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**Department of Defense
Fiscal Year (FY) 2019 Budget Estimates**

February 2018



Army

Justification Book of

Procurement of Ammunition, Army

FY19 Procurement of Ammunition, Army

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Army • Budget Estimates FY 2019 • Procurement

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The following Justification Books were prepared at a cost of \$226,413: 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, and Budget Activity 7.

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, Base \$2,234,761 and OCO \$309,525 to remain available for obligation until September 30, 2021.

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Department of the Army
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 Exhibit P-1 FY 2019 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

11 Jan 2018

<u>Appropriation</u>	<u>FY 2017</u> <u>(Base + OCO)</u>	<u>FY 2018</u> <u>PB Request</u> <u>with CR Adj</u> <u>Base</u>	<u>FY 2018</u> <u>Total</u> <u>PB Requests*</u> <u>with CR Adj</u> <u>Base</u>	<u>FY 2018</u> <u>PB Request</u> <u>with CR Adj</u> <u>OCO</u>
Procurement of Ammunition, Army	2,261,021	1,468,525	1,468,525	738,355
Total Department of the Army	2,261,021	1,468,525	1,468,525	738,355

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11 Jan 2018

<u>Appropriation</u>	FY 2018 Total PB Requests* with CR Adj OCO -----	FY 2018 Emergency Requests** Emergency -----	FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs -----	FY 2018 Remaining Req Emergency -----
Procurement of Ammunition, Army	738,355			
Total Department of the Army	738,355			

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 (Dollars in Thousands)

11 Jan 2018

<u>Appropriation</u>	FY 2018 Total PB Requests* with CR Adj Base + OCO + Emergency**	FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency
Procurement of Ammunition, Army	2,206,880		2,206,880
Total Department of the Army	2,206,880		2,206,880

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Department of the Army
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 (Dollars in Thousands)

11 Jan 2018

<u>Appropriation</u>	<u>FY 2019 Base</u>	<u>FY 2019 OCO</u>	<u>FY 2019 Total</u>
Procurement of Ammunition, Army	2,234,761	309,525	2,544,286
Total Department of the Army	2,234,761	309,525	2,544,286

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Department of the Army
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 Total Obligational Authority
 (Dollars in Thousands)

11 Jan 2018

Appropriation: Procurement of Ammunition, Army

Budget Activity	FY 2017 (Base + OCO)	FY 2018 PB Request with CR Adj Base	FY 2018 Total PB Requests* with CR Adj Base	FY 2018 PB Request with CR Adj OCO
01. Ammunition	1,691,147	1,348,383	1,348,383	193,436
02. Ammunition Production Base Support	569,874	530,900	530,900	
20. Undistributed		-410,758	-410,758	544,919
Total Procurement of Ammunition, Army	2,261,021	1,468,525	1,468,525	738,355

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11 Jan 2018

Appropriation: Procurement of Ammunition, Army

Budget Activity -----	FY 2018 Total PB Requests* with CR Adj OCO -----	FY 2018 Emergency Requests** Emergency -----	FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs -----	FY 2018 Remaining Req Emergency -----
01. Ammunition	193,436			
02. Ammunition Production Base Support				
20. Undistributed	544,919			
Total Procurement of Ammunition, Army	738,355			

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Appropriation: Procurement of Ammunition, Army

<u>Budget Activity</u>	FY 2018 Total PB Requests* with CR Adj Base + OCO + Emergency**	FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency
-----	-----	-----	-----
01. Ammunition	1,541,819		1,541,819
02. Ammunition Production Base Support	530,900		530,900
20. Undistributed	134,161		134,161
Total Procurement of Ammunition, Army	2,206,880		2,206,880

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 (Dollars in Thousands)

11 Jan 2018

Appropriation: Procurement of Ammunition, Army

<u>Budget Activity</u>	<u>FY 2019 Base</u>	<u>FY 2019 OCO</u>	<u>FY 2019 Total</u>
01. Ammunition	1,679,322	309,525	1,988,847
02. Ammunition Production Base Support	555,439		555,439
20. Undistributed			
Total Procurement of Ammunition, Army	2,234,761	309,525	2,544,286

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 (Dollars in Thousands)

11 Jan 2018

Appropriation: 2034A Procurement of Ammunition, Army

Line No	Item Nomenclature	Ident Code	FY 2017 (Base + OCO)		FY 2018 PB Request with CR Adj Base		FY 2018 Total PB Requests* with CR Adj Base		FY 2018 PB Request with CR Adj OCO		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		44,296		39,767		39,767			U
2	CTG, 7.62mm, All Types	A		55,879		46,804		46,804			U
3	CTG, Handgun, All Types	A		5,193		10,413		10,413		5	U
4	CTG, .50 Cal, All Types	A		60,300		62,837		62,837		121	U
5	CTG, 20mm, All Types	A		36,077		8,208		8,208		1,605	U
6	CTG, 25mm, All Types	A		34,537		8,640		8,640			U
7	CTG, 30mm, All Types	A		76,949		76,850		76,850		35,000	U
8	CTG, 40mm, All Types	A		118,747		108,189		108,189			U
Mortar Ammunition											
9	60MM Mortar, All Types			65,984		57,359		57,359			U
10	81MM Mortar, All Types			38,802		49,471		49,471			U
11	120MM Mortar, All Types	A		110,233		91,528		91,528			U
Tank Ammunition											
12	Cartridges, Tank, 105MM and 120MM, All Types	A		126,852		133,500		133,500			U
Artillery Ammunition											
13	Artillery Cartridges, 75MM & 105MM, All Types	A		65,790		44,200		44,200			U
14	Artillery Projectile, 155MM, All Types			127,101		187,149		187,149			U

P-119PB: FY 2019 President's Budget (Published Version), as of January 11, 2018 at 06:52:38

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Department of the Army
 FY 2019 President's Budget
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 Total Obligational Authority
 (Dollars in Thousands)

11 Jan 2018

Appropriation: 2034A Procurement of Ammunition, Army

Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests* with CR Adj OCO		FY 2018 Emergency Requests**		FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs		FY 2018 Remaining Req Emergency		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									U
2	CTG, 7.62mm, All Types	A									U
3	CTG, Handgun, All Types	A		5							U
4	CTG, .50 Cal, All Types	A		121							U
5	CTG, 20mm, All Types	A		1,605							U
6	CTG, 25mm, All Types	A									U
7	CTG, 30mm, All Types	A		35,000							U
8	CTG, 40mm, All Types	A									U
Mortar Ammunition											
9	60MM Mortar, All Types										U
10	81MM Mortar, All Types										U
11	120MM Mortar, All Types	A									U
Tank Ammunition											
12	Cartridges, Tank, 105MM and 120MM, All Types	A									U
Artillery Ammunition											
13	Artillery Cartridges, 75MM & 105MM, All Types	A									U
14	Artillery Projectile, 155MM, All Types										U

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Appropriation: 2034A Procurement of Ammunition, Army

Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests* with CR Adj Base + OCO + Emergency**		FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs		FY 2018 Remaining Req with CR Adj Base + OCO + Emergency		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	
Budget Activity 01: Ammunition									
Small/Medium-Cal Ammunition									
1	Ctg, 5.56mm, All Types	A		39,767			39,767		U
2	CTG, 7.62mm, All Types	A		46,804			46,804		U
3	CTG, Handgun, All Types	A		10,418			10,418		U
4	CTG, .50 Cal, All Types	A		62,958			62,958		U
5	CTG, 20mm, All Types	A		9,813			9,813		U
6	CTG, 25mm, All Types	A		8,640			8,640		U
7	CTG, 30mm, All Types	A		111,850			111,850		U
8	CTG, 40mm, All Types	A		108,189			108,189		U
Mortar Ammunition									
9	60MM Mortar, All Types			57,359			57,359		U
10	81MM Mortar, All Types			49,471			49,471		U
11	120MM Mortar, All Types	A		91,528			91,528		U
Tank Ammunition									
12	Cartridges, Tank, 105MM and 120MM, All Types	A		133,500			133,500		U
Artillery Ammunition									
13	Artillery Cartridges, 75MM & 105MM, All Types	A		44,200			44,200		U
14	Artillery Projectile, 155MM, All Types			187,149			187,149		U

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Department of the Army
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Appropriation: 2034A Procurement of Ammunition, Army

Line No	Item Nomenclature	Ident Code	FY 2019 Base		FY 2019 OCO		FY 2019 Total		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	
<u>Budget Activity 01: Ammunition</u>									
Small/Medium Cal Ammunition									
1	Ctg, 5.56mm, All Types	A		41,848		3,392		45,240	U
2	CTG, 7.62mm, All Types	A		86,199		40		86,239	U
3	CTG, Handgun, All Types	A		20,158		17		20,175	U
4	CTG, .50 Cal, All Types	A		65,573		189		65,762	U
5	CTG, 20mm, All Types	A		8,198		1,605		9,803	U
6	CTG, 25mm, All Types	A							U
7	CTG, 30mm, All Types	A		77,995		25,000		102,995	U
8	CTG, 40mm, All Types	A		69,781				69,781	U
Mortar Ammunition									
9	60MM Mortar, All Types			45,280		218		45,498	U
10	81MM Mortar, All Types			46,853		484		47,337	U
11	120MM Mortar, All Types	A		83,003				83,003	U
Tank Ammunition									
12	Cartridges, Tank, 105MM and 120MM, All Types	A		168,101				168,101	U
Artillery Ammunition									
13	Artillery Cartridges, 75MM & 105MM, All Types	A		39,341				39,341	U
14	Artillery Projectile, 155MM, All Types			211,442		79,400		290,842	U

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Appropriation: 2034A Procurement of Ammunition, Army

Line No	Item Nomenclature	Ident Code	FY 2017 (Base + OCO)		FY 2018 PB Request with CR Adj Base		FY 2018 Total PB Requests* with CR Adj Base		FY 2018 PB Request with CR Adj OCO		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
15	Proj 155mm Extended Range M982	A	2209	171,565	480	49,000	480	49,000	266	23,234	U
16	Artillery Propellants, Fuzes and Primers, All	A		179,736		83,046		83,046		20,023	U
Mines											
17	Mines & Clearing Charges, All Types			16,866		3,942		3,942		11,615	U
Rockets											
18	Shoulder Launched Munitions, All Types	A		99,046		5,000		5,000		25,000	U
19	Rocket, Hydra 70, All Types	A		144,794		161,155		161,155		75,820	U
Other Ammunition											
20	CAD/PAD, All Types	A		4,914		7,441		7,441			U
21	Demolition Munitions, All Types	A		12,754		19,345		19,345			U
22	Grenades, All Types	A		26,904		22,759		22,759			U
23	Signals, All Types	A		8,018		2,583		2,583		1,013	U
24	Simulators, All Types	A		7,412		13,084		13,084			U
Miscellaneous											
25	Ammo Components, All Types	A		11,224		12,237		12,237			U
26	Non-Lethal Ammunition, All Types	A		5,873		1,500		1,500			U
27	Items Less Than \$5 Million (AMMO)	A		9,506		10,730		10,730			U
28	Ammunition Peculiar Equipment	A		10,822		16,425		16,425			U
29	First Destination Transportation (AMMO)	A		14,951		15,221		15,221			U

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Appropriation: 2034A Procurement of Ammunition, Army

Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests* with CR Adj OCO		FY 2018 Emergency Requests**		FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs		FY 2018 Remaining Req Emergency		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
15	Proj 155mm Extended Range M982	A	266	23,234							U
16	Artillery Propellants, Fuzes and Primers, All	A		20,023							U
Mines											
17	Mines & Clearing Charges, All Types			11,615							U
Rockets											
18	Shoulder Launched Munitions, All Types	A		25,000							U
19	Rocket, Hydra 70, All Types	A		75,820							U
Other Ammunition											
20	CAD/PAD, All Types	A									U
21	Demolition Munitions, All Types	A									U
22	Grenades, All Types	A									U
23	Signals, All Types	A		1,013							U
24	Simulators, All Types	A									U
Miscellaneous											
25	Ammo Components, All Types	A									U
26	Non-Lethal Ammunition, All Types	A									U
27	Items Less Than \$5 Million (AMMO)	A									U
28	Ammunition Peculiar Equipment	A									U
29	First Destination Transportation (AMMO)	A									U

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Appropriation: 2034A Procurement of Ammunition, Army

Line No	Item Nomenclature	Ident Code	FY 2018 Total		FY 2018 Less Enacted		FY 2018 Remaining Req		S e c	
			Quantity	Cost	Quantity	Cost	Quantity	Cost		
15	Proj 155mm Extended Range M982	A	746	72,234			746	72,234	U	
16	Artillery Propellants, Fuzes and Primers, All	A		103,069				103,069	U	
Mines										
17	Mines & Clearing Charges, All Types			15,557				15,557	U	
Rockets										
18	Shoulder Launched Munitions, All Types	A		30,000				30,000	U	
19	Rocket, Hydra 70, All Types	A		236,975				236,975	U	
Other Ammunition										
20	CAD/PAD, All Types	A		7,441				7,441	U	
21	Demolition Munitions, All Types	A		19,345				19,345	U	
22	Grenades, All Types	A		22,759				22,759	U	
23	Signals, All Types	A		3,596				3,596	U	
24	Simulators, All Types	A		13,084				13,084	U	
Miscellaneous										
25	Ammo Components, All Types	A		12,237				12,237	U	
26	Non-Lethal Ammunition, All Types	A		1,500				1,500	U	
27	Items Less Than \$5 Million (AMMO)	A		10,730				10,730	U	
28	Ammunition Peculiar Equipment	A		16,425				16,425	U	
29	First Destination Transportation (AMMO)	A		15,221				15,221	U	

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11 Jan 2018

Appropriation: 2034A Procurement of Ammunition, Army

Line No	Item Nomenclature	Ident Code	FY 2019 Base		FY 2019 OCO		FY 2019 Total		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	
15	Proj 155mm Extended Range M982	A	1189	100,906	973	72,985	2162	173,891	U
16	Artillery Propellants, Fuzes and Primers, All	A		236,677		63,900		300,577	U
Mines									
17	Mines & Clearing Charges, All Types			15,905				15,905	U
Rockets									
18	Shoulder Launched Munitions, All Types	A		4,503		22,242		26,745	U
19	Rocket, Hydra 70, All Types	A		211,211		39,974		251,185	U
Other Ammunition									
20	CAD/PAD, All Types	A		10,428				10,428	U
21	Demolition Munitions, All Types	A		44,656		5		44,661	U
22	Grenades, All Types	A		19,896		8		19,904	U
23	Signals, All Types	A		10,121				10,121	U
24	Simulators, All Types	A		11,464				11,464	U
Miscellaneous									
25	Ammo Components, All Types	A		5,224				5,224	U
26	Non-Lethal Ammunition, All Types	A		4,310				4,310	U
27	Items Less Than \$5 Million (AMMO)	A		11,193		66		11,259	U
28	Ammunition Peculiar Equipment	A		10,500				10,500	U
29	First Destination Transportation (AMMO)	A		18,456				18,456	U

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11 Jan 2018

Appropriation: 2034A Procurement of Ammunition, Army

Line No	Item Nomenclature	Ident Code	FY 2017 (Base + OCO)		FY 2018 PB Request with CR Adj Base		FY 2018 Total PB Requests* with CR Adj Base		FY 2018 PB Request with CR Adj OCO		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
30	Closeout Liabilities										U
31	Closed Account Adjustments			22							U
Total Ammunition				1,691,147		1,348,383		1,348,383		193,436	
Budget Activity 02: Ammunition Production Base Support											
Production Base Support											
32	Industrial Facilities			408,867		329,356		329,356			U
33	Conventional Munitions Demilitarization			157,361		197,825		197,825			U
34	Arms Initiative			3,646		3,719		3,719			U
Total Ammunition Production Base Support				569,874		530,900		530,900			
Budget Activity 20: Undistributed											
Undistributed											
35	Adj to Match Continuing Resolution	A				-410,758		-410,758		544,919	U
Total Undistributed						-410,758		-410,758		544,919	
Total Procurement of Ammunition, Army				2,261,021		1,468,525		1,468,525		738,355	

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Appropriation: 2034A Procurement of Ammunition, Army

Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests* with CR Adj OCO		FY 2018 Emergency Requests**		FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs		FY 2018 Remaining Req Emergency		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
30	Closeout Liabilities										U
31	Closed Account Adjustments										U
Total Ammunition				193,436							
Budget Activity 02: Ammunition Production Base Support											
Production Base Support											
32	Industrial Facilities										U
33	Conventional Munitions Demilitarization										U
34	Arms Initiative										U
Total Ammunition Production Base Support											
Budget Activity 20: Undistributed											
Undistributed											
35	Adj to Match Continuing Resolution	A		544,919							U
Total Undistributed				544,919							
Total Procurement of Ammunition, Army				738,355							

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11 Jan 2018

Appropriation: 2034A Procurement of Ammunition, Army

Line No	Item Nomenclature	Ident Code	FY 2018 Total		FY 2018 Less Enacted		FY 2018 Remaining Req		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	
30	Closeout Liabilities								U
31	Closed Account Adjustments								U
Total Ammunition			1,541,819				1,541,819		
Budget Activity 02: Ammunition Production Base Support									
Production Base Support									
32	Industrial Facilities		329,356				329,356		U
33	Conventional Munitions Demilitarization		197,825				197,825		U
34	Arms Initiative		3,719				3,719		U
Total Ammunition Production Base Support			530,900				530,900		
Budget Activity 20: Undistributed									
Undistributed									
35	Adj to Match Continuing Resolution	A	134,161				134,161		U
Total Undistributed			134,161				134,161		
Total Procurement of Ammunition, Army			2,206,880				2,206,880		

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11 Jan 2018

Appropriation: 2034A Procurement of Ammunition, Army

Line No	Item Nomenclature	Ident Code	FY 2019 Base		FY 2019 OCO		FY 2019 Total		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	
30	Closeout Liabilities			100				100	U
31	Closed Account Adjustments								U
Total Ammunition				1,679,322		309,525		1,988,847	
Budget Activity 02: Ammunition Production Base Support									
Production Base Support									
32	Industrial Facilities			394,133				394,133	U
33	Conventional Munitions Demilitarization			157,535				157,535	U
34	Arms Initiative			3,771				3,771	U
Total Ammunition Production Base Support				555,439				555,439	
Budget Activity 20: Undistributed									
Undistributed									
35	Adj to Match Continuing Resolution	A							U
Total Undistributed									
Total Procurement of Ammunition, Army				2,234,761		309,525		2,544,286	

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5	01	30	2382E08900	CTG, 20mm, All Types.....	100
6	01	30	2650E08200	CTG, 25MM, All Types.....	109
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8	01	30	3222ER8001	CTG, 40mm, All Types.....	147
9	01	33	0050E89600	60MM Mortar, All Types.....	164
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12	01	35	1120E22203	Cartridges, Tank, 105MM And 120MM, All Types.....	229
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14	01	37	3102E89500	ARTILLERY PROJECTILE, 155MM, All Types.....	266
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Appropriation 2034A: Procurement of Ammunition, Army

Line #	BA	BSA	Line Item Number	Line Item Title	Page
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18	01	45	2348EA4000	Shoulder Launched Munitions, All Types.....	341
19	01	45	3246E37300	Rocket, Hydra 70, All Types.....	357
20	01	47	2420E61000	CAD/PAD, All Types.....	372
21	01	47	2790E55400	Demolition Munitions, All Types.....	375
22	01	47	4582E34000	Grenades, All Types.....	413
23	01	47	6038E46900	Signals, All Types.....	431
24	01	47	8278E51200	Simulators, All Types.....	447
25	01	50	0684EB0016	Ammo Components, All Types.....	457
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28	01	50	4370EA0575	Ammunition Peculiar Equipment.....	472
29	01	50	4758EA0550	First Destination Transportation (AMMO).....	474
30	01	50	9615EA8500	Closeout Liabilities.....	475

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Appropriation 2034A: Procurement of Ammunition, Army

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34	02	10	4150EP2500	ARMS Initiative.....	591

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60MM Mortar, All Types	0050E89600	9	01	33.....	164
81MM Mortar, All Types	3584E76000	10	01	33.....	190
ARMS Initiative	4150EP2500	34	02	10.....	591
ARTILLERY PROJECTILE, 155MM, All Types	3102E89500	14	01	37.....	266
Ammo Components, All Types	0684EB0016	25	01	50.....	457
Ammunition Peculiar Equipment	4370EA0575	28	01	50.....	472
Artillery Cartridges, 75MM & 105MM, All Types	0530E15101	13	01	37.....	260
Artillery Propellants, Fuzes and Primers, All	8750E27501	16	01	37.....	311
CAD/PAD, All Types	2420E61000	20	01	47.....	372
CTG, .50 Cal, All Types	1722E08000	4	01	30.....	77
CTG, 20mm, All Types	2382E08900	5	01	30.....	100
CTG, 25MM, All Types	2650E08200	6	01	30.....	109
CTG, 30MM, ALL TYPES	2938ER8120	7	01	30.....	111
CTG, 40mm, All Types	3222ER8001	8	01	30.....	147
CTG, 5.56MM, All Types	0132E00700	1	01	30.....	1
CTG, 7.62MM, All Types	0612E02000	2	01	30.....	29

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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	12	01	35.....	229
Closeout Liabilities	9615EA8500	30	01	50.....	475
Conventional Munitions Demilitarization	4099EP1700	33	02	10.....	584
Demolition Munitions, All Types	2790E55400	21	01	47.....	375
First Destination Transportation (AMMO)	4758EA0550	29	01	50.....	474
Grenades, All Types	4582E34000	22	01	47.....	413
Industrial Facilities	0572EP1000	32	02	10.....	476
Items Less Than \$5 Million (AMMO)	2624EA0055	27	01	50.....	462
Mines & Clearing Charges, All Types	0442EA0800	17	01	43.....	332
Non-Lethal Ammunition, All Types	1430E91901	26	01	50.....	460
Proj 155mm Extended Range M982	6600E80100	15	01	37.....	302
Rocket, Hydra 70, All Types	3246E37300	19	01	45.....	357
Shoulder Launched Munitions, All Types	2348EA4000	18	01	45.....	341
Signals, All Types	6038E46900	23	01	47.....	431
Simulators, All Types	8278E51200	24	01	47.....	447

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,751.635	44.296	39.767	41.848	3.392	45.240	78.219	78.651	94.863	90.533	-	2,223.204
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,751.635	44.296	39.767	41.848	3.392	45.240	78.219	78.651	94.863	90.533	-	2,223.204
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,751.635	44.296	39.767	41.848	3.392	45.240	78.219	78.651	94.863	90.533	-	2,223.204

(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 and it is designed to simulate firing during training exercises. The M27 metallic link is merely a scaled-down version of the highly successful 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.

(E95400) 5.56mm, M855A1 Ball Cartridge has a bullet with a conical steel insert and a non-lead slug in a copper alloy jacket. The cartridge is used in M16A2/A4 Rifles and M4/M4A1 Carbines. This cartridge is packed in bandoleer's in standard military can pack. This item is Code A, approved for service use.

(E95700) 5.56mm, M855A1 Ball Cartridge has a bullet with a conical steel insert and a non-lead slug in a copper alloy 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.

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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>(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 from 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. This item is Code A, approved for service use.</p> <p>(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. This item is Code A, approved for service use.</p> <p>(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. This item is Code A, approved for service use.</p> <p>(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.</p> <p>(E96126) 5.56mm Short Range Training Ammunition (SRTA) M1037 linked cartridge will be used in live fire training scenarios. The M1037 Linked cartridge permits training in adjacent training areas due to its reduced Surface Danger Zone (SDZ) and can be fired with the existing M249 family of weapons. This item is Code A, approved for service use.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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, (DDI), M199A1 [AB46]		A		- / 0.295	- / -	201,730 / 0.229	- / -	- / -	- / -
P-5	E01100 / CTG 5.56MM BLANK M200 [A080]		A		- / 527.951	31,875,558 / 4.500	19,564,800 / 3.300	19,128,246 / 3.397	- / -	19,128,246 / 3.397
P-5	E01101 / CTG 5.56MM BLANK M200 LINKED F/SAW [A075]		A		- / 206.805	10,586,797 / 2.387	10,336,868 / 2.435	10,026,358 / 2.582	- / -	10,026,358 / 2.582
P-5	E04607 / CTG, 5.56MM 4 BALL M855A1 EPR /1 TR M856A1 LINKED [AB73]	P-5a, P-21	A		- / 50.183	17,185,766 / 6.300	15,936,213 / 6.400	15,310,266 / 6.340	713,513 / 0.264	16,023,779 / 6.604
P-5	E04608 / CTG, 5.56MM TRACER M856A1 SINGLE ROUND [AB74]		A		- / 9.782	- / -	- / -	- / -	7,087,383 / 3.128	7,087,383 / 3.128
P-5	E95400 / CTG 5.56MM, BALL M855A1 EPR, CLIPPED MIL PACK [AB57]	P-5a	A		- / 807.424	11,959,557 / 6.400	18,181,170 / 6.500	16,289,856 / 6.519	- / -	16,289,856 / 6.519
P-5	E95700 / CTG, 5.56MM, BALL M855A1, CLIPPED BULK PACK [AB77]	P-5a, P-21	A		- / 122.990	81,148,445 / 22.119	59,310,613 / 18.508	55,412,637 / 17.915	- / -	55,412,637 / 17.915
P-5	E96111 / CTG, 5.56MM MARKING, M1042 (RED) [AB10]		A		- / 11.697	- / -	- / -	1,492,649 / 0.993	- / -	1,492,649 / 0.993
P-5	E96120 / CTG, 5.56MM MARKING LINKED, M1071 (BLUE) F/SAW [AB16]		A		- / 3.536	845,578 / 0.545	347,718 / 0.263	994,851 / 0.778	- / -	994,851 / 0.778
P-5	E96121 / CTG, 5.56MM MARKING LINKED, M1071 (RED) F/SAW [AB17]		A		- / 3.508	552,566 / 0.345	200,301 / 0.150	795,341 / 0.622	- / -	795,341 / 0.622
P-5	E96125 / Ctg, 5.56mm, Short Range Training, M1037, sngr rd [AB67]		A		- / 1.614	672,115 / 0.700	991,433 / 1.400	1,848,214 / 2.702	- / -	1,848,214 / 2.702
P-5	E96126 / Ctg, 5.56mm, Short Range Training, M1037 Linked [AB66]		A		- / 5.850	822,894 / 1.000	437,995 / 0.582	- / -	- / -	- / -
P-40	Total Gross/Weapon System Cost				- / 1,751.635	- / 44.296	- / 39.767	- / 41.848	- / 3.392	- / 45.240

*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 2019 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements IAW DoD Instruction 3000.04 (Munitions Requirements Process) and AR 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support 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 2019 Total Base procurement dollars in the amount of \$41.848 million supports procurement of 121.30 million cartridges. The FY 2019 European Deterrence Initiative (EDI) Overseas Contingency Operations (OCO) dollars in the amount of \$3.392M supports procurement of 7.801M cartridges.

(E00901) 5.56mm, Single Cartridge (DDI), M199A1 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. Type Classification date: 2008

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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>(E01100) 5.56mm, M200 Blank Cartridge is a training unique item not used in combat. The FY 2019 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2019 Base Procurement dollars in the amount of \$3.397 million supports the procurement of 19.128 million of the 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 2019 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2019 Base Procurement dollars in the amount of \$2.582 million supports the procurement of 10.026 million of the 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 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base Procurement dollars in the amount of \$6.340 million supports the procurement of 15.310 million of the M855A1 Ball and M856A1 Tracer Cartridges. FY 2019 EDI OCO dollars in the amount of \$0.264M supports the procurement of 0.714M M855A1 Ball Cartridges. Type classification date: 1982</p> <p>(E04608) 5.56mm M856A1 Tracer Bullet is lead free and is a training standard item used in training and combat. The FY 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 EDI OCO dollars in the amount of \$3.128M supports the procurement of 7.087 million of the M856A1 bullets. This is a new start in FY 2019.</p> <p>(E95400) 5.56mm, M855A1 Ball Cartridge is a training standard item used in training and combat. The FY 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base Procurement dollars in the amount of \$6.519 million supports the procurement of 16.290 million of the 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 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base Procurement dollars in the amount of \$17.915 million supports the procurement of 55.413 million of the M855A1 Ball Cartridges. Type classification date: 1982</p> <p>(E96111) 5.56mm Marking, M1042 Red are training unique items not used in combat. The FY 2019 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2019 Base Procurement dollars in the amount of \$.993 million supports the procurement of 1.493 million of the Marking Red M1042 Cartridges. This is a New Start in FY 2019. Type classification date: May 2009</p> <p>(E96120) 5.56mm, Marking Blue, M1071 are training unique items not used in combat. The FY 2019 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2019 Base Procurement dollars in the amount of \$0.778 million supports the procurement of 0.995 million of the Marking Blue M1071 Cartridges. Type classification date: May 2009</p> <p>(E96121) 5.56mm, Marking Red, M1071 are training unique items not used in combat. The FY 2019 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2019 Base Procurement dollars in the amount of \$0.622 million supports the procurement of .795 million of the Marking Red M1071 Cartridges. Type classification date: May 2009</p> <p>(E96125) 5.56mm Short Range Training Ammunition (SRTA) M1037 clipped cartridges are training unique items not used in combat. The FY 2019 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2019 Base Procurement dollars in the amount of \$2.702 million supports the procurement of 1.848 million of the clipped SRTA M1037 Cartridges. Type classification date: July 2012</p> <p>(E96126) 5.56mm Short Range Training Ammunition (SRTA) M1037 linked cartridges are training unique items not used in combat. The request supports annual training and builds a depot level in accordance with Army's procurement goals.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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: 2008

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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, (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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	201,730	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.295	-	0.229	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.295	-	0.229	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.295	-	0.229	-	-	-

(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>)	-	-	1.14	-	-	-

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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)	0.39	756,410	0.295	-	-	-	1.05	201,730	0.212	-	-	-	-	-	-	-	-	-
BOX METAL M2A2	-	-	-	-	-	-	13.67	246	0.003	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	0.295	-	-	-	-	-	0.215	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	0.295	-	-	-	-	-	0.215	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	-	-	-	0.014	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	-	-	-	0.014	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	0.295	-	-	-	1.14	201,730	0.229	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 [A080]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	31,875,558	19,564,800	19,128,246	-	19,128,246
Gross/Weapon System Cost (\$ in Millions)	527.951	4.500	3.300	3.397	-	3.397
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	527.951	4.500	3.300	3.397	-	3.397
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	527.951	4.500	3.300	3.397	-	3.397

(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)	-	0.14	0.17	0.18	-	0.18

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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)	0.18	2,782,628K	500.873	0.12	31,875,558	3.825	0.13	19,564,800	2.543	0.14	19,128,246	2.678	-	-	-	0.14	19,128,246	2.678
BOX METAL M2A2	10.93	2,405,594	26.293	-	-	-	13.67	17,217	0.235	14.06	16,832	0.237	-	-	-	14.06	16,832	0.237
<i>Subtotal: Recurring Cost</i>	-	-	527.166	-	-	3.825	-	-	2.779	-	-	2.915	-	-	-	-	-	2.915
<i>Subtotal: Hardware Cost</i>	-	-	527.166	-	-	3.825	-	-	2.779	-	-	2.915	-	-	-	-	-	2.915
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	0.080	-	-	0.040	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	0.080	-	-	0.040	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	0.692	-	-	0.629	-	-	0.516	-	-	0.472	-	-	-	-	-	0.472
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.692	-	-	0.629	-	-	0.516	-	-	0.472	-	-	-	-	-	0.472
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.013	-	-	0.006	-	-	0.005	-	-	0.011	-	-	-	-	-	0.011
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.013	-	-	0.006	-	-	0.005	-	-	0.011	-	-	-	-	-	0.011
Gross/Weapon System Cost	-	-	527.951	0.14	31,875,558	4.500	0.17	19,564,800	3.300	0.18	19,128,246	3.397	-	-	-	0.18	19,128,246	3.397

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	10,586,797	10,336,868	10,026,358	-	10,026,358
Gross/Weapon System Cost (\$ in Millions)	206.805	2.387	2.435	2.582	-	2.582
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	206.805	2.387	2.435	2.582	-	2.582
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	206.805	2.387	2.435	2.582	-	2.582

(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)	-	0.23	0.24	0.26	-	0.26

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	938,727K	206.520	0.20	10,586,797	2.117	0.21	10,336,868	2.171	0.21	10,026,358	2.106	-	-	-	0.21	10,026,358	2.106
Subtotal: Recurring Cost	-	-	206.520	-	-	2.117	-	-	2.171	-	-	2.106	-	-	-	-	-	2.106
Subtotal: Hardware Cost	-	-	206.520	-	-	2.117	-	-	2.171	-	-	2.106	-	-	-	-	-	2.106
Support - Product Improvement Cost																		
Environmental Initiatives	-	-	-	-	-	-	-	-	-	-	-	0.135	-	-	-	-	-	0.135
Subtotal: Support - Product Improvement Cost	-	-	-	-	-	-	-	-	-	-	-	0.135	-	-	-	-	-	0.135
Support - Production Engineering Cost																		
Production Engineering	-	-	0.285	-	-	0.266	-	-	0.261	-	-	0.338	-	-	-	-	-	0.338
Subtotal: Support - Production Engineering Cost	-	-	0.285	-	-	0.266	-	-	0.261	-	-	0.338	-	-	-	-	-	0.338
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	0.003	-	-	0.003	-	-	0.004	-	-	-	-	-	0.004
Subtotal: Support - Quality Assurance Cost	-	-	-	-	-	0.003	-	-	0.003	-	-	0.004	-	-	-	-	-	0.004
Gross/Weapon System Cost	-	-	206.805	0.23	10,586,797	2.387	0.24	10,336,868	2.435	0.26	10,026,358	2.582	-	-	-	0.26	10,026,358	2.582

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 M855A1 EPR /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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	17,185,766	15,936,213	15,310,266	713,513	16,023,779
Gross/Weapon System Cost (\$ in Millions)	50.183	6.300	6.400	6.340	0.264	6.604
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	50.183	6.300	6.400	6.340	0.264	6.604
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	50.183	6.300	6.400	6.340	0.264	6.604

(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)	-	0.37	0.40	0.41	0.37	0.41

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 ^(†)	0.31	156,290K	48.450	0.33	17,185,766	5.671	0.36	15,936,213	5.737	0.37	15,310,266	5.665	0.37	713,513	0.264	0.37	16,023,779	5.929
Subtotal: Recurring Cost	-	-	48.450	-	-	5.671	-	-	5.737	-	-	5.665	-	-	0.264	-	-	5.929
Subtotal: Hardware Cost	-	-	48.450	-	-	5.671	-	-	5.737	-	-	5.665	-	-	0.264	-	-	5.929
Support - Product Improvement Cost																		
Safety	-	-	-	-	-	0.056	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Product Improvement Cost	-	-	-	-	-	0.056	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	1.723	-	-	0.566	-	-	0.657	-	-	0.668	-	-	-	-	-	0.668
Subtotal: Support - Production Engineering Cost	-	-	1.723	-	-	0.566	-	-	0.657	-	-	0.668	-	-	-	-	-	0.668
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.010	-	-	0.006	-	-	0.006	-	-	0.007	-	-	-	-	-	0.007
Subtotal: Support - Quality Assurance Cost	-	-	0.010	-	-	0.006	-	-	0.006	-	-	0.007	-	-	-	-	-	0.007
Gross/Weapon System Cost	-	-	50.183	0.37	17,185,766	6.300	0.40	15,936,213	6.400	0.41	15,310,266	6.340	0.37	713,513	0.264	0.41	16,023,779	6.604

(†) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018					
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 M855A1 EPR /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 ^(†)		2017	ALLIANT TECHSYSTEMS (LCAAP) / INDEPENDENCE, MO	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2017	Apr 2018	17,185,766	0.33	Y		
COMPLETE ROUND ^(†)		2018	ALLIANT TECHSYSTEMS (LCAAP) / INDEPENDENCE, MO	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Oct 2018	15,936,213	0.36	Y		
COMPLETE ROUND ^(†)		2019	ALLIANT TECHSYSTEMS (LCAAP) / INDEPENDENCE, MO	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Oct 2019	16,023,779	0.37	Y		

^(†) indicates the presence of a P-21

Remarks:
FY 2017, FY 2018 AND FY 2019 COMPLETE ROUND IS A DELIVERY ORDER TO THE EXISTING CONTRACT.

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Exhibit P-21, Production Schedule: PB 2019 Army			Date: February 2018				
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 M855A1 EPR /1 TR M856A1 LINKED [AB73]		

Cost Elements <i>(Units in Millions, * = < 500)</i>						Fiscal Year 2017										Fiscal Year 2018										B A L A N C E								
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	Calendar Year 2017										Calendar Year 2018																	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R		M A Y	J U N	J U L	A U G	S E P			
COMPLETE ROUND																																		
Prior Years Deliveries: 156289606																																		
1		2017	ARMY	17.186	.000	17.186																												.000
1		2018	ARMY	15.936	.000	15.936																												15.936
1		2019	ARMY	16.024	.000	16.024																												16.024
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army															Date: February 2018														
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 M855A1 EPR /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 #	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: 156289606																																			
1	2017	ARMY	17.186	17.186	.000																														.000
1	2018	ARMY	15.936	.000	15.936	1.328	1.328	1.328	1.328	1.328	1.328	1.328	1.328	1.328	1.328	1.328																			.000
1	2019	ARMY	16.024	.000	16.024																														.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						

UNCLASSIFIED

Exhibit P-21, Production Schedule: PB 2019 Army		Date: February 2018
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 M855A1 EPR /1 TR M856A1 LINKED [AB73]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	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	ALLIANT TECHSYSTEMS (LCAAP) - INDEPENDENCE, MO	1,600	5,143,040	9,771,776	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 2019 Army													Date: February 2018					
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:								
Resource Summary				Prior Years		FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO		FY 2019 Total	
Procurement Quantity (<i>Units in Each</i>)				-		-			-			-			7,087,383		7,087,383	
Gross/Weapon System Cost (<i>\$ in Millions</i>)				9.782		-			-			-			3.128		3.128	
Less PY Advance Procurement (<i>\$ in Millions</i>)				-		-			-			-			-		-	
Net Procurement (P-1) (<i>\$ in Millions</i>)				9.782		-			-			-			3.128		3.128	
Plus CY Advance Procurement (<i>\$ in Millions</i>)				-		-			-			-			-		-	
Total Obligation Authority (<i>\$ in Millions</i>)				9.782		-			-			-			3.128		3.128	
<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>)				-		-			-			-			0.44		0.44	
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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)	0.37	24,435,313	9.041	-	-	-	-	-	-	-	-	-	0.40	7,087,383	2.835	0.40	7,087,383	2.835
BOX METAL M2A2	10.38	2,608	0.027	-	-	-	-	-	-	-	-	-	14.06	8,646	0.122	14.06	8,646	0.122
<i>Subtotal: Recurring Cost</i>	-	-	9.068	-	-	-	-	-	-	-	-	0.000	-	-	2.957	-	-	2.957
<i>Subtotal: Hardware Cost</i>	-	-	9.068	-	-	-	-	-	-	-	-	0.000	-	-	2.957	-	-	2.957
Support - Production Engineering Cost																		
Production Engineering	-	-	0.714	-	-	-	-	-	-	-	-	-	-	-	0.168	-	-	0.168
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.714	-	-	-	-	-	-	-	-	0.000	-	-	0.168	-	-	0.168
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.003	-	-	0.003
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.000	-	-	0.003	-	-	0.003
Gross/Weapon System Cost	-	-	9.782	-	-	-	-	-	-	-	-	-	0.44	7,087,383	3.128	0.44	7,087,383	3.128

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	11,959,557	18,181,170	16,289,856	-	16,289,856
Gross/Weapon System Cost (\$ in Millions)	807.424	6.400	6.500	6.519	-	6.519
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	807.424	6.400	6.500	6.519	-	6.519
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	807.424	6.400	6.500	6.519	-	6.519

(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)	-	0.54	0.36	0.40	-	0.40

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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) ^(†)	0.45	1,764,170K	793.876	0.47	11,959,557	5.621	0.30	18,181,170	5.454	0.30	16,289,856	4.887	-	-	-	0.30	16,289,856	4.887
BOX METAL M2A2 ^(†)	10.87	53,402	0.580	11.83	14,351	0.170	13.67	21,635	0.296	14.06	19,385	0.273	-	-	-	14.06	19,385	0.273
<i>Subtotal: Recurring Cost</i>	-	-	<i>794.457</i>	-	-	<i>5.791</i>	-	-	<i>5.750</i>	-	-	<i>5.160</i>	-	-	-	-	-	<i>5.160</i>
<i>Subtotal: Hardware Cost</i>	-	-	<i>794.457</i>	-	-	<i>5.791</i>	-	-	<i>5.750</i>	-	-	<i>5.160</i>	-	-	-	-	-	<i>5.160</i>
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	-	-	-	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>
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	-	-	12.954	-	-	0.447	-	-	0.629	-	-	0.744	-	-	-	-	-	0.744
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>12.954</i>	-	-	<i>0.447</i>	-	-	<i>0.629</i>	-	-	<i>0.744</i>	-	-	-	-	-	<i>0.744</i>
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.013	-	-	0.003	-	-	0.003	-	-	0.003	-	-	-	-	-	0.003

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 0132E00700 / CTG, 5.56MM, All Types
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:
Item Number / Title [DODIC]: E95400 / CTG 5.56MM, BALL M855A1 EPR, CLIPPED MIL PACK [AB57]		

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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>	-	-	0.013	-	-	0.003	-	-	0.003	-	-	0.003	-	-	-	-	-	0.003
Gross/Weapon System Cost	-	-	807.424	0.54	11,959,557	6.400	0.36	18,181,170	6.500	0.40	16,289,856	6.519	-	-	-	0.40	16,289,856	6.519

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

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018					
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 <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP)		2017	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Jan 2017	Nov 2017	11,959,557	0.47	Y		
LOAD, ASSEMBLE, PACK (LAP)		2018	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Oct 2018	1,818,117	0.30	Y		
LOAD, ASSEMBLE, PACK (LAP)		2018	ALLIANT TECHSYSTEMS (LCAAP) / INDEPENDENCE, MO	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Oct 2018	16,363,053	0.30	Y		
LOAD, ASSEMBLE, PACK (LAP)		2019	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Oct 2019	1,628,986	0.30	Y		
LOAD, ASSEMBLE, PACK (LAP)		2019	ALLIANT TECHSYSTEMS (LCAAP) / INDEPENDENCE, MO	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Oct 2019	14,660,870	0.30	Y		
BOX METAL M2A2		2017	BWAY CORPORATION / ATLANTA, GA	C / FFP	ROCK ISLAND ARSENAL, IL	May 2017	Jul 2017	14,351	11.83	Y		
BOX METAL M2A2		2018	BWAY CORPORATION / ATLANTA, GA	C / FFP	ROCK ISLAND ARSENAL, IL	May 2018	Jul 2018	21,635	13.67	Y		
BOX METAL M2A2		2019	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	May 2019	Jul 2019	19,385	14.06	Y		

Remarks:
FY 2017, FY 2018 AND FY 2019 LAP IS A DELIVERY ORDER TO AN EXISTING CONTRACT. FY 2018 AND FY 2019 LAP IS AN AVERAGE UNIT COST BETWEEN TWO CONTRACTORS. FY 2014 OLIN CORP WINCHESTER DOES NOT REQUIRE BOX, METAL M2A1 OR M2A2.

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	81,148,445	59,310,613	55,412,637	-	55,412,637
Gross/Weapon System Cost (\$ in Millions)	122.990	22.119	18.508	17.915	-	17.915
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	122.990	22.119	18.508	17.915	-	17.915
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	122.990	22.119	18.508	17.915	-	17.915

(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)	-	0.27	0.31	0.32	-	0.32

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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) ^(†)	0.32	372,663K	119.252	0.24	81,148,445	19.476	0.27	59,310,613	16.014	0.27	55,412,637	14.961	-	-	-	0.27	55,412,637	14.961
BOX METAL M2A2 ^(†)	10.93	68,163	0.745	-	-	-	13.67	65,845	0.900	14.06	61,508	0.865	-	-	-	14.06	61,508	0.865
<i>Subtotal: Recurring Cost</i>	-	-	119.997	-	-	19.476	-	-	16.914	-	-	15.826	-	-	-	-	-	15.826
<i>Subtotal: Hardware Cost</i>	-	-	119.997	-	-	19.476	-	-	16.914	-	-	15.826	-	-	-	-	-	15.826
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	0.045	-	-	0.490	-	-	0.089	-	-	0.100	-	-	-	-	-	0.100
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	0.045	-	-	0.490	-	-	0.089	-	-	0.100	-	-	-	-	-	0.100
Support - Product Improvement Cost																		
Reliability	-	-	-	-	-	0.625	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Product Improvement Cost</i>	-	-	-	-	-	0.625	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	2.927	-	-	1.525	-	-	1.502	-	-	1.978	-	-	-	-	-	1.978
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	2.927	-	-	1.525	-	-	1.502	-	-	1.978	-	-	-	-	-	1.978
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.021	-	-	0.003	-	-	0.003	-	-	0.011	-	-	-	-	-	0.011

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	0.003	-	-	0.003	-	-	0.011	-	-	-	-	-	0.011
Gross/Weapon System Cost	-	-	122.990	0.27	81,148,445	22.119	0.31	59,310,613	18.508	0.32	55,412,637	17.915	-	-	-	0.32	55,412,637	17.915

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

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018					
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 <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2017	ALLIANT TECHSYSTEMS (LCAAP) / INDEPENDENCE, MO	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2017	Oct 2017	81,148,445	0.24	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2018	ALLIANT TECHSYSTEMS (LCAAP) / INDEPENDENCE, MO	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Oct 2018	59,310,613	0.27	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2019	ALLIANT TECHSYSTEMS (LCAAP) / INDEPENDENCE, MO	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Oct 2019	55,412,637	0.27	Y		
BOX METAL M2A2		2018	BWAY CORPORATION / ATLANTA, GA	C / FFP	ROCK ISLAND ARSENAL, IL	May 2018	Jul 2018	65,845	13.67	Y		
BOX METAL M2A2		2019	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	May 2019	Jul 2019	61,508	14.06	Y		

^(†) indicates the presence of a P-21

Remarks:
FY 2017, FY 2018 AND FY 2019 LAP IS A DELIVERY ORDER TO THE EXISTING CONTRACT. FY 2017 LAP IS A DELIVERY ORDER TO THE EXISTING CONTRACT.

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Exhibit P-21, Production Schedule: PB 2019 Army				Date: February 2018	
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 2017											Fiscal Year 2018											B A L A N C E								
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	Calendar Year 2017											Calendar Year 2018																		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N		J U L	A U G	S E P					
LOAD, ASSEMBLE, PACK (LAP)																																				
Prior Years Deliveries: 372662674																																				
1	2017	ARMY	81.148	.000	81.148																															.000
1	2018	ARMY	59.311	.000	59.311																														59.311	
1	2019	ARMY	55.413	.000	55.413																														55.413	
						O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army																Date: February 2018																	
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											
LOAD, ASSEMBLE, PACK (LAP)																																									
Prior Years Deliveries: 372662674																																									
	1	2017	ARMY	81.148	81.148	.000																													.000						
	1	2018	ARMY	59.311	.000	59.311	4.943	4.943	4.943	4.943	4.943	4.943	4.943	4.943	4.943	4.943	4.943															.000									
	1	2019	ARMY	55.413	.000	55.413															A	-	-	-	-	-	-	4.618	4.618	4.618	4.618	4.618	4.618	4.618	4.618	4.618	4.618	4.618	4.618	4.618	.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 2019 Army		Date: February 2018
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 2019	1-8-5 For 2019	MAX For 2019	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	ALLIANT TECHSYSTEMS (LCAAP) - INDEPENDENCE, MO	900	19,400,000	67,500,000	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 2019 Army		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	1,492,649	-	1,492,649
Gross/Weapon System Cost (<i>\$ in Millions</i>)	11.697	-	-	0.993	-	0.993
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	11.697	-	-	0.993	-	0.993
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	11.697	-	-	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>)	-	-	-	0.67	-	0.67

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	15,444,227	10.965	-	-	-	-	-	-	0.61	1,492,649	0.911	-	-	-	0.61	1,492,649	0.911
<i>Subtotal: Recurring Cost</i>	-	-	10.965	-	-	-	-	-	-	-	-	0.911	-	-	-	-	-	0.911
<i>Subtotal: Hardware Cost</i>	-	-	10.965	-	-	-	-	-	-	-	-	0.911	-	-	-	-	-	0.911
Support - Production Engineering Cost																		
Production Engineering	-	-	0.732	-	-	-	-	-	-	-	-	0.082	-	-	-	-	-	0.082
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.732	-	-	-	-	-	-	-	-	0.082	-	-	-	-	-	0.082
Gross/Weapon System Cost	-	-	11.697	-	-	-	-	-	-	0.67	1,492,649	0.993	-	-	-	0.67	1,492,649	0.993

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 LINKED, M1071 (BLUE) 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	-	845,578	347,718	994,851	-	994,851
Gross/Weapon System Cost (<i>\$ in Millions</i>)	3.536	0.545	0.263	0.778	-	0.778
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	3.536	0.545	0.263	0.778	-	0.778
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	3.536	0.545	0.263	0.778	-	0.778

(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>)	-	0.64	0.76	0.78	-	0.78

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	0.81	2,514,400	2.037	0.62	845,578	0.524	0.70	347,718	0.243	0.72	994,851	0.716	-	-	-	0.72	994,851	0.716
<i>Subtotal: Recurring Cost</i>	-	-	2.037	-	-	0.524	-	-	0.243	-	-	0.716	-	-	-	-	-	0.716
<i>Subtotal: Hardware Cost</i>	-	-	2.037	-	-	0.524	-	-	0.243	-	-	0.716	-	-	-	-	-	0.716
Support - Production Engineering Cost																		
Production Engineering	-	-	1.499	-	-	0.021	-	-	0.017	-	-	0.062	-	-	-	-	-	0.062
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	1.499	-	-	0.021	-	-	0.017	-	-	0.062	-	-	-	-	-	0.062
Gross/Weapon System Cost	-	-	3.536	0.64	845,578	0.545	0.76	347,718	0.263	0.78	994,851	0.778	-	-	-	0.78	994,851	0.778

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 LINKED, M1071 (RED) 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	-	552,566	200,301	795,341	-	795,341
Gross/Weapon System Cost (<i>\$ in Millions</i>)	3.508	0.345	0.150	0.622	-	0.622
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	3.508	0.345	0.150	0.622	-	0.622
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	3.508	0.345	0.150	0.622	-	0.622

(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>)	-	0.62	0.75	0.78	-	0.78

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	0.80	3,635,406	2.908	0.62	552,566	0.343	0.70	200,301	0.140	0.72	795,341	0.573	-	-	-	0.72	795,341	0.573
<i>Subtotal: Recurring Cost</i>	-	-	2.908	-	-	0.343	-	-	0.140	-	-	0.573	-	-	-	-	-	0.573
<i>Subtotal: Hardware Cost</i>	-	-	2.908	-	-	0.343	-	-	0.140	-	-	0.573	-	-	-	-	-	0.573
Support - Production Engineering Cost																		
Production Engineering	-	-	0.600	-	-	0.002	-	-	0.010	-	-	0.050	-	-	-	-	-	0.050
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.600	-	-	0.002	-	-	0.010	-	-	0.050	-	-	-	-	-	0.050
Gross/Weapon System Cost	-	-	3.508	0.62	552,566	0.345	0.75	200,301	0.150	0.78	795,341	0.622	-	-	-	0.78	795,341	0.622

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	-	672,115	991,433	1,848,214	-	1,848,214
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1.614	0.700	1.400	2.702	-	2.702
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1.614	0.700	1.400	2.702	-	2.702
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1.614	0.700	1.400	2.702	-	2.702

(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>)	-	1.04	1.41	1.46	-	1.46

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	1.17	1,126,495	1.318	0.99	672,115	0.665	1.33	991,433	1.319	1.37	1,848,214	2.532	-	-	-	1.37	1,848,214	2.532
<i>Subtotal: Recurring Cost</i>	-	-	1.318	-	-	0.665	-	-	1.319	-	-	2.532	-	-	-	-	-	2.532
<i>Subtotal: Hardware Cost</i>	-	-	1.318	-	-	0.665	-	-	1.319	-	-	2.532	-	-	-	-	-	2.532
Support - Production Engineering Cost																		
Production Engineering	-	-	0.296	-	-	0.034	-	-	0.081	-	-	0.170	-	-	-	-	-	0.170
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.296	-	-	0.034	-	-	0.081	-	-	0.170	-	-	-	-	-	0.170
Gross/Weapon System Cost	-	-	1.614	1.04	672,115	0.700	1.41	991,433	1.400	1.46	1,848,214	2.702	-	-	-	1.46	1,848,214	2.702

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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]: E96126 / Ctg, 5.56mm, Short Range Training, M1037 Linked [AB66]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity <i>(Units in Each)</i>	-	822,894	437,995	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	5.850	1.000	0.582	-	-	-
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	5.850	1.000	0.582	-	-	-
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	5.850	1.000	0.582	-	-	-

(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>	-	1.22	1.33	-	-	-

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	1.17	1,856,775	2.172	1.15	822,894	0.946	1.25	437,995	0.547	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	2.172	-	-	0.946	-	-	0.547	-	-	-	-	-	-	-	-	-
Subtotal: Hardware Cost	-	-	2.172	-	-	0.946	-	-	0.547	-	-	-	-	-	-	-	-	-
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	0.006	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	0.006	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	3.678	-	-	0.047	-	-	0.034	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	3.678	-	-	0.047	-	-	0.034	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	5.850	1.22	822,894	1.000	1.33	437,995	0.582	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	2,240.840	55.879	46.804	86.199	0.040	86.239	99.970	109.485	115.424	110.494	-	2,865.135
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	2,240.840	55.879	46.804	86.199	0.040	86.239	99.970	109.485	115.424	110.494	-	2,865.135
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	2,240.840	55.879	46.804	86.199	0.040	86.239	99.970	109.485	115.424	110.494	-	2,865.135

(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.

(E02007) 7.62mm 4 BALL/1 TRACER F/OHF consists of a M80 Overhead Fire (OHF) ball and a M62 OHF tracer cartridges linked four to one and is used for overhead fire in the M240 Machine Gun family of weapons. Manufactured with unique bullet jackets and no base closure seals to reduce fragmentation or shrapnel risks to soldiers training underneath the flight path of these bullets. 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.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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>(F57510) 7.62mm M1158 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 M1158 Ball Cartridge utilizes projectile 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 M1158 trajectory. They are intended for use against a broad spectrum of hard targets.</p> <p>(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.</p> <p>(E02500) 7.62mm Dummy M172 W/M13 linked cartridge is properly weighted in terms of mass and center of gravity and is physically contoured to represent a tactical M80 7.62mm ball cartridge. The round is coated with black oxide to visually distinguish from tactical ammunition. The cartridge is used for weapon manufacturing testing to conduct belt-pull tests for automatic weapons and for environmental conditioning tests of weapons, mounts and ammunition. The M172 linked cartridge is also used for developing new and/or improved mount systems for the vehicles that contain the M240 Series machine gun. This Item is Code B, not approved for service use.</p> <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>		

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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 LINKED/M13 [A111]	P-5a, P-21	A		- / 355.909	- / -	- / -	15,329,645 / 6.832	- / -	15,329,645 / 6.832
P-5	E02002 / CTG 7.62MM 4 BALL/1 TRACER LINKED [A131]		A		- / 747.303	- / -	- / -	1,099,287 / 0.695	- / -	1,099,287 / 0.695
P-5	E02003 / CTG 7.62MM BALL M80 LINKED/M13 [A143]		A		- / 165.880	- / -	- / -	574,697 / 0.348	- / -	574,697 / 0.348
P-5	E02007 / CTG 7.62MM 4 BALL/1 TRACER F/OHF [A151]		A		- / 745.875	- / -	4,525,617 / 2.800	- / -	- / -	- / -
P-5	E02011 / CTG, 7.62MM M80A1 BALL LINKED, LEAD FREE [AB79]	P-5a, P-21	A		- / 25.596	14,789,075 / 12.027	9,421,274 / 9.300	9,177,573 / 9.319	- / -	9,177,573 / 9.319
P-5	E02012 / CTG, 7.62MM 4 BALL/1TR LINKED, LEAD FREE [AB86]	P-5a, P-21	A		- / 159.571	39,318,200 / 41.942	30,839,984 / 33.627	38,957,346 / 41.860	- / -	38,957,346 / 41.860
P-5	E02015 / CTG, 7.62MM, BOTTLENOSE BLANK, M82A1 [AB72]		A		- / 1.341	459,029 / 0.332	419,262 / 0.338	- / -	- / -	- / -
P-5	E02500 / CTG 7.62MM DUMMY M172 W/M13 LINK [A159]		B		- / 0.734	98,223 / 0.243	- / -	- / -	- / -	- / -
P-5	E02501 / CTG, 7.62MM SINGLE ROUND (NPF DDI), M63A1 [AB47]		A		- / 0.734	72,141 / 0.256	- / -	- / -	46,512 / 0.040	46,512 / 0.040
P-5	E89100 / CARTRIDGE 7.62MM M118 LONG RANGE [AA11]		A		- / 37.897	1,794,830 / 1.079	1,021,510 / 0.739	2,925,084 / 2.145	- / -	2,925,084 / 2.145
P-5	F57510 / CTG, 7.62mm Advanced Armor Piercing, XM1158	P-5a, P-21	B		- / -	- / -	- / -	1,675,411 / 25.000	- / -	1,675,411 / 25.000
P-40	Total Gross/Weapon System Cost				- / 2,240.840	- / 55.879	- / 46.804	- / 86.199	- / 0.040	- / 86.239

*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 2019 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements IAW DoD Instruction 3000.04 (Munitions Requirements Process) and AR 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support 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 2019 Base procurement dollars in the amount of \$86.199 million supports procurement of 92.165 million cartridges. The FY 2019 European Deterrence Initiative (EDI) Overseas Contingency Operations (OCO) dollars in the amount of \$0.040 million supports procurement of 0.047 million cartridges.

(E01902) 7.62mm Blank, M82 w/M13 Link is a training unique item not used in combat. The procurement supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2019 Base Procurement dollars in the amount of \$6.832 million supports the procurement of 15.330 million of the Blank M82 cartridges. This is a New Start in FY 2019.
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. FY 2019 procurement supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base Procurement dollars in the amount of \$.695 million supports the procurement of 1.099 million of the 4 Ball M80/1 Tracer M62 w/M13 Link Cartridges. This is a New Start in FY 2019.
Type classification date: 1962

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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>(E02003) 7.62mm Ball M80 Linked/M13 is a training standard item used in training and combat. The FY 2019 procurement supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base Procurement dollars in the amount of \$.348 million supports the procurement of 0.575 million of the M80 Linked/M13 Cartridges. This is a New Start in FY 2019. Type Classification date: 1962</p> <p>(E02007) 7.62mm 4 BALL/1 TRACER F/OHF is a training unique item and is not used in combat. The procurement supports annual training and builds a depot level in accordance with the Army's procurement goals. TYPE CLASSIFICATION DATE: 1975</p> <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 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base Procurement dollars in the amount of \$9.319 million supports the procurement of 9.178 million of the 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 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base Procurement dollars in the amount of \$41.860 million supports the procurement of 38.957 million of the 7.62mm M80A1 4 Ball/1Trace (EPR) (LFS) Cartridges. Type classification date: 1962</p> <p>(F57510) 7.62mm M1158 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 2019 request builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base procurement in the amount of \$25.000 million supports the procurement of 1.675 million 7.62mm M1158 Advanced Armor-Piercing (ADVAP) Ball Cartridges 4Ball/1 M62A1 Tracer linked Cartridges. This is a new start in FY 2019. Type classification date: 4th Quarter 2019</p> <p>(E02015) 7.62mm M82A1 Blank Bottleneck Cartridge is a training unique item not used in combat. The procurement supports annual training and builds a depot level in accordance with the Army's procurement goals. Type classification date: 2012</p> <p>(E02500) 7.62mm Dummy M172 W/M13 linked cartridge is a training item not used in combat. This cartridge is a unique item used in weapon manufacturing testing to conduct belt-pull tests for automatic weapons and for environmental conditioning tests of weapons, mounts and ammunition. The M172 linked cartridge is also used for developing new and/or improved mount systems for the vehicles that contain the M240 Series machine gun. The procurement supports annual training and builds a depot level in accordance with the Army's procurement goals. Type classification date: 1963</p> <p>(E02501) 7.62mm Single Round (NPF DDI) M63A1 Round is a training unique item not used in combat. The procurement supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2019 EDI OCO Procurement dollars in the amount of \$0.040 million supports the procurement of 0.047 million M63A1 rounds. Type classification date: 2008</p> <p>(E89100) 7.62mm M118 Long Range Round is a training standard item used in training and combat. The FY 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base Procurement dollars in the amount of \$2.145 million supports the procurement of 2.925 million of the 7.62mm Long Range Rounds. Type classification date: Prior to 1997</p>		

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 LINKED/M13 [A111]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	-	-	15,329,645	-	15,329,645
Gross/Weapon System Cost (\$ in Millions)	355.909	-	-	6.832	-	6.832
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	355.909	-	-	6.832	-	6.832
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	355.909	-	-	6.832	-	6.832

(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)	-	-	-	0.45	-	0.45

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	-	-	-	-	0.38	15,329,645	5.825	-	-	-	0.38	15,329,645	5.825
Subtotal: Recurring Cost	-	-	354.146	-	-	-	-	-	-	-	-	5.825	-	-	-	-	-	5.825
Subtotal: Hardware Cost	-	-	354.146	-	-	-	-	-	-	-	-	5.825	-	-	-	-	-	5.825
Support - Production Engineering Cost																		
Production Engineering	-	-	1.764	-	-	-	-	-	-	-	-	1.003	-	-	-	-	-	1.003
Subtotal: Support - Production Engineering Cost	-	-	1.764	-	-	-	-	-	-	-	-	1.003	-	-	-	-	-	1.003
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	-	-	-	-	-	-	0.004	-	-	-	-	-	0.004
Subtotal: Support - Quality Assurance Cost	-	-	-	-	-	-	-	-	-	-	-	0.004	-	-	-	-	-	0.004
Gross/Weapon System Cost	-	-	355.909	-	-	-	-	-	-	0.45	15,329,645	6.832	-	-	-	0.45	15,329,645	6.832

(†) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018					
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 LINKED/M13 [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	ALLIANT TECHSYSTEMS (LCAAP) / INDEPENDENCE, MO	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Oct 2019	15,329,645	0.38	Y		

^(†) indicates the presence of a P-21

Remarks:
FY 2019 COMPLETE ROUND IS A DELIVERY ORDER TO AN EXISTING CONTRACT.

UNCLASSIFIED

Exhibit P-21, Production Schedule: PB 2019 Army															Date: February 2018														
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 LINKED/M13 [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																														
1	2019	ARMY	15.330	.000	15.330																									

UNCLASSIFIED

Exhibit P-21, Production Schedule: PB 2019 Army		Date: February 2018
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 LINKED/M13 [A111]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	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	ALLIANT TECHSYSTEMS (LCAAP) - 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).

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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]: E02002 / CTG 7.62MM 4 BALL/1 TRACER LINKED [A131]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	1,099,287	-	1,099,287
Gross/Weapon System Cost (<i>\$ in Millions</i>)	747.303	-	-	0.695	-	0.695
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	747.303	-	-	0.695	-	0.695
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	747.303	-	-	0.695	-	0.695

(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>)	-	-	-	0.63	-	0.63

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	945,844K	747.217	-	-	-	-	-	-	0.56	1,099,287	0.616	-	-	-	0.56	1,099,287	0.616
<i>Subtotal: Recurring Cost</i>	-	-	747.217	-	-	-	-	-	-	-	-	0.616	-	-	-	-	-	0.616
<i>Subtotal: Hardware Cost</i>	-	-	747.217	-	-	-	-	-	-	-	-	0.616	-	-	-	-	-	0.616
Support - Production Engineering Cost																		
Production Engineering	-	-	0.086	-	-	-	-	-	-	-	-	0.079	-	-	-	-	-	0.079
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.086	-	-	-	-	-	-	-	-	0.079	-	-	-	-	-	0.079
Gross/Weapon System Cost	-	-	747.303	-	-	-	-	-	-	0.63	1,099,287	0.695	-	-	-	0.63	1,099,287	0.695

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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]: E02003 / CTG 7.62MM BALL M80 LINKED/M13 [A143]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	574,697	-	574,697
Gross/Weapon System Cost (<i>\$ in Millions</i>)	165.880	-	-	0.348	-	0.348
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	165.880	-	-	0.348	-	0.348
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	165.880	-	-	0.348	-	0.348

(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>)	-	-	-	0.61	-	0.61

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	0.74	223,856K	165.653	-	-	-	-	-	-	0.53	574,697	0.305	-	-	-	0.53	574,697	0.305
<i>Subtotal: Recurring Cost</i>	-	-	165.653	-	-	-	-	-	-	-	-	0.305	-	-	-	-	-	0.305
<i>Subtotal: Hardware Cost</i>	-	-	165.653	-	-	-	-	-	-	-	-	0.305	-	-	-	-	-	0.305
Support - Production Engineering Cost																		
Production Engineering	-	-	0.227	-	-	-	-	-	-	-	-	0.043	-	-	-	-	-	0.043
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.227	-	-	-	-	-	-	-	-	0.043	-	-	-	-	-	0.043
Gross/Weapon System Cost	-	-	165.880	-	-	-	-	-	-	0.61	574,697	0.348	-	-	-	0.61	574,697	0.348

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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]: E02007 / CTG 7.62MM 4 BALL/1 TRACER F/OHF [A151]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	4,525,617	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	745.875	-	2.800	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	745.875	-	2.800	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	745.875	-	2.800	-	-	-

(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>)	-	-	0.62	-	-	-

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	0.55	1,356,136K	745.875	-	-	-	0.55	4,525,617	2.489	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	745.875	-	-	-	-	-	2.489	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	745.875	-	-	-	-	-	2.489	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	-	-	-	0.311	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	-	-	-	0.311	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	745.875	-	-	-	0.62	4,525,617	2.800	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 M80A1 BALL LINKED, LEAD FREE [AB79]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	14,789,075	9,421,274	9,177,573	-	9,177,573
Gross/Weapon System Cost (\$ in Millions)	25.596	12.027	9.300	9.319	-	9.319
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	25.596	12.027	9.300	9.319	-	9.319
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	25.596	12.027	9.300	9.319	-	9.319

(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)	-	0.81	0.99	1.02	-	1.02

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 ^(†)	0.78	31,497,292	24.568	0.78	14,789,075	11.535	0.88	9,421,274	8.291	0.88	9,177,573	8.076	-	-	-	0.88	9,177,573	8.076
<i>Subtotal: Recurring Cost</i>	-	-	24.568	-	-	11.535	-	-	8.291	-	-	8.076	-	-	-	-	-	8.076
<i>Subtotal: Hardware Cost</i>	-	-	24.568	-	-	11.535	-	-	8.291	-	-	8.076	-	-	-	-	-	8.076
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	-	-	-	0.105	-	-	0.193	-	-	-	-	-	0.193
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	-	-	-	0.105	-	-	0.193	-	-	-	-	-	0.193
Support - Product Improvement Cost																		
Environmental Initiatives	-	-	-	-	-	-	-	-	-	-	-	0.150	-	-	-	-	-	0.150
<i>Subtotal: Support - Product Improvement Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.150	-	-	-	-	-	0.150
Support - Production Engineering Cost																		
Production Engineering	-	-	1.021	-	-	0.485	-	-	0.898	-	-	0.897	-	-	-	-	-	0.897
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	1.021	-	-	0.485	-	-	0.898	-	-	0.897	-	-	-	-	-	0.897
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.007	-	-	0.006	-	-	0.007	-	-	0.004	-	-	-	-	-	0.004
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.007	-	-	0.006	-	-	0.007	-	-	0.004	-	-	-	-	-	0.004

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 0612E02000 / CTG, 7.62MM, All Types
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:
Item Number / Title [DODIC]: E02011 / CTG, 7.62MM M80A1 BALL LINKED, LEAD FREE [AB79]		

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	25.596	0.81	14,789,075	12.027	0.99	9,421,274	9.300	1.02	9,177,573	9.319	-	-	-	1.02	9,177,573	9.319

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

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018					
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 M80A1 BALL LINKED, LEAD FREE [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 ^(†)		2017	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Jan 2017	Aug 2017	14,789,075	0.78	Y		
COMPLETE ROUND ^(†)		2018	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Oct 2018	9,421,274	0.88	Y		
COMPLETE ROUND ^(†)		2019	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Oct 2019	9,177,573	0.88	Y		

^(†) indicates the presence of a P-21

Remarks:
FY 2017, FY 2018 AND FY 2019 COMPLETE ROUND IS A DELIVERY ORDER TO THE EXISTING CONTRACT.

UNCLASSIFIED

Exhibit P-21, Production Schedule: PB 2019 Army															Date: February 2018														
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 M80A1 BALL LINKED, LEAD FREE [AB79]									

Cost Elements <i>(Units in Millions, * = < 500)</i>						Fiscal Year 2017														Fiscal Year 2018														B A L A N C E	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	Calendar Year 2017														Calendar Year 2018														
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					
COMPLETE ROUND																																			
Prior Years Deliveries: 31497292																																			
1	2017	ARMY	14.789	.000	14.789				A	-	-	-	-	-	-	-	1.134	.070	1.212	3.000	3.000	3.000	3.000	.374						.000					
1	2018	ARMY	9.421	.000	9.421																					A	-	-	-	-	-	9.421			
1	2019	ARMY	9.178	.000	9.178																										9.178				
									O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S			
									C	O	E	A	E	A	A	A	U	U	U	E	C	O	V	E	A	E	A	A	U	U	U	E			
									T	V	C	N	B	R	R	Y	N	L	G	P	T	V	C	N	B	R	R	Y	N	L	G	P			

UNCLASSIFIED

Exhibit P-21, Production Schedule: PB 2019 Army															Date: February 2018														
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 M80A1 BALL LINKED, LEAD FREE [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	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: 31497292																																				
1	2017	ARMY	14.789	14.789	.000																															.000
1	2018	ARMY	9.421	.000	9.421	.785	.785	.785	.785	.785	.785	.785	.785	.785	.785																					.000
1	2019	ARMY	9.178	.000	9.178																															.000

UNCLASSIFIED

Exhibit P-21, Production Schedule: PB 2019 Army		Date: February 2018
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 M80A1 BALL LINKED, LEAD FREE [AB79]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	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 2019 Army		Date: February 2018
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/1TR LINKED, LEAD FREE [AB86]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	39,318,200	30,839,984	38,957,346	-	38,957,346
Gross/Weapon System Cost (\$ in Millions)	159.571	41.942	33.627	41.860	-	41.860
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	159.571	41.942	33.627	41.860	-	41.860
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	159.571	41.942	33.627	41.860	-	41.860

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

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	1.07	1.09	1.07	-	1.07

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 ^(†)	1.15	131,238K	150.923	0.98	39,318,200	38.532	0.99	30,839,984	30.532	1.00	38,957,346	38.957	-	-	-	1.00	38,957,346	38.957
Subtotal: Recurring Cost	-	-	150.923	-	-	38.532	-	-	30.532	-	-	38.957	-	-	-	-	-	38.957
Subtotal: Hardware Cost	-	-	150.923	-	-	38.532	-	-	30.532	-	-	38.957	-	-	-	-	-	38.957
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	0.072	-	-	0.113	-	-	0.164	-	-	0.164	-	-	-	-	-	0.164
Subtotal: Support - Acceptance Testing Cost	-	-	0.072	-	-	0.113	-	-	0.164	-	-	0.164	-	-	-	-	-	0.164
Support - Product Improvement Cost																		
Environmental Initiatives	-	-	0.562	-	-	0.150	-	-	-	-	-	0.480	-	-	-	-	-	0.480
Subtotal: Support - Product Improvement Cost	-	-	0.562	-	-	0.150	-	-	-	-	-	0.480	-	-	-	-	-	0.480
Support - Production Engineering Cost																		
Production Engineering	-	-	8.007	-	-	3.148	-	-	2.932	-	-	2.251	-	-	-	-	-	2.251
Subtotal: Support - Production Engineering Cost	-	-	8.007	-	-	3.148	-	-	2.932	-	-	2.251	-	-	-	-	-	2.251
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.006	-	-	-	-	-	-	-	-	0.009	-	-	-	-	-	0.009
Subtotal: Support - Quality Assurance Cost	-	-	0.006	-	-	-	-	-	-	-	-	0.009	-	-	-	-	-	0.009

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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/1TR LINKED, LEAD FREE [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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	159.571	1.07	39,318,200	41.942	1.09	30,839,984	33.627	1.07	38,957,346	41.860	-	-	-	1.07	38,957,346	41.860

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

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018					
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/1TR LINKED, LEAD FREE [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 ^(†)		2017	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Jan 2017	Sep 2017	39,318,200	0.98	Y		
COMPLETE ROUND ^(†)		2018	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Oct 2018	15,419,992	0.99	Y		
COMPLETE ROUND ^(†)		2018	ALLIANT TECHSYSTEMS (LCAAP) / INDEPENDENCE, MO	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Apr 2019	15,419,992	0.99	Y		
COMPLETE ROUND ^(†)		2019	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Oct 2019	19,478,673	1.00	Y		
COMPLETE ROUND ^(†)		2019	ALLIANT TECHSYSTEMS (LCAAP) / INDEPENDENCE, MO	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Apr 2020	19,478,673	1.00	Y		

^(†) indicates the presence of a P-21

Remarks:

FY 2017, FY 2018 AND FY 2019 COMPLETE ROUND IS A DELIVERY ORDER TO THE EXISTING CONTRACTS. FY 2018 AND FY 2019 COMPLETE ROUND IS AN AVERAGE UNIT COST BETWEEN TWO CONTRACTORS. FY 2017 COMPLETE ROUND IS A DELIVERY ORDER TO THE EXISTING CONTRACT.

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Exhibit P-21, Production Schedule: PB 2019 Army **Date:** February 2018

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/1TR LINKED, LEAD FREE [AB86]
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Cost Elements <i>(Units in Millions, * = < 500)</i>						Fiscal Year 2017														Fiscal Year 2018														B A L A N C E	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	Calendar Year 2017														Calendar Year 2018														
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					
COMPLETE ROUND																																			
Prior Years Deliveries: 131237649																																			
1	2017	ARMY	39.318	.000	39.318				A -	-	-	-	-	-	-	-	-	1.222	1.700	1.500	3.500	3.575	4.000	4.000	4.000	3.821	4.000	4.000	4.000		.000				
1	2018	ARMY	15.420	.000	15.420																				A -	-	-	-	-	-	-	15.420			
2	2018	ARMY	15.420	.000	15.420																				A -	-	-	-	-	-	-	15.420			
1	2019	ARMY	19.479	.000	19.479																										19.479				
2	2019	ARMY	19.479	.000	19.479																										19.479				

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Exhibit P-21, Production Schedule: PB 2019 Army															Date: February 2018														
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/1TR LINKED, LEAD FREE [AB86]									

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: 131237649																																	
1	2017	ARMY	39.318	39.318	.000																								.000				
1	2018	ARMY	15.420	.000	15.420	1.285	1.285	1.285	1.285	1.285	1.285	1.285	1.285	1.285	1.285														.000				
2	2018	ARMY	15.420	.000	15.420	-	-	-	-	-	-	1.285	1.285	1.285	1.285	1.285	1.285	1.285	1.285	1.285	1.285	1.285							.000				
1	2019	ARMY	19.479	.000	19.479							A -	-	-	-	-	-	-	1.623	1.623	1.623	1.623	1.623	1.623	1.623	1.623	1.623	1.623	.000				
2	2019	ARMY	19.479	.000	19.479							A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.623	1.623	1.623	9.739			
						O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army															Date: February 2018														
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/1TR LINKED, LEAD FREE [AB86]									

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
COMPLETE ROUND																															
Prior Years Deliveries: 131237649																															
	1	2017	ARMY	39.318	39.318	.000																							.000		
	1	2018	ARMY	15.420	15.420	.000																							.000		
	2	2018	ARMY	15.420	15.420	.000																							.000		
	1	2019	ARMY	19.479	19.479	.000																							.000		
	2	2019	ARMY	19.479	9.739	9.739	1.623	1.623	1.623	1.623	1.623	1.623																	.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 2019 Army		Date: February 2018
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/1TR LINKED, LEAD FREE [AB86]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	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	4,000,000	6	6	12	18	6	6	7	13
2	ALLIANT TECHSYSTEMS (LCAAP) - INDEPENDENCE, MO	800	5,000,000	10,000,000	6	6	13	19	6	6	13	19

"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 2019 Army		Date: February 2018
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 [AB72]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	-	459,029	419,262	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1.341	0.332	0.338	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1.341	0.332	0.338	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1.341	0.332	0.338	-	-	-

(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>)	-	0.72	0.81	-	-	-

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	0.72	1,802,287	1.298	0.65	459,029	0.298	0.72	419,262	0.302	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	1.298	-	-	0.298	-	-	0.302	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	1.298	-	-	0.298	-	-	0.302	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	0.040	-	-	0.031	-	-	0.033	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.040	-	-	0.031	-	-	0.033	-	-	-	-	-	-	-	-	-
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.003	-	-	0.003	-	-	0.003	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.003	-	-	0.003	-	-	0.003	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	1.341	0.72	459,029	0.332	0.81	419,262	0.338	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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]: E02500 / CTG 7.62MM DUMMY M172 W/M13 LINK [A159]

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	-	98,223	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.734	0.243	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.734	0.243	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.734	0.243	-	-	-	-

(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>)	-	2.47	-	-	-	-

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	673,076	0.700	2.09	98,223	0.205	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	<i>0.700</i>	-	-	<i>0.205</i>	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Hardware Cost	-	-	0.700	-	-	0.205	-	-	-	-	-	-	-	-	-	-	-	-
Support - Product Improvement Cost																		
Safety	-	-	-	-	-	0.036	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Product Improvement Cost</i>	-	-	-	-	-	<i>0.036</i>	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	0.034	-	-	0.001	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>0.034</i>	-	-	<i>0.001</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	0.734	2.47	98,223	0.243	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity <i>(Units in Each)</i>	-	72,141	-	-	46,512	46,512	
Gross/Weapon System Cost <i>(\$ in Millions)</i>	0.734	0.256	-	-	0.040	0.040	
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	
Net Procurement (P-1) <i>(\$ in Millions)</i>	0.734	0.256	-	-	0.040	0.040	
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	
Total Obligation Authority <i>(\$ in Millions)</i>	0.734	0.256	-	-	0.040	0.040	

(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>	-	3.55	-	-	0.86	0.86

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	841,648	0.681	0.82	72,141	0.059	-	-	-	-	-	-	0.82	46,512	0.038	0.82	46,512	0.038
BOX METAL M2A2	13.01	1,809	0.024	11.83	159	0.002	-	-	-	-	-	-	14.06	101	0.001	14.06	101	0.001
<i>Subtotal: Recurring Cost</i>	-	-	0.705	-	-	0.061	-	-	-	-	-	0.000	-	-	0.040	-	-	0.040
<i>Subtotal: Hardware Cost</i>	-	-	0.705	-	-	0.061	-	-	-	-	-	0.000	-	-	0.040	-	-	0.040
Support - Product Improvement Cost																		
Reliability	-	-	-	-	-	0.180	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Product Improvement Cost</i>	-	-	-	-	-	0.180	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	0.029	-	-	0.015	-	-	-	-	-	-	-	-	0.000	-	-	0.000
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.029	-	-	0.015	-	-	-	-	-	0.000	-	-	0.000	-	-	0.000
Gross/Weapon System Cost	-	-	0.734	3.55	72,141	0.256	-	-	-	-	-	-	0.86	46,512	0.040	0.86	46,512	0.040

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 / CARTRIDGE 7.62MM 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	1,794,830	1,021,510	2,925,084	-	2,925,084
Gross/Weapon System Cost (\$ in Millions)	37.897	1.079	0.739	2.145	-	2.145
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	37.897	1.079	0.739	2.145	-	2.145
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	37.897	1.079	0.739	2.145	-	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)	-	0.60	0.72	0.73	-	0.73

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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)	1.09	31,623,311	34.469	0.57	1,794,830	1.023	0.61	1,021,510	0.623	0.62	2,925,084	1.814	-	-	-	0.62	2,925,084	1.814
BOX METAL M2A2	10.38	1,204	0.012	-	-	-	13.67	2,227	0.030	14.06	6,359	0.089	-	-	-	14.06	6,359	0.089
<i>Subtotal: Recurring Cost</i>	-	-	34.482	-	-	1.023	-	-	0.654	-	-	1.903	-	-	-	-	-	1.903
<i>Subtotal: Hardware Cost</i>	-	-	34.482	-	-	1.023	-	-	0.654	-	-	1.903	-	-	-	-	-	1.903
Support - Product Improvement Cost																		
Reliability	-	-	-	-	-	0.015	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Product Improvement Cost</i>	-	-	-	-	-	0.015	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	3.408	-	-	0.039	-	-	0.083	-	-	0.239	-	-	-	-	-	0.239
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	3.408	-	-	0.039	-	-	0.083	-	-	0.239	-	-	-	-	-	0.239
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.007	-	-	0.002	-	-	0.002	-	-	0.003	-	-	-	-	-	0.003
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.007	-	-	0.002	-	-	0.002	-	-	0.003	-	-	-	-	-	0.003
Gross/Weapon System Cost	-	-	37.897	0.60	1,794,830	1.079	0.72	1,021,510	0.739	0.73	2,925,084	2.145	-	-	-	0.73	2,925,084	2.145

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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) : B	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	-	-	1,675,411	-	1,675,411
Gross/Weapon System Cost (\$ in Millions)	-	-	-	25.000	-	25.000
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	-	-	25.000	-	25.000
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	-	-	25.000	-	25.000

(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)	-	-	-	14.92	-	14.92

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 ^(†)	-	-	-	-	-	-	-	-	-	12.98	1,675,411	21.747	-	-	-	12.98	1,675,411	21.747
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	-	-	-	21.747	-	-	-	-	-	21.747
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	-	-	-	-	-	-	21.747	-	-	-	-	-	21.747
Support - Product Improvement Cost																		
Production Qualification Test	-	-	-	-	-	-	-	-	-	-	-	0.500	-	-	-	-	-	0.500
Production Verification Test	-	-	-	-	-	-	-	-	-	-	-	0.500	-	-	-	-	-	0.500
<i>Subtotal: Support - Product Improvement Cost</i>	-	-	-	-	-	-	-	-	-	-	-	1.000	-	-	-	-	-	1.000
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	-	-	-	-	-	-	2.251	-	-	-	-	-	2.251
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	-	-	-	-	-	-	2.251	-	-	-	-	-	2.251
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	-	-	-	-	-	-	0.003	-	-	-	-	-	0.003
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.003	-	-	-	-	-	0.003
Gross/Weapon System Cost	-	-	-	-	-	-	-	-	-	14.92	1,675,411	25.000	-	-	-	14.92	1,675,411	25.000

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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) : B		MDAP/MAIS Code:

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018					
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 (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2019	ARDEC / PICATINNY ARSENAL, NJ	MIPR	Picatinny Arsenal, NJ	Mar 2019	Sep 2019	1,425,411	12.98	N		
COMPLETE ROUND ^(†)		2019	ALLIANT TECHSYSTEMS (LCAAP) / INDEPENDENCE, MO	C / CPIF	ROCK ISLAND ARSENAL, IL	Aug 2019	Feb 2020	250,000	12.98	N		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2019 Army		Date: February 2018
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 (Units in Millions, * = < 500)						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	1.425	.000	1.425											A	-	-	-	-	-	-		.100	.100	.100	.100	.100	.100	.100	.100	.100	.150	.175	.200	.000	
	2	2019	ARMY	.250	.000	.250																																.000

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Exhibit P-21, Production Schedule: PB 2019 Army		Date: February 2018
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 2019	1-8-5 For 2019	MAX For 2019	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	ARDEC - PICATINNY ARSENAL, NJ	25,000	2,250,000	4,500,000	6	6	12	18	6	6	12	18
2	ALLIANT TECHSYSTEMS (LCAAP) - INDEPENDENCE, MO	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).

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	134.196	5.193	10.418	20.158	0.017	20.175	12.740	7.806	7.940	7.953	-	206.421
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	134.196	5.193	10.418	20.158	0.017	20.175	12.740	7.806	7.940	7.953	-	206.421
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	134.196	5.193	10.418	20.158	0.017	20.175	12.740	7.806	7.940	7.953	-	206.421

(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.

(E05209) CTG, 9mm High Pressure Test (HPT) M905 cartridge has a stannic (silver) stained case. It also has HPT stamped on the rear of the case. Used in proofing M9 pistols and test barrels to demonstrate safety prior to releasing weapons to the field. This item is Code A, approved for service use.

(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 NATO STANAG 4090 and is packed in military type packaging. It is used in M9 and M11 pistols. This item is Code A, approved for service use.

(E05218) CTG, MODULAR HANDGUN SYSTEM AMMUNITION consists of four new cartridges - Ball XM1152, Special Purpose XM1153, Drilled Dummy Inert (DDI) XM1156 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. They are plated and drilled for easy identification and used for training and weapon familiarization. Blank cartridges are used for K-9 training. These items are not yet type classified or approved for service use. 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 existing M9/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 recoil spring guide. The M4 kit consist of a replacement upper receiver for 9mm. A blue enameled portion of the M9, M11, and M4 barrels is visible through the ejection port of the weapons. 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. 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 existing M9/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 recoil spring guide. The M4 kit consist of a replacement upper receiver for 9mm. A blue enameled portion of the M9, M11 and M4 barrels is visible through the ejection port of the weapons. The projectile leaves a mark upon impact (similar to paintball), enabling after action evaluation of training scenarios. It differs from paintball in

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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>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. 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 and M11 pistols. This item is Code A, approved for service use.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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

Exhibits Schedule					Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	E05209 / CTG 9MM HIGH PRESSURE TEST M905 [A364]		A		- / 0.173	- / -	- / -	272,633 / 0.099	- / -	272,633 / 0.099
P-5	E05210 / CTG, 9MM BALL, M882 (Combat Pack) [A363]		A		- / 78.701	10,784,678 / 1.900	9,439,729 / 2.005	18,977,320 / 3.992	90,909 / 0.017	19,068,229 / 4.009
P-5	E05218 / CTG, MODULAR HANDGUN AMMO	P-5a	B		- / 3.154	4,631,250 / 0.978	12,687,917 / 4.258	23,947,368 / 5.227	- / -	23,947,368 / 5.227
P-5	E96105 / CTG, 9MM MARKING, M1041 (BLUE) [AB13]		A		- / 1.858	321,315 / 0.177	269,557 / 0.168	703,142 / 0.449	- / -	703,142 / 0.449
P-5	E96107 / CTG, 9MM MARKING, M1041 (RED) [AB14]		A		- / 1.452	196,550 / 0.108	58,748 / 0.037	806,550 / 0.515	- / -	806,550 / 0.515
P-5	E99900 / CTG, 9MM Ball, M882 (Commercial Pack) [AA49]	P-5a, P-21	A		- / 48.858	11,530,288 / 2.030	20,073,434 / 3.950	52,948,769 / 9.876	- / -	52,948,769 / 9.876
P-40	Total Gross/Weapon System Cost				- / 134.196	- / 5.193	- / 10.418	- / 20.158	- / 0.017	- / 20.175

*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 2019 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements IAW DoD Instruction 3000.04 (Munitions Requirements Process) and AR 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support 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 2019 Base procurement dollars in the amount of \$20.158 million supports procurement of 97.656 million cartridges. The FY 2019 European Deterrence Initiative (EDI) Overseas Contingency Operations (OCO) procurement dollars in the amount of \$0.017 million supports procurement of 0.091 million cartridges.

(E05209) CTG, 9mm High Pressure Test (HPT) M905 cartridge is a testing unique item. The request supports annual training and builds a depot level in accordance with Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$.099 million supports the procurement of .273 million M905 cartridges. This is a New Start in FY 2019.
 Type Classification Date: 15 April 1985

(E05210) CTG 9MM BALL, M882 (Combat Pack) is a training standard item used in both training and combat. The FY 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$3.992 million supports the procurement of 18.977 million M882 Ball cartridges. FY 2019 EDI OCO procurement dollars in the amount of \$0.017 million supports the procurement of 0.091 million M882 Ball cartridges.
 Type Classification Date: 1985

(E05218) CTG MODULAR HANDGUN SYSTEM AMMUNITION is a training standard item used in both training and combat. The FY 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$5.227 million supports the procurement of 23.947 million Modular Handgun cartridges.
 Type Classification Date: Pending

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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>(E96105) CTG 9MM MARKING, M1041 (BLUE) is a training unique item not used in combat. The FY 2019 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$0.449 million supports the procurement of 0.703 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 2019 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$0.515 million supports the procurement of 0.807 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 FY 2019 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$9.876 million supports the procurement of 52.949 million M882 Ball cartridges. Type Classification Date: 1985</p>		

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 1450EA3000 / CTG, Handgun, All Types	Item Number / Title [DODIC]: E05209 / CTG 9MM HIGH PRESSURE TEST M905 [A364]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	-	-	272,633	-	272,633
Gross/Weapon System Cost (\$ in Millions)	0.173	-	-	0.099	-	0.099
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	0.173	-	-	0.099	-	0.099
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	0.173	-	-	0.099	-	0.099

(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)	-	-	-	0.36	-	0.36

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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)	0.30	576,666	0.173	-	-	-	-	-	-	0.30	272,633	0.082	-	-	-	0.30	272,633	0.082
BOX METAL M2A2	-	-	-	-	-	-	-	-	-	14.06	275	0.004	-	-	-	14.06	275	0.004
<i>Subtotal: Recurring Cost</i>	-	-	0.173	-	-	-	-	-	-	-	-	0.086	-	-	-	-	-	0.086
<i>Subtotal: Hardware Cost</i>	-	-	0.173	-	-	-	-	-	-	-	-	0.086	-	-	-	-	-	0.086
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	-	-	-	-	-	-	0.009	-	-	-	-	-	0.009
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.009	-	-	-	-	-	0.009
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	-	-	-	-	-	-	0.004	-	-	-	-	-	0.004
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.004	-	-	-	-	-	0.004
Gross/Weapon System Cost	-	-	0.173	-	-	-	-	-	-	0.36	272,633	0.099	-	-	-	0.36	272,633	0.099

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 1450EA3000 / CTG, Handgun, All Types
		Item Number / Title [DODIC]: E05210 / CTG, 9MM BALL, M882 (Combat Pack) [A363]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	10,784,678	9,439,729	18,977,320	90,909	19,068,229
Gross/Weapon System Cost (\$ in Millions)	78.701	1.900	2.005	3.992	0.017	4.009
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	78.701	1.900	2.005	3.992	0.017	4.009
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	78.701	1.900	2.005	3.992	0.017	4.009

(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)	-	0.18	0.21	0.21	0.19	0.21

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	0.16	490,591K	78.495	0.16	10,784,678	1.726	0.17	9,439,729	1.605	0.18	18,977,320	3.416	0.18	90,909	0.016	0.18	19,068,229	3.432
Subtotal: Recurring Cost	-	-	78.495	-	-	1.726	-	-	1.605	-	-	3.416	-	-	0.016	-	-	3.432
Subtotal: Hardware Cost	-	-	78.495	-	-	1.726	-	-	1.605	-	-	3.416	-	-	0.016	-	-	3.432
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	-	-	-	0.096	-	-	0.008	-	-	-	-	-	0.008
Subtotal: Support - Acceptance Testing Cost	-	-	-	-	-	-	-	-	0.096	-	-	0.008	-	-	-	-	-	0.008
Support - Production Engineering Cost																		
Production Engineering	-	-	0.204	-	-	0.175	-	-	0.303	-	-	0.563	-	-	0.001	-	-	0.564
Subtotal: Support - Production Engineering Cost	-	-	0.204	-	-	0.175	-	-	0.303	-	-	0.563	-	-	0.001	-	-	0.564
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.002	-	-	-	-	-	0.002	-	-	0.006	-	-	-	-	-	0.006
Subtotal: Support - Quality Assurance Cost	-	-	0.002	-	-	-	-	-	0.002	-	-	0.006	-	-	-	-	-	0.006
Gross/Weapon System Cost	-	-	78.701	0.18	10,784,678	1.900	0.21	9,439,729	2.005	0.21	18,977,320	3.992	0.19	90,909	0.017	0.21	19,068,229	4.009

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 1450EA3000 / CTG, Handgun, All Types	Item Number / Title [DODIC]: E05218 / CTG, MODULAR HANDGUN AMMO

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity <i>(Units in Each)</i>	-	4,631,250	12,687,917	23,947,368	-	23,947,368
Gross/Weapon System Cost <i>(\$ in Millions)</i>	3.154	0.978	4.258	5.227	-	5.227
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	3.154	0.978	4.258	5.227	-	5.227
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	3.154	0.978	4.258	5.227	-	5.227

(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>	-	0.21	0.34	0.22	-	0.22

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 ^(†)	0.16	812,500	0.130	0.16	4,631,250	0.741	0.24	12,687,917	3.045	0.19	23,947,368	4.550	-	-	-	0.19	23,947,368	4.550
<i>Subtotal: Recurring Cost</i>	-	-	<i>0.130</i>	-	-	<i>0.741</i>	-	-	<i>3.045</i>	-	-	<i>4.550</i>	-	-	-	-	-	<i>4.550</i>
<i>Subtotal: Hardware Cost</i>	-	-	0.130	-	-	0.741	-	-	3.045	-	-	4.550	-	-	-	-	-	4.550
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	0.001	-	-	-	-	-	0.001	-	-	-	-	-	0.001
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	0.001	-	-	-	-	-	0.001	-	-	-	-	-	0.001
Support - Production Engineering Cost																		
Production Engineering	-	-	3.024	-	-	0.236	-	-	1.213	-	-	0.676	-	-	-	-	-	0.676
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	3.024	-	-	0.236	-	-	1.213	-	-	0.676	-	-	-	-	-	0.676
Gross/Weapon System Cost	-	-	3.154	0.21	4,631,250	0.978	0.34	12,687,917	4.258	0.22	23,947,368	5.227	-	-	-	0.22	23,947,368	5.227

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30			P-1 Line Item Number / Title: 1450EA3000 / CTG, Handgun, All Types				Item Number / Title [DODIC]: E05218 / CTG, MODULAR HANDGUN AMMO				

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		2017	Sig Sauer, INC / Newington NH	C / FFP	Picatinny Arsenal, NJ	Jul 2017	Nov 2017	4,631,250	0.16	Y		
COMPLETE ROUND		2018	Sig Sauer, INC / Newington NH	C / FFP	Picatinny Arsenal, NJ	Mar 2018	Oct 2018	12,687,917	0.24	Y		
COMPLETE ROUND		2019	Sig Sauer, INC / Newington NH	C / FFP	Picatinny Arsenal, NJ	Mar 2019	Oct 2019	23,947,368	0.19	Y		

Remarks:
FY 2018 and FY 2019 LAP are delivery orders to an existing contract.

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 1450EA3000 / CTG, Handgun, All Types	Item Number / Title [DODIC]: E96105 / CTG, 9MM MARKING, M1041 (BLUE) [AB13]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	-	321,315	269,557	703,142	-	703,142
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1.858	0.177	0.168	0.449	-	0.449
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1.858	0.177	0.168	0.449	-	0.449
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1.858	0.177	0.168	0.449	-	0.449

(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>)	-	0.55	0.62	0.64	-	0.64

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	0.57	3,236,842	1.845	0.55	321,315	0.177	0.57	269,557	0.154	0.59	703,142	0.415	-	-	-	0.59	703,142	0.415
<i>Subtotal: Recurring Cost</i>	-	-	1.845	-	-	0.177	-	-	0.154	-	-	0.415	-	-	-	-	-	0.415
<i>Subtotal: Hardware Cost</i>	-	-	1.845	-	-	0.177	-	-	0.154	-	-	0.415	-	-	-	-	-	0.415
Support - Production Engineering Cost																		
Production Engineering	-	-	0.013	-	-	0.001	-	-	0.014	-	-	0.034	-	-	-	-	-	0.034
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.013	-	-	0.001	-	-	0.014	-	-	0.034	-	-	-	-	-	0.034
Gross/Weapon System Cost	-	-	1.858	0.55	321,315	0.177	0.62	269,557	0.168	0.64	703,142	0.449	-	-	-	0.64	703,142	0.449

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30	P-1 Line Item Number / Title: 1450EA3000 / CTG, Handgun, All Types	Item Number / Title [DODIC]: E96107 / CTG, 9MM MARKING, M1041 (RED) [AB14]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	-	196,550	58,748	806,550	-	806,550
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1.452	0.108	0.037	0.515	-	0.515
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1.452	0.108	0.037	0.515	-	0.515
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1.452	0.108	0.037	0.515	-	0.515

(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>)	-	0.55	0.63	0.64	-	0.64

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	0.57	2,363,157	1.347	0.55	196,550	0.108	0.57	58,748	0.033	0.59	806,550	0.476	-	-	-	0.59	806,550	0.476
<i>Subtotal: Recurring Cost</i>	-	-	1.347	-	-	0.108	-	-	0.033	-	-	0.476	-	-	-	-	-	0.476
<i>Subtotal: Hardware Cost</i>	-	-	1.347	-	-	0.108	-	-	0.033	-	-	0.476	-	-	-	-	-	0.476
Support - Production Engineering Cost																		
Production Engineering	-	-	0.105	-	-	-	-	-	0.003	-	-	0.040	-	-	-	-	-	0.040
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.105	-	-	-	-	-	0.003	-	-	0.040	-	-	-	-	-	0.040
Gross/Weapon System Cost	-	-	1.452	0.55	196,550	0.108	0.63	58,748	0.037	0.64	806,550	0.515	-	-	-	0.64	806,550	0.515

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 1450EA3000 / CTG, Handgun, All Types
		Item Number / Title [DODIC]: E99900 / CTG, 9MM Ball, M882 (Commercial Pack) [AA49]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	11,530,288	20,073,434	52,948,769	-	52,948,769
Gross/Weapon System Cost (\$ in Millions)	48.858	2.030	3.950	9.876	-	9.876
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	48.858	2.030	3.950	9.876	-	9.876
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	48.858	2.030	3.950	9.876	-	9.876

(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)	-	0.18	0.20	0.19	-	0.19

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 ^(†)	0.18	260,288K	46.852	0.15	11,530,288	1.730	0.16	20,073,434	3.212	0.16	52,948,769	8.472	-	-	-	0.16	52,948,769	8.472
Subtotal: Recurring Cost	-	-	46.852	-	-	1.730	-	-	3.212	-	-	8.472	-	-	-	-	-	8.472
Subtotal: Hardware Cost	-	-	46.852	-	-	1.730	-	-	3.212	-	-	8.472	-	-	-	-	-	8.472
Support - Production Engineering Cost																		
Production Engineering	-	-	1.991	-	-	0.294	-	-	0.731	-	-	1.401	-	-	-	-	-	1.401
Subtotal: Support - Production Engineering Cost	-	-	1.991	-	-	0.294	-	-	0.731	-	-	1.401	-	-	-	-	-	1.401
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.015	-	-	0.007	-	-	0.007	-	-	0.004	-	-	-	-	-	0.004
Subtotal: Support - Quality Assurance Cost	-	-	0.015	-	-	0.007	-	-	0.007	-	-	0.004	-	-	-	-	-	0.004
Gross/Weapon System Cost	-	-	48.858	0.18	11,530,288	2.030	0.20	20,073,434	3.950	0.19	52,948,769	9.876	-	-	-	0.19	52,948,769	9.876

^(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30			P-1 Line Item Number / Title: 1450EA3000 / CTG, Handgun, All Types				Item Number / Title [DODIC]: E99900 / CTG, 9MM Ball, M882 (Commercial Pack) [AA49]					

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 ^(†)		2017	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Jan 2017	Mar 2018	11,530,288	0.15	Y		
COMPLETE ROUND ^(†)		2018	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Oct 2018	20,073,434	0.16	Y		
COMPLETE ROUND ^(†)		2019	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Oct 2019	52,948,769	0.16	Y		

^(†) indicates the presence of a P-21

Remarks:
FY 2017, FY 2018 AND FY 2019 COMPLETE ROUND IS A DELIVERY ORDER TO THE EXISTING CONTRACT.

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Exhibit P-21, Production Schedule: PB 2019 Army															Date: February 2018														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30										P-1 Line Item Number / Title: 1450EA3000 / CTG, Handgun, All Types										Item Number / Title [DODIC]: E99900 / CTG, 9MM Ball, M882 (Commercial Pack) [AA49]									

Cost Elements <i>(Units in Millions, * = < 500)</i>						Fiscal Year 2017														Fiscal Year 2018														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 1 6	BAL D U E A S O F 1 O C T	Calendar Year 2017														Calendar Year 2018																	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P								
COMPLETE ROUND																																						
Prior Years Deliveries: 260287661																																						
1		2017	ARMY	11.530	.000	11.530				A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.494	3.000	3.000	3.000	.074	1.962		.000
1		2018	ARMY	20.073	.000	20.073																															20.073	
1		2019	ARMY	52.949	.000	52.949																																52.949
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army															Date: February 2018														
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30										P-1 Line Item Number / Title: 1450EA3000 / CTG, Handgun, All Types										Item Number / Title [DODIC]: E99900 / CTG, 9MM Ball, M882 (Commercial Pack) [AA49]									

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: 260287661

1	2017	ARMY	11.530	11.530	.000																													.000
1	2018	ARMY	20.073	.000	20.073	1.673	1.673	1.673	1.673	1.673	1.673	1.673	1.673	1.673	1.673	1.673													.000					
1	2019	ARMY	52.949	.000	52.949						A	-	-	-	-	-	-	4.412	4.412	4.412	4.412	4.412	4.412	4.412	4.412	4.412	4.412	4.412	4.412	4.412	.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 2019 Army		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 30		P-1 Line Item Number / Title: 1450EA3000 / CTG, Handgun, All Types
Item Number / Title [DODIC]: E99900 / CTG, 9MM Ball, M882 (Commercial Pack) [AA49]		

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	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	2,000	2,500,000	10,000,000	7	7	7	14	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).

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,620.905	60.300	62.958	65.573	0.189	65.762	79.064	79.203	70.820	86.610	-	2,125.622
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,620.905	60.300	62.958	65.573	0.189	65.762	79.064	79.203	70.820	86.610	-	2,125.622
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,620.905	60.300	62.958	65.573	0.189	65.762	79.064	79.203	70.820	86.610	-	2,125.622

(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.

(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.

(E06700) CTG .50 Caliber M8, Armor Piercing Incendiary (API) Cartridge, packed single round, is used in the M2 Machine Gun and 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.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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 CAL .50 API M8, SINGLE ROUND [A531]		A		- / 5.651	- / -	- / -	- / -	6,128 / 0.013	6,128 / 0.013
P-5	E07100 / CTG CAL .50 BALL M33 LINK [A555]	P-5a, P-21	A		- / 271.364	2,105,263 / 4.000	1,087,893 / 2.380	4,016,498 / 8.898	87,744 / 0.176	4,104,242 / 9.074
P-5	E07200 / CTG CAL .50 4 BALL/1 TRACER W/M9 LINK [A557]	P-5a, P-21	A		- / 1,225.831	18,322,279 / 54.047	25,510,877 / 58.253	22,230,926 / 51.521	- / -	22,230,926 / 51.521
P-5	E07302 / CTG CAL .50 BLANK M1A1 LKD W/M9 LINK F/M [A598]		A		- / 112.552	1,665,092 / 2.253	1,568,977 / 2.325	3,090,834 / 4.950	- / -	3,090,834 / 4.950
P-5	E07900 / CTG CAL .50 HIGH PRESSURE TEST M1, SINGLE RD [A575]		A		- / 5.507	- / -	- / -	58,510 / 0.204	- / -	58,510 / 0.204
P-40	Total Gross/Weapon System Cost				- / 1,620.905	- / 60.300	- / 62.958	- / 65.573	- / 0.189	- / 65.762

*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:
FY 2019 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements IAW DoD Instruction 3000.04 (Munitions Requirements Process) and AR 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support 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 2019 Base procurement dollars in the amount of \$65.573 million supports procurement of 29.397 million cartridges. The FY 2019 European Deterrence Initiative (EDI)Overseas Contingency Operations (OCO) dollars in the amount of \$0.189M supports the procurement of 0.0939 million cartridges.

(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 2019 request supports procurement of cal.50 weapons and builds a depot level in accordance with Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$0.204 million supports the procurement of 0.059 million .50 Caliber High Pressure Test, M1 Cartridges. This is a New Start in FY 2019
Type classification date: 1926

(E06700) CTG .50 Caliber M8, Armor Piercing Incendiary (API) Cartridge is a training standard item used in training and combat. The FY 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 EDI OCO dollars in the amount of \$0.013 million supports the procurement of 0.006 million of the M8 cartridges. This is a New Start in FY 2019.
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 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$8.898 million supports the procurement of 4.016 million of the Ball M33 Link Cartridges. FY 2019 EDI OCO dollars in the amount of \$0.176M supports the procurement of 0.088M M33 cartridges
Type classification date: 1951

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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>(E07302) CTG .50 Caliber Blank Cartridge, M1A1 linked with the M9 link. This is a training unique item not used in combat. The FY 2019 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$4.950 million supports the procurement of 3.091 million .50 Caliber Blank Cartridge, M1A1 Cartridges. Type classification date: 1980</p> <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 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$51.521 million supports the procurement of 22.231 million .50 Caliber Cartridge, Ball M33 and Cartridge, Tracer M17 linked Cartridges. Type classification date: 1968</p>		

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 CAL .50 API M8, SINGLE ROUND [A531]

ID Code (A=Service Ready, B=Not Service Ready) : A				MDAP/MAIS Code:			
Resource Summary		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)		-	-	-	-	6,128	6,128
Gross/Weapon System Cost (<i>\$ in Millions</i>)		5.651	-	-	-	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
Plus CY Advance Procurement (<i>\$ in Millions</i>)		-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)		5.651	-	-	-	0.013	0.013
<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>)		-	-	-	-	2.12	2.12

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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)	2.76	1,866,998	5.153	-	-	-	-	-	-	-	-	-	2.00	6,128	0.012	2.00	6,128	0.012
BOX METAL M2A2	-	-	-	-	-	-	-	-	-	-	-	-	14.06	51	0.001	14.06	51	0.001
<i>Subtotal: Recurring Cost</i>	-	-	5.153	-	-	-	-	-	-	-	-	-	0.000	-	0.013	-	-	0.013
<i>Subtotal: Hardware Cost</i>	-	-	5.153	-	-	-	-	-	-	-	-	-	0.000	-	0.013	-	-	0.013
Support - Production Engineering Cost																		
Production Engineering	-	-	0.498	-	-	-	-	-	-	-	-	-	-	-	0.000	-	-	0.000
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.498	-	-	-	-	-	-	-	-	-	0.000	-	0.000	-	-	0.000
Gross/Weapon System Cost	-	-	5.651	-	-	-	-	-	-	-	-	-	2.12	6,128	0.013	2.12	6,128	0.013

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 CAL .50 BALL 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	2,105,263	1,087,893	4,016,498	87,744	4,104,242
Gross/Weapon System Cost (\$ in Millions)	271.364	4.000	2.380	8.898	0.176	9.074
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	271.364	4.000	2.380	8.898	0.176	9.074
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	271.364	4.000	2.380	8.898	0.176	9.074

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

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	1.90	2.19	2.22	2.01	2.21

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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) ^(†)	2.10	128,136K	269.086	1.90	2,105,263	4.000	1.86	1,087,893	2.023	1.86	4,016,498	7.471	1.86	87,744	0.163	1.86	4,104,242	7.634
BOX METAL M2A2 ^(†)	10.93	96,617	1.056	-	-	-	13.67	10,933	0.149	14.06	40,165	0.565	14.06	877	0.012	14.06	41,042	0.577
<i>Subtotal: Recurring Cost</i>	-	-	270.142	-	-	4.000	-	-	2.173	-	-	8.035	-	-	0.176	-	-	8.211
<i>Subtotal: Hardware Cost</i>	-	-	270.142	-	-	4.000	-	-	2.173	-	-	8.035	-	-	0.176	-	-	8.211
Support - Production Engineering Cost																		
Production Engineering	-	-	1.217	-	-	-	-	-	0.205	-	-	0.858	-	-	0.000	-	-	0.858
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	1.217	-	-	-	-	-	0.205	-	-	0.858	-	-	0.000	-	-	0.858
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.005	-	-	-	-	-	0.002	-	-	0.004	-	-	-	-	-	0.004
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.005	-	-	-	-	-	0.002	-	-	0.004	-	-	-	-	-	0.004
Gross/Weapon System Cost	-	-	271.364	1.90	2,105,263	4.000	2.19	1,087,893	2.380	2.22	4,016,498	8.898	2.01	87,744	0.176	2.21	4,104,242	9.074

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018				
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 CAL .50 BALL 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 (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2017	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Jul 2017	Jun 2018	210,526	1.90	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2017	ALLIANT TECHSYSTEMS (LCAAP) / INDEPENDENCE, MO	C / FFP	ROCK ISLAND ARSENAL, IL	Apr 2017	Jan 2018	1,894,737	1.90	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2018	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Mar 2019	108,789	1.86	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2018	ALLIANT TECHSYSTEMS (LCAAP) / INDEPENDENCE, MO	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Mar 2019	979,104	1.86	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2019	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Mar 2020	410,424	1.86	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2019	ALLIANT TECHSYSTEMS (LCAAP) / INDEPENDENCE, MO	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Mar 2020	3,693,818	1.86	Y		
BOX METAL M2A2		2018	BWAY CORPORATION / ATLANTA, GA	C / FFP	ROCK ISLAND ARSENAL, IL	May 2018	Jul 2018	10,933	13.67	Y		
BOX METAL M2A2		2019	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	May 2019	Jul 2019	41,042	14.06	Y		

^(†) indicates the presence of a P-21

Remarks:
FY 2017, FY 2018 AND FY 2019 LAP IS A DELIVERY ORDER TO THE EXISTING CONTRACTS. FY 2017, FY 2018 AND FY 2019 LAP IS AN AVERAGE UNIT COST BETWEEN TWO CONTRACTORS.

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Exhibit P-21, Production Schedule: PB 2019 Army		Date: February 2018
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 CAL .50 BALL M33 LINK [A555]

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				
LOAD, ASSEMBLE, PACK (LAP)																																		
Prior Years Deliveries: 128136346																																		
	1	2017	ARMY	.211	.211	.000																										.000		
	2	2017	AF (+)	1.373	1.373	.000	-	-	-																							.000		
	2	2017	ARMY	1.895	1.421	.474	.158	.158	.158																							.000		
	2	2017	NAVSEA (+)	1.305	1.305	.000	-	-	-																							.000		
	2	2017	Total	4.573	4.099	.474	.158	.158	.158																							.000		
	1	2018	ARMY	.109	.000	.109	-	-	-																							.000		
	1	2018	NAVSEA (+)	.148	.000	.148	-	-	-																							.000		
	1	2018	NSOF (+)	.040	.000	.040	-	-	-																							.000		
	1	2018	Total	.297	.000	.297																										.000		
	2	2018	ARMY	.979	.000	.979	-	-	-																							.000		
	2	2018	NAVSEA (+)	1.330	.000	1.330	-	-	-																							.000		
	2	2018	NSOF (+)	.360	.000	.360	-	-	-																							.000		
	2	2018	Total	2.669	.000	2.669																										.000		
	1	2019	AF (+)	.048	.000	.048																										.000		
	1	2019	ARMY	.410	.000	.410																										.171		
	1	2019	MC (+)	.136	.000	.136																										.000		
	1	2019	NAVSEA (+)	.080	.000	.080																										.000		
	1	2019	Total	.674	.000	.674																										.171		
	2	2019	AF (+)	.428	.000	.428																										.000		
	2	2019	ARMY	3.694	.000	3.694																										1.539		
	2	2019	MC (+)	1.220	.000	1.220																										.509		
	2	2019	NAVSEA (+)	.724	.000	.724																										.000		
	2	2019	Total	6.067	.000	6.067																										2.048		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army															Date: February 2018									
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 CAL .50 BALL M33 LINK [A555]				

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	
LOAD, ASSEMBLE, PACK (LAP)																																
Prior Years Deliveries: 128136346																																
	1	2017	ARMY	.211	.211	.000																							.000			
	2	2017	AF (+)	1.373	1.373	.000																							.000			
	2	2017	ARMY	1.895	1.895	.000																							.000			
	2	2017	NAVSEA (+)	1.305	1.305	.000																							.000			
	2	2017	Total	4.573	4.573	.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000			
	1	2018	ARMY	.109	.109	.000																							.000			
	1	2018	NAVSEA (+)	.148	.148	.000																							.000			
	1	2018	NSOF (+)	.040	.040	.000																							.000			
	1	2018	Total	.297	.297	.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000			
	2	2018	ARMY	.979	.979	.000																							.000			
	2	2018	NAVSEA (+)	1.330	1.330	.000																							.000			
	2	2018	NSOF (+)	.360	.360	.000																							.000			
	2	2018	Total	2.669	2.669	.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000			
	1	2019	AF (+)	.048	.048	.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000			
	1	2019	ARMY	.410	.239	.171	.034	.034	.034	.034	.034																		.000			
	1	2019	MC (+)	.136	.136	.000	-	-	-	-	-																		.000			
	1	2019	NAVSEA (+)	.080	.080	.000	-	-	-	-	-																		.000			
	1	2019	Total	.674	.503	.171	.034	.034	.034	.034	.034	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000			
	2	2019	AF (+)	.428	.428	.000	-	-	-	-	-																		.000			
	2	2019	ARMY	3.694	2.155	1.539	.308	.308	.308	.308	.308																		.000			
	2	2019	MC (+)	1.220	.712	.509	.102	.102	.102	.102	.102																		.000			
	2	2019	NAVSEA (+)	.724	.724	.000	-	-	-	-	-																		.000			
	2	2019	Total	6.067	4.019	2.048	.410	.410	.410	.410	.410	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.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 2019 Army		Date: February 2018
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 CAL .50 BALL M33 LINK [A555]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	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	1,000,000	2,500,000	6	6	12	18	6	6	12	18
2	ALLIANT TECHSYSTEMS (LCAAP) - INDEPENDENCE, MO	200	5,990,000	20,770,000	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 2019 Army		Date: February 2018
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 CAL .50 4 BALL/1 TRACER 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	18,322,279	25,510,877	22,230,926	-	22,230,926
Gross/Weapon System Cost (\$ in Millions)	1,225.831	54.047	58.253	51.521	-	51.521
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	1,225.831	54.047	58.253	51.521	-	51.521
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	1,225.831	54.047	58.253	51.521	-	51.521

(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)	-	2.95	2.28	2.32	-	2.32

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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) ^(†)	2.15	555,180K	1,193.638	2.63	18,322,279	48.185	1.95	25,510,877	49.745	1.95	22,230,926	43.350	-	-	-	1.95	22,230,926	43.350
BOX METAL M2A2 ^(†)	10.93	299,950	3.278	11.83	186,887	2.211	13.67	256,381	3.505	14.06	222,309	3.126	-	-	-	14.06	222,309	3.126
<i>Subtotal: Recurring Cost</i>	-	-	<i>1,196.916</i>	-	-	<i>50.398</i>	-	-	<i>53.251</i>	-	-	<i>46.476</i>	-	-	-	-	-	<i>46.476</i>
<i>Subtotal: Hardware Cost</i>	-	-	<i>1,196.916</i>	-	-	<i>50.398</i>	-	-	<i>53.251</i>	-	-	<i>46.476</i>	-	-	-	-	-	<i>46.476</i>
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	0.305	-	-	0.051	-	-	0.178	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	<i>0.305</i>	-	-	<i>0.051</i>	-	-	<i>0.178</i>	-	-	-	-	-	-	-	-	-
Support - Product Improvement Cost																		
Environmental Initiatives	-	-	0.105	-	-	0.633	-	-	-	-	-	0.487	-	-	-	-	-	0.487
<i>Subtotal: Support - Product Improvement Cost</i>	-	-	<i>0.105</i>	-	-	<i>0.633</i>	-	-	-	-	-	<i>0.487</i>	-	-	-	-	-	<i>0.487</i>
Support - Production Engineering Cost																		
Production Engineering	-	-	28.451	-	-	2.955	-	-	4.814	-	-	4.546	-	-	-	-	-	4.546
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>28.451</i>	-	-	<i>2.955</i>	-	-	<i>4.814</i>	-	-	<i>4.546</i>	-	-	-	-	-	<i>4.546</i>
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.053	-	-	0.008	-	-	0.010	-	-	0.012	-	-	-	-	-	0.012

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 CAL .50 4 BALL/1 TRACER W/M9 LINK [A557]
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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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>	-	-	0.053	-	-	0.008	-	-	0.010	-	-	0.012	-	-	-	-	-	0.012
Gross/Weapon System Cost	-	-	1,225.831	2.95	18,322,279	54.047	2.28	25,510,877	58.253	2.32	22,230,926	51.521	-	-	-	2.32	22,230,926	51.521

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

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018				
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 CAL .50 4 BALL/1 TRACER 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
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2017	ALLIANT TECHSYSTEMS (LCAAP) / INDEPENDENCE, MO	C / FFP	ROCK ISLAND ARSENAL, IL	Apr 2017	Aug 2018	2,204,686	2.31	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2017	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Jan 2017	Jul 2017	16,117,593	2.31	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2018	ALLIANT TECHSYSTEMS (LCAAP) / INDEPENDENCE, MO	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Mar 2019	22,959,789	1.96	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2018	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Mar 2019	2,551,088	1.96	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2019	ALLIANT TECHSYSTEMS (LCAAP) / INDEPENDENCE, MO	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Mar 2020	20,007,833	1.95	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2019	OLIN CORP WINCHESTER DIVISION / EAST ALTON, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Mar 2020	2,223,093	1.95	Y		
BOX METAL M2A2		2017	BWAY CORPORATION / ATLANTA, GA	C / FFP	ROCK ISLAND ARSENAL, IL	May 2017	Jul 2017	186,887	11.83	Y		
BOX METAL M2A2		2018	BWAY CORPORATION / ATLANTA, GA	C / FFP	ROCK ISLAND ARSENAL, IL	May 2018	Jul 2018	256,381	13.67	Y		
BOX METAL M2A2		2019	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	May 2019	Jul 2019	222,309	14.06	Y		

(†) indicates the presence of a P-21

Remarks:
FY 2017, FY 2018 AND FY 2019 LAP IS A DELIVERY ORDER TO THE EXISTING CONTRACTS. FY 2018 AND FY 2019 LAP IS AN AVERAGE UNIT COST BETWEEN TWO CONTRACTORS.

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Exhibit P-21, Production Schedule: PB 2019 Army		Date: February 2018
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 CAL .50 4 BALL/1 TRACER W/M9 LINK [A557]

Cost Elements <small>(Units in Millions, * = < 500)</small>						Fiscal Year 2017												Fiscal Year 2018												BALANCE	
O C C O #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	Calendar Year 2017												Calendar Year 2018												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
2		2019	ARMY	2.223	.000	2.223																								2.223	
2		2019	CG (+)	.005	.000	.005																								.005	
2		2019	NAVSEA (+)	.304	.000	.304																								.304	
2		2019	NSOF (+)	.039	.000	.039																								.039	
2		2019	Total	2.662	.000	2.662																								2.662	

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

Exhibit P-21, Production Schedule: PB 2019 Army																Date: February 2018													
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 CAL .50 4 BALL/1 TRACER W/M9 LINK [A557]									

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										
LOAD, ASSEMBLE, PACK (LAP)																																								
Prior Years Deliveries: 555180400																																								
1	2017	ARMY	2.205	1.106	1.099	.250	.250	.250	.349	-																									.000					
1	2017	CG (+)	.250	.250	.000	-	-	-	-	-																								.000						
1	2017	NAVSEA (+)	3.611	*	3.610	-	-	-	.369	3.241																								.000						
1	2017	Total	6.065	1.356	4.709	.250	.250	.250	.718	3.241	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000						
2	2017	ARMY	16.118	16.118	.000																													.000						
1	2018	AF (+)	.830	.000	.830	-	-	-	-	.400	.430	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000						
1	2018	ARMY	22.960	.000	22.960	-	-	-	-	1.913	1.913	1.913	1.913	1.913	1.913	1.913	1.913	1.913	1.913	1.913	1.913	1.913	1.913	1.913	1.913	1.913	1.913	1.913	1.913	1.913	1.913	1.913	1.913	.000						
1	2018	CG (+)	.045	.000	.045	-	-	-	-	.045	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000						
1	2018	NAVSEA (+)	3.469	.000	3.469	-	-	-	-	.750	.750	.750	.750	.469	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000						
1	2018	NSOF (+)	1.275	.000	1.275	-	-	-	-	.825	.450	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000						
1	2018	Total	28.579	.000	28.579	-	-	-	-	3.934	3.544	2.663	2.663	2.382	1.913	1.913	1.913	1.913	1.913	1.913	1.913	1.913	1.913	1.913	1.913	1.913	1.913	1.913	1.913	1.913	1.913	1.913	.000							
2	2018	AF (+)	.092	.000	.092	-	-	-	-	.092	-	-	-																					.000						
2	2018	ARMY	2.551	.000	2.551	-	-	-	-	.756	.751	.751	.294																					.000						
2	2018	CG (+)	.005	.000	.005	-	-	-	-	.005	-	-	-																					.000						
2	2018	NAVSEA (+)	.385	.000	.385	-	-	-	-	.100	.100	.100	.085																					.000						
2	2018	NSOF (+)	.142	.000	.142	-	-	-	-	.142	-	-	-																					.000						
2	2018	Total	3.175	.000	3.175	-	-	-	-	1.095	.851	.851	.379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000						
1	2019	AF (+)	.821	.000	.821					A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.420	.401	-	-	-	-	.000	
1	2019	ARMY	20.008	.000	20.008					A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.667	1.667	1.667	1.667	1.667	1.667	1.667	8.337
1	2019	CG (+)	.043	.000	.043					A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.043	-	-	-	-	-	-	.000
1	2019	NAVSEA (+)	2.737	.000	2.737					A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.750	.750	.750	.487	-	-	-	.000
1	2019	NSOF (+)	.350	.000	.350					A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.350	-	-	-	-	-	-	.000
1	2019	Total	23.959	.000	23.959					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.231	2.818	2.417	2.154	1.667	1.667	1.667	8.337	
2	2019	AF (+)	.091	.000	.091					A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.091	-	-	-	-	-	-	.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 2019 Army															Date: February 2018									
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 CAL .50 4 BALL/1 TRACER W/M9 LINK [A557]				

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			
LOAD, ASSEMBLE, PACK (LAP)																																	
Prior Years Deliveries: 555180400																																	
1	2017	ARMY		2.205	2.205	.000																							.000				
1	2017	CG (+)		.250	.250	.000																							.000				
1	2017	NAVSEA (+)		3.611	3.611	.000																							.000				
1	2017	Total		6.065	6.065	.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000				
2	2017	ARMY		16.118	16.118	.000																							.000				
1	2018	AF (+)		.830	.830	.000																							.000				
1	2018	ARMY		22.960	22.960	.000																							.000				
1	2018	CG (+)		.045	.045	.000																							.000				
1	2018	NAVSEA (+)		3.469	3.469	.000																							.000				
1	2018	NSOF (+)		1.275	1.275	.000																							.000				
1	2018	Total		28.579	28.579	.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000				
2	2018	AF (+)		.092	.092	.000																							.000				
2	2018	ARMY		2.551	2.551	.000																							.000				
2	2018	CG (+)		.005	.005	.000																							.000				
2	2018	NAVSEA (+)		.385	.385	.000																							.000				
2	2018	NSOF (+)		.142	.142	.000																							.000				
2	2018	Total		3.175	3.175	.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000				
1	2019	AF (+)		.821	.821	.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000				
1	2019	ARMY		20.008	11.671	8.337	1.667	1.667	1.667	1.667	1.667																		.000				
1	2019	CG (+)		.043	.043	.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000				
1	2019	NAVSEA (+)		2.737	2.737	.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000				
1	2019	NSOF (+)		.350	.350	.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000				
1	2019	Total		23.959	15.622	8.337	1.667	1.667	1.667	1.667	1.667	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000					
2	2019	AF (+)		.091	.091	.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 2019 Army															Date: February 2018														
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 CAL .50 4 BALL/1 TRACER W/M9 LINK [A557]									

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						
2	2019	ARMY		2.223	1.297	.926	.185	.185	.185	.185	.185																										.000
2	2019	CG (‡)		.005	.005	.000	-	-	-	-	-																									.000	
2	2019	NAVSEA (‡)		.304	.304	.000	-	-	-	-	-																									.000	
2	2019	NSOF (‡)		.039	.039	.000	-	-	-	-	-																									.000	
2	2019	Total		2.662	1.736	.926	.185	.185	.185	.185	.185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000		

O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	BALANCE				

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Exhibit P-21, Production Schedule: PB 2019 Army		Date: February 2018
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 CAL .50 4 BALL/1 TRACER W/M9 LINK [A557]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	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	ALLIANT TECHSYSTEMS (LCAAP) - INDEPENDENCE, MO	200	1,670,000	5,000,000	6	6	12	18	6	6	12	18
2	OLIN CORP WINCHESTER DIVISION - EAST ALTON, IL	200	400,000	1,600,000	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 2019 Army		Date: February 2018
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 CAL .50 BLANK M1A1 LKD W/M9 LINK F/M [A598]

ID Code (A=Service Ready, B=Not Service Ready) : A				MDAP/MAIS Code:				
Resource Summary			Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)			-	1,665,092	1,568,977	3,090,834	-	3,090,834
Gross/Weapon System Cost (\$ in Millions)			112.552	2.253	2.325	4.950	-	4.950
Less PY Advance Procurement (\$ in Millions)			-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)			112.552	2.253	2.325	4.950	-	4.950
Plus CY Advance Procurement (\$ in Millions)			-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)			112.552	2.253	2.325	4.950	-	4.950
<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)			-	1.35	1.48	1.60	-	1.60

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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)	1.02	109,414K	111.602	1.06	1,665,092	1.765	1.19	1,568,977	1.867	1.19	3,090,834	3.678	-	-	-	1.19	3,090,834	3.678
BOX METAL M2A2	10.93	18,399	0.201	11.83	16,984	0.201	13.67	15,768	0.216	14.06	30,908	0.435	-	-	-	14.06	30,908	0.435
<i>Subtotal: Recurring Cost</i>	-	-	<i>111.803</i>	-	-	<i>1.966</i>	-	-	<i>2.083</i>	-	-	<i>4.113</i>	-	-	-	-	-	<i>4.113</i>
<i>Subtotal: Hardware Cost</i>	-	-	<i>111.803</i>	-	-	<i>1.966</i>	-	-	<i>2.083</i>	-	-	<i>4.113</i>	-	-	-	-	-	<i>4.113</i>
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	0.062	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	<i>0.062</i>	-	-	-	-	-	-	-	-	-	-	-	-
Support - Product Improvement Cost																		
Environmental Initiatives	-	-	-	-	-	-	-	-	-	-	-	0.267	-	-	-	-	-	0.267
<i>Subtotal: Support - Product Improvement Cost</i>	-	-	-	-	-	-	-	-	-	-	-	<i>0.267</i>	-	-	-	-	-	<i>0.267</i>
Support - Production Engineering Cost																		
Production Engineering	-	-	0.749	-	-	0.223	-	-	0.240	-	-	0.567	-	-	-	-	-	0.567
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>0.749</i>	-	-	<i>0.223</i>	-	-	<i>0.240</i>	-	-	<i>0.567</i>	-	-	-	-	-	<i>0.567</i>
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	0.002	-	-	0.002	-	-	0.003	-	-	-	-	-	0.003
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	-	-	-	<i>0.002</i>	-	-	<i>0.002</i>	-	-	<i>0.003</i>	-	-	-	-	-	<i>0.003</i>

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 CAL .50 BLANK M1A1 LKD W/M9 LINK F/M [A598]
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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	112.552	1.35	1,665,092	2.253	1.48	1,568,977	2.325	1.60	3,090,834	4.950	-	-	-	1.60	3,090,834	4.950

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 CAL .50 HIGH PRESSURE TEST M1, SINGLE RD [A575]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	-	-	58,510	-	58,510
Gross/Weapon System Cost (\$ in Millions)	5.507	-	-	0.204	-	0.204
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	5.507	-	-	0.204	-	0.204
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	5.507	-	-	0.204	-	0.204

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

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	3.49	-	3.49

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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)	2.73	2,012,533	5.494	-	-	-	-	-	-	3.09	58,510	0.181	-	-	-	3.09	58,510	0.181
BOX METAL M2A2	-	-	-	-	-	-	-	-	-	14.06	487	0.007	-	-	-	14.06	487	0.007
<i>Subtotal: Recurring Cost</i>	-	-	5.494	-	-	-	-	-	-	-	-	0.188	-	-	-	-	-	0.188
<i>Subtotal: Hardware Cost</i>	-	-	5.494	-	-	-	-	-	-	-	-	0.188	-	-	-	-	-	0.188
Support - Production Engineering Cost																		
Production Engineering	-	-	0.013	-	-	-	-	-	-	-	-	0.016	-	-	-	-	-	0.016
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.013	-	-	-	-	-	-	-	-	0.016	-	-	-	-	-	0.016
Gross/Weapon System Cost	-	-	5.507	-	-	-	-	-	-	3.49	58,510	0.204	-	-	-	3.49	58,510	0.204

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	103.061	36.077	9.813	8.198	1.605	9.803	8.405	8.620	8.827	8.827	-	193.433
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	103.061	36.077	9.813	8.198	1.605	9.803	8.405	8.620	8.827	8.827	-	193.433
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	103.061	36.077	9.813	8.198	1.605	9.803	8.405	8.620	8.827	8.827	-	193.433

(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, pyrotechnically initiated 20mm High Explosive cartridge. 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. It is effective against light armor at 1,000 meters and against airborne and light surface targets at 2,000 meters. 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.

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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 [AB07]	P-5a, P-21	A		- / 103.061	823,672 / 36.077	244,000 / 9.813	197,235 / 8.198	43,323 / 1.605	240,558 / 9.803
P-40	Total Gross/Weapon System Cost				- / 103.061	- / 36.077	- / 9.813	- / 8.198	- / 1.605	- / 9.803

*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 2019 Base Budget supports critical Army Title 10, United States Code, war reserve/operational, training, and test requirements IAW DoD Instruction 3000.04 (Munitions Requirements Process) and AR 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support 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 2019 Base dollars in the amount of \$8.198 million supports the procurement of .197 million M940 cartridges.

FY 2019 Total Overseas Contingency Operations (OCO) funding in amount of \$1.605 million are required to replenish munitions expended in combat operations in Operation Freedom's Sentinel (OFS) Afghanistan theater. FY 2019 OCO request procures .043 million critical Army munitions consumed in support of deployed units' ongoing military operations.

(E08909) The 20MM Multi-Purpose Tracer - Self-Destruct (MPT-SD) cartridge is a training standard item used in both training and combat. The FY 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals.

TYPE CLASSIFICATION DATE: 1989

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 [AB07]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	823,672	244,000	197,235	43,323	240,558
Gross/Weapon System Cost (\$ in Millions)	103.061	36.077	9.813	8.198	1.605	9.803
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	103.061	36.077	9.813	8.198	1.605	9.803
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	103.061	36.077	9.813	8.198	1.605	9.803

(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)	-	43.80	40.22	41.56	37.05	40.75

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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) ^(†)	30.82	3,323,915	102.443	29.94	823,672	24.661	35.83	244,000	8.743	36.57	197,235	7.213	36.57	43,323	1.584	36.57	240,558	8.797
BOX METAL M548 ^(†)	-	-	-	46.03	8,402	0.387	44.87	2,440	0.109	46.24	2,011	0.093	46.24	442	0.020	46.24	2,453	0.113
<i>Subtotal: Recurring Cost</i>	-	-	102.443	-	-	25.047	-	-	8.852	-	-	7.306	-	-	1.605	-	-	8.911
<i>Subtotal: Hardware Cost</i>	-	-	102.443	-	-	25.047	-	-	8.852	-	-	7.306	-	-	1.605	-	-	8.911
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	0.043	-	-	0.038	-	-	-	-	-	-	-	-	-	-	-	-
First Article Test	-	-	-	-	-	0.081	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	0.043	-	-	0.119	-	-	-	-	-	-	-	-	-	-	-	-
Support - Engineering Change Proposals Cost																		
Engineering Change Proposals	-	-	-	-	-	6.000	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Engineering Change Proposals Cost</i>	-	-	-	-	-	6.000	-	-	-	-	-	-	-	-	-	-	-	-
Support - Product Improvement Cost																		
Reliability	-	-	-	-	-	0.500	-	-	-	-	-	-	-	-	-	-	-	-
Production Qualification Test	-	-	-	-	-	2.394	-	-	-	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 [AB07]
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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 - Product Improvement Cost</i>	-	-	-	-	-	2.894	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	0.575	-	-	1.999	-	-	0.949	-	-	0.884	-	-	0.000	-	-	0.884
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.575	-	-	1.999	-	-	0.949	-	-	0.884	-	-	0.000	-	-	0.884
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	0.017	-	-	0.012	-	-	0.008	-	-	-	-	-	0.008
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	-	-	-	0.017	-	-	0.012	-	-	0.008	-	-	-	-	-	0.008
Gross/Weapon System Cost	-	-	103.061	43.80	823,672	36.077	40.22	244,000	9.813	41.56	197,235	8.198	37.05	43,323	1.605	40.75	240,558	9.803

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

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018				
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 [AB07]				

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) ^(†)		2017	GENERAL DYNAMICS ORD & TAC / MARION, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Sep 2017	Nov 2018	280,049	29.94	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2017	ORBITAL ALLIANT TECHSYSTEMS / PLYMOUTH, MN	C / FFP	ROCK ISLAND ARSENAL, IL	Sep 2017	Jul 2018	543,623	29.94	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2018	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Mar 2019	122,000	35.83	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2018	TO BE SELECTED / TBS02	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Mar 2019	122,000	35.83	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2019	TO BE SELECTED / TBS02	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Mar 2020	240,558	36.57	Y		
BOX METAL M548		2017	CONCO INC. / LOUISVILLE, KY	C / FFP	ROCK ISLAND ARSENAL, IL	Sep 2017	Mar 2018	8,402	46.03	Y		
BOX METAL M548		2019	CONCO INC. / LOUISVILLE, KY	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Nov 2019	2,453	46.24	Y		

^(†) indicates the presence of a P-21

Remarks:

This item is part of a combined 20mm, 25mm, 30mm contract FY 2013 - FY 2018. Quantity split is determined in year of execution between two contractors: General Dynamics Ordnance and Tactical Systems, Marion IL and Alliant Techsystems Operations, Plymouth MN. FY 2019 requirements will be part of a new FY 2019 contract. This item is part of a combined 20MM, 25MM, 30MM contract FY 2013 - FY 2018. Quantity split is determined in year of execution between two contractors: General Dynamics Ordnance and Tactical Systems, Marion, IL and Alliant Techsystems Operations, Plymouth MN. FY 2019 requirements will be part of a new FY 2019 contract.

UNCLASSIFIED

Exhibit P-21, Production Schedule: PB 2019 Army															Date: February 2018														
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 [AB07]									

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	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				
LOAD, ASSEMBLE, PACK (LAP)																																		
Prior Years Deliveries: 3323915																																		
	1	2017	ARMY	280.049	.000	280.049	-	31.738	70.000	70.000	50.000	58.311																		.000				
	2	2017	ARMY	543.623	210.000	333.623	70.000	70.000	70.000	70.000	53.623																			.000				
	3	2018	ARMY	122.000	.000	122.000	-	-	-	-	-	10.174	10.166	10.166	10.166	10.166	10.166	10.166	10.166	10.166	10.166	10.166	10.166	10.166	10.166	10.166	10.166	10.166	10.166	.000				
	4	2018	ARMY	122.000	.000	122.000	-	-	-	-	-	10.174	10.166	10.166	10.166	10.166	10.166	10.166	10.166	10.166	10.166	10.166	10.166	10.166	10.166	10.166	10.166	10.166	10.166	.000				
	4	2019	ARMY	240.558	.000	240.558						A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.230					
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army															Date: February 2018									
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 [AB07]				

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
LOAD, ASSEMBLE, PACK (LAP)																														
Prior Years Deliveries: 3323915																														
	1	2017	ARMY	280.049	280.049	.000																							.000	
	2	2017	ARMY	543.623	543.623	.000																							.000	
	3	2018	ARMY	122.000	122.000	.000																							.000	
	4	2018	ARMY	122.000	122.000	.000																							.000	
	4	2019	ARMY	240.558	140.328	100.230	20.046	20.046	20.046	20.046	20.046																		.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 2019 Army		Date: February 2018
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 [AB07]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	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	70,000	210,000	6	6	12	18	6	6	12	18
2	ORBITAL ALLIANT TECHSYSTEMS - PLYMOUTH, MN	1,000	70,000	210,000	6	6	12	18	6	6	12	18
3	TO BE SELECTED - TBS01	1,000	70,000	210,000	6	6	12	18	6	6	12	18
4	TO BE SELECTED - TBS02	1,000	70,000	210,000	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 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	707.705	34.537	8.640	-	-	-	8.924	21.431	26.328	18.693	-	826.258
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	707.705	34.537	8.640	-	-	-	8.924	21.431	26.328	18.693	-	826.258
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	707.705	34.537	8.640	-	-	-	8.924	21.431	26.328	18.693	-	826.258

(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 Cartridge is a ballistically matched training round that simulates the tactical M792 25mm High Explosive Incendiary - Tracer Cartridge and the MK210 High Explosive Incendiary - Tracer Cartridge. The M793 supports gunnery training for the Army's Bradley Fighting Vehicles, the United States Marine Corps 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 linked belts of 30 cartridges and packed 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.

(E08201) The 25mm HEI-T M792 is a High Explosive Incendiary Tracer (HEI-T) cartridge, fired from the M242 Bushmaster automatic cannon mounted on the Army's Bradley Fighting Vehicles (BFV) and the United States Marine Corps Light Armored Vehicles. The M792 uses the M758 Point Detonating-Self Destruct (PD-SD) fuze and provides lethality against structures and vehicles, as well as personnel, and also has a self-destruct feature if it misses its intended target. The defeat mechanism of the M792 is an explosively loaded, naturally fragmenting warhead with incendiary charge. This item is Code A, approved for service use.

Justification:

The Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements IAW DoD Instruction 3000.04 (Munitions Requirements Process) and AR 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support 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.

(E08203) CTG 25MM TP-T M793 - This is a training unique item not used in combat. The request supports annual training and builds a depot level in accordance with the Army's procurement goals.

Type Classification Date: 1979

(E08201) 25mm HEI-T M792 This is a war reserve item used in combat. The request builds a war reserve inventory in accordance with the Army's procurement goals.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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		
Type Classification Date: 1979		

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,325.423	76.949	111.850	77.995	25.000	102.995	72.712	99.471	101.074	105.724	-	1,996.198
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,325.423	76.949	111.850	77.995	25.000	102.995	72.712	99.471	101.074	105.724	-	1,996.198
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,325.423	76.949	111.850	77.995	25.000	102.995	72.712	99.471	101.074	105.724	-	1,996.198

(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:

(E09900) 30mm M789 High Explosive Dual Purpose Cartridge is the only qualified combat cartridge for use in the Apache Helicopter's M230 Chain Gun. It is also used by the 160th 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.

(E10100) 30mm M788 30mm Target Practice 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.

(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. This item is Code B, not approved for service use.

(E07306) 30x173mm MK239 Target Practice with Tracer (TP-T) cartridge is a Navy qualified training cartridge that is ballistically matched to the MK238 and MK266 High Explosive Incendiary with Tracer (HEI-T) cartridges. The MK239 cartridge consists of an inert projectile, a glass-reinforced nylon rotating band, a tracer, AFP-001 propellant, an M36A2 percussion primer, and an aluminum cartridge case. The MK239 cartridges are packed 30 cartridges per M592 ammunition container. 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 DNAG 8235 percussion primer, and a steel cartridge case. The MK258 cartridges are packed 30 cartridges per M592 ammunition container. This item is code B, not approved for service use.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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>(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, ATK151-LD fuze, a tracer, AFP-001 propellant, and an M36A2 percussion primer. The MK238 cartridges are packed 30 cartridges per M592 container. This item is code B, not approved for service use.</p> <p>(E07610) 30x173mm MK310 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. This item is Code B, not approved for service use.</p>		

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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		- / -	109,663 / 6.437	245,054 / 14.550	- / -	36,534 / 3.000	36,534 / 3.000
P-5	E07406 / CTG, 30mm Hi Expl Incendry-T(HEI-T), Mk238 [AC27]	P-5a, P-21	B		- / -	52,934 / 9.176	115,882 / 14.300	41,051 / 8.281	36,531 / 6.000	77,582 / 14.281
P-5	E07610 / CTG, 30MM, Progmabl Air Burst Mun, Mk310, single	P-5a, P-21	B		- / -	- / -	- / -	20,472 / 17.536	- / -	20,472 / 17.536
P-5	E09191 / CTG, 30MM, TPFSDS-T, Mk317 (sabot trnr), single [AC28]	P-5a, P-21	B		- / -	35,091 / 5.581	111,285 / 15.000	76,931 / 11.123	31,066 / 4.000	107,997 / 15.123
P-5	E09292 / CTG, 30MM, APFSDS-T, Mk258, single [AC26]	P-5a, P-21	B		- / -	23,075 / 13.754	39,138 / 25.500	21,264 / 13.447	21,816 / 12.000	43,080 / 25.447
P-5	E09900 / CTG 30MM HEDP M789 [B129]	P-5a	A		- / 960.552	206,511 / 20.000	149,865 / 20.000	38,374 / 5.105	- / -	38,374 / 5.105
P-5	E10100 / CTG 30MM TP M788 [B118]	P-5a, P-21	A		- / 364.871	1,063,421 / 22.001	868,420 / 22.500	839,178 / 22.503	- / -	839,178 / 22.503
P-40	Total Gross/Weapon System Cost				- / 1,325.423	- / 76.949	- / 111.850	- / 77.995	- / 25.000	- / 102.995

*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 2019 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements IAW DoD Instruction 3000.04 (Munitions Requirements Process) and AR 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support 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.

FY 2019 OCO includes \$25.000 million to support the COCOM requirement for unit equipment sets to deter potential adversaries and support the European Deterrence Initiative. The procurement includes .054 million 30mm MK239 Cartridges, .037 30mm MK238 Cartridges, .031 30mm MK317 Cartridges, and .022 million MK258 Cartridges.

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 2019 Base procurement dollars in the amount of \$77.995 million supports the procurement of 1.037 million cartridges.
 FY 2019 Overseas Contingency Operations (OCO) dollars in the amount of \$25.000 million supports the procurement of .143 million cartridges.

(E09900) CTG 30mm HEDP M789 - This is a war reserve item used in combat. FY 2019 procurement request builds a war reserve inventory in accordance with the Army's procurement goals. The FY 2019 Base procurement dollars in the amount of \$5.105 million supports the procurement of .038 million M789 cartridges.

TYPE CLASSIFICATION DATE: 1962

(E10100) CTG 30mm TP M788 - This is a training unique item not used in combat. FY 2019 procurement request supports annual training and builds a depot level in accordance with the Army's procurement goals. The FY 2019 Base procurement dollars in the amount of \$22.503 million supports the procurement of .839 million M788 cartridges.

TYPE CLASSIFICATION DATE: 1982

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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>(E09191) CTG 30x173mm MK317 - This is a training unique item not used in combat. FY 2019 procurement request supports annual training and builds a depot level in accordance with the Army's procurement goals. The FY 2019 Base procurement dollars in the amount of \$11.123 million supports the procurement of .077 million 30mm MK317 cartridges. FY 2019 EDI OCO procurement dollars in the amount of \$4.000 million supports the procurement of .031 million 30mm MK317 cartridges.</p> <p>TYPE CLASSIFICATION DATE: PENDING</p> <p>(E07306) CTG 30x173mm MK239 - This is a training unique item not used in combat. FY 2019 procurement request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2019 EDI OCO procurement dollars in the amount of \$3.000 million supports the procurement of .037 million 30mm MK239 cartridges.</p> <p>TYPE CLASSIFICATION DATE: PENDING</p> <p>(E09292) CTG 30x173mm MK258 - This is a war reserve item used in combat. FY 2019 procurement builds a war reserve inventory in accordance with the Army's procurement goals. The FY 2019 Base procurement dollars in the amount of \$13.447 million supports the procurement of .021 million 30mm MK258 cartridges. FY 2019 EDI OCO procurement dollars in the amount of \$12.000 million supports the procurement of .022 million 30mm MK258 cartridges.</p> <p>TYPE CLASSIFICATION DATE: PENDING</p> <p>(E07406) CTG 30x173mm MK238 High Explosive Incendiary with Tracer (HEI-T) - This is a war reserve item used in combat. FY 2019 procurement builds a war reserve inventory in accordance with the Army's procurement goals. The FY 2019 Base procurement dollars in the amount of \$8.281 million supports the procurement of .041 million 30mm MK238 cartridges. FY 2019 EDI OCO procurement dollars in the amount of \$6.000 million supports the procurement of .037 million 30mm MK258 cartridges.</p> <p>TYPE CLASSIFICATION DATE: PENDING</p> <p>(E07610) 30x173mm MK310 Programmable Air Burst Munition with Tracer (PABM-T) - This is a war reserve item used in combat. FY 2019 procurement request builds a war reserve inventory in accordance with the Army's procurement goals. The FY 2019 Base procurement dollars in the amount of \$17.536 million supports the procurement of .020 million 30mm MK310 cartridges. E07610 is a new start in FY 2019.</p> <p>TYPE CLASSIFICATION DATE: PENDING</p>		

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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:					
Resource Summary				Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)				-	109,663	245,054	-	36,534	36,534
Gross/Weapon System Cost (\$ in Millions)				-	6.437	14.550	-	3.000	3.000
Less PY Advance Procurement (\$ in Millions)				-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)				-	6.437	14.550	-	3.000	3.000
Plus CY Advance Procurement (\$ in Millions)				-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)				-	6.437	14.550	-	3.000	3.000
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>									
Initial Spares (\$ in Millions)				-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)				-	58.70	59.37	-	82.12	82.12

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 ^(†)	-	-	-	48.74	109,663	5.345	53.31	245,054	13.064	-	-	-	55.73	36,534	2.036	55.73	36,534	2.036
Subtotal: Recurring Cost	-	-	-	-	-	5.345	-	-	13.064	-	-	0.000	-	-	2.036	-	-	2.036
Subtotal: Hardware Cost	-	-	-	-	-	5.345	-	-	13.064	-	-	0.000	-	-	2.036	-	-	2.036
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	0.410	-	-	0.445	-	-	-	-	-	0.445	-	-	0.445
Subtotal: Support - Acceptance Testing Cost	-	-	-	-	-	0.410	-	-	0.445	-	-	0.000	-	-	0.445	-	-	0.445
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	0.672	-	-	1.022	-	-	-	-	-	0.509	-	-	0.509
Subtotal: Support - Production Engineering Cost	-	-	-	-	-	0.672	-	-	1.022	-	-	0.000	-	-	0.509	-	-	0.509
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	0.010	-	-	0.020	-	-	-	-	-	0.010	-	-	0.010
Subtotal: Support - Quality Assurance Cost	-	-	-	-	-	0.010	-	-	0.020	-	-	0.000	-	-	0.010	-	-	0.010
Gross/Weapon System Cost	-	-	-	58.70	109,663	6.437	59.37	245,054	14.550	-	-	-	82.12	36,534	3.000	82.12	36,534	3.000

^(†) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018				
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		2017	ORBITAL ALLIANT TECHSYSTEMS / PLYMOUTH, MN	C / FFP	ROCK ISLAND ARSENAL, IL	Jul 2017	Jul 2018	109,663	48.74	Y		
Complete Round		2018	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Mar 2019	245,054	53.31	Y		
Complete Round	✓	2019	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Mar 2020	36,534	55.73	Y		

Remarks:

This item is part of a combined 20mm, 25mm, 30mm contract FY 2013 - FY 2018. Quantity split is determined in year of execution between two contractors: General Dynamics Ordnance and Tactical Systems, Marion, IL and Alliant Techsystems Operations, Plymouth, MN. FY 2019 requirements will be part of a new FY 2019 contract.

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 [AC27]

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	52,934	115,882	41,051	36,531	77,582
Gross/Weapon System Cost (\$ in Millions)	-	9.176	14.300	8.281	6.000	14.281
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	9.176	14.300	8.281	6.000	14.281
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	9.176	14.300	8.281	6.000	14.281

(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)	-	173.35	123.40	201.72	164.24	184.08

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	52,934	7.602	107.91	115,882	12.505	164.24	41,051	6.742	164.24	36,531	6.000	164.24	77,582	12.742
Subtotal: Recurring Cost	-	-	-	-	-	7.602	-	-	12.505	-	-	6.742	-	-	6.000	-	-	12.742
Subtotal: Hardware Cost	-	-	-	-	-	7.602	-	-	12.505	-	-	6.742	-	-	6.000	-	-	12.742
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	0.598	-	-	0.711	-	-	0.711	-	-	-	-	-	0.711
Subtotal: Support - Acceptance Testing Cost	-	-	-	-	-	0.598	-	-	0.711	-	-	0.711	-	-	-	-	-	0.711
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	0.966	-	-	1.074	-	-	0.818	-	-	0.000	-	-	0.818
Subtotal: Support - Production Engineering Cost	-	-	-	-	-	0.966	-	-	1.074	-	-	0.818	-	-	0.000	-	-	0.818
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	0.010	-	-	0.010	-	-	0.010	-	-	-	-	-	0.010
Subtotal: Support - Quality Assurance Cost	-	-	-	-	-	0.010	-	-	0.010	-	-	0.010	-	-	-	-	-	0.010
Gross/Weapon System Cost	-	-	-	173.35	52,934	9.176	123.40	115,882	14.300	201.72	41,051	8.281	164.24	36,531	6.000	184.08	77,582	14.281

(†) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018				
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 [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 ^(†)		2017	ORBITAL ALLIANT TECHSYSTEMS / PLYMOUTH, MN	C / FFP	ROCK ISLAND ARSENAL, IL	Jul 2017	Jul 2018	52,934	143.62	Y		
COMPLETE ROUND ^(†)		2018	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Mar 2019	115,882	107.91	Y		
COMPLETE ROUND ^(†)		2019	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Mar 2020	77,582	164.24	Y		

^(†) indicates the presence of a P-21

Remarks:

This item is part of a combined 20mm, 25mm, and 30mm contract for FY 2013 - FY 2018. Quantity split is determined in year of execution between two contractors: General Dynamics Ordnance and Tactical Systems, Marion, IL and Alliant Techsystems Operations, Plymouth, MN. FY 2019 requirements will be part of a new FY 2019 contract.

UNCLASSIFIED

Exhibit P-21, Production Schedule: PB 2019 Army												Date: February 2018																	
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 [AC27]											

Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2017												Fiscal Year 2018												B A L A N C E							
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	Calendar Year 2017												Calendar Year 2018																		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P						
COMPLETE ROUND																																					
	1	2017	ARMY	52.934	.000	52.934													A	-	-	-	-	-	-	-	-	-	-	-	-	25.000	27.934		.000		
	2	2018	ARMY	115.882	.000	115.882																															115.882
	2	2019	ARMY	77.582	.000	77.582																															77.582
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army																							Date: February 2018								
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 [AC27]											
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 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	2017	ARMY	52.934	52.934	.000																								.000	
	2	2018	ARMY	115.882	115.882	.000																								.000	
	2	2019	ARMY	77.582	45.262	32.320	6.464	6.464	6.464	6.464	6.464																			.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 2019 Army		Date: February 2018
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 [AC27]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	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	ORBITAL ALLIANT TECHSYSTEMS - PLYMOUTH, MN	1,000	80,000	160,000	6	6	12	18	6	6	12	18
2	TO BE SELECTED - TBS01	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 2019 Army		Date: February 2018
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, single

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	-	-	20,472	-	20,472
Gross/Weapon System Cost (\$ in Millions)	-	-	-	17.536	-	17.536
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	-	-	17.536	-	17.536
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	-	-	17.536	-	17.536

(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)	-	-	-	856.58	-	856.58

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 ^(†)	-	-	-	-	-	-	-	-	-	765.49	20,472	15.671	-	-	-	765.49	20,472	15.671
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	-	-	-	15.671	-	-	-	-	-	15.671
Subtotal: Hardware Cost	-	-	-	-	-	-	-	-	-	-	-	15.671	-	-	-	-	-	15.671
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	-	-	-	-	-	-	0.100	-	-	-	-	-	0.100
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.100	-	-	-	-	-	0.100
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	-	-	-	-	-	-	1.754	-	-	-	-	-	1.754
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	-	-	-	-	-	-	1.754	-	-	-	-	-	1.754
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	-	-	-	-	-	-	0.010	-	-	-	-	-	0.010
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.010	-	-	-	-	-	0.010
Gross/Weapon System Cost	-	-	-	-	-	-	-	-	-	856.58	20,472	17.536	-	-	-	856.58	20,472	17.536

^(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018					
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, single					
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	ROCK ISLAND ARSENAL, IL	Mar 2019	Mar 2020	20,472	765.49	N		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2019 Army															Date: February 2018														
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, single									

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

Complete Round																																		
1	2019	ARMY		20.472	11.942	8.530	1.706	1.706	1.706	1.706	1.706																							.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 2019 Army		Date: February 2018
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, single

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	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	1,000	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 2019 Army		Date: February 2018
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, TPFSDS-T, Mk317 (sabot trnr), single [AC28]

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	35,091	111,285	76,931	31,066	107,997
Gross/Weapon System Cost (\$ in Millions)	-	5.581	15.000	11.123	4.000	15.123
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	5.581	15.000	11.123	4.000	15.123
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	5.581	15.000	11.123	4.000	15.123

(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)	-	159.04	134.79	144.58	128.76	140.03

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 ^(†)	-	-	-	112.59	35,091	3.951	122.31	111,285	13.611	128.75	76,931	9.905	128.75	31,066	4.000	128.75	107,997	13.905
Subtotal: Recurring Cost	-	-	-	-	-	3.951	-	-	13.611	-	-	9.905	-	-	4.000	-	-	13.905
Subtotal: Hardware Cost	-	-	-	-	-	3.951	-	-	13.611	-	-	9.905	-	-	4.000	-	-	13.905
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	0.835	-	-	0.304	-	-	0.304	-	-	-	-	-	0.304
Subtotal: Support - Acceptance Testing Cost	-	-	-	-	-	0.835	-	-	0.304	-	-	0.304	-	-	-	-	-	0.304
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	0.785	-	-	1.075	-	-	0.904	-	-	0.000	-	-	0.904
Subtotal: Support - Production Engineering Cost	-	-	-	-	-	0.785	-	-	1.075	-	-	0.904	-	-	0.000	-	-	0.904
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	0.010	-	-	0.010	-	-	0.010	-	-	-	-	-	0.010
Subtotal: Support - Quality Assurance Cost	-	-	-	-	-	0.010	-	-	0.010	-	-	0.010	-	-	-	-	-	0.010
Gross/Weapon System Cost	-	-	-	159.04	35,091	5.581	134.79	111,285	15.000	144.58	76,931	11.123	128.76	31,066	4.000	140.03	107,997	15.123

^(†) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018					
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, TPFSDS-T, Mk317 (sabot trnr), 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 ^(†)		2017	GENERAL DYNAMICS ORD & TAC / MARION, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Jul 2017	May 2018	35,091	112.59	Y		
Complete Round ^(†)		2018	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Mar 2019	111,285	122.31	Y		
Complete Round ^(†)		2019	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Mar 2020	107,997	128.75	Y		

^(†) indicates the presence of a P-21

Remarks:

This item is part of a combined 20mm, 25mm and 30mm contract for FY 2013 - FY 2018. Quantity split is determined in year of execution between two contractors: General Dynamics Ordnance and Tactical Systems, Marion, IL and Alliant Techsystems Operations, Plymouth, MN. FY 2019 requirements will be part of a new FY 2019 contract.

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Exhibit P-21, Production Schedule: PB 2019 Army															Date: February 2018														
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, TPFSDS-T, Mk317 (sabot trnr), single [AC28]									

Cost Elements <i>(Units in Thousands)</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	2017	ARMY	35.091	35.091	.000																							.000					
	2	2018	ARMY	111.285	.000	111.285	-	-	-	-	-	9.273	9.274	9.273	9.274	9.273	9.274	9.274	9.274	9.274	9.274	9.274	9.274	9.274	9.274	9.274			.000					
	2	2019	ARMY	107.997	.000	107.997						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	9.019	8.998	8.998	8.998	8.998	8.998	8.998	8.998	44.990
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army													Date: February 2018												
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, TPFSDS-T, Mk317 (sabot trnr), single [AC28]													

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
Complete Round																														
	1	2017	ARMY	35.091	35.091	.000																							.000	
	2	2018	ARMY	111.285	111.285	.000																							.000	
	2	2019	ARMY	107.997	63.007	44.990	8.998	8.998	8.998	8.998	8.998																		.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 2019 Army		Date: February 2018
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, TPFSDS-T, Mk317 (sabot trnr), single [AC28]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	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	TO BE SELECTED - TBS01	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 2019 Army		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	23,075	39,138	21,264	21,816	43,080
Gross/Weapon System Cost (\$ in Millions)	-	13.754	25.500	13.447	12.000	25.447
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	13.754	25.500	13.447	12.000	25.447
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	13.754	25.500	13.447	12.000	25.447

(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)	-	596.06	651.54	632.38	550.06	590.69

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 ^(†)	-	-	-	487.67	23,075	11.253	600.16	39,138	23.489	550.05	21,264	11.696	550.05	21,816	12.000	550.05	43,080	23.696
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	<i>11.253</i>	-	-	<i>23.489</i>	-	-	<i>11.696</i>	-	-	<i>12.000</i>	-	-	<i>23.696</i>
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	11.253	-	-	23.489	-	-	11.696	-	-	12.000	-	-	23.696
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	1.354	-	-	0.709	-	-	0.709	-	-	-	-	-	0.709
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	1.354	-	-	0.709	-	-	0.709	-	-	-	-	-	0.709
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	1.137	-	-	1.292	-	-	1.032	-	-	0.000	-	-	1.032
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	1.137	-	-	1.292	-	-	1.032	-	-	0.000	-	-	1.032
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	0.010	-	-	0.010	-	-	0.010	-	-	-	-	-	0.010
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	-	-	-	0.010	-	-	0.010	-	-	0.010	-	-	-	-	-	0.010
Gross/Weapon System Cost	-	-	-	596.06	23,075	13.754	651.54	39,138	25.500	632.38	21,264	13.447	550.06	21,816	12.000	590.69	43,080	25.447

^(†) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018					
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 ^(†)		2017	GENERAL DYNAMICS ORD & TAC / MARION, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Sep 2017	May 2018	23,075	487.67	Y		
COMPLETE ROUND ^(†)		2018	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Mar 2019	39,138	600.16	Y		
COMPLETE ROUND ^(†)		2019	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Mar 2020	43,080	550.05	Y		

^(†) indicates the presence of a P-21

Remarks:

This item is part of a combined 20mm, 25mm, 30mm contract FY 2013 - FY 2018. Quantity split is determined in year of execution between two contractors: General Dynamics and Tactical Systems, Marion, IL and Alliant Techsystems Operations, Plymouth, MN. FY 2019 requirements will be part of a new FY 2019 contract.

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Exhibit P-21, Production Schedule: PB 2019 Army	Date: February 2018
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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]
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Cost Elements <i>(Units in Thousands)</i>						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																																		
	1	2017	ARMY	23.075	23.075	.000																												.000
	2	2018	ARMY	39.138	.000	39.138	-	-	-	-	-	3.261	3.262	3.261	3.262	3.261	3.262	3.261	3.262	3.261	3.262	3.261	3.262	3.261	3.262	3.261	3.262							.000
	2	2019	ARMY	43.080	.000	43.080						A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	43.080				.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 2019 Army		Date: February 2018
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 2019	1-8-5 For 2019	MAX For 2019	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	12	18	6	6	12	18
2	TO BE SELECTED - TBS01	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 2019 Army		Date: February 2018
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 [B129]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	206,511	149,865	38,374	-	38,374
Gross/Weapon System Cost (\$ in Millions)	960.552	20.000	20.000	5.105	-	5.105
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	960.552	20.000	20.000	5.105	-	5.105
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	960.552	20.000	20.000	5.105	-	5.105

(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)	-	96.85	133.45	133.03	-	133.03

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 ^(†)	74.24	12,856,180	954.437	85.67	206,511	17.692	122.33	149,865	18.333	124.70	38,374	4.785	-	-	-	124.70	38,374	4.785
Subtotal: Recurring Cost	-	-	954.443	-	-	17.692	-	-	18.333	-	-	4.785	-	-	-	-	-	4.785
Subtotal: Hardware Cost	-	-	954.443	-	-	17.692	-	-	18.333	-	-	4.785	-	-	-	-	-	4.785
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	-	-	-	-	-	-	0.008	-	-	-	-	-	0.008
Subtotal: Support - Acceptance Testing Cost	-	-	-	-	-	-	-	-	-	-	-	0.008	-	-	-	-	-	0.008
Support - Production Engineering Cost																		
Production Engineering	-	-	6.060	-	-	2.300	-	-	1.659	-	-	0.306	-	-	-	-	-	0.306
Subtotal: Support - Production Engineering Cost	-	-	6.060	-	-	2.300	-	-	1.659	-	-	0.306	-	-	-	-	-	0.306
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.049	-	-	0.008	-	-	0.008	-	-	0.006	-	-	-	-	-	0.006
Subtotal: Support - Quality Assurance Cost	-	-	0.049	-	-	0.008	-	-	0.008	-	-	0.006	-	-	-	-	-	0.006
Gross/Weapon System Cost	-	-	960.552	96.85	206,511	20.000	133.45	149,865	20.000	133.03	38,374	5.105	-	-	-	133.03	38,374	5.105

^(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army **Date:** February 2018

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 [B129]
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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		2017	GENERAL DYNAMICS ORD & TAC / MARION, IL	C / FFP	ROCK ISLAND ARSENAL, IL	May 2017	Oct 2018	82,604	85.67	Y		
COMPLETE ROUND		2017	ORBITAL ALLIANT TECHSYSTEMS / PLYMOUTH, MN	C / FFP	ROCK ISLAND ARSENAL, IL	May 2017	Jan 2018	123,907	85.67	Y		
COMPLETE ROUND		2018	TO BE SELECTED / TBS02	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Mar 2019	74,933	122.33	Y		
COMPLETE ROUND		2018	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Mar 2019	74,932	122.33	Y		
COMPLETE ROUND		2019	TO BE SELECTED / TBS02	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Mar 2020	19,187	124.70	Y		
COMPLETE ROUND		2019	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Mar 2020	19,187	124.70	Y		

Remarks:
This item is part of a combined 20mm, 25mm and 30mm contract FY 2013 - FY 2018. Quantity split is determined in year of execution between two contractors: General Dynamics Ordnance and Tactical Systems, Marion, IL and Alliant Techsystems Operations, Plymouth, MN. FY 2019 requirements will be part of a new FY 2019 contract.

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 [B118]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	1,063,421	868,420	839,178	-	839,178
Gross/Weapon System Cost (\$ in Millions)	364.871	22.001	22.500	22.503	-	22.503
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	364.871	22.001	22.500	22.503	-	22.503
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	364.871	22.001	22.500	22.503	-	22.503

(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)	-	20.69	25.91	26.82	-	26.82

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 ^(†)	18.11	19,517,593	353.459	18.31	1,063,421	19.471	23.69	868,420	20.573	24.15	839,178	20.266	-	-	-	24.15	839,178	20.266
Subtotal: Recurring Cost	-	-	353.464	-	-	19.471	-	-	20.573	-	-	20.266	-	-	-	-	-	20.266
Subtotal: Hardware Cost	-	-	353.464	-	-	19.471	-	-	20.573	-	-	20.266	-	-	-	-	-	20.266
Support - Product Improvement Cost																		
Safety	-	-	-	-	-	0.600	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Product Improvement Cost	-	-	-	-	-	0.600	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	11.394	-	-	1.921	-	-	1.919	-	-	2.227	-	-	-	-	-	2.227
Subtotal: Support - Production Engineering Cost	-	-	11.394	-	-	1.921	-	-	1.919	-	-	2.227	-	-	-	-	-	2.227
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.013	-	-	0.008	-	-	0.008	-	-	0.009	-	-	-	-	-	0.009
Subtotal: Support - Quality Assurance Cost	-	-	0.013	-	-	0.008	-	-	0.008	-	-	0.009	-	-	-	-	-	0.009
Gross/Weapon System Cost	-	-	364.871	20.69	1,063,421	22.001	25.91	868,420	22.500	26.82	839,178	22.503	-	-	-	26.82	839,178	22.503

(†) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2019 Army **Date:** February 2018

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 [B118]
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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 ^(†)		2017	GENERAL DYNAMICS ORD & TAC / MARION, IL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2017	Nov 2018	584,882	18.31	Y		
COMPLETE ROUND ^(†)		2017	ORBITAL ALLIANT TECHSYSTEMS / PLYMOUTH, MN	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2017	May 2018	478,539	18.31	Y		
COMPLETE ROUND ^(†)		2018	TO BE SELECTED / TBS02	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Mar 2019	434,210	23.70	Y		
COMPLETE ROUND ^(†)		2018	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Mar 2019	434,210	23.70	Y		
COMPLETE ROUND ^(†)		2019	TO BE SELECTED / TBS02	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Mar 2020	419,589	24.15	Y		
COMPLETE ROUND ^(†)		2019	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Mar 2020	419,589	24.15	Y		

^(†) indicates the presence of a P-21

Remarks:

This item is part of a combined 20mm, 25mm, 30MM contract FY 2013 - FY 2018. Quantity split is determined in year of execution between two contractors. General Dynamics Ordnance and Tactical Systems, Marion, IL and Alliant Techsystems Operations, Plymouth MN. FY 2019 requirements will be part of a new FY 2019 contract. This is a training unique item not used in combat. FY2019 procurement supports annual training and build a depot level in accordance with the Army's procurement goals. Type Classification Date: 1982

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Exhibit P-21, Production Schedule: PB 2019 Army **Date:** February 2018

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 [B118]

Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2017												Fiscal Year 2018												B A L A N C E	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	Calendar Year 2017												Calendar Year 2018												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
COMPLETE ROUND																															
Prior Years Deliveries: 19517593																															
	1	2017	ARMY	584.882	.000	584.882																							584.882		
	3	2017	ARMY	478.539	.000	478.539																							.000		
	2	2018	ARMY	434.210	.000	434.210																							434.210		
	4	2018	ARMY	434.210	.000	434.210																							434.210		
	2	2019	ARMY	419.589	.000	419.589																							419.589		
	4	2019	ARMY	419.589	.000	419.589																							419.589		

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Exhibit P-21, Production Schedule: PB 2019 Army **Date:** February 2018

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 [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	ACCEP T O 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: 19517593																																			
	1	2017	ARMY	584.882	.000	584.882	-	120.000	120.000	120.000	120.000	104.882																	.000						
	3	2017	ARMY	478.539	478.539	.000																							.000						
	2	2018	ARMY	434.210	.000	434.210	-	-	-	-	-	36.186	36.184	36.184	36.184	36.184	36.184	36.184	36.184	36.184	36.184	36.184	36.184	36.184	36.184	36.184	36.184		.000						
	4	2018	ARMY	434.210	.000	434.210	-	-	-	-	-	36.186	36.184	36.184	36.184	36.184	36.184	36.184	36.184	36.184	36.184	36.184	36.184	36.184	36.184	36.184	36.184		.000						
	2	2019	ARMY	419.589	.000	419.589						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34.974	34.965	34.965	34.965	34.965	34.965	34.965	174.825
	4	2019	ARMY	419.589	.000	419.589						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34.974	34.965	34.965	34.965	34.965	34.965	34.965	174.825
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army **Date:** February 2018

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 [B118]
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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 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: 19517593																														
	1	2017	ARMY	584.882	584.882	.000																							.000	
	3	2017	ARMY	478.539	478.539	.000																							.000	
	2	2018	ARMY	434.210	434.210	.000																							.000	
	4	2018	ARMY	434.210	434.210	.000																							.000	
	2	2019	ARMY	419.589	244.764	174.825	34.965	34.965	34.965	34.965	34.965																		.000	
	4	2019	ARMY	419.589	244.764	174.825	34.965	34.965	34.965	34.965	34.965																		.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 2019 Army **Date:** February 2018

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 [B118]
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MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	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	120,000	200,000	6	6	12	18	6	6	12	18
2	TO BE SELECTED - TBS02	1,000	120,000	200,000	6	6	12	18	6	6	12	18
3	ORBITAL ALLIANT TECHSYSTEMS - PLYMOUTH, MN	1,000	120,000	200,000	6	6	12	18	6	6	12	18
4	TO BE SELECTED - TBS01	1,000	120,000	200,000	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 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	721.087	118.747	108.189	69.781	-	69.781	98.550	109.772	125.469	149.519	-	1,501.114
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	721.087	118.747	108.189	69.781	-	69.781	98.550	109.772	125.469	149.519	-	1,501.114
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	721.087	118.747	108.189	69.781	-	69.781	98.550	109.772	125.469	149.519	-	1,501.114

(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:

(E11800) CTG 40mm M430A1 is a High-Explosive Dual Purpose cartridge (HEDP), and is fired from a MK19 Grenade Machine Gun at a max range of 2,200 meters. It is capable of penetrating three inches of steel armor and inflicting personnel casualties in the target area. This item is Code A, 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 unaided eye, 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.

(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 unaided eye, 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.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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		- / -	2,752,298 / 34.000	1,049,196 / 23.000	632,995 / 11.206	- / -	632,995 / 11.206
P-5	E05611 / CTG, 40MM TP-DAY/NITE/THER,HI VEL,M918E1 f/ MK19GMG [BA55]	P-5a, P-21	B		- / -	3,415,422 / 77.824	2,717,867 / 82.276	2,222,480 / 55.626	- / -	2,222,480 / 55.626
P-5	E11800 / CTG 40MM HEDP M430A1 series F/MK19 MG [B542]		A		- / 721.087	120,220 / 6.923	41,881 / 2.913	31,622 / 2.949	- / -	31,622 / 2.949
P-40	Total Gross/Weapon System Cost				- / 721.087	- / 118.747	- / 108.189	- / 69.781	- / -	- / 69.781

*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 2019 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements IAW DoD Instruction 3000.04 (Munitions Requirements Process) and AR 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support 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 2019 Base procurement dollars in the amount of \$69.781 million supports the procurement of 2.887 million cartridges.

(E05611) CTG, 40MM, M918E1 High Velocity Day Night Thermal - This is a training unique item not used in combat. The FY 2019 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$55.626 million supports the procurement of 2.222 million M918E1 cartridges.
Type Classification Date: Pending

(E05610) CTG, 40MM, M781E1 Low Velocity Day Night Thermal - This is a training unique item not used in combat. The FY 2019 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$11.206 million supports the procurement of .633 million M781E1 cartridges.
Type Classification Date: Pending

(E11800) CTG 40MM HEDP M430A1 F/MK19 MG - This is a war reserve item used in combat. FY 2019 request builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$2.949 million supports the procurement of .032 million M430A1 Cartridges.
Type Classification Date: 1971

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	2,752,298	1,049,196	632,995	-	632,995
Gross/Weapon System Cost (\$ in Millions)	-	34.000	23.000	11.206	-	11.206
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	34.000	23.000	11.206	-	11.206
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	34.000	23.000	11.206	-	11.206

(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)	-	12.35	21.92	17.70	-	17.70

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 ^(†)	-	-	-	11.56	2,752,298	31.817	20.00	1,049,196	20.984	14.98	632,995	9.482	-	-	-	14.98	632,995	9.482
Subtotal: Recurring Cost	-	-	-	-	-	31.817	-	-	20.984	-	-	9.482	-	-	-	-	-	9.482
Subtotal: Hardware Cost	-	-	-	-	-	31.817	-	-	20.984	-	-	9.482	-	-	-	-	-	9.482
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	0.158	-	-	-	-	-	0.174	-	-	-	-	-	0.174
Subtotal: Support - Acceptance Testing Cost	-	-	-	-	-	0.158	-	-	-	-	-	0.174	-	-	-	-	-	0.174
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	1.989	-	-	1.902	-	-	1.540	-	-	-	-	-	1.540
Subtotal: Support - Production Engineering Cost	-	-	-	-	-	1.989	-	-	1.902	-	-	1.540	-	-	-	-	-	1.540
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	0.010	-	-	0.005	-	-	0.010	-	-	-	-	-	0.010
Subtotal: Support - Quality Assurance Cost	-	-	-	-	-	0.010	-	-	0.005	-	-	0.010	-	-	-	-	-	0.010
Support - Study & Analysis Cost																		
Study & Analysis	-	-	-	-	-	0.027	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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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Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 - Study & Analysis Cost</i>	-	-	-	-	-	0.027	-	-	-	-	-	-	-	-	-	-	-	-
Support - System Test and Evaluation Cost																		
Operational Test and Evaluation	-	-	-	-	-	-	-	-	0.109	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - System Test and Evaluation Cost</i>	-	-	-	-	-	-	-	-	0.109	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	-	12.35	2,752,298	34.000	21.92	1,049,196	23.000	17.70	632,995	11.206	-	-	-	17.70	632,995	11.206

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

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018				
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 ^(†)		2017	GENERAL DYNAMICS ORD & TAC / MARION, IL	C / FFP	PICATINNY ARSENAL, NJ	Jul 2017	Dec 2018	2,752,298	11.56	Y		
COMPLETE ROUND ^(†)		2018	GENERAL DYNAMICS ORD & TAC / MARION, IL	C / FFP	PICATINNY ARSENAL, NJ	Mar 2018	Mar 2019	1,049,196	20.00	Y		
COMPLETE ROUND ^(†)		2019	GENERAL DYNAMICS ORD & TAC / MARION, IL	C / FFP	PICATINNY ARSENAL, NJ	Mar 2019	Jul 2020	632,995	14.98	Y		

^(†) indicates the presence of a P-21

Remarks:
FY 2017, FY 2018, AND FY 2019 COMPLETE ROUND IS A DELIVERY ORDER TO AN EXISTING CONTRACT.

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Exhibit P-21, Production Schedule: PB 2019 Army		Date: February 2018
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 2017												Fiscal Year 2018												B A L A N C E	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 1 6	BAL D U E A S O F 1 O C T	Calendar Year 2017												Calendar Year 2018												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
COMPLETE ROUND																															
	1	2017	ARMY	2.752	.000	2.752																							2.752		
	1	2018	ARMY	1.049	.000	1.049																							1.049		
	1	2019	ARMY	.633	.000	.633																							.633		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army		Date: February 2018
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 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																																	
	1	2017	ARMY	2.752	.000	2.752	-	-	.375	.375	.375	.375	.375	.375	.375	.127														.000			
	1	2018	ARMY	1.049	.000	1.049	-	-	-	-	-	.087	.087	.087	.087	.087	.087	.087	.087	.087	.087	.087	.087	.087					.000				
	1	2019	ARMY	.633	.000	.633						A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.053	.053	.053	.475			
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army		Date: February 2018
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 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	2017	ARMY	2.752	2.752	.000																							.000		
	1	2018	ARMY	1.049	1.049	.000																							.000		
	1	2019	ARMY	.633	.158	.475	.053	.053	.053	.053	.053	.053	.053	.053															.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 2019 Army		Date: February 2018
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 2019	1-8-5 For 2019	MAX For 2019	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	125,000	375,000	6	6	16	22	6	6	16	22

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

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

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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:			
Resource Summary		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)		-	3,415,422	2,717,867	2,222,480	-	2,222,480
Gross/Weapon System Cost (\$ in Millions)		-	77.824	82.276	55.626	-	55.626
Less PY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)		-	77.824	82.276	55.626	-	55.626
Plus CY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)		-	77.824	82.276	55.626	-	55.626
<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)		-	22.79	30.27	25.03	-	25.03

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 ^(†)	-	-	-	21.17	3,415,422	72.304	28.44	2,717,867	77.296	22.54	2,222,480	50.095	-	-	-	22.54	2,222,480	50.095
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	72.304	-	-	77.296	-	-	50.095	-	-	-	-	-	50.095
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	72.304	-	-	77.296	-	-	50.095	-	-	-	-	-	50.095
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	0.409	-	-	-	-	-	0.434	-	-	-	-	-	0.434
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	0.409	-	-	-	-	-	0.434	-	-	-	-	-	0.434
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	5.070	-	-	4.864	-	-	5.087	-	-	-	-	-	5.087
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	5.070	-	-	4.864	-	-	5.087	-	-	-	-	-	5.087
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	0.010	-	-	0.006	-	-	0.010	-	-	-	-	-	0.010
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	-	-	-	0.010	-	-	0.006	-	-	0.010	-	-	-	-	-	0.010
Support - Study & Analysis Cost																		
Study & Analysis	-	-	-	-	-	0.030	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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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Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 - Study & Analysis Cost</i>	-	-	-	-	-	0.030	-	-	-	-	-	-	-	-	-	-	-	-
Support - System Test and Evaluation Cost																		
Test and Evaluation Support	-	-	-	-	-	-	-	-	0.109	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - System Test and Evaluation Cost</i>	-	-	-	-	-	-	-	-	0.109	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	-	22.79	3,415,422	77.824	30.27	2,717,867	82.276	25.03	2,222,480	55.626	-	-	-	25.03	2,222,480	55.626

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

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018				
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 ^(†)		2017	AMERICAN ORDNANCE LLC (IAAP) / MIDDLETOWN, IA	C / FFP	PICATINNY ARSENAL, NJ	Jul 2017	Dec 2018	3,415,422	21.17	Y		
COMPLETE ROUND ^(†)		2018	AMERICAN ORDNANCE LLC (IAAP) / MIDDLETOWN, IA	C / FFP	PICATINNY ARSENAL, NJ	Mar 2018	Mar 2019	2,717,867	28.44	Y		
COMPLETE ROUND ^(†)		2019	AMERICAN ORDNANCE LLC (IAAP) / MIDDLETOWN, IA	C / FFP	PICATINNY ARSENAL, NJ	Mar 2019	Jul 2020	2,222,480	22.54	Y		

^(†) indicates the presence of a P-21

Remarks:
FY 2017, FY 2018, AND FY 2019 COMPLETE ROUND IS A DELIVERY ORDER TO AN EXISTING CONTRACT.

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Exhibit P-21, Production Schedule: PB 2019 Army		Date: February 2018
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 2017												Fiscal Year 2018												B A L A N C E	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 1 6	BAL D U E A S O F 1 O C T	Calendar Year 2017												Calendar Year 2018												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
COMPLETE ROUND																															
	1	2017	ARMY	3.415	.000	3.415																							3.415		
	1	2018	ARMY	2.718	.000	2.718																							2.718		
	1	2019	ARMY	2.222	.000	2.222																							2.222		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army		Date: February 2018
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 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																																	
	1	2017	ARMY	3.415	.000	3.415	-	-	.500	.500	.500	.500	.500	.500	.415															.000			
	1	2018	ARMY	2.718	.000	2.718	-	-	-	-	-	.226	.226	.226	.226	.226	.226	.226	.226	.226	.226	.226	.226	.226	.226	.226	.226	.226	.226	.000			
	1	2019	ARMY	2.222	.000	2.222																											

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Exhibit P-21, Production Schedule: PB 2019 Army		Date: February 2018
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 #	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	2017	ARMY	3.415	3.415	.000																							.000		
	1	2018	ARMY	2.718	2.718	.000																							.000		
	1	2019	ARMY	2.222	.556	1.667	.185	.185	.185	.185	.185	.185	.185	.185															.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 2019 Army		Date: February 2018
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 2019	1-8-5 For 2019	MAX For 2019	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	500,000	6	6	16	22	6	6	16	22

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

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

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	120,220	41,881	31,622	-	31,622
Gross/Weapon System Cost (\$ in Millions)	721.087	6.923	2.913	2.949	-	2.949
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	721.087	6.923	2.913	2.949	-	2.949
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	721.087	6.923	2.913	2.949	-	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)	-	57.59	69.55	93.26	-	93.26

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	50.00	14,361,026	718.051	42.50	120,220	5.109	53.29	41,881	2.232	59.79	31,622	1.891	-	-	-	59.79	31,622	1.891
Subtotal: Recurring Cost	-	-	718.051	-	-	5.109	-	-	2.232	-	-	1.891	-	-	-	-	-	1.891
Subtotal: Hardware Cost	-	-	718.051	-	-	5.109	-	-	2.232	-	-	1.891	-	-	-	-	-	1.891
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	0.446	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Acceptance Testing Cost	-	-	-	-	-	0.446	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	2.997	-	-	1.368	-	-	0.672	-	-	1.054	-	-	-	-	-	1.054
Subtotal: Support - Production Engineering Cost	-	-	2.997	-	-	1.368	-	-	0.672	-	-	1.054	-	-	-	-	-	1.054
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.039	-	-	-	-	-	0.009	-	-	0.004	-	-	-	-	-	0.004
Subtotal: Support - Quality Assurance Cost	-	-	0.039	-	-	-	-	-	0.009	-	-	0.004	-	-	-	-	-	0.004
Gross/Weapon System Cost	-	-	721.087	57.59	120,220	6.923	69.55	41,881	2.913	93.26	31,622	2.949	-	-	-	93.26	31,622	2.949

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	521.058	65.984	57.359	45.280	0.218	45.498	54.817	30.619	44.171	35.361	-	854.867
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	521.058	65.984	57.359	45.280	0.218	45.498	54.817	30.619	44.171	35.361	-	854.867
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	521.058	65.984	57.359	45.280	0.218	45.498	54.817	30.619	44.171	35.361	-	854.867

(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) in all 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.

The M1061 is Code A, approved for service use.

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

The 60mm High Explosive (HE) Cartridges are Insensitive Munitions (IM) enhanced, HE rounds. The M786 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 2lbs. of an IM explosive. This round is used primarily in training because it is significantly less expensive than the M720A1, the preferred war fighting round. However, the M768 is lethal and can be used in combat.

This item is Code A, approved for service use.

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

The M769 is a low-cost, full range, practice round that will replace a percentage of the standard HE rounds used in 60mm mortar training. The M769 FRPC (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 HE 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.

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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>(E70400) CTG, 60mm Mortar VL ILLUM, M721 w/MTSQ Fuze The M721 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 visible light illumination. This visible light illumination allows for monitoring of enemy activities and adjustment of fire at greater observation distances during night operations. It also provides a means for day/night signaling. It is particularly useful in combined operations with allies who may not have night vision devices (NVDs). The M721/M767 Illumination Cartridges (Range 200 meter minimum to 3,200 meter maximum) are ballistically similar to the M720A1 HE Cartridge, allowing a gun to illuminate and fire on the same target without adjustments. These items are Code A, approved for service use.</p> <p>(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.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	E70400 / CTG, MORTAR, 60MM ILLUM VL M721 W/MTSQ FUZE [B647]	P-5a	A		- / 80.722	- / -	12,901 / 8.600	- / -	- / -	- / -
P-5	E72199 / CTG, MORTAR, 60MM HE ENFRAG M1061 SERIES W/MOFM [BA42]	P-5a, P-21	A		- / 23.223	20,530 / 21.923	10,650 / 15.559	14,761 / 15.859	176 / 0.176	14,937 / 16.035
P-5	E85700 / CTG, MORTAR, 60MM ILLUM IR M767 SERIES W/MTSQ FUZE [BA04]	P-5a	A		- / 44.634	11,648 / 8.022	- / -	- / -	55 / 0.042	55 / 0.042
P-5	E92200 / CTG, Mortar, 60MM FRTR M769 SERIES W/PRACTICE FUZE [BA15]	P-5a	A		- / 151.117	54,208 / 8.645	75,395 / 14.400	78,636 / 14.186	- / -	78,636 / 14.186
P-5	E92900 / CTG MORTAR 60MM HE M768 SERIES W/PD FUZE [BA45]	P-5a	A		- / 221.362	63,701 / 27.394	37,363 / 18.800	30,282 / 15.235	- / -	30,282 / 15.235
P-40	Total Gross/Weapon System Cost				- / 521.058	- / 65.984	- / 57.359	- / 45.280	- / 0.218	- / 45.498

*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 2019 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements IAW DoD Instruction 3000.04 (Munitions Requirements Process) and AR 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support 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 2019 Total BASE dollars in the amount of \$45.280 million supports the procurement of 123,679 cartridges.
 FY 2019 Total Overseas Contingency Operations (OCO) dollars in the amount of \$0.218 million supports the procurement of 231 cartridges.

E72199 - CTG, 60mm Mortar HE ENFRAG, M1061 Series w/MOFM
 This is a war reserve item used in combat. FY 2019 request builds a war reserve inventory in accordance with Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$15.859 million supports the procurement of 14,761 cartridges. FY 2019 OCO includes \$0.176 million to support the COCOM requirement for unit equipment sets to deter potential adversaries and support the European Deterrence Initiative. The procurement includes 176 cartridges.
 TYPE CLASSIFICATION DATE: 2013

E92200 - CTG, 60mm Mortar FRTR, M769 Series w/Practice Fuze
 This is a training unique item not used in combat. FY 2019 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$14.186 million supports the procurement of 78,636 cartridges.
 TYPE CLASSIFICATION DATE: 2001

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

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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>This is a training standard item used in training and combat. FY 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$15.235 million supports the procurement of 30,282 cartridges. TYPE CLASSIFICATION DATE: 2001</p> <p>E70400 -CTG, 60mm Mortar VL ILLUM, M721 w/MTSQ Fuze This is a training standard item used in training and combat. Request supports annual training and builds a war reserve inventory in accordance with the Army procurement goals. TYPE CLASSIFICATION DATE: DECEMBER 1999</p> <p>E85700 - CTG, 60mm Mortar IR ILLUM, M767 Series w/MTSQ Fuze This is a training standard item used in training and combat. Request supports annual training and builds a war reserve inventory in accordance with the Army procurement goals. FY 2019 OCO includes \$0.042 million to support the COCOM requirement for unit equipment sets to deter potential adversaries and support the European Deterrence Initiative. The procurement includes 55 cartridges. TYPE CLASSIFICATION DATE: DECEMBER 1999</p>		

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33		P-1 Line Item Number / Title: 0050E89600 / 60MM Mortar, All Types
		Item Number / Title [DODIC]: E70400 / CTG, MORTAR, 60MM ILLUM VL M721 W/MTSQ FUZE [B647]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	-	12,901	-	-	-
Gross/Weapon System Cost (\$ in Millions)	80.722	-	8.600	-	-	-
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	80.722	-	8.600	-	-	-
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	80.722	-	8.600	-	-	-

(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)	-	-	666.61	-	-	-

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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) ^(†)	-	-	-	-	-	-	121.83	12,901	1.572	-	-	-	-	-	-	-	-	-
FIN ASSEMBLY M27 ^(†)	-	-	-	-	-	-	7.99	13,288	0.106	-	-	-	-	-	-	-	-	-
M702 IGNITION CARTRIDGE ^(†)	-	-	-	-	-	-	17.39	13,288	0.231	-	-	-	-	-	-	-	-	-
PROPELLANT CHARGE, M235 ^(†)	-	-	-	-	-	-	12.92	53,152	0.687	-	-	-	-	-	-	-	-	-
FUZE MTSQ, M776 ^(†)	-	-	-	-	-	-	199.48	13,288	2.651	-	-	-	-	-	-	-	-	-
BODY TUBE, 60MM ILLUM ^(†)	-	-	-	-	-	-	27.37	13,288	0.364	-	-	-	-	-	-	-	-	-
VL ILLUM CANNISTER, 60MM ^(†)	-	-	-	-	-	-	99.03	13,288	1.316	-	-	-	-	-	-	-	-	-
PARACHUTE, 60MM ^(†)	-	-	-	-	-	-	19.58	13,288	0.260	-	-	-	-	-	-	-	-	-
FIBER CONTAINER PA 175, 60MM ^(†)	-	-	-	-	-	-	4.58	13,288	0.061	-	-	-	-	-	-	-	-	-
TAIL CONE, 60MM ILLUM ^(†)	-	-	-	-	-	-	20.56	13,288	0.273	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33	P-1 Line Item Number / Title: 0050E89600 / 60MM Mortar, All Types	Item Number / Title [DODIC]: E70400 / CTG, MORTAR, 60MM ILLUM VL M721 W/MTSQ FUZE [B647]
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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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)	-	-	-	-	-	-	46.21	1,612	0.074	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	7.595	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	-	-	-	7.595	-	-	-	-	-	-	-	-	-
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	-	-	-	0.090	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	-	-	-	0.090	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	80.722	-	-	-	-	-	0.915	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	80.722	-	-	-	-	-	0.915	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	80.722	-	-	-	666.61	12,901	8.600	-	-	-	-	-	-	-	-	-

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

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33			P-1 Line Item Number / Title: 0050E89600 / 60MM Mortar, All Types				Item Number / Title [DODIC]: E70400 / CTG, MORTAR, 60MM ILLUM VL M721 W/MTSQ FUZE [B647]				

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)		2018	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	PICATINNY ARSENAL, NJ	Mar 2018	Mar 2020	12,901	121.83	Y		
FIN ASSEMBLY M27		2018	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	13,288	7.99	Y		
M702 IGNITION CARTRIDGE		2018	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	13,288	17.39	Y		
PROPELLANT CHARGE, M235		2018	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	53,152	12.92	Y		
FUZE MTSQ, M776		2018	JUNGHANS MICROTEC GMBH / DUNNINGEN, GERMANY	SS / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Nov 2019	13,288	199.48	Y		
BODY TUBE, 60MM ILLUM		2018	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	13,288	27.37	Y		
VL ILLUM CANNISTER, 60MM		2018	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	13,288	99.03	Y		
PARACHUTE, 60MM		2018	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	13,288	19.58	Y		
FIBER CONTAINER PA 175, 60MM		2018	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	13,288	4.58	Y		
TAIL CONE, 60MM ILLUM		2018	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	13,288	20.56	Y		
METAL CONTAINER PA191, 60MM		2018	BWAY CORPORATION / ATLANTA, GA	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	1,612	46.21	Y		

Remarks:
M27 FINS: IDIQ awarded (Feb 11) to multiple contractors. Requirements will be competed among the following contractors: Gayston, Springboro, OH; Flexible Concepts, Elkhart, IN; Cerebrus, Morris Plains, NJ. Ignition Cartridges: IDIQ awarded (Jun 12) to multiple contractors. Requirements will be competed among the following contractors: Pocal Industries, Scranton, PA and American Ordnance, Middletown, IA Body Tube / Tail Cones: IDIQ awarded (Sep 11) to multiple contractors. Requirements will be competed among the following contractors: Medico Industries Inc., Wilkes Barre, PA and Lewis Engineering Company, Marshall, TX. Propellant Charges: IDIQ awarded (Dec 12) to multiple contractors. Requirements will be competed among the following contractors: Day and Zimmerman, Parsons, KS; American Ordnance, Middletown, IA; and General Dynamics, Marion, IL.

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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, MORTAR, 60MM 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	20,530	10,650	14,761	176	14,937
Gross/Weapon System Cost (\$ in Millions)	23.223	21.923	15.559	15.859	0.176	16.035
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	23.223	21.923	15.559	15.859	0.176	16.035
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	23.223	21.923	15.559	15.859	0.176	16.035

(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)	-	1,067.85	1,460.94	1,074.39	1,000.00	1,073.51

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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) ^(†)	-	-	-	611.33	20,530	12.551	935.94	10,650	9.968	636.03	14,761	9.388	636.03	176	0.112	636.03	14,937	9.500
FUZE MOFM, M734A1 ^(†)	-	-	-	265.85	21,146	5.622	271.13	10,969	2.974	266.17	15,204	4.047	266.17	181	0.048	266.17	15,385	4.095
M702 IGNITION CARTRIDGE ^(†)	-	-	-	14.06	21,146	0.297	17.39	10,969	0.191	17.74	15,204	0.270	17.74	181	0.003	17.74	15,385	0.273
PROPELLANT CHARGE, M236 ^(†)	-	-	-	9.26	84,583	0.783	15.08	43,878	0.662	13.16	60,815	0.800	13.16	725	0.010	13.16	61,540	0.810
FIN ASSEMBLY M27 ^(†)	-	-	-	7.05	21,146	0.149	7.99	10,969	0.088	8.16	15,204	0.124	8.16	181	0.001	8.16	15,385	0.126
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	19.402	-	-	13.882	-	-	14.629	-	-	0.174	-	-	14.804
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	19.402	-	-	13.882	-	-	14.629	-	-	0.174	-	-	14.804
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	0.290	-	-	0.120	-	-	0.119	-	-	0.001	-	-	0.120
First Article Test	-	-	-	-	-	0.571	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	0.861	-	-	0.120	-	-	0.119	-	-	0.001	-	-	0.120
Support - Production Engineering Cost																		
Production Engineering	-	-	23.223	-	-	1.660	-	-	1.556	-	-	1.110	-	-	0.000	-	-	1.110

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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, MORTAR, 60MM HE ENFRAG M1061 SERIES W/MOFM [BA42]

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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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>	-	-	23.223	-	-	1.660	-	-	1.556	-	-	1.110	-	-	0.000	-	-	1.110
Gross/Weapon System Cost	-	-	23.223	1,067.85	20,530	21.923	1,460.94	10,650	15.559	1,074.39	14,761	15.859	1,000.00	176	0.176	1,073.51	14,937	16.035

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

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018				
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, MORTAR, 60MM 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) ^(†)		2017	DAY & ZIMMERMAN (KSAAP) / PARSONS, KS	C / FFP	PICATINNY ARSENAL, NJ	May 2017	May 2020	20,530	611.33	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2018	DAY & ZIMMERMAN (KSAAP) / PARSONS, KS	C / FFP	PICATINNY ARSENAL, NJ	May 2018	May 2021	10,650	935.94	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2019	DAY & ZIMMERMAN (KSAAP) / PARSONS, KS	C / FFP	PICATINNY ARSENAL, NJ	May 2019	May 2022	14,937	636.03	Y		
FUZE MOFM, M734A1		2017	L-3 FUZING & ORDANCE SYSTEMS / CINCINNATI, OH	C / FFP	PICATINNY ARSENAL, NJ	Sep 2017	Sep 2019	21,146	265.85	Y		
FUZE MOFM, M734A1		2018	L-3 FUZING & ORDANCE SYSTEMS / CINCINNATI, OH	C / FFP	PICATINNY ARSENAL, NJ	Mar 2018	Nov 2019	10,969	271.13	Y		
FUZE MOFM, M734A1		2019	L-3 FUZING & ORDANCE SYSTEMS / CINCINNATI, OH	C / FFP	PICATINNY ARSENAL, NJ	Mar 2019	Mar 2021	15,385	266.17	Y		
M702 IGNITION CARTRIDGE		2017	NAMMO POCAL INC. / SCRANTON, PA	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2017	Sep 2018	21,146	14.06	Y		
M702 IGNITION CARTRIDGE		2018	TO BE SELECTED / TBS02	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	10,969	17.39	Y		
M702 IGNITION CARTRIDGE		2019	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	15,385	17.74	Y		
PROPELLANT CHARGE, M236		2017	AMERICAN ORDNANCE LLC (IAAP) / MIDDLETOWN, IA	C / IDIQ	ROCK ISLAND ARSENAL, IL	Aug 2017	Feb 2019	84,583	9.26	Y		
PROPELLANT CHARGE, M236		2018	TO BE SELECTED / TBS02	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	43,878	15.08	Y		
PROPELLANT CHARGE, M236		2019	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	61,540	13.16	Y		
FIN ASSEMBLY M27		2017	FLEXIBLE CONCEPTS, INC. / ELKHART, IN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Jul 2017	Jan 2019	21,146	7.05	Y		
FIN ASSEMBLY M27		2018	TO BE SELECTED / TBS02	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	10,969	7.99	Y		
FIN ASSEMBLY M27		2019	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	15,385	8.16	Y		

^(†) indicates the presence of a P-21

Remarks:

Ignition Cartridges: IDIQ awarded (Jun 12) to multiple contractors. Requirements will be competed among the following contractors: Nammo Pocal Industries, Scranton, PA; Day and Zimmerman, Camden AR and American Ordnance, Middletown, IA. M27 Fins: IDIQ awarded (Feb 11) to multiple contractors. Requirements will be competed among the following contractors: Gayston, Springboro, OH; Flexible Concepts, Elkhart, IN; Cerebrus, Morris Plains, NJ. M236 Propellant Charges: IDIQ awarded (Dec 12) to multiple contractors. Requirements will be competed among the following contractors: Day and Zimmerman, Camden, AR; American Ordnance, Middletown, IA; and General Dynamics, Marion, IL.

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Exhibit P-21, Production Schedule: PB 2019 Army		Date: February 2018
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, MORTAR, 60MM HE ENFRAG M1061 SERIES W/MOFM [BA42]

Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2017												Fiscal Year 2018												BALANCE	
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	Calendar Year 2017												Calendar Year 2018												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
LOAD, ASSEMBLE, PACK (LAP)																															
1		2017	ARMY	20.530	.000	20.530																							20.530		
1		2018	ARMY	10.650	.000	10.650																							10.650		
1		2019	ARMY	14.937	.000	14.937																							14.937		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army		Date: February 2018
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, MORTAR, 60MM HE ENFRAG M1061 SERIES W/MOFM [BA42]

Cost Elements <i>(Units in Thousands)</i>					Fiscal Year 2019													Fiscal Year 2020													B A L A N C E		
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			
LOAD, ASSEMBLE, PACK (LAP)																																	
1		2017	ARMY	20.530	.000	20.530	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.000	5.000	5.000	5.530	.000
1		2018	ARMY	10.650	.000	10.650	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.650
1		2019	ARMY	14.937	.000	14.937																										14.937	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army		Date: February 2018
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, MORTAR, 60MM HE ENFRAG M1061 SERIES W/MOFM [BA42]

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
LOAD, ASSEMBLE, PACK (LAP)																														
	1	2017	ARMY	20.530	20.530	.000																								.000
	1	2018	ARMY	10.650	.000	10.650	-	-	-	-	-	-	-	5.000	5.650															.000
	1	2019	ARMY	14.937	.000	14.937	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.000	5.000	4.937			.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 2019 Army		Date: February 2018
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, MORTAR, 60MM HE ENFRAG M1061 SERIES W/MOFM [BA42]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	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	DAY & ZIMMERMAN (KSAAP) - PARSONS, KS	1,000	5,000	15,000	6	8	36	44	6	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 2019 Army		Date: February 2018
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, MORTAR, 60MM ILLUM IR 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	11,648	-	-	55	55
Gross/Weapon System Cost (\$ in Millions)	44.634	8.022	-	-	0.042	0.042
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	44.634	8.022	-	-	0.042	0.042
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	44.634	8.022	-	-	0.042	0.042

(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)	-	688.70	-	-	763.64	763.64

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	-	-	-	-	140.57	55	0.008	140.57	55	0.008
FIN ASSEMBLY M27 ^(†)	-	-	-	7.89	11,997	0.095	-	-	-	-	-	-	8.15	56	*.*.*	8.15	56	*.*.*
M702 IGNITION CARTRIDGE ^(†)	-	-	-	14.49	11,997	0.174	-	-	-	-	-	-	17.74	56	0.001	17.74	56	0.001
PROPELLANT CHARGE, M235 ^(†)	-	-	-	9.26	47,990	0.444	-	-	-	-	-	-	13.16	226	0.003	13.16	226	0.003
FUZE MTSQ, M776 ^(†)	-	-	-	225.52	11,997	2.706	-	-	-	-	-	-	250.00	56	0.014	250.00	56	0.014
BODY TUBE, 60MM ILLUM ^(†)	-	-	-	26.84	11,997	0.322	-	-	-	-	-	-	20.80	56	0.001	20.80	56	0.001
TAIL CONE, 60MM ILLUM ^(†)	-	-	-	20.16	11,997	0.242	-	-	-	-	-	-	20.60	56	0.001	20.60	56	0.001
PARACHUTE, 60MM ^(†)	-	-	-	22.00	11,997	0.264	-	-	-	-	-	-	22.43	56	0.001	22.43	56	0.001
IR ILLUM CANNISTER, 60MM ^(†)	-	-	-	101.96	11,997	1.223	-	-	-	-	-	-	107.94	56	0.006	107.94	56	0.006
FIBER CONTAINER PA 175, 60MM ^(†)	-	-	-	3.47	11,997	0.042	-	-	-	-	-	-	3.56	56	*.*.*	3.56	56	*.*.*

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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, MORTAR, 60MM ILLUM IR M767 SERIES W/MTSQ FUZE [BA04]

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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	-	-	-	-	43.79	6	*.***	43.79	6	*.***
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	6.863	-	-	-	-	-	0.000	-	-	0.036	-	-	0.036
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	6.863	-	-	-	-	-	0.000	-	-	0.036	-	-	0.036
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	0.187	-	-	-	-	-	-	-	-	0.003	-	-	0.003
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	0.187	-	-	-	-	-	0.000	-	-	0.003	-	-	0.003
Support - Production Engineering Cost																		
Production Engineering	-	-	44.634	-	-	0.972	-	-	-	-	-	-	-	-	0.003	-	-	0.003
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	44.634	-	-	0.972	-	-	-	-	-	0.000	-	-	0.003	-	-	0.003
Gross/Weapon System Cost	-	-	44.634	688.70	11,648	8.022	-	-	-	-	-	-	763.64	55	0.042	763.64	55	0.042

*.*** represents funding below \$1,000.00

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

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018				
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, MORTAR, 60MM ILLUM IR M767 SERIES W/MTSQ FUZE [BA04]				

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)		2017	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	PICATINNY ARSENAL, NJ	Jul 2017	Oct 2019	11,648	109.80	Y		
LOAD, ASSEMBLE, PACK (LAP)	✓	2019	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	PICATINNY ARSENAL, NJ	Feb 2019	Feb 2021	55	140.57	Y		
FIN ASSEMBLY M27		2017	GAYSTON CORPORATION / MIAMISBURG, OH	C / IDIQ	ROCK ISLAND ARSENAL, IL	Jul 2017	Jan 2019	11,997	7.89	Y		
FIN ASSEMBLY M27	✓	2019	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	56	8.15	Y		
M702 IGNITION CARTRIDGE		2017	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2018	11,997	14.49	Y		
M702 IGNITION CARTRIDGE	✓	2019	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	56	17.74	Y		
PROPELLANT CHARGE, M235		2017	AMERICAN ORDNANCE LLC (IAAP) / MIDDLETOWN, IA	C / IDIQ	ROCK ISLAND ARSENAL, IL	Aug 2017	Feb 2019	47,990	9.26	Y		
PROPELLANT CHARGE, M235	✓	2019	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	226	13.16	Y		
FUZE MTSQ, M776		2017	JUNGHANS MICROTEC GMBH / DUNNINGEN, GERMANY	SS / FFP	ROCK ISLAND ARSENAL, IL	Sep 2017	May 2019	11,997	225.52	Y		
FUZE MTSQ, M776	✓	2019	JUNGHANS MICROTEC GMBH / DUNNINGEN, GERMANY	SS / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Nov 2020	56	250.00	Y		
BODY TUBE, 60MM ILLUM		2017	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	11,997	26.84	Y		
BODY TUBE, 60MM ILLUM	✓	2019	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	56	20.80	Y		
TAIL CONE, 60MM ILLUM		2017	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	11,997	20.16	Y		
TAIL CONE, 60MM ILLUM	✓	2019	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	56	20.60	Y		
PARACHUTE, 60MM		2017	YOLAND CORPORATION / BROOKLYN, NY	C / IDIQ	ROCK ISLAND ARSENAL, IL	Jul 2017	Jan 2019	11,997	22.00	Y		
PARACHUTE, 60MM	✓	2019	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	56	22.43	Y		
IR ILLUM CANNISTER, 60MM		2017	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Aug 2017	Feb 2019	11,997	101.96	Y		
IR ILLUM CANNISTER, 60MM	✓	2019	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Feb 2019	Aug 2020	56	107.94	N		
FIBER CONTAINER PA 175, 60MM		2017	UNITED AMMUNITION CONTAINER / WYNNEWOOD, PA	C / IDIQ	PICATINNY ARSENAL, NJ	Sep 2017	Mar 2019	11,997	3.47	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018				
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, MORTAR, 60MM ILLUM IR M767 SERIES W/MTSQ FUZE [BA04]				

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
FIBER CONTAINER PA 175, 60MM	✓	2019	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	56	3.56	Y		
METAL CONTAINER PA191, 60MM		2017	BWAY CORPORATION / ATLANTA, GA	C / IDIQ	PICATINNY ARSENAL, NJ	Jul 2017	Jan 2019	1,500	48.60	Y		
METAL CONTAINER PA191, 60MM	✓	2019	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	6	43.79	Y		

Remarks:
M27 FINS: IDIQ awarded (Feb 11) to multiple contractors. Requirements will be competed among the following contractors: Gayston, Springboro, OH; Flexible Concepts, Elkhart, IN; Cerebrus, Morris Plains, NJ. Ignition Cartridges: IDIQ awarded (Jun 12) to multiple contractors. Requirements will be competed among the following contractors: Pocal Industries, Scranton, PA and American Ordnance, Middletown, IA Body Tube / Tail Cones: IDIQ awarded (Sep 11) to multiple contractors. Requirements will be competed among the following contractors: Medico Industries Inc., Wilkes Barre, PA and Lewis Engineering Company, Marshall, TX. Propellant Charges: IDIQ awarded (Dec 12) to multiple contractors. Requirements will be competed among the following contractors: Day and Zimmerman, Parsons, KS; American Ordnance, Middletown, IA; and General Dynamics, Marion, IL.

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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, Mortar, 60MM 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	54,208	75,395	78,636	-	78,636
Gross/Weapon System Cost (\$ in Millions)	151.117	8.645	14.400	14.186	-	14.186
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	151.117	8.645	14.400	14.186	-	14.186
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	151.117	8.645	14.400	14.186	-	14.186

(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)	-	159.48	190.99	180.40	-	180.40

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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) ^(†)	-	-	-	18.04	54,208	0.978	17.96	75,395	1.354	18.56	78,636	1.459	-	-	-	18.56	78,636	1.459
Fuze Practice, M775 ^(†)	-	-	-	20.45	55,834	1.142	21.56	77,656	1.674	21.98	80,995	1.780	-	-	-	21.98	80,995	1.780
Shell Body, 60MM FRPC ^(†)	-	-	-	35.99	55,834	2.009	44.00	77,656	3.417	37.19	80,995	3.012	-	-	-	37.19	80,995	3.012
M702 Ignition Cartridge ^(†)	-	-	-	14.06	55,834	0.785	17.39	77,656	1.350	17.74	80,995	1.437	-	-	-	17.74	80,995	1.437
Propellant Charge, M235 ^(†)	-	-	-	9.26	223,337	2.068	12.92	310,627	4.013	13.16	323,980	4.264	-	-	-	13.16	323,980	4.264
Fin Assembly M27 ^(†)	-	-	-	7.89	55,834	0.441	7.99	77,656	0.620	8.16	80,995	0.661	-	-	-	8.16	80,995	0.661
Subtotal: Recurring Cost	-	-	-	-	-	7.423	-	-	12.429	-	-	12.613	-	-	-	-	-	12.613
Subtotal: Hardware Cost	-	-	-	-	-	7.423	-	-	12.429	-	-	12.613	-	-	-	-	-	12.613
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	0.480	-	-	0.528	-	-	0.576	-	-	-	-	-	0.576
Subtotal: Support - Acceptance Testing Cost	-	-	-	-	-	0.480	-	-	0.528	-	-	0.576	-	-	-	-	-	0.576
Support - Production Engineering Cost																		
Production Engineering	-	-	151.117	-	-	0.743	-	-	1.444	-	-	0.997	-	-	-	-	-	0.997

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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, Mortar, 60MM FRTR M769 SERIES W/PRACTICE FUZE [BA15]

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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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>	-	-	151.117	-	-	0.743	-	-	1.444	-	-	0.997	-	-	-	-	-	0.997
Gross/Weapon System Cost	-	-	151.117	159.48	54,208	8.645	190.99	75,395	14.400	180.40	78,636	14.186	-	-	-	180.40	78,636	14.186

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

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2019 Army								Date: February 2018				
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, Mortar, 60MM 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)		2017	NAMMO POCAL INC. / SCRANTON, PA	C / IDIQ	ROCK ISLAND ARSENAL, IL	Jul 2017	Jul 2019	54,208	18.04	Y		
Load, Assemble, Pack (LAP)		2018	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	May 2018	May 2020	75,395	17.96	Y		
Load, Assemble, Pack (LAP)		2019	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	May 2019	May 2021	78,636	18.56	Y		
Fuze Practice, M775		2017	NAMMO POCAL INC. / SCRANTON, PA	C / IDIQ	PICATINNY ARSENAL, NJ	Jan 2017	Jul 2018	55,834	20.45	Y		
Fuze Practice, M775		2018	NAMMO POCAL INC. / SCRANTON, PA	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	77,656	21.56	Y		
Fuze Practice, M775		2019	NAMMO POCAL INC. / SCRANTON, PA	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	80,995	21.98	Y		
Shell Body, 60MM FRPC		2017	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2017	Sep 2018	55,834	35.99	Y		
Shell Body, 60MM FRPC		2018	TO BE SELECTED / TBS02	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	77,656	44.00	Y		
Shell Body, 60MM FRPC		2019	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	80,995	37.19	Y		
M702 Ignition Cartridge		2017	NAMMO POCAL INC. / SCRANTON, PA	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2017	Sep 2018	55,834	14.06	Y		
M702 Ignition Cartridge		2018	TO BE SELECTED / TBS02	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	77,656	17.39	Y		
M702 Ignition Cartridge		2019	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	80,995	17.74	Y		
Propellant Charge, M235		2017	AMERICAN ORDNANCE LLC (IAAP) / MIDDLETOWN, IA	C / IDIQ	ROCK ISLAND ARSENAL, IL	Aug 2017	Feb 2019	223,337	9.26	Y		
Propellant Charge, M235		2018	TO BE SELECTED / TBS02	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	310,627	12.92	Y		
Propellant Charge, M235		2019	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	323,980	13.16	Y		
Fin Assembly M27		2017	GAYSTON CORPORATION / MIAMISBURG, OH	C / IDIQ	ROCK ISLAND ARSENAL, IL	Jul 2017	Jan 2018	55,834	7.89	Y		
Fin Assembly M27		2018	TO BE SELECTED / TBS02	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	77,656	7.99	Y		
Fin Assembly M27		2019	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	80,995	8.16	Y		

Remarks:

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army		Date: February 2018
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, Mortar, 60MM FRTR M769 SERIES W/PRACTICE FUZE [BA15]

FRPC LAP: IDIQ awarded (Feb 11) to multiple contractors. Requirements will be competed among the following contractors: Day and Zimmerman, Parsons, KS; Chemring Ordnance, Perry FL. M27 FINS: IDIQ awarded (Feb 11) to multiple contractors. Requirements will be competed among the following contractors: Gayston, Springboro, OH; Flexible Concepts, Elkhart, IN; Cerebrus, Morris Plains, NJ. Ignition Cartridges: IDIQ awarded (Jun 12) to multiple contractors. Requirements will be competed among the following contractors: Nammo Pocal Industries, Scranton, PA and American Ordnance, Middletown, IA. Shell Body: IDIQ awarded (Aug 11) to multiple contractors. Requirements will be competed among the following contractors: Medico Industries Inc., Wilkes Barre, PA and Lewis Engineering Company, Marshall, TX. Propellant Charges: IDIQ awarded (Dec 12) to multiple contractors. Requirements will be competed among the following contractors: Day and Zimmerman, Parsons, KS; American Ordnance, Middletown, IA; and General Dynamics, Marion, IL.

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 MORTAR 60MM 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	63,701	37,363	30,282	-	30,282
Gross/Weapon System Cost (\$ in Millions)	221.362	27.394	18.800	15.235	-	15.235
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	221.362	27.394	18.800	15.235	-	15.235
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	221.362	27.394	18.800	15.235	-	15.235

(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)	-	430.04	503.17	503.10	-	503.10

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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) ^(†)	-	-	-	50.88	63,701	3.241	58.35	37,363	2.180	52.93	30,282	1.603	-	-	-	52.93	30,282	1.603
SHELL BODY (HF1), 60MM HE ^(†)	-	-	-	39.59	65,613	2.598	48.00	38,483	1.847	40.79	31,190	1.272	-	-	-	40.79	31,190	1.272
FIN ASSEMBLY M27 ^(†)	-	-	-	7.05	65,613	0.463	7.99	38,483	0.307	8.16	31,190	0.255	-	-	-	8.16	31,190	0.255
M702 IGNITION CARTRIDGE ^(†)	-	-	-	14.06	65,613	0.923	17.39	38,483	0.669	17.74	31,190	0.553	-	-	-	17.74	31,190	0.553
PROPELLANT CHARGE, M235 ^(†)	-	-	-	9.26	262,448	2.430	12.92	153,935	1.989	13.16	124,761	1.642	-	-	-	13.16	124,761	1.642
FUZE POINT DETONATOR M783 ^(†)	-	-	-	165.30	65,613	10.846	167.50	38,483	6.446	190.74	31,190	5.949	-	-	-	190.74	31,190	5.949
PBXW-14 BULK EXPLOSIVE ^(†)	-	-	-	67.73	3,822	0.259	83.63	2,241	0.187	69.36	1,816	0.126	-	-	-	69.36	1,816	0.126
EXPLOSIVE FILL IMX-104 ^(†)	-	-	-	23.27	191,103	4.447	27.04	112,089	3.031	27.59	90,846	2.506	-	-	-	27.59	90,846	2.506
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	25.206	-	-	16.657	-	-	13.906	-	-	-	-	-	13.906
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	25.206	-	-	16.657	-	-	13.906	-	-	-	-	-	13.906
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	0.632	-	-	0.264	-	-	0.260	-	-	-	-	-	0.260

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 MORTAR 60MM 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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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>	-	-	-	-	-	0.632	-	-	0.264	-	-	0.260	-	-	-	-	-	0.260
Support - Production Engineering Cost																		
Production Engineering	-	-	221.362	-	-	1.556	-	-	1.880	-	-	1.069	-	-	-	-	-	1.069
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	221.362	-	-	1.556	-	-	1.880	-	-	1.069	-	-	-	-	-	1.069
Gross/Weapon System Cost	-	-	221.362	430.04	63,701	27.394	503.17	37,363	18.800	503.10	30,282	15.235	-	-	-	503.10	30,282	15.235

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army								Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity:			P-1 Line Item Number / Title:					Item Number / Title [DODIC]:				
2034A / 01 / 33			0050E89600 / 60MM Mortar, All Types					E92900 / CTG MORTAR 60MM 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)		2017	GEN DYNAMICS ORD & TAC SYS - / LE GARDEUR, CANADA	C / IDIQ	ROCK ISLAND ARSENAL, IL	Sep 2017	Sep 2020	63,701	50.88	Y		
LOAD, ASSEMBLE, PACK (LAP)		2018	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	May 2018	May 2021	37,363	58.35	Y		
LOAD, ASSEMBLE, PACK (LAP)		2019	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	May 2019	May 2022	30,282	52.93	Y		
SHELL BODY (HF1), 60MM HE		2017	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2017	Sep 2018	65,613	39.59	Y		
SHELL BODY (HF1), 60MM HE		2018	TO BE SELECTED / TBS02	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	38,483	48.00	Y		
SHELL BODY (HF1), 60MM HE		2019	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	31,190	40.79	Y		
FIN ASSEMBLY M27		2017	FLEXIBLE CONCEPTS, INC. / ELKHART, IN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Jul 2017	Jan 2019	65,613	7.05	Y		
FIN ASSEMBLY M27		2018	TO BE SELECTED / TBS02	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	38,483	7.99	Y		
FIN ASSEMBLY M27		2019	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	31,190	8.16	Y		
M702 IGNITION CARTRIDGE		2017	NAMMO POCAL INC. / SCRANTON, PA	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2017	Sep 2018	65,613	14.06	Y		
M702 IGNITION CARTRIDGE		2018	TO BE SELECTED / TBS02	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	38,483	17.39	Y		
M702 IGNITION CARTRIDGE		2019	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	31,190	17.74	Y		
PROPELLANT CHARGE, M235		2017	AMERICAN ORDNANCE LLC (IAAP) / MIDDLETOWN, IA	C / IDIQ	ROCK ISLAND ARSENAL, IL	Aug 2017	Feb 2019	262,448	9.26	Y		
PROPELLANT CHARGE, M235		2018	TO BE SELECTED / TBS02	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	153,935	12.92	Y		
PROPELLANT CHARGE, M235		2019	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	124,761	13.16	Y		
FUZE POINT DETONATOR M783		2017	L-3 FUZING & ORDANCE SYSTEMS / CINCINNATI, OH	C / FFP	PICATINNY ARSENAL, NJ	Mar 2017	Mar 2019	65,613	165.30	Y		
FUZE POINT DETONATOR M783		2018	L-3 FUZING & ORDANCE SYSTEMS / CINCINNATI, OH	C / FFP	PICATINNY ARSENAL, NJ	Mar 2018	Mar 2020	38,483	167.50	Y		
FUZE POINT DETONATOR M783		2019	L-3 FUZING & ORDANCE SYSTEMS / CINCINNATI, OH	C / FFP	PICATINNY ARSENAL, NJ	Mar 2019	Mar 2021	31,190	190.74	Y		
PBXW-14 BULK EXPLOSIVE		2017	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Sep 2017	May 2018	3,822	67.73	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018					
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 MORTAR 60MM 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 <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
PBXW-14 BULK EXPLOSIVE		2018	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	2,241	83.63	Y		
PBXW-14 BULK EXPLOSIVE		2019	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	1,816	69.36	Y		
EXPLOSIVE FILL IMX-104		2017	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Sep 2017	Mar 2019	191,103	23.27	Y		
EXPLOSIVE FILL IMX-104		2018	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	112,089	27.04	Y		
EXPLOSIVE FILL IMX-104		2019	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	90,846	27.59	Y		

Remarks:
 HE LAP: IDIQ awarded (Dec 16) to multiple contractors. Requirements will be competed among the following contractors: Day and Zimmerman, Parsons, KS; American Ordnance, Middletown, IA; General Dynamics, Le Gardeur, QC, Canada. M27 FINS: IDIQ awarded (Feb 11) to multiple contractors. Requirements will be competed among the following contractors: Gayston, Springboro, OH; Flexible Concepts, Elkhart, IN; Cerebrus, Morris Plains, NJ. Ignition Cartridges: IDIQ awarded (Jun 12) to multiple contractors. Requirements will be competed among the following contractors: Nammo Pocal Industries, Scranton, PA and American Ordnance, Middletown, IA Shell Body: IDIQ awarded (Aug 11) to multiple contractors. Requirements will be competed among the following contractors: Medico Industries Inc., Wilkes Barre, PA and Lewis Engineering Company, Marshall, TX. Propellant Charges: IDIQ awarded (Dec 12) to multiple contractors. Requirements will be competed among the following contractors: Day and Zimmerman, Parsons, KS; American Ordnance, Middletown, IA; and General Dynamics, Marion, IL.

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	719.189	38.802	49.471	46.853	0.484	47.337	47.564	58.508	54.710	62.048	-	1,077.629
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	719.189	38.802	49.471	46.853	0.484	47.337	47.564	58.508	54.710	62.048	-	1,077.629
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	719.189	38.802	49.471	46.853	0.484	47.337	47.564	58.508	54.710	62.048	-	1,077.629

(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, HE rounds. 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.

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 M821A3E1 cartridge will incorporate warhead modifications in order to meet all requirements. Specifically, the warhead will consist of a Fragmentation Sleeve with an HF-1 Steel body. All other components are the same and will 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, HE rounds. 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 M889A2 HE (Range 70 meter minimum to 5,859 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 M821A2, the preferred war fighting round. However, the M889A2 is lethal and can be used in combat.

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 FRPC M879 SERIES W/PRACTICE FUZE

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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>The M879 is a low-cost, full range, practice round (FRPC) 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 M889A2/M821A2 HE cartridges. The flash, bang and smoke signature provided by the M751 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>(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.</p> <p>This cartridge was modified to include Gas Absorbent Modules (GAMS) that absorb the phosphine gas emitted by the RP to keep the round stable. The M819 (Range 300 meter minimum and 4,900 maximum) is range-matched to the 81mm High Explosive (HE) and Illum cartridges. This item is code A, approved for service use.</p> <p>(E76100) CTG, MORTAR, 81MM VL ILLUM M853 SERIES W/MTSQ FUZE The M853A1 cartridge is a fin stabilized, mortar cartridge that consists of a M772 Mechanical Time Super Quick (MTSQ) fuze, a thin wall aluminum 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 visible light illumination. This visible light illumination allows for monitoring of enemy activities and adjustment of fire at greater observation distances during night operations. It also provides a means for day/night signaling. It is particularly useful in combined operations with allies who may not have night vision devices (NVDs). This round illuminates to the full range of the HE round, which allows adjustment of fire at any distance out to the maximum range. The M853A1 (Range 300 meter minimum and 5,050 maximum) is range-matched to the 81mm High Explosive (HE) and smoke cartridges. This item is Code A, approved for service use.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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, MORTAR, 81MM HE M821 SERIES W/MOFM [CA66]	P-5a	A		- / 275.553	- / -	15,051 / 15.934	9,893 / 8.896	478 / 0.400	10,371 / 9.296
P-5	E18404 / CTG, MORTAR 81MM HE M889 SERIES W/PD FUZE [CA63]	P-5a	A		- / 113.317	35,402 / 18.777	21,041 / 13.100	31,258 / 18.762	- / -	31,258 / 18.762
P-5	E69600 / CTG, MORTAR, 81MM FRTR M879 SERIES W/PRACT FUZE [C875]	P-5a	A		- / 150.401	63,588 / 13.449	56,069 / 14.000	55,825 / 12.572	- / -	55,825 / 12.572
P-5	E76100 / CTG, MORTAR, 81MM VL ILLUM M853 SERIES W/MTSQ FUZE [C871]	P-5a	A		- / 96.052	- / -	- / -	- / -	95 / 0.084	95 / 0.084
P-5	E76200 / CTG, MORTAR, 81MM RP SMOKE M819 SERIES W/MTSQ FUZE [C870]	P-5a	A		- / 83.866	8,064 / 6.576	7,931 / 6.437	7,469 / 6.623	- / -	7,469 / 6.623
P-40	Total Gross/Weapon System Cost				- / 719.189	- / 38.802	- / 49.471	- / 46.853	- / 0.484	- / 47.337

*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 2019 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements IAW DoD Instruction 3000.04 (Munitions Requirements Process) and AR 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support 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 2019 Total BASE dollars in the amount of \$46.853 million supports the procurement of 104,445 cartridges.
 FY 2019 Total Overseas Contingency Operations (OCO) dollars in the amount of \$0.484 million supports the procurement of 573 cartridges.

E18403 - CTG, MORTAR, 81MM HE M821 SERIES W/MOFM
 This is a training standard item used in training and combat. FY 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$8.896 million supports the procurement of 9,893 cartridges. FY 2019 OCO includes \$0.400 million to support the COCOM requirement for unit equipment sets to deter potential adversaries and support the European Deterrence Initiative. The procurement includes 478 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 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$18.762 million supports the procurement of 31,258 cartridges.
 TYPE CLASSIFICATION DATE: July 2009

E69600 - CTG, MORTAR, 81MM FRPC M879 SERIES W/PRACTICE FUZE

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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>This is a training standard item used in training and combat. FY 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$12.572 million supports the procurement of 55,825 cartridges. TYPE CLASSIFICATION DATE: August 1986</p> <p>E76200 - CTG, MORTAR, 81MM RP SMOKE M819 SERIES W/MTSQ FUZE This is a training standard item used in training and combat. FY 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base procurement in the amount of \$6.623 million supports the procurement of 7,469 cartridges. TYPE CLASSIFICATION DATE: December 1986</p> <p>(E76100)CTG, MORTAR, 81MM VL ILLUM M853 SERIES W/MTSQ FUZE This is a training standard item used in training and combat. Request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 OCO includes \$0.084 million to support the COCOM requirement for unit equipment sets to deter potential adversaries and support the European Deterrence Initiative. The procurement includes 95 cartridges. This is a New Start in FY 2019. TYPE CLASSIFICATION DATE: December 1986</p>		

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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, MORTAR, 81MM HE M821 SERIES W/MOFM [CA66]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	-	15,051	9,893	478	10,371
Gross/Weapon System Cost (\$ in Millions)	275.553	-	15.934	8.896	0.400	9.296
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	275.553	-	15.934	8.896	0.400	9.296
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	275.553	-	15.934	8.896	0.400	9.296

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

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	1,058.67	899.22	836.82	896.35

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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) ^(†)	-	-	-	-	-	-	253.10	15,051	3.809	258.16	9,893	2.554	258.16	478	0.123	258.16	10,371	2.677
SHELL BODY, 81MM HE M821A3E1 ^(†)	-	-	-	-	-	-	80.00	15,502	1.240	81.60	10,190	0.832	81.60	492	0.040	81.60	10,682	0.872
FIN MORTAR CTG M24 F/81MM ^(†)	-	-	-	-	-	-	16.59	15,502	0.257	16.91	10,190	0.172	16.91	492	0.008	16.91	10,682	0.181
IGN CTG M299 ^(†)	-	-	-	-	-	-	18.05	15,502	0.280	18.42	10,190	0.188	18.42	492	0.009	18.42	10,682	0.197
CHG PROP 81MM M220 ^(†)	-	-	-	-	-	-	16.08	62,010	0.997	13.26	40,759	0.540	13.26	1,969	0.026	13.26	42,728	0.567
FUZE MOFM, M734A1 ^(†)	-	-	-	-	-	-	271.13	15,502	4.203	266.17	10,190	2.712	266.17	492	0.131	266.17	10,682	2.843
PBXW-14 BULK EXPLOSIVE ^(†)	-	-	-	-	-	-	83.63	1,806	0.151	69.36	1,187	0.082	69.36	57	0.004	69.36	1,244	0.086
EXPLOSIVE FILL IMX-104 ^(†)	-	-	-	-	-	-	27.04	63,214	1.709	27.59	41,550	1.146	27.59	2,008	0.055	27.59	43,558	1.202
<i>Subtotal: Recurring Cost</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>12.647</i>	<i>-</i>	<i>-</i>	<i>8.227</i>	<i>-</i>	<i>-</i>	<i>0.397</i>	<i>-</i>	<i>-</i>	<i>8.624</i>
<i>Subtotal: Hardware Cost</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>12.647</i>	<i>-</i>	<i>-</i>	<i>8.227</i>	<i>-</i>	<i>-</i>	<i>0.397</i>	<i>-</i>	<i>-</i>	<i>8.624</i>
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	-	-	-	0.085	-	-	0.046	-	-	0.002	-	-	0.048
First Article Test	-	-	-	-	-	-	-	-	0.500	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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, MORTAR, 81MM 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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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>	-	-	-	-	-	-	-	-	0.585	-	-	0.046	-	-	0.002	-	-	0.048
Support - Engineering Change Proposals Cost																		
Engineering Change Proposals	-	-	-	-	-	-	-	-	1.000	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Engineering Change Proposals Cost</i>	-	-	-	-	-	-	-	-	1.000	-	-	-	-	-	-	-	-	-
Support - Product Improvement Cost																		
Insensitive Munitions	-	-	-	-	-	-	-	-	1.700	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Product Improvement Cost</i>	-	-	-	-	-	-	-	-	1.700	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	275.553	-	-	-	-	-	0.003	-	-	0.623	-	-	0.000	-	-	0.623
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	275.553	-	-	-	-	-	0.003	-	-	0.623	-	-	0.000	-	-	0.623
Gross/Weapon System Cost	-	-	275.553	-	-	-	1,058.67	15,051	15,934	899.22	9,893	8,896	836.82	478	0.400	896.35	10,371	9,296

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

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army								Date: February 2018				
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, MORTAR, 81MM 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)		2018	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	May 2018	May 2021	15,051	253.10	Y		
LOAD, ASSEMBLE, PACK (LAP)		2019	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	May 2019	May 2022	10,371	258.16	Y		
SHELL BODY, 81MM HE M821A3E1		2018	TO BE SELECTED / TBS03	C / IDIQ	PICATINNY ARSENAL, NJ	Jun 2018	Dec 2019	15,502	80.00	Y		
SHELL BODY, 81MM HE M821A3E1		2019	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	10,682	81.60	Y		
FIN MORTAR CTG M24 F/81MM		2018	TO BE SELECTED / TBS03	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	15,502	16.59	Y		
FIN MORTAR CTG M24 F/81MM		2019	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	10,682	16.91	Y		
IGN CTG M299		2018	TO BE SELECTED / TBS03	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	15,502	18.05	Y		
IGN CTG M299		2019	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	10,682	18.42	Y		
CHG PROP 81MM M220		2018	TO BE SELECTED / TBS03	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	62,010	16.08	Y		
CHG PROP 81MM M220		2019	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	42,728	13.26	Y		
FUZE MOFM, M734A1		2018	L-3 FUZING & ORDANCE SYSTEMS / CINCINNATI, OH	C / FFP	PICATINNY ARSENAL, NJ	Mar 2018	Nov 2019	15,502	271.13	Y		
FUZE MOFM, M734A1		2019	L-3 FUZING & ORDANCE SYSTEMS / CINCINNATI, OH	C / FFP	PICATINNY ARSENAL, NJ	Mar 2019	Nov 2020	10,682	266.17	Y		
PBXW-14 BULK EXPLOSIVE		2018	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Nov 2019	1,806	83.63	Y		
PBXW-14 BULK EXPLOSIVE		2019	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Nov 2020	1,244	69.36	Y		
EXPLOSIVE FILL IMX-104		2018	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2020	63,214	27.04	Y		
EXPLOSIVE FILL IMX-104		2019	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2021	43,558	27.59	Y		

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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, MORTAR 81MM 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	35,402	21,041	31,258	-	31,258
Gross/Weapon System Cost (\$ in Millions)	113.317	18.777	13.100	18.762	-	18.762
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	113.317	18.777	13.100	18.762	-	18.762
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	113.317	18.777	13.100	18.762	-	18.762

(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)	-	530.39	622.59	600.23	-	600.23

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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) ^(†)	-	-	-	83.38	35,402	2.952	86.78	21,041	1.826	85.04	31,258	2.658	-	-	-	85.04	31,258	2.658
FUZE POINT DETONATOR M783 ^(†)	-	-	-	165.30	36,464	6.027	167.51	21,672	3.630	190.74	32,195	6.141	-	-	-	190.74	32,195	6.141
SHELL BODY, 81MM HE ^(†)	-	-	-	50.39	36,464	1.837	64.00	21,672	1.387	51.58	32,195	1.661	-	-	-	51.58	32,195	1.661
IGN CTG M299 ^(†)	-	-	-	14.64	36,464	0.534	18.06	21,672	0.391	18.42	32,195	0.593	-	-	-	18.42	32,195	0.593
CHG PROP 81MM M220 ^(†)	-	-	-	10.44	145,856	1.523	16.08	86,689	1.394	13.26	128,782	1.708	-	-	-	13.26	128,782	1.708
FIN MORTAR CTG M24 F/81MM ^(†)	-	-	-	15.95	36,464	0.582	16.59	21,672	0.360	16.91	32,195	0.544	-	-	-	16.91	32,195	0.544
PBXW-14 BULK EXPLOSIVE ^(†)	-	-	-	67.73	4,248	0.288	83.63	2,525	0.211	69.36	3,750	0.260	-	-	-	69.36	3,750	0.260
EXPLOSIVE FILL IMX-104 ^(†)	-	-	-	23.27	148,688	3.460	27.05	88,372	2.390	27.59	131,283	3.622	-	-	-	27.59	131,283	3.622
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	17.203	-	-	11.590	-	-	17.187	-	-	-	-	-	17.187
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	17.203	-	-	11.590	-	-	17.187	-	-	-	-	-	17.187
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	0.233	-	-	0.200	-	-	0.260	-	-	-	-	-	0.260

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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, MORTAR 81MM HE M889 SERIES W/PD FUZE [CA63]
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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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>	-	-	-	-	-	0.233	-	-	0.200	-	-	0.260	-	-	-	-	-	0.260
Support - Production Engineering Cost																		
Production Engineering	-	-	113.317	-	-	1.342	-	-	1.311	-	-	1.315	-	-	-	-	-	1.315
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	113.317	-	-	1.342	-	-	1.311	-	-	1.315	-	-	-	-	-	1.315
Gross/Weapon System Cost	-	-	113.317	530.39	35,402	18.777	622.59	21,041	13.100	600.23	31,258	18.762	-	-	-	600.23	31,258	18.762

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

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army								Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity:			P-1 Line Item Number / Title:					Item Number / Title [DODIC]:				
2034A / 01 / 33			3584E76000 / 81MM Mortar, All Types					E18404 / CTG, MORTAR 81MM 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)		2017	GEN DYNAMICS ORD & TAC SYS - / LE GARDEUR, CANADA	C / IDIQ	ROCK ISLAND ARSENAL, IL	Sep 2017	Sep 2020	35,402	83.38	Y		
LOAD, ASSEMBLE, PACK (LAP)		2018	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	May 2018	May 2021	21,041	86.78	Y		
LOAD, ASSEMBLE, PACK (LAP)		2019	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	May 2019	May 2022	31,258	85.04	Y		
FUZE POINT DETONATOR M783		2017	L-3 FUZING & ORDANCE SYSTEMS / CINCINNATI, OH	C / FFP	PICATINNY ARSENAL, NJ	Mar 2017	Mar 2019	36,464	165.30	Y		
FUZE POINT DETONATOR M783		2018	L-3 FUZING & ORDANCE SYSTEMS / CINCINNATI, OH	C / FFP	PICATINNY ARSENAL, NJ	Mar 2018	Mar 2020	21,672	167.51	Y		
FUZE POINT DETONATOR M783		2019	L-3 FUZING & ORDANCE SYSTEMS / CINCINNATI, OH	C / FFP	PICATINNY ARSENAL, NJ	Mar 2019	Mar 2021	32,195	190.74	Y		
SHELL BODY, 81MM HE		2017	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2017	Sep 2018	36,464	50.39	Y		
SHELL BODY, 81MM HE		2018	TO BE SELECTED / TBS02	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	21,672	64.00	Y		
SHELL BODY, 81MM HE		2019	TO BE SELECTED / TBS02	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	32,195	51.58	Y		
IGN CTG M299		2017	NAMMO POCAL INC. / SCRANTON, PA	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2017	Sep 2018	36,464	14.64	Y		
IGN CTG M299		2018	TO BE SELECTED / TBS02	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	21,672	18.06	Y		
IGN CTG M299		2019	TO BE SELECTED / TBS02	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	32,195	18.42	Y		
CHG PROP 81MM M220		2017	AMERICAN ORDNANCE LLC (IAAP) / MIDDLETOWN, IA	C / IDIQ	ROCK ISLAND ARSENAL, IL	Aug 2017	Feb 2019	145,856	10.44	Y		
CHG PROP 81MM M220		2018	TO BE SELECTED / TBS02	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	86,689	16.08	Y		
CHG PROP 81MM M220		2019	TO BE SELECTED / TBS02	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	128,782	13.26	Y		
FIN MORTAR CTG M24 F/81MM		2017	FLEXIBLE CONCEPTS, INC. / ELKHART, IN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Jul 2017	Jan 2019	36,464	15.95	Y		
FIN MORTAR CTG M24 F/81MM		2018	TO BE SELECTED / TBS02	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	21,672	16.59	Y		
FIN MORTAR CTG M24 F/81MM		2019	TO BE SELECTED / TBS02	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	32,195	16.91	Y		
PBXW-14 BULK EXPLOSIVE		2017	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Sep 2017	Mar 2019	4,248	67.73	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018					
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, MORTAR 81MM 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
PBXW-14 BULK EXPLOSIVE		2018	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Aug 2019	2,525	83.63	Y		
PBXW-14 BULK EXPLOSIVE		2019	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Aug 2020	3,750	69.36	Y		
EXPLOSIVE FILL IMX-104		2017	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Aug 2017	Feb 2019	148,688	23.27	Y		
EXPLOSIVE FILL IMX-104		2018	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	88,372	27.05	Y		
EXPLOSIVE FILL IMX-104		2019	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	131,283	27.59	Y		

Remarks:

Ignition Cartridges: IDIQ awarded (Jun 12) to multiple contractors. Requirements will be competed among the following contractors: Pocal Industries, Scranton, PA; American Ordnance, Middletown, IA; and DZI Lonestar LLC., Texarkana, TX. HE LAP: IDIQ awarded (Aug 11) to multiple contractors. Requirements will be competed among the following contractors: Day and Zimmerman, Camden, AR; Day and Zimmerman, Parsons, KS; General Dynamics, LeGardeur, Canada; American Ordnance, Middletown, IA. HE Shell Bodes: IDIQ awarded (Aug 11) to multiple contractors. Requirements will be competed among the following contractors: Medico Industries, Wilkes Barre, PA; Modern Industries, Erie, PA; T&A Screw Products, Terryville, CT. M220 Propellant Charges: IDIQ awarded (Dec 12) to multiple contractors. Requirements will be competed among the following contractors: Day and Zimmerman, Camden, AR; American Ordnance, Middletown, IA; and General Dynamics, Marion IL. Fins: IDIQ awarded (Jul 12) to multiple contractors. Requirements will be competed among the following contractors: Gayston Corp., Springboro, OH and T&A Screw Products, Terryville, CT.

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Exhibit P-5, Cost Analysis: PB 2019 Army													Date: February 2018					
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, MORTAR, 81MM FRTR M879 SERIES W/PRACT FUZE [C875]						
ID Code (A=Service Ready, B=Not Service Ready) : A									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO		FY 2019 Total	
Procurement Quantity (Units in Each)				-		63,588			56,069			55,825			-		55,825	
Gross/Weapon System Cost (\$ in Millions)				150.401		13.449			14.000			12.572			-		12.572	
Less PY Advance Procurement (\$ in Millions)				-		-			-			-			-		-	
Net Procurement (P-1) (\$ in Millions)				150.401		13.449			14.000			12.572			-		12.572	
Plus CY Advance Procurement (\$ in Millions)				-		-			-			-			-		-	
Total Obligation Authority (\$ in Millions)				150.401		13.449			14.000			12.572			-		12.572	
<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)				-		211.50			249.69			225.20			-		225.20	
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	63,588	2.646	42.00	56,069	2.355	42.84	55,825	2.392	-	-	-	42.84	55,825	2.392
FUZE PRACTICE, M751 ^(†)	-	-	-	20.00	65,496	1.310	21.56	57,751	1.245	22.00	57,499	1.265	-	-	-	22.00	57,499	1.265
SHELL BODY, 81MM FRPC ^(†)	-	-	-	43.39	65,496	2.842	50.00	57,751	2.888	44.58	57,499	2.563	-	-	-	44.58	57,499	2.563
IGN CTG M299 ^(†)	-	-	-	14.64	65,496	0.959	18.06	57,751	1.043	18.42	57,499	1.059	-	-	-	18.42	57,499	1.059
CHG PROP 81MM M220 ^(†)	-	-	-	10.44	261,983	2.735	16.08	231,004	3.715	13.26	229,998	3.050	-	-	-	13.26	229,998	3.050
FIN MORTAR CTG M24 F/81MM ^(†)	-	-	-	15.95	65,496	1.045	16.59	57,751	0.958	16.91	57,499	0.972	-	-	-	16.91	57,499	0.972
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	11.536	-	-	12.203	-	-	11.301	-	-	-	-	-	11.301
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	11.536	-	-	12.203	-	-	11.301	-	-	-	-	-	11.301
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	0.629	-	-	0.395	-	-	0.390	-	-	-	-	-	0.390
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	0.629	-	-	0.395	-	-	0.390	-	-	-	-	-	0.390
Support - Production Engineering Cost																		
Production Engineering	-	-	150.401	-	-	1.283	-	-	1.401	-	-	0.881	-	-	-	-	-	0.881

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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, MORTAR, 81MM FRTR M879 SERIES W/PRACT 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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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>	-	-	150.401	-	-	1.283	-	-	1.401	-	-	0.881	-	-	-	-	-	0.881
Gross/Weapon System Cost	-	-	150.401	211.50	63,588	13.449	249.69	56,069	14.000	225.20	55,825	12.572	-	-	-	225.20	55,825	12.572

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

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army								Date: February 2018				
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, MORTAR, 81MM FRTR M879 SERIES W/PRACT 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)		2017	DAY & ZIMMERMAN (KSAAP) / PARSONS, KS	C / IDIQ	ROCK ISLAND ARSENAL, IL	Aug 2017	Aug 2020	63,588	41.61	Y		
LOAD, ASSEMBLE, PACK (LAP)		2018	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	May 2018	May 2020	56,069	42.00	Y		
LOAD, ASSEMBLE, PACK (LAP)		2019	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	May 2019	May 2021	55,825	42.84	Y		
FUZE PRACTICE, M751		2017	NAMMO POCAL INC. / SCRANTON, PA	C / IDIQ	ROCK ISLAND ARSENAL, IL	Jan 2017	Jul 2018	65,496	20.00	Y		
FUZE PRACTICE, M751		2018	NAMMO POCAL INC. / SCRANTON, PA	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	57,751	21.56	Y		
FUZE PRACTICE, M751		2019	NAMMO POCAL INC. / SCRANTON, PA	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	57,499	22.00	Y		
SHELL BODY, 81MM FRPC		2017	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2017	Sep 2018	65,496	43.39	Y		
SHELL BODY, 81MM FRPC		2018	TO BE SELECTED / TBS02	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	57,751	50.00	Y		
SHELL BODY, 81MM FRPC		2019	TO BE SELECTED / TBS02	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	57,499	44.58	Y		
IGN CTG M299		2017	NAMMO POCAL INC. / SCRANTON, PA	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2017	Sep 2018	65,496	14.64	Y		
IGN CTG M299		2018	TO BE SELECTED / TBS02	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	57,751	18.06	Y		
IGN CTG M299		2019	TO BE SELECTED / TBS02	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	57,499	18.42	Y		
CHG PROP 81MM M220		2017	AMERICAN ORDNANCE LLC (IAAP) / MIDDLETOWN, IA	C / IDIQ	ROCK ISLAND ARSENAL, IL	Aug 2017	Feb 2019	261,983	10.44	Y		
CHG PROP 81MM M220		2018	TO BE SELECTED / TBS02	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	231,004	16.08	Y		
CHG PROP 81MM M220		2019	TO BE SELECTED / TBS02	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	229,998	13.26	Y		
FIN MORTAR CTG M24 F/81MM		2017	FLEXIBLE CONCEPTS, INC. / ELKHART, IN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Jul 2017	Jan 2019	65,496	15.95	Y		
FIN MORTAR CTG M24 F/81MM		2018	TO BE SELECTED / TBS02	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	57,751	16.59	Y		
FIN MORTAR CTG M24 F/81MM		2019	TO BE SELECTED / TBS02	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	57,499	16.91	Y		
Remarks:												

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army		Date: February 2018
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, MORTAR, 81MM FRTR M879 SERIES W/PRACT FUZE [C875]
<p>FRPC LAP: IDIQ awarded (Feb 11) to multiple contractors. Requirements will be competed among the following contractors: Day and Zimmerman, Camden, AR; Pocal Industries, Scranton, PA; Day and Zimmerman, Parsons, K S; Chemring Ordnance, Perry, FL. FRPC Shell Bodes: IDIQ awarded (Aug 11) to multiple contractors. Requirements will be competed among the following contractors: Medico Industries, Wilkes Barre, PA; Modern Industries, Erie, PA. Ignition Cartridges: IDIQ awarded (Jun 12) to multiple contractors. Requirements will be competed among the following contractors: Pocal Industries, Scranton, PA; DZI Lonestar LLC., Texarkana, TX and American Ordnance, Middletown, IA. M220 Propellant Charges: IDIQ awarded (Dec 12) to multiple contractors. Requirements will be competed among the following contractors: Day and Zimmerman, Camden, AR; American Ordnance, Middletown, IA; and General Dynamics, Marion, IL. Fins: IDIQ awarded (Jul 12) to multiple contractors. Requirements will be competed among the following contractors: Gayston Corp., Springboro, OH and T&A Screw Machine INC., Waterbury, CT.</p>		

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33	P-1 Line Item Number / Title: 3584E76000 / 81MM Mortar, All Types	Item Number / Title [DODIC]: E76100 / CTG, MORTAR, 81MM VL ILLUM M853 SERIES W/MTSQ FUZE [C871]

ID Code (A=Service Ready, B=Not Service Ready) : A				MDAP/MAIS Code:			
Resource Summary		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)		-	-	-	-	95	95
Gross/Weapon System Cost (\$ in Millions)		96.052	-	-	-	0.084	0.084
Less PY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)		96.052	-	-	-	0.084	0.084
Plus CY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)		96.052	-	-	-	0.084	0.084
<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)		-	-	-	-	884.21	884.21

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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) ^(†)	-	-	-	-	-	-	-	-	-	-	-	-	120.53	95	0.011	120.53	95	0.011
FUZE MTSQ, M772 ^(†)	-	-	-	-	-	-	-	-	-	-	-	-	290.66	97	0.028	290.66	97	0.028
BODY TUBE, 81MM ILLUM ^(†)	-	-	-	-	-	-	-	-	-	-	-	-	38.07	97	0.004	38.07	97	0.004
TAIL CONE, 81MM ILLUM ^(†)	-	-	-	-	-	-	-	-	-	-	-	-	17.21	97	0.002	17.21	97	0.002
IGN CTG M752 ^(†)	-	-	-	-	-	-	-	-	-	-	-	-	20.53	97	0.002	20.53	97	0.002
CHG PROP 81MM M219 ^(†)	-	-	-	-	-	-	-	-	-	-	-	-	17.25	391	0.007	17.25	391	0.007
FIN MORTAR CTG M28 F/81MM M819 RP ^(†)	-	-	-	-	-	-	-	-	-	-	-	-	18.35	97	0.002	18.35	97	0.002
ILLUM CANDLE VL F/81MM M853A1 ^(†)	-	-	-	-	-	-	-	-	-	-	-	-	174.50	97	0.017	174.50	97	0.017
PARACHUTE, 81MM ^(†)	-	-	-	-	-	-	-	-	-	-	-	-	27.41	97	0.003	27.41	97	0.003
FIBER CONTAINER PA 162, 81MM ^(†)	-	-	-	-	-	-	-	-	-	-	-	-	6.62	97	0.001	6.62	97	0.001

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33	P-1 Line Item Number / Title: 3584E76000 / 81MM Mortar, All Types	Item Number / Title [DODIC]: E76100 / CTG, MORTAR, 81MM VL ILLUM M853 SERIES W/MTSQ FUZE [C871]

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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 157, 81MM ^(†)	-	-	-	-	-	-	-	-	-	-	-	-	59.80	32	0.002	59.80	32	0.002
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.000	-	-	0.078	-	-	0.078
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.000	-	-	0.078	-	-	0.078
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.003	-	-	0.003
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.000	-	-	0.003	-	-	0.003
Support - Production Engineering Cost																		
Production Engineering	-	-	96.052	-	-	-	-	-	-	-	-	-	-	-	0.004	-	-	0.004
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	96.052	-	-	-	-	-	-	-	-	0.000	-	-	0.004	-	-	0.004
Gross/Weapon System Cost	-	-	96.052	-	-	-	-	-	-	-	-	-	884.21	95	0.084	884.21	95	0.084

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 33			P-1 Line Item Number / Title: 3584E76000 / 81MM Mortar, All Types				Item Number / Title [DODIC]: E76100 / CTG, MORTAR, 81MM VL ILLUM M853 SERIES W/MTSQ FUZE [C871]				

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	May 2019	Sep 2021	95	120.53	Y		
FUZE MTSQ, M772	✓	2019	JUNGHANS MICROTEC GMBH / DUNNINGEN, GERMANY	SS / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	97	290.66	Y		
BODY TUBE, 81MM ILLUM	✓	2019	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	97	38.07	Y		
TAIL CONE, 81MM ILLUM	✓	2019	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	97	17.21	Y		
IGN CTG M752	✓	2019	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	97	20.53	Y		
CHG PROP 81MM M219	✓	2019	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	391	17.25	Y		
FIN MORTAR CTG M28 F/81MM M819 RP	✓	2019	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	97	18.35	Y		
ILLUM CANDLE VL F/81MM M853A1	✓	2019	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Feb 2019	Oct 2020	97	174.50	Y		
PARACHUTE, 81MM	✓	2019	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	97	27.41	Y		
FIBER CONTAINER PA 162, 81MM	✓	2019	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2019	97	6.62	Y		
METAL CONTAINER PA 157, 81MM	✓	2019	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	32	59.80	Y		

Remarks:

81MM Illum Body Tubes and Tail Cones: IDIQ awarded (Aug 11) to multiple contractors. Requirements will be competed among the following contractors: Medico, Wilkes Barre, PA and Lewis Engineering, Marshall, TX. Ignition Cartridges: IDIQ awarded (Jun 12) to multiple contractors. Requirements will be competed among the following contractors: Nammo Pocal Industries, Scranton, PA ; DZI Lonestar, LLC., Texarka, TX and American Ordnance, Middletown, IA. M28 Fin: IDIQ awarded (Sept 11) to multiple contractors. Requirements will be competed among the following contractors: Gayston Corporation, Springboro, OH and Flexible Concepts, Elkhart, IN. M219 Propellany Charges: IDIQ awarded (Dec 12) to multiple contractors. Requirements will be competed among the following contractors: Day and Zimmerman, Camden, AR; American Ordnance, Middletown, IA and General Dynamics, Marion, IL. 81MM Parachutes: IDIQ awarded (Aug 10) to multiple contractors. Requirements will be competed among the following contractors: North American Aerodynamics INC., Roxboro, NC and Yoland Corp. Jamaica, NY. 81MM Illum Body Tubes and Tail Cones: IDIQ awarded (Aug 11) to multiple contractors. Requirements will be competed among the following contractors: Medico, Wilkes Barre, PA and Lewis Engineering, Marshall, TX Ignition Cartridges: IDIQ awarded (Jun 12) to multiple contractors. Requirements will be competed among the following contractors: Nammo Pocal Industries, Scranton, PA and American Ordnance, Middletown, IA.

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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, MORTAR, 81MM RP SMOKE M819 SERIES W/MTSQ FUZE [C870]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	8,064	7,931	7,469	-	7,469
Gross/Weapon System Cost (\$ in Millions)	83.866	6.576	6.437	6.623	-	6.623
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	83.866	6.576	6.437	6.623	-	6.623
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	83.866	6.576	6.437	6.623	-	6.623

(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)	-	815.48	811.63	886.73	-	886.73

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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) ^(†)	-	-	-	266.88	8,064	2.152	242.50	7,931	1.923	312.40	7,469	2.333	-	-	-	312.40	7,469	2.333
FIN MORTAR CTG M28 F/81MM M819 RP ^(†)	-	-	-	16.75	8,306	0.139	20.31	8,168	0.166	18.36	7,693	0.141	-	-	-	18.36	7,693	0.141
IGN CTG M752 ^(†)	-	-	-	19.19	8,306	0.159	20.14	8,168	0.165	20.53	7,693	0.158	-	-	-	20.53	7,693	0.158
PROPELLANT CHARGE, M218 ^(†)	-	-	-	10.44	33,224	0.347	17.26	32,675	0.564	17.61	30,772	0.542	-	-	-	17.61	30,772	0.542
RED PHOSPHOROUS PELLET ^(†)	-	-	-	-	-	-	13.45	23,793	0.320	-	-	-	-	-	-	-	-	-
FUZE MTSQ, M772 ^(†)	-	-	-	247.91	8,306	2.059	199.45	8,168	1.629	290.66	7,693	2.236	-	-	-	290.66	7,693	2.236
BODY TUBE, 81MM RP SMK ^(†)	-	-	-	24.87	8,306	0.207	49.42	8,168	0.404	26.83	7,693	0.206	-	-	-	26.83	7,693	0.206
TAIL CONE, 81MM SMOKE ^(†)	-	-	-	22.74	8,306	0.189	26.01	8,168	0.212	24.18	7,693	0.186	-	-	-	24.18	7,693	0.186
GAMS ^(†)	-	-	-	8.52	16,612	0.142	10.59	16,496	0.175	10.20	15,535	0.158	-	-	-	10.20	15,535	0.158
FIBER CONTAINER PA 162, 81MM ^(†)	-	-	-	6.00	8,306	0.050	6.49	8,168	0.053	6.62	7,693	0.051	-	-	-	6.62	7,693	0.051

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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, MORTAR, 81MM RP SMOKE M819 SERIES W/MTSQ FUZE [C870]

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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 157, 81MM ^(t)	-	-	-	55.65	2,769	0.154	50.97	991	0.051	59.80	933	0.056	-	-	-	59.80	933	0.056
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	5.598	-	-	5.661	-	-	6.068	-	-	-	-	-	6.068
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	5.598	-	-	5.661	-	-	6.068	-	-	-	-	-	6.068
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	0.229	-	-	0.090	-	-	0.090	-	-	-	-	-	0.090
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	0.229	-	-	0.090	-	-	0.090	-	-	-	-	-	0.090
Support - Production Engineering Cost																		
Production Engineering	-	-	83.866	-	-	0.749	-	-	0.685	-	-	0.465	-	-	-	-	-	0.465
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	83.866	-	-	0.749	-	-	0.685	-	-	0.465	-	-	-	-	-	0.465
Gross/Weapon System Cost	-	-	83.866	815.48	8,064	6.576	811.63	7,931	6.437	886.73	7,469	6.623	-	-	-	886.73	7,469	6.623

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

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army										Date: February 2018		
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, MORTAR, 81MM RP SMOKE 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)		2017	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	PICATINNY ARSENAL, NJ	Jan 2017	Jan 2019	8,064	266.88	Y		
LOAD, ASSEMBLE, PACK (LAP)		2018	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	PICATINNY ARSENAL, NJ	Feb 2018	Feb 2020	7,931	242.50	Y		
LOAD, ASSEMBLE, PACK (LAP)		2019	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	PICATINNY ARSENAL, NJ	Feb 2019	Feb 2021	7,469	312.40	Y		
FIN MORTAR CTG M28 F/81MM M819 RP		2017	FLEXIBLE CONCEPTS, INC. / ELKHART, IN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Jul 2017	Nov 2018	8,306	16.75	Y		
FIN MORTAR CTG M28 F/81MM M819 RP		2018	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	8,168	20.31	Y		
FIN MORTAR CTG M28 F/81MM M819 RP		2019	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	7,693	18.36	Y		
IGN CTG M752		2017	NAMMO POCAL INC. / SCRANTON, PA	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2017	Sep 2018	8,306	19.19	Y		
IGN CTG M752		2018	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	8,168	20.14	Y		
IGN CTG M752		2019	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	7,693	20.53	Y		
PROPELLANT CHARGE, M218		2017	AMERICAN ORDNANCE LLC (IAAP) / MIDDLETOWN, IA	C / IDIQ	ROCK ISLAND ARSENAL, IL	Aug 2017	Nov 2018	33,224	10.44	Y		
PROPELLANT CHARGE, M218		2018	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	32,675	17.26	Y		
PROPELLANT CHARGE, M218		2019	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	30,772	17.61	Y		
RED PHOSPHOROUS PELLET		2018	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	Picatinny Arsenal, NJ	Mar 2018	Sep 2019	23,793	13.45	Y		
FUZE MTSQ, M772		2017	JUNGHANS MICROTEC GMBH / DUNNINGEN, GERMANY	SS / FFP	ROCK ISLAND ARSENAL, IL	Sep 2017	Nov 2018	8,306	247.91	Y		
FUZE MTSQ, M772		2018	JUNGHANS MICROTEC GMBH / DUNNINGEN, GERMANY	SS / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	8,168	199.45	Y		
FUZE MTSQ, M772		2019	JUNGHANS MICROTEC GMBH / DUNNINGEN, GERMANY	SS / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	7,693	290.66	Y		
BODY TUBE, 81MM RP SMK		2017	LEWIS ENGINEERING COMPANY / MARSHALL, TX	C / IDIQ	PICATINNY ARSENAL, NJ	Feb 2017	Aug 2018	8,306	24.87	Y		
BODY TUBE, 81MM RP SMK		2018	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	8,168	49.42	Y		
BODY TUBE, 81MM RP SMK		2019	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	7,693	26.83	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018				
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, MORTAR, 81MM RP SMOKE 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
TAIL CONE, 81MM SMOKE		2017	LEWIS ENGINEERING COMPANY / MARSHALL, TX	C / IDIQ	PICATINNY ARSENAL, NJ	Feb 2017	Aug 2018	8,306	22.74	Y		
TAIL CONE, 81MM SMOKE		2018	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	8,168	26.01	Y		
TAIL CONE, 81MM SMOKE		2019	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	7,693	24.18	Y		
GAMS		2017	DESIGN WEST TECHNOLOGIES, / TUSTIN, CA	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2017	Sep 2018	16,612	8.52	Y		
GAMS		2018	DESIGN WEST TECHNOLOGIES, / TUSTIN, CA	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	16,496	10.59	Y		
GAMS		2019	DESIGN WEST TECHNOLOGIES, / TUSTIN, CA	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	15,535	10.20	Y		
FIBER CONTAINER PA 162, 81MM		2017	UNITED AMMUNITION CONTAINER / WYNNEWOOD, PA	C / IDIQ	PICATINNY ARSENAL, NJ	Sep 2017	Nov 2018	8,306	6.00	Y		
FIBER CONTAINER PA 162, 81MM		2018	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	8,168	6.49	Y		
FIBER CONTAINER PA 162, 81MM		2019	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	7,693	6.62	Y		
METAL CONTAINER PA 157, 81MM		2017	BWAY CORPORATION / ATLANTA, GA	C / IDIQ	PICATINNY ARSENAL, NJ	Jul 2017	Nov 2018	2,769	55.65	Y		
METAL CONTAINER PA 157, 81MM		2018	BWAY CORPORATION / ATLANTA, GA	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	991	50.97	Y		
METAL CONTAINER PA 157, 81MM		2019	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	933	59.80	Y		

Remarks:
M28 FINS: IDIQ awarded (Feb 11) to multiple contractors. Requirements will be competed among the following contractors: Gayston, Springboro, OH ; Flexible Concepts, Elkhart, IN; Flexible Concepts, INC., Elkhart, IN. Ignition Cartridges: IDIQ awarded (Jun 12) to multiple contractors. Requirements will be competed among the following contractors: Nammo Pocal Industries, Scranton, PA and Day and Zimmerman, Parsons, KS. Body Tube / Tail Cones: IDIQ awarded (Sep 11) to multiple contractors. Requirements will be competed among the following contractors: Medico Industries Inc., Wilkes Barre, PA and Lewis Engineering Company, Marshall , TX, Woodlawn MFG. Inc., Marshall, TX. Propellant Charges: IDIQ awarded (Dec 12) to multiple contractors. Requirements will be competed among the following contractors: Day and Zimmerman, Parsons, KS; American Ordnance, Middletown, IA; and General Dynamics, Marion, IL.
Fiber Container: IDIQ awarded (Mar 11) to multiple contractors. Requirements will be competed among the following contractors: United Ammunition Container INC, Wynnewood, PA. Metal Container: IDIQ awarded (Sep 13) to multiple contractors. Requirements will be competed among the following contractors: BWAY Corporation, Atlanta, GA.

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,030.592	110.233	91.528	83.003	-	83.003	133.657	111.961	115.490	146.425	-	1,822.889
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,030.592	110.233	91.528	83.003	-	83.003	133.657	111.961	115.490	146.425	-	1,822.889
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,030.592	110.233	91.528	83.003	-	83.003	133.657	111.961	115.490	146.425	-	1,822.889

(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 FRPC M931 SERIES W/PRACT FUZE

The M931 is a low-cost, full range, practice round that will replace a percentage of the standard HE rounds used in 120mm mortar training. The M931 FRPC (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 Illum cartridges.
This item is Code A, approved for service use.

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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, MORTAR, 120MM HE M933 SERIES W/ PD FUZE [CA44]	P-5a	A		- / 369.887	82,167 / 55.900	26,485 / 23.400	29,666 / 24.021	- / -	29,666 / 24.021
P-5	E25507 / CTG, MORTAR, 120MM FRTR M931 SERIES W/PRACT FUZE [CA09]	P-5a, P-21	A		- / 463.774	144,591 / 54.333	101,783 / 51.328	146,431 / 58.982	- / -	146,431 / 58.982
P-5	E91300 / CTG, MORTAR, 120MM WP SMOKE M929 SERIES W/ MOFM [CA03]	P-5a	A		- / 196.931	- / -	10,590 / 16.800	- / -	- / -	- / -
P-40	Total Gross/Weapon System Cost				- / 1,030.592	- / 110.233	- / 91.528	- / 83.003	- / -	- / 83.003

*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 2019 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements IAW DoD Instruction 3000.04 (Munitions Requirements Process) and AR 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support 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 2019 Total BASE dollars in the amount of \$83.003 million supports the procurement of 176,097 cartridges.

(E25502) CTG, MORTAR, 120MM HE M933 SERIES W/ PD FUZE
This is a training standard item used in training and combat. FY 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base procurement in the amount of \$24.021 million supports production of 29,666 cartridges.
TYPE CLASSIFICATION DATE: 2009

(E25507) CTG, MORTAR, 120MM FRPC M931 SERIES W/PRACT FUZE
This is a training unique item not used in combat. FY 2019 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$58.982 million supports the procurement of 146,431 cartridges.
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. Request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals.
TYPE CLASSIFICATION DATE: 1996

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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, MORTAR, 120MM 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	82,167	26,485	29,666	-	29,666
Gross/Weapon System Cost (\$ in Millions)	369.887	55.900	23.400	24.021	-	24.021
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	369.887	55.900	23.400	24.021	-	24.021
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	369.887	55.900	23.400	24.021	-	24.021

(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)	-	680.32	883.52	809.71	-	809.71

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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) ^(†)	-	-	-	133.84	82,167	10.997	145.57	26,485	3.855	155.00	29,666	4.598	-	-	-	155.00	29,666	4.598
FIN ASSEMBLY, M31 ^(†)	-	-	-	43.32	84,632	3.666	45.88	27,279	1.252	46.80	30,555	1.430	-	-	-	46.80	30,555	1.430
IGNITION CARTRIDGE, M1020 ^(†)	-	-	-	23.21	84,632	1.964	24.11	27,279	0.658	24.59	30,555	0.751	-	-	-	24.59	30,555	0.751
PROPELLANT CHARGE, M234A1 ^(†)	-	-	-	17.60	338,528	5.958	28.25	109,118	3.083	21.42	122,223	2.618	-	-	-	21.42	122,223	2.618
SHELL BODY, 120MM HE ^(†)	-	-	-	96.40	84,632	8.159	165.00	27,279	4.501	107.74	30,555	3.292	-	-	-	107.74	30,555	3.292
FUZE POINT DETONATOR M783 ^(†)	-	-	-	165.30	84,632	13.990	167.50	27,279	4.569	190.74	30,555	5.828	-	-	-	190.74	30,555	5.828
COMP B TYPE I GRADE A ^(†)	-	-	-	11.87	739,503	8.778	12.00	238,365	2.860	13.26	266,994	3.540	-	-	-	13.26	266,994	3.540
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	53.512	-	-	20.778	-	-	22.058	-	-	-	-	-	22.058
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	53.512	-	-	20.778	-	-	22.058	-	-	-	-	-	22.058
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	0.325	-	-	0.282	-	-	0.280	-	-	-	-	-	0.280
First Article Test	-	-	-	-	-	0.100	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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, MORTAR, 120MM HE M933 SERIES W/PD FUZE [CA44]
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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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>	-	-	-	-	-	0.425	-	-	0.282	-	-	0.280	-	-	-	-	-	0.280
Support - Production Engineering Cost																		
Production Engineering	-	-	369.887	-	-	1.963	-	-	2.340	-	-	1.682	-	-	-	-	-	1.682
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	369.887	-	-	1.963	-	-	2.340	-	-	1.682	-	-	-	-	-	1.682
Gross/Weapon System Cost	-	-	369.887	680.32	82,167	55.900	883.52	26,485	23.400	809.71	29,666	24.021	-	-	-	809.71	29,666	24.021

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army								Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity:			P-1 Line Item Number / Title:					Item Number / Title [DODIC]:				
2034A / 01 / 33			6780E25500 / 120MM Mortar, All Types					E25502 / CTG, MORTAR, 120MM 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)		2017	GEN DYNAMICS ORD & TAC SYS - / LE GARDEUR, CANADA	C / FFP	PICATINNY ARSENAL, NJ	Jul 2017	Jul 2020	82,167	133.84	Y		
LOAD, ASSEMBLE, PACK (LAP)		2018	GEN DYNAMICS ORD & TAC SYS - / LE GARDEUR, CANADA	C / FFP	PICATINNY ARSENAL, NJ	May 2018	May 2021	26,485	145.57	Y		
LOAD, ASSEMBLE, PACK (LAP)		2019	TO BE SELECTED / TBS01	C / FFP	PICATINNY ARSENAL, NJ	May 2019	May 2022	29,666	155.00	Y		
FIN ASSEMBLY, M31		2017	MACHINING TECHNOLOGIES INC / SALISBURY, MD	C / IDIQ	PICATINNY ARSENAL, NJ	Jul 2017	Jan 2019	84,632	43.32	Y		
FIN ASSEMBLY, M31		2018	TO BE SELECTED / TBS02	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	27,279	45.88	Y		
FIN ASSEMBLY, M31		2019	TO BE SELECTED / TBS02	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	30,555	46.80	Y		
IGNITION CARTRIDGE, M1020		2017	NAMMO POCAL INC. / SCRANTON, PA	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2017	Sep 2018	84,632	23.21	Y		
IGNITION CARTRIDGE, M1020		2018	TO BE SELECTED / TBS02	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	27,279	24.11	Y		
IGNITION CARTRIDGE, M1020		2019	TO BE SELECTED / TBS02	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	30,555	24.59	Y		
PROPELLANT CHARGE, M234A1		2017	AMERICAN ORDNANCE LLC (IAAP) / MIDDLETOWN, IA	C / IDIQ	ROCK ISLAND ARSENAL, IL	Aug 2017	Feb 2019	338,528	17.60	Y		
PROPELLANT CHARGE, M234A1		2018	TO BE SELECTED / TBS02	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	109,118	28.25	Y		
PROPELLANT CHARGE, M234A1		2019	TO BE SELECTED / TBS02	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	122,223	21.42	Y		
SHELL BODY, 120MM HE		2017	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	C / FFP	PICATINNY ARSENAL, NJ	Jul 2017	Jan 2019	84,632	96.40	Y		
SHELL BODY, 120MM HE		2018	TO BE SELECTED / TBS02	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	27,279	165.00	Y		
SHELL BODY, 120MM HE		2019	TO BE SELECTED / TBS02	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	30,555	107.74	Y		
FUZE POINT DETONATOR M783		2017	L-3 FUZING & ORDANCE SYSTEMS / CINCINNATI, OH	C / FFP	PICATINNY ARSENAL, NJ	Mar 2017	Nov 2018	84,632	165.30	Y		
FUZE POINT DETONATOR M783		2018	L-3 FUZING & ORDANCE SYSTEMS / CINCINNATI, OH	C / FFP	PICATINNY ARSENAL, NJ	Mar 2018	Nov 2019	27,279	167.50	Y		
FUZE POINT DETONATOR M783		2019	L-3 FUZING & ORDANCE SYSTEMS / CINCINNATI, OH	C / FFP	PICATINNY ARSENAL, NJ	Mar 2019	Nov 2020	30,555	190.74	Y		
COMP B TYPE I GRADE A		2017	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Aug 2017	Feb 2019	739,503	11.87	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army								Date: February 2018				
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, MORTAR, 120MM 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		2018	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Mar 2019	238,365	12.00	Y		
COMP B TYPE I GRADE A		2019	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Mar 2020	266,994	13.26	Y		

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Exhibit P-5, Cost Analysis: PB 2019 Army													Date: February 2018								
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, MORTAR, 120MM 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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
Procurement Quantity (Units in Each)				-			144,591			101,783			146,431			-			146,431		
Gross/Weapon System Cost (\$ in Millions)				463.774			54.333			51.328			58.982			-			58.982		
Less PY Advance Procurement (\$ in Millions)				-			-			-			-			-			-		
Net Procurement (P-1) (\$ in Millions)				463.774			54.333			51.328			58.982			-			58.982		
Plus CY Advance Procurement (\$ in Millions)				-			-			-			-			-			-		
Total Obligation Authority (\$ in Millions)				463.774			54.333			51.328			58.982			-			58.982		
<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)				-			375.77			504.29			402.80			-			402.80		
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																					
Cost Elements		Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total				
		Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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) ^(†)		-	-	-	77.65	144,591	11.227	78.02	101,783	7.941	79.58	146,431	11.653	-	-	-	79.58	146,431	11.653		
FIN ASSEMBLY, M31 ^(†)		-	-	-	43.30	148,929	6.449	45.89	104,836	4.811	46.80	150,823	7.059	-	-	-	46.80	150,823	7.059		
IGNITION CARTRIDGE, M1020 ^(†)		-	-	-	23.21	148,929	3.457	24.11	104,836	2.528	24.59	150,823	3.709	-	-	-	24.59	150,823	3.709		
PROPELLANT CHARGE, M234A1 ^(†)		-	-	-	18.04	595,715	10.747	28.26	419,345	11.851	21.42	603,295	12.923	-	-	-	21.42	603,295	12.923		
SHELL BODY, 120MM FRPC ^(†)		-	-	-	92.59	148,929	13.789	153.32	104,836	16.073	100.67	150,823	15.183	-	-	-	100.67	150,823	15.183		
FUZE PRACTICE, M781 ^(†)		-	-	-	21.57	148,929	3.212	21.56	104,836	2.260	21.98	150,823	3.315	-	-	-	21.98	150,823	3.315		
<i>Subtotal: Recurring Cost</i>		-	-	-	-	-	48.881	-	-	45.464	-	-	53.841	-	-	-	-	-	53.841		
<i>Subtotal: Hardware Cost</i>		-	-	-	-	-	48.881	-	-	45.464	-	-	53.841	-	-	-	-	-	53.841		
Support - Acceptance Testing Cost																					
Acceptance Test		-	-	-	-	-	0.735	-	-	0.730	-	-	1.010	-	-	-	-	-	1.010		
<i>Subtotal: Support - Acceptance Testing Cost</i>		-	-	-	-	-	0.735	-	-	0.730	-	-	1.010	-	-	-	-	-	1.010		
Support - Production Engineering Cost																					

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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]: E25507 / CTG, MORTAR, 120MM FRTR M931 SERIES W/PRACT FUZE [CA09]		

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	463.774	-	-	4.717	-	-	5.133	-	-	4.131	-	-	-	-	-	4.131
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	463.774	-	-	4.717	-	-	5.133	-	-	4.131	-	-	-	-	-	4.131
Gross/Weapon System Cost	-	-	463.774	375.77	144,591	54.333	504.29	101,783	51.328	402.80	146,431	58.982	-	-	-	402.80	146,431	58.982

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018					
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, MORTAR, 120MM FRTR M931 SERIES W/PRACT FUZE [CA09]					

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) ^(†)		2017	GEN DYNAMICS ORD & TAC SYS - / LE GARDEUR, CANADA	C / FFP	PICATINNY ARSENAL, NJ	May 2017	May 2019	144,591	77.65	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2018	GEN DYNAMICS ORD & TAC SYS - / LE GARDEUR, CANADA	C / FFP	PICATINNY ARSENAL, NJ	May 2018	May 2020	101,783	78.02	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2019	TO BE SELECTED / TBS01	C / FFP	PICATINNY ARSENAL, NJ	May 2019	May 2021	146,431	79.58	Y		
FIN ASSEMBLY, M31		2017	MACHINING TECHNOLOGIES INC / SALISBURY, MD	C / IDIQ	PICATINNY ARSENAL, NJ	Dec 2016	Jun 2018	148,929	43.30	Y		
FIN ASSEMBLY, M31		2018	MACHINING TECHNOLOGIES INC / SALISBURY, MD	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	104,836	45.89	Y		
FIN ASSEMBLY, M31		2019	TO BE SELECTED / TBS02	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	150,823	46.80	Y		
IGNITION CARTRIDGE, M1020		2017	NAMMO POCAL INC. / SCRANTON, PA	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2017	Sep 2018	148,929	23.21	Y		
IGNITION CARTRIDGE, M1020		2018	TO BE SELECTED / TBS02	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	104,836	24.11	Y		
IGNITION CARTRIDGE, M1020		2019	TO BE SELECTED / TBS02	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	150,823	24.59	Y		
PROPELLANT CHARGE, M234A1		2017	GEN DYNAMICS ORD & TAC SYS - / MARION, IL	C / IDIQ	ROCK ISLAND ARSENAL, IL	Aug 2017	Feb 2019	595,715	18.04	Y		
PROPELLANT CHARGE, M234A1		2018	TO BE SELECTED / TBS02	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	419,345	28.26	Y		
PROPELLANT CHARGE, M234A1		2019	TO BE SELECTED / TBS02	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	603,295	21.42	Y		
SHELL BODY, 120MM FRPC		2017	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	C / FFP	PICATINNY ARSENAL, NJ	Jul 2017	Jan 2019	148,929	92.59	Y		
SHELL BODY, 120MM FRPC		2018	TO BE SELECTED / TBS02	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	104,836	153.32	Y		
SHELL BODY, 120MM FRPC		2019	TO BE SELECTED / TBS02	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	150,823	100.67	Y		
FUZE PRACTICE, M781		2017	NAMMO POCAL INC. / SCRANTON, PA	C / IDIQ	PICATINNY ARSENAL, NJ	Jan 2018	Jul 2018	148,929	21.57	Y		
FUZE PRACTICE, M781		2018	NAMMO POCAL INC. / SCRANTON, PA	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	104,836	21.56	Y		
FUZE PRACTICE, M781		2019	NAMMO POCAL INC. / SCRANTON, PA	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	150,823	21.98	Y		

^(†) indicates the presence of a P-21

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army		Date: February 2018
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, MORTAR, 120MM FRTR M931 SERIES W/PRACT FUZE [CA09]

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Exhibit P-21, Production Schedule: PB 2019 Army				Date: February 2018							
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, MORTAR, 120MM FRTR M931 SERIES W/PRACT FUZE [CA09]			

Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2017												Fiscal Year 2018												B A L A N C E	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	Calendar Year 2017												Calendar Year 2018												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
LOAD, ASSEMBLE, PACK (LAP)																															
	1	2017	ARMY	144.591	.000	144.591																							144.591		
	1	2018	ARMY	101.783	.000	101.783																							101.783		
	2	2019	ARMY	146.431	.000	146.431																							146.431		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army															Date: February 2018														
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, MORTAR, 120MM 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)																																	
	1	2017	ARMY	144.591	.000	144.591	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000				
	1	2018	ARMY	101.783	.000	101.783	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41.783				
	2	2019	ARMY	146.431	.000	146.431																						146.431					
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army															Date: February 2018														
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, MORTAR, 120MM FRTR M931 SERIES W/PRACT FUZE [CA09]									

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				
LOAD, ASSEMBLE, PACK (LAP)																																		
	1	2017	ARMY	144.591	144.591	.000																							.000					
	1	2018	ARMY	101.783	60.000	41.783	12.000	12.000	17.783																				.000					
	2	2019	ARMY	146.431	.000	146.431	-	-	-	-	-	-	-	12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000	14.431					.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 2019 Army		Date: February 2018
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, MORTAR, 120MM FRTR M931 SERIES W/PRACT FUZE [CA09]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	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
2	TO BE SELECTED - TBS01	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 2019 Army		Date: February 2018
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, MORTAR, 120MM 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	-	10,590	-	-	-
Gross/Weapon System Cost (\$ in Millions)	196.931	-	16.800	-	-	-
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	196.931	-	16.800	-	-	-
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	196.931	-	16.800	-	-	-

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

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	1,586.40	-	-	-

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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) ^(†)	-	-	-	-	-	-	479.44	10,590	5.077	-	-	-	-	-	-	-	-	-
FIN ASSEMBLY, M31 ^(†)	-	-	-	-	-	-	45.88	10,907	0.500	-	-	-	-	-	-	-	-	-
IGNITION CARTRIDGE, M1020 ^(†)	-	-	-	-	-	-	24.11	10,907	0.263	-	-	-	-	-	-	-	-	-
PROPELLANT CHARGE, M234A1 ^(†)	-	-	-	-	-	-	28.25	43,630	1.233	-	-	-	-	-	-	-	-	-
SHELL BODY, 120MM SMK ^(†)	-	-	-	-	-	-	324.00	10,907	3.534	-	-	-	-	-	-	-	-	-
FUZE MOFM, M734A1 ^(†)	-	-	-	-	-	-	271.13	10,907	2.957	-	-	-	-	-	-	-	-	-
BURSTER ASSEMBLY, M86 ^(†)	-	-	-	-	-	-	49.59	10,907	0.541	-	-	-	-	-	-	-	-	-
BURSTER HOUSING, 120MM SMOKE ^(†)	-	-	-	-	-	-	31.37	10,907	0.342	-	-	-	-	-	-	-	-	-
FIBER CONTAINER PA 167, 120MM ^(†)	-	-	-	-	-	-	12.98	10,907	0.142	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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]: E91300 / CTG, MORTAR, 120MM WP SMOKE M929 SERIES W/MOFM [CA03]		

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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)	-	-	-	-	-	-	60.59	5,506	0.334	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	14.922	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	-	-	-	14.922	-	-	-	-	-	-	-	-	-
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	-	-	-	0.090	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	-	-	-	0.090	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	196.931	-	-	-	-	-	1.787	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	196.931	-	-	-	-	-	1.787	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	196.931	-	-	-	1,586.40	10,590	16.800	-	-	-	-	-	-	-	-	-

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

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018				
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, MORTAR, 120MM 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
LOAD, ASSEMBLE, PACK (LAP)		2018	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	PICATINNY ARSENAL, NJ	May 2018	May 2021	10,590	479.44	Y		
FIN ASSEMBLY, M31		2018	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	10,907	45.88	Y		
IGNITION CARTRIDGE, M1020		2018	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	10,907	24.11	Y		
PROPELLANT CHARGE, M234A1		2018	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	43,630	28.25	Y		
SHELL BODY, 120MM SMK		2018	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	10,907	324.00	Y		
FUZE MOFM, M734A1		2018	L-3 FUZING & ORDANCE SYSTEMS / CINCINNATI, OH	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Mar 2020	10,907	271.13	Y		
BURSTER ASSEMBLY, M86		2018	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Feb 2018	Aug 2019	10,907	49.59	Y		
BURSTER HOUSING, 120MM SMOKE		2018	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Feb 2018	Aug 2019	10,907	31.37	Y		
FIBER CONTAINER PA 167, 120MM		2018	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	10,907	12.98	Y		
METAL CONTAINER PA 154, 120MM		2018	BWAY CORPORATION / ATLANTA, GA	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	5,506	60.59	Y		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	3,772.197	126.852	133.500	168.101	-	168.101	174.585	195.647	254.261	251.745	-	5,076.888
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	3,772.197	126.852	133.500	168.101	-	168.101	174.585	195.647	254.261	251.745	-	5,076.888
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	3,772.197	126.852	133.500	168.101	-	168.101	174.585	195.647	254.261	251.745	-	5,076.888

(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 M865 Target Practice Cone-Stabilized Discarding Sabot with Tracer (TPCSDS-T) 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. 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 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 A, approved for service use.

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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>(E78007) The 120mm M830A1 High Explosive Anti-Tank, Multi-Purpose w/Tracer,(HEAT-MP-T) cartridge is designed for use against light armor, buildings and bunkers, as well as providing self-defense capability against attack helicopters. The lethal mechanism includes a shaped-charged warhead and blast effect. This round is fired from the M256 120MM smooth-bore cannon mounted on the Abrams tank. Additionally, the M830A1 is effective against the side and rear aspects of tanks and dismounted anti-tank and automatic weapon teams (targets not suitable to kinetic energy penetrator cartridges). The fixed round utilizes a combustible cartridge case affixed to a steel stub base and loaded with granular propellant. The fin-stabilized, high chrome alloy steel projectile body contains press-loaded high explosive and a precision copper liner. The fuze is armed during launch and initiated by an impact switch or proximity sensor, depending upon the operational mode selected by the ammo loader. This item is Code A, 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>		

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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, P-21	A		- / 18.927	2,464 / 7.900	3,064 / 8.500	3,037 / 8.719	- / -	3,037 / 8.719
P-5	E73201 / CTG, TANK, 120MM M1002 TP MULTI PUR-TRACE (TPMP-T) [CA31]	P-5a, P-21	A		- / 419.502	- / 35.513	19,801 / 53.100	16,018 / 47.882	- / -	16,018 / 47.882
P-5	E73400 / CTG TANK 120MM TPCSDS-T M865 [C785]		A		- / 2,647.804	- / 29.900	- / 32.800	- / 34.279	- / -	- / 34.279
P-5	E78007 / CTG, TANK, 120MM HEAT-MP-T M830A1 [C791]		A		- / 565.934	- / 8.999	- / -	- / -	- / -	- / -
P-5	E88105 / CTG, 120MM TANK, HEMP-T, XM1147	P-5a, P-21	A		- / -	- / -	- / -	700 / 24.598	- / -	700 / 24.598
P-5	E88106 / CTG, TANK, 120MM APFSDS-T, M829A4 [CA64]	P-5a, P-21	A		- / 120.030	2,937 / 44.540	2,606 / 39.100	3,006 / 52.623	- / -	3,006 / 52.623
P-40	Total Gross/Weapon System Cost				- / 3,772.197	- / 126.852	- / 133.500	- / 168.101	- / -	- / 168.101

*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 2019 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements IAW DoD Instruction 3000.04 (Munitions Requirements Process) and AR 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support 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 2019 Base procurement dollars in the amount of \$168.101 million supports the procurement of .023 million cartridges.

(E22125) M724A2 - This is a training unique item not used in combat. The FY 2019 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$8.719 million supports the procurement of .003 million M724A2 cartridges.

TYPE CLASSIFICATION DATE: 2016

(E78007) M830A1 (HEAT-MP-T) - This is a war reserve item used in combat. The request builds a war reserve inventory in accordance with the Army's procurement goals.

TYPE CLASSIFICATION DATE: 1993

(E73201) M1002 (TPMP-T) - This is a training unique item not used in combat. The FY 2019 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$47.882 million supports the procurement of .016 million M1002 cartridges.

TYPE CLASSIFICATION DATE: 2006

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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>(E73400) M865 (TPCSDS-T) - This is a training unique item not used in combat. FY 2019 request supports annual training and builds a depot level in accordance with the Army's procurement goals. The FY 2019 request provides a safer round by incorporating safety initiatives such as a safer case. FY 2019 Base procurement dollars in the amount of \$34.279 million supports recapitalizing .034 million M865 cartridges.</p> <p>TYPE CLASSIFICATION DATE: 1984</p> <p>(E88105) XM1147 (HEMP-T) Advanced Multi Purpose (AMP) - This is a war reserve item used in combat. The FY 2019 request builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$24.598 million supports the procurement of .001 million XM1147 AMP cartridges. E88105 is a new start in FY 2019.</p> <p>TYPE CLASSIFICATION DATE: 2020</p> <p>(E88106) M829A4 (APFSDS-T) - This is a war reserve item used in combat. The FY 2019 request builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$52.623 million supports the procurement of .003 million M829A4 cartridges.</p> <p>TYPE CLASSIFICATION DATE: 2015</p>		

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	2,464	3,064	3,037	-	3,037
Gross/Weapon System Cost (\$ in Millions)	18.927	7.900	8.500	8.719	-	8.719
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	18.927	7.900	8.500	8.719	-	8.719
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	18.927	7.900	8.500	8.719	-	8.719

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

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	3,206.17	2,774.15	2,870.93	-	2,870.93

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 ^(†)	2,875.48	3,663	10,533	2,012.00	2,464	4,958	2,044.00	3,064	6,263	2,095.00	3,037	6,363	-	-	-	2,095.00	3,037	6,363
Subtotal: Recurring Cost	-	-	10,533	-	-	4,958	-	-	6,263	-	-	6,363	-	-	-	-	-	6,363
Subtotal: Hardware Cost	-	-	10,533	-	-	4,958	-	-	6,263	-	-	6,363	-	-	-	-	-	6,363
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	0.238	-	-	-	-	-	0.498	-	-	-	-	-	0.498
Acceptance Test	-	-	-	-	-	-	-	-	0.061	-	-	0.251	-	-	-	-	-	0.251
Subtotal: Support - Acceptance Testing Cost	-	-	-	-	-	0.238	-	-	0.061	-	-	0.749	-	-	-	-	-	0.749
Support - Product Improvement Cost																		
Production Verification Test	-	-	-	-	-	-	-	-	0.478	-	-	-	-	-	-	-	-	-
Production Qualification Test	-	-	0.583	-	-	0.434	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Product Improvement Cost	-	-	0.583	-	-	0.434	-	-	0.478	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	7.811	-	-	1.441	-	-	1.698	-	-	1.607	-	-	-	-	-	1.607
Subtotal: Support - Production Engineering Cost	-	-	7.811	-	-	1.441	-	-	1.698	-	-	1.607	-	-	-	-	-	1.607
Support - Study & Analysis Cost																		

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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:

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
Study & Analysis	-	-	-	-	-	0.829	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Study & Analysis Cost</i>	-	-	-	-	-	0.829	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	18.927	3,206.17	2,464	7.900	2,774.15	3,064	8.500	2,870.93	3,037	8.719	-	-	-	2,870.93	3,037	8.719

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018				
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 <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2017	ORBITAL ALLIANT TECHSYSTEMS / PLYMOUTH, MN	C / FFP	PICATINNY ARSENAL, NJ	Mar 2017	Mar 2018	2,464	2,012.00	Y		
COMPLETE ROUND ^(†)		2018	ORBITAL ALLIANT TECHSYSTEMS / PLYMOUTH, MN	C / FFP	PICATINNY ARSENAL, NJ	Mar 2018	Mar 2019	3,064	2,044.00	Y		
COMPLETE ROUND ^(†)		2019	ORBITAL ALLIANT TECHSYSTEMS / PLYMOUTH, MN	C / FFP	PICATINNY ARSENAL, NJ	Mar 2019	Mar 2020	3,037	2,095.00	Y		

^(†) indicates the presence of a P-21

Remarks:

FY 2017 - FY 2019 complete round is awarded as an option to an existing contract. This is a training standard item. FY 2019 Base procurement supports annual training and builds a depot level in accordance with Army's procurement goals.

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Exhibit P-21, Production Schedule: PB 2019 Army **Date:** February 2018

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]
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Cost Elements <i>(Units in Each)</i>							Fiscal Year 2017										Fiscal Year 2018										B A L A N C E																																													
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	Calendar Year 2017										Calendar Year 2018																																																							
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y		J U N	J U L	A U G	S E P																																									
COMPLETE ROUND																																																																								
Prior Years Deliveries: 3663																																																																								
1		2017	ARMY	2,464	0	2,464																						A -	-	-	-	-	-	-	-	-	-	-	-	-	1,860	604							0																							
1		2018	ARMY	3,064	0	3,064																																				A -	-	-	-	-	-	-	-	-	-	-	-			3,064																
1		2019	ARMY	3,037	0	3,037																																																																		3,037
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army															Date: February 2018														
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 <i>(Units in Each)</i>						Fiscal Year 2019														Fiscal Year 2020														BALANCE	
O C O #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019														Calendar Year 2020														
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					
COMPLETE ROUND																																			
Prior Years Deliveries: 3663																																			
1		2017	ARMY	2,464	2,464	0																											0		
1		2018	ARMY	3,064	0	3,064	-	-	-	-	-	259	255	255	255	255	255	255	255	255	255	255										0			
1		2019	ARMY	3,037	0	3,037						A	-	-	-	-	-	-	-	-	-	-	-	254	253	253	253	253	253	253	1,265				
							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 2019 Army															Date: February 2018														
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 <i>(Units in Each)</i>						Fiscal Year 2021										Fiscal Year 2022										BALANCE								
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021										Calendar Year 2022																	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R		M A Y	J U N	J U L	A U G	S E P			
COMPLETE ROUND																																		
Prior Years Deliveries: 3663																																		
1		2017	ARMY	2,464	2,464	0																												
1		2018	ARMY	3,064	3,064	0																												
1		2019	ARMY	3,037	1,772	1,265	253	253	253	253	253																							
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army		Date: February 2018
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]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	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	ORBITAL ALLIANT TECHSYSTEMS - PLYMOUTH, MN	100	2,000	3,000	7	11	12	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 2019 Army		Date: February 2018
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, TANK, 120MM 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)		-	-	19,801	16,018	-	16,018
Gross/Weapon System Cost (\$ in Millions)		419.502	35.513	53.100	47.882	-	47.882
Less PY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)		419.502	35.513	53.100	47.882	-	47.882
Plus CY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)		419.502	35.513	53.100	47.882	-	47.882

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

Initial Spares (\$ in Millions)		-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)		-	-	2,681.68	2,989.26	-	2,989.26

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 ^(†)	2,115.71	191,507	405.173	-	-	-	2,273.92	19,801	45.026	2,509.17	16,018	40.192	-	-	-	2,509.17	16,018	40.192
Subtotal: Recurring Cost	-	-	405.173	-	-	-	-	-	45.026	-	-	40.192	-	-	-	-	-	40.192
Subtotal: Hardware Cost	-	-	405.173	-	-	-	-	-	45.026	-	-	40.192	-	-	-	-	-	40.192
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	0.842	-	-	0.006	-	-	0.806	-	-	0.595	-	-	-	-	-	0.595
Subtotal: Support - Acceptance Testing Cost	-	-	0.842	-	-	0.006	-	-	0.806	-	-	0.595	-	-	-	-	-	0.595
Support - Product Improvement Cost																		
Safety	-	-	4.073	-	-	-	-	-	1.474	-	-	1.633	-	-	-	-	-	1.633
Reliability	-	-	-	-	-	-	-	-	0.784	-	-	0.468	-	-	-	-	-	0.468
Subtotal: Support - Product Improvement Cost	-	-	4.073	-	-	-	-	-	2.258	-	-	2.101	-	-	-	-	-	2.101
Support - Production Engineering Cost																		
Production Engineering	-	-	9.406	-	-	4.123	-	-	5.001	-	-	4.987	-	-	-	-	-	4.987
Subtotal: Support - Production Engineering Cost	-	-	9.406	-	-	4.123	-	-	5.001	-	-	4.987	-	-	-	-	-	4.987
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.008	-	-	0.008	-	-	0.009	-	-	0.008	-	-	-	-	-	0.008

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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, TANK, 120MM M1002 TP MULTI PUR-TRACE (TPMP-T) [CA31]
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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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>	-	-	0.008	-	-	0.008	-	-	0.009	-	-	0.008	-	-	-	-	-	0.008
Support - Recapitalization Cost																		
Recapitalization	-	-	-	-	-	31.376	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Recapitalization Cost</i>	-	-	-	-	-	31.376	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	419.502	-	-	35.513	2,681.68	19,801	53.100	2,989.26	16,018	47.882	-	-	-	2,989.26	16,018	47.882

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

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018				
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, TANK, 120MM M1002 TP MULTI PUR-TRACE (TPMP-T) [CA31]				

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 ^(†)		2018	GENERAL DYNAMICS ORD AND TACT / ST PETERSBURG, FL	SS / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Feb 2019	10,891	2,273.93	Y		
COMPLETE ROUND ^(†)		2018	ORBITAL ALLIANT TECHSYSTEMS / PLYMOUTH, MN	SS / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Feb 2019	8,910	2,273.93	Y		
COMPLETE ROUND ^(†)		2019	GENERAL DYNAMICS ORD AND TACT / ST PETERSBURG, FL	SS / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Feb 2020	8,810	2,509.17	Y		
COMPLETE ROUND ^(†)		2019	ORBITAL ALLIANT TECHSYSTEMS / PLYMOUTH, MN	SS / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Feb 2020	7,208	2,509.17	Y		

^(†) indicates the presence of a P-21

Remarks:

Hardware unit prices are an average unit price for multiple producers. FY 2019 will be part of the FY 2017 systems contract for FY 2017 - FY 2021

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Exhibit P-21, Production Schedule: PB 2019 Army															Date: February 2018														
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, TANK, 120MM M1002 TP MULTI PUR-TRACE (TPMP-T) [CA31]									

Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2018															Fiscal Year 2019															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 7	BAL D U E A S O F 1 O C T	Calendar Year 2018															Calendar Year 2019															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							

COMPLETE ROUND																																						
Prior Years Deliveries: 191507																																						
1	2018	ARMY	10.891	.000	10.891																																	
2	2018	ARMY	8.910	.000	8.910																																	
1	2019	ARMY	8.810	.000	8.810																																	
2	2019	ARMY	7.208	.000	7.208																																	

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Exhibit P-21, Production Schedule: PB 2019 Army															Date: February 2018														
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, TANK, 120MM M1002 TP MULTI PUR-TRACE (TPMP-T) [CA31]									

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																																					
Prior Years Deliveries: 191507																																					
	1	2018	ARMY	10.891	7.263	3.628	.907	.907	.907	.907																									.000		
	2	2018	ARMY	8.910	5.942	2.968	.742	.742	.742	.742																									.000		
	1	2019	ARMY	8.810	.000	8.810	-	-	-	-	.736	.734	.734	.734	.734	.734	.734	.734	.734	.734	.734	.734	.734												.000		
	2	2019	ARMY	7.208	.000	7.208	-	-	-	-	.608	.600	.600	.600	.600	.600	.600	.600	.600	.600	.600	.600	.600												.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 2019 Army		Date: February 2018
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, TANK, 120MM M1002 TP MULTI PUR-TRACE (TPMP-T) [CA31]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	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	ORBITAL ALLIANT TECHSYSTEMS - PLYMOUTH, MN	100	2,880	7,800	6	6	11	17	6	6	11	17

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

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

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 TANK 120MM 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	2,647.804	29.900	32.800	34.279	-	34.279
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	2,647.804	29.900	32.800	34.279	-	34.279
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	2,647.804	29.900	32.800	34.279	-	34.279

(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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	2,610.020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Hardware Cost	-	-	2,610.020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	0.810	-	-	0.824	-	-	0.854	-	-	-	-	-	0.854
Subtotal: Support - Acceptance Testing Cost	-	-	-	-	-	0.810	-	-	0.824	-	-	0.854	-	-	-	-	-	0.854
Support - Product Improvement Cost																		
Reliability	-	-	2.620	-	-	-	-	-	1.148	-	-	0.832	-	-	-	-	-	0.832
Safety	-	-	2.297	-	-	-	-	-	0.848	-	-	1.963	-	-	-	-	-	1.963
Subtotal: Support - Product Improvement Cost	-	-	4.917	-	-	-	-	-	1.996	-	-	2.795	-	-	-	-	-	2.795
Support - Production Engineering Cost																		
Production Engineering	-	-	11.884	-	-	2.569	-	-	2.563	-	-	2.768	-	-	-	-	-	2.768
Subtotal: Support - Production Engineering Cost	-	-	11.884	-	-	2.569	-	-	2.563	-	-	2.768	-	-	-	-	-	2.768
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.010	-	-	-	-	-	0.009	-	-	-	-	-	-	-	-	-
Subtotal: Support - Quality Assurance Cost	-	-	0.010	-	-	-	-	-	0.009	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 TANK 120MM 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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	20.973	-	-	26.521	-	-	27.408	-	-	27.862	-	-	-	-	-	27.862
<i>Subtotal: Support - Recapitalization Cost</i>	-	-	20.973	-	-	26.521	-	-	27.408	-	-	27.862	-	-	-	-	-	27.862
Gross/Weapon System Cost	-	-	2,647.804	-	-	29.900	-	-	32.800	-	-	34.279	-	-	-	-	-	34.279

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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]: E78007 / CTG, TANK, 120MM HEAT-MP-T M830A1 [C791]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	565.934	8.999	-	-	-	-
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	565.934	8.999	-	-	-	-
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	565.934	8.999	-	-	-	-

(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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	0.368	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Acceptance Testing Cost	-	-	-	-	-	0.368	-	-	-	-	-	-	-	-	-	-	-	-
Support - Product Improvement Cost																		
Production Qualification Test	-	-	-	-	-	0.222	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Product Improvement Cost	-	-	-	-	-	0.222	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	565.934	-	-	0.700	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Production Engineering Cost	-	-	565.934	-	-	0.700	-	-	-	-	-	-	-	-	-	-	-	-
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	0.003	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Quality Assurance Cost	-	-	-	-	-	0.003	-	-	-	-	-	-	-	-	-	-	-	-
Support - Recapitalization Cost																		
Recapitalization	-	-	-	-	-	7.706	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Recapitalization Cost	-	-	-	-	-	7.706	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	565.934	-	-	8.999	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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]: E78007 / CTG, TANK, 120MM HEAT-MP-T M830A1 [C791]
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	-	-	700	-	700
Gross/Weapon System Cost (\$ in Millions)	-	-	-	24.598	-	24.598
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	-	-	24.598	-	24.598
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	-	-	24.598	-	24.598

(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)	-	-	-	35,140.00	-	35,140.00

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total				
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	700	9.945	-	-	-	14,206.56	700	9.945		
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	-	-	-	9.945	-	-	-	-	-	9.945		
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	-	-	-	-	-	-	9.945	-	-	-	-	-	9.945		
Support - Acceptance Testing Cost																				
Acceptance Test	-	-	-	-	-	-	-	-	-	-	-	1.524	-	-	-	-	-	1.524		
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	-	-	-	-	-	-	1.524	-	-	-	-	-	1.524		
Support - Production Engineering Cost																				
Production Engineering	-	-	-	-	-	-	-	-	-	-	-	3.888	-	-	-	-	-	3.888		
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	-	-	-	-	-	-	3.888	-	-	-	-	-	3.888		
Support - Study & Analysis Cost																				
Study & Analysis	-	-	-	-	-	-	-	-	-	-	-	9.241	-	-	-	-	-	9.241		
<i>Subtotal: Support - Study & Analysis Cost</i>	-	-	-	-	-	-	-	-	-	-	-	9.241	-	-	-	-	-	9.241		
Gross/Weapon System Cost	-	-	-	-	-	-	-	-	-	-	-	35,140.00	700	24.598	-	-	-	35,140.00	700	24.598

(†) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018					
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 (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND ^(†)		2019	ALLIANT TECHSYSTEMS / PLYMOUTH, MN	SS / FFP	PICATINNY ARSENAL, NJ	Jun 2019	Jun 2020	700	14,206.56	Y		

^(†) indicates the presence of a P-21

UNCLASSIFIED

Exhibit P-21, Production Schedule: PB 2019 Army													Date: February 2018																
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 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		700	0	700									A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	700		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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UNCLASSIFIED

Exhibit P-21, Production Schedule: PB 2019 Army		Date: February 2018
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 2019	1-8-5 For 2019	MAX For 2019	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	ALLIANT TECHSYSTEMS - 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).

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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, TANK, 120MM 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	2,937	2,606	3,006	-	3,006
Gross/Weapon System Cost (\$ in Millions)	120.030	44.540	39.100	52.623	-	52.623
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	120.030	44.540	39.100	52.623	-	52.623
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	120.030	44.540	39.100	52.623	-	52.623

(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)	-	15,165.13	15,003.84	17,505.99	-	17,505.99

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 ^(†)	11,646.00	8,648	100.715	11,200.00	2,937	32.894	13,370.00	2,606	34.842	16,000.00	3,006	48.096	-	-	-	16,000.00	3,006	48.096
Subtotal: Recurring Cost	-	-	100.715	-	-	32.894	-	-	34.842	-	-	48.096	-	-	-	-	-	48.096
Subtotal: Hardware Cost	-	-	100.715	-	-	32.894	-	-	34.842	-	-	48.096	-	-	-	-	-	48.096
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	1.334	-	-	6.173	-	-	0.266	-	-	-	-	-	-	-	-	-
First Article Test	-	-	-	-	-	-	-	-	0.177	-	-	0.185	-	-	-	-	-	0.185
Subtotal: Support - Acceptance Testing Cost	-	-	1.334	-	-	6.173	-	-	0.443	-	-	0.185	-	-	-	-	-	0.185
Support - Non-Recurring Support Cost																		
Industrial Stock	-	-	-	-	-	0.053	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Non-Recurring Support Cost	-	-	-	-	-	0.053	-	-	-	-	-	-	-	-	-	-	-	-
Support - Product Improvement Cost																		
Production Verification Test	-	-	-	-	-	1.670	-	-	0.219	-	-	0.041	-	-	-	-	-	0.041
Subtotal: Support - Product Improvement Cost	-	-	-	-	-	1.670	-	-	0.219	-	-	0.041	-	-	-	-	-	0.041
Support - Production Engineering Cost																		
Production Engineering	-	-	17.981	-	-	3.749	-	-	3.596	-	-	4.301	-	-	-	-	-	4.301

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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]: E88106 / CTG, TANK, 120MM APFSDS-T, M829A4 [CA64]		

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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>	-	-	17.981	-	-	3.749	-	-	3.596	-	-	4.301	-	-	-	-	-	4.301
Gross/Weapon System Cost	-	-	120.030	15,165.13	2,937	44.540	15,003.84	2,606	39.100	17,505.99	3,006	52.623	-	-	-	17,505.99	3,006	52.623

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

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018				
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, TANK, 120MM 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 ^(†)		2017	ORBITAL ALLIANT TECHSYSTEMS / PLYMOUTH, MN	SS / FFP	PICATINNY ARSENAL, NJ	Jun 2018	Aug 2019	2,937	11,200.00	Y		
COMPLETE ROUND ^(†)		2018	ORBITAL ALLIANT TECHSYSTEMS / PLYMOUTH, MN	SS / FFP	PICATINNY ARSENAL, NJ	Jun 2018	Feb 2020	2,606	13,370.00	Y		
COMPLETE ROUND ^(†)		2019	TO BE SELECTED / TBS02	SS / FFP	PICATINNY ARSENAL, NJ	Mar 2019	Jun 2020	3,006	16,000.00	Y		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2019 Army															Date: February 2018														
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, TANK, 120MM APFSDS-T, M829A4 [CA64]									

Cost Elements <i>(Units in Each)</i>										Fiscal Year 2018										Fiscal Year 2019										B A L A N C E
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	Calendar Year 2018										Calendar Year 2019													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	

COMPLETE ROUND

Prior Years Deliveries: 8648

	1	2017	ARMY	2,937	0	2,937																									2,937			0
	1	2018	ARMY	2,606	0	2,606																									-	-		2,606
	2	2019	ARMY	3,006	0	3,006															A	-												3,006

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

Exhibit P-21, Production Schedule: PB 2019 Army															Date: February 2018														
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, TANK, 120MM APFSDS-T, M829A4 [CA64]									

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2020													Fiscal Year 2021													BALANCE			
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCE PT PRI OR 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: 8648																																			
1		2017	ARMY	2,937	2,937	0																													0
1		2018	ARMY	2,606	0	2,606	-	-	-	-	2,000	606																							0
2		2019	ARMY	3,006	0	3,006	-	-	-	-	-	-	-	2,000	1,006																				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 2019 Army		Date: February 2018
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, TANK, 120MM APFSDS-T, M829A4 [CA64]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	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	ORBITAL ALLIANT TECHSYSTEMS - PLYMOUTH, MN	100	500	3,500	6	9	15	24	6	6	14	20
2	TO BE SELECTED - TBS02	100	500	2,000	6	6	15	21	6	6	14	20

Remarks:
Production is continuous. Deliveries are consolidated to reduce cost.

"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 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	2,854.947	65.790	44.200	39.341	-	39.341	83.615	31.193	31.736	32.350	-	3,183.172
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	2,854.947	65.790	44.200	39.341	-	39.341	83.615	31.193	31.736	32.350	-	3,183.172
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	2,854.947	65.790	44.200	39.341	-	39.341	83.615	31.193	31.736	32.350	-	3,183.172

(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.

(E15200) CTG, ARTY, 75MM BLANK, M337A1
The 75mm M337A2 is a non-tactical blank cartridge fired from a M116 Howitzer that is used in burial, retreat ceremonies and VIP Salutes. It consists of a cartridge case containing loosely packed black powder and a press-fitted percussion primer. A fiberglass wad is inserted over the black powder and a polystyrene closing cup is cemented in place with a polyester resin adhesive. When the firing pin of the weapon strikes the primer, a flash is generated which ignites the black powder charge producing flash, smoke, and a loud report to simulate weapon firing.
This item is Code A, approved for service use.

(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. Funding for the 105MM HE, M1 program in FY 2017 through FY 2019 is for recapitalization.
This item is Code A, approved for service use.

(E21705) CTG, ARTY, 105MM IR ILLUM, M1064
The 105mm M1064 is a Infrared (IR) Illuminating Cartridge compatible with the M762 series ET fuze, M67 propelling charge, and is packaged in the PA117 Shipping Container. The XM1064 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 Infrared Illumination greatly enhances the effectiveness of night vision devices providing front line units with temporary battlefield infrared illumination to observe the movements and maneuvers of enemy forces under the cover of darkness.
The item is Code A approved for service use.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	E15200 / CTG, ARTY, 75MM BLANK, M337A1 [C025]	P-5a	A		- / 59.454	30,634 / 3.500	- / -	- / -	- / -	- / -
P-5	E21501 / CTG, ARTY, 105MM HE, M1 W/O FUZE [C445]		A		- / 2,776.536	- / 62.290	- / 44.200	- / 30.006	- / -	- / 30.006
P-5	E21705 / CTG, ARTY, 105MM IR ILLUM M1064 W/O FUZE [CA53]		A		- / 18.957	- / -	- / -	- / 9.335	- / -	- / 9.335
P-40	Total Gross/Weapon System Cost				- / 2,854.947	- / 65.790	- / 44.200	- / 39.341	- / -	- / 39.341

*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 2019 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements IAW DoD Instruction 3000.04 (Munitions Requirements Process) and AR 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support 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 2019 Total BASE dollars in the amount of \$39.341 million supports the procurement of 132,000 recapitalized (RECAP) cartridges.

(E15200) CTG, ARTY, 75MM Blank, M337A1
This is a training unique item not used in combat. Request supports annual training and builds a depot level in accordance with the Army procurement goals.
TYPE CLASSIFICATION DATE: 1975

(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 2019 request supports annual training and builds a war reserve inventory in accordance with the Army procurement goals. FY 2019 Base procurement dollars in the amount of \$30.006 million will supports the procurement of 120,000 recapitalized cartridges.
TYPE CLASSIFICATION DATE: 1966

(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. FY 2019 request supports annual training and builds a war reserve inventory in accordance with the Army procurement goals. FY 2019 Base procurement dollars in the amount of \$9.335 million will support the procurement of 12,000 recapitalized cartridges. This is a New Start in FY 2019.
TYPE CLASSIFICATION DATE: MARCH 2009

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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]: E15200 / CTG, ARTY, 75MM BLANK, M337A1 [C025]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	-	30,634	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	59.454	3.500	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	59.454	3.500	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	59.454	3.500	-	-	-	-

(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>)	-	114.25	-	-	-	-

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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) ^(†)	-	-	-	93.18	30,634	2.854	-	-	-	-	-	-	-	-	-	-	-	-
BLACK POWDER CLASS 1 ^(†)	-	-	-	15.38	30,634	0.471	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	3.326	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	3.326	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	59.454	-	-	0.174	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	59.454	-	-	0.174	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	59.454	114.25	30,634	3.500	-	-	-	-	-	-	-	-	-	-	-	-

^(†) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2019 Army								Date: February 2018				
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]: E15200 / CTG, ARTY, 75MM BLANK, M337A1 [C025]				
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)		2017	AMERICAN ORDNANCE LLC (IAAP) / MIDDLETOWN, IA	C / FFP	ROCK ISLAND ARSENAL, IL	Dec 2017	Aug 2019	30,634	93.18	Y		
BLACK POWDER CLASS 1		2017	GOEX POWDER, INC. / MINDEN, LA	SS / FFP	ROCK ISLAND ARSENAL, IL	Feb 2018	Feb 2019	30,634	15.38	Y		

Remarks:
FY 2017 is a delivery order to an existing contract.

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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, ARTY, 105MM 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	2,776.536	62.290	44.200	30.006	-	30.006
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	2,776.536	62.290	44.200	30.006	-	30.006
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	2,776.536	62.290	44.200	30.006	-	30.006
<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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	2,776.536	-	-	62.290	-	-	44.200	-	-	30.006	-	-	-	-	-	30.006
<i>Subtotal: Support - Recapitalization Cost</i>	-	-	2,776.536	-	-	62.290	-	-	44.200	-	-	30.006	-	-	-	-	-	30.006
Gross/Weapon System Cost	-	-	2,776.536	-	-	62.290	-	-	44.200	-	-	30.006	-	-	-	-	-	30.006

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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]: E21705 / CTG, ARTY, 105MM IR ILLUM M1064 W/O FUZE [CA53]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	18.957	-	-	9.335	-	9.335
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	18.957	-	-	9.335	-	9.335
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	18.957	-	-	9.335	-	9.335

(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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	18.957	-	-	-	-	-	-	-	-	9.335	-	-	-	-	-	9.335
<i>Subtotal: Support - Recapitalization Cost</i>	-	-	18.957	-	-	-	-	-	-	-	-	9.335	-	-	-	-	-	9.335
Gross/Weapon System Cost	-	-	18.957	-	-	-	-	-	-	-	-	9.335	-	-	-	-	-	9.335

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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: N/A

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,867.876	127.101	187.149	211.442	79.400	290.842	128.514	176.623	102.543	140.286	-	3,020.934
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,867.876	127.101	187.149	211.442	79.400	290.842	128.514	176.623	102.543	140.286	-	3,020.934
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,867.876	127.101	187.149	211.442	79.400	290.842	128.514	176.623	102.543	140.286	-	3,020.934

(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.

(E21618) PROJ, ARTY, 155mm Extended Range Spotting, M1121

The 155mm M110A3 Smoke White Phosphorous (WP) Artillery Round utilizes projectile bodies generated from an on-going M483 Dual Purpose Improved Conventional Munition (DPICM) demilitarization program and incorporates a more producible 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 B, not approved for service use.

(E26904) PROJ, ARTY, 155MM IR ILLUM M1123

The 155mm M1123 Infrared Illumination Projectile is used with night vision devices to illuminate a designated target area to a maximum range of 22.5 kilometers. The M1123 utilizes projectile bodies generated from an on-going M483 Dual Purpose Improved Conventional Munition (DPICM) demilitarization program and leverages the payload contained in the M1066 IR Illuminating Projectile. The M1123 contains a Canister Loading Assembly, Expulsion Charge, and numerous spacers. The Canister Loading Assembly consists of an IR 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 deploys and the canister fins extend. The expelling charge also ignites the Delay in the canister nose. The Delay 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 illuminate candle descends at 15 feet per second and burns for 120 seconds minimum. The M1123 provides Infrared battlefield illumination that is 2.4x larger in diameter than the M1124 Visible Light Illumination projectile.

This item is Code A, approved for service use.

(E26900) PROJ, ARTY, 155MM VL ILLUM M1124

The 155mm M1124 Visual Light 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 VL Illuminating Candle, Main Parachute, Drogue Parachute, Delay, and

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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: N/A		
<p>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.</p> <p>(E27603) PROJ, ARTY, 155MM HE IM TRAINING M1122 The 155mm M1122 High Explosive (HE) Projectile will be the primary HE round used for training. The M1122 is a lower cost HE training round. The M1122 will replace the M804A1 and M107 Projectiles for training. It utilizes M483A1 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 (IMX-101 explosive fill, PBXN-9 Supplementary Charge, Plastic Fuze Well Liner and Meltable Fuze Plug) to increase survivability and safety. The M1122 will replicate the flight characteristics of the wartime M795 HE Projectile with a maximum range of 22.5 kilometers. This item is Code A, approved for service use.</p> <p>(E66800)PROJ, ARTY, 155MM HE, M795 The M795 High Explosive (HE) Projectile is the primary HE round used for warfare 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>(E21615) PROJ, ARTY, 155MM SMOKE M1125 The 155mm Smoke M1125 Artillery Round utilizes projectile bodies generated from an on-going M483 Dual Purpose Improved Conventional Munition (DPICM) demilitarization program. M1125 will incorporate a metal chloride composition with hexachloroethane known as HX (technical name not yet defined) into four smoke canisters to enhance screening and obscuration while reducing toxicity to a maximum range of 22.5 kilometers providing increased operational effectiveness and improved training. 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>(E68500) PROJ, ARTY, 155MM DPICM BASEBLED M864 The 155mm projectile replacement for Dual Purpose Improved Conventional Munition (DPICM) capability which will be lost 01 January 2019 due to policy restrictions. Capability will provide lethal effects against disbursed and poorly located light, medium and heavy armored targets by procuring sensor fuzed projectiles. This is a directed procurement by the Vice Chief of Staff of the Army as a bridging strategy to fill a critical capability gap from the loss of DPICM and a planned follow-on program of record. This item is Code A, approved for service use.</p> <p>(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</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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: N/A		
<p>is comprised of an ogive, expulsion charge, modified all steel body, and a one-piece steel dome shaped base. Upon M762/M762A1 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.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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: N/A

Exhibits Schedule					Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	E21615 / PROJ, ARTY, 155MM, SMOKE M1125 [DZ08]		B		- / 10.000	- / 2.238	- / -	- / -	- / -	- / -
P-5	E21618 / PROJ, ARTY, 155mm Extended Range Spotting, M1121 [DA66]		B		- / 9.162	- / 1.201	- / -	- / -	- / -	- / -
P-5	E26900 / PROJ, ARTY, 155MM VL ILLUM, M485 / M1124 [DA57]	P-5a	A		- / 289.522	7,864 / 11.524	- / -	14,717 / 19.344	- / -	14,717 / 19.344
P-5	E26904 / PROJ, ARTY, 155MM IR ILLUM M1066 / M1123 [DA56]	P-5a	A		- / 63.337	- / -	8,810 / 13.300	- / -	- / -	- / -
P-5	E27001 / PROJ, 155MM ARTY Smoke, M116 Series [D506]	P-5a	A		- / -	- / -	2,000 / 5.000	- / -	- / -	- / -
P-5	E27603 / PROJ, 155mm ARTY HE IM Training, M1122	P-5a, P-21	A		- / 89.854	143,434 / 67.290	121,554 / 65.400	140,900 / 63.153	- / -	140,900 / 63.153
P-5	E66800 / PROJ, ARTY, 155MM HE, M795 [DA54]	P-5a, P-21	A		- / 361.024	35,987 / 44.848	16,573 / 28.000	88,785 / 124.476	59,502 / 79.400	148,287 / 203.876
P-5	E67800 / PROJ, ARTY, 155MM WHITE PHOS SMOKE, M825 / M825A1 [D528]		A		- / 236.214	- / -	- / -	- / 4.469	- / -	- / 4.469
P-5	E68500 / PROJ, ARTY, 155MM DPICM BASEBLEED M864 [D864]	P-5a	A		- / 808.763	- / -	1,250 / 75.449	- / -	- / -	- / -
P-40	Total Gross/Weapon System Cost				- / 1,867.876	- / 127.101	- / 187.149	- / 211.442	- / 79.400	- / 290.842

*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 2019 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements IAW DoD Instruction 3000.04 (Munitions Requirements Process) and AR 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support 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 2019 Total BASE dollars in the amount of \$211.442 million supports the procurement of 244,402 projectiles and 15,000 recapitalized projectiles. FY 2019 Total Overseas Contingency Operations (OCO) funding in the amount of \$79.400 million supports the procurement of 59,502 projectiles.

(E21618) PROJ, ARTY, 155mm Extended Range Spotting, M1121
 This item is a training standard item used in both training and combat. Request supports annual training and build a war reserve inventory in accordance with the Army's procurement goals.
 TYPE CLASSIFICATION DATE: May 2017

(E26900) PROJ, ARTY, 155MM VL ILLUM, M485 / M1124
 This is a training standard item used in training and combat. FY 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$19.344 million supports the procurement of 14,717 projectiles.
 TYPE CLASSIFICATION DATE: 1970

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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: N/A		
<p>(E26904) PROJ, ARTY, 155MM IR ILLUM M1066 / M1123 This item is a training standard item used in both training and combat. Request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. TYPE CLASSIFICATION: 2010</p> <p>(E27603) PROJ, ARTY, 155MM HE IM TRAINING M1122 This is a training unique item not used in combat. FY 2019 request supports annual training and builds a depot level inventory in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$63.153 million supports the procurement of 140,900 projectiles. TYPE CLASSIFICATION DATE: 2010</p> <p>(E66800) PROJ, ARTY, 155MM HE, M795 This is a war reserve item used in combat. FY 2019 request builds a war reserve inventory in accordance with Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$124.476 million supports the procurement of 88,785 projectiles. FY 2019 OCO includes \$79.400 million to support the COCOM requirement for unit equipment sets to deter potential adversaries and support the European Deterrence Initiative (EDI) of 59,502 155MM HE, M795 projectiles. TYPE CLASSIFICATION DATE: 1982</p> <p>(E21615) PROJ, ARTY, 155MM SMOKE, M1125 This item is a training standard item used in both training and combat. Request supports annual training and build a war reserve inventory in accordance with the Army's procurement goals.</p> <p>(E27001) PROJ, ARTY, 155MM HC SMOKE M116 Series This item is a training standard item used in both training and combat. Request supports annual training and build a war reserve inventory in accordance with the Army's procurement goals. The 155mm Smoke M116 Artillery requirement was initiated based upon REF 10 Liner which required annual delivery of 1,000 M116A1 HC Smoke Projectiles (D506) to support training.</p> <p>(E68500) PROJ, ARTY, 155MM DPICM BASEBLED M864 This is a war reserve item. Request supports directed procurement by the Vice Chief of Staff of the Army to field 155MM Dual Purpose Improved Conventional Munitions (DPCIM). TYPE CLASSIFICATION DATE: 1991</p> <p>(E67800) PROJ, ARTY, 155MM WP SMOKE M825 This items is a training standard item used in training and combat. FY 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$4.469 million will support the procurement of 15,000 recapitalized projectiles. This is a New Start in FY 2019. TYPE CLASSIFICATION DATE: 1982</p>		

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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]: E21615 / PROJ, ARTY, 155MM, SMOKE M1125 [DZ08]

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	10.000	2.238	-	-	-	-
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	10.000	2.238	-	-	-	-
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	10.000	2.238	-	-	-	-

(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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 - Non-Recurring Support Cost																		
Facilitization	-	-	-	-	-	2.238	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Non-Recurring Support Cost</i>	-	-	-	-	-	2.238	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	10.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	10.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	10.000	-	-	2.238	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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) : B	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	9.162	1.201	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	9.162	1.201	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	9.162	1.201	-	-	-	-

(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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 - Engineering Change Proposals Cost																		
Engineering Change Proposals	-	-	-	-	-	1.201	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Engineering Change Proposals Cost</i>	-	-	-	-	-	1.201	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	9.162	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	9.162	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	9.162	-	-	1.201	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2019 Army						Date: February 2018		
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, ARTY, 155MM VL ILLUM, M485 / M1124 [DA57]		
ID Code (A=Service Ready, B=Not Service Ready) : A						MDAP/MAIS Code:		
Resource Summary			Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)			-	7,864	-	14,717	-	14,717
Gross/Weapon System Cost (\$ in Millions)			289.522	11.524	-	19.344	-	19.344
Less PY Advance Procurement (\$ in Millions)			-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)			289.522	11.524	-	19.344	-	19.344
Plus CY Advance Procurement (\$ in Millions)			-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)			289.522	11.524	-	19.344	-	19.344
<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)			-	1,465.41	-	1,314.40	-	1,314.40

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	-	310.69	14,717	4.572	-	-	-	310.69	14,717	4.572
DELAY ELEMENT, 155MM ILLUM ^(†)	-	-	-	32.94	8,021	0.264	-	-	-	81.87	15,011	1.229	-	-	-	81.87	15,011	1.229
WOODEN PALLET, IMX ^(†)	-	-	-	95.58	1,022	0.098	-	-	-	117.30	1,913	0.224	-	-	-	117.30	1,913	0.224
VL ILLUM CANNISTER ^(†)	-	-	-	312.60	8,021	2.507	-	-	-	363.57	15,011	5.458	-	-	-	363.57	15,011	5.458
PARACHUTE MAIN, 155MM ILLUM ^(†)	-	-	-	37.80	8,021	0.303	-	-	-	39.29	15,011	0.590	-	-	-	39.29	15,011	0.590
CANISTER MPTS ASSY, 155MM ILLUM ^(†)	-	-	-	53.82	8,021	0.432	-	-	-	55.08	15,011	0.827	-	-	-	55.08	15,011	0.827
CANISTER BASE ASSY, 155MM ILLUM ^(†)	-	-	-	17.74	8,021	0.142	-	-	-	18.36	15,011	0.276	-	-	-	18.36	15,011	0.276
M10 EXPULSION CHARGE ASSEMBLY ^(†)	-	-	-	16.28	8,021	0.131	-	-	-	17.46	15,011	0.262	-	-	-	17.46	15,011	0.262

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Exhibit P-5, Cost Analysis: PB 2019 Army												Date: February 2018					
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, ARTY, 155MM VL ILLUM, M485 / M1124 [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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	-	5.25	60,045	0.315	-	-	-	5.25	60,045	0.315
METAL PARTS SETS ^(†)	-	-	-	301.47	8,021	2.418	-	-	-	175.00	14,717	2.575	-	-	-	175.00	14,717	2.575
PARACHUTE DROGUE ASSEMBLY, 155MM ILLUM ^(†)	-	-	-	16.90	8,021	0.136	-	-	-	18.36	15,011	0.276	-	-	-	18.36	15,011	0.276
DOWNLOAD, CLEAN AND INSPECT ^(†)	-	-	-	81.22	8,257	0.671	-	-	-	83.17	15,452	1.285	-	-	-	83.17	15,452	1.285
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	9.895	-	-	-	-	-	17.889	-	-	-	-	-	17.889
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	9.895	-	-	-	-	-	17.889	-	-	-	-	-	17.889
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	0.058	-	-	-	-	-	0.100	-	-	-	-	-	0.100
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	0.058	-	-	-	-	-	0.100	-	-	-	-	-	0.100
Support - Production Engineering Cost																		
Production Engineering	-	-	289.522	-	-	1.571	-	-	-	-	-	1.355	-	-	-	-	-	1.355
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	289.522	-	-	1.571	-	-	-	-	-	1.355	-	-	-	-	-	1.355
Gross/Weapon System Cost	-	-	289.522	1,465.41	7,864	11.524	-	-	-	1,314.40	14,717	19.344	-	-	-	1,314.40	14,717	19.344

^(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army								Date: February 2018				
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, ARTY, 155MM VL ILLUM, M485 / M1124 [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)		2017	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	PICATINNY ARSENAL, NJ	Jan 2017	Jan 2019	7,864	334.60	Y		
LOAD, ASSEMBLE, PACK (LAP)		2019	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	PICATINNY ARSENAL, NJ	Feb 2019	Feb 2021	14,717	310.69	Y		
DELAY ELEMENT, 155MM ILLUM		2017	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Jan 2017	Jul 2018	8,021	32.94	Y		
DELAY ELEMENT, 155MM ILLUM		2019	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Feb 2019	Aug 2020	15,011	81.87	Y		
WOODEN PALLET, IMX		2017	KNOX CNTY ASSOC RETARDED / VINCENNES, IN	C / FFP	ROCK ISLAND ARSENAL, IL	Aug 2017	Nov 2018	1,022	95.58	Y		
WOODEN PALLET, IMX		2019	KNOX CNTY ASSOC RETARDED / VINCENNES, IN	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	1,913	117.30	Y		
VL ILLUM CANNISTER		2017	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Jan 2017	Jul 2018	8,021	312.60	Y		
VL ILLUM CANNISTER		2019	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Feb 2019	Aug 2020	15,011	363.57	Y		
PARACHUTE MAIN, 155MM ILLUM		2017	YOLAND CORPORATION / BROOKLYN, NY	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2017	Sep 2018	8,021	37.80	Y		
PARACHUTE MAIN, 155MM ILLUM		2019	YOLAND CORPORATION / BROOKLYN, NY	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	15,011	39.29	Y		
CANISTER MPTS ASSY, 155MM ILLUM		2017	WOODLAWN MANUFACTURING INC / MARSHALL, TX	C / IDIQ	PICATINNY ARSENAL, NJ	Dec 2017	Nov 2018	8,021	53.82	Y		
CANISTER MPTS ASSY, 155MM ILLUM		2019	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	15,011	55.08	Y		
CANISTER BASE ASSY, 155MM ILLUM		2017	WOODLAWN MANUFACTURING INC / MARSHALL, TX	C / IDIQ	PICATINNY ARSENAL, NJ	Dec 2017	Nov 2018	8,021	17.74	Y		
CANISTER BASE ASSY, 155MM ILLUM		2019	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	15,011	18.36	Y		
M10 EXPULSION CHARGE ASSEMBLY		2017	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Jan 2017	Jul 2018	8,021	16.28	Y		
M10 EXPULSION CHARGE ASSEMBLY		2019	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Feb 2019	Aug 2020	15,011	17.46	Y		
PARACHUTE MAIN SUPPORTS, 155MM ILLUM		2017	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Jan 2017	Jul 2018	32,085	5.05	Y		
PARACHUTE MAIN SUPPORTS, 155MM ILLUM		2019	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Feb 2019	Aug 2020	60,045	5.25	Y		
METAL PARTS SETS		2017	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Jan 2017	Jul 2018	8,021	301.47	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018					
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, ARTY, 155MM VL ILLUM, M485 / M1124 [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 <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
METAL PARTS SETS		2019	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Feb 2019	Aug 2020	14,717	175.00	Y		
PARACHUTE DROGUE ASSEMBLY, 155MM ILLUM		2017	YOLAND CORPORATION / BROOKLYN, NY	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2017	Sep 2018	8,021	16.90	Y		
PARACHUTE DROGUE ASSEMBLY, 155MM ILLUM		2019	YOLAND CORPORATION / BROOKLYN, NY	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	15,011	18.36	Y		
DOWNLOAD, CLEAN AND INSPECT		2017	MCALESTER ARMY AMMUNITION / MCALESTER, OK	PO	OTHER	Feb 2017	Aug 2018	8,257	81.22	Y		
DOWNLOAD, CLEAN AND INSPECT		2019	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	OTHER	Feb 2019	Aug 2020	15,452	83.17	Y		

Remarks:
 Canister Base / MPTS Assembly: IDIQ contract awarded to multiple contractors. Requirements competed among the following contractors: Woodlawn MFG INC., Marshall, TX and Bailey Tooling and MFG CO., Lancaster, TX. Parachute Main: IDIQ contract awarded to multiple contractors. Requirements competed among the following contractors: Production Products MFG., Buffalo, MO; North American Aerodynamics INC., Roxboro, NC and Yoland Corp INC., Brooklyn, NY. Parachute Drogue Assembly: IDIQ contract awarded to multiple contractors. Requirements will be competed among the following contractors: North American Aerodynamics INC., Roxboro, NC and Yoland Corp INC., Brooklyn, NY.

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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]: E26904 / PROJ, ARTY, 155MM IR ILLUM M1066 / M1123 [DA56]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	-	8,810	-	-	-
Gross/Weapon System Cost (\$ in Millions)	63.337	-	13.300	-	-	-
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	63.337	-	13.300	-	-	-
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	63.337	-	13.300	-	-	-

(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)	-	-	1,509.65	-	-	-

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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) ^(†)	-	-	-	-	-	-	349.43	8,810	3.078	-	-	-	-	-	-	-	-	-
DOWNLOAD, CLEAN AND INSPECT ^(†)	-	-	-	-	-	-	77.22	9,250	0.714	-	-	-	-	-	-	-	-	-
METAL PARTS SETS ^(†)	-	-	-	-	-	-	345.96	8,810	3.048	-	-	-	-	-	-	-	-	-
CANISTER BASE ASSY, 155MM ILLUM ^(†)	-	-	-	-	-	-	19.42	8,986	0.175	-	-	-	-	-	-	-	-	-
IR ILLUM CANNISTER	-	-	-	-	-	-	343.16	8,986	3.084	-	-	-	-	-	-	-	-	-
CANISTER MPTS ASSY, 155MM ILLUM ^(†)	-	-	-	-	-	-	52.01	8,986	0.467	-	-	-	-	-	-	-	-	-
PARACHUTE DROGUE ASSEMBLY, 155MM ILLUM ^(†)	-	-	-	-	-	-	21.51	8,986	0.193	-	-	-	-	-	-	-	-	-
PARACHUTE MAIN, 155MM ILLUM ^(†)	-	-	-	-	-	-	40.75	8,986	0.366	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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]: E26904 / PROJ, ARTY, 155MM IR ILLUM M1066 / M1123 [DA56]
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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 ^(t)	-	-	-	-	-	-	5.15	35,944	0.185	-	-	-	-	-	-	-	-	-
M10 EXPULSION CHARGE ASSEMBLY ^(t)	-	-	-	-	-	-	17.15	8,986	0.154	-	-	-	-	-	-	-	-	-
DELAY ELEMENT, 155MM ILLUM ^(t)	-	-	-	-	-	-	38.45	8,986	0.346	-	-	-	-	-	-	-	-	-
WOOD PALLET (HEAT TREATED) ^(t)	-	-	-	-	-	-	95.12	1,145	0.109	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	11.919	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	-	-	-	11.919	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	63.337	-	-	-	-	-	1.381	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	63.337	-	-	-	-	-	1.381	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	63.337	-	-	-	1,509.65	8,810	13.300	-	-	-	-	-	-	-	-	-

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

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018				
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]: E26904 / PROJ, ARTY, 155MM IR ILLUM M1066 / M1123 [DA56]				

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)		2018	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	PICATINNY ARSENAL, NJ	Feb 2018	Feb 2020	8,810	349.43	Y		
DOWNLOAD, CLEAN AND INSPECT		2018	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Feb 2018	Aug 2019	9,250	77.22	Y		
METAL PARTS SETS		2018	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Feb 2018	Aug 2019	8,810	345.96	Y		
CANISTER BASE ASSY, 155MM ILLUM		2018	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Feb 2018	Aug 2019	8,986	19.42	Y		
CANISTER MPTS ASSY, 155MM ILLUM		2018	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Feb 2018	Aug 2019	8,986	52.01	Y		
PARACHUTE DROGUE ASSEMBLY, 155MM ILLUM		2018	YOLAND CORPORATION / BROOKLYN, NY	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2018	Aug 2019	8,986	21.51	Y		
PARACHUTE MAIN, 155MM ILLUM		2018	YOLAND CORPORATION / BROOKLYN, NY	C / IDIQ	PICATINNY ARSENAL, NJ	Feb 2018	Aug 2019	8,986	40.75	Y		
PARACHUTE MAIN SUPPORTS, 155MM ILLUM		2018	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Feb 2018	Aug 2019	35,944	5.15	Y		
M10 EXPULSION CHARGE ASSEMBLY		2018	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Feb 2018	Aug 2019	8,986	17.15	Y		
DELAY ELEMENT, 155MM ILLUM		2018	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Feb 2018	Aug 2019	8,986	38.45	Y		
WOOD PALLET (HEAT TREATED)		2018	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	PICATINNY ARSENAL, NJ	Feb 2018	Aug 2019	1,145	95.12	Y		

Remarks:

Canister Base / MPTS Assembly: IDIQ contract awarded to multiple contractors. Requirements competed among the following contractors: Woodlawn M FG INC., Marshall, TX and Bailey Tooling and MFG CO., Lancaster, TX. Parachute Main: IDIQ contract awarded to multiple contractors. Requirements competed among the following contractors: Production Products MFG., Buffalo, MO; North American Aerodynamics INC., Roxboro, NC and Yoland Corp INC., Brooklyn, NY. Parachute Drogue Assembly: IDIQ contract awarded to multiple contractors. Requirements will be competed among the following contractors: North American Aerodynamics INC., Roxboro, NC and Yoland Corp INC., Brooklyn, NY.

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	-	2,000	-	-	-
Gross/Weapon System Cost (\$ in Millions)	-	-	5.000	-	-	-
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	-	5.000	-	-	-
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	-	5.000	-	-	-

(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)	-	-	2,500.00	-	-	-

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 ^(†)	-	-	-	-	-	-	2,212.50	2,000	4.425	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	4.425	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	-	-	-	4.425	-	-	-	-	-	-	-	-	-
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	-	-	-	0.075	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	-	-	-	0.075	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	-	-	-	0.500	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	-	-	-	0.500	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	-	-	-	-	2,500.00	2,000	5.000	-	-	-	-	-	-	-	-	-

^(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army								Date: February 2018				
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]				
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		2018	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	PICATINNY ARSENAL, NJ	May 2018	May 2020	2,000	2,212.50	Y		

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	143,434	121,554	140,900	-	140,900
Gross/Weapon System Cost (\$ in Millions)	89.854	67.290	65.400	63.153	-	63.153
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	89.854	67.290	65.400	63.153	-	63.153
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	89.854	67.290	65.400	63.153	-	63.153

(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)	-	469.14	538.03	448.21	-	448.21

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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) ^(†)	-	-	-	305.79	140,069	42.832	337.40	121,554	41.012	313.03	140,900	44.106	-	-	-	313.03	140,900	44.106
WOODEN PALLET, IMX ^(†)	-	-	-	108.84	18,209	1.982	115.00	15,802	1.817	117.30	18,317	2.149	-	-	-	117.30	18,317	2.149
PLUG, LIFTING, MELTABLE FOR IM ^(†)	-	-	-	9.59	142,870	1.370	12.00	123,985	1.488	10.20	143,718	1.466	-	-	-	10.20	143,718	1.466
SUPPLEMENTAL CHARGE, PBXNg ^(†)	-	-	-	18.85	142,870	2.693	35.34	123,985	4.382	20.40	143,718	2.932	-	-	-	20.40	143,718	2.932
EXPLOSIVE FILL IMX-101 ^(†)	-	-	-	19.12	490,242	9.373	19.50	364,662	7.111	17.34	422,700	7.330	-	-	-	17.34	422,700	7.330
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	58.250	-	-	55.810	-	-	57.982	-	-	-	-	-	57.982
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	58.250	-	-	55.810	-	-	57.982	-	-	-	-	-	57.982
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	0.650	-	-	0.650	-	-	0.750	-	-	-	-	-	0.750
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	0.650	-	-	0.650	-	-	0.750	-	-	-	-	-	0.750
Support - Engineering Change Proposals Cost																		
Engineering Change Proposals	-	-	-	-	-	0.867	-	-	3.449	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 - Engineering Change Proposals Cost</i>	-	-	-	-	-	0.867	-	-	3.449	-	-	-	-	-	-	-	-	-
Support - Product Improvement Cost																		
Reliability	-	-	-	-	-	2.000	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Product Improvement Cost</i>	-	-	-	-	-	2.000	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	89.854	-	-	5.523	-	-	5.491	-	-	4.421	-	-	-	-	-	4.421
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	89.854	-	-	5.523	-	-	5.491	-	-	4.421	-	-	-	-	-	4.421
Gross/Weapon System Cost	-	-	89.854	469.14	143,434	67.290	538.03	121,554	65.400	448.21	140,900	63.153	-	-	-	448.21	140,900	63.153

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

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018				
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 (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2017	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	May 2017	May 2020	50,425	305.79	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2017	MCALISTER ARMY AMMUNITION / MCALISTER, OK	PO	PICATINNY ARSENAL, NJ	Jan 2017	Jan 2020	89,644	305.79	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2018	MCALISTER ARMY AMMUNITION / MCALISTER, OK	PO	PICATINNY ARSENAL, NJ	May 2018	May 2021	121,554	337.40	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2019	CRANE ARMY AMMO ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	May 2019	May 2022	32,407	313.03	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2019	MCALISTER ARMY AMMUNITION / MCALISTER, OK	PO	PICATINNY ARSENAL, NJ	May 2019	May 2022	108,493	313.03	Y		
WOODEN PALLET, IMX		2017	KNOX CNTY ASSOC RETARDED / VINCENNES, IN	C / FFP	ROCK ISLAND ARSENAL, IL	Aug 2017	Feb 2019	18,209	108.84	Y		
WOODEN PALLET, IMX		2018	KNOX CNTY ASSOC RETARDED / VINCENNES, IN	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	15,802	115.00	Y		
WOODEN PALLET, IMX		2019	KNOX CNTY ASSOC RETARDED / VINCENNES, IN	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Mar 2020	18,317	117.30	Y		
PLUG, LIFTING, MELTABLE FOR IM		2017	POLYMER TECHNOLOGIES, INC / CLIFTON, NJ	C / FFP	PICATINNY ARSENAL, NJ	Apr 2017	Oct 2018	142,870	9.59	Y		
PLUG, LIFTING, MELTABLE FOR IM		2018	POLYMER TECHNOLOGIES, INC / CLIFTON, NJ	C / FFP	PICATINNY ARSENAL, NJ	Mar 2018	Mar 2019	123,985	12.00	Y		
PLUG, LIFTING, MELTABLE FOR IM		2019	TO BE SELECTED / TBS01	C / FFP	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	143,718	10.20	Y		
SUPPLEMENTAL CHARGE, PBXN9		2017	DAY & ZIMMERMANN LONE STAR / TEXARKANA, TX	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2017	Sep 2018	142,870	18.85	Y		
SUPPLEMENTAL CHARGE, PBXN9		2018	TO BE SELECTED / TBS01	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Mar 2019	123,985	35.34	Y		
SUPPLEMENTAL CHARGE, PBXN9		2019	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	143,718	20.40	Y		
EXPLOSIVE FILL IMX-101		2017	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Sep 2017	Mar 2019	490,242	19.12	Y		
EXPLOSIVE FILL IMX-101		2018	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2020	364,662	19.50	Y		
EXPLOSIVE FILL IMX-101		2019	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2021	422,700	17.34	Y		

^(†) indicates the presence of a P-21

Remarks:

Supplemental Charge, PBXN9 is an 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.

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Exhibit P-21, Production Schedule: PB 2019 Army		Date: February 2018
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 <i>(Units in Thousands)</i>						Fiscal Year 2017												Fiscal Year 2018												B A L A N C E			
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	Calendar Year 2017												Calendar Year 2018														
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P		
LOAD, ASSEMBLE, PACK (LAP)																																	
	1	2017	ARMY	50.425	.000	50.425																									50.425		
	2	2017	ARMY	89.644	.000	89.644				A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	89.644		
	2	2018	ARMY	121.554	.000	121.554																						A	-	-	-	-	121.554
	1	2019	ARMY	32.407	.000	32.407																										32.407	
	2	2019	ARMY	108.493	.000	108.493																										108.493	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army		Date: February 2018
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 <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)																															
	1	2017	ARMY	50.425	.000	50.425	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000		
	2	2017	ARMY	89.644	.000	89.644	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.000	13.000	13.000	13.000	13.000	13.000	11.644	-	.000		
	2	2018	ARMY	121.554	.000	121.554	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	121.554		
	1	2019	ARMY	32.407	.000	32.407								A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32.407		
	2	2019	ARMY	108.493	.000	108.493								A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	108.493		

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Exhibit P-21, Production Schedule: PB 2019 Army															Date: February 2018														
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 <i>(Units in Thousands)</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			
LOAD, ASSEMBLE, PACK (LAP)																																	
	1	2017	ARMY	50.425	50.425	.000																							.000				
	2	2017	ARMY	89.644	89.644	.000																							.000				
	2	2018	ARMY	121.554	.000	121.554	-	-	-	-	-	-	-	13.000	13.000	13.000	13.000	13.000	13.000	13.000	13.000	17.554							.000				
	1	2019	ARMY	32.407	.000	32.407	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.000	13.000	6.407	.000				
	2	2019	ARMY	108.493	.000	108.493	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.000	13.000	13.000	13.000	13.000	43.493		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army														Date: February 2018															
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 <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	2017	ARMY	50.425	50.425	.000																							.000						
	2	2017	ARMY	89.644	89.644	.000																							.000						
	2	2018	ARMY	121.554	121.554	.000																							.000						
	1	2019	ARMY	32.407	32.407	.000																							.000						
	2	2019	ARMY	108.493	65.000	43.493	13.000	13.000	13.000	4.493																			.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 2019 Army		Date: February 2018
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

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	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	CRANE ARMY AMMO ACTIVITY - CRANE, IN	5,000	13,000	30,000	5	5	36	41	4	4	36	40
2	MCALESTER ARMY AMMUNITION - MCALESTER, OK	5,000	13,000	30,000	5	5	36	41	5	5	36	41

"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 2019 Army													Date: February 2018					
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, ARTY, 155MM HE, M795 [DA54]						
ID Code (A=Service Ready, B=Not Service Ready) : A									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO		FY 2019 Total	
Procurement Quantity (Units in Each)				-		35,987			16,573			88,785			59,502		148,287	
Gross/Weapon System Cost (\$ in Millions)				361.024		44.848			28.000			124.476			79.400		203.876	
Less PY Advance Procurement (\$ in Millions)				-		-			-			-			-		-	
Net Procurement (P-1) (\$ in Millions)				361.024		44.848			28.000			124.476			79.400		203.876	
Plus CY Advance Procurement (\$ in Millions)				-		-			-			-			-		-	
Total Obligation Authority (\$ in Millions)				361.024		44.848			28.000			124.476			79.400		203.876	
<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)				-		1,246.23			1,689.49			1,401.99			1,334.41		1,374.87	
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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) ^(†)	-	-	-	226.60	35,987	8.155	268.07	16,573	4.443	239.26	88,785	21.243	239.26	59,502	14.236	239.26	148,287	35.479
PLUG, LIFTING, MELTABLE FOR IM ^(†)	-	-	-	12.00	36,708	0.440	12.00	16,904	0.203	10.19	90,560	0.923	10.19	60,692	0.618	10.19	151,252	1.541
EXPLOSIVE FILL IMX-104 ^(†)	-	-	-	23.27	35,987	0.837	-	-	-	27.59	88,785	2.450	27.59	59,502	1.642	27.59	148,287	4.091
SUPPLEMENTAL CHARGE, PBXNg ^(†)	-	-	-	18.85	36,707	0.692	26.61	16,904	0.450	20.40	90,560	1.847	20.40	60,692	1.238	20.40	151,252	3.086
WOODEN PALLET, IMX ^(†)	-	-	-	115.92	4,678	0.542	100.00	2,154	0.215	102.00	11,542	1.177	102.00	7,735	0.789	102.00	19,277	1.966
EXPLOSIVE FILL IMX-101 ^(†)	-	-	-	15.54	1,187,571	18.455	19.50	546,909	10.665	17.34	2,929,905	50.805	17.34	1,963,566	34.048	17.34	4,893,471	84.853
M795 IM METAL PART ^(†)	-	-	-	372.69	36,708	13.681	428.35	16,904	7.241	436.91	90,560	39.567	436.91	60,692	26.517	436.91	151,252	66.084
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	42.802	-	-	23.216	-	-	118.011	-	-	79.089	-	-	197.100
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	42.802	-	-	23.216	-	-	118.011	-	-	79.089	-	-	197.100
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	-	-	-	1.874	-	-	-	-	-	-	-	-	-
Acceptance Test	-	-	-	-	-	0.135	-	-	0.109	-	-	0.464	-	-	0.311	-	-	0.775

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Exhibit P-5, Cost Analysis: PB 2019 Army												Date: February 2018					
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, ARTY, 155MM 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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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>	-	-	-	-	-	0.135	-	-	1.983	-	-	0.464	-	-	0.311	-	-	0.775
Support - Non-Recurring Support Cost																		
Facilitization	-	-	-	-	-	-	-	-	-	-	-	1.000	-	-	-	-	-	1.000
<i>Subtotal: Support - Non-Recurring Support Cost</i>	-	-	-	-	-	-	-	-	-	-	-	1.000	-	-	-	-	-	1.000
Support - Production Engineering Cost																		
Production Engineering	-	-	361.024	-	-	1.911	-	-	2.800	-	-	5.001	-	-	-	-	-	5.001
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	361.024	-	-	1.911	-	-	2.800	-	-	5.001	-	-	-	-	-	5.001
Gross/Weapon System Cost	-	-	361.024	1,246.23	35,987	44.848	1,689.49	16,573	28.000	1,401.99	88,785	124.476	1,334.41	59,502	79.400	1,374.87	148,287	203.876

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

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army										Date: February 2018		
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, ARTY, 155MM 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) ^(†)		2017	AMERICAN ORDNANCE LLC (IAAP) / MIDDLETOWN, IA	C / FFP	ROCK ISLAND ARSENAL, IL	Sep 2017	Sep 2020	35,987	226.60	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2018	AMERICAN ORDNANCE LLC (IAAP) / MIDDLETOWN, IA	C / FFP	ROCK ISLAND ARSENAL, IL	May 2018	May 2021	16,573	268.07	Y		
LOAD, ASSEMBLE, PACK (LAP) ^(†)		2019	AMERICAN ORDNANCE LLC (IAAP) / MIDDLETOWN, IA	C / FFP	ROCK ISLAND ARSENAL, IL	May 2019	May 2022	148,287	239.26	Y		
PLUG, LIFTING, MELTABLE FOR IM		2017	POLYMER TECHNOLOGIES, INC / CLIFTON, NJ	C / FFP	PICATINNY ARSENAL, NJ	Apr 2017	Oct 2018	36,708	12.00	Y		
PLUG, LIFTING, MELTABLE FOR IM		2018	POLYMER TECHNOLOGIES, INC / CLIFTON, NJ	C / FFP	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	16,904	12.00	Y		
PLUG, LIFTING, MELTABLE FOR IM		2019	TO BE SELECTED / TBS02	C / FFP	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	151,252	10.19	Y		
EXPLOSIVE FILL IMX-104		2017	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Sep 2017	Mar 2019	35,987	23.27	Y		
EXPLOSIVE FILL IMX-104		2019	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	148,287	27.59	Y		
SUPPLEMENTAL CHARGE, PBXN9		2017	DAY & ZIMMERMANN LONE STAR LLC / TEXARKANA, TX	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2017	Sep 2018	36,707	18.85	Y		
SUPPLEMENTAL CHARGE, PBXN9		2018	TO BE SELECTED / TBS02	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2019	16,904	26.61	Y		
SUPPLEMENTAL CHARGE, PBXN9		2019	TO BE SELECTED / TBS02	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	151,252	20.40	Y		
WOODEN PALLET, IMX		2017	KNOX CNTY ASSOC RETARDED / VINCENNES, IN	C / FFP	ROCK ISLAND ARSENAL, IL	Aug 2017	Aug 2018	4,678	115.92	Y		
WOODEN PALLET, IMX		2018	TO BE SELECTED / TBS02	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Mar 2019	2,154	100.00	Y		
WOODEN PALLET, IMX		2019	TO BE SELECTED / TBS02	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Mar 2020	19,277	102.00	Y		
EXPLOSIVE FILL IMX-101		2017	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Sep 2017	Mar 2019	1,187,571	15.54	Y		
EXPLOSIVE FILL IMX-101		2018	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2018	Sep 2020	546,909	19.50	Y		
EXPLOSIVE FILL IMX-101		2019	BAE SYSTEMS ORDNANCE SYSTEMS / KINGSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2021	4,893,471	17.34	Y		
M795 IM METAL PART		2017	MEDICO INDUSTRIES INC. / WILKES BARRE, PA	C / IDIQ	PICATINNY ARSENAL, NJ	Sep 2017	Sep 2019	36,708	372.69	Y		
M795 IM METAL PART		2018	TO BE SELECTED / TBS02	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Sep 2019	16,904	428.35	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army								Date: February 2018				
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, ARTY, 155MM 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
M795 IM METAL PART		2019	TO BE SELECTED / TBS02	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	151,252	436.91	Y		

(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2019 Army																					Date: February 2018											
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, ARTY, 155MM HE, M795 [DA54]															
Cost Elements (Units in Thousands)						Fiscal Year 2017										Fiscal Year 2018										B A L A N C E						
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	Calendar Year 2017										Calendar Year 2018															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R		M A Y	J U N	J U L	A U G	S E P	
LOAD, ASSEMBLE, PACK (LAP)																																
1		2017	ARMY	35.987	.000	35.987															A	-	-	-	-	-	-	-	-	35.987		
1		2018	ARMY	16.573	.000	16.573																					A	-	-	-	-	16.573
1		2019	ARMY	148.287	.000	148.287																									148.287	
1		2019	MC (†)	62.946	.000	62.946																									62.946	
1		2019	Total	211.233	.000	211.233																									211.233	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army															Date: February 2018														
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, ARTY, 155MM HE, M795 [DA54]									

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)																																					
1		2017	ARMY	35.987	.000	35.987	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.585	16.402							
1		2018	ARMY	16.573	.000	16.573	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16.573							
1		2019	ARMY	148.287	.000	148.287																							-	148.287							
1		2019	MC (†)	62.946	.000	62.946																							-	62.946							
1		2019	Total	211.233	.000	211.233																							-	211.233							
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army														Date: February 2018																											
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, ARTY, 155MM 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 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	2017	ARMY	35.987	19.585	16.402	16.402																												.000		
	1	2018	ARMY	16.573	.000	16.573	-	-	-	-	-	-	-	-	16.573																				.000		
	1	2019	ARMY	148.287	.000	148.287	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.000	15.000	15.000	11.768	10.000	81.519
	1	2019	MC (†)	62.946	.000	62.946	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.000	10.000	10.000	13.232	5.000	14.714
	1	2019	Total	211.233	.000	211.233	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25.000	25.000	25.000	25.000	15.000	96.233	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army												Date: February 2018											
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, ARTY, 155MM HE, M795 [DA54]											

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	2017	ARMY	35.987	35.987	.000																								.000	
	1	2018	ARMY	16.573	16.573	.000																								.000	
	1	2019	ARMY	148.287	66.768	81.519	20.000	20.000	20.286	21.233																				.000	
	1	2019	MC (†)	62.946	48.232	14.714	5.000	5.000	4.714	-																			.000		
	1	2019	Total	211.233	115.000	96.233	25.000	25.000	25.000	21.233	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.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 2019 Army								Date: February 2018				
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, ARTY, 155MM HE, M795 [DA54]				
MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	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	6,000	25,000	35,000	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 2019 Army		Date: February 2018
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, ARTY, 155MM WHITE PHOS 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	236.214	-	-	4.469	-	4.469
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	236.214	-	-	4.469	-	4.469
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	236.214	-	-	4.469	-	4.469

(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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	236.214	-	-	-	-	-	-	-	-	4.469	-	-	-	-	-	4.469
<i>Subtotal: Support - Recapitalization Cost</i>	-	-	236.214	-	-	-	-	-	-	-	-	4.469	-	-	-	-	-	4.469
Gross/Weapon System Cost	-	-	236.214	-	-	-	-	-	-	-	-	4.469	-	-	-	-	-	4.469

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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]: E68500 / PROJ, ARTY, 155MM DPICM BASEBLED M864 [D864]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	-	1,250	-	-	-
Gross/Weapon System Cost (\$ in Millions)	808.763	-	75.449	-	-	-
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	808.763	-	75.449	-	-	-
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	808.763	-	75.449	-	-	-

(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)	-	-	60,359.20	-	-	-

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 ^(†)	-	-	-	-	-	-	57,000.00	1,250	71.250	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	71.250	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	-	-	-	71.250	-	-	-	-	-	-	-	-	-
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	-	-	-	1.362	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	-	-	-	1.362	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	808.763	-	-	-	-	-	2.837	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	808.763	-	-	-	-	-	2.837	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	808.763	-	-	-	60,359.20	1,250	75.449	-	-	-	-	-	-	-	-	-

^(†) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2019 Army								Date: February 2018				
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]: E68500 / PROJ, ARTY, 155MM DPICM BASEBLED M864 [D864]				
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		2018	BAE SYSTEMS BOFORS AB / KARLSKOGA, SWEDEN	SS / FFP	PICATINNY ARSENAL, NJ	Apr 2018	Apr 2019	1,250	57,000.00	Y		

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	7,340	2,209	746	1,189	973	2,162	693	707	701	370	-	14,928
Gross/Weapon System Cost (<i>\$ in Millions</i>)	756.013	171.565	72.234	100.906	72.985	173.891	74.440	75.236	76.274	49.661	-	1,449.314
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	756.013	171.565	72.234	100.906	72.985	173.891	74.440	75.236	76.274	49.661	-	1,449.314
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	756.013	171.565	72.234	100.906	72.985	173.891	74.440	75.236	76.274	49.661	-	1,449.314

(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>)	102,999.05	77,666.36	96,828.42	84,866.27	75,010.28	80,430.62	107,417.03	106,415.84	108,807.42	134,218.92	-	97,086.95

Description:

This budget line item includes the Excalibur family of munitions for the 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. Additionally 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 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 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 Ia-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 Ia-2 was fielded in early FY 2012 and greatly increases range from 25.2 kilometers to 40.5 kilometers. Excalibur Increment Ib 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.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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, ARTY, 155MM EXTENDED RANGE M982-U EXCALIBUR [DA58]	P-5a, P-21	A		7,340 / 756.013	2,209 / 171.565	746 / 72.234	1,189 / 100.906	973 / 72.985	2,162 / 173.891
P-40	Total Gross/Weapon System Cost				7,340 / 756.013	2,209 / 171.565	746 / 72.234	1,189 / 100.906	973 / 72.985	2,162 / 173.891

*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:
In accordance with Section 1815 of the FY2008 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 war reserve item currently being used in combat. The FY 2019 request builds a war reserve inventory in accordance with the Army procurement goals. FY 2019 Base procurement dollars in the amount of \$100.906 million supports the procurement of 1189 Increment 1b projectiles. FY 2019 OCO includes \$51.700 million to support the COCOM requirement for unit equipment sets to deter potential adversaries and support the European Deterrence Initiative. The procurement includes 689 Increment 1b projectiles. FY 2019 \$21.285 million OCO supports the procurement of critical Army munitions consumed in support of Operation Inherent Resolve for ISIL. The procurement includes 284 Increment 1b projectiles. FY 2019 total OCO dollars in the amount of \$72.985 million supports the procurement of 973 critical Army munitions consumed in support of deployed units' ongoing military operations.

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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, ARTY, 155MM 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	7,340	2,209	746	1,189	973	2,162
Gross/Weapon System Cost (\$ in Millions)	756.013	171.565	72.234	100.906	72.985	173.891
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	756.013	171.565	72.234	100.906	72.985	173.891
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	756.013	171.565	72.234	100.906	72.985	173.891

(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)	102,999.05	77,666.36	96,828.42	84,866.27	75,010.28	80,430.62

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 ^(†)	98,660.67	7,340	724.169	68,448.00	2,209	151.202	84,212.00	746	62.822	71,975.00	1,189	85.578	71,975.00	973	70.032	71,975.00	2,162	155.610
CONTAINER, EXCALIBUR ^(†)	2,083.90	7,340	15.296	2,183.00	2,209	4.822	2,359.00	746	1.760	2,644.00	1,189	3.144	2,644.00	973	2.573	2,644.00	2,162	5.716
<i>Subtotal: Recurring Cost</i>	-	-	<i>739.465</i>	-	-	<i>156.024</i>	-	-	<i>64.582</i>	-	-	<i>88.722</i>	-	-	<i>72.604</i>	-	-	<i>161.326</i>
<i>Subtotal: Hardware Cost</i>	-	-	<i>739.465</i>	-	-	<i>156.024</i>	-	-	<i>64.582</i>	-	-	<i>88.722</i>	-	-	<i>72.604</i>	-	-	<i>161.326</i>
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	0.781	-	-	1.100	-	-	0.706	-	-	0.600	-	-	0.381	-	-	0.981
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	<i>0.781</i>	-	-	<i>1.100</i>	-	-	<i>0.706</i>	-	-	<i>0.600</i>	-	-	<i>0.381</i>	-	-	<i>0.981</i>
Support - Engineering Change Proposals Cost																		
Engineering Change Proposals	-	-	6.103	-	-	3.000	-	-	-	-	-	3.785	-	-	-	-	-	3.785
<i>Subtotal: Support - Engineering Change Proposals Cost</i>	-	-	<i>6.103</i>	-	-	<i>3.000</i>	-	-	-	-	-	<i>3.785</i>	-	-	-	-	-	<i>3.785</i>
Support - Hardware Analysis Cost																		
Hardware Analysis	-	-	2.850	-	-	2.500	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Hardware Analysis Cost</i>	-	-	<i>2.850</i>	-	-	<i>2.500</i>	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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, ARTY, 155MM 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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 - Product Improvement Cost																		
Reliability	-	-	-	-	-	1.325	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Product Improvement Cost</i>	-	-	-	-	-	1.325	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	5.887	-	-	6.766	-	-	6.446	-	-	6.949	-	-	-	-	-	6.949
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	5.887	-	-	6.766	-	-	6.446	-	-	6.949	-	-	-	-	-	6.949
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.926	-	-	0.850	-	-	0.500	-	-	0.850	-	-	-	-	-	0.850
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.926	-	-	0.850	-	-	0.500	-	-	0.850	-	-	-	-	-	0.850
Gross/Weapon System Cost	102,999.05	7,340	756.013	77,666.36	2,209	171.565	96,828.42	746	72.234	84,866.27	1,189	100.906	75,010.28	973	72.985	80,430.62	2,162	173.891

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

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018				
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, ARTY, 155MM 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 ^(†)		2017	RAYTHEON MISSILE SYSTEMS CO / TUCSON, AZ	C / FFP	PICATINNY ARSENAL, NJ	Jan 2017	Oct 2017	2,209	68,448.00	Y		
COMPLETE ROUND ^(†)		2018	RAYTHEON MISSILE SYSTEMS CO / TUCSON, AZ	SS / FFP	PICATINNY ARSENAL, NJ	Jun 2018	Apr 2019	746	84,212.00	Y		
COMPLETE ROUND ^(†)		2019	RAYTHEON MISSILE SYSTEMS CO / TUCSON, AZ	SS / FFP	PICATINNY ARSENAL, NJ	Jan 2019	Nov 2019	2,162	71,975.00	Y		
CONTAINER, EXCALIBUR		2017	RAYTHEON MISSILE SYSTEMS CO / TUCSON, AZ	C / FFP	PICATINNY ARSENAL, NJ	Jan 2017	Oct 2017	2,209	2,183.00	Y		
CONTAINER, EXCALIBUR		2018	RAYTHEON MISSILE SYSTEMS CO / TUCSON, AZ	SS / FFP	PICATINNY ARSENAL, NJ	Jun 2018	Apr 2019	746	2,359.00	Y		
CONTAINER, EXCALIBUR		2019	RAYTHEON MISSILE SYSTEMS CO / TUCSON, AZ	SS / FFP	PICATINNY ARSENAL, NJ	Jan 2019	Nov 2019	2,162	2,644.00	Y		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2019 Army			Date: February 2018
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, ARTY, 155MM EXTENDED RANGE M982-U EXCALIBUR [DA58]			

Cost Elements <i>(Units in Each)</i>					Fiscal Year 2017													Fiscal Year 2018													B A L A N C E			
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 1 6	BAL D U E A S O F 1 O C T	Calendar Year 2017													Calendar Year 2018														
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P				
COMPLETE ROUND																																		
Prior Years Deliveries: 7340																																		
	1	2017	ARMY	2,209	0	2,209			A	-	-	-	-	-	-	-	-	-	185	184	184	184	184	184	184	184	184	184	184	184	184	0		
	1	2018	ARMY	746	0	746																							A	-	-	-	746	
	1	2019	ARMY	2,162	0	2,162																											2,162	
							O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S				
							C	O	E	A	E	A	A	A	U	U	U	E	C	O	V	E	E	A	A	A	U	U	A	S				
							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 2019 Army															Date: February 2018														
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, ARTY, 155MM EXTENDED RANGE M982-U EXCALIBUR [DA58]									

Cost Elements <i>(Units in Each)</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: 7340																																					
1	2017	ARMY	2,209	2,209	0																																0
1	2018	ARMY	746	0	746	-	-	-	-	-	-	70	100	100	100	100	100	100	76																		0
1	2019	ARMY	2,162	0	2,162				A	-	-	-	-	-	-	-	-	109	187	187	187	187	187	187	187	187	187	187	187	187	187	187	187	187	183		
						O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P								

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Exhibit P-21, Production Schedule: PB 2019 Army		Date: February 2018
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, ARTY, 155MM EXTENDED RANGE M982-U EXCALIBUR [DA58]

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2021												Fiscal Year 2022												BALANCE	
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021												Calendar Year 2022												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
COMPLETE ROUND																															
Prior Years Deliveries: 7340																															
1		2017	ARMY	2,209	2,209	0																							0		
1		2018	ARMY	746	746	0																							0		
1		2019	ARMY	2,162	1,979	183	183																						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	

UNCLASSIFIED

Exhibit P-21, Production Schedule: PB 2019 Army		Date: February 2018
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, ARTY, 155MM EXTENDED RANGE M982-U EXCALIBUR [DA58]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	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	187	250	3	18	10	28	3	4	10	14

"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 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,068.413	179.736	103.069	236.677	63.900	300.577	58.030	97.230	133.733	236.176	-	2,176.964
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,068.413	179.736	103.069	236.677	63.900	300.577	58.030	97.230	133.733	236.176	-	2,176.964
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,068.413	179.736	103.069	236.677	63.900	300.577	58.030	97.230	133.733	236.176	-	2,176.964

(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:

(E27501) Artillery Propellants, Fuzes and Primers, All Types.

(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.

(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.

(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.

(E99250) ARTY, FUZE, PRECISION GUIDANCE KIT (PGK)

The Precision Guidance Kit (PGK) is a course correcting fuze that provides near 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. This item is Code A, approved for service use.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	E62208 / ARTY, FUZE PD M739A1 [N340]	P-5a, P-21	A		- / 204.243	271,920 / 28.751	326,425 / 32.626	307,717 / 30.335	- / -	307,717 / 30.335
P-5	E63000 / ARTY, 155MM PRIMER PERCUSSION M82 Series [N523]		A		- / 37.903	38,400 / 2.707	86,105 / 2.080	103,137 / 2.447	- / -	103,137 / 2.447
P-5	E99250 / ARTY, FUZE, PRECISION GUIDANCE KIT (PGK) [NA29]	P-5a, P-21	A		18,730 / 233.015	10,656 / 118.278	6,330 / 68.363	20,545 / 184.033	8,192 / 63.900	28,737 / 247.933
P-5	ER8021 / ARTY, 155MM PROP CHG, MACS M232 SERIES [DA67]	P-5a	A		- / 593.252	155,100 / 30.000	- / -	105,871 / 19.862	- / -	105,871 / 19.862
P-40	Total Gross/Weapon System Cost				- / 1,068.413	- / 179.736	- / 103.069	- / 236.677	- / 63.900	- / 300.577

*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 2019 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements IAW DoD Instruction 3000.04 (Munitions Requirements Process) and AR 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support 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 2019 Total BASE dollars in the amount of \$236.677 million supports procurement of 328,262 fuzes, 105,871 charges and 103,137 primers.
FY 2019 \$63.900 million Overseas Contingency Operations (OCO) funding supports the procurement of critical Army munitions consumed in the support of Operation Inherent Resolve for ISIL and European Deterrence Initiative supports production of 8,192 fuzes.

(E62208) ARTY, FUZE PD M739A1
This is a training standard item used in training and combat. FY 2019 request supports annual training and a builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$30.335 million supports production of 307,717 fuzes.
TYPE CLASSIFICATION: 1982

(E63000) ARTY, 155MM PRIMER PERCUSSION M82 Series
This is a training standard item used in training and combat. FY 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$2.447 million supports production of 103,137 primers.
TYPE CLASSIFICATION DATE: MAY 1961

(ER8021) ARTY, 155MM PROP CHG, MACS M232 SERIES
This is a training standard item used in training and combat. FY 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$19.862 million supports production of 105,871 charges.
TYPE CLASSIFICATION DATE: 2001

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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>(E99250) ARTY, FUZE, PRECISION GUIDANCE KIT (PGK) This is a war reserve item used in both training and combat. FY 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$184.033 million supports the procurement of 20,545 PGK fuzes. FY 2019 \$48.900 million OCO supports the procurement of 6,269 critical Army munitions consumed in support of Operation Inherent Resolve for ISIL and \$15.000 million OCO supports the procurement of 1,923 critical Army munitions consumed in support of European Deterrence Initiative, all in support of deployed units ongoing military operations. TYPE CLASSIFICATION DATE: October 2015</p>		

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 / ARTY, FUZE PD M739A1 [N340]

ID Code (A=Service Ready, B=Not Service Ready) : A				MDAP/MAIS Code:			
Resource Summary		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)		-	271,920	326,425	307,717	-	307,717
Gross/Weapon System Cost (\$ in Millions)		204.243	28.751	32.626	30.335	-	30.335
Less PY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)		204.243	28.751	32.626	30.335	-	30.335
Plus CY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)		204.243	28.751	32.626	30.335	-	30.335
<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)		-	105.73	99.95	98.58	-	98.58

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 ^(†)	-	-	204.243	87.28	271,920	23.733	86.01	326,425	28.076	87.73	307,717	26.996	-	-	-	87.73	307,717	26.996
Subtotal: Recurring Cost	-	-	204.243	-	-	23.733	-	-	28.076	-	-	26.996	-	-	-	-	-	26.996
Subtotal: Hardware Cost	-	-	204.243	-	-	23.733	-	-	28.076	-	-	26.996	-	-	-	-	-	26.996
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	1.256	-	-	1.288	-	-	1.216	-	-	-	-	-	1.216
First Article Test	-	-	-	-	-	1.185	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Acceptance Testing Cost	-	-	-	-	-	2.441	-	-	1.288	-	-	1.216	-	-	-	-	-	1.216
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	2.575	-	-	3.263	-	-	2.123	-	-	-	-	-	2.123
Subtotal: Support - Production Engineering Cost	-	-	-	-	-	2.575	-	-	3.263	-	-	2.123	-	-	-	-	-	2.123
Gross/Weapon System Cost	-	-	204.243	105.73	271,920	28.751	99.95	326,425	32.626	98.58	307,717	30.335	-	-	-	98.58	307,717	30.335

^(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018				
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 / ARTY, FUZE PD M739A1 [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 ^(†)		2017	ACTION MANUFACTURING COMPANY / BRISTOL, PA	Option / FFP	PICATINNY ARSENAL, NJ	May 2017	Oct 2019	28,592	86.26	Y		
COMPLETE ROUND ^(†)		2017	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Mar 2021	243,328	86.26	Y		
COMPLETE ROUND ^(†)		2018	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2018	Mar 2021	326,425	86.01	Y		
COMPLETE ROUND ^(†)		2019	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Mar 2022	307,717	87.73	Y		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2019 Army																										Date: February 2018										
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 / ARTY, FUZE PD M739A1 [N340]														
Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2017													Fiscal Year 2018													BALANCE				
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	Calendar Year 2017													Calendar Year 2018																
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P						
COMPLETE ROUND																																				
	1	2017	ARMY	28.592	.000	28.592											A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28.592			
	2	2017	ARMY	243.328	.000	243.328																							A	-	-	-	-	-	-	243.328
	2	2018	ARMY	326.425	.000	326.425																							A	-	-	-	-	-	-	326.425
	2	2018	MC (†)	5.447	.000	5.447																							A	-	-	-	-	-	-	5.447
	2	2018	Total	331.872	.000	331.872																							-	-	-	-	-	-	-	331.872
	2	2019	ARMY	307.717	.000	307.717																													307.717	

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Exhibit P-21, Production Schedule: PB 2019 Army														Date: February 2018																											
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 / ARTY, FUZE PD M739A1 [N340]													

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																																			
	1	2017	ARMY	28.592	.000	28.592	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000						
	2	2017	ARMY	243.328	.000	243.328	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	243.328						
	2	2018	ARMY	326.425	.000	326.425	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	326.425						
	2	2018	MC (†)	5.447	.000	5.447	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.447						
	2	2018	Total	331.872	.000	331.872	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	331.872						
	2	2019	ARMY	307.717	.000	307.717																							307.717						
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army														Date: February 2018															
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 / ARTY, FUZE PD M739A1 [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	2017	ARMY	28.592	28.592	.000																								.000					
	2	2017	ARMY	243.328	.000	243.328	-	-	-	-	-	20.292	20.276	20.276	20.276	20.276	20.276	20.276	20.276	20.276	20.276	20.276	20.276	20.276	20.276	20.276	20.276	20.276	20.276	.000					
	2	2018	ARMY	326.425	.000	326.425	-	-	-	-	-	23.761	28.202	28.202	28.202	27.644	27.202	27.202	27.202	27.202	27.202	27.202	27.202	27.202	27.202	27.202	27.202	27.202	.000						
	2	2018	MC (†)	5.447	.000	5.447	-	-	-	-	-	5.447	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000						
	2	2018	Total	331.872	.000	331.872	-	-	-	-	-	29.208	28.202	28.202	28.202	27.644	27.202	27.202	27.202	27.202	27.202	27.202	27.202	27.202	27.202	27.202	27.202	27.202	.000						
	2	2019	ARMY	307.717	.000	307.717	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	97.717							
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army															Date: February 2018														
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 / ARTY, FUZE PD M739A1 [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	2017	ARMY	28.592	28.592	.000																							.000		
	2	2017	ARMY	243.328	243.328	.000																							.000		
	2	2018	ARMY	326.425	326.425	.000																							.000		
	2	2018	MC (†)	5.447	5.447	.000																							.000		
	2	2018	Total	331.872	331.872	.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000		
	2	2019	ARMY	307.717	210.000	97.717	35.000	35.000	27.717																				.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 2019 Army		Date: February 2018
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 / ARTY, FUZE PD M739A1 [N340]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	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	40,000	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 2019 Army		Date: February 2018
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 / ARTY, 155MM PRIMER PERCUSSION M82 Series [N523]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	38,400	86,105	103,137	-	103,137
Gross/Weapon System Cost (\$ in Millions)	37.903	2.707	2.080	2.447	-	2.447
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	37.903	2.707	2.080	2.447	-	2.447
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	37.903	2.707	2.080	2.447	-	2.447

(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)	-	70.49	24.16	23.73	-	23.73

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	37.903	21.16	38,400	0.813	21.16	86,105	1.822	21.58	103,137	2.226	-	-	-	21.58	103,137	2.226
<i>Subtotal: Recurring Cost</i>	-	-	37.903	-	-	0.813	-	-	1.822	-	-	2.226	-	-	-	-	-	2.226
Subtotal: Hardware Cost	-	-	37.903	-	-	0.813	-	-	1.822	-	-	2.226	-	-	-	-	-	2.226
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	0.752	-	-	0.050	-	-	0.050	-	-	-	-	-	0.050
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	0.752	-	-	0.050	-	-	0.050	-	-	-	-	-	0.050
Support - Product Improvement Cost																		
Production Qualification Test	-	-	-	-	-	0.667	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Product Improvement Cost</i>	-	-	-	-	-	0.667	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	0.475	-	-	0.208	-	-	0.171	-	-	-	-	-	0.171
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	0.475	-	-	0.208	-	-	0.171	-	-	-	-	-	0.171
Gross/Weapon System Cost	-	-	37.903	70.49	38,400	2.707	24.16	86,105	2.080	23.73	103,137	2.447	-	-	-	23.73	103,137	2.447

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Exhibit P-5, Cost Analysis: PB 2019 Army													Date: February 2018					
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 / ARTY, FUZE, PRECISION GUIDANCE KIT (PGK) [NA29]						
ID Code (A=Service Ready, B=Not Service Ready) : A									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total				
Procurement Quantity (Units in Each)				18,730		10,656		6,330		20,545		8,192		28,737				
Gross/Weapon System Cost (\$ in Millions)				233.015		118.278		68.363		184.033		63.900		247.933				
Less PY Advance Procurement (\$ in Millions)				-		-		-		-		-		-				
Net Procurement (P-1) (\$ in Millions)				233.015		118.278		68.363		184.033		63.900		247.933				
Plus CY Advance Procurement (\$ in Millions)				-		-		-		-		-		-				
Total Obligation Authority (\$ in Millions)				233.015		118.278		68.363		184.033		63.900		247.933				
<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)				12,440.74		11,099.66		10,799.84		8,957.56		7,800.29		8,627.66				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 ^(†)	12,397.83	18,730	232.211	9,112.82	10,656	97.106	8,966.25	6,330	56.756	7,300.00	20,545	149.979	7,300.00	8,192	59.802	7,300.00	28,737	209.780
M762A1 Safe & Arm	-	-	0.804	-	-	-	-	-	-	-	-	2.310	-	-	0.691	-	-	3.001
Melody II ASIC Chips	-	-	-	-	-	-	-	-	-	-	-	5.639	-	-	1.685	-	-	7.324
<i>Subtotal: Recurring Cost</i>	-	-	233.015	-	-	97.106	-	-	56.756	-	-	157.928	-	-	62.178	-	-	220.105
Non Recurring Cost																		
Rhapsody II ASIC Chips	-	-	-	147.00	25,000	3.675	149.00	5,000	0.745	-	-	-	-	-	-	-	-	-
Extended Production Capacity	-	-	-	-	-	0.389	-	-	-	-	-	2.000	-	-	-	-	-	2.000
GPS Receiver Obsolescence (M-Code Compliance)	-	-	-	-	-	1.330	-	-	-	-	-	8.379	-	-	-	-	-	8.379
<i>Subtotal: Non Recurring Cost</i>	-	-	-	-	-	5.394	-	-	0.745	-	-	10.379	-	-	-	-	-	10.379
<i>Subtotal: Hardware Cost</i>	-	-	233.015	-	-	102.501	-	-	57.501	-	-	168.307	-	-	62.178	-	-	230.484
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	1.000	-	-	2.095	-	-	3.288	-	-	1.310	-	-	4.598
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	1.000	-	-	2.095	-	-	3.288	-	-	1.310	-	-	4.598
Support - Engineering Change Proposals Cost																		

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 / ARTY, FUZE, 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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
Engineering Change Proposals	-	-	-	-	-	5.848	-	-	1.500	-	-	4.851	-	-	-	-	-	4.851
<i>Subtotal: Support - Engineering Change Proposals Cost</i>	-	-	-	-	-	5.848	-	-	1.500	-	-	4.851	-	-	-	-	-	4.851
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	6.016	-	-	6.500	-	-	6.500	-	-	-	-	-	6.500
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	6.016	-	-	6.500	-	-	6.500	-	-	-	-	-	6.500
Support - Training Cost																		
Services	-	-	-	-	-	2.913	-	-	0.767	-	-	1.087	-	-	0.412	-	-	1.499
<i>Subtotal: Support - Training Cost</i>	-	-	-	-	-	2.913	-	-	0.767	-	-	1.087	-	-	0.412	-	-	1.499
Gross/Weapon System Cost	12,440.74	18,730	233.015	11,099.66	10,656	118.278	10,799.84	6,330	68.363	8,957.56	20,545	184.033	7,800.29	8,192	63.900	8,627.66	28,737	247.933

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

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018					
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 / ARTY, FUZE, 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 ^(†)		2017	ALLIANT TECHSYSTEMS / PLYMOUTH, MN	SS / FFP	PICATINNY ARSENAL, NJ	Mar 2017	Mar 2019	10,656	9,112.82	Y		
COMPLETE ROUND ^(†)		2018	ALLIANT TECHSYSTEMS / PLYMOUTH, MN	SS / FFP	PICATINNY ARSENAL, NJ	Mar 2018	Mar 2020	6,330	8,966.25	Y		
COMPLETE ROUND ^(†)		2019	ALLIANT TECHSYSTEMS / PLYMOUTH, MN	SS / FFP	PICATINNY ARSENAL, NJ	Mar 2019	Mar 2021	24,885	7,300.00	Y		
COMPLETE ROUND ^(†)		2019	ALLIANT TECHSYSTEMS. / PLYMOUTH, MN	SS / FFP	PICATINNY ARSENAL, NJ	Jun 2019	Mar 2022	3,852	7,300.00	Y		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2019 Army												Date: February 2018											
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 / ARTY, FUZE, PRECISION GUIDANCE KIT (PGK) [NA29]					

Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2017												Fiscal Year 2018												B A L A N C E				
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	Calendar Year 2017												Calendar Year 2018															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P			
COMPLETE ROUND																																		
Prior Years Deliveries: 18730																																		
1	2017	ARMY		10.656	.000	10.656																												10.656
1	2017	MC ^(†)		2.133	.000	2.133																												2.133
1	2017	Total		12.789	.000	12.789																												12.789
1	2018	ARMY		6.330	.000	6.330																												6.330
1	2018	MC ^(†)		1.916	.000	1.916																												1.916
1	2018	Total		8.246	.000	8.246																												8.246
1	2019	ARMY		24.885	.000	24.885																												24.885
1	2019	MC ^(†)		1.515	.000	1.515																												1.515
1	2019	Total		26.400	.000	26.400																												26.400
2	2019	ARMY		3.852	.000	3.852																												3.852
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army															Date: February 2018														
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 / ARTY, FUZE, PRECISION GUIDANCE KIT (PGK) [NA29]									

Cost Elements <i>(Units in Thousands)</i>					Fiscal Year 2019															Fiscal Year 2020															B A L A N C E			
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: 18730																																						
1	2017	ARMY	10.656	.000	10.656	-	-	-	-	-	.341	.650	.873	.895	.915	.940	.975	.975	1.000	1.000	1.046	1.046																.000
1	2017	MC (†)	2.133	.000	2.133	-	-	-	-	-	.100	.150	.250	.250	.275	.275	.275	.279	.279	-	-	-															.000	
1	2017	Total	12.789	.000	12.789	-	-	-	-	-	.441	.800	1.123	1.145	1.190	1.215	1.250	1.254	1.279	1.000	1.046	1.046	-	-	-	-	-	-	-	-	-	-	-	-	.000			
1	2018	ARMY	6.330	.000	6.330	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.350	.350	.350	.350	.350	.570	.570							3.440		
1	2018	MC (†)	1.916	.000	1.916	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.104	.200	.225	.225	.225	.225	.250							.462		
1	2018	Total	8.246	.000	8.246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.454	.550	.575	.575	.575	.795	.820							3.902		
1	2019	ARMY	24.885	.000	24.885						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.885			
1	2019	MC (†)	1.515	.000	1.515						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.515			
1	2019	Total	26.400	.000	26.400						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26.400			
2	2019	ARMY	3.852	.000	3.852									A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.852			
						O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army	Date: February 2018
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 / ARTY, FUZE, PRECISION GUIDANCE KIT (PGK) [NA29]	

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			

COMPLETE ROUND																														
Prior Years Deliveries: 18730																														
1	2017	ARMY	10.656	10.656	.000																									
1	2017	MC (†)	2.133	2.133	.000																							.000		
1	2017	Total	12.789	12.789	.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000		
1	2018	ARMY	6.330	2.890	3.440	.570	.600	.674	.675	.921																		.000		
1	2018	MC (†)	1.916	1.454	.462	.250	.212	-	-	-																		.000		
1	2018	Total	8.246	4.344	3.902	.820	.812	.674	.675	.921	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.000			
1	2019	ARMY	24.885	.000	24.885	-	-	-	-	-	2.074	2.074	2.074	2.074	2.074	2.074	2.074	2.074	2.074	2.074	2.074	2.071							.000	
1	2019	MC (†)	1.515	.000	1.515	-	-	-	-	-	.126	.126	.126	.126	.126	.126	.126	.126	.126	.126	.126	.129							.000	
1	2019	Total	26.400	.000	26.400	-	-	-	-	-	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200	-	-	-	-	-	-	.000	
2	2019	ARMY	3.852	.000	3.852	-	-	-	-	-													2.200	1.652					.000	
						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	A	P	A	U	U	U	P	
						T	V	C	N	B	R	R	Y	N	L	G	P	T	V	C	N	B	R	R	Y	N	L	G	P	

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Exhibit P-21, Production Schedule: PB 2019 Army		Date: February 2018
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 / ARTY, FUZE, PRECISION GUIDANCE KIT (PGK) [NA29]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	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	ALLIANT TECHSYSTEMS - PLYMOUTH, MN	333	1,100	2,200	13	9	27	36	3	6	24	30
2	ALLIANT TECHSYSTEMS. - PLYMOUTH, MN	333	1,100	2,200	13	9	27	36	3	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-5, Cost Analysis: PB 2019 Army													Date: February 2018					
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 / ARTY, 155MM PROP CHG, MACS M232 SERIES [DA67]						
ID Code (A=Service Ready, B=Not Service Ready) : A									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total				
Procurement Quantity (Units in Each)				-		155,100		-		105,871		-		105,871				
Gross/Weapon System Cost (\$ in Millions)				593.252		30.000		-		19.862		-		19.862				
Less PY Advance Procurement (\$ in Millions)				-		-		-		-		-		-				
Net Procurement (P-1) (\$ in Millions)				593.252		30.000		-		19.862		-		19.862				
Plus CY Advance Procurement (\$ in Millions)				-		-		-		-		-		-				
Total Obligation Authority (\$ in Millions)				593.252		30.000		-		19.862		-		19.862				
<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)				-		193.42		-		187.61		-		187.61				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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) ^(†)	-	-	591.372	25.50	155,100	3.955	-	-	-	25.50	105,871	2.700	-	-	-	25.50	105,871	2.700
PROPELLANT, M31A2 ^(†)	-	-	-	18.27	750,000	13.703	-	-	-	18.27	510,298	9.323	-	-	-	18.27	510,298	9.323
CONTAINER, M232A1 ^(†)	-	-	-	58.27	31,968	1.863	-	-	-	58.27	22,232	1.295	-	-	-	58.27	22,232	1.295
COMBUSTIBLE CASES - M232A1 ^(†)	-	-	-	41.07	225,792	9.273	-	-	-	43.81	109,047	4.777	-	-	-	43.81	109,047	4.777
IGNITION PROPELLANT, MACS ^(†)	-	-	-	10.52	10,000	0.105	-	-	-	10.52	6,352	0.067	-	-	-	10.52	6,352	0.067
BLACK POWDER ^(†)	-	-	-	15.92	7,300	0.116	-	-	-	15.92	6,352	0.101	-	-	-	15.92	6,352	0.101
<i>Subtotal: Recurring Cost</i>	-	-	<i>591.372</i>	-	-	<i>29.015</i>	-	-	-	-	-	<i>18.264</i>	-	-	-	-	-	<i>18.264</i>
<i>Subtotal: Hardware Cost</i>	-	-	<i>591.372</i>	-	-	<i>29.015</i>	-	-	-	-	-	<i>18.264</i>	-	-	-	-	-	<i>18.264</i>
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	0.500	-	-	-	-	-	0.208	-	-	-	-	-	0.208
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	<i>0.500</i>	-	-	-	-	-	<i>0.208</i>	-	-	-	-	-	<i>0.208</i>
Support - Production Engineering Cost																		
Production Engineering	-	-	1.880	-	-	0.485	-	-	-	-	-	1.390	-	-	-	-	-	1.390

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 / ARTY, 155MM PROP CHG, 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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	0.485	-	-	-	-	-	1.390	-	-	-	-	-	1.390
Gross/Weapon System Cost	-	-	593.252	193.42	155,100	30.000	-	-	-	187.61	105,871	19.862	-	-	-	187.61	105,871	19.862

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

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2019 Army **Date:** February 2018

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 / ARTY, 155MM PROP CHG, 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 <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
LOAD, ASSEMBLE, PACK (LAP)		2017	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Jun 2019	Jun 2021	155,100	25.50	Y		
LOAD, ASSEMBLE, PACK (LAP)		2019	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Jun 2019	Jun 2021	105,871	25.50	Y		
PROPELLANT, M31A2		2017	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	May 2019	Jan 2021	750,000	18.27	Y		
PROPELLANT, M31A2		2019	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	May 2019	Jan 2021	510,298	18.27	Y		
CONTAINER, M232A1		2017	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Mar 2020	31,968	58.27	Y		
CONTAINER, M232A1		2019	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Mar 2020	22,232	58.27	Y		
COMBUSTIBLE CASES - M232A1		2017	ARMTEC DEFENSE PRODUCTS CO / COACHELLA, CA	C / IDIQ	PICATINNY ARSENAL, NJ	Oct 2017	Sep 2020	225,792	41.07	Y		
COMBUSTIBLE CASES - M232A1		2019	ARMTEC DEFENSE PRODUCTS CO / COACHELLA, CA	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	109,047	43.81	Y		
IGNITION PROPELLANT, MACS		2017	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Mar 2020	10,000	10.52	Y		
IGNITION PROPELLANT, MACS		2019	TO BE SELECTED / TBS01	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2019	Mar 2020	6,352	10.52	Y		
BLACK POWDER		2017	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	7,300	15.92	Y		
BLACK POWDER		2019	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	6,352	15.92	Y		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	56.475	16.866	15.557	15.905	-	15.905	47.580	41.684	27.629	11.919	-	233.615
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	56.475	16.866	15.557	15.905	-	15.905	47.580	41.684	27.629	11.919	-	233.615
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	56.475	16.866	15.557	15.905	-	15.905	47.580	41.684	27.629	11.919	-	233.615

(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.

E72800 MK7Mod2 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.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	E72800 / ANTI-PERS OBSTACLE BREACHNG SYS(APOBS), MK7 w/MODS [MN79]	P-5a, P-21	A		- / 56.475	1,563 / 16.866	1,208 / 15.557	1,046 / 15.905	- / -	1,046 / 15.905
P-40	Total Gross/Weapon System Cost				- / 56.475	- / 16.866	- / 15.557	- / 15.905	- / -	- / 15.905

*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 2019 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements IAW DoD Instruction 3000.04 (Munitions Requirements Process) and AR 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support 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.

FY 2019 Base Procurement dollars in the amount of \$15.905 million supports production of 1 Variant of Mines & Clearing Charges.

(E72800) Anti-Personnel Obstacle Breaching System (APOBS)

This is a training standard item used in training and combat. The FY 2019 request supports annual training and builds a war reserve in accordance with the Army's procurement goals.

The FY 2019 Base procurement dollars in the amount of \$15.905 million supports the production of 1046 APOBS.

TYPE CLASSIFICATION DATE: July 2001

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	1,563	1,208	1,046	-	1,046
Gross/Weapon System Cost (\$ in Millions)	56.475	16.866	15.557	15.905	-	15.905
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	56.475	16.866	15.557	15.905	-	15.905
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	56.475	16.866	15.557	15.905	-	15.905

(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)	-	10,790.79	12,878.31	15,205.54	-	15,205.54

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 ^(†)	-	-	56.475	10,405.83	1,563	16.264	12,288.75	1,208	14.845	13,098.91	1,046	13.701	-	-	-	13,098.91	1,046	13.701
Subtotal: Recurring Cost	-	-	56.475	-	-	16.264	-	-	14.845	-	-	13.701	-	-	-	-	-	13.701
Subtotal: Hardware Cost	-	-	56.475	-	-	16.264	-	-	14.845	-	-	13.701	-	-	-	-	-	13.701
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	-	-	-	-	-	-	0.883	-	-	-	-	-	0.883
Subtotal: Support - Acceptance Testing Cost	-	-	-	-	-	-	-	-	-	-	-	0.883	-	-	-	-	-	0.883
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	0.602	-	-	0.712	-	-	1.286	-	-	-	-	-	1.286
Subtotal: Support - Production Engineering Cost	-	-	-	-	-	0.602	-	-	0.712	-	-	1.286	-	-	-	-	-	1.286
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	-	-	-	-	-	-	0.035	-	-	-	-	-	0.035
Subtotal: Support - Quality Assurance Cost	-	-	-	-	-	-	-	-	-	-	-	0.035	-	-	-	-	-	0.035
Gross/Weapon System Cost	-	-	56.475	10,790.79	1,563	16.866	12,878.31	1,208	15.557	15,205.54	1,046	15.905	-	-	-	15,205.54	1,046	15.905

(†) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018				
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 <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
Complete Round ^(†)		2017	CHEMRING ORDNANCE, INC. / PERRY, FL	C / FFP	ROCK ISLAND ARSENAL, IL	Sep 2017	Mar 2019	241	10,405.83	Y		
Complete Round ^(†)		2017	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Nov 2018	Nov 2020	1,322	10,405.83	Y		
Complete Round ^(†)		2018	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Nov 2018	Nov 2020	1,208	12,288.75	Y		
Complete Round ^(†)		2019	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Nov 2021	1,046	13,098.91	Y		

^(†) indicates the presence of a P-21

UNCLASSIFIED

Exhibit P-21, Production Schedule: PB 2019 Army	Date: February 2018
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 2017																Fiscal Year 2018																BALANCE																																								
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 1 6	BAL D U E A S O F 1 O C T	Calendar Year 2017																Calendar Year 2018																																																							
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P																																																
Complete Round																																																																														
1	2017	ARMY		241	0	241														A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	241																																											
2	2017	ARMY		1,322	0	1,322																													1,322																																											
2	2018	ARMY		1,208	0	1,208																													1,208																																											
2	2019	ARMY		1,046	0	1,046																													1,046																																											
2	2019	MC ^(†)		391	0	391																													391																																											
2	2019	Total		1,437	0	1,437																													1,437																																											
<table border="1" style="width:100%; border-collapse: collapse; font-size: 8pt;"> <thead> <tr> <th>O C T</th><th>N O V</th><th>D E C</th><th>J A N</th><th>F E B</th><th>M A R</th><th>A P R</th><th>M A Y</th><th>J U N</th><th>J U L</th><th>A U G</th><th>S E P</th><th>O C T</th><th>N O V</th><th>D E C</th><th>J A N</th><th>F E B</th><th>M A R</th><th>A P R</th><th>M A Y</th><th>J U N</th><th>J U L</th><th>A U G</th><th>S E P</th> </tr> </thead> <tbody> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </tbody> </table>																													O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P																										
O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army		Date: February 2018
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 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	2017	ARMY	241	0	241	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
	2	2017	ARMY	1,322	0	1,322		A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,322		
	2	2018	ARMY	1,208	0	1,208		A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,208			
	2	2019	ARMY	1,046	0	1,046								A	-	-	-	-	-	-	-	-	-	-	-	-	-	1,046			
	2	2019	MC ^(*)	391	0	391								A	-	-	-	-	-	-	-	-	-	-	-	-	-	38			
	2	2019	Total	1,437	0	1,437								-	-	-	-	-	-	-	-	-	-	-	-	-	-	38			
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: PB 2019 Army		Date: February 2018
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 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	2017	ARMY	241	241	0																							0		
	2	2017	ARMY	1,322	0	1,322	-	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	0		
	2	2018	ARMY	1,208	0	1,208	-	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	0		
	2	2019	ARMY	1,046	0	1,046	-	-	-	-	-	-	-	-	-	-	-	-	87	87	87	87	87	87	87	87	87	87	89		
	2	2019	MC ^(*)	391	38	353	31	43	31	31	31	31	31	31	31	31	31	-	-	-	-	-	-	-	-	-	-	-	0		
	2	2019	Total	1,437	38	1,399	31	43	31	31	31	31	31	31	31	31	31	-	-	87	87	87	87	87	87	87	87	87	89		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army		Date: February 2018
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 2023														Fiscal Year 2024														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 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																																			
1		2017	ARMY	241	241	0																								0					
2		2017	ARMY	1,322	1,322	0																								0					
2		2018	ARMY	1,208	1,208	0																								0					
2		2019	ARMY	1,046	957	89	89																							0					
2		2019	MC ^(*)	391	391	0	-																							0					
2		2019	Total	1,437	1,348	89	89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	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					

UNCLASSIFIED

Exhibit P-21, Production Schedule: PB 2019 Army		Date: February 2018
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 2019	1-8-5 For 2019	MAX For 2019	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	CHEMRING ORDNANCE, INC. - PERRY, FL	25	130	576	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).

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	390.983	99.046	30.000	4.503	22.242	26.745	2.976	19.040	27.513	27.525	-	623.828
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	390.983	99.046	30.000	4.503	22.242	26.745	2.976	19.040	27.513	27.525	-	623.828
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	390.983	99.046	30.000	4.503	22.242	26.745	2.976	19.040	27.513	27.525	-	623.828

(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 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. 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 7.62 mm 553B Sub-Caliber Adapter 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 B, not approved for service use.

(E36404) CTG, Gun, HEDP 502, 84MM CARL GUSTAF (MAAWS) - Multi-Role Anti-Armor Anti-Personnel Weapon System (MAAWS) for rapid response forces that must have the ability to combat many types of threat, the 84 mm HEDP 502 (High Explosive Dual Purpose) is effective against light-armored vehicles, concrete and brick walls, field fortifications, and bunkers. This item is Code B, not approved for service use.

(E36405) CTG, Gun, HE 441D, 84MM CARL GUSTAF (MAAWS) - Multi-Role Anti-Armor Anti-Personnel Weapon System (MAAWS) for combating troops in the open, behind cover, or in slit trenches as well as soft-skinned vehicles and similar types of targets, the 84 mm HE 441D (High Explosive) can be set for impact or air burst detonation. This item is Code B, not 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 but still retaining the right weapon "feel" and live firing experience. This item is Code B, not approved for service use.

(E36901) ROCKET, PRACTICE, 21MM SUBCALIBER for Shoulder Launched Munitions (SLM) simulates the firing of unguided shoulder fired munitions. It simulates the tactical munitions flight trajectory, but with less noise and backblast. 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 is used in New Equipment Training (NET)/Mobile Training Teams (MTT). This item is Code A, approved for service use.

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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>(E88401) 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. The system also defeats 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 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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 / AT4-Confined Space (AT4-CS), M136A1 [CA30]	P-5a	A		- / 129.076	9,263 / 42.620	- / -	- / -	101 / 0.450	101 / 0.450
P-5	E36403 / CTG, 7.62MM TRACER 553 F/SUBCAL ADAPTR CARL GUSTAF [A254]		B		- / 1.000	- / -	- / -	- / -	133,758 / 0.352	133,758 / 0.352
P-5	E36404 / CTG, GUN, HEDP 502, 84MM CARL GUSTAF (MAAWS) [CA21]		B		- / 1.500	834 / 3.000	216 / 1.500	292 / 1.487	345 / 1.440	637 / 2.927
P-5	E36405 / CTG, GUN, HE 441D, 84MM CARL GUSTAF (MAAWS) [CA27]		B		- / 1.500	834 / 3.000	138 / 1.000	189 / 0.992	- / -	189 / 0.992
P-5	E36406 / CTG, GUN, TGT PRAC-TR 141, 84MM CARL GUSTAF(MAAWS) [CA10]		B		- / 1.500	6,233 / 3.000	205 / 0.500	279 / 0.497	- / -	279 / 0.497
P-5	E36901 / ROCKET, PRACTICE, 21MM SUBCALIBER FOR SLM [HA21]		A		- / 5.508	19,005 / 2.000	- / -	8,628 / 1.527	- / -	8,628 / 1.527
P-5	E88401 / BUNKER DEFEAT MUNITION, 83mm Rkt & Launcher, M141 [HA08]	P-5a, P-21	A		- / 250.899	2,041 / 45.426	1,679 / 27.000	- / -	1,258 / 20.000	1,258 / 20.000
P-40	Total Gross/Weapon System Cost				- / 390.983	- / 99.046	- / 30.000	- / 4.503	- / 22.242	- / 26.745

*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 2019 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements IAW DoD Instruction 3000.04 (Munitions Requirements Process) and AR 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support 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 2019 Base procurement dollars in the amount of \$4.503 million supports procurement of four variants of Shoulder Launched Munitions.

FY 2019 Overseas Contingency Operations (OCO) funds are required to replenish munitions expended in combat operations in both Operation Freedom's Sentinel (OFS)-Afghanistan Theater and European Deterrence Initiative (EDI).

FY 2019 \$20.000 million OCO funds are required to replenish munitions expended in combat operations in OFS-Afghanistan Theater. This procurement includes 1,256 BUNKER DEFEAT MUNITION, 83mm Rocket & Launcher, M141.

FY 2019 OCO includes \$2.242 million to support the COCOM requirement for unit equipment sets to deter potential adversaries and support the European Deterrence Initiative. The procurement supports \$0.450 million for 101 Launcher and Cartridge 84MM M136A1 (AT4CS-RS), \$0.352 million 133,758 CTG, 7.62MM TRACER 553 F/SUBCAL ADAPTR CARL GUSTAF, and \$1.440 million for 345 CTG, Gun, HEDP 502, 84MM CARL GUSTAF (MAAWS).

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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>(E36101) Launcher and Cartridge 84MM M136A1 (AT4CS-RS) - This is a training standard used in both training and combat. FY 2019 \$0.450 million EDI funds support the procurement of 101 rounds. Type Classification Date: 2009</p> <p>(E36403) CTG, 7.62MM TRACER 553 F/SUBCAL ADAPTR CARL GUSTAF - This is a training unique item not used in combat. The FY 2019 request supports annual OCO training and builds a war reserve inventory in accordance with the Army Procurement goals. FY 2019 EDI procurement dollars in the amount of \$0.352 million supports the procurement of 133,758 rounds. This is a New Start in FY 2019. Type Classification Date: TBD</p> <p>(E36404) CTG, Gun, HEDP 502, 84MM CARL GUSTAF (MAAWS) - This is a training standard item used in both training and combat. The FY 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goal. FY 2019 Base procurement dollars in the amount of \$1.487 million supports the procurement of 292 Rounds. FY 2019 EDI procurement dollars in the amount of \$1.440 supports the procurement of 345 rounds. Type Classification Date: TBD</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 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goal. FY 2019 Base procurement dollars in the amount of \$0.992 million supports the procurement of 189 Rounds. Type Classification Date: TBD</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 2019 request supports annual training and builds a depot level in accordance with the Army's procurement goal. FY 2019 Base procurement dollars in the amount of \$0.497 million supports the procurement of 279 Rounds. Type Classification Date: TBD</p> <p>(E36901) ROCKET, PRACTICE, 21MM SUBCALIBER for Shoulder Launched Munitions (SLM) - This is a training unique item not used in combat. The FY 2019 request supports annual training and builds a depot level in accordance with the Army's procurement goal. FY 2019 Base procurement dollars in the amount of \$1.527 million supports the procurement of 8,628 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. FY 2019 \$20.000 million OCO funds support the procurement of 1,258 rounds required to replenish munitions expended in combat operations in OFS-Afghanistan Theater. The request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goal. Type Classification Date: 2008</p>		

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 / AT4-Confined Space (AT4-CS), M136A1 [CA30]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	9,263	-	-	101	101
Gross/Weapon System Cost (\$ in Millions)	129.076	42.620	-	-	0.450	0.450
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	129.076	42.620	-	-	0.450	0.450
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	129.076	42.620	-	-	0.450	0.450

(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)	-	4,601.10	-	-	4,455.45	4,455.45

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 ^(†)	-	-	129.076	4,260.17	9,263	39.462	-	-	-	-	-	-	4,428.83	101	0.447	4,428.83	101	0.447
Subtotal: Recurring Cost	-	-	129.076	-	-	39.462	-	-	-	-	-	0.000	-	-	0.447	-	-	0.447
Subtotal: Hardware Cost	-	-	129.076	-	-	39.462	-	-	-	-	-	0.000	-	-	0.447	-	-	0.447
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	3.158	-	-	-	-	-	-	-	-	0.003	-	-	0.003
Subtotal: Support - Production Engineering Cost	-	-	-	-	-	3.158	-	-	-	-	-	0.000	-	-	0.003	-	-	0.003
Gross/Weapon System Cost	-	-	129.076	4,601.10	9,263	42.620	-	-	-	-	-	-	4,455.45	101	0.450	4,455.45	101	0.450

^(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army								Date: February 2018				
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 / AT4-Confined Space (AT4-CS), M136A1 [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 (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
COMPLETE ROUND		2017	TO BE SELECTED / TBS01	C / FFP	PICATINNY ARSENAL, NJ	Sep 2018	Sep 2020	9,263	4,260.17	Y		
COMPLETE ROUND	✓	2019	TO BE SELECTED / TBS01	C / FFP	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	101	4,428.83	Y		

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 TRACER 553 F/SUBCAL ADAPTR CARL GUSTAF [A254]

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	133,758	133,758
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1.000	-	-	-	0.352	0.352
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1.000	-	-	-	0.352	0.352
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1.000	-	-	-	0.352	0.352

(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>)	-	-	-	-	2.63	2.63

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total			
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	-	-	-	-	-	-	-	2.63	133,758	0.352	2.63	133,758	0.352	
<i>Subtotal: Recurring Cost</i>	-	-	<i>1.000</i>	-	-	-	-	-	-	-	-	<i>0.000</i>	-	-	<i>0.352</i>	-	-	<i>0.352</i>	
<i>Subtotal: Hardware Cost</i>	-	-	<i>1.000</i>	-	-	-	-	-	-	-	-	<i>0.000</i>	-	-	<i>0.352</i>	-	-	<i>0.352</i>	
Support - Production Engineering Cost																			
Production Engineering	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.000	-	-	0.000	
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	-	-	-	-	-	-	<i>0.000</i>	-	-	<i>0.000</i>	-	-	<i>0.000</i>	
Gross/Weapon System Cost	-	-	1.000	-	-	-	-	-	-	-	-	-	2.63	133,758	0.352	2.63	133,758	0.352	

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Exhibit P-5, Cost Analysis: PB 2019 Army													Date: February 2018					
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, GUN, HEDP 502, 84MM CARL GUSTAF (MAAWS) [CA21]						
ID Code (A=Service Ready, B=Not Service Ready) : B									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO		FY 2019 Total	
Procurement Quantity (<i>Units in Each</i>)				-		834			216			292			345		637	
Gross/Weapon System Cost (<i>\$ in Millions</i>)				1.500		3.000			1.500			1.487			1.440		2.927	
Less PY Advance Procurement (<i>\$ in Millions</i>)				-		-			-			-			-		-	
Net Procurement (P-1) (<i>\$ in Millions</i>)				1.500		3.000			1.500			1.487			1.440		2.927	
Plus CY Advance Procurement (<i>\$ in Millions</i>)				-		-			-			-			-		-	
Total Obligation Authority (<i>\$ in Millions</i>)				1.500		3.000			1.500			1.487			1.440		2.927	
<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>)				-		3,597.12			6,944.44			5,092.47			4,173.91		4,594.98	
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	1.500	2,801.00	834	2.336	4,090.00	216	0.883	4,171.80	292	1.218	4,171.80	345	1.439	4,171.80	637	2.657
<i>Subtotal: Recurring Cost</i>	-	-	1.500	-	-	2.336	-	-	0.883	-	-	1.218	-	-	1.439	-	-	2.657
<i>Subtotal: Hardware Cost</i>	-	-	1.500	-	-	2.336	-	-	0.883	-	-	1.218	-	-	1.439	-	-	2.657
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	-	-	-	0.084	-	-	0.086	-	-	-	-	-	0.086
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	-	-	-	0.084	-	-	0.086	-	-	-	-	-	0.086
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	0.664	-	-	0.532	-	-	0.183	-	-	0.001	-	-	0.184
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	0.664	-	-	0.532	-	-	0.183	-	-	0.001	-	-	0.184
Gross/Weapon System Cost	-	-	1.500	3,597.12	834	3.000	6,944.44	216	1.500	5,092.47	292	1.487	4,173.91	345	1.440	4,594.98	637	2.927

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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, GUN, HE 441D, 84MM CARL GUSTAF (MAAWS) [CA27]

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	-	834	138	189	-	189
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1.500	3.000	1.000	0.992	-	0.992
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1.500	3.000	1.000	0.992	-	0.992
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1.500	3.000	1.000	0.992	-	0.992

(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>)	-	3,597.12	7,246.38	5,248.68	-	5,248.68

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	1.500	2,801.00	834	2.336	4,028.00	138	0.556	4,108.56	189	0.777	-	-	-	4,108.56	189	0.777
<i>Subtotal: Recurring Cost</i>	-	-	1.500	-	-	2.336	-	-	0.556	-	-	0.777	-	-	-	-	-	0.777
<i>Subtotal: Hardware Cost</i>	-	-	1.500	-	-	2.336	-	-	0.556	-	-	0.777	-	-	-	-	-	0.777
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	-	-	-	0.091	-	-	0.092	-	-	-	-	-	0.092
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	-	-	-	0.091	-	-	0.092	-	-	-	-	-	0.092
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	0.664	-	-	0.354	-	-	0.123	-	-	-	-	-	0.123
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	0.664	-	-	0.354	-	-	0.123	-	-	-	-	-	0.123
Gross/Weapon System Cost	-	-	1.500	3,597.12	834	3.000	7,246.38	138	1.000	5,248.68	189	0.992	-	-	-	5,248.68	189	0.992

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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, GUN, TGT PRAC-TR 141, 84MM CARL GUSTAF(MAAWS) [CA10]

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity <i>(Units in Each)</i>	-	6,233	205	279	-	279
Gross/Weapon System Cost <i>(\$ in Millions)</i>	1.500	3.000	0.500	0.497	-	0.497
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	1.500	3.000	0.500	0.497	-	0.497
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	1.500	3.000	0.500	0.497	-	0.497

(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>	-	481.31	2,439.02	1,781.36	-	1,781.36

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	1.500	375.00	6,233	2.337	1,406.00	205	0.288	1,434.12	279	0.400	-	-	-	1,434.12	279	0.400
<i>Subtotal: Recurring Cost</i>	-	-	<i>1.500</i>	-	-	<i>2.337</i>	-	-	<i>0.288</i>	-	-	<i>0.400</i>	-	-	-	-	-	<i>0.400</i>
<i>Subtotal: Hardware Cost</i>	-	-	<i>1.500</i>	-	-	<i>2.337</i>	-	-	<i>0.288</i>	-	-	<i>0.400</i>	-	-	-	-	-	<i>0.400</i>
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	-	-	-	0.034	-	-	0.035	-	-	-	-	-	0.035
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	-	-	-	<i>0.034</i>	-	-	<i>0.035</i>	-	-	-	-	-	<i>0.035</i>
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	0.663	-	-	0.177	-	-	0.062	-	-	-	-	-	0.062
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	<i>0.663</i>	-	-	<i>0.177</i>	-	-	<i>0.062</i>	-	-	-	-	-	<i>0.062</i>
Gross/Weapon System Cost	-	-	1.500	481.31	6,233	3.000	2,439.02	205	0.500	1,781.36	279	0.497	-	-	-	1,781.36	279	0.497

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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, PRACTICE, 21MM SUBCALIBER FOR SLM [HA21]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	-	19,005	-	8,628	-	8,628
Gross/Weapon System Cost (<i>\$ in Millions</i>)	5.508	2.000	-	1.527	-	1.527
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	5.508	2.000	-	1.527	-	1.527
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	5.508	2.000	-	1.527	-	1.527

(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>)	-	105.24	-	176.98	-	176.98

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	5.152	89.45	19,005	1.700	-	-	-	155.64	8,628	1.343	-	-	-	155.64	8,628	1.343
<i>Subtotal: Recurring Cost</i>	-	-	5.152	-	-	1.700	-	-	-	-	-	1.343	-	-	-	-	-	1.343
<i>Subtotal: Hardware Cost</i>	-	-	5.152	-	-	1.700	-	-	-	-	-	1.343	-	-	-	-	-	1.343
Support - Production Engineering Cost																		
Production Engineering	-	-	0.356	-	-	0.300	-	-	-	-	-	0.184	-	-	-	-	-	0.184
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.356	-	-	0.300	-	-	-	-	-	0.184	-	-	-	-	-	0.184
Gross/Weapon System Cost	-	-	5.508	105.24	19,005	2.000	-	-	-	176.98	8,628	1.527	-	-	-	176.98	8,628	1.527

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 / BUNKER DEFEAT MUNITION, 83mm Rkt & Launcher, M141 [HA08]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity <i>(Units in Each)</i>	-	2,041	1,679	-	1,258	1,258
Gross/Weapon System Cost <i>(\$ in Millions)</i>	250.899	45.426	27.000	-	20.000	20.000
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	250.899	45.426	27.000	-	20.000	20.000
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	250.899	45.426	27.000	-	20.000	20.000

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

Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>	-	22,256.74	16,081.00	-	15,898.25	15,898.25

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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) ^(†)	-	-	250.899	21,583.30	2,041	44.052	15,583.22	1,679	26.164	-	-	-	15,894.89	1,258	19.996	15,894.89	1,258	19.996
<i>Subtotal: Recurring Cost</i>	-	-	250.899	-	-	44.052	-	-	26.164	-	-	0.000	-	-	19.996	-	-	19.996
<i>Subtotal: Hardware Cost</i>	-	-	250.899	-	-	44.052	-	-	26.164	-	-	0.000	-	-	19.996	-	-	19.996
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	1.374	-	-	0.836	-	-	-	-	-	0.004	-	-	0.004
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	1.374	-	-	0.836	-	-	0.000	-	-	0.004	-	-	0.004
Gross/Weapon System Cost	-	-	250.899	22,256.74	2,041	45.426	16,081.00	1,679	27.000	-	-	-	15,898.25	1,258	20.000	15,898.25	1,258	20.000

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018				
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 / BUNKER DEFEAT MUNITION, 83mm Rkt & Launcher, 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) ^(†)		2017	TO BE SELECTED / TBS01	C / FPIF	PICATINNY ARSENAL, NJ	Jun 2018	Sep 2019	2,041	21,583.30	Y		
BUNKER DEFEAT MUNITION (BDM) ^(†)		2018	TO BE SELECTED / TBS01	C / FPIF	PICATINNY ARSENAL, NJ	Jun 2018	Sep 2019	1,679	15,583.22	Y		
BUNKER DEFEAT MUNITION (BDM) ^(†)	✓	2019	TO BE SELECTED / TBS01	C / FPIF	PICATINNY ARSENAL, NJ	Mar 2019	Jun 2020	1,258	15,894.89	Y		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2019 Army		Date: February 2018
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 / BUNKER DEFEAT MUNITION, 83mm Rkt & Launcher, M141 [HA08]

Cost Elements (Units in Each)						Fiscal Year 2018												Fiscal Year 2019												B A L A N C E	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	Calendar Year 2018												Calendar Year 2019												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
BUNKER DEFEAT MUNITION (BDM)																															
	1	2017	ARMY	2,041	0	2,041																							700	1,341	
	1	2018	ARMY	1,679	0	1,679																							1	1,678	
✓	1	2019	ARMY	1,258	0	1,258																							-	1,258	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army															Date: February 2018														
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 / BUNKER DEFEAT MUNITION, 83mm Rkt & Launcher, M141 [HA08]									

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							
BUNKER DEFEAT MUNITION (BDM)																																					
	1	2017	ARMY	2,041	700	1,341	700	641																												0	
	1	2018	ARMY	1,679	1	1,678	-	-	641	700	337																									0	
✓	1	2019	ARMY	1,258	0	1,258	-	-	-	-	-	-	-	-	700	558																				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 2019 Army		Date: February 2018
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 / BUNKER DEFEAT MUNITION, 83mm Rkt & Launcher, M141 [HA08]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	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	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).

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	171.193	144.794	236.975	211.211	39.974	251.185	74.536	73.527	78.906	129.758	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	171.193	144.794	236.975	211.211	39.974	251.185	74.536	73.527	78.906	129.758	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	171.193	144.794	236.975	211.211	39.974	251.185	74.536	73.527	78.906	129.758	Continuing	Continuing
<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>)	-	-	1,567.65	-	-	-	-	-	-	-	Continuing	Continuing

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.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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			- / 168.203	- / 85.751	149,085 / 171.649	- / 53.618	- / 39.750	- / 93.368
P-5	E37413 / Aviation Rocket Procurement, Guided	P-5a, P-21			- / 2.990	- / 59.043	2,081 / 65.326	- / 157.593	- / 0.224	- / 157.817
P-40	Total Gross/Weapon System Cost				- / 171.193	- / 144.794	- / 236.975	- / 211.211	- / 39.974	- / 251.185

*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 2019 Base procurement dollars in the amount of \$211.211 million will procure 38,367 unguided Hydra-70 Rockets and 4,873 guided Hydra-70 Rockets.

FY 2019 Overseas Contingency Operations (OCO) procurement dollars in the amount of \$39.974 will procure 32,873 unguided Hydra-70 Rockets and 7 guided Hydra-70 Rockets to replace and replenish Rockets expended in wartime operations.

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.

"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."

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	-	149,085	-	-	-
Gross/Weapon System Cost (\$ in Millions)	168.203	85.751	171.649	53.618	39.750	93.368
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	168.203	85.751	171.649	53.618	39.750	93.368
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	168.203	85.751	171.649	53.618	39.750	93.368

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

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	1,151.35	-	-	-

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 ^(†)	987.90	130,019	128.446	1,328.72	52,988	70.406	809.37	149,085	120.665	1,137.55	38,367	43.644	1,022.94	32,873	33.627	1,084.66	71,240	77.271
Subtotal: Recurring Cost	-	-	128.446	-	-	70.406	-	-	120.665	-	-	43.644	-	-	33.627	-	-	77.271
Subtotal: Flyaway Cost	-	-	128.446	-	-	70.406	-	-	120.665	-	-	43.644	-	-	33.627	-	-	77.271
Support - Industrial Facilities Cost																		
Radford Army Ammunition Plant (AAP)	-	-	12.397	-	-	4.820	-	-	25.046	186.26	38,367	7.146	186.27	32,873	6.123	186.26	71,240	13.269
Subtotal: Support - Industrial Facilities Cost	-	-	12.397	-	-	4.820	-	-	25.046	-	-	7.146	-	-	6.123	-	-	13.269
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	5.559	-	-	9.896	-	-	0.810	-	-	-	-	-	0.810
Subtotal: Support - Production Engineering Cost	-	-	-	-	-	5.559	-	-	9.896	-	-	0.810	-	-	-	-	-	0.810
Support - System Engineering Cost																		
System Engineering	-	-	27.360	-	-	4.966	-	-	16.042	-	-	2.018	-	-	-	-	-	2.018
Subtotal: Support - System Engineering Cost	-	-	27.360	-	-	4.966	-	-	16.042	-	-	2.018	-	-	-	-	-	2.018
Gross/Weapon System Cost	-	-	168.203	-	-	85.751	1,151.35	149,085	171.649	-	-	53.618	-	-	39.750	-	-	93.368

^(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018				
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 ^(†)		2017	General Dynamics / Williston, VT	C / FFP	Redstone Arsenal, AL	Sep 2017	Feb 2019	52,988	1,328.72	Y		Apr 2013
Complete Round ^(†)		2018	General Dynamics / Williston, VT	C / FFP	Redstone Arsenal, AL	May 2018	Nov 2019	149,085	809.37	Y		Apr 2013
Complete Round ^(†)		2019	General Dynamics / Williston, VT	C / FFP	Redstone Arsenal, AL	May 2019	Nov 2020	71,240	1,084.66	Y		Apr 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.
- FY17 & FY18 are contract 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 2019 Army															Date: February 2018														
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 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: 130019																																	
1	2017	AF (†)	33.081	.000	33.081	-	-	-	-	-	-	-	-	-	-	-	2.984	-	14.043	-	5.441	6.872	3.741							.000			
1	2017	ARMY	52.988	.000	52.988	-	-	-	-	1.840	3.780	-	4.656	-	3.855	2.479	2.000	4.300	6.300	4.300	7.100	4.300	8.078							.000			
1	2017	FMS (†)	36.133	.000	36.133	-	-	-	-	-	-	-	-	4.992	-	-	-	1.035	.346	14.304	-	-	15.456							.000			
1	2017	NAVY (†)	50.883	.000	50.883	-	-	-	-	-	-	-	5.537	-	8.000	.755	16.490	3.273	9.185	-	-	-	7.643							.000			
1	2017	OTH (†)	111.078	.000	111.078	-	-	-	-	-	-	-	-	12.000	-	-	6.912	15.260	12.000	17.770	25.728	13.488	7.920							.000			
1	2017	SOCOM (†)	.835	.000	.835	-	-	-	-	-	-	-	-	-	-	.835	-	-	-	-	-	-	-							.000			
1	2017	Total	284.998	.000	284.998	-	-	-	-	1.840	3.780	-	10.193	16.992	11.855	4.069	28.386	23.868	41.874	36.374	38.269	24.660	42.838	-	-	-	-	-	-	.000			
1	2018	AF (†)	1.429	.000	1.429	-	-	-	-	-	-	-	-	-	-	-	-	.120	.119	.119	.119	.119	.119							.119			
1	2018	ARMY	149.085	.000	149.085	-	-	-	-	-	-	-	-	-	-	-	-	-	12.424	12.424	12.424	12.424	12.424	12.424	12.424	12.424	12.424	12.424	12.424	12.424	12.423		
1	2018	FMS (†)	47.234	.000	47.234	-	-	-	-	-	-	-	-	-	-	-	-	-	3.936	3.936	3.936	3.936	3.936	3.936	3.936	3.936	3.936	3.936	3.936	3.937	3.937		
1	2018	NAVY (†)	60.760	.000	60.760	-	-	-	-	-	-	-	-	-	-	-	-	-	5.063	5.063	5.063	5.063	5.063	5.063	5.063	5.063	5.064	5.064	5.064	5.064	5.064		
1	2018	Total	258.508	.000	258.508	-	-	-	-	-	-	-	-	-	-	-	-	-	21.543	21.542	21.542	21.542	21.542	21.542	21.542	21.542	21.542	21.542	21.543	21.543	21.543		
1	2019	ARMY	71.240	.000	71.240																										71.240		

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Exhibit P-21, Production Schedule: PB 2019 Army		Date: February 2018
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 2019	1-8-5 For 2019	MAX For 2019	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 MSR, 1-8-5 and Max are actual quantities. System will not validate with below instructions.

(‡) 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 2019 Army		Date: February 2018
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:
---	------------------------

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	-	2,081	-	-	-
Gross/Weapon System Cost (\$ in Millions)	2.990	59.043	65.326	157.593	0.224	157.817
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	2.990	59.043	65.326	157.593	0.224	157.817
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	2.990	59.043	65.326	157.593	0.224	157.817

(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)	-	-	31,391.64	-	-	-

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 ^(†)	6,114.52	489	2.990	25,805.29	2,080	53.675	28,712.16	2,081	59.750	25,204.21	4,873	122.820	25,200.00	7	0.176	25,204.20	4,880	122.997
Complete Round, Unguided section	-	-	-	-	-	-	-	-	-	1,184.69	4,873	5.773	1,184.71	7	0.008	1,184.69	4,880	5.781
<i>Subtotal: Recurring Cost</i>	-	-	2.990	-	-	53.675	-	-	59.750	-	-	128.593	-	-	0.185	-	-	128.778
<i>Subtotal: Flyaway Cost</i>	-	-	2.990	-	-	53.675	-	-	59.750	-	-	128.593	-	-	0.185	-	-	128.778
Support - Industrial Facilities Cost																		
Radford Army Ammunition Plant (AAP)	-	-	-	-	-	0.370	-	-	0.350	-	-	0.908	-	-	0.001	-	-	0.909
<i>Subtotal: Support - Industrial Facilities Cost</i>	-	-	-	-	-	0.370	-	-	0.350	-	-	0.908	-	-	0.001	-	-	0.909
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	3.205	-	-	3.300	-	-	15.534	-	-	0.018	-	-	15.552
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	3.205	-	-	3.300	-	-	15.534	-	-	0.018	-	-	15.552
Support - System Engineering Cost																		
System Engineering	-	-	-	-	-	1.793	-	-	1.926	-	-	12.558	-	-	0.020	-	-	12.578
<i>Subtotal: Support - System Engineering Cost</i>	-	-	-	-	-	1.793	-	-	1.926	-	-	12.558	-	-	0.020	-	-	12.578
Gross/Weapon System Cost	-	-	2.990	-	-	59.043	31,391.64	2,081	65.326	-	-	157.593	-	-	0.224	-	-	157.817

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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:
^(†) indicates the presence of a P-5a		

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018				
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 ^(†)		2017	BAE Systems / Nashua, NH	SS / FFP	Pax River, MD	Mar 2017	May 2018	2,080	25,805.29			
Complete Round ^(†)		2018	BAE Systems / Nashua, NH	SS / FFP	Pax River, MD	Mar 2018	May 2019	2,081	28,712.16			
Complete Round ^(†)		2019	BAE Systems / Nashua, NH	SS / FFP	Pax River, MD	Mar 2019	May 2020	4,880	25,204.20			

^(†) indicates the presence of a P-21

Remarks:

- QTY EA for delivery schedule.
- FY17 & FY18 are contract option years.

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Exhibit P-21, Production Schedule: PB 2019 Army															Date: February 2018														
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 <i>(Units in Each)</i>						Fiscal Year 2019													Fiscal Year 2020													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 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: 489																																	
1		2017	ARMY	2,080	2,080	0																							0				
1		2018	ARMY	2,081	0	2,081	-	-	-	-	-	-	-	173	173	173	173	173	173	173	174	174	174	174	174				0				
1		2019	ARMY	4,880	0	4,880								A	-	-	-	-	-	-	-	-	-	-	-	-	400	400	400	400	400	2,880	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army															Date: February 2018														
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 <i>(Units in Each)</i>						Fiscal Year 2021													Fiscal Year 2022													BALANCE	
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021													Calendar Year 2022													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			
Complete Round																																	
Prior Years Deliveries: 489																																	
1		2017	ARMY	2,080	2,080	0																									0		
1		2018	ARMY	2,081	2,081	0																									0		
1		2019	ARMY	4,880	2,000	2,880	400	400	400	400	400	400	480																		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 2019 Army		Date: February 2018
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

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	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 - Nashua, NH	200	1,000	10,000	0	0	0	0	0	2	11	13

Remarks:
Guidance systems are procured on a Navy contract.

"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 2019 Army **Date:** February 2018

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
--	---	--

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	133.000	4.914	7.441	10.428	-	10.428	7.545	8.839	8.140	9.932	-	190.239
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	133.000	4.914	7.441	10.428	-	10.428	7.545	8.839	8.140	9.932	-	190.239
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	133.000	4.914	7.441	10.428	-	10.428	7.545	8.839	8.140	9.932	-	190.239

(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:

Cartridge Actuated Devices (CAD) and Propellant Actuated Devices (PAD) all types are used in various escape and jettison systems on all types of Army aircraft. They are required to support aircraft escape, safety, and jettison systems and mission essential needs. Items are subject to shelf and service life restrictions and, therefore, require replacement at specified intervals.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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
--	---	--

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	EA0003 / CAD/PAD, All Other				- / 133.000	- / 4.914	- / 7.441	- / 10.428	- / -	- / 10.428
P-40	Total Gross/Weapon System Cost				- / 133.000	- / 4.914	- / 7.441	- / 10.428	- / -	- / 10.428

*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 2019 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements IAW DoD Instruction 3000.04 (Munitions Requirements Process) and AR 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support 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 2019 Base procurement funding in the amount of \$10.428 million will procure Apache Underwater Emergency Egress System procurements, 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 2019 program is required to assure availability of replacement items when needed and avoid grounding aircraft or rendering aircraft partially mission capable.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47 **P-1 Line Item Number / Title:** 2420E61000 / CAD/PAD, All Types **Aggregated Items Title:** Various

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
CAD/PAD, All Other																				
EA0003 / CAD/PAD, All Other			-	-	133.000	-	-	4.914	-	-	7.441	-	-	10.428	-	-	-	-	-	10.428
Subtotal: CAD/PAD, All Other			-	-	133.000	-	-	4.914	-	-	7.441	-	-	10.428	-	-	-	-	-	10.428
Total			-	-	133.000	-	-	4.914	-	-	7.441	-	-	10.428	-	-	-	-	-	10.428

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 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	432.287	12.754	19.345	44.656	0.005	44.661	31.630	27.237	25.179	23.536	-	616.629
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	432.287	12.754	19.345	44.656	0.005	44.661	31.630	27.237	25.179	23.536	-	616.629
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	432.287	12.754	19.345	44.656	0.005	44.661	31.630	27.237	25.179	23.536	-	616.629

(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) (DODIC MP47) is a one-time use receiver that 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 MK152 RF-RAMS transmitter. The Receiver is programmed in the field by an RF-RAMS Transmitter and subsequently responds only to that transmitter. The M17A1 Receiver is a single use item, which is capable of functioning non electric blasting caps or detonation cord. This item is Code B, not approved for service use.

(E50510) Demo Kit, Blasting: Munition Array Charge, XM335, is the neutralizing component to the Standoff Robotic Explosive Hazard Detection System (SREHD), formerly known as the Autonomous Mine Detection System (AMDS). SREHD provides increased survivability through mine and explosive hazards stand-off detection, marking and neutralization capability for the dismounted soldier. The SREHD system is a single payload mounted on a Man Transportable Robotic System (MTRS) platform to conduct counter explosive hazard detection, marking, and neutralization missions without reconfiguration by combining the detect/mark system with the ability to deploy a neutralizer. To neutralize explosive hazards, the SREHD payload deploys the XM335, a three shape charge array, on top of the target. The shape charges are tailored to penetrate overburden, casing and impact detonate the explosive fill. The neutralizer is detonated using the existing Remote Activation Munition System (RAMS), along with the M50 Shock Tube Initiator. The SREHD system is currently in Engineering Manufacturing Development (EMD), with Milestone (MS) C/Type Classification (TC) Standard in 2nd Quarter FY 2018 for Low Rate Initial Production (LRIP) and Full Material Release (FMR) in 2nd Quarter FY 2019 for Full Rate Production (FRP). This item is Code B, not approved for service use until Type Classification Standard and Full Material Release.

(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.

(E50800) 1/4 LB TNT 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,

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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>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.</p> <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 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>(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) The Cartridge Impulse Electrically Initiated is used in Explosive Ordnance Disposal (EOD) tools and equipment. 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>(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>(E78201) The M980 Demolition Charge is a 20 pound, 38 foot roll of flexible explosive. It is 10 inches wide and .083 inches 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>(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. 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>		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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>(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>(E99902) Blast Cap Non-Electric W/200 FT Shock Tube M20 Inert is part of the family of Modernized Demolition Initiators (MDI). This item physically represents the actual M19, except it is inert. It is used for training and is reusable. The color of the shock tube is bronze. The blasting cap has four holes drilled on the circumference using a #35-43 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>		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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, M17E1 RADIO FIRING-REMOTE ACTV(RF-RAMS) [MP47]		B		- / 11.851	48 / 0.155	- / 1.200	- / -	2 / 0.005	2 / 0.005
P-5	E50510 / DEMO KIT, BLASTING: Munition Array Charge, XM335 [MP57]		B		- / -	- / -	348 / 1.586	755 / 2.350	- / -	755 / 2.350
P-5	E50601 / CHG DEMO BLK COMP C-4 1-1/4 LB M112 [M023]	P-5a	A		- / 227.234	185,806 / 6.218	4,535 / 0.200	67,350 / 2.615	- / -	67,350 / 2.615
P-5	E50800 / CHG DEMO BLK TNT 1/4 LB [M030]		A		- / 5.935	- / -	- / -	914 / 0.406	- / -	914 / 0.406
P-5	E51400 / CHARGE DEMO, (50FT), Sheet Explosive, M186 [M060]		A		- / 8.445	- / -	19,959 / 1.500	32,918 / 1.489	- / -	32,918 / 1.489
P-5	E52000 / SELECTABLE LTWT ATTACK MUNITION M4 [MP12]	P-5a, P-21	A		- / 38.934	- / -	- / 0.816	3,152 / 16.070	- / -	3,152 / 16.070
P-5	E52500 / CAP BLASTING ELEC M6 [M130]		A		579,048 / 16.218	0 / -	43,501 / 1.641	45,074 / 1.660	- / -	45,074 / 1.660
P-5	E54100 / CORD DETONATING TYPE 1 [M456]		A		90,848,485 / 30.392	0 / 0.150	7,113,726 / 3.300	- / -	- / -	- / -
P-5	E56500 / FUZE BLASTING TIME M700 [M670]		A		- / 4.714	- / -	269,829 / 0.350	647,866 / 0.737	- / -	647,866 / 0.737
P-5	E59100 / CARTRIDGE IMPULSE ELECTRICALLY INITIATED DRG NO LD [SS01]	P-5a, P-21	A		- / 0.993	8,126 / 1.012	8,131 / 1.033	48,594 / 6.001	- / -	48,594 / 6.001
P-5	E76728 / Disrupter, Main Charge, MK 788-0 [DWDFF]		B		- / 1.983	1,065 / 0.314	94 / 0.064	8,233 / 2.289	- / -	8,233 / 2.289
P-5	E78201 / CHARGE DEMO (38FT) Sheet Explosive, PBXW-202 [M980]		A		- / 5.618	61,390 / 0.929	34,235 / 1.200	- / -	- / -	- / -
P-5	E81302 / CAP BLASTING NON-ELEC, W/30 FT SHOCK TUBE [ML47]		A		283,254 / 6.781	- / -	- / -	4,752 / 0.158	- / -	4,752 / 0.158
P-5	E81305 / CAP BLASTING NON-ELEC, DELAY, M14 [MN06]		A		846,096 / 14.630	- / -	- / -	13,099 / 0.167	- / -	13,099 / 0.167
P-5	E81306 / CAP BLASTING NON-ELEC, DELAY, W/70 FT TUBE, M15 [MN07]		A		- / 3.943	- / -	- / -	6,113 / 0.168	- / -	6,113 / 0.168
P-5	E81307 / IGNITER, TIME FUZE AND SHOCK TUBE M81 [MN08]		A		3,435,301 / 17.185	24,209 / 0.306	155,992 / 1.058	- / -	- / -	- / -
P-5	E94100 / BOOSTER, DEMO CHARGE, M151 [MN68]		A		- / 7.060	- / -	- / -	21,365 / 0.168	- / -	21,365 / 0.168
P-5	E96200 / BOOSTER, DEMO CHARGE M152 INERT [MN75]		A		- / -	- / -	- / -	18,791 / 0.168	- / -	18,791 / 0.168
P-5	E99902 / Blast Cap, Non-Elec: Inert, 200Ft Minitube, XM20 [MN87]		A		10,353 / 0.610	- / -	- / -	2,595 / 0.200	- / -	2,595 / 0.200
P-5	E99903 / Blast Cap, Non-Elec: 500Ft Minitube, M21 [MN88]	P-5a	A		- / 13.614	11,309 / 1.885	34,555 / 2.647	79,415 / 5.295	- / -	79,415 / 5.295
P-5	E99905 / Blast Cap, Non-Elec, 1000Ft Minitube, M23 [MN90]		A		203,582 / 16.147	10,114 / 1.785	23,999 / 2.750	48,032 / 4.715	- / -	48,032 / 4.715
P-40	Total Gross/Weapon System Cost				- / 432.287	- / 12.754	- / 19.345	- / 44.656	- / 0.005	- / 44.661

*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:
2019 Base Budget support critical Army Title 10 war reserve/operational, training, and test requirements IAW DoD Instruction 3000.04 (Munitions Requirements Process) and AR 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support 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 2019 Army		Date: February 2018
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		

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 2019 Base procurement dollars in the amount of \$44.656 million supports production of 17 variants of Demolitions.

The FY 2019 Overseas Contingency Operations (OCO) procurement dollars in the amount of \$0.005 million supports production of one variant of Demolitions.

(E45404) M17A1 Receiver, Radio Frequency Remote Activation Munition System (RF-RAMS)

This is a training standard item used in training and combat. Request supports annual training and builds a war reserve in accordance with the Army's procurement goals.

FY 2019 OCO includes \$0.005 million to support the COCOM requirement for unit equipment sets to deter potential adversaries and support the European Deterrence Initiative. The procurement includes 2 M17A1 Receivers, Radio Frequency Remote Activation Munition Systems.

TYPE CLASSIFICATION DATE: 2001

(E50510) Demo Kit, Blasting: Munition Array Charge, XM335

This is a training standard item used in both training and combat. The FY 2019 request supports annual training and builds a war reserve inventory in accordance with Army's procurement goals.

FY 2019 Base procurement dollars in the amount of \$2.350 million supports the production of 755 XM335 Munition Array Charges.

TYPE CLASSIFICATION DATE: 2019

(E50601) Charge Demo BLK Comp C-4 1-1/4 LB M112

This is a training standard item used in training and combat. FY 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals.

FY 2019 Base procurement dollars in the amount of \$2.615 million supports the production of 67,350 Demolitions Blocks, C-4.

TYPE CLASSIFICATION DATE: 1964

(E50800) 1/4 LB TNT Block Demolition Charge

This is a training standard item used in training and combat. FY 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals.

FY 2019 Base procurement dollars in the amount of \$0.406 million supports the production of 914 Demolitions Blocks. This is a new start in FY 2019.

TYPE CLASSIFICATION DATE: June 1968

(E51400) M186 Demolition Charge

This is a training standard item used in training and combat. The FY 2019 request supports annual training and builds a war reserve in accordance with the Army's procurement goals.

FY 2019 Base procurement dollars in the amount of \$1.489 million supports the production of 32,918 Demolition Charges.

TYPE CLASSIFICATION DATE: 1968

(E52000) Selectable Light Weight Attack Munition (SLAM)

This is a training standard item used in training and combat. The FY 2019 request supports annual training and builds a war reserve in accordance with the Army's procurement goals.

FY 2019 Base procurement dollars in the amount of \$16.070 million supports the production of 3,152 SLAMs.

TYPE CLASSIFICATION DATE: 2011

(E52500) Cap, Blasting Electric M6

This is a training standard item used in training and combat. The FY 2019 request supports annual training and builds a war reserve inventory in accordance with Army's procurement goals.

FY 2019 Base procurement dollars in the amount of \$1.660 million supports the production of 45,074 Blasting Caps.

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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>TYPE CLASSIFICATION DATE: January 1960</p> <p>(E54100) Detonating Cord, Type 1 This is a training standard item used in training and combat. Request supports annual training and builds a war reserve inventory in accordance with Army's procurement goals. TYPE CLASSIFICATION DATE: 1958</p> <p>(E56500) Time Blasting Fuze M700 This is a training standard item used in training and combat. The FY 2019 request supports annual training and builds a war reserve in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$0.737 million supports the production of 647,866 Blasting Fuzes. TYPE CLASSIFICATION DATE: January 1958</p> <p>(E59100) The Cartridge Impulse Electrically Initiated is used in Explosive Ordnance Disposal (EOD) tools and equipment. This is a training standard item used in training and combat. FY 2019 request supports annual training and builds a war reserve inventory in accordance with Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$6.001 million supports production of 48,594 Cartridges. TYPE CLASSIFICATION DATE: EOD Item Navy Configured</p> <p>(E76728) MK 788-0, Main Charge Disrupter This is a training standard item used in training and combat. FY 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$2.289 million supports procurement of 8,233 Disrupters. TYPE CLASSIFICATION DATE: EOD Item Navy Configured</p> <p>(E78201) M980 Demolition Charge, 38 foot Sheet Explosive This is a training standard item used in training and combat. Request supports annual training and builds a war reserve inventory in accordance with Army's procurement goals. TYPE CLASSIFICATION DATE: EOD Item Navy Configured</p> <p>(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. FY 2019 request supports annual training and builds a war reserve inventory in accordance with Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$0.158 million supports procurement of 4,752 Blasting Caps. This is a new start in FY 2019. TYPE CLASSIFICATION DATE: April 1996</p> <p>(E81305) Non-Elec Delay Blast Cap M14 This is a training standard item used in training and combat. FY 2019 request supports annual training and builds a war reserve inventory in accordance with Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$0.167 million supports procurement of 13,099 Blasting Caps. This is a new start in FY 2019. TYPE CLASSIFICATION DATE: April 1996</p> <p>(E81306) 70 FT Non-Elec Shock Tube Blast Cap M15 This is a training standard item used in training and combat. FY 2019 request supports annual training and builds a war reserve inventory in accordance with Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$0.168 million supports procurement of 6,113 Blasting Caps. This is a new start in FY 2019. TYPE CLASSIFICATION DATE: April 1996</p> <p>(E81307) Igniter, Time Fuze and Shock Tube, M81 This is a training standard item used in training and combat. Request supports annual training and builds a war reserve inventory in accordance with Army's procurement goals.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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>TYPE CLASSIFICATION DATE: April 1996</p> <p>(E94100) Demolition Booster Charge M151 This is a training standard item used in training and combat. FY 2019 request supports annual training and builds a war reserve inventory in accordance with Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$0.168 million supports procurement of 21,365 Demolition Charges. This is a new start in FY 2019. TYPE CLASSIFICATION DATE: April 2000</p> <p>(E96200) Booster, Demo Charge M152 This is a training standard item used in training. FY 2019 request supports annual training and builds a war reserve inventory in accordance with Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$0.168 million supports procurement of 18,791 Demolition Charges. This is a new start in FY 2019. TYPE CLASSIFICATION DATE: April 2000</p> <p>(E99902) Blast Cap Non-Elec W/200 FT Shock Tube M20 Inert This is a training standard item used in training and combat. FY 2019 request supports annual training and builds a war reserve inventory in accordance with Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$0.200 million supports procurement of 2,595 Blasting Caps. This is a new start in FY 2019. TYPE CLASSIFICATION DATE: September 2002</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. FY 2019 request supports annual training and builds a war reserve inventory in accordance with Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$5.295 million supports production of 79,415 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. FY 2019 request supports annual training and builds a war reserve inventory in accordance with Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$4.715 million supports production of 48,032 Blasting Caps. TYPE CLASSIFICATION DATE: April 1996</p>		

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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, M17E1 RADIO FIRING-REMOTE ACTV(RF-RAMS) [MP47]

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	48	-	-	2	2
Gross/Weapon System Cost (\$ in Millions)	11.851	0.155	1.200	-	0.005	0.005
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	11.851	0.155	1.200	-	0.005	0.005
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	11.851	0.155	1.200	-	0.005	0.005

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

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	3,229.17	-	-	2,500.00	2,500.00

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	11.851	2,241.57	48	0.108	-	-	-	-	-	-	2,333.96	2	0.005	2,333.96	2	0.005
<i>Subtotal: Recurring Cost</i>	-	-	11.851	-	-	0.108	-	-	-	-	-	0.000	-	-	0.005	-	-	0.005
<i>Subtotal: Hardware Cost</i>	-	-	11.851	-	-	0.108	-	-	-	-	-	0.000	-	-	0.005	-	-	0.005
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	0.047	-	-	1.200	-	-	-	-	-	0.000	-	-	0.000
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	0.047	-	-	1.200	-	-	0.000	-	-	0.000	-	-	0.000
Gross/Weapon System Cost	-	-	11.851	3,229.17	48	0.155	-	-	1.200	-	-	-	2,500.00	2	0.005	2,500.00	2	0.005

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Exhibit P-5, Cost Analysis: PB 2019 Army													Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47						P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types						Item Number / Title [DODIC]: E50510 / DEMO KIT, BLASTING: Munition Array Charge, XM335 [MP57]						
ID Code (A=Service Ready, B=Not Service Ready) : B									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO		FY 2019 Total	
Procurement Quantity (<i>Units in Each</i>)				-		-			348			755			-		755	
Gross/Weapon System Cost (<i>\$ in Millions</i>)				-		-			1.586			2.350			-		2.350	
Less PY Advance Procurement (<i>\$ in Millions</i>)				-		-			-			-			-		-	
Net Procurement (P-1) (<i>\$ in Millions</i>)				-		-			1.586			2.350			-		2.350	
Plus CY Advance Procurement (<i>\$ in Millions</i>)				-		-			-			-			-		-	
Total Obligation Authority (<i>\$ in Millions</i>)				-		-			1.586			2.350			-		2.350	
<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>)				-		-			4,557.47			3,112.58			-		3,112.58	
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	-	-	-	-	1,917.00	348	0.667	1,955.34	755	1.476	-	-	-	1,955.34	755	1.476
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	0.667	-	-	1.476	-	-	-	-	-	1.476
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	-	-	-	0.667	-	-	1.476	-	-	-	-	-	1.476
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	-	-	-	-	-	-	0.055	-	-	-	-	-	0.055
First Article Test	-	-	-	-	-	-	-	-	0.204	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	-	-	-	0.204	-	-	0.055	-	-	-	-	-	0.055
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	-	-	-	0.715	-	-	0.819	-	-	-	-	-	0.819
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	-	-	-	0.715	-	-	0.819	-	-	-	-	-	0.819
Gross/Weapon System Cost	-	-	-	-	-	-	4,557.47	348	1.586	3,112.58	755	2.350	-	-	-	3,112.58	755	2.350

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Exhibit P-5, Cost Analysis: PB 2019 Army													Date: February 2018								
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 / CHG 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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
Procurement Quantity (Units in Each)				-			185,806			4,535			67,350			-			67,350		
Gross/Weapon System Cost (\$ in Millions)				227.234			6.218			0.200			2.615			-			2.615		
Less PY Advance Procurement (\$ in Millions)				-			-			-			-			-			-		
Net Procurement (P-1) (\$ in Millions)				227.234			6.218			0.200			2.615			-			2.615		
Plus CY Advance Procurement (\$ in Millions)				-			-			-			-			-			-		
Total Obligation Authority (\$ in Millions)				227.234			6.218			0.200			2.615			-			2.615		
<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)				-			33.47			44.10			38.83			-			38.83		
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																					
Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total					
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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) ^(†)	-	-	11.925	7.30	185,806	1.356	7.66	4,535	0.035	8.43	67,350	0.568	-	-	-	8.43	67,350	0.568			
COMP C-4 CLASS 3 ^(†)	-	-	209.775	15.15	245,264	3.716	16.93	5,986	0.101	16.98	88,902	1.510	-	-	-	16.98	88,902	1.510			
<i>Subtotal: Recurring Cost</i>	-	-	<i>221.700</i>	-	-	<i>5.072</i>	-	-	<i>0.136</i>	-	-	<i>2.077</i>	-	-	-	-	-	<i>2.077</i>			
<i>Subtotal: Hardware Cost</i>	-	-	<i>221.700</i>	-	-	<i>5.072</i>	-	-	<i>0.136</i>	-	-	<i>2.077</i>	-	-	-	-	-	<i>2.077</i>			
Support - Product Improvement Cost																					
Production Qualification Test	-	-	-	-	-	0.595	-	-	-	-	-	-	-	-	-	-	-	-			
<i>Subtotal: Support - Product Improvement Cost</i>	-	-	-	-	-	<i>0.595</i>	-	-	-	-	-	-	-	-	-	-	-	-			
Support - Production Engineering Cost																					
Production Engineering	-	-	5.526	-	-	0.550	-	-	0.064	-	-	0.537	-	-	-	-	-	0.537			
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>5.526</i>	-	-	<i>0.550</i>	-	-	<i>0.064</i>	-	-	<i>0.537</i>	-	-	-	-	-	<i>0.537</i>			
Support - Quality Assurance Cost																					
Quality Assurance	-	-	0.008	-	-	0.001	-	-	-	-	-	0.000	-	-	-	-	-	0.000			
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	<i>0.008</i>	-	-	<i>0.001</i>	-	-	-	-	-	<i>0.000</i>	-	-	-	-	-	<i>0.000</i>			
Gross/Weapon System Cost	-	-	227.234	33.47	185,806	6.218	44.10	4,535	0.200	38.83	67,350	2.615	-	-	-	38.83	67,350	2.615			

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 / CHG DEMO BLK COMP C-4 1-1/4 LB M112 [M023]
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:
^(†) indicates the presence of a P-5a		

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018					
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 / CHG DEMO BLK COMP C-4 1-1/4 LB M112 [M023]					

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)		2017	AMERICAN ORDNANCE LLC (IAAP) / MIDDLETOWN, IA	C / FFP	ROCK ISLAND ARSENAL, IL	Apr 2017	Apr 2018	185,806	7.30	Y		
LOAD, ASSEMBLE, PACK (LAP)		2018	AMERICAN ORDNANCE LLC (IAAP) / MIDDLETOWN, IA	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Mar 2019	4,535	7.66	Y		
LOAD, ASSEMBLE, PACK (LAP)		2019	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	May 2019	Nov 2020	67,350	8.43	Y		
COMP C-4 CLASS 3		2018	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Jun 2018	5,986	16.93	Y		
COMP C-4 CLASS 3		2019	TO BE SELECTED / TBS01	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Jun 2019	88,902	16.98	Y		

Remarks:
FY 2017 - FY 2018 are delivery orders to an existing contract.

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Exhibit P-5, Cost Analysis: PB 2019 Army													Date: February 2018					
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 / CHG DEMO BLK TNT 1/4 LB [M030]						
ID Code (A=Service Ready, B=Not Service Ready) : A									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total				
Procurement Quantity (Units in Each)				-		-		-		914		-		914				
Gross/Weapon System Cost (\$ in Millions)				5.935		-		-		0.406		-		0.406				
Less PY Advance Procurement (\$ in Millions)				-		-		-		-		-		-				
Net Procurement (P-1) (\$ in Millions)				5.935		-		-		0.406		-		0.406				
Plus CY Advance Procurement (\$ in Millions)				-		-		-		-		-		-				
Total Obligation Authority (\$ in Millions)				5.935		-		-		0.406		-		0.406				
<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)				-		-		-		444.20		-		444.20				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	914	0.007	-	-	-	7.84	914	0.007
<i>Subtotal: Recurring Cost</i>	-	-	5.935	-	-	-	-	-	-	-	-	0.007	-	-	-	-	-	0.007
<i>Subtotal: Hardware Cost</i>	-	-	5.935	-	-	-	-	-	-	-	-	0.007	-	-	-	-	-	0.007
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	-	-	-	-	-	-	0.075	-	-	-	-	-	0.075
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.075	-	-	-	-	-	0.075
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	-	-	-	-	-	-	0.322	-	-	-	-	-	0.322
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.322	-	-	-	-	-	0.322
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	-	-	-	-	-	-	0.002	-	-	-	-	-	0.002
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.002	-	-	-	-	-	0.002
Gross/Weapon System Cost	-	-	5.935	-	-	-	-	-	-	444.20	914	0.406	-	-	-	444.20	914	0.406

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	-	19,959	32,918	-	32,918
Gross/Weapon System Cost (\$ in Millions)	8.445	-	1.500	1.489	-	1.489
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	8.445	-	1.500	1.489	-	1.489
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	8.445	-	1.500	1.489	-	1.489

(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)	-	-	75.15	45.23	-	45.23

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	8.003	-	-	-	56.23	19,959	1.122	32.63	32,918	1.074	-	-	-	32.63	32,918	1.074
<i>Subtotal: Recurring Cost</i>	-	-	<i>8.003</i>	-	-	-	-	-	<i>1.122</i>	-	-	<i>1.074</i>	-	-	-	-	-	<i>1.074</i>
Subtotal: Hardware Cost	-	-	8.003	-	-	-	-	-	1.122	-	-	1.074	-	-	-	-	-	1.074
Support - Production Engineering Cost																		
Production Engineering	-	-	0.435	-	-	-	-	-	0.375	-	-	0.413	-	-	-	-	-	0.413
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>0.435</i>	-	-	-	-	-	<i>0.375</i>	-	-	<i>0.413</i>	-	-	-	-	-	<i>0.413</i>
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.007	-	-	-	-	-	0.003	-	-	0.002	-	-	-	-	-	0.002
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	<i>0.007</i>	-	-	-	-	-	<i>0.003</i>	-	-	<i>0.002</i>	-	-	-	-	-	<i>0.002</i>
Gross/Weapon System Cost	-	-	8.445	-	-	-	75.15	19,959	1.500	45.23	32,918	1.489	-	-	-	45.23	32,918	1.489

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 / SELECTABLE LTWT ATTACK MUNITION M4 [MP12]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	-	-	3,152	-	3,152
Gross/Weapon System Cost (\$ in Millions)	38.934	-	0.816	16.070	-	16.070
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	38.934	-	0.816	16.070	-	16.070
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	38.934	-	0.816	16.070	-	16.070

(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)	-	-	-	5,098.35	-	5,098.35

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	3,152	12.462	-	-	-	3,953.64	3,152	12.462
<i>Subtotal: Recurring Cost</i>	-	-	37.711	-	-	-	-	-	-	-	-	12.462	-	-	-	-	-	12.462
Subtotal: Hardware Cost	-	-	37.711	-	-	-	-	-	-	-	-	12.462	-	-	-	-	-	12.462
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	-	-	-	-	-	-	1.576	-	-	-	-	-	1.576
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	-	-	-	-	-	-	1.576	-	-	-	-	-	1.576
Support - Engineering Change Proposals Cost																		
Engineering Change Proposals	-	-	-	-	-	-	-	-	-	-	-	0.300	-	-	-	-	-	0.300
<i>Subtotal: Support - Engineering Change Proposals Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.300	-	-	-	-	-	0.300
Support - Production Engineering Cost																		
Production Engineering	-	-	1.223	-	-	-	-	-	0.816	-	-	1.732	-	-	-	-	-	1.732
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	1.223	-	-	-	-	-	0.816	-	-	1.732	-	-	-	-	-	1.732
Gross/Weapon System Cost	-	-	38.934	-	-	-	-	-	0.816	5,098.35	3,152	16.070	-	-	-	5,098.35	3,152	16.070

^(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018					
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 / SELECTABLE LTWT ATTACK MUNITION 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 (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
Complete Round ^(†)		2019	TO BE SELECTED / TBS01	C / FFP	PICATINNY ARSENAL, NJ	Mar 2019	Jun 2020	3,152	3,953.64	Y		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2019 Army	Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	<table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:35%;">P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types</td> <td>Item Number / Title [DODIC]: E52000 / SELECTABLE LTWT ATTACK MUNITION M4 [MP12]</td> </tr> </table>	P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types	Item Number / Title [DODIC]: E52000 / SELECTABLE LTWT ATTACK MUNITION M4 [MP12]
P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types	Item Number / Title [DODIC]: E52000 / SELECTABLE LTWT ATTACK MUNITION M4 [MP12]		

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	Fiscal Year 2019											Fiscal Year 2020											B A L A N C E	
								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	3,152	0	3,152							A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,032	1,060	1,060		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 2019 Army		Date: February 2018
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 / SELECTABLE LTWT ATTACK MUNITION M4 [MP12]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	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	6	6	15	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 2019 Army		Date: February 2018
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:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity <i>(Units in Each)</i>	579,048	0	43,501	45,074	-	45,074
Gross/Weapon System Cost <i>(\$ in Millions)</i>	16.218	-	1.641	1.660	-	1.660
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	16.218	-	1.641	1.660	-	1.660
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	16.218	-	1.641	1.660	-	1.660

(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>	28.01	-	37.72	36.83	-	36.83

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	27.48	579,048	15.912	-	-	-	30.42	43,501	1.323	31.33	45,074	1.412	-	-	-	31.33	45,074	1.412
<i>Subtotal: Recurring Cost</i>	-	-	<i>15.912</i>	-	-	-	-	-	<i>1.323</i>	-	-	<i>1.412</i>	-	-	-	-	-	<i>1.412</i>
<i>Subtotal: Hardware Cost</i>	-	-	<i>15.912</i>	-	-	-	-	-	<i>1.323</i>	-	-	<i>1.412</i>	-	-	-	-	-	<i>1.412</i>
Support - Production Engineering Cost																		
Production Engineering	-	-	0.301	-	-	-	-	-	0.316	-	-	0.246	-	-	-	-	-	0.246
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>0.301</i>	-	-	-	-	-	<i>0.316</i>	-	-	<i>0.246</i>	-	-	-	-	-	<i>0.246</i>
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.004	-	-	-	-	-	0.002	-	-	0.002	-	-	-	-	-	0.002
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	<i>0.004</i>	-	-	-	-	-	<i>0.002</i>	-	-	<i>0.002</i>	-	-	-	-	-	<i>0.002</i>
Gross/Weapon System Cost	28.01	579,048	16.218	-	0	-	37.72	43,501	1.641	36.83	45,074	1.660	-	-	-	36.83	45,074	1.660

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity <i>(Units in Each)</i>	90,848,485	0	7,113,726	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	30.392	0.150	3.300	-	-	-
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	30.392	0.150	3.300	-	-	-
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	30.392	0.150	3.300	-	-	-

(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>	0.33	-	0.46	-	-	-

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	90,848,485	29.980	-	-	-	0.37	7,113,726	2.632	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	29.980	-	-	-	-	-	2.632	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	29.980	-	-	-	-	-	2.632	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	0.406	-	-	0.150	-	-	0.665	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.406	-	-	0.150	-	-	0.665	-	-	-	-	-	-	-	-	-
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.006	-	-	-	-	-	0.003	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.006	-	-	-	-	-	0.003	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	0.33	90,848,485	30.392	0	0	0.150	0.46	7,113,726	3.300	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 / FUSE 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity <i>(Units in Each)</i>	-	-	269,829	647,866	-	647,866
Gross/Weapon System Cost <i>(\$ in Millions)</i>	4.714	-	0.350	0.737	-	0.737
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	4.714	-	0.350	0.737	-	0.737
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	4.714	-	0.350	0.737	-	0.737

(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>	-	-	1.30	1.14	-	1.14

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	4.489	-	-	-	0.58	269,829	0.157	0.59	647,866	0.382	-	-	-	0.59	647,866	0.382
<i>Subtotal: Recurring Cost</i>	-	-	4.489	-	-	-	-	-	0.157	-	-	0.382	-	-	-	-	-	0.382
<i>Subtotal: Hardware Cost</i>	-	-	4.489	-	-	-	-	-	0.157	-	-	0.382	-	-	-	-	-	0.382
Support - Production Engineering Cost																		
Production Engineering	-	-	0.221	-	-	-	-	-	0.190	-	-	0.349	-	-	-	-	-	0.349
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.221	-	-	-	-	-	0.190	-	-	0.349	-	-	-	-	-	0.349
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.004	-	-	-	-	-	0.003	-	-	0.006	-	-	-	-	-	0.006
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.004	-	-	-	-	-	0.003	-	-	0.006	-	-	-	-	-	0.006
Gross/Weapon System Cost	-	-	4.714	-	-	-	1.30	269,829	0.350	1.14	647,866	0.737	-	-	-	1.14	647,866	0.737

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 / CARTRIDGE IMPULSE ELECTRICALLY INITIATED DRG NO LD [SS01]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	8,126	8,131	48,594	-	48,594
Gross/Weapon System Cost (\$ in Millions)	0.993	1.012	1.033	6.001	-	6.001
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	0.993	1.012	1.033	6.001	-	6.001
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	0.993	1.012	1.033	6.001	-	6.001

(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)	-	124.54	127.04	123.49	-	123.49

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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)	-	-	0.993	112.08	8,126	0.911	114.33	8,131	0.930	116.69	48,594	5.670	-	-	-	116.69	48,594	5.670
<i>Subtotal: Recurring Cost</i>	-	-	<i>0.993</i>	-	-	<i>0.911</i>	-	-	<i>0.930</i>	-	-	<i>5.670</i>	-	-	-	-	-	<i>5.670</i>
Subtotal: Hardware Cost	-	-	0.993	-	-	0.911	-	-	0.930	-	-	5.670	-	-	-	-	-	5.670
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	0.101	-	-	0.103	-	-	0.330	-	-	-	-	-	0.330
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	<i>0.101</i>	-	-	<i>0.103</i>	-	-	<i>0.330</i>	-	-	-	-	-	<i>0.330</i>
Gross/Weapon System Cost	-	-	0.993	124.54	8,126	1.012	127.04	8,131	1.033	123.49	48,594	6.001	-	-	-	123.49	48,594	6.001

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

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018				
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 / CARTRIDGE IMPULSE ELECTRICALLY INITIATED DRG NO LD [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 <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
Complete Round ^(†)		2017	TO BE SELECTED / TBS01	C / FFP	PICATINNY ARSENAL, NJ	Feb 2018	May 2019	8,126	112.08	Y		
Complete Round ^(†)		2018	TO BE SELECTED / TBS01	C / FFP	PICATINNY ARSENAL, NJ	Mar 2018	Mar 2019	8,131	114.33	Y		
Complete Round ^(†)		2019	TO BE SELECTED / TBS01	C / FFP	PICATINNY ARSENAL, NJ	Mar 2019	Mar 2020	48,594	116.69	Y		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2019 Army				Date: February 2018					
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 / CARTRIDGE IMPULSE ELECTRICALLY INITIATED DRG NO LD [SS01]			

Cost Elements <i>(Units in Thousands)</i>				Fiscal Year 2018														Fiscal Year 2019										B A L A N C E			
O C C #	M F R #	F Y	S E R V I C E	P R O C Q T Y	A C C E P T P R I O R T O 1 O C T 2 0 1 7	B A L D U E A S O F 1 O C T	Calendar Year 2018														Calendar Year 2019										
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N		J U L	A U G	S E P
Complete Round																															
1		2017	ARMY	8.126	.000	8.126																									.000
1		2018	ARMY	8.131	.000	8.131																								.000	
1		2019	ARMY	48.594	.000	48.594																								48.594	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	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 2019 Army		Date: February 2018
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 / CARTRIDGE IMPULSE ELECTRICALLY INITIATED DRG NO LD [SS01]

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	2017	ARMY	8.126	8.126	.000																								.000	
	1	2018	ARMY	8.131	8.131	.000																								.000	
	1	2019	ARMY	48.594	.000	48.594	-	-	-	-	-	4.800	4.800	4.800	4.800	4.800	4.800	4.800	4.800	4.800	4.800	4.800	4.800	.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	

UNCLASSIFIED

Exhibit P-21, Production Schedule: PB 2019 Army		Date: February 2018
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 / CARTRIDGE IMPULSE ELECTRICALLY INITIATED DRG NO LD [SS01]

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	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	4,800	14,400	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 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-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	-	1,065	94	8,233	-	8,233
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1.983	0.314	0.064	2.289	-	2.289
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1.983	0.314	0.064	2.289	-	2.289
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1.983	0.314	0.064	2.289	-	2.289

(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>)	-	294.84	680.85	278.03	-	278.03

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	1.932	250.00	1,065	0.266	99.86	94	0.009	257.50	8,233	2.120	-	-	-	257.50	8,233	2.120
<i>Subtotal: Recurring Cost</i>	-	-	<i>1.932</i>	-	-	<i>0.266</i>	-	-	<i>0.009</i>	-	-	<i>2.120</i>	-	-	-	-	-	<i>2.120</i>
<i>Subtotal: Hardware Cost</i>	-	-	<i>1.932</i>	-	-	<i>0.266</i>	-	-	<i>0.009</i>	-	-	<i>2.120</i>	-	-	-	-	-	<i>2.120</i>
Support - Production Engineering Cost																		
Production Engineering	-	-	0.045	-	-	0.048	-	-	0.048	-	-	0.169	-	-	-	-	-	0.169
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>0.045</i>	-	-	<i>0.048</i>	-	-	<i>0.048</i>	-	-	<i>0.169</i>	-	-	-	-	-	<i>0.169</i>
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.006	-	-	-	-	-	0.007	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	<i>0.006</i>	-	-	-	-	-	<i>0.007</i>	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	1.983	294.84	1,065	0.314	680.85	94	0.064	278.03	8,233	2.289	-	-	-	278.03	8,233	2.289

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types	Item Number / Title [DODIC]: E78201 / CHARGE DEMO (38FT) Sheet Explosive, PBXW-202 [M980]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	61,390	34,235	-	-	-
Gross/Weapon System Cost (\$ in Millions)	5.618	0.929	1.200	-	-	-
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	5.618	0.929	1.200	-	-	-
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	5.618	0.929	1.200	-	-	-

(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)	-	15.13	35.05	-	-	-

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	5.618	13.79	61,390	0.847	31.49	34,235	1.078	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	<i>5.618</i>	-	-	<i>0.847</i>	-	-	<i>1.078</i>	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	<i>5.618</i>	-	-	<i>0.847</i>	-	-	<i>1.078</i>	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	0.081	-	-	0.120	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	<i>0.081</i>	-	-	<i>0.120</i>	-	-	-	-	-	-	-	-	-
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	0.002	-	-	0.002	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	-	-	-	<i>0.002</i>	-	-	<i>0.002</i>	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	5.618	15.13	61,390	0.929	35.05	34,235	1.200	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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/30 FT 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	283,254	-	-	4,752	-	4,752
Gross/Weapon System Cost (<i>\$ in Millions</i>)	6.781	-	-	0.158	-	0.158
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	6.781	-	-	0.158	-	0.158
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	6.781	-	-	0.158	-	0.158

(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>)	23.94	-	-	33.25	-	33.25

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	4,752	0.134	-	-	-	28.22	4,752	0.134
<i>Subtotal: Recurring Cost</i>	-	-	6.631	-	-	-	-	-	-	-	-	0.134	-	-	-	-	-	0.134
<i>Subtotal: Hardware Cost</i>	-	-	6.631	-	-	-	-	-	-	-	-	0.134	-	-	-	-	-	0.134
Support - Production Engineering Cost																		
Production Engineering	-	-	0.150	-	-	-	-	-	-	-	-	0.024	-	-	-	-	-	0.024
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.150	-	-	-	-	-	-	-	-	0.024	-	-	-	-	-	0.024
Gross/Weapon System Cost	23.94	283,254	6.781	-	-	-	-	-	-	33.25	4,752	0.158	-	-	-	33.25	4,752	0.158

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	846,096	-	-	13,099	-	13,099
Gross/Weapon System Cost (\$ in Millions)	14.630	-	-	0.167	-	0.167
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	14.630	-	-	0.167	-	0.167
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	14.630	-	-	0.167	-	0.167

(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)	17.29	-	-	12.75	-	12.75

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	13,099	0.142	-	-	-	10.82	13,099	0.142
<i>Subtotal: Recurring Cost</i>	-	-	14.629	-	-	-	-	-	-	-	-	0.142	-	-	-	-	-	0.142
<i>Subtotal: Hardware Cost</i>	-	-	14.629	-	-	-	-	-	-	-	-	0.142	-	-	-	-	-	0.142
Support - Production Engineering Cost																		
Production Engineering	-	-	0.001	-	-	-	-	-	-	-	-	0.025	-	-	-	-	-	0.025
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.001	-	-	-	-	-	-	-	-	0.025	-	-	-	-	-	0.025
Gross/Weapon System Cost	17.29	846,096	14.630	-	-	-	-	-	-	12.75	13,099	0.167	-	-	-	12.75	13,099	0.167

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	6,113	-	6,113
Gross/Weapon System Cost (<i>\$ in Millions</i>)	3.943	-	-	0.168	-	0.168
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	3.943	-	-	0.168	-	0.168
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	3.943	-	-	0.168	-	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>)	-	-	-	27.48	-	27.48

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	-	23.33	6,113	0.143
<i>Subtotal: Recurring Cost</i>	-	-	3.943	-	-	-	-	-	-	-	-	0.143	-	-	-	-	-	0.143
<i>Subtotal: Hardware Cost</i>	-	-	3.943	-	-	-	-	-	-	-	-	0.143	-	-	-	-	-	0.143
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	-	-	-	-	-	-	0.025	-	-	-	-	-	0.025
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.025	-	-	-	-	-	0.025
Gross/Weapon System Cost	-	-	3.943	-	-	-	-	-	-	27.48	6,113	0.168	-	-	-	27.48	6,113	0.168

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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:				
Resource Summary			Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)			3,435,301	24,209	155,992	-	-	-
Gross/Weapon System Cost (\$ in Millions)			17.185	0.306	1.058	-	-	-
Less PY Advance Procurement (\$ in Millions)			-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)			17.185	0.306	1.058	-	-	-
Plus CY Advance Procurement (\$ in Millions)			-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)			17.185	0.306	1.058	-	-	-
<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)			5.00	12.64	6.78	-	-	-

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	4.83	3,435,301	16.593	6.89	24,209	0.167	5.43	155,992	0.847	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	16.593	-	-	0.167	-	-	0.847	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	16.593	-	-	0.167	-	-	0.847	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	0.592	-	-	0.139	-	-	0.210	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.592	-	-	0.139	-	-	0.210	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	5.00	3,435,301	17.185	12.64	24,209	0.306	6.78	155,992	1.058	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	21,365	-	21,365
Gross/Weapon System Cost (<i>\$ in Millions</i>)	7.060	-	-	0.168	-	0.168
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	7.060	-	-	0.168	-	0.168
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	7.060	-	-	0.168	-	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>)	-	-	-	7.86	-	7.86

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	-	-	-	-	6.67	21,365	0.143	-	-	-	6.67	21,365	0.143
<i>Subtotal: Recurring Cost</i>	-	-	<i>7.060</i>	-	-	-	-	-	-	-	-	<i>0.143</i>	-	-	-	-	-	<i>0.143</i>
<i>Subtotal: Hardware Cost</i>	-	-	<i>7.060</i>	-	-	-	-	-	-	-	-	<i>0.143</i>	-	-	-	-	-	<i>0.143</i>
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	-	-	-	-	-	-	0.025	-	-	-	-	-	0.025
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	-	-	-	-	-	-	<i>0.025</i>	-	-	-	-	-	<i>0.025</i>
Gross/Weapon System Cost	-	-	7.060	-	-	-	-	-	-	7.86	21,365	0.168	-	-	-	7.86	21,365	0.168

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	-	-	18,791	-	18,791
Gross/Weapon System Cost (\$ in Millions)	-	-	-	0.168	-	0.168
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	-	-	0.168	-	0.168
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	-	-	0.168	-	0.168

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

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	8.94	-	8.94

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	-	-	-	-	-	-	-	7.58	18,791	0.142	-	-	-	7.58	18,791	0.142
Subtotal: Recurring Cost	-	-	-	-	-	-	-	-	-	-	-	0.142	-	-	-	-	-	0.142
Subtotal: Hardware Cost	-	-	-	-	-	-	-	-	-	-	-	0.142	-	-	-	-	-	0.142
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	-	-	-	-	-	-	0.025	-	-	-	-	-	0.025
Subtotal: Support - Production Engineering Cost	-	-	-	-	-	-	-	-	-	-	-	0.025	-	-	-	-	-	0.025
Gross/Weapon System Cost	-	-	-	-	-	-	-	-	-	8.94	18,791	0.168	-	-	-	8.94	18,791	0.168

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 2790E55400 / Demolition Munitions, All Types	Item Number / Title [DODIC]: E99902 / Blast Cap, Non-Elec: Inert, 200Ft Minitube, XM20 [MN87]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	10,353	-	-	2,595	-	2,595
Gross/Weapon System Cost (\$ in Millions)	0.610	-	-	0.200	-	0.200
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	0.610	-	-	0.200	-	0.200
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	0.610	-	-	0.200	-	0.200

(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)	58.92	-	-	77.07	-	77.07

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	58.92	10,353	0.610	-	-	-	-	-	-	65.43	2,595	0.170	-	-	-	65.43	2,595	0.170
<i>Subtotal: Recurring Cost</i>	-	-	<i>0.610</i>	-	-	-	-	-	-	-	-	<i>0.170</i>	-	-	-	-	-	<i>0.170</i>
Subtotal: Hardware Cost	-	-	0.610	-	-	-	-	-	-	-	-	0.170	-	-	-	-	-	0.170
Support - Production Engineering Cost																		
Production Engineering	-	-	0.000	-	-	-	-	-	-	-	-	0.030	-	-	-	-	-	0.030
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>0.000</i>	-	-	-	-	-	-	-	-	<i>0.030</i>	-	-	-	-	-	<i>0.030</i>
Gross/Weapon System Cost	58.92	10,353	0.610	-	-	-	-	-	-	77.07	2,595	0.200	-	-	-	77.07	2,595	0.200

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 / Blast Cap, Non-Elec: 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	11,309	34,555	79,415	-	79,415
Gross/Weapon System Cost (\$ in Millions)	13.614	1.885	2.647	5.295	-	5.295
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	13.614	1.885	2.647	5.295	-	5.295
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	13.614	1.885	2.647	5.295	-	5.295

(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)	-	166.68	76.60	66.68	-	66.68

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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)	-	-	12.877	100.73	11,309	1.139	57.01	34,555	1.970	56.59	79,415	4.494	-	-	-	56.59	79,415	4.494
<i>Subtotal: Recurring Cost</i>	-	-	<i>12.877</i>	-	-	<i>1.139</i>	-	-	<i>1.970</i>	-	-	<i>4.494</i>	-	-	-	-	-	<i>4.494</i>
Subtotal: Hardware Cost	-	-	12.877	-	-	1.139	-	-	1.970	-	-	4.494	-	-	-	-	-	4.494
Support - Production Engineering Cost																		
Production Engineering	-	-	0.737	-	-	0.746	-	-	0.677	-	-	0.801	-	-	-	-	-	0.801
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>0.737</i>	-	-	<i>0.746</i>	-	-	<i>0.677</i>	-	-	<i>0.801</i>	-	-	-	-	-	<i>0.801</i>
Gross/Weapon System Cost	-	-	13.614	166.68	11,309	1.885	76.60	34,555	2.647	66.68	79,415	5.295	-	-	-	66.68	79,415	5.295

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

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018					
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 / Blast Cap, Non-Elec: 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 <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
Complete Round		2017	ENSIGN-BICKFORD AEROSPACE & / SIMSBURY, CT	C / FFP	PICATINNY ARSENAL, NJ	Aug 2017	Aug 2018	11,309	100.73	Y		
Complete Round		2018	ENSIGN-BICKFORD AEROSPACE & / SIMSBURY, CT	C / FFP	PICATINNY ARSENAL, NJ	Mar 2018	Mar 2019	34,555	57.01	Y		
Complete Round		2019	ENSIGN-BICKFORD AEROSPACE & / SIMSBURY, CT	C / FFP	PICATINNY ARSENAL, NJ	Mar 2019	Mar 2020	79,415	56.59	Y		

Remarks:
FY 2017 - FY 2019 are delivery orders to an existing contract

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 / Blast Cap, 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	203,582	10,114	23,999	48,032	-	48,032
Gross/Weapon System Cost (<i>\$ in Millions</i>)	16.147	1.785	2.750	4.715	-	4.715
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	16.147	1.785	2.750	4.715	-	4.715
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	16.147	1.785	2.750	4.715	-	4.715

(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>)	79.31	176.49	114.59	98.16	-	98.16

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	76.89	203,582	15.653	125.30	10,114	1.267	85.54	23,999	2.053	83.32	48,032	4.002	-	-	-	83.32	48,032	4.002
<i>Subtotal: Recurring Cost</i>	-	-	15.653	-	-	1.267	-	-	2.053	-	-	4.002	-	-	-	-	-	4.002
<i>Subtotal: Hardware Cost</i>	-	-	15.653	-	-	1.267	-	-	2.053	-	-	4.002	-	-	-	-	-	4.002
Support - Production Engineering Cost																		
Production Engineering	-	-	0.494	-	-	0.518	-	-	0.697	-	-	0.713	-	-	-	-	-	0.713
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.494	-	-	0.518	-	-	0.697	-	-	0.713	-	-	-	-	-	0.713
Gross/Weapon System Cost	79.31	203,582	16.147	176.49	10,114	1.785	114.59	23,999	2.750	98.16	48,032	4.715	-	-	-	98.16	48,032	4.715

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	977.362	26.904	22.759	19.896	0.008	19.904	27.528	26.197	62.613	62.221	-	1,225.488
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	977.362	26.904	22.759	19.896	0.008	19.904	27.528	26.197	62.613	62.221	-	1,225.488
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	977.362	26.904	22.759	19.896	0.008	19.904	27.528	26.197	62.613	62.221	-	1,225.488

(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.

(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 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.

(E34001) GRENADE HAND SMOKE GREEN M18

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.

(E34002) GRENADE HAND SMOKE YELLOW M18

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.

(E34004) GRENADE HAND SMOKE VIOLET M18

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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>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>(E34250) GRENADE HAND OFFENSIVE MK3 SERIES W/FUZE MK3 Hand Grenade consists of a 2.5 inch diameter plastic hexagonal body that is designed to burst and provide overpressure effective against enemy troops in indoor and close combat environments where fragments are not desired to reduce collateral damage. The grenade body is filled with 8oz of high explosive Pax-3. Each grenade is fitted with an M213 fuze that initiates the explosive charge 4 to 5.5 seconds after release of safety lever. MK3 will be replaced by XM111 (funding for the XM111 will be realigned to E33010 in FY 2020). XM111 provides the warfighter with the capability to conduct pre-mobilization training and the capability to conduct close combat operations.</p> <p>The XM111 Offensive Hand Grenade consists of a 2.5 inch diameter plastic hexagonal body that is designed to burst and provide overpressure effective against enemy troops in indoor and close combat environments where fragments are not desired to reduce collateral damage. The grenade body is filled with 8oz of high explosive Pax-3. Each grenade is fitted with an 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 is code B, approved for restricted use.</p> <p>(E35800) BODY GRENADE HAND PRAC M69 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>(E69300) GRENADE HAND SMOKE WHITE M83 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> <p>(E35801) BODY GRENADE HAND PRAC XM112 Body, Grenade Hand Practice XM112 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 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 is code B, approved for restricted use.</p>		

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	E31900 / FUZE GRENADE HAND PRAC M228 [G878]		A		- / 263.321	- / 2.502	- / 2.504	196,793 / 4.780	- / -	196,793 / 4.780
P-5	E32000 / GRENADE HAND FRAG DELAY M67 [G881]	P-5a	A		- / 302.262	305,926 / 14.851	198,276 / 10.181	38,367 / 3.681	185 / 0.008	38,552 / 3.689
P-5	E34001 / GRENADE HAND SMOKE GREEN M18 [G940]		A		- / 162.664	41,313 / 3.316	43,766 / 2.987	27,803 / 2.258	- / -	27,803 / 2.258
P-5	E34002 / GRENADE HAND SMOKE YELLOW M18 [G945]		A		- / 87.373	23,415 / 2.055	26,119 / 1.872	23,023 / 1.895	- / -	23,023 / 1.895
P-5	E34004 / GRENADE HAND SMOKE VIOLET M18 [G955]		A		- / 52.940	9,413 / 0.714	9,835 / 0.728	8,154 / 0.737	- / -	8,154 / 0.737
P-5	E34250 / GRENADE, HAND, OFFENSIVE, MK3 SERIES, W/FUZE [GG37]		B		- / -	- / -	2,161 / 0.927	1,705 / 0.939	- / -	1,705 / 0.939
P-5	E35800 / BODY GRENADE HAND PRAC M69 [G811]		A		- / 1.730	- / -	8,706 / 0.500	127,781 / 2.483	- / -	127,781 / 2.483
P-5	E35801 / GRENADE, Hand, Body, Practice, Offensive, XM112 [GG38]		B		- / -	- / -	- / -	15,317 / 0.533	- / -	15,317 / 0.533
P-5	E69300 / GRENADE HAND SMOKE (WHITE) M83 [G982]		A		- / 107.072	52,196 / 3.466	53,221 / 3.060	38,751 / 2.590	- / -	38,751 / 2.590
P-40	Total Gross/Weapon System Cost				- / 977.362	- / 26.904	- / 22.759	- / 19.896	- / 0.008	- / 19.904

*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 2019 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements IAW DoD Instruction 3000.04 (Munitions Requirements Process) and AR 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support 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 2019 Base procurement dollars in the amount of \$19.904 million supports procurement of nine variants of Grenades.

The FY 2019 Overseas Contingency Operations (OCO) procurement dollars in the amount of \$0.008 million supports procurement of one variant of Grenades.

(E31900) FUZE GRENADE HAND PRAC M228
This is a training unique item not used in combat. FY 2019 procurement supports annual training and builds a depot level in accordance with Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$4.780 million supports the Recapitalization of 600,615 fuzes and procurement of 196,793 fuzes.
TYPE CLASSIFICATION DATE: March 1971

(E32000) GRENADE HAND FRAG DELAY M67
This is a training standard item used in both training and combat. FY 2019 procurement supports annual training and builds a war reserve inventory in accordance with Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$3.681 million supports the procurement of 38,367 grenades. FY 2019 OCO includes \$0.008 million to support the COCOM requirement for unit equipment sets to deter potential adversaries and support the European Deterrence Initiative. The procurement includes 185 M67 Hand Fragmentation Delay Grenades.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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 1970		
(E34001) GRENADE HAND SMOKE GREEN M18 This is a training standard item used in both training and combat. FY 2019 procurement supports annual training and builds a war reserve inventory in accordance with Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$2.258 million supports the procurement of 27,803 grenades. TYPE CLASSIFICATION DATE: September 1943		
(E34002) GRENADE HAND SMOKE YELLOW M18 This is a training standard item used in both training and combat. FY 2019 procurement supports annual training and builds war reserve inventory in accordance with Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$1.895 million supports the procurement of 23,023 grenades. TYPE CLASSIFICATION DATE: September 1943		
(E34004) GRENADE HAND SMOKE VIOLET M This is a training standard item used in both training and in combat. FY 2019 procurement supports annual training and builds a war reserve inventory in accordance with Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$0.737 million supports the procurement of 8,154 grenades. TYPE CLASSIFICATION DATE: September 1943		
(E34250) GRENADE HAND OFFENSIVE MK3 SERIES This is a training standard item used in both training and combat. FY 2019 procurement supports annual training and builds a war reserve inventory in accordance with Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$.939 million supports the procurement of 1,705 XM111 Offensive Hand Grenades. Funding for the XM111 will be realigned to E33010 in FY 2020 to provide greater transparency. Type Classification Standard is projected for 3QFY19. Full Materiel Release is projected for 4QFY20.		
(E35800) BODY GRENADE HAND PRAC M69 This is a training standard item used in both training and combat. FY 2019 procurement supports annual training and builds a war reserve inventory in accordance with Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$2.483 million supports the procurement of 127,781 grenades. TYPE CLASSIFICATION DATE: March 1971		
(E35801) GRENADE HAND BODY PRACTICE OFFENSIVE XM112 This is a training standard item used in both training and combat. FY2019 procurement supports annual training and builds a war reserve inventory in accordance with Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$.533 million supports the procurement of 15,317 grenades. This is a new start in FY 2019. Type Classification Standard is projected for 3QFY19. Full Materiel Release for this item is projected for 4QFY20.		
(E69300) GRENADE HAND SMOKE WHITE M83 This is a training standard item used in both training and combat. FY 2019 procurement supports annual training and builds a war reserve inventory in accordance with Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$2.590 million supports the procurement of 38,751 grenades. TYPE CLASSIFICATION DATE: July 1994		

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 PRAC M228 [G878]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	-	-	196,793	-	196,793
Gross/Weapon System Cost (\$ in Millions)	263.321	2.502	2.504	4.780	-	4.780
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	263.321	2.502	2.504	4.780	-	4.780
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	263.321	2.502	2.504	4.780	-	4.780

(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)	-	-	-	24.29	-	24.29

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	36,245,265	260.966	-	-	-	-	-	-	10.02	196,793	1.972	-	-	-	10.02	196,793	1.972
Subtotal: Recurring Cost	-	-	260.966	-	-	-	-	-	-	-	-	1.972	-	-	-	-	-	1.972
Subtotal: Hardware Cost	-	-	260.966	-	-	-	-	-	-	-	-	1.972	-	-	-	-	-	1.972
Support - Product Improvement Cost																		
Safety	-	-	1.661	-	-	1.646	-	-	1.745	-	-	1.910	-	-	-	-	-	1.910
Subtotal: Support - Product Improvement Cost	-	-	1.661	-	-	1.646	-	-	1.745	-	-	1.910	-	-	-	-	-	1.910
Support - Production Engineering Cost																		
Production Engineering	-	-	0.689	-	-	0.690	-	-	0.759	-	-	0.891	-	-	-	-	-	0.891
Subtotal: Support - Production Engineering Cost	-	-	0.689	-	-	0.690	-	-	0.759	-	-	0.891	-	-	-	-	-	0.891
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.005	-	-	0.008	-	-	-	-	-	0.007	-	-	-	-	-	0.007
Subtotal: Support - Quality Assurance Cost	-	-	0.005	-	-	0.008	-	-	-	-	-	0.007	-	-	-	-	-	0.007
Support - Staging and Transportation Cost																		
Staging and Transportation	-	-	-	-	-	0.158	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Staging and Transportation Cost	-	-	-	-	-	0.158	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 PRAC M228 [G878]
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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	263.321	-	-	2.502	-	-	2.504	24.29	196,793	4.780	-	-	-	24.29	196,793	4.780

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	305,926	198,276	38,367	185	38,552
Gross/Weapon System Cost (\$ in Millions)	302.262	14.851	10.181	3.681	0.008	3.689
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	302.262	14.851	10.181	3.681	0.008	3.689
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	302.262	14.851	10.181	3.681	0.008	3.689

(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)	-	48.54	51.35	95.94	43.24	95.69

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 ^(t)	31.45	9,543,653	300.148	35.81	305,926	10.955	38.62	198,276	7.657	43.16	38,367	1.656	43.16	185	0.008	43.16	38,552	1.664
Subtotal: Recurring Cost	-	-	300.148	-	-	10.955	-	-	7.657	-	-	1.656	-	-	0.008	-	-	1.664
Subtotal: Hardware Cost	-	-	300.148	-	-	10.955	-	-	7.657	-	-	1.656	-	-	0.008	-	-	1.664
Support - Production Engineering Cost																		
Production Engineering	-	-	2.103	-	-	3.104	-	-	2.493	-	-	2.018	-	-	0.000	-	-	2.018
Subtotal: Support - Production Engineering Cost	-	-	2.103	-	-	3.104	-	-	2.493	-	-	2.018	-	-	0.000	-	-	2.018
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.009	-	-	0.033	-	-	0.030	-	-	0.007	-	-	-	-	-	0.007
Subtotal: Support - Quality Assurance Cost	-	-	0.009	-	-	0.033	-	-	0.030	-	-	0.007	-	-	-	-	-	0.007
Support - Study & Analysis Cost																		
Study & Analysis	-	-	-	-	-	0.759	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Study & Analysis Cost	-	-	-	-	-	0.759	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	302.262	48.54	305,926	14.851	51.35	198,276	10.181	95.94	38,367	3.681	43.24	185	0.008	95.69	38,552	3.689

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

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018				
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]				

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 GRENADE		2017	DAY & ZIMMERMANN LONE STAR / TEXARKANA, TX	C / FFP	ROCK ISLAND ARSENAL, IL	Sep 2017	Jun 2020	305,926	35.81	Y		
COMPLETE GRENADE		2018	DAY & ZIMMERMANN LONE STAR / TEXARKANA, TX	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Mar 2020	198,276	38.62	Y		
COMPLETE GRENADE		2019	DAY & ZIMMERMANN LONE STAR / TEXARKANA, TX	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Mar 2021	38,552	43.16	Y		

Remarks:
FY 2017 - FY 2019 are delivery orders to an existing contract.

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	41,313	43,766	27,803	-	27,803
Gross/Weapon System Cost (\$ in Millions)	162.664	3.316	2.987	2.258	-	2.258
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	162.664	3.316	2.987	2.258	-	2.258
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	162.664	3.316	2.987	2.258	-	2.258

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

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	80.27	68.25	81.21	-	81.21

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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)	42.00	3,860,485	162.140	36.36	41,313	1.502	38.20	43,766	1.672	49.77	27,803	1.384	-	-	-	49.77	27,803	1.384
FUZE,HAND GRENADE M201	7.96	53,291	0.424	8.20	42,965	0.352	9.00	45,516	0.410	9.20	28,915	0.266	-	-	-	9.20	28,915	0.266
Grenade, Metal Parts Set	1.90	52,340	0.099	1.90	44,618	0.085	1.95	47,267	0.092	1.95	30,027	0.059	-	-	-	1.95	30,027	0.059
<i>Subtotal: Recurring Cost</i>	-	-	162.664	-	-	1.939	-	-	2.174	-	-	1.708	-	-	-	-	-	1.708
<i>Subtotal: Hardware Cost</i>	-	-	162.664	-	-	1.939	-	-	2.174	-	-	1.708	-	-	-	-	-	1.708
Support - Non-Recurring Support Cost																		
Value Engineering	-	-	-	-	-	0.061	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Non-Recurring Support Cost</i>	-	-	-	-	-	0.061	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	0.646	-	-	0.808	-	-	0.543	-	-	-	-	-	0.543
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	0.646	-	-	0.808	-	-	0.543	-	-	-	-	-	0.543
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	0.006	-	-	0.006	-	-	0.006	-	-	-	-	-	0.006
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	-	-	-	0.006	-	-	0.006	-	-	0.006	-	-	-	-	-	0.006
Support - Study & Analysis Cost																		

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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:

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
Study & Analysis	-	-	-	-	-	0.664	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Study & Analysis Cost</i>	-	-	-	-	-	0.664	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	162.664	80.27	41,313	3.316	68.25	43,766	2.987	81.21	27,803	2.258	-	-	-	81.21	27,803	2.258

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	23,415	26,119	23,023	-	23,023
Gross/Weapon System Cost (\$ in Millions)	87.373	2.055	1.872	1.895	-	1.895
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	87.373	2.055	1.872	1.895	-	1.895
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	87.373	2.055	1.872	1.895	-	1.895

(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)	-	87.76	71.67	82.31	-	82.31

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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)	43.03	2,009,132	86.453	39.16	23,415	0.917	41.13	26,119	1.074	50.89	23,023	1.172	-	-	-	50.89	23,023	1.172
FUZE,HAND GRENADE M201	7.96	48,307	0.385	8.20	24,352	0.200	9.00	27,163	0.244	9.20	23,944	0.220	-	-	-	9.20	23,944	0.220
Grenade, Metal Parts Set	1.90	48,165	0.092	1.90	25,288	0.048	1.95	28,208	0.055	1.95	24,864	0.048	-	-	-	1.95	24,864	0.048
<i>Subtotal: Recurring Cost</i>	-	-	86.929	-	-	1.165	-	-	1.374	-	-	1.440	-	-	-	-	-	1.440
<i>Subtotal: Hardware Cost</i>	-	-	86.929	-	-	1.165	-	-	1.374	-	-	1.440	-	-	-	-	-	1.440
Support - Non-Recurring Support Cost																		
Value Engineering	-	-	-	-	-	0.039	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Non-Recurring Support Cost</i>	-	-	-	-	-	0.039	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	0.436	-	-	0.418	-	-	0.491	-	-	0.451	-	-	-	-	-	0.451
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.436	-	-	0.418	-	-	0.491	-	-	0.451	-	-	-	-	-	0.451
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.008	-	-	0.007	-	-	0.007	-	-	0.004	-	-	-	-	-	0.004
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.008	-	-	0.007	-	-	0.007	-	-	0.004	-	-	-	-	-	0.004
Support - Study & Analysis Cost																		

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
Study & Analysis	-	-	-	-	-	0.426	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Study & Analysis Cost</i>	-	-	-	-	-	0.426	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	87.373	87.76	23,415	2.055	71.67	26,119	1.872	82.31	23,023	1.895	-	-	-	82.31	23,023	1.895

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	9,413	9,835	8,154	-	8,154
Gross/Weapon System Cost (\$ in Millions)	52.940	0.714	0.728	0.737	-	0.737
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	52.940	0.714	0.728	0.737	-	0.737
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	52.940	0.714	0.728	0.737	-	0.737

(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)	-	75.85	74.02	90.39	-	90.39

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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)	44.63	1,173,788	52.386	41.08	9,413	0.387	43.15	9,835	0.424	58.51	8,154	0.477	-	-	-	58.51	8,154	0.477
FUZE,HAND GRENADE M201	7.96	23,526	0.187	8.20	9,790	0.080	9.00	10,228	0.092	9.20	8,480	0.078	-	-	-	9.20	8,480	0.078
Grenade, Metal Parts Set	1.90	24,431	0.046	1.90	10,166	0.019	1.95	10,621	0.021	1.95	8,806	0.017	-	-	-	1.95	8,806	0.017
<i>Subtotal: Recurring Cost</i>	-	-	52.620	-	-	0.486	-	-	0.537	-	-	0.572	-	-	-	-	-	0.572
<i>Subtotal: Hardware Cost</i>	-	-	52.620	-	-	0.486	-	-	0.537	-	-	0.572	-	-	-	-	-	0.572
Support - Production Engineering Cost																		
Production Engineering	-	-	0.311	-	-	0.224	-	-	0.187	-	-	0.163	-	-	-	-	-	0.163
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.311	-	-	0.224	-	-	0.187	-	-	0.163	-	-	-	-	-	0.163
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.010	-	-	0.004	-	-	0.004	-	-	0.001	-	-	-	-	-	0.001
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.010	-	-	0.004	-	-	0.004	-	-	0.001	-	-	-	-	-	0.001
Gross/Weapon System Cost	-	-	52.940	75.85	9,413	0.714	74.02	9,835	0.728	90.39	8,154	0.737	-	-	-	90.39	8,154	0.737

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 4582E34000 / Grenades, All Types	Item Number / Title [DODIC]: E34250 / GRENADE, HAND, OFFENSIVE, MK3 SERIES, W/FUZE [GG37]

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	2,161	1,705	-	1,705
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	-	0.927	0.939	-	0.939
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	-	0.927	0.939	-	0.939
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	-	0.927	0.939	-	0.939

(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>)	-	-	428.97	550.73	-	550.73

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	-	-	-	-	91.80	2,161	0.198	93.63	1,705	0.160	-	-	-	93.63	1,705	0.160
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	<i>0.198</i>	-	-	<i>0.160</i>	-	-	-	-	-	<i>0.160</i>
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	-	-	-	0.198	-	-	0.160	-	-	-	-	-	0.160
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	-	-	-	0.724	-	-	0.774	-	-	-	-	-	0.774
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	-	-	-	0.724	-	-	0.774	-	-	-	-	-	0.774
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	-	-	-	0.005	-	-	0.005	-	-	-	-	-	0.005
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	-	-	-	-	-	-	0.005	-	-	0.005	-	-	-	-	-	0.005
Gross/Weapon System Cost	-	-	-	-	-	-	428.97	2,161	0.927	550.73	1,705	0.939	-	-	-	550.73	1,705	0.939

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity <i>(Units in Each)</i>	-	-	8,706	127,781	-	127,781
Gross/Weapon System Cost <i>(\$ in Millions)</i>	1.730	-	0.500	2.483	-	2.483
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	1.730	-	0.500	2.483	-	2.483
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	1.730	-	0.500	2.483	-	2.483

(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>	-	-	57.43	19.43	-	19.43

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	-	14.94	8,706	0.130	15.24	127,781	1.947	-	-	-	15.24	127,781	1.947
<i>Subtotal: Recurring Cost</i>	-	-	1.730	-	-	-	-	-	0.130	-	-	1.947	-	-	-	-	-	1.947
<i>Subtotal: Hardware Cost</i>	-	-	1.730	-	-	-	-	-	0.130	-	-	1.947	-	-	-	-	-	1.947
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	-	-	-	0.365	-	-	0.531	-	-	-	-	-	0.531
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	-	-	-	0.365	-	-	0.531	-	-	-	-	-	0.531
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	-	-	-	0.005	-	-	0.004	-	-	-	-	-	0.004
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	-	-	-	-	-	-	0.005	-	-	0.004	-	-	-	-	-	0.004
Gross/Weapon System Cost	-	-	1.730	-	-	-	57.43	8,706	0.500	19.43	127,781	2.483	-	-	-	19.43	127,781	2.483

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 4582E34000 / Grenades, All Types	Item Number / Title [DODIC]: E35801 / GRENADE, Hand, Body, Practice, Offensive, XM112 [GG38]

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	-	-	15,317	-	15,317
Gross/Weapon System Cost (\$ in Millions)	-	-	-	0.533	-	0.533
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	-	-	0.533	-	0.533
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	-	-	0.533	-	0.533

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

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	34.80	-	34.80

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	-	-	-	-	-	-	-	14.98	15,317	0.229	-	-	-	14.98	15,317	0.229
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.229	-	-	-	-	-	0.229
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.229	-	-	-	-	-	0.229
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	-	-	-	-	-	-	0.304	-	-	-	-	-	0.304
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.304	-	-	-	-	-	0.304
Gross/Weapon System Cost	-	-	-	-	-	-	-	-	-	34.80	15,317	0.533	-	-	-	34.80	15,317	0.533

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	52,196	53,221	38,751	-	38,751
Gross/Weapon System Cost (\$ in Millions)	107.072	3.466	3.060	2.590	-	2.590
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	107.072	3.466	3.060	2.590	-	2.590
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	107.072	3.466	3.060	2.590	-	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)	-	66.40	57.50	66.84	-	66.84

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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)	27.13	3,904,128	105.919	27.13	52,196	1.416	28.50	53,221	1.517	36.26	38,751	1.405	-	-	-	36.26	38,751	1.405
FUZE,HAND GRENADE M201	-	-	-	8.20	54,284	0.445	9.00	55,349	0.498	9.20	40,301	0.371	-	-	-	9.20	40,301	0.371
GRENADE, METAL PARTS SET	1.90	110,048	0.209	1.90	56,372	0.107	1.95	57,478	0.112	1.95	41,851	0.082	-	-	-	1.95	41,851	0.082
<i>Subtotal: Recurring Cost</i>	-	-	<i>106.128</i>	-	-	<i>1.968</i>	-	-	<i>2.127</i>	-	-	<i>1.857</i>	-	-	-	-	-	<i>1.857</i>
<i>Subtotal: Hardware Cost</i>	-	-	<i>106.128</i>	-	-	<i>1.968</i>	-	-	<i>2.127</i>	-	-	<i>1.857</i>	-	-	-	-	-	<i>1.857</i>
Support - Non-Recurring Support Cost																		
Value Engineering	-	-	-	-	-	0.064	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Non-Recurring Support Cost</i>	-	-	-	-	-	<i>0.064</i>	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	0.936	-	-	0.731	-	-	0.925	-	-	0.726	-	-	-	-	-	0.726
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>0.936</i>	-	-	<i>0.731</i>	-	-	<i>0.925</i>	-	-	<i>0.726</i>	-	-	-	-	-	<i>0.726</i>
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.008	-	-	0.007	-	-	0.008	-	-	0.006	-	-	-	-	-	0.006
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	<i>0.008</i>	-	-	<i>0.007</i>	-	-	<i>0.008</i>	-	-	<i>0.006</i>	-	-	-	-	-	<i>0.006</i>
Support - Study & Analysis Cost																		

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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]: E69300 / GRENADE HAND SMOKE (WHITE) M83 [G982]		

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
Study & Analysis	-	-	-	-	-	0.696	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Study & Analysis Cost</i>	-	-	-	-	-	0.696	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	107.072	66.40	52,196	3.466	57.50	53,221	3.060	66.84	38,751	2.590	-	-	-	66.84	38,751	2.590

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	394.887	8.018	3.596	10.121	-	10.121	17.857	8.074	14.905	16.997	-	474.455
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	394.887	8.018	3.596	10.121	-	10.121	17.857	8.074	14.905	16.997	-	474.455
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	394.887	8.018	3.596	10.121	-	10.121	17.857	8.074	14.905	16.997	-	474.455

(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.

(E49500) FUSEE WARNING RR RED 20 MIN M72

COTS item. Item is a red railroad or highway flare and available commercially. The purpose of the M72 is to outline emergency airfield boundaries under poor visibility conditions, as well as for recognition and signaling along railroads rights-of-way. This item is Code A, approved for service use.

(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 antisubmarine 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

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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 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.</p> <p>(E46800) Signal, Hand Held White Parachute Flare M127 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>(E49100) Flare, AC Countermeasure, M206 Magnesium Teflon IR The M206 flares are part of a family of advanced infrared (IR) decoy flares designed for use by Army helicopters and fixed wing aircraft to meet advanced threats in current and future operational environments. This flare is a Magnesium Teflon Viton flare. When used together with the M212, a spectrally matched flare, and the M211, a pyrophoric alloy material payload that reacts with air to emit intense IR radiation, it provides protection against a wide range of surface to air threats. This item is Code A, approved for service use.</p> <p>(E57600) CTG 25.4 MM DECOY CHAFF M839 The M839 is part of a family of advanced radar frequency (RF) Chaff decoys designed for use by Army helicopters and fixed wing aircraft against radar controlled weapon systems. The M839 is in a 1x1x8 form factor in a plastic case. The decoy payload is composed of strands of aluminum coated glass fibers and dipoles. The M839 is delivered with the BBU-35/B and/or M796 impulse cartridge by electrical initiation of the impulse cartridge, When chaff is dispensed, it generates a reflected return signal which obstructs/confuses enemy radar and prevents Army aircraft detection. When used together, the RR170 and M839, provides protection against a wide range of surface-to-air missile (SAM) threats. This item is Code A, approved for service use.</p>		

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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		- / 1.985	- / -	2,826 / 1.101	2,923 / 1.092	- / -	2,923 / 1.092
P-5	E44600 / SIGNAL KIT PERSONNEL DISTRESS RED FP [L119]		A		- / 19.184	- / -	- / -	12,320 / 2.091	- / -	12,320 / 2.091
P-5	E46500 / Signal, Hand Held White Star Cluster M159 [L307]		A		- / 31.400	- / 0.104	- / -	32,382 / 3.067	- / -	32,382 / 3.067
P-5	E46700 / Signal, Hand Held Red Parachute Flare M126A1 [LA80]		A		- / 21.316	- / -	3,954 / 0.463	- / -	- / -	- / -
P-5	E46800 / Signal, Hand Held White Parachute Flare M127A1 [L312]		A		- / 138.192	26,361 / 2.190	8,873 / 1.019	10,785 / 1.031	- / -	10,785 / 1.031
P-5	E47000 / Signal, Hand Held Green Star Cluster M125A1 [L314]		A		- / 51.960	- / 0.103	- / -	7,613 / 0.724	- / -	7,613 / 0.724
P-5	E49100 / Flare, AC Countermeasure, M206 Magnesium Teflon IR [L410]		A		- / 74.734	- / 0.022	28,834 / 1.013	5,935 / 0.244	- / -	5,935 / 0.244
P-5	E49500 / FUSEE WARNING RR RED 20 MIN M72 [L508]		A		- / 0.409	- / 0.016	- / -	- / -	- / -	- / -
P-5	E57600 / CTG, 25.4MM, DECOY, CHAFF, M839 Series (Ctg+Chaff) [A965]		A		- / 6.550	71,704 / 1.950	- / -	- / -	- / -	- / -
P-5	E62900 / SMOKE POT PRACTICE M8 [K511]	P-5a	A		- / 49.157	687 / 3.633	- / -	704 / 1.872	- / -	704 / 1.872
P-40	Total Gross/Weapon System Cost				- / 394.887	- / 8.018	- / 3.596	- / 10.121	- / -	- / 10.121

*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 2019 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements IAW DoD Instruction 3000.04 (Munitions Requirements Process) and AR 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support 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 2019 Base procurement dollars in the amount of \$10.121 million supports production of 7 variants of Signals.

(E49500) FUSEE WARNING RR RED 20 MIN M72
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's procurement goal.
TYPE CLASSIFICATION DATE: NA

(E42010) Flares and Markers, Watercraft
This is a training standard item used in both training and combat. FY 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$1.092 million supports the procurement of 2,923 Markers.
TYPE CLASSIFICATION DATE: 2011

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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>(E62900) Smoke Pot Practice M8 This is a training standard item used in both training and combat. FY 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$1.872 million supports the procurement of 704 smoke pots. TYPE CLASSIFICATION DATE: 1994</p> <p>(E44600) Signal Kit Personnel Distress Red FP This is a training standard item used in both training and combat. FY 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$2.091 million supports the procurement of 12,320 Signals. This is a new start in FY 2019. TYPE CLASSIFICATION DATE: 1972</p> <p>(E46500) Signal, Hand Held White Star Cluster M159 This is a training standard item used in both training and in combat. FY 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$3.067 million supports the procurement of 32,382 Signals. 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 request supports annual training and builds a war reserve inventory in accordance with the Army procurement goals. 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. FY 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$1.031 million supports the procurement of 10,785 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. FY 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$0.724 million supports the procurement of 7,613 Signals. TYPE CLASSIFICATION DATE: 1983</p> <p>(E49100) Flare, AC Countermeasure, M206 Magnesium Teflon IR This is a training standard item used in both training and combat. FY 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$0.244 million supports the procurement of 5,935 Signals TYPE CLASSIFICATION DATE: 1978</p> <p>(E57600) CTG, 25.4mm, Decoy,Chaff,M839 Series (Ctg+Chaff) 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's procurement goal.</p>		

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	-	2,826	2,923	-	2,923
Gross/Weapon System Cost (\$ in Millions)	1.985	-	1.101	1.092	-	1.092
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	1.985	-	1.101	1.092	-	1.092
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	1.985	-	1.101	1.092	-	1.092

(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)	-	-	389.60	373.59	-	373.59

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	-	243.64	2,826	0.689	248.36	2,923	0.726	-	-	-	248.36	2,923	0.726
Subtotal: Recurring Cost	-	-	1.594	-	-	-	-	-	0.689	-	-	0.726	-	-	-	-	-	0.726
Subtotal: Hardware Cost	-	-	1.594	-	-	-	-	-	0.689	-	-	0.726	-	-	-	-	-	0.726
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	-	-	-	-	-	-	0.185	-	-	0.187	-	-	-	-	-	0.187
Subtotal: Support - Acceptance Testing Cost	-	-	-	-	-	-	-	-	0.185	-	-	0.187	-	-	-	-	-	0.187
Support - Production Engineering Cost																		
Production Engineering	-	-	0.391	-	-	-	-	-	0.222	-	-	0.174	-	-	-	-	-	0.174
Subtotal: Support - Production Engineering Cost	-	-	0.391	-	-	-	-	-	0.222	-	-	0.174	-	-	-	-	-	0.174
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	-	-	-	0.005	-	-	0.005	-	-	-	-	-	0.005
Subtotal: Support - Quality Assurance Cost	-	-	-	-	-	-	-	-	0.005	-	-	0.005	-	-	-	-	-	0.005
Gross/Weapon System Cost	-	-	1.985	-	-	-	389.60	2,826	1.101	373.59	2,923	1.092	-	-	-	373.59	2,923	1.092

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 RED FP [L119]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	12,320	-	12,320
Gross/Weapon System Cost (<i>\$ in Millions</i>)	19.184	-	-	2.091	-	2.091
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	19.184	-	-	2.091	-	2.091
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	19.184	-	-	2.091	-	2.091

(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>)	-	-	-	169.72	-	169.72

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	-	-	-	-	160.06	12,320	1.972	-	-	-	160.06	12,320	1.972
<i>Subtotal: Recurring Cost</i>	-	-	<i>19.008</i>	-	-	-	-	-	-	-	-	<i>1.972</i>	-	-	-	-	-	<i>1.972</i>
<i>Subtotal: Hardware Cost</i>	-	-	19.008	-	-	-	-	-	-	-	-	1.972	-	-	-	-	-	1.972
Support - Production Engineering Cost																		
Production Engineering	-	-	0.174	-	-	-	-	-	-	-	-	0.115	-	-	-	-	-	0.115
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.174	-	-	-	-	-	-	-	-	0.115	-	-	-	-	-	0.115
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.002	-	-	-	-	-	-	-	-	0.004	-	-	-	-	-	0.004
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.002	-	-	-	-	-	-	-	-	0.004	-	-	-	-	-	0.004
Gross/Weapon System Cost	-	-	19.184	-	-	-	-	-	-	169.72	12,320	2.091	-	-	-	169.72	12,320	2.091

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	-	-	32,382	-	32,382
Gross/Weapon System Cost (\$ in Millions)	31.400	0.104	-	3.067	-	3.067
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	31.400	0.104	-	3.067	-	3.067
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	31.400	0.104	-	3.067	-	3.067

(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)	-	-	-	94.71	-	94.71

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	-	-	-	-	78.21	32,382	2.533	-	-	-	78.21	32,382	2.533
Box Metal M548	-	-	0.042	-	-	-	-	-	-	46.24	1,363	0.063	-	-	-	46.24	1,363	0.063
<i>Subtotal: Recurring Cost</i>	-	-	31.400	-	-	-	-	-	-	-	-	2.596	-	-	-	-	-	2.596
<i>Subtotal: Hardware Cost</i>	-	-	31.400	-	-	-	-	-	-	-	-	2.596	-	-	-	-	-	2.596
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	0.101	-	-	-	-	-	0.469	-	-	-	-	-	0.469
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	0.101	-	-	-	-	-	0.469	-	-	-	-	-	0.469
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	0.003	-	-	-	-	-	0.002	-	-	-	-	-	0.002
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	-	-	-	0.003	-	-	-	-	-	0.002	-	-	-	-	-	0.002
Gross/Weapon System Cost	-	-	31.400	-	-	0.104	-	-	-	94.71	32,382	3.067	-	-	-	94.71	32,382	3.067

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	-	3,954	-	-	-
Gross/Weapon System Cost (\$ in Millions)	21.316	-	0.463	-	-	-
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	21.316	-	0.463	-	-	-
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	21.316	-	0.463	-	-	-

(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)	-	-	117.10	-	-	-

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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)	-	-	21.131	-	-	-	71.06	3,954	0.281	-	-	-	-	-	-	-	-	-
Box Metal M548	-	-	0.185	-	-	-	44.86	166	0.007	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	<i>21.316</i>	-	-	-	-	-	<i>0.288</i>	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	<i>21.316</i>	-	-	-	-	-	<i>0.288</i>	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	-	-	-	0.171	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	-	-	-	<i>0.171</i>	-	-	-	-	-	-	-	-	-
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	-	-	-	0.003	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	-	-	-	-	-	-	<i>0.003</i>	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	21.316	-	-	-	117.10	3,954	0.463	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	-	26,361	8,873	10,785	-	10,785
Gross/Weapon System Cost (<i>\$ in Millions</i>)	138.192	2.190	1.019	1.031	-	1.031
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	138.192	2.190	1.019	1.031	-	1.031
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	138.192	2.190	1.019	1.031	-	1.031

(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>)	-	83.08	114.84	95.60	-	95.60

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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)	-	-	138.087	68.42	26,361	1.804	69.48	8,873	0.616	78.79	10,785	0.850	-	-	-	78.79	10,785	0.850
Box Metal M548	-	-	0.105	43.54	1,110	0.048	44.86	373	0.017	46.24	454	0.021	-	-	-	46.24	454	0.021
<i>Subtotal: Recurring Cost</i>	-	-	<i>138.192</i>	-	-	<i>1.852</i>	-	-	<i>0.633</i>	-	-	<i>0.871</i>	-	-	-	-	-	<i>0.871</i>
<i>Subtotal: Hardware Cost</i>	-	-	<i>138.192</i>	-	-	<i>1.852</i>	-	-	<i>0.633</i>	-	-	<i>0.871</i>	-	-	-	-	-	<i>0.871</i>
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	0.337	-	-	0.383	-	-	0.157	-	-	-	-	-	0.157
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	<i>0.337</i>	-	-	<i>0.383</i>	-	-	<i>0.157</i>	-	-	-	-	-	<i>0.157</i>
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	0.001	-	-	0.003	-	-	0.003	-	-	-	-	-	0.003
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	-	-	-	<i>0.001</i>	-	-	<i>0.003</i>	-	-	<i>0.003</i>	-	-	-	-	-	<i>0.003</i>
Gross/Weapon System Cost	-	-	138.192	83.08	26,361	2.190	114.84	8,873	1.019	95.60	10,785	1.031	-	-	-	95.60	10,785	1.031

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	-	-	7,613	-	7,613
Gross/Weapon System Cost (\$ in Millions)	51.960	0.103	-	0.724	-	0.724
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	51.960	0.103	-	0.724	-	0.724
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	51.960	0.103	-	0.724	-	0.724

(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)	-	-	-	95.10	-	95.10

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	-	-	-	-	78.21	7,613	0.595	-	-	-	78.21	7,613	0.595
Box Metal M548	-	-	0.042	-	-	-	-	-	-	46.24	320	0.015	-	-	-	46.24	320	0.015
<i>Subtotal: Recurring Cost</i>	-	-	<i>51.045</i>	-	-	-	-	-	-	-	-	<i>0.610</i>	-	-	-	-	-	<i>0.610</i>
<i>Subtotal: Hardware Cost</i>	-	-	<i>51.045</i>	-	-	-	-	-	-	-	-	<i>0.610</i>	-	-	-	-	-	<i>0.610</i>
Support - Production Engineering Cost																		
Production Engineering	-	-	0.903	-	-	0.100	-	-	-	-	-	0.110	-	-	-	-	-	0.110
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>0.903</i>	-	-	<i>0.100</i>	-	-	-	-	-	<i>0.110</i>	-	-	-	-	-	<i>0.110</i>
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.012	-	-	0.003	-	-	-	-	-	0.003	-	-	-	-	-	0.003
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	<i>0.012</i>	-	-	<i>0.003</i>	-	-	-	-	-	<i>0.003</i>	-	-	-	-	-	<i>0.003</i>
Gross/Weapon System Cost	-	-	51.960	-	-	0.103	-	-	-	95.10	7,613	0.724	-	-	-	95.10	7,613	0.724

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 6038E46900 / Signals, All Types	Item Number / Title [DODIC]: E49100 / Flare, AC Countermeasure, M206 Magnesium Teflon IR [L410]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	-	28,834	5,935	-	5,935
Gross/Weapon System Cost (\$ in Millions)	74.734	0.022	1.013	0.244	-	0.244
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	74.734	0.022	1.013	0.244	-	0.244
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	74.734	0.022	1.013	0.244	-	0.244

(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)	-	-	35.13	41.11	-	41.11

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	73.877	-	-	-	34.16	28,834	0.985	37.97	5,935	0.225	-	-	-	37.97	5,935	0.225
<i>Subtotal: Recurring Cost</i>	-	-	<i>73.877</i>	-	-	-	-	-	<i>0.985</i>	-	-	<i>0.225</i>	-	-	-	-	-	<i>0.225</i>
Subtotal: Hardware Cost	-	-	73.877	-	-	-	-	-	0.985	-	-	0.225	-	-	-	-	-	0.225
Support - Production Engineering Cost																		
Production Engineering	-	-	0.849	-	-	0.020	-	-	0.028	-	-	0.019	-	-	-	-	-	0.019
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>0.849</i>	-	-	<i>0.020</i>	-	-	<i>0.028</i>	-	-	<i>0.019</i>	-	-	-	-	-	<i>0.019</i>
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.008	-	-	0.002	-	-	-	-	-	0.000	-	-	-	-	-	0.000
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	<i>0.008</i>	-	-	<i>0.002</i>	-	-	-	-	-	<i>0.000</i>	-	-	-	-	-	<i>0.000</i>
Gross/Weapon System Cost	-	-	74.734	-	-	0.022	35.13	28,834	1.013	41.11	5,935	0.244	-	-	-	41.11	5,935	0.244

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 6038E46900 / Signals, All Types	Item Number / Title [DODIC]: E49500 / FUSEE WARNING RR RED 20 MIN M72 [L508]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.409	0.016	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.409	0.016	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.409	0.016	-	-	-	-

(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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	0.409	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	0.409	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	0.409	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	0.016	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	0.016	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	0.409	-	-	0.016	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 47	P-1 Line Item Number / Title: 6038E46900 / Signals, All Types	Item Number / Title [DODIC]: E57600 / CTG, 25.4MM, DECOY, CHAFF, M839 Series (Ctg+Chaff) [A965]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	71,704	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	6.550	1.950	-	-	-	-
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	6.550	1.950	-	-	-	-
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	6.550	1.950	-	-	-	-
<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)	-	27.20	-	-	-	-

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	-	16.76	71,704	1.202	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	<i>1.202</i>	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	<i>1.202</i>	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	6.536	-	-	0.745	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>6.536</i>	-	-	<i>0.745</i>	-	-	-	-	-	-	-	-	-	-	-	-
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.014	-	-	0.003	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	<i>0.014</i>	-	-	<i>0.003</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	6.550	27.20	71,704	1.950	-	-	-	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	687	-	704	-	704
Gross/Weapon System Cost (\$ in Millions)	49.157	3.633	-	1.872	-	1.872
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	49.157	3.633	-	1.872	-	1.872
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	49.157	3.633	-	1.872	-	1.872

(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)	-	5,288.21	-	2,659.09	-	2,659.09

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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) ^(†)	486.96	91,298	44.458	499.71	687	0.343	-	-	-	549.72	704	0.387	-	-	-	549.72	704	0.387
FUZE, SMOKE POT, FLOATING M208 ^(†)	90.68	2,059	0.187	149.17	714	0.107	-	-	-	157.61	732	0.115	-	-	-	157.61	732	0.115
INNER COVER ASSEMBLY ^(†)	56.70	2,277	0.129	57.30	790	0.045	-	-	-	60.81	809	0.049	-	-	-	60.81	809	0.049
OUTER COVER ASSEMBLY ^(†)	71.29	2,277	0.162	72.00	790	0.057	-	-	-	76.41	809	0.062	-	-	-	76.41	809	0.062
CONTAINER, USED ON SMOKE POT M8 ^(†)	66.26	2,277	0.151	66.84	790	0.053	-	-	-	70.69	809	0.057	-	-	-	70.69	809	0.057
<i>Subtotal: Recurring Cost</i>	-	-	45.087	-	-	0.605	-	-	-	-	-	0.671	-	-	-	-	-	0.671
<i>Subtotal: Hardware Cost</i>	-	-	45.087	-	-	0.605	-	-	-	-	-	0.671	-	-	-	-	-	0.671
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	0.002	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	0.002	-	-	-	-	-	-	-	-	-	-	-	-
Support - Non-Recurring Support Cost																		
Value Engineering	-	-	-	-	-	0.027	-	-	-	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 - Non-Recurring Support Cost</i>	-	-	-	-	-	0.027	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	4.055	-	-	2.984	-	-	-	-	-	1.197	-	-	-	-	-	1.197
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	4.055	-	-	2.984	-	-	-	-	-	1.197	-	-	-	-	-	1.197
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.015	-	-	0.015	-	-	-	-	-	0.004	-	-	-	-	-	0.004
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	0.015	-	-	0.015	-	-	-	-	-	0.004	-	-	-	-	-	0.004
Gross/Weapon System Cost	-	-	49.157	5,288.21	687	3.633	-	-	-	2,659.09	704	1.872	-	-	-	2,659.09	704	1.872

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

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Exhibit P-5a, Procurement History and Planning: PB 2019 Army **Date:** February 2018

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)		2017	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	ROCK ISLAND ARSENAL, IL	Aug 2017	Jan 2019	687	499.71	Y		
LOAD, ASSEMBLE, PACK (LAP)		2019	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	ROCK ISLAND ARSENAL, IL	Mar 2019	Aug 2020	704	549.72	Y		
FUZE,SMOKE POT, FLOATING M208		2017	CHEMRING ORDNANCE, INC. / PERRY, FL	C / FFP	ROCK ISLAND ARSENAL, IL	Aug 2017	Jun 2018	714	149.17	Y		
FUZE,SMOKE POT, FLOATING M208		2019	CHEMRING ORDNANCE, INC. / PERRY, FL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Jan 2020	732	157.61	Y		
INNER COVER ASSEMBLY		2017	TOOL MASTERS INC. / TUSCUMBIA, AL	C / FFP	ROCK ISLAND ARSENAL, IL	Aug 2017	Aug 2018	790	57.30	Y		
INNER COVER ASSEMBLY		2019	TOOL MASTERS INC. / TUSCUMBIA, AL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Dec 2019	809	60.81	Y		
OUTER COVER ASSEMBLY		2017	TOOL MASTERS INC. / TUSCUMBIA, AL	C / FFP	ROCK ISLAND ARSENAL, IL	Aug 2017	Aug 2018	790	72.00	Y		
OUTER COVER ASSEMBLY		2019	TOOL MASTERS INC. / TUSCUMBIA, AL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Dec 2019	809	76.41	Y		
CONTAINER, USED ON SMOKE POT M8		2017	TOOL MASTERS INC. / TUSCUMBIA, AL	C / FFP	ROCK ISLAND ARSENAL, IL	Aug 2017	Aug 2018	790	66.84	Y		
CONTAINER, USED ON SMOKE POT M8		2019	TOOL MASTERS INC. / TUSCUMBIA, AL	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Dec 2019	809	70.69	Y		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	247.170	7.412	13.084	11.464	-	11.464	16.320	16.471	13.143	13.413	-	338.477
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	247.170	7.412	13.084	11.464	-	11.464	16.320	16.471	13.143	13.413	-	338.477
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	247.170	7.412	13.084	11.464	-	11.464	16.320	16.471	13.143	13.413	-	338.477

(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 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.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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 PROJ GND BURST M115A2 [L594]	P-5a	A		- / 114.572	102,215 / 2.323	181,098 / 5.200	97,854 / 3.532	- / -	97,854 / 3.532
P-5	E50200 / SIMULATOR HAND GRENADE M116A1 [L601]		A		- / 89.434	101,348 / 2.210	126,484 / 4.314	89,605 / 3.251	- / -	89,605 / 3.251
P-5	E70600 / SIMULATOR ANTITANK GM RKT M22 (ATWESS) [LA77]		A		- / 43.164	220,339 / 2.879	101,252 / 1.938	213,190 / 3.029	- / -	213,190 / 3.029
P-5	E88404 / SIMULATORS, NON-STANDARD, SPECIAL EFFECTS FOR CTCS [LZ04]		B		- / -	- / -	100,921 / 1.632	105,162 / 1.652	- / -	105,162 / 1.652
P-40	Total Gross/Weapon System Cost				- / 247.170	- / 7.412	- / 13.084	- / 11.464	- / -	- / 11.464

*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 2019 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements IAW DoD Instruction 3000.04 (Munitions Requirements Process) and AR 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support 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 2019 Base procurement dollars in the amount of \$11.464 million supports production of four variants of simulators.

E88404 - SIMULATORS, NON STANDARD, SPECIAL EFFECTS FOR CTCS

This is a training unique item not used in combat. FY 2019 request supports annual training and builds a depot level in accordance with Army's procurement goals.

FY 2019 Base procurement dollars in the amount of \$1.652 million supports production of 105,162 Non Standard Simulators.

TYPE CLASSIFICATION DATE: TBD

E49700 - SIMULATOR PROJ GND BURST M115A2

This is a training unique item not used in combat. FY 2019 request supports annual training and builds a depot level in accordance with Army's procurement goals.

FY 2019 Base procurement dollars in the amount of \$3.532 million supports production of 97,854 Ground Burst Simulators.

TYPE CLASSIFICATION DATE: 1962

E50200 - SIMULATOR HAND GRENADE M116A1

This is a training unique item not used in combat. FY 2019 request supports annual training and builds a depot level in accordance with Army's procurement goals.

FY 2019 Base procurement dollars in the amount of \$3.251 million supports production of 89,605 hand grenade simulators.

TYPE CLASSIFICATION DATE: 1960

E70600 - SIMULATOR ANTITANK GM RKT M22 (ATWESS)

This is a training unique item not used in combat. FY 2019 request supports annual training and builds a depot level in accordance with Army's procurement goals.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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		
FY 2019 Base procurement dollars in the amount of \$3.029 million supports production of 213,190 Anti-Tank simulators. TYPE CLASSIFICATION DATE: 1984		

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 PROJ GND 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	102,215	181,098	97,854	-	97,854
Gross/Weapon System Cost (\$ in Millions)	114.572	2.323	5.200	3.532	-	3.532
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	114.572	2.323	5.200	3.532	-	3.532
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	114.572	2.323	5.200	3.532	-	3.532

(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)	-	22.73	28.71	36.09	-	36.09

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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 ^(†)	-	-	114.003	17.25	102,215	1.763	23.78	181,098	4.307	30.55	97,854	2.989	-	-	-	30.55	97,854	2.989
Subtotal: Recurring Cost	-	-	114.003	-	-	1.763	-	-	4.307	-	-	2.989	-	-	-	-	-	2.989
Subtotal: Hardware Cost	-	-	114.003	-	-	1.763	-	-	4.307	-	-	2.989	-	-	-	-	-	2.989
Support - Product Improvement Cost																		
Environmental Initiatives	-	-	-	-	-	0.204	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Product Improvement Cost	-	-	-	-	-	0.204	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	0.565	-	-	0.250	-	-	0.888	-	-	0.537	-	-	-	-	-	0.537
Subtotal: Support - Production Engineering Cost	-	-	0.565	-	-	0.250	-	-	0.888	-	-	0.537	-	-	-	-	-	0.537
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.004	-	-	0.002	-	-	0.005	-	-	0.005	-	-	-	-	-	0.005
Subtotal: Support - Quality Assurance Cost	-	-	0.004	-	-	0.002	-	-	0.005	-	-	0.005	-	-	-	-	-	0.005
Support - Study & Analysis Cost																		
Study & Analysis	-	-	-	-	-	0.104	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Study & Analysis Cost	-	-	-	-	-	0.104	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 PROJ GND BURST M115A2 [L594]
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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	114.572	22.73	102,215	2.323	28.71	181,098	5.200	36.09	97,854	3.532	-	-	-	36.09	97,854	3.532

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

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2019 Army							Date: February 2018				
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 PROJ GND 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		2017	PYROTECHNIQUE BY GRUCCI INC / RADFORD, VA	C / FFP	ROCK ISLAND ARSENAL, IL	Apr 2017	Sep 2017	102,215	17.25	Y		
COMPLETE ROUND		2018	PYROTECHNIQUE BY GRUCCI INC / RADFORD, VA	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Mar 2019	181,098	23.78	Y		
COMPLETE ROUND		2019	PYROTECHNIQUE BY GRUCCI INC / RADFORD, VA	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Mar 2020	97,854	30.55	Y		

Remarks:
FY 2017 - FY 2019 are delivery orders to an existing contract.

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	101,348	126,484	89,605	-	89,605
Gross/Weapon System Cost (\$ in Millions)	89.434	2.210	4.314	3.251	-	3.251
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	89.434	2.210	4.314	3.251	-	3.251
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	89.434	2.210	4.314	3.251	-	3.251

(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)	-	21.81	34.11	36.28	-	36.28

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	86.598	17.36	101,348	1.759	28.64	126,484	3.623	29.77	89,605	2.668	-	-	-	29.77	89,605	2.668
<i>Subtotal: Recurring Cost</i>	-	-	<i>86.598</i>	-	-	<i>1.759</i>	-	-	<i>3.623</i>	-	-	<i>2.668</i>	-	-	-	-	-	<i>2.668</i>
Subtotal: Hardware Cost	-	-	86.598	-	-	1.759	-	-	3.623	-	-	2.668	-	-	-	-	-	2.668
Support - Acceptance Testing Cost																		
First Article Test	-	-	0.250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	<i>0.250</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	2.579	-	-	0.345	-	-	0.689	-	-	0.582	-	-	-	-	-	0.582
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>2.579</i>	-	-	<i>0.345</i>	-	-	<i>0.689</i>	-	-	<i>0.582</i>	-	-	-	-	-	<i>0.582</i>
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.007	-	-	0.002	-	-	0.003	-	-	0.002	-	-	-	-	-	0.002
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	<i>0.007</i>	-	-	<i>0.002</i>	-	-	<i>0.003</i>	-	-	<i>0.002</i>	-	-	-	-	-	<i>0.002</i>
Support - Study & Analysis Cost																		
Study & Analysis	-	-	-	-	-	0.104	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Study & Analysis Cost</i>	-	-	-	-	-	<i>0.104</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	89.434	21.81	101,348	2.210	34.11	126,484	4.314	36.28	89,605	3.251	-	-	-	36.28	89,605	3.251

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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:

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 ANTITANK GM RKT M22 (ATWESS) [LA77]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	-	220,339	101,252	213,190	-	213,190
Gross/Weapon System Cost (<i>\$ in Millions</i>)	43.164	2.879	1.938	3.029	-	3.029
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	43.164	2.879	1.938	3.029	-	3.029
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	43.164	2.879	1.938	3.029	-	3.029

(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>)	-	13.07	19.14	14.21	-	14.21

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	41.635	9.62	220,339	2.120	9.62	101,252	0.974	10.20	213,190	2.175	-	-	-	10.20	213,190	2.175
<i>Subtotal: Recurring Cost</i>	-	-	<i>41.635</i>	-	-	<i>2.120</i>	-	-	<i>0.974</i>	-	-	<i>2.175</i>	-	-	-	-	-	<i>2.175</i>
Subtotal: Hardware Cost	-	-	41.635	-	-	2.120	-	-	0.974	-	-	2.175	-	-	-	-	-	2.175
Support - Production Engineering Cost																		
Production Engineering	-	-	1.527	-	-	0.756	-	-	0.961	-	-	0.851	-	-	-	-	-	0.851
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>1.527</i>	-	-	<i>0.756</i>	-	-	<i>0.961</i>	-	-	<i>0.851</i>	-	-	-	-	-	<i>0.851</i>
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.002	-	-	0.003	-	-	0.003	-	-	0.003	-	-	-	-	-	0.003
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	<i>0.002</i>	-	-	<i>0.003</i>	-	-	<i>0.003</i>	-	-	<i>0.003</i>	-	-	-	-	-	<i>0.003</i>
Gross/Weapon System Cost	-	-	43.164	13.07	220,339	2.879	19.14	101,252	1.938	14.21	213,190	3.029	-	-	-	14.21	213,190	3.029

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 FOR CTCS [LZ04]

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	100,921	105,162	-	105,162
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	-	1.632	1.652	-	1.652
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	-	1.632	1.652	-	1.652
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	-	1.632	1.652	-	1.652

(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>)	-	-	16.17	15.71	-	15.71

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	-	-	-	-	14.55	100,921	1.468	14.84	105,162	1.561	-	-	-	14.84	105,162	1.561
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	<i>1.468</i>	-	-	<i>1.561</i>	-	-	-	-	-	<i>1.561</i>
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	-	-	-	1.468	-	-	1.561	-	-	-	-	-	1.561
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	-	-	-	0.163	-	-	0.091	-	-	-	-	-	0.091
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	-	-	-	<i>0.163</i>	-	-	<i>0.091</i>	-	-	-	-	-	<i>0.091</i>
Gross/Weapon System Cost	-	-	-	-	-	-	16.17	100,921	1.632	15.71	105,162	1.652	-	-	-	15.71	105,162	1.652

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army							Date: February 2018					
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					

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	710.119	11.224	12.237	5.224	-	5.224	5.328	5.435	5.539	5.652	-	760.758
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	710.119	11.224	12.237	5.224	-	5.224	5.328	5.435	5.539	5.652	-	760.758
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	710.119	11.224	12.237	5.224	-	5.224	5.328	5.435	5.539	5.652	-	760.758

(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:

FY 2019 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.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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

Exhibits Schedule					Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	EA0500 / COMPONENTS AND RENOVATION OF FIELD STOCK				- / 651.362	- / 9.104	- / 10.834	- / 3.800	- / -	- / 3.800
P-40a	EA1200 / WEAPON COMP IN SPT OF PROOF/ACPT TESTING				- / 58.757	- / 2.120	- / 1.403	- / 1.424	- / -	- / 1.424
P-40	Total Gross/Weapon System Cost				- / 710.119	- / 11.224	- / 12.237	- / 5.224	- / -	- / 5.224

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

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

Justification:
 FY 2019 Ammo Components support Special Tests, First Article Test, Renovation of Field Stocks and Proof of Acceptance Tests. It also supports 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. Yuma Test Center (YTC) updates nondestructive and physical measurements equipment to maintain required accuracy, improve ease of use, and reduce the cost of performing physical measurements for production based support. YTC also overhauls 14 projectile followers to the newest trajectory tracker II (T2) status and procures an additional eight brand new T2 units bringing the total capacity to 22 T2's. Aberdeen Test Center (ATC) continues procuring replacements for Video Target Scoring System at various firing ranges in ATC, which will address shortfalls of current camera equipment and improve overall system capability and data quality. ATC also procures Commercial-Off-The-Shelf (COTS) instrumentation to support production of medium and large caliber ammunition testing.

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 01 / 50 **P-1 Line Item Number / Title:** 0684EB0016 / Ammo Components, All Types **Aggregated Items Title:** Various

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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																				
EA0500 / COMPONENTS AND RENOVATION OF FIELD STOCK			-	-	651.362	-	-	9.104	-	-	10.834	-	-	3.800	-	-	-	-	-	3.800
EA1200 / WEAPON COMP IN SPT OF PROOF/ACPT TESTING			-	-	58.757	-	-	2.120	-	-	1.403	-	-	1.424	-	-	-	-	-	1.424
Subtotal: Various Items			-	-	710.119	-	-	11.224	-	-	12.237	-	-	5.224	-	-	-	-	-	5.224
Total			-	-	710.119	-	-	11.224	-	-	12.237	-	-	5.224	-	-	-	-	-	5.224

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

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	16.800	5.873	1.500	4.310	-	4.310	0.715	0.728	-	-	-	29.926
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	16.800	5.873	1.500	4.310	-	4.310	0.715	0.728	-	-	-	29.926
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	16.800	5.873	1.500	4.310	-	4.310	0.715	0.728	-	-	-	29.926

(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.

(E86401) CTG 12 GA NL, EXT RG, MARK M1116

The XM1116 is a 12 gauge low velocity cartridge fired from a standard, 3 inch chamber, manually operated shotgun. It utilizes a drag stabilized bean bag design with fluorescent green marking powder to deliver a strong, non-penetrating blow to the body. This cartridge has an effective range of approximately 30 to 50 meters. This item is Code B, not approved for service use.

(E89002) CTG, 40MM AIRBURST F M203 XM1112

The Cartridge 40 Millimeter Airburst for M203 XM1112 is intended to have an effective range between 35 to 300 meters. It contains a proximity fuze with programmable option. It is intended to deliver multiple non-lethal effects: flash-blindness, temporary hearing shift. The XM1112 is intended to deliver consistent non-lethal effects regardless of range setting. It will have a user settable delay option for room clearing. It is fully compatible with existing 40 millimeter M203/M320 weapons platforms without any modifications. The XM1112 will deliver non-lethal effects lasting at least 20 seconds. This item is Code A, approved for service use.

(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 (LESF), which is a hand held device used for Electro-Muscular Incapacitation (EMI). 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.

Justification:

FY 2019 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements IAW DoD Instruction 3000.04 (Munitions Requirements Process) and AR 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support 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.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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		

The FY 2019 Base procurement dollars in the amount of \$4.310 million supports production of 3 variants of Non-Lethal Ammunition.

(E86401) Ctg, 12G, Non-Lethal, Ext RG, Marking M1116 Series

This is a training standard item used in both training and combat. The procurement supports annual training and builds a war reserve inventory in accordance with Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$2.277 million will procure 343,225 rounds.

TYPE CLASSIFICATION DATE: October 2015

(E89002) CTG, 40MM AIRBURST F M203 XM1112

This is a training standard item used in both training and combat. The procurement supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$1.331 million will procure 675 rounds.

TYPE CLASSIFICATION DATE: TBD

(E91505) Ctg, NL Firing Device: Taser XP25 f/X26E Taser

This is a training standard item used in both training and combat. FY 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goal. FY 2019 Base procurement dollars in the amount of \$0.702 million will procure 16,403 cartridges.

TYPE CLASSIFICATION DATE: August 2011

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	178.233	9.506	10.730	11.193	0.066	11.259	9.513	9.839	9.169	23.986	-	262.235
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	178.233	9.506	10.730	11.193	0.066	11.259	9.513	9.839	9.169	23.986	-	262.235
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	178.233	9.506	10.730	11.193	0.066	11.259	9.513	9.839	9.169	23.986	-	262.235

(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 ceremonial purposes and training in the M1 Garand rifles. 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 lead-styphnate 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 non-standard munitions and energetic materials to support the training of US Army troops in accordance with HQDA G3 approved authorizations.

(E99105) Soldier Enhancement Program Ammo. The Soldier Enhancement Program (SEP) was established by the National Defense Authorization Act for Fiscal Year 1990 and 1991. The SEP evaluates available Commercial Off the Shelf (COTS), Government Off the Shelf (GOTS) and Non-Developmental Items (NDI) equipment to determine if items have the potential to provide increased combat effectiveness to the Soldier. The SEP procures selected types of equipment designed to increase Soldiers' mission command, situational awareness and operational effectiveness. SEP AMMO provides a means of procuring COTS/GOTS/NDI ammunition to be evaluated by Soldiers for potential Army use.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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>(E99222) Foreign Weapons Training Ammunition. Foreign weapons ammunition procures munitions that have not been Type Classified, Materiel Released or Fielded for standard use by US 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 includes ammunition program support to enhance the management of ammunition.</p> <p>(EA0960) USAMTU FT BENNING (United States Army Marksmanship Training Unit). This budget line funds procurement of non-standard munitions and energetic materials to support marksmanship training throughout the US Army, in accordance with HQDA G3 approved authorizations.</p>		

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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		339,000 / 0.152	- / -	- / -	- / -	235,714 / 0.066	235,714 / 0.066
P-5	E01700 / CTG CAL .22 LR MATCH F/RIFLE [A091]		A		- / 7.317	- / -	323,778 / 0.074	633,555 / 0.154	- / -	633,555 / 0.154
P-5	E03001 / CTG, CAL .30 BLANK [A222]		A		- / 28.495	- / -	2,393,954 / 1.000	1,546,762 / 0.673	- / -	1,546,762 / 0.673
P-5	E03701 / CTG, CAL .300 WIN MAG, MK 248 w/MODs (7.62x67MM) [A191]		A		- / 11.968	1,138,086 / 1.393	- / -	1,426,261 / 1.922	- / -	1,426,261 / 1.922
P-5	E92100 / CTG 12 GAUGE BREACHING ROUND M1030 [AA54]		A		- / 7.931	- / -	- / -	325,969 / 0.894	- / -	325,969 / 0.894
P-40a	E99101 / Special Training Ammo:				- / 31.676	- / 0.966	- / 1.582	- / 1.071	- / -	- / 1.071
P-40a	E99105 / Soldier Enhancement Program Ammo				- / -	- / 0.341	- / 0.248	- / 0.253	- / -	- / 0.253
P-40a	E99222 / Foreign Weapons Training Ammunition				- / -	- / 0.500	- / 0.500	- / 0.496	- / -	- / 0.496
P-40a	EA0600 / AMMUNITION PROGRAM SUPPORT				- / 54.808	- / 4.611	- / 5.515	- / 4.002	- / -	- / 4.002
P-40a	EA0960 / USAMTU FT BENNING				- / 35.886	- / 1.695	- / 1.811	- / 1.728	- / -	- / 1.728
P-40	Total Gross/Weapon System Cost				- / 178.233	- / 9.506	- / 10.730	- / 11.193	- / 0.066	- / 11.259

*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 2019 Base Budget supports critical Army Title 10 war reserve/operational, training, and test requirements IAW DoD Instruction 3000.04 (Munitions Requirements Process) and AR 5-13 (Total Army Munitions Requirements Process and Prioritization System). War reserve requirements support 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 2019 Base procurement dollars in the amount of \$11.193 million supports procurement of 3.933 million cartridges. FY 2019 European Deterrence Initiative (EDI) Overseas Contingency Operations (OCO) procurement dollars in the amount of \$0.066 million supports procurement of .236 million cartridges.

(E00300) CTG 12 GAUGE SHOTGUN 7.5 CHILLED SHOT is a war reserve item used in combat. FY 2019 procurement builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 EDI OCO procurement dollars in the amount of \$0.066 million support the procurement of 0.236 million 12 Gauge Shotgun cartridges. This is a NEW START in FY 2019.
Type Classification date: November 1975.

(E01700) CTG CAL .22 LR MATCH F/PISTOL is a training standard item used in training and combat. The FY 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$0.154 million supports the procurement of 0.634 million .22 Long Rifle Match (LR MATCH) grade cartridges.
Type classification date: April 1988

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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>(E03001) CTG .30 BLANK is a training unique item not used in combat. The FY 2019 request supports annual training and builds a depot level in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$.673 million supports the procurement of 1.547 million CAL .30 BLANK 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 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base procurement dollars in the amount of \$1.922 million supports the procurement of 1.426 million MK248 cartridges. This is a New Start in FY 2019. 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 2019 request supports annual training and builds a war reserve inventory in accordance with the Army's procurement goals. FY 2019 Base Procurement dollars in the amount of \$.894 million supports the procurement of .326 million of the M1030 Breaching Rounds. This is a New Start in FY 2019. Type classification date: October 2007</p> <p>(E99101) Special Training Ammunition. The FY 2019 funds will procure non-standard munitions and energetic materials to support the training of US Army troops in accordance with HQDA G3 approved authorizations. FY 2019 Base procurement dollars in the amount of \$1.071 million supports Special Training Ammunition initiatives.</p> <p>(E99105) Soldier Enhancement Program (SEP) Ammunition. The FY 2019 request procures approved COTS, GOTS, and Non-developmental Items (NDIs) ammunition that will be evaluated by Soldiers for potential use by the Army or used for evaluation of SEP weapons. FY 2019 Base procurement dollars in the amount of \$0.253 million supports Soldier Enhancement Program Ammunition initiatives.</p> <p>(E99222) Foreign Weapons Training Ammunition. FY 2019 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 Nonstandard 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. FY 2019 Base procurement dollars in the amount of \$0.496 million supports Non Standard Ammunition initiatives.</p> <p>(EA0600) Ammunition Program Support. The FY 2019 request in the amount of \$4.002 million supports Ammunition Program Support activities that focus on enhancing the management of ammunition.</p> <p>(EA0960) USAMTU Ft. BENNING. The FY 2019 \$1.728 million request supports the procurement of non-standard munitions and energetic materials to support marksmanship training throughout the US. Army, in accordance with HQDA G3 approved authorizations.</p>		

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	339,000	-	-	-	235,714	235,714
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.152	-	-	-	0.066	0.066
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.152	-	-	-	0.066	0.066
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.152	-	-	-	0.066	0.066

(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>)	0.45	-	-	-	0.28	0.28

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	-	-	-	-	-	-	-	0.28	235,714	0.066	0.28	235,714	0.066
<i>Subtotal: Recurring Cost</i>	-	-	0.115	-	-	-	-	-	-	-	-	-	0.000	-	0.066	-	-	0.066
<i>Subtotal: Hardware Cost</i>	-	-	0.115	-	-	-	-	-	-	-	-	-	0.000	-	0.066	-	-	0.066
Support - Production Engineering Cost																		
Production Engineering	-	-	0.037	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.037	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	0.45	339,000	0.152	-	-	-	-	-	-	-	-	-	0.28	235,714	0.066	0.28	235,714	0.066

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 CAL .22 LR MATCH F/ RIFLE [A091]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	323,778	633,555	-	633,555
Gross/Weapon System Cost (<i>\$ in Millions</i>)	7.317	-	0.074	0.154	-	0.154
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	7.317	-	0.074	0.154	-	0.154
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	7.317	-	0.074	0.154	-	0.154

(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>)	-	-	0.23	0.24	-	0.24

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	20,693,978	6.208	-	-	-	0.14	323,778	0.045	0.14	633,555	0.089	-	-	-	0.14	633,555	0.089
<i>Subtotal: Recurring Cost</i>	-	-	<i>6.208</i>	-	-	-	-	-	<i>0.045</i>	-	-	<i>0.089</i>	-	-	-	-	-	<i>0.089</i>
<i>Subtotal: Hardware Cost</i>	-	-	<i>6.208</i>	-	-	-	-	-	<i>0.045</i>	-	-	<i>0.089</i>	-	-	-	-	-	<i>0.089</i>
Support - Production Engineering Cost																		
Production Engineering	-	-	1.101	-	-	-	-	-	0.027	-	-	0.062	-	-	-	-	-	0.062
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	<i>1.101</i>	-	-	-	-	-	<i>0.027</i>	-	-	<i>0.062</i>	-	-	-	-	-	<i>0.062</i>
Support - Quality Assurance Cost																		
Quality Assurance	-	-	0.008	-	-	-	-	-	0.001	-	-	0.004	-	-	-	-	-	0.004
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	<i>0.008</i>	-	-	-	-	-	<i>0.001</i>	-	-	<i>0.004</i>	-	-	-	-	-	<i>0.004</i>
Gross/Weapon System Cost	-	-	7.317	-	-	-	0.23	323,778	0.074	0.24	633,555	0.154	-	-	-	0.24	633,555	0.154

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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, CAL .30 BLANK [A222]

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity <i>(Units in Each)</i>	-	-	2,393,954	1,546,762	-	1,546,762
Gross/Weapon System Cost <i>(\$ in Millions)</i>	28.495	-	1.000	0.673	-	0.673
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	28.495	-	1.000	0.673	-	0.673
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	28.495	-	1.000	0.673	-	0.673

(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>	-	-	0.42	0.44	-	0.44

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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)	0.54	51,201,897	27.649	-	-	-	0.30	2,393,954	0.718	0.30	1,546,762	0.464	-	-	-	0.30	1,546,762	0.464
BOX METAL M2A2	20.76	4,800	0.100	-	-	-	13.67	3,788	0.052	14.06	2,494	0.035	-	-	-	14.06	2,494	0.035
<i>Subtotal: Recurring Cost</i>	-	-	27.749	-	-	-	-	-	0.770	-	-	0.499	-	-	-	-	-	0.499
<i>Subtotal: Hardware Cost</i>	-	-	27.749	-	-	-	-	-	0.770	-	-	0.499	-	-	-	-	-	0.499
Support - Production Engineering Cost																		
Production Engineering	-	-	0.746	-	-	-	-	-	0.230	-	-	0.170	-	-	-	-	-	0.170
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	0.746	-	-	-	-	-	0.230	-	-	0.170	-	-	-	-	-	0.170
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	-	-	-	-	-	-	0.004	-	-	-	-	-	0.004
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.004	-	-	-	-	-	0.004
Gross/Weapon System Cost	-	-	28.495	-	-	-	0.42	2,393,954	1.000	0.44	1,546,762	0.673	-	-	-	0.44	1,546,762	0.673

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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, CAL .300 WIN MAG, MK 248 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)	-	1,138,086	-	1,426,261	-	1,426,261
Gross/Weapon System Cost (\$ in Millions)	11.968	1.393	-	1.922	-	1.922
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	11.968	1.393	-	1.922	-	1.922
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	11.968	1.393	-	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)	-	1.22	-	1.35	-	1.35

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	7,481,247	8.903	1.17	1,138,086	1.332	-	-	-	1.28	1,426,261	1.826	-	-	-	1.28	1,426,261	1.826
<i>Subtotal: Recurring Cost</i>	-	-	8.903	-	-	1.332	-	-	-	-	-	1.826	-	-	-	-	-	1.826
<i>Subtotal: Hardware Cost</i>	-	-	8.903	-	-	1.332	-	-	-	-	-	1.826	-	-	-	-	-	1.826
Support - Product Improvement Cost																		
Production Verification Test	-	-	-	-	-	0.002	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Product Improvement Cost</i>	-	-	-	-	-	0.002	-	-	-	-	-	-	-	-	-	-	-	-
Support - Production Engineering Cost																		
Production Engineering	-	-	3.065	-	-	0.056	-	-	-	-	-	0.096	-	-	-	-	-	0.096
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	3.065	-	-	0.056	-	-	-	-	-	0.096	-	-	-	-	-	0.096
Support - Quality Assurance Cost																		
Quality Assurance	-	-	-	-	-	0.003	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Quality Assurance Cost</i>	-	-	-	-	-	0.003	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	11.968	1.22	1,138,086	1.393	-	-	-	1.35	1,426,261	1.922	-	-	-	1.35	1,426,261	1.922

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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:			
Resource Summary		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)		-	-	-	325,969	-	325,969
Gross/Weapon System Cost (<i>\$ in Millions</i>)		7.931	-	-	0.894	-	0.894
Less PY Advance Procurement (<i>\$ in Millions</i>)		-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)		7.931	-	-	0.894	-	0.894
Plus CY Advance Procurement (<i>\$ in Millions</i>)		-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)		7.931	-	-	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>)		-	-	-	2.74	-	2.74

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

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	-	-	-	-	2.52	325,969	0.821	-	-	-	2.52	325,969	0.821
<i>Subtotal: Recurring Cost</i>	-	-	7.931	-	-	-	-	-	-	-	-	0.821	-	-	-	-	-	0.821
<i>Subtotal: Hardware Cost</i>	-	-	7.931	-	-	-	-	-	-	-	-	0.821	-	-	-	-	-	0.821
Support - Production Engineering Cost																		
Production Engineering	-	-	-	-	-	-	-	-	-	-	-	0.073	-	-	-	-	-	0.073
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.073	-	-	-	-	-	0.073
Gross/Weapon System Cost	-	-	7.931	-	-	-	-	-	-	2.74	325,969	0.894	-	-	-	2.74	325,969	0.894

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Army **Date:** February 2018

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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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:			-	-	31.676	-	-	0.966	-	-	1.582	-	-	1.071	-	-	-	-	-	1.071
E99105 / Soldier Enhancement Program Ammo			-	-	-	-	-	0.341	-	-	0.248	-	-	0.253	-	-	-	-	-	0.253
E99222 / Foreign Weapons Training Ammunition			-	-	-	-	-	0.500	-	-	0.500	-	-	0.496	-	-	-	-	-	0.496
EA0600 / AMMUNITION PROGRAM SUPPORT			-	-	54.808	-	-	4.611	-	-	5.515	-	-	4.002	-	-	-	-	-	4.002
EA0960 / USAMTU FT BENNING			-	-	35.886	-	-	1.695	-	-	1.811	-	-	1.728	-	-	-	-	-	1.728
Subtotal: Various Items			-	-	122.370	-	-	8.113	-	-	9.656	-	-	7.550	-	-	-	-	-	7.550
Total			-	-	122.370	-	-	8.113	-	-	9.656	-	-	7.550	-	-	-	-	-	7.550

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 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	331.505	10.822	16.425	10.500	-	10.500	10.832	11.608	11.787	12.027	-	415.506
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	331.505	10.822	16.425	10.500	-	10.500	10.832	11.608	11.787	12.027	-	415.506
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	331.505	10.822	16.425	10.500	-	10.500	10.832	11.608	11.787	12.027	-	415.506

(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 DoD 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.

Justification:

FY 2019 Base procurement dollars in the amount of \$10.500 million will provide APE that must be available to perform ammunition depot operations for conventional ammunition. 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

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army		Date: February 2018
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
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>throughout and beyond FY 2019. FY 2019 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.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	946.742	14.951	15.221	18.456	-	18.456	18.819	35.880	36.982	38.137	-	1,125.188
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	946.742	14.951	15.221	18.456	-	18.456	18.819	35.880	36.982	38.137	-	1,125.188
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	946.742	14.951	15.221	18.456	-	18.456	18.819	35.880	36.982	38.137	-	1,125.188

(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 CONUS and OCONUS manufacturing plants/contractors, and/or assembly points, e.g., Army Ammunition Plants (AAPs), Arsenal; Defense Contract Management Centers to include Off Shore Procurement Contractors shipping under F.O.B Origin terms. Requirements are either destined for CONUS depots for acceptance into the Army Supply System, to CONUS Customers, to CONUS Arsenal, 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 2019 request supports centrally funded distribution of Army ammunition end items and components from the point of manufacture to initial receipt in the Army supply system.

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.517	-	-	0.100	-	0.100	0.099	0.099	0.099	0.099	-	1.013
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.517	-	-	0.100	-	0.100	0.099	0.099	0.099	0.099	-	1.013
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.517	-	-	0.100	-	0.100	0.099	0.099	0.099	0.099	-	1.013

(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:

Funding will pay contract termination cost and operational losses/claims at ammunition plants.

Justification:

FY 2019 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 Army Contract Review Board (ACRB).

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	7,584.091	408.867	329.356	394.133	-	394.133	476.233	517.824	462.893	345.201	-	10,518.598
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	7,584.091	408.867	329.356	394.133	-	394.133	476.233	517.824	462.893	345.201	-	10,518.598
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	7,584.091	408.867	329.356	394.133	-	394.133	476.233	517.824	462.893	345.201	-	10,518.598

(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 efforts at Government-Owned, Contractor-Operated Army Ammunition Plants (AAPs) and commercial facilities, including replacement of obsolete or worn production equipment, correction of deficiencies and upgrade of infrastructures. The Industrial Facilities (IF) budget line also 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, as well as emergency modernization and associated construction to address 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, also known as Layaway of Industrial Facilities (LIF) activities. Funding will also support consolidation of laid-away production equipment and redistribution of production equipment that cannot be stored on-site. Laid-away efforts will also include retaining critical operational and technical knowledge of production equipment, such as engineering designs, process data and control manufacturing practices. Efforts will also include 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) to include utilities, buildings, plant equipment, special tooling, and special test equipment being retained to support future production requirements. 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 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Exhibit Type	Project	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)
(Uncategorized)		-	408.867	329.356	394.133	-	394.133
	Holston Army Ammunition Plant	-	138.687	168.229	164.003	-	164.003
P-25	Critical Roof Replacement, Ph 2	-	-	2.450	-	-	-
P-25	Treatment Technology Alternatives to Open Burning	-	1.174	-	-	-	-
P-25	Modernize B235 Filter Press, Ph 2	-	6.375	6.500	-	-	-
P-25	Mitigate High Melt Explosives (HMX) Pump Grinding Single Point Failure (SPF), Design	-	-	-	1.600	-	1.600
P-25	Holston Landfill Expansion, Ph 2	-	1.761	-	-	-	-
P-25	Reduce Repetitive Manual Handling	-	-	-	5.080	-	5.080
P-25	Improve Scrubber Technology, Predesign	-	-	1.487	-	-	-
P-25	Ins Mun (IM) Weak Nitric Acid Recovery (Construct)(NAC/SAC)	-	0.315	-	-	-	-
P-25	Magazine Vent Replacement	-	5.187	-	-	-	-
P-25	Plant-Wide Building Deluge Upgrades	-	-	8.750	-	-	-
P-25	Install Additional Media Filters, Industrial Wastewater Treatment Facility (IWWTF)	-	11.181	-	-	-	-
P-25	Install Wastewater Anaerobic Filtration (3W & 4W)	-	23.798	-	-	-	-
P-25	Install Additional Anoxic Basins 7E and 8E	-	8.316	-	-	-	-
P-25	Electrical System Modernization Upgrades, Building 203	-	4.937	-	-	-	-
P-25	New Analytical Lab	-	-	2.393	20.000	-	20.000
P-25	Elevator and Lift Upgrades	-	-	6.518	-	-	-
P-25	X-Ray Tech Improvements, Safety Risk Reduction (Pckg Fac)	-	-	7.764	-	-	-
P-25	Boxway Upgrade for Spill Prevention & Containment	-	-	7.350	-	-	-
P-25	Modernization of Lacquer Preparation Facility	-	2.424	-	-	-	-
P-25	Modernized Melt-Cast Facility	-	1.914	-	9.500	-	9.500
P-25	Ceiling Replacements, Production Buildings	-	-	6.146	-	-	-
P-25	Sewer Line Replacement, Ph 1	-	-	7.871	-	-	-
P-25	NTO Drying Facility	-	-	-	4.000	-	4.000
P-25	Ansol Treatment Design	-	-	5.000	-	-	-
P-25	Combined Nitration/Wash Facility, Design	-	-	13.000	-	-	-
P-25	FEM RDX Wastewater Point Source Treatment	-	-	5.000	25.000	-	25.000
P-25	Natural Gas fired Stream Plant, Design/Construct	-	46.970	-	33.823	-	33.823
P-25	WAARP Facility Train II, B4	-	4.835	-	37.000	-	37.000
P-25	Acid Tank Farm	-	-	-	10.500	-	10.500
P-25	New Fluid Energy Mill (FEM) Facility	-	-	20.000	-	-	-
P-25	Activate Building G-3 for RDX/NQ Recrystallization Construction	-	-	25.000	-	-	-
P-25	RDX Employee Change House	-	11.518	-	-	-	-

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Exhibit Type	Project	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)
P-25	Ansol Filtration Mod	-	2.482	-	12.000	-	12.000
P-25	IMX Production Building	-	-	3.000	-	-	-
P-25	Area B Third Acid Train Design/Construct	-	-	40.000	-	-	-
P-25	Improved Staging Area, Design/Construction	-	5.500	-	-	-	-
P-25	Stainless Steel Nutsches f/Production	-	-	-	3.500	-	3.500
P-25	New Kettle Drying Facility, Design	-	-	-	2.000	-	2.000
	Iowa Army Ammunition Plant	-	21.309	14.408	50.370	-	50.370
P-25	Replace Water Main Services	-	3.920	-	-	-	-
P-25	Replace Main Sewage	-	-	-	8.790	-	8.790
P-25	Central Fire Alarm Reporting System, Ph 2	-	-	-	2.280	-	2.280
P-25	General Road Improvements (Road 1 & Line 2)	-	4.075	-	-	-	-
P-25	Rail System Upgrades	-	9.853	-	4.730	-	4.730
P-25	Rehab HVAC Controls and Exterior Lighting, Line 1	-	-	-	2.660	-	2.660
P-25	Energy Efficiency Improvements, Low Cost Energy Conservation Measures	-	0.336	-	-	-	-
P-25	IAAAP Footprint Reduction - Melt Pour Operations Phase	-	-	9.600	-	-	-
P-25	Distributed Gas Boiler Systems	-	-	-	14.970	-	14.970
P-25	Storage Yard Upgrades	-	-	-	1.510	-	1.510
P-25	Roof Replacement, Production Areas	-	-	2.385	2.990	-	2.990
P-25	Underground Electrical Upgrades	-	0.908	-	-	-	-
P-25	Sewer Rehabilitation, Ph 1	-	2.217	-	-	-	-
P-25	Gate 3 Upgrade	-	-	2.423	-	-	-
P-25	Centralized Solid Waste Processing	-	-	-	4.340	-	4.340
P-25	40MM High Velocatiy Grenade Defuse	-	-	-	1.890	-	1.890
P-25	Automate M112 Bagging Operations	-	-	-	1.690	-	1.690
P-25	Power Factor Capacitors	-	-	-	0.410	-	0.410
P-25	Ignition Cartridge Automation	-	-	-	4.110	-	4.110
	Lake City Army Ammunition Plant	-	28.993	42.691	5.569	-	5.569
P-25	Small Caliber Modernization, Production Line Upgrades	-	8.993	20.070	-	-	-
P-25	Install Sprinkler Systems (Plantwide)	-	-	-	3.700	-	3.700
P-25	Primer Assembly Wing, Building 35, HVAC(Design)	-	-	1.111	-	-	-
P-25	Building 1 & 2 Load Center Transformer Replacement	-	-	3.176	-	-	-
P-25	Covered Walkways in Explosives Area	-	-	-	1.869	-	1.869
P-25	HVAC Modifications, Upgrade Prod Bldg Wings	-	4.746	-	-	-	-
P-25	Water Well Replacement	-	9.138	-	-	-	-

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Exhibit Type	Project	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)
P-25	Building 15 Boiler Plant, Conceptual Design/Requirement Determination	-	-	2.858	-	-	-
P-25	Building 2,3, 35 Lighting Switchgear	-	1.232	-	-	-	-
P-25	Exterior Steam Main Supports	-	-	5.445	-	-	-
P-25	IWTP Lagoon Liners	-	-	2.239	-	-	-
P-25	Protective Structure Design for Site Plan Compliance	-	-	0.617	-	-	-
P-25	Building 35 Wash Pad Replacement	-	-	0.799	-	-	-
P-25	New Emergency Fire Doors (PW)	-	-	0.805	-	-	-
P-25	Communication Lines, System Analysis & Design	-	-	0.612	-	-	-
P-25	Bldgs 12B, 93 Roof Replacement	-	-	1.137	-	-	-
P-25	Building 85 Kill Tanks, Design	-	-	0.524	-	-	-
P-25	Building 6 Electrical Upgrades	-	-	1.218	-	-	-
P-25	New Water Plant, Construct	-	4.884	-	-	-	-
P-25	Powder Elevator Replacement, Bldgs 1 & 3	-	-	2.080	-	-	-
	Radford Army Ammunition Plant	-	208.827	75.184	150.940	-	150.940
P-25	Construct New Nitrocellulose (NC) Facility	-	166.782	-	-	-	-
P-25	Replace Chemical Grind, Design	-	-	3.235	-	-	-
P-25	Plant Operations, Major Maintenance	-	17.599	28.686	-	-	-
P-25	Plant-Wide Road Upgrades	-	-	1.996	-	-	-
P-25	Acid Sewer Upgrades, Ph 3	-	4.933	-	-	-	-
P-25	Industrial Sewer Upgrades & Rehabilitation, Ph 2 & 3	-	-	9.984	21.630	-	21.630
P-25	Solventless Propellant Mfg Fac, Preliminary Design	-	-	-	4.060	-	4.060
P-25	Modernize Nitroglycerin (NG-2) Facility	-	4.881	-	9.740	-	9.740
P-25	Electrical Distribution System Upgrades, Ph 3	-	-	11.924	5.410	-	5.410
P-25	Barricade Replacement	-	-	5.170	-	-	-
P-25	Upgrade Settling Basins, Bldg 409	-	11.709	-	-	-	-
P-25	Upgrade Facility Change Houses	-	-	3.750	-	-	-
P-25	Combined EWI-CWP Facility, Construction	-	-	-	94.240	-	94.240
P-25	Package Boiler Facility	-	0.197	-	-	-	-
P-25	Acid Area Improvements, Ph 3	-	-	5.730	-	-	-
P-25	Acid Sewer Treatment Upgrades (Lime Slaker)	-	2.726	-	-	-	-
P-25	Water Intake Pump Upgrade (Building 407)	-	-	-	9.370	-	9.370
P-25	Near Term NC Line Upgrade	-	-	-	3.250	-	3.250
P-25	Structural Repair, Assessment & Study	-	-	0.504	1.080	-	1.080
P-25	Alternate Nitrate Ester Manufacturing Facility, Design	-	-	4.205	-	-	-

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Exhibit Type	Project	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)
P-25	NC Solvent Dewatering, Design	-	-	-	2.160	-	2.160
	Scranton Army Ammunition Plant	-	-	1.033	-	-	-
P-25	Rehab Forge Shop Casting Platform	-	-	1.033	-	-	-
	Various Army Ammunition Plants	-	7.729	8.750	4.015	-	4.015
P-25	Engineering in Support of Provision of Industrial Facilities	-	7.729	8.750	4.015	-	4.015
	Yuma Proving Ground / Aberdeen Test Center	-	1.102	1.529	1.458	-	1.458
P-25	Replace Test Instrumentation in Production Acceptance Testing (Ammunition)	-	1.102	1.529	1.458	-	1.458
	Maintenance of Inactive Facilities	-	1.870	6.298	6.387	-	6.387
P-25	Maintenance of Inactive Facilities	-	1.870	6.298	6.387	-	6.387
	Layaway Of Industrial Facilities	-	0.350	11.234	11.391	-	11.391
P-25	Layaway Of Industrial Facilities	-	0.350	11.234	11.391	-	11.391
Total Gross/Weapon System Cost		-	408.867	329.356	394.133	-	394.133

*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 2019 Base procurement dollars in the amount of \$394.133 million will support modernization projects to include modernization of melt-cast facility at Holston Army Ammunition Plant (AAP), modernization upgrades to the small caliber production lines at Lake City AAP, and design of a new solventless propellant facility at Radford AAP. Funds support modernization projects to expand the production capacity of RDX at Holston AAP. Efforts include construction of new analytical lab, construction of a Fluid Energy Mill (FEM) RDX wastewater point source treatment facility, and modernization efforts to improve Ammonium Nitrate Solution (ANSOL) filtration requirements. Funds also support infrastructure upgrades at Holston, Iowa, Lake City, Radford, and Scranton AAP and critical work environmental projects, improvements for personnel safety and health, and efforts to maintain environmental compliance at the ammunition plants. Funds will provide for engineering support of industrial facilities, pre-design efforts for future-year modernization projects and procurement efforts at Aberdeen and Yuma Test Centers to include production acceptance tests for various ammunition end items.

FY 2019 funding also 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 Lake city and Radford AAP and the layaway of various load, assemble and pack production lines at Milan AAP. Funds will also support the disposal of excess equipment at McAlester AAP.

FY 2019 funding 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 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Critical Roof Replacement, Ph 2 **Project Number:** 5183160 **Project Category:**

End Item Supported Model: Research Development Explosives (RDX), High Melt Explosives (HMX), IMX **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	2.250	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Jun 2018 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	-	0.200	-	-	-							
Total Project Cost	-	2.450	-	-	-							
							Related Projects					
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$2.450 million supports second phase of roof replacements to critical production buildings at Holston Army Ammunition Plant.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

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:** 5173214 **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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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 2018 Initial/Final Project Award: Sep 2017 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	1.174	-	-	-	-		
Total Project Cost	1.174	-	-	-	-		
Related Projects							
	Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$1.174 million supports the evaluation of thermal and non-thermal treatment technologies alternative to open burning at Holston Army Ammunition Plant (AAP). Contaminated materials including contaminated plastics, rubber and other materials are generated during the explosives manufacturing process. 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.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Modernize B235 Filter Press, Ph 2 **Project Number:** 5XX3295 **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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO				
A. Construction Cost	3.250	3.250	-	-	-	Principal Milestones Month & Year Concept Design Complete: Jun 2019 Final Design Complete: Initial/Final Project Award: Jun 2017 Construction Complete: Oct 2018 Equipment Installation Complete: Oct 2018 Prove Out Begins: Nov 2018 Prove Out Complete:				
B. Equipment Cost	3.125	2.750	-	-	-					
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	-	0.500	-	-	-					
Total Project Cost	6.375	6.500	-	-	-					
Related Projects										
	Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date			

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$6.500 million supports installation of a new belt filter press with associated pumps, piping, power & controls at the Holston Army Ammunition Plant (AAP) Industrial Waste Water Treatment Facility (IWWTF) Building 235. Holston AAP is required to satisfy discharge regulations within the National Pollutant Discharge Elimination System (NPDES) permit, which includes treated effluent limitations on Total Suspended Solids (TSS). TSS levels will increase due to the increased biological activity within the IWWTF

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Mitigate High Melt Explosives (HMX) Pump Grinding Single Point Failure (SPF), Design **Project Number:** 5193578 **Project Category:**

End Item Supported Model: High Melt Expl(HMX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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 2020 Initial/Final Project Award: Mar 2019 Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	1.182	-	1.182							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	0.418	-	0.418							
Total Project Cost	-	-	1.600	-	1.600							
							Related Projects					
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$1.600 million support the design effort to eliminate the SPF for production of High Melt Explosive at Holston Army Ammunition Plant. It will also improve safety, quality and capability of production operations. This is a new start in FY 2019.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Holston Landfill Expansion, Ph 2 **Project Number:** 5173579 **Project Category:**

End Item Supported Model: Research Development Explosives (RDX), High Melt Explosives (HMX), IMX **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Holston Army Ammunition Plant						
						Facility Location: Kingsport, Tennessee						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Sep 2020 Initial/Final Project Award: Aug 2017 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	1.761	-	-	-	-							
Total Project Cost	1.761	-	-	-	-	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$1.761 million support the design of the landfill expansion at Holston Army Ammunition Plant (AAP). The design will support future landfill expansion to maintain compliance with Tennessee Department of Environment and Conservation. The existing landfill site opened in 1997 and has a remaining life of less than ten years. The expansion is required to create more waste disposal capacity for future production operations at Holston AAP.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Reduce Repetitive Manual Handling **Project Number:** 5193627 **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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	3.850	-	3.850	Principal Milestones Concept Design Complete: Final Design Complete: Initial/Final Project Award: Mar 2019 Construction Complete: Mar 2021 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	-	-	1.230	-	1.230							
H. Other Costs	-	-	-	-	-							
Total Project Cost	-	-	5.080	-	5.080							
						Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$5.080 million supports effort to reduce repetitive manual handling at Holston Army Ammunition Plant. It will reduce handling to existing box and drum packaging buildings, recrystallization buildings, and drying buildings and improve ergonomics and enhance operator safety. This effort will improve production efficiency and the quality of work environment. This is new start in FY 2019.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Improve Scrubber Technology, Predesign **Project Number:** 5183670 **Project Category:**

End Item Supported Model: Research Development Explosives (RDX), High Melt Explosives (HMX), IMX **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Holston Army Ammunition Plant						
						Facility Location: Kingsport, Tennessee						
A. Construction Cost	-	-	-	-	-	Facility Type (GOGO, GOCO, COCO): GOCO						
B. Equipment Cost	-	-	-	-	-	Principal Milestones					Month & Year	
C. Equipment Installation Cost	-	-	-	-	-	Concept Design Complete:					Feb 2019	
D. Contractor Support Cost	-	-	-	-	-	Final Design Complete:					Feb 2018	
E. Corps of Engineers Support Cost	-	-	-	-	-	Initial/Final Project Award:					Feb 2018	
F. Other In-House Support Cost	-	-	-	-	-	Construction Complete:						
G. Total Facility Project Cost	-	-	-	-	-	Equipment Installation Complete:						
H. Other Costs	-	1.487	-	-	-	Prove Out Begins:						
Total Project Cost	-	1.487	-	-	-	Prove Out Complete:						
						Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$1.487 million supports predesign effort to identify alternatives to update or replace the particulate scrubber technology currently employed at Holston Army Ammunition Plant. The existing technology was developed in the 1940s and is now obsolete. This project will increase the removal of explosive particles from the air and reduce safety risks to operations personnel.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Ins Mun (IM) Weak Nitric Acid Recovery (Construct)(NAC/SAC) **Project Number:** 5173673 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5): /**

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	0.315	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Jun 2017 Construction Complete: Aug 2019 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	0.315	-	-	-	-							
						Related Projects						
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$0.315 million supports construction of a Nitric Acid Concentrator / Sulfuric Acid Concentrator (NAC/SAC) facility at Holston Army Ammunition Plant (AAP). This facility will recover the spent acid used in IM Explosives (IMX)-101, IMX-104 manufacturing and other Dinitroanisole and Nitrotriazalone IMX bases. This phase supports cost increase for differing site conditions found during site surveys related to the construction of the NAC/SAC facility. The surveys identified a requirement to reroute an additional 240 feet of piping.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Magazine Vent Replacement **Project Number:** 5173683 **Project Category:**

End Item Supported Model: Research Development Explosives (RDX), High Melt Explosives (HMX), IMX **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	2.750	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Jul 2019 Final Design Complete: Initial/Final Project Award: Jul 2017 Construction Complete: Sep 2020 Equipment Installation Complete: Sep 2020 Prove Out Begins: Feb 2019 Prove Out Complete:						
B. Equipment Cost	1.487	-	-	-	-							
C. Equipment Installation Cost	0.950	-	-	-	-							
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	5.187	-	-	-	-							
Related Projects						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$5.187 million support the purchase and installation of new magazine vents at Holston Army Ammunition Plant. Ventilation openings provide air circulation within storage structures; if the ventilators do not operate properly, a spark or fire nearby could detonate the contents. This project will enhance the safety for each magazine and meet the requirements in Army Technical Manual 38-410, Storage and Handling of Hazardous Materials.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Plant-Wide Building Deluge Upgrades **Project Number:** 5183751 **Project Category:**

End Item Supported Model: Research Development Explosives (RDX), High Melt Explosives (HMX), IMX **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	8.350	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Jun 2018 Construction Complete: Apr 2021 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	0.250	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	0.150	-	-	-							
Total Project Cost	-	8.750	-	-	-							
							Related Projects					
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$8.750 million supports upgrades to deluge systems in production buildings at Holston Army Ammunition Plant.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

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:** 5173752 **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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO						
						Principal Milestones			Month & Year			
A. Construction Cost	5.850	-	-	-	-	Concept Design Complete:			Jul 2019			
B. Equipment Cost	1.585	-	-	-	-	Final Design Complete:			Sep 2016			
C. Equipment Installation Cost	1.383	-	-	-	-	Initial/Final Project Award:			Feb 2017			
D. Contractor Support Cost	0.974	-	-	-	-	Construction Complete:			Feb 2019			
E. Corps of Engineers Support Cost	-	-	-	-	-	Equipment Installation Complete:			Feb 2019			
F. Other In-House Support Cost	-	-	-	-	-	Prove Out Begins:			Feb 2019			
G. Total Facility Project Cost	-	-	-	-	-	Prove Out Complete:						
H. Other Costs	1.389	-	-	-	-	Related Projects						
Total Project Cost	11.181	-	-	-	-							
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$11.181 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. This will allow for uninterrupted manufacturing of Insensitive Munition Explosives (IMX)-101, Research and 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 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Install Wastewater Anaerobic Filtration (3W & 4W) **Project Number:** 5173754 **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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO																																													
A. Construction Cost	8.135	-	-	-	-	<table style="width: 100%; border-collapse: collapse;"> <tr> <th align="left" colspan="3">Principal Milestones</th> <th align="left" colspan="3">Month & Year</th> </tr> <tr> <td>Concept Design Complete:</td> <td></td> <td>Apr 2019</td> </tr> <tr> <td>Final Design Complete:</td> <td></td> <td>Jun 2016</td> </tr> <tr> <td>Initial/Final Project Award:</td> <td></td> <td>Dec 2016</td> </tr> <tr> <td>Construction Complete:</td> <td></td> <td>Oct 2018</td> </tr> <tr> <td>Equipment Installation Complete:</td> <td></td> <td>Oct 2018</td> </tr> <tr> <td>Prove Out Begins:</td> <td></td> <td>Jan 2019</td> </tr> <tr> <td>Prove Out Complete:</td> <td></td> <td></td> </tr> <tr> <th align="center" colspan="6">Related Projects</th> </tr> <tr> <th align="center">Project Number</th> <th align="center">Title</th> <th align="center">FY & Appn</th> <th align="center">Value (\$ M)</th> <th align="center">Facing</th> <th align="center">Start Date</th> <th align="center">Compl Date</th> </tr> </table>						Principal Milestones			Month & Year			Concept Design Complete:		Apr 2019	Final Design Complete:		Jun 2016	Initial/Final Project Award:		Dec 2016	Construction Complete:		Oct 2018	Equipment Installation Complete:		Oct 2018	Prove Out Begins:		Jan 2019	Prove Out Complete:			Related Projects						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date
Principal Milestones			Month & Year																																																
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Initial/Final Project Award:		Dec 2016																																																	
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Related Projects																																																			
Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date																																													
B. Equipment Cost	6.600	-	-	-	-																																														
C. Equipment Installation Cost	4.253	-	-	-	-																																														
D. Contractor Support Cost	1.955	-	-	-	-																																														
E. Corps of Engineers Support Cost	-	-	-	-	-																																														
F. Other In-House Support Cost	-	-	-	-	-																																														
G. Total Facility Project Cost	-	-	-	-	-																																														
H. Other Costs	2.855	-	-	-	-																																														
Total Project Cost	23.798	-	-	-	-																																														

Narrative Explanation:
 Procurement dollars in the amount of \$23.798 million supports construction and installation of two additional anaerobic filtration systems and associated equipment at Holston Army Ammunition Plant. The implementation of the additional anaerobic filtration systems at the Industrial Wastewater Treatment Facility (IWTF) will allow for uninterrupted manufacturing and compliance with the National Pollutant Discharge Elimination System permit. The IWTF treats process waste water from the production of RDX, HMX, and IMX. These basins will primary support removal of excess ammonia and organic pollutants prior to discharge.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Install Additional Anoxic Basins 7E and 8E **Project Number:** 5173761 **Project Category:**

End Item Supported Model: Research & Development Explosives (RDX), High Melt Explosives (HMX), IMX **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Holston Army Ammunition Plant						
						Facility Location: Kingsport, Tennessee						
A. Construction Cost	4.082	-	-	-	-	Facility Type (GOGO, GOCO, COCO): GOCO						
B. Equipment Cost	1.935	-	-	-	-	Principal Milestones						
C. Equipment Installation Cost	0.844	-	-	-	-	Month & Year						
D. Contractor Support Cost	0.595	-	-	-	-	Concept Design Complete: Mar 2019						
E. Corps of Engineers Support Cost	-	-	-	-	-	Final Design Complete: Aug 2016						
F. Other In-House Support Cost	0.105	-	-	-	-	Initial/Final Project Award: Jan 2017						
G. Total Facility Project Cost	-	-	-	-	-	Construction Complete: Jan 2019						
H. Other Costs	0.755	-	-	-	-	Equipment Installation Complete: Jan 2019						
Total Project Cost	8.316	-	-	-	-	Prove Out Begins: Jan 2019						
						Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$8.316 million supported the installation of two additional anoxic treatment cells at Holston Army Ammunition Plant's Wastewater Treatment Facility. Project will also modify existing anoxic basins 1E and 2E with associated pumps, agitators, piping, power, and controls. Anoxic treatment exposes the nitrified water to an environment without free oxygen. Biological organisms in the anoxic system use the nitrate as an oxidizing agent and reduce the nitrogen in the form of nitrogen gas. The implementation of this project ensures compliance with the National Pollutant Discharge Elimination System permit.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Electrical System Modernization Upgrades, Building 203 **Project Number:** 5173776 **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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Holston Army Ammunition Plant						
						Facility Location: Kingsport, Tennessee						
A. Construction Cost	1.980	-	-	-	-	Facility Type (GOGO, GOCO, COCO): GOCO						
B. Equipment Cost	1.277	-	-	-	-	Principal Milestones			Month & Year			
C. Equipment Installation Cost	0.847	-	-	-	-	Concept Design Complete:			Mar 2019			
D. Contractor Support Cost	0.293	-	-	-	-	Final Design Complete:						
E. Corps of Engineers Support Cost	-	-	-	-	-	Initial/Final Project Award:			Mar 2017			
F. Other In-House Support Cost	-	-	-	-	-	Construction Complete:			Dec 2018			
G. Total Facility Project Cost	-	-	-	-	-	Equipment Installation Complete:			Dec 2018			
H. Other Costs	0.540	-	-	-	-	Prove Out Begins:			Jan 2019			
Total Project Cost	4.937	-	-	-	-	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 \$4.937 million supports effort to modernize electrical infrastructure and pumping systems within Holston Army Ammunition Plant's (AAP) Filtered Water Facility (Building 203). The facility was constructed in the 1940s to treat and filter river water for Holston AAP's production and utilities operations. The pumping system has not undergone modernization; existing equipment is beyond its useful, experiences numerous failures, and routine maintenance is no longer viable. The project will make the facility reliable and maintainable, easier to operate, meet changing flow rates, and increase electrical safety.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: New Analytical Lab **Project Number:** 5XX3783 **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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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: May 2019 Initial/Final Project Award: May 2018 / Jun 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	-	2.393	20.000	-	20.000							
Total Project Cost	-	2.393	20.000	-	20.000							
						Related Projects						
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$20.000 million supports the construction of a new analytical lab at Holston Army Ammunition Plant (AAP). The new facility would replace the current lab facility at Holston AAP as well as provide expanded laboratory capabilities. The new analytical lab will be used for acceptance testing of all explosives produced at the facility. The new laboratory will be constructed to allow larger load limits within the lab facilities which will improve the throughput required by the increased production at Holston AAP.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Elevator and Lift Upgrades **Project Number:** 5183785 **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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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: Mar 2021 Final Design Complete: Nov 2018 Initial/Final Project Award: Mar 2018 Construction Complete: Jul 2020 Equipment Installation Complete: Dec 2020 Prove Out Begins: Dec 2020 Prove Out Complete:				
B. Equipment Cost	-	2.500	-	-	-					
C. Equipment Installation Cost	-	4.018	-	-	-					
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	-	6.518	-	-	-					
Related Projects										
	Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date			

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$6.518 million supports repair and installation of lift and elevator equipment at Holston Army Ammunition Plant. The existing elevator system has not been upgraded in several decades. The system experiences numerous failures and leaks. Routine maintenance is no longer feasible. This project will bring the building elevator systems in plant wide production buildings to modern safety standards, and significantly reduce risk of downtime of explosive operations.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: X-Ray Tech Improvements, Safety Risk Reduction (Pckg Fac) **Project Number:** 5183969 **Project Category:**

End Item Supported Model: Research Development Explosives (RDX), High Melt Explosives (HMX), IMX **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO														
A. Construction Cost	-	2.750	-	-	-	Principal Milestones Month & Year Concept Design Complete: Oct 2020 Final Design Complete: Apr 2019 Initial/Final Project Award: Apr 2018 Construction Complete: Apr 2020 Equipment Installation Complete: Apr 2020 Prove Out Begins: Apr 2020 Prove Out Complete:														
B. Equipment Cost	-	2.000	-	-	-															
C. Equipment Installation Cost	-	2.564	-	-	-															
D. Contractor Support Cost	-	-	-	-	-															
E. Corps of Engineers Support Cost	-	-	-	-	-															
F. Other In-House Support Cost	-	0.450	-	-	-															
G. Total Facility Project Cost	-	-	-	-	-															
H. Other Costs	-	-	-	-	-															
Total Project Cost	-	7.764	-	-	-															
							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:
 FY 2018 Base procurement dollars in the amount of \$7.764 million supports installation of X-ray technologies at Holston Army Ammunition Plant. These technologies would reduce risks associated with the shipment of foreign object contamination in the bulk explosives shipped to LAP facilities. The LAP activities involve further processing of the explosive materials, via drying, mixing, pressing, meltcast, curing, and milling operations, into final munitions systems. Metal, glass or other contamination are hazardous due to their ability to sensitize explosives.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Boxway Upgrade for Spill Prevention & Containment **Project Number:** 5183970 **Project Category:**

End Item Supported Model: Research Development Explosives (RDX), High Melt Explosives (HMX), IMX **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO				
A. Construction Cost	-	1.950	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Jun 2018 Construction Complete: Jun 2020 Equipment Installation Complete: Jun 2020 Prove Out Begins: Prove Out Complete:				
B. Equipment Cost	-	2.070	-	-	-					
C. Equipment Installation Cost	-	2.000	-	-	-					
D. Contractor Support Cost	-	-	-	-	-					
E. Corps of Engineers Support Cost	-	-	-	-	-					
F. Other In-House Support Cost	-	-	-	-	-					
G. Total Facility Project Cost	-	0.589	-	-	-					
H. Other Costs	-	0.741	-	-	-					
Total Project Cost	-	7.350	-	-	-					
Related Projects										
	Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date			

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$7.350 million support upgrades and repairs the boxway network at Holston Army Ammunition Plant. Project will improve spill containment and storm water exclusion and enhance compliance with the facility's National Pollutant Discharge Elimination System permit and associated Spill Prevention, Control and Countermeasure Plan.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Modernization of Lacquer Preparation Facility **Project Number:** 5173972 **Project Category:**

End Item Supported Model: Research Development Explosives (RDX), High Melt Explosives (HMX), IMX **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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: Oct 2017 Initial/Final Project Award: Sep 2017 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	2.424	-	-	-	-															
Total Project Cost	2.424	-	-	-	-															
							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 \$2.424 million supports modernization upgrades to the lacquer preparation facility at Holston Army Ammunition Plant (AAP). This facility will include new instrumentation, agitator drives, and process improvements to provide improved batch processing capability. The lacquer preparation facility is an aging facility that is essential to the manufacture of mature and innovative Insensitive Munitions (IM). A malfunction of the outdated controls could lead to an extended shutdown of the lacquer preparation facility and affect Holston AAP's ability to manufacture IM product.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10		P-1 Line Item Number / Title: 0572EP1000 / Industrial Facilities
Project Title: Modernized Melt-Cast Facility		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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO														
A. Construction Cost	-	-	4.301	-	4.301	Principal Milestones Concept Design Complete: Sep 2021 Final Design Complete: Initial/Final Project Award: Sep 2017 / Mar 2019 Construction Complete: Jul 2021 Equipment Installation Complete: Aug 2021 Prove Out Begins: Aug 2021 Prove Out Complete:														
B. Equipment Cost	-	-	1.500	-	1.500															
C. Equipment Installation Cost	-	-	1.250	-	1.250															
D. Contractor Support Cost	-	-	-	-	-															
E. Corps of Engineers Support Cost	-	-	-	-	-															
F. Other In-House Support Cost	-	-	-	-	-															
G. Total Facility Project Cost	-	-	2.449	-	2.449															
H. Other Costs	1.914	-	-	-	-															
Total Project Cost	1.914	-	9.500	-	9.500															
							Related Projects													
						<table border="1"> <thead> <tr> <th>Project Number</th> <th>Title</th> <th>FY & Appn</th> <th>Value (\$ M)</th> <th>Facing</th> <th>Start Date</th> <th>Compl Date</th> </tr> </thead> <tbody> <tr> <td colspan="7"> </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:

FY 2019 Base procurement dollars in the amount of \$9.500 million supports construction of a new melt-cast facility at Holston Army Ammunition Plant (AAP). This effort supports production of IM explosives ensuring Holston AAP retains capability to manufacture newly formulated explosives. Holston AAP is the only qualified source of IM melt-cast explosives in the National Technology and Industrial Base. The current facilities, buildings L-4 and M-4, cannot meet the future production requirements.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Ceiling Replacements, Production Buildings **Project Number:** 5185057 **Project Category:**

End Item Supported Model: Research & Development Explosive (RDX), High Melt Explosive (HMX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO							
A. Construction Cost	-	5.346	-	-	-	Principal Milestones Month & Year Concept Design Complete: Mar 2021 Final Design Complete: Mar 2019 Initial/Final Project Award: Mar 2018 Construction Complete: Sep 2020 Equipment Installation Complete: Prove Out Begins: Sep 2020 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	-	0.800	-	-	-								
Total Project Cost	-	6.146	-	-	-								

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$6.146 million supports replacement of production buildings ceilings at Holston Army Ammunition Plant. The ceilings have deteriorated and risk contamination of explosive manufacturing. The ceilings of buildings with highest priority for replacement are I-3, I-6, M-3, M-6, N-5, N-6, L-5, and L-8.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Sewer Line Replacement, Ph 1 **Project Number:** 5183668 **Project Category:**

End Item Supported Model: Research Development Explosives (RDX), High Melt Explosives (HMX), IMX **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO				
A. Construction Cost	-	5.357	-	-	-	Principal Milestones Month & Year Concept Design Complete: Apr 2020 Final Design Complete: Jul 2018 Initial/Final Project Award: Apr 2018 Construction Complete: Feb 2020 Equipment Installation Complete: Mar 2020 Prove Out Begins: Apr 2020 Prove Out Complete:				
B. Equipment Cost	-	0.980	-	-	-					
C. Equipment Installation Cost	-	0.765	-	-	-					
D. Contractor Support Cost	-	-	-	-	-					
E. Corps of Engineers Support Cost	-	-	-	-	-					
F. Other In-House Support Cost	-	0.769	-	-	-					
G. Total Facility Project Cost	-	-	-	-	-					
H. Other Costs	-	-	-	-	-					
Total Project Cost	-	7.871	-	-	-					
Related Projects										
	Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date			

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$7.871 million supports repair and replacement of industrial and sanitary sewer lines at Holston Army Ammunition Plant. The existing sewer system is aging and suffers significant leaks. Rain water infiltration has increased flow to the waste water treatment facility and impacted its ability to treat RDX. This effort will ensure Holston remains in compliance with EPA and other environmental regulations.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: NTO Drying Facility **Project Number:** 5195094 **Project Category:**

End Item Supported Model: Insensitive Mun Expl(IMX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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: Mar 2019 Construction Complete: Dec 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	-	-	4.000	-	4.000							
Total Project Cost	-	-	4.000	-	4.000							
							Related Projects					
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$4.000 million supports modernization of existing infrastructure to increase additional Nitrotriazalone (NTO) drying capacity at Holston Army Ammunition Plant (AAP). Effort will design and construct twenty bed drying stations at Holston AAP. This project will also include improvements to an existing building and related infrastructure at Holston AAP. This project supports projected production capacity requirements of IMX. This is a new start in FY 2019.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Ansol Treatment Design **Project Number:** 5185096 **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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Holston Army Ammunition Plant						
						Facility Location: Kingsport, Tennessee						
A. Construction Cost	-	-	-	-	-	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: May 2019						
E. Corps of Engineers Support Cost	-	-	-	-	-	Initial/Final Project Award: Mar 2018						
F. Other In-House Support Cost	-	-	-	-	-	Construction Complete:						
G. Total Facility Project Cost	-	-	-	-	-	Equipment Installation Complete:						
H. Other Costs	-	5.000	-	-	-	Prove Out Begins:						
Total Project Cost	-	5.000	-	-	-	Prove Out Complete:						
						Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$5.000 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 ANFO 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.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Combined Nitration/Wash Facility, Design **Project Number:** 5185097 **Project Category:**

End Item Supported Model: Research Development Explosives (RDX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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: Jun 2018 Initial/Final Project Award: Nov 2017 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	-	13.000	-	-	-							
Total Project Cost	-	13.000	-	-	-							
							Related Projects					
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$13.000 million supports design of a combined Nitration/Wash facility at Holston Army Ammunition Plant. Additional capacities are required to meet future RDX production requirements.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10	P-1 Line Item Number / Title: 0572EP1000 / Industrial Facilities
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Project Title: FEM RDX Wastewater Point Source Treatment	Project Number: 5XX5098	Project Category:
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End Item Supported Model: Research Development Explosives (RDX)	Annual Capacity Before / After (1-8-5): /
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Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO																																																					
A. Construction Cost	-	-	-	-	-	<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">Jul 2017</td> </tr> <tr> <td colspan="3">Final Design Complete:</td> <td colspan="3"></td> </tr> <tr> <td colspan="3">Initial/Final Project Award:</td> <td colspan="3">Nov 2017 / Mar 2019</td> </tr> <tr> <td colspan="3">Construction Complete:</td> <td colspan="3">Mar 2020</td> </tr> <tr> <td colspan="3">Equipment Installation Complete:</td> <td colspan="3"></td> </tr> <tr> <td colspan="3">Prove Out Begins:</td> <td colspan="3">Apr 2020</td> </tr> <tr> <td colspan="3">Prove Out Complete:</td> <td colspan="3"></td> </tr> </table>						Principal Milestones			Month & Year			Concept Design Complete:			Jul 2017			Final Design Complete:						Initial/Final Project Award:			Nov 2017 / Mar 2019			Construction Complete:			Mar 2020			Equipment Installation Complete:						Prove Out Begins:			Apr 2020			Prove Out Complete:					
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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	-	5.000	25.000	-	25.000																																																						
Total Project Cost	-	5.000	25.000	-	25.000																																																						
Related Projects																																																											
	Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date																																																				

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$25.000 million supports construction of a Fluid Energy Mill (FEM) RDX Wastewater Point Source Treatment facility at Holston Army Ammunition Plant. Additional capacities are required to support future RDX production requirements.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

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, Design/Construct **Project Number:** 5XX5099 **Project Category:**

End Item Supported Model: Research Development Explosives (RDX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	27.850	-	25.360	-	25.360	Principal Milestones Month & Year Concept Design Complete: Feb 2021 Final Design Complete: Mar 2020 Initial/Final Project Award: Nov 2017 / May 2019 Construction Complete: Dec 2020 Equipment Installation Complete: Dec 2020 Prove Out Begins: Jan 2021 Prove Out Complete:						
B. Equipment Cost	16.590	-	7.358	-	7.358							
C. Equipment Installation Cost	2.530	-	1.105	-	1.105							
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	46.970	-	33.823	-	33.823	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$33.823 million support expansion of the Natural Gas fired Stream Plant at Holston Army Ammunition Plant (AAP). Additional capacities are required to meet the future RDX production requirements. 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 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: WAARP Facility Train II, B4 **Project Number:** 5XX5100 **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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	18.750	-	18.750	Principal Milestones Month & Year Concept Design Complete: Jun 2021 Final Design Complete: Feb 2019 Initial/Final Project Award: Sep 2017 / Jun 2019 Construction Complete: Dec 2020 Equipment Installation Complete: Jan 2021 Prove Out Begins: Jan 2021 Prove Out Complete:						
B. Equipment Cost	-	-	8.953	-	8.953							
C. Equipment Installation Cost	-	-	7.955	-	7.955							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	0.390	-	0.390							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	4.835	-	0.952	-	0.952							
Total Project Cost	4.835	-	37.000	-	37.000							
											Related Projects	
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$37.000 million supports the construction of a second modernized facility to recover weak acetic acid for RDX/HMX production at Holston Army Ammunition Plant. Additional capacities are required to meeting the future RDX production requirements.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Acid Tank Farm **Project Number:** 5195102 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Holston Army Ammunition Plant						
						Facility Location: Kingsport, Tennessee						
A. Construction Cost	-	-	5.000	-	5.000	Facility Type (GOGO, GOCO, COCO): GOCO						
B. Equipment Cost	-	-	3.500	-	3.500	Principal Milestones			Month & Year			
C. Equipment Installation Cost	-	-	1.850	-	1.850	Concept Design Complete:			Dec 2020			
D. Contractor Support Cost	-	-	-	-	-	Final Design Complete:						
E. Corps of Engineers Support Cost	-	-	-	-	-	Initial/Final Project Award:			Dec 2018			
F. Other In-House Support Cost	-	-	-	-	-	Construction Complete:			Nov 2020			
G. Total Facility Project Cost	-	-	0.150	-	0.150	Equipment Installation Complete:			Nov 2020			
H. Other Costs	-	-	-	-	-	Prove Out Begins:			Nov 2020			
Total Project Cost	-	-	10.500	-	10.500	Prove Out Complete:						
						Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$10.500 million supports the modernization of the acid tank farm at Holston Army Ammunition Plant (AAP). This project supports the expansion of production capacity of RDX explosives at Holston AAP. This project will expand and replace several aging chemical storage tanks, transfer equipment and containment dike at the B3 and B5 tank farms. The tank farm is part of the acids production loop that includes glacial acetic acid production, acetic anhydride production and weak acetic acid recovery and recycling. This is a new start in FY 2019.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: New Fluid Energy Mill (FEM) Facility **Project Number:** 5185103 **Project Category:**

End Item Supported Model: Research Develop Expl(RDX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	12.500	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Apr 2018 Construction Complete: Sep 2020 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	4.500	-	-	-							
C. Equipment Installation Cost	-	1.250	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	1.750	-	-	-							
Total Project Cost	-	20.000	-	-	-							
							Related Projects					
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$20.000 million supports the construction of a second FEM Facility dedicated to RDX at Holston Army Ammunition Plant. Currently, only one facility (Building N-3) can produce RDX FEM material, and its capacity is inadequate to support future demand. Future production requirements for CXM-AF-7 necessitate a significant increase in FEM production. FEM throughput is one of the main chokepoints in producing this product.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

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:** 5185104 **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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	10.250	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Jun 2018 Construction Complete: Sep 2020 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	7.500	-	-	-							
C. Equipment Installation Cost	-	4.500	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	2.750	-	-	-							
Total Project Cost	-	25.000	-	-	-							
						Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$25.000 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.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: RDX Employee Change House **Project Number:** 5175105 **Project Category:**

End Item Supported Model: Research Development Explosives (RDX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	11.518	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Sep 2017 Construction Complete: Nov 2019 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	11.518	-	-	-	-							
						Related Projects						
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$11.518 million supports modernization of RDX change house facilities, restrooms, showers, and lockers. It will also provide ventilation and air conditioning for change house facilities. This effort will improve the quality of work environment and support the projected increase of production requirements at Holston Army Ammunition Plant.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Ansol Filtration Mod **Project Number:** 5XX5106 **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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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: Apr 2020 Final Design Complete: Initial/Final Project Award: Sep 2017 / Apr 2019 Construction Complete: Feb 2020 Equipment Installation Complete: Feb 2020 Prove Out Begins: Mar 2020 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	2.482	-	12.000	-	12.000	Related Projects						
Total Project Cost	2.482	-	12.000	-	12.000							
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$12.000 million supports construction 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.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: IMX Production Building **Project Number:** 5185107 **Project Category:**

End Item Supported Model: Insensitive Mun Expl(IMX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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: Jun 2019 Initial/Final Project Award: Jul 2018 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	-	3.000	-	-	-							
Total Project Cost	-	3.000	-	-	-							
							Related Projects					
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$3.000 million supports design of a second IMX Production Building at Holston Army Ammunition Plant. This production building will produce the additional required Dinitroanisole and Nitrotriazalone IMX base explosives to meet the projected requirements for IMX explosives.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

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:** 5185110 **Project Category:**

End Item Supported Model: Research Development Explosives (RDX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	40.000	-	-	-	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	-	-	-	-	-							
Total Project Cost	-	40.000	-	-	-							
						Related Projects						
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$40.000 million supports design and construction of a third acid train facility at Holston Army Ammunition Plant. Additional capacities are required to meet future RDX production requirements.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Improved Staging Area, Design/Construction **Project Number:** 5175111 **Project Category:**

End Item Supported Model: Research Development Explosives (RDX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee Facility Type (GOGO, GOCO, COCO): GOCO							
A. Construction Cost	5.500	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Sep 2017 Construction Complete: Oct 2019 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:	Related Projects						
B. Equipment Cost	-	-	-	-	-		Project	Title	FY & Appn	Value <i>(\$ M)</i>	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	5.500	-	-	-	-								

Narrative Explanation:
 Procurement dollars in the amount of \$5.500 million supports design and construction of earth covered magazines and modernize existing loading docks at Holston Army Ammunition Plant. Project will alleviate current product staging constraints and improve handling and movement requirements. Additional capacities are required to meet future RDX production requirements as well as mitigate safety risks.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Stainless Steel Nutsches f/Production **Project Number:** 5195118 **Project Category:**

End Item Supported Model: Research Development Explosives (RDX) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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: Construction Complete: 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: 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>					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	-	-	3.500	-	3.500																										
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	-	-	-	-	-																										
Total Project Cost	-	-	3.500	-	3.500																										

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$3.500 million supports purchase of stainless steel nutsches for production operations at Holston Army Ammunition Plant. Stainless steel nutsches are required to transport explosives. This is a new start in FY 2019.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: New Kettle Drying Facility, Design **Project Number:** 5195116 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Holston Army Ammunition Plant Facility Location: Kingsport, Tennessee 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:					Dec 2018	
D. Contractor Support Cost	-	-	-	-	-	Construction Complete:						
E. Corps of Engineers Support Cost	-	-	-	-	-	Equipment Installation Complete:						
F. Other In-House Support Cost	-	-	-	-	-	Prove Out Begins:						
G. Total Facility Project Cost	-	-	2.000	-	2.000	Prove Out Complete:						
H. Other Costs	-	-	-	-	-							
Total Project Cost	-	-	2.000	-	2.000							
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:

FY 2019 Base procurement dollars in the amount of \$2.000 supports the design of a new kettle drying facility at Holston Army Ammunition Plant. A 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 explosive products. This is a new start in FY 2019.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Replace Water Main Services **Project Number:** 5173366 **Project Category:**

End Item Supported Model: 120mm Tank, 155mm Artillery **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Iowa Army Ammunition Plant Facility Location: Middletown, Iowa Facility Type (GOGO, GOCO, COCO): GOCO							
A. Construction Cost	3.543	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Sep 2017 Construction Complete: Sep 2019 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:							
B. Equipment Cost	-	-	-	-	-								
C. Equipment Installation Cost	-	-	-	-	-								
D. Contractor Support Cost	0.377	-	-	-	-								
E. Corps of Engineers Support Cost	-	-	-	-	-								
F. Other In-House Support Cost	-	-	-	-	-								
G. Total Facility Project Cost	-	-	-	-	-								
H. Other Costs	-	-	-	-	-								
Total Project Cost	3.920	-	-	-	-								
Related Projects													
							Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$3.920 million supports replacing the Yard L and Shop Area domestic water supply system with new, like-sized polyvinyl chloride conduits at Iowa Army Ammunition Plant. The existing water mains and distribution system is approximately seventy-five years of age and has exceeded its life expectancy of fifty years. It has corroded resulting in excessive line breaks, affecting the rate of water flow available to fire protection systems, and can interrupt production throughout the installation.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

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:** 5193410 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Iowa Army Ammunition Plant Facility Location: Middletown, Iowa Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	8.790	-	8.790	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	-	-	-	-	-							
Total Project Cost	-	-	8.790	-	8.790							
						Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$8.790 million supports replacement of the main sewage treatment system at Iowa Army Ammunition Plant. This is a new start in FY 2019.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

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, Ph 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Iowa Army Ammunition Plant						
						Facility Location: Middletown, Iowa						
A. Construction Cost	-	-	-	-	-	Principal Milestones						Month & Year
B. Equipment Cost	-	-	1.750	-	1.750	Concept Design Complete:						
C. Equipment Installation Cost	-	-	0.530	-	0.530	Final Design Complete:						
D. Contractor Support Cost	-	-	-	-	-	Initial/Final Project Award:						Jan 2019
E. Corps of Engineers Support Cost	-	-	-	-	-	Construction Complete:						
F. Other In-House Support Cost	-	-	-	-	-	Equipment Installation Complete:						Oct 2020
G. Total Facility Project Cost	-	-	-	-	-	Prove Out Begins:						
H. Other Costs	-	-	-	-	-	Prove Out Complete:						
Total Project Cost	-	-	2.280	-	2.280	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$2.280 million supports second phase of modernization of 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. This is a new start in FY 2019.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: General Road Improvements (Road I & Line 2) **Project Number:** 5173745 **Project Category:**

End Item Supported Model: 40mm, Artillery, Mortar, Tank **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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: Initial/Final Project Award: Sep 2017 Construction Complete: Sep 2019 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	4.075	-	-	-	-																				
						<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 \$4.075 million supports improvements to Road I & Line 2 at Iowa Army Ammunition Plant. Roads have deteriorated to a condition in which routine maintenance is no longer economically feasible. Effort will rehabilitate approximately 3.5 miles of roadways. The rehabilitation of these roads will ensure safe travel of explosive laden trucks.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

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:** 5XX3794 **Project Category:**

End Item Supported Model: 40mm, Artillery, Mortars **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Iowa Army Ammunition Plant Facility Location: Middletown, Iowa Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	8.163	-	4.730	-	4.730	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Sep 2017 / Feb 2019 Construction Complete: Sep 2019 Equipment Installation Complete: Sep 2019 Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	1.235	-	-	-	-							
C. Equipment Installation Cost	0.361	-	-	-	-							
D. Contractor Support Cost	0.094	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	9.853	-	4.730	-	4.730	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$4.730 million supports 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. Project 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 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Rehab HVAC Controls and Exterior Lighting, Line 1 **Project Number:** 5193912 **Project Category:**

End Item Supported Model: M112, 40mm **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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 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	-	-	2.660	-	2.660							
Total Project Cost	-	-	2.660	-	2.660							
						Related Projects						
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$2.660 million supports modernization and rehabilitation of HVAC controls and exterior lighting on Line 1 at Iowa Army Ammunition Plant. This is a new start in FY 2019.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Energy Efficiency Improvements, Low Cost Energy Conservation Measures **Project Number:** 5175019 **Project Category:**

End Item Supported Model: Artillery, Mine Clearing Line Charge (MICLIC), Tank **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Iowa Army Ammunition Plant Facility Location: Middletown, Iowa Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	0.185	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Sep 2017 Construction Complete: Sep 2018 Equipment Installation Complete: Sep 2018 Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	0.063	-	-	-	-							
C. Equipment Installation Cost	0.057	-	-	-	-							
D. Contractor Support Cost	0.031	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	0.336	-	-	-	-	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$0.336 million supports identification and implementation of cost effective measures to reduce energy and steam consumption at Iowa Army Ammunition Plant. Project includes installation of thermostatic control equipment and a Supervisory Control and Data Acquisition (SCADA) system. Numerous production buildings were designed and built in the 1940s and did not contain a centralized, monitoring system. Effort supports the Army's energy goal for the National Technology Industrial Base.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: IAAAP Footprint Reduction - Melt Pour Operations Phase **Project Number:** 5185030 **Project Category:**

End Item Supported Model: Mortars, Artillery **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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 2018 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	-	9.600	-	-	-							
Total Project Cost	-	9.600	-	-	-							
							Related Projects					
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$9.600 million support Phase I design for footprint reduction at Iowa Army Ammunition Plant. Phase I will evaluate the transfer of Line 3A to the east side of the plant and reduce maintenance costs of the facility. Effort will also evaluate modernization of primary melt pour facility.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

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:** 5195033 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Iowa Army Ammunition Plant Facility Location: Middletown, Iowa Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	14.970	-	14.970	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: May 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	-	-	-	-	-							
Total Project Cost	-	-	14.970	-	14.970							
						Related Projects						
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$14.970 million supports 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, 2, 3, 4A, 4B, mechanical, roundhouse, and laundry facilities at Iowa AAP. This is a new start in FY 2019.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Storage Yard Upgrades **Project Number:** 5195034 **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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Iowa Army Ammunition Plant Facility Location: Middletown, Iowa Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	1.510	-	1.510	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Feb 2019 Construction Complete: Oct 2019 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	-	-	1.510	-	1.510							
						Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$1.510 million supports upgrades to the storage yards at Iowa Army Ammunition Plant. Effort will rehabilitate storage magazines, extend the useful life and improve access to rail and trailers. This is a new start in FY 2019.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10	P-1 Line Item Number / Title: 0572EP1000 / Industrial Facilities
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Project Title: Roof Replacement, Production Areas	Project Number: 5XX5036	Project Category:
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End Item Supported Model: M112 C4, 40mm	Annual Capacity Before / After (1-8-5): /
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Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Iowa Army Ammunition Plant Facility Location: Middletown, Iowa Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	2.112	2.990	-	2.990	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Feb 2018 / Mar 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	-	0.273	-	-	-							
Total Project Cost	-	2.385	2.990	-	2.990							
Related Projects												
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$2.990 million supports roof replacement in Line 1 production areas at Iowa Army Ammunition Plant. Effort will improve safety and work environment within the production areas. Existing roofs have exceeded their life expectancy.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Underground Electrical Upgrades **Project Number:** 5175086 **Project Category:**

End Item Supported Model: 40mm **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Iowa Army Ammunition Plant Facility Location: Middletown, Iowa Facility Type (GOGO, GOCO, COCO): GOCO							
A. Construction Cost	0.908	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Sep 2017 Construction Complete: Mar 2019 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	0.908	-	-	-	-								
Related Projects													
							Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$0.908 million supports upgrades to underground electrical feeds at Iowa Army Ammunition Plant (AAP). Line 1 underground electrical feed at Iowa AAP reached the end of its useful life. Project will bore and trench new electrical cable to feed Loops 1, 2, and 3 of the Line 1 electrical system. This effort corrects deficiencies and reduce the risk of production shutdown.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Sewer Rehabilitation, Ph 1 **Project Number:** 5185087 **Project Category:**

End Item Supported Model: Artillery, Mortars **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Iowa Army Ammunition Plant Facility Location: Middletown, Iowa Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	1.833	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Sep 2017 Construction Complete: Mar 2019 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	0.071	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	0.313	-	-	-	-							
Total Project Cost	2.217	-	-	-	-							
							Related Projects					
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$2.217 million supports sewer rehabilitation at Iowa Army Ammunition Plant. Sewer infiltration and inflow (I&I) has reached levels that have exceeded compliance with state standards. This phase will focus on executing repairs of the distribution system and decentralizing the treatment capability for several areas. This phase is also expected to reduce influent flow by seventy-seven percent. This project will reduce the I&I rates system and achieve compliance with the Iowa Department of Natural Resources (IDNR) standards.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Gate 3 Upgrade **Project Number:** 5185108 **Project Category:**

End Item Supported Model: Tank, Artillery, Mortars **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Iowa Army Ammunition Plant Facility Location: Middletown, Iowa Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	1.850	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Mar 2018 Construction Complete: Mar 2020 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	0.250	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	0.323	-	-	-							
Total Project Cost	-	2.423	-	-	-							
						Related Projects						
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$2.423 million supports Gate 3 upgrades at Iowa Army Ammunition Plant. This project includes upgrades and modernization of Gate 3 to meet Army standards for access control points.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

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:** 5195119 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Iowa Army Ammunition Plant Facility Location: Middletown, Iowa Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	4.340	-	4.340	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	-	-	-	-	-							
Total Project Cost	-	-	4.340	-	4.340							
						Related Projects						
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$4.340 million supports modernization of the centralized solid waste processing operations at Iowa Army Ammunition Plant. This is a new start in FY 2019.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: 40MM High Velocatiy Grenade Defuse **Project Number:** 5195121 **Project Category:**

End Item Supported Model: 40mm **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Iowa Army Ammunition Plant Facility Location: Middletown, Iowa Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	0.850	-	0.850	Principal Milestones Month & Year Concept Design Complete: Jul 2020 Final Design Complete: Initial/Final Project Award: Mar 2019 Construction Complete: Apr 2020 Equipment Installation Complete: Apr 2020 Prove Out Begins: May 2020 Prove Out Complete:						
B. Equipment Cost	-	-	0.500	-	0.500							
C. Equipment Installation Cost	-	-	0.540	-	0.540							
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	-	-	1.890	-	1.890	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$1.890 million supports modernization upgrades to defuse and refuse 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. This is a new start in FY 2019.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

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:** 5195122 **Project Category:**

End Item Supported Model: M112 **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Iowa Army Ammunition Plant Facility Location: Middletown, Iowa Facility Type (GOGO, GOCO, COCO): GOCO	
A. Construction Cost	-	-	0.655	-	0.655	Principal Milestones Concept Design Complete: Feb 2021 Final Design Complete: Initial/Final Project Award: Mar 2019 Construction Complete: Dec 2020 Equipment Installation Complete: Dec 2020 Prove Out Begins: Jan 2021 Prove Out Complete:	Month & Year
B. Equipment Cost	-	-	0.585	-	0.585		
C. Equipment Installation Cost	-	-	0.450	-	0.450		
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	-	-	1.690	-	1.690		
Related Projects							
	Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$1.690 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. This is a new start in FY 2019.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Iowa Army Ammunition Plant Facility Location: Middletown, Iowa Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	0.410	-	0.410	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Jan 2019 Construction Complete: Jan 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	-	-	0.410	-	0.410							
							Related Projects					
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$0.410 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. This is a new start in FY 2019.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Ignition Cartridge Automation **Project Number:** 5195300 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Iowa Army Ammunition Plant						
						Facility Location: Middletown, Iowa	Facility Type (GOGO, GOCO, COCO): GOCO					
A. Construction Cost	-	-	1.250	-	1.250	Principal Milestones Concept Design Complete: Apr 2021 Final Design Complete: Initial/Final Project Award: Apr 2019 Construction Complete: Jan 2021 Equipment Installation Complete: Jan 2021 Prove Out Begins: Feb 2021 Prove Out Complete:						
B. Equipment Cost	-	-	2.350	-	2.350							
C. Equipment Installation Cost	-	-	0.510	-	0.510							
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	-	-	4.110	-	4.110	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$4.110 million supports ignition cartridge automation at Iowa Army Ammunition Plant. Effort will establish cost competitive, reliable, high quality mortar ignition cartridge production source. Existing production processes have experienced several shutdowns due to critical defects. The new automated process will increase efficiency and increase quality. This is a new start in FY 2019.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Small Caliber Modernization, Production Line Upgrades **Project Number:** 5XX3356 **Project Category:**

End Item Supported Model: .50 Cal (all types except SLAP-T), 5.56mm, 7.62mm (all types) **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Lake City Army Ammunition Plant Facility Location: Independence, Missouri Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	3.910	-	-	-	Principal Milestones Month & Year Concept Design Complete: Feb 2020 Final Design Complete: Apr 2017 Initial/Final Project Award: Mar 2017 / May 2018 Construction Complete: Dec 2019 Equipment Installation Complete: Dec 2019 Prove Out Begins: Jan 2020 Prove Out Complete:						
B. Equipment Cost	6.200	8.500	-	-	-							
C. Equipment Installation Cost	1.968	5.500	-	-	-							
D. Contractor Support Cost	0.645	1.260	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	0.180	0.900	-	-	-							
Total Project Cost	8.993	20.070	-	-	-	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$20.070 million supports modernization improvements in small caliber ammunition manufacturing at Lake City Army Ammunition Plant. Upgrades are required due to the age of the equipment and extensive production requirements in recent years. Upgrades include replacement of 5.56mm Clip Carton Pack Machines, .50 Caliber Linker Machine Cartridge Feed and Link Feed system, 7.62mm Linker Machine Cartridge Feed and Link system, and Building 1 material handling upgrades. Effort will improve product quality, equipment reliability, availability, and maintainability, while addressing personnel safety.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Install Sprinkler Systems (Plantwide) **Project Number:** 5193434 **Project Category:**

End Item Supported Model: 5.56mm, 7.62mm, Cal .50 **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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: Initial/Final Project Award: May 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	-	-	3.700	-	3.700							
H. Other Costs	-	-	-	-	-							
Total Project Cost	-	-	3.700	-	3.700	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$3.700 million support replacement of sprinkler systems at Lake City Army Ammunition Plant. The existing fire sprinkler systems were installed approximately 70 years ago and are in poor condition, requiring frequent maintenance and repairs. This project will improve personnel safety and protect production equipment from serious damage and loss of industrial capability for small and medium caliber ammunition. This is a new start in FY 2019.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

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(Design) **Project Number:** 5183459 **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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Lake City Army Ammunition Plant Facility Location: Independence, Missouri Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	0.650	-	-	-	Principal Milestones Concept Design Complete: Apr 2020 Final Design Complete: May 2017 / May 2018 Initial/Final Project Award: Feb 2020 Construction Complete: Mar 2020 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	-	0.461	-	-	-							
Total Project Cost	-	1.111	-	-	-							
						Related Projects						
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$1.111 million supports modernization upgrades to the heating, ventilation and air conditioning (HVAC) throughout the primer assembly wing in Building 35 at Lake City Army Ammunition Plant. 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.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Building 1 & 2 Load Center Transformer Replacement **Project Number:** 5XX3611 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Lake City Army Ammunition Plant Facility Location: Independence, Missouri Facility Type (GOGO, GOCO, COCO): GOCO				
A. Construction Cost	-	1.568	-	-	-	Principal Milestones Month & Year Concept Design Complete: Aug 2020 Final Design Complete: Initial/Final Project Award: Apr 2017 / May 2018 Construction Complete: May 2020 Equipment Installation Complete: May 2020 Prove Out Begins: Jun 2020 Prove Out Complete:				
B. Equipment Cost	-	0.750	-	-	-					
C. Equipment Installation Cost	-	0.500	-	-	-					
D. Contractor Support Cost	-	-	-	-	-					
E. Corps of Engineers Support Cost	-	-	-	-	-					
F. Other In-House Support Cost	-	-	-	-	-					
G. Total Facility Project Cost	-	-	-	-	-					
H. Other Costs	-	0.358	-	-	-					
Total Project Cost	-	3.176	-	-	-					
Related Projects										
	Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date			

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$3.176 million supports replacement of Building 1 and 2 load center transformer at Lake City Army Ammunition Plant. The transformers are the main power conversion feeding the 5.56mm production operations. This effort will design and install electrical transformers to be used for production Buildings 1 and 2 substations. The existing transformers have exceeded their service life and failure of these transformers has the potential to interrupt 5.56mm production operations.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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: Initial/Final Project Award: Apr 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	-	-	1.869	-	1.869								
Total Project Cost	-	-	1.869	-	1.869								
Related Projects							Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$1.869 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. This project will improve the quality of work environment for personnel. This is a new start in FY 2019.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: HVAC Modifications, Upgrade Prod Bldg Wings **Project Number:** 5173652 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5): /**

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Lake City Army Ammunition Plant Facility Location: Independence, Missouri Facility Type (GOGO, GOCO, COCO): GOCO	Principal Milestones	Month & Year																				
A. Construction Cost	-	-	-	-	-	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th align="center" colspan="7">Related Projects</th> </tr> <tr> <th align="center">Project Number</th> <th align="center">Title</th> <th align="center">FY & Appn</th> <th align="center">Value (\$ M)</th> <th align="center">Facing</th> <th align="center">Start Date</th> <th align="center">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	-	-	-	-	-		Concept Design Complete:																					
C. Equipment Installation Cost	-	-	-	-	-		Final Design Complete:	Mar 2019																				
D. Contractor Support Cost	-	-	-	-	-		Initial/Final Project Award:	Sep 2017																				
E. Corps of Engineers Support Cost	-	-	-	-	-		Construction Complete:																					
F. Other In-House Support Cost	-	-	-	-	-	Equipment Installation Complete:																						
G. Total Facility Project Cost	-	-	-	-	-	Prove Out Begins:																						
H. Other Costs	4.746	-	-	-	-	Prove Out Complete:																						
Total Project Cost	4.746	-	-	-	-																							

Narrative Explanation:
 Procurement dollars in the amount of \$4.746 million support design of installation of HVAC equipment in the priming and loading wings of Buildings 1 and 3 at Lake City Army Ammunition Plant. The existing HVAC systems 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 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Water Well Replacement **Project Number:** 5173715 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Lake City Army Ammunition Plant Facility Location: Independence, Missouri Facility Type (GOGO, GOCO, COCO): GOCO							
A. Construction Cost	8.950	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Sep 2017 Construction Complete: Sep 2019 Equipment Installation Complete: Sep 2019 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	0.188	-	-	-	-								
Total Project Cost	9.138	-	-	-	-								
Related Projects													
							Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$9.138 million supports upgrade of the water supply wells and water distribution system at Lake City Army Ammunition Plant (AAP). This project will construct new groundwater wells to increase capacity by at least 2.5 million gallons per day (MGD) for the next 10 years and replace portions of the water distribution system piping. The existing wells are fifty years old, experience leaks and provide inadequate capacity for Lake City AAP's production operations and fire suppression systems.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10	P-1 Line Item Number / Title: 0572EP1000 / Industrial Facilities
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Project Title: Building 15 Boiler Plant, Conceptual Design/Requirement Determination	Project Number: 5XX3718	Project Category:
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End Item Supported Model:	Annual Capacity Before / After (1-8-5): /
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Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Lake City Army Ammunition Plant Facility Location: Independence, Missouri Facility Type (GOGO, GOCO, COCO): GOCO				
A. Construction Cost	-	1.750	-	-	-	Principal Milestones Month & Year Concept Design Complete: Sep 2020 Final Design Complete: Apr 2018 Initial/Final Project Award: Apr 2017 / Apr 2018 Construction Complete: Jun 2020 Equipment Installation Complete: Jun 2020 Prove Out Begins: Jul 2020 Prove Out Complete:				
B. Equipment Cost	-	0.250	-	-	-					
C. Equipment Installation Cost	-	0.358	-	-	-					
D. Contractor Support Cost	-	-	-	-	-					
E. Corps of Engineers Support Cost	-	-	-	-	-					
F. Other In-House Support Cost	-	-	-	-	-					
G. Total Facility Project Cost	-	-	-	-	-					
H. Other Costs	-	0.500	-	-	-					
Total Project Cost	-	2.858	-	-	-					
Related Projects										
	Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date			

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$2.858 million supports the investigation of the existing steam plant, evaluation of alternatives to constructing a new centralized steam plant (such as decentralization) and determine the necessity of building 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 and support production of small caliber ammunition.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Building 2,3, 35 Lighting Switchgear **Project Number:** 5173762 **Project Category:**

End Item Supported Model: 20mm, 7.62mm, Cal .50 **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Lake City Army Ammunition Plant Facility Location: Independence, Missouri Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	0.890	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Sep 2017 Construction Complete: Mar 2019 Equipment Installation Complete: Mar 2019 Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	0.193	-	-	-	-							
C. Equipment Installation Cost	0.073	-	-	-	-							
D. Contractor Support Cost	0.076	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	1.232	-	-	-	-							
							Related Projects					
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$1.232 million supports an effort to install new lighting switchgear in Buildings 2, 3, and 35 at Lake City Army Ammunition Plant. The primary switchgear is an original installation and components are obsolete and hard to procure, resulting in potential production interruption. The existing lighting and power supply switchgears in these buildings are beyond their expected twenty-five year lifespan. Routine maintenance is no longer economically viable and experiences parts obsolescence. This effort will provide a safe and reliable electrical distribution system in Buildings 2, 3, and 35 which supports production of small caliber ammunition.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Exterior Steam Main Supports **Project Number:** 5XX3778 **Project Category:**

End Item Supported Model: 5.56mm, 7.62mm, Cal .50 **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Lake City Army Ammunition Plant Facility Location: Independence, Missouri Facility Type (GOGO, GOCO, COCO): GOCO				
A. Construction Cost	-	5.025	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Jan 2017 Initial/Final Project Award: Sep 2016 Construction Complete: Nov 2017 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:				
B. Equipment Cost	-	-	-	-	-					
C. Equipment Installation Cost	-	-	-	-	-					
D. Contractor Support Cost	-	0.420	-	-	-					
E. Corps of Engineers Support Cost	-	-	-	-	-					
F. Other In-House Support Cost	-	-	-	-	-					
G. Total Facility Project Cost	-	-	-	-	-					
H. Other Costs	-	-	-	-	-					
Total Project Cost	-	5.445	-	-	-					
Related Projects										
	Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date			

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$5.445 million supports modernization of exterior steam supports at Lake City Army Ammunition Plant. Effort will evaluate existing steam main supports at the Primer Complex and design and install new steam supports as required. Effort will improve safety, reduce steam loss to manufacturing buildings and reduce risk of production interruptions for small caliber ammunition.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: IWTP Lagoon Liners **Project Number:** 5183792 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Lake City Army Ammunition Plant Facility Location: Independence, Missouri Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	1.850	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: May 2018 Construction Complete: Jul 2019 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	-	0.325	-	-	-							
H. Other Costs	-	0.064	-	-	-							
Total Project Cost	-	2.239	-	-	-							
							Related Projects					
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$2.239 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. Replacement is required to ensure environmental compliance.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Protective Structure Design for Site Plan Compliance **Project Number:** 5183797 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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: Feb 2019 Initial/Final Project Award: Apr 2018 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	-	0.617	-	-	-		
Total Project Cost	-	0.617	-	-	-		
Related Projects							
	Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$0.617 million supports design effort for protective structural improvements at the Lake City Army Ammunition Plant. Effort will evaluate production building explosive areas to ensure compliance with current site safety plans.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Building 35 Wash Pad Replacement **Project Number:** 5183799 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Lake City Army Ammunition Plant Facility Location: Independence, Missouri Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	0.499	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Mar 2018 Construction Complete: Mar 2019 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	-	0.300	-	-	-							
Total Project Cost	-	0.799	-	-	-							
							Related Projects					
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$0.799 million supports effort to correct structural deficiencies in the Building 35 Wash Pad area at Lake City Army Ammunition Plant.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: New Emergency Fire Doors (PW) **Project Number:** 5185000 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5): /**

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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: Initial/Final Project Award: Jun 2018 Construction Complete: Equipment Installation Complete: Jun 2019 Prove Out Begins: Prove Out Complete:	Related Projects						
B. Equipment Cost	-	0.375	-	-	-		Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date
C. Equipment Installation Cost	-	0.430	-	-	-								
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	-	0.805	-	-	-								

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$0.805 million will support replacement of emergency fire doors that will be code compliant in Buildings 1, 2 and 3 at Lake City Army Ammunition Plant. Effort will improve safety for personnel in Buildings 1, 2 and 3.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Communication Lines, System Analysis & Design **Project Number:** 5185003 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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 2019 Initial/Final Project Award: Apr 2018 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	-	0.612	-	-	-								
Total Project Cost	-	0.612	-	-	-								

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$0.612 million supports design phase for upgrade of the communication infrastructure of telephone, fiber, and Information Technology devices at Lake City Army Ammunition Plant.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Bldgs 12B, 93 Roof Replacement **Project Number:** 5185007 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Lake City Army Ammunition Plant						
						Facility Location: Independence, Missouri						
A. Construction Cost	-	0.975	-	-	-	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: Mar 2018						
F. Other In-House Support Cost	-	-	-	-	-	Construction Complete: Jul 2019						
G. Total Facility Project Cost	-	-	-	-	-	Equipment Installation Complete:						
H. Other Costs	-	0.162	-	-	-	Prove Out Begins:						
Total Project Cost	-	1.137	-	-	-	Prove Out Complete:						
						Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$1.137 million supports roof replacement of buildings 12B and 93 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 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Building 85 Kill Tanks, Design **Project Number:** 5185064 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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: Jan 2019 Initial/Final Project Award: Mar 2018 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	-	0.524	-	-	-							
Total Project Cost	-	0.524	-	-	-							
							Related Projects					
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$0.524 million support design of new Kill Tanks in Building 85 at Lake City Army Ammunition Plant. There are ten explosives kill tanks below building 85. These tanks chemically neutralize tetrazene, lead styphnate, magnesium styphnate and PETN. The existing tanks are aging and hazardous to personnel. The new system will provide increased protection and improve containment functions.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Building 6 Electrical Upgrades **Project Number:** 5185109 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Lake City Army Ammunition Plant Facility Location: Independence, Missouri Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	1.118	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Apr 2018 Construction Complete: Oct 2019 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	-	0.100	-	-	-							
Total Project Cost	-	1.218	-	-	-							
							Related Projects					
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$1.218 million support electrical upgrades to Building 6 at Lake City Army Ammunition Plant. Building 6 functions have expanded and the current electrical load requirement is inadequate. The electrical service and branch circuits will be upgraded as well as rerouting sections of the system to maximize efficiencies.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: New Water Plant, Construct **Project Number:** 5XX5117 **Project Category:**

End Item Supported Model: 5.56mm, 7.62mm, Cal .50 **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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: Sep 2018 Initial/Final Project Award: Aug 2017 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	4.884	-	-	-	-								
Total Project Cost	4.884	-	-	-	-								
Related Projects							Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of the \$4.884 million support design of a new water plant at Lake City Army Ammunition Plant. The existing water plant has significant deterioration, antiquated controls and inefficient processes and equipment. This project will construct a new water plant on a greenfield site, and it will provide zero and five grain water as well as fire suppression.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:**
0572EP1000 / Industrial Facilities

Project Title: Powder Elevator Replacement, Bldgs 1 & 3 **Project Number:** 5185333 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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: Initial/Final Project Award: May 2018 Construction Complete: Equipment Installation Complete: Jun 2019 Prove Out Begins: Prove Out Complete:	Related Projects						
B. Equipment Cost	-	1.250	-	-	-		Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date
C. Equipment Installation Cost	-	0.750	-	-	-								
D. Contractor Support Cost	-	-	-	-	-								
E. Corps of Engineers Support Cost	-	-	-	-	-								
F. Other In-House Support Cost	-	-	-	-	-								
G. Total Facility Project Cost	-	-	-	-	-								
H. Other Costs	-	0.080	-	-	-								
Total Project Cost	-	2.080	-	-	-								

Narrative Explanation:
 FY2018 Base procurement dollars in the amount of \$2.080 million supports rehabilitation of elevators that carry explosives in Buildings 1 and 3 at Lake City Army Ammunition Plant. This effort is required to maintain production continuity.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

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:** 5172736 **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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	81.285	-	-	-	-	Principal Milestones Concept Design Complete: Dec 2018 Final Design Complete: Aug 2015 Initial/Final Project Award: Dec 2013 / Jan 2017 Construction Complete: Apr 2018 Equipment Installation Complete: Apr 2018 Prove Out Begins: Jun 2018 Prove Out Complete:	Month & Year					
B. Equipment Cost	57.256	-	-	-	-							
C. Equipment Installation Cost	26.632	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	0.825	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	0.784	-	-	-	-							
Total Project Cost	166.782	-	-	-	-							
						Related Projects						
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$166.782 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 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Replace Chemical Grind, Design **Project Number:** 5183140 **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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Dec 2019 Initial/Final Project Award: Jul 2018 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	-	0.125	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	3.110	-	-	-							
Total Project Cost	-	3.235	-	-	-							
							Related Projects					
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$3.235 million supports modernization effort to upgrade the current chemical grind facility at Radford Army Ammunition Facility. The existing facility was constructed in the 1940s and utilizes antiquated equipment. The chemical grind facility is required to prepare chemicals for propellant production.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

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:** 5XX3407 **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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia Facility Type (GOGO, GOCO, COCO): GOCO														
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Sep 2017 / Jan 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	17.599	28.686	-	-	-															
Total Project Cost	17.599	28.686	-	-	-	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:
 FY 2018 Base procurement dollars in the amount of \$28.686 million supports major maintenance activities at Radford Army Ammunition Plant (AAP). Effort includes substantial purchases, repairs, and upgrades that are high priority and critical to Radford's mission. Major maintenance is beyond normal maintenance and can generally be attributed to end of life, unforeseeable failures, or changes in laws, regulations, codes, or standards. This includes building and infrastructure sustainment/refurbishment. Effort will also fund preventive, scheduled and unscheduled maintenance of production equipment and facilities that would prevent serious injury to personnel or effects to the environment. Funding is also provided for cyber security requirements, fire and emergency services and to execute an environmental program to ensure compliance with existing Federal, State, and local environmental laws.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Plant-Wide Road Upgrades **Project Number:** 5183434 **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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	1.750	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Jun 2018 Construction Complete: Sep 2020 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	0.185	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	0.061	-	-	-							
Total Project Cost	-	1.996	-	-	-							
							Related Projects					
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$1.996 million supports road upgrades within production areas at Radford Army Ammunition Plant. The production area roadways are heavily used and exhibit significant deterioration. Routine maintenance is no longer economically feasible. This effort will ensure safe transportation of energetic material throughout the installation.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Acid Sewer Upgrades, Ph 3 **Project Number:** 5173439 **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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	4.933	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Aug 2018 Final Design Complete: Initial/Final Project Award: Sep 2017 Construction Complete: Jun 2018 Equipment Installation Complete: Prove Out Begins: Jun 2018 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	4.933	-	-	-	-							
						Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$4.933 million supports modernization upgrades to the main acid sewer lines located in the acid production area at Radford Army Ammunition Plant. The existing system was installed over 50 years ago and experiences frequent leaks and failures. The system is no longer economically viable. Upgrades are required to ensure adequate acidic wastewater processing capabilities to support production operations and to comply with environmental regulations.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Industrial Sewer Upgrades & Rehabilitation, Ph 2 & 3 **Project Number:** 5XX3445 **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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	8.250	19.850	-	19.850	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Jul 2018 / Jun 2019 Construction Complete: Jul 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	-	0.175	0.758	-	0.758							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	1.559	1.022	-	1.022							
Total Project Cost	-	9.984	21.630	-	21.630							
											Related Projects	
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$21.630 million supports modernization effort to upgrade the industrial sewer system at Radford Army Ammunition Plant. The industrial sewer system has been in operation for over 30 years and consists of approximately 95,560 linear feet of sewer, 649 structures (manholes & catch basins), 8 pump stations, 12 monitoring stations, and a treatment plant. The industrial sewer system must be upgraded in order for the plant to continue to comply with its Virginia Pollutant Discharge Elimination System (VPDES) discharge permit. The Government and the Operating Contractor are jointly liable for failure in meeting the VPDES discharge permit.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Solventless Propellant Mfg Fac, Preliminary Design **Project Number:** 5193447 **Project Category:**

End Item Supported Model: Solventless propellant formulations **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Mar 2021 Initial/Final Project Award: Jun 2019 / Jun 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	-	-	4.060	-	4.060							
Total Project Cost	-	-	4.060	-	4.060							
							Related Projects					
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$4.060 million supports the preliminary design of a new solventless facility at Radford Army Ammunition Plant (AAP). Existing production operations have remained relatively unchanged since 1940s. Equipment automation at a consolidated facility will allow for consolidated footprint and a reduction in the costs of manufacturing solventless propellant at Radford AAP. This is new start in FY 2019.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

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:** 5XX3449 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5): /**

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	3.109	-	5.585	-	5.585	Principal Milestones Month & Year Concept Design Complete: Aug 2019 Final Design Complete: Initial/Final Project Award: Sep 2017 Construction Complete: Apr 2019 Equipment Installation Complete: Apr 2019 Prove Out Begins: May 2019 Prove Out Complete:						
B. Equipment Cost	1.772	-	2.568	-	2.568							
C. Equipment Installation Cost	-	-	1.587	-	1.587							
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	4.881	-	9.740	-	9.740							
											Related Projects	
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$9.740 million supports 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 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Electrical Distribution System Upgrades, Ph 3 **Project Number:** 5XX3557 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5): /**

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia Facility Type (GOGO, GOCO, COCO): GOCO														
A. Construction Cost	-	9.884	4.750	-	4.750	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Jun 2018 / Jun 2019 Construction Complete: Apr 2021 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:														
B. Equipment Cost	-	0.790	0.435	-	0.435															
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	-	1.250	0.225	-	0.225															
Total Project Cost	-	11.924	5.410	-	5.410															
						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:
 FY 2019 Base procurement dollars in the amount of \$5.410 million supports upgrades to the electrical distribution system at Radford Army Ammunition Plant. This modernization effort will replace electrical poles, cable connections, 480V substations, old switches, cross arms, insulators, and surge arresters. Electrical circuits and substations are a safety risk, unreliable and susceptible to catastrophic failure during adverse weather events.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Barricade Replacement **Project Number:** 5183567 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	4.850	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: May 2018 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	-	0.320	-	-	-							
Total Project Cost	-	5.170	-	-	-							
							Related Projects					
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$5.170 million supports replacement of barricades at Radford Army Ammunition Plant. This project will support the demolition and replacement of wooden barricades identified to support production at Radford Army Ammunition Plant (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 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Upgrade Settling Basins, Bldg 409 **Project Number:** 5173572 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	7.955	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Oct 2019 Final Design Complete: Initial/Final Project Award: Sep 2017 Construction Complete: Sep 2019 Equipment Installation Complete: Sep 2019 Prove Out Begins: Oct 2019 Prove Out Complete:						
B. Equipment Cost	3.754	-	-	-	-							
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	11.709	-	-	-	-	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$11.709 million support repair of settling basins at Building 409 at Radford Army Ammunition Plant (AAP). This project will upgrade the main central water filtration plant at RFAAP, Building 409. This includes repairs and upgrades to the two settling basins, such as replacing clarifier rakes, rehabilitating the flocculators, replacing wooden baffles, and sealing and repairing the concrete basins. Electrical upgrades will include breakers, switches, panels, motor starters, drive motors and wiring to bring the electrical supply and control system to modern standards. This effort will support the continued uninterrupted supply of water for Radford AAP process, fire and drinking water requirements.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

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:** 5183613 **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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	3.000	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Apr 2018 Construction Complete: May 2019 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	-	0.750	-	-	-							
Total Project Cost	-	3.750	-	-	-							
							Related Projects					
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$3.750 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 two change houses near the new Nitrocellulose (NC) area to support daily operation of the new NC facility

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

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: **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Radford Army Ammunition Plant						
						Facility Location: Radford, Virginia						
A. Construction Cost	-	-	58.650	-	58.650	Facility Type (GOGO, GOCO, COCO): GOCO						
B. Equipment Cost	-	-	28.650	-	28.650	Principal Milestones Month & Year						
C. Equipment Installation Cost	-	-	6.940	-	6.940	Concept Design Complete:						
D. Contractor Support Cost	-	-	-	-	-	Final Design Complete: Jan 2018						
E. Corps of Engineers Support Cost	-	-	-	-	-	Initial/Final Project Award: Dec 2020						
F. Other In-House Support Cost	-	-	-	-	-	Construction Complete:						
G. Total Facility Project Cost	-	-	-	-	-	Equipment Installation Complete:						
H. Other Costs	-	-	-	-	-	Prove Out Begins:						
Total Project Cost	-	-	94.240	-	94.240	Prove Out Complete:						
						Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$94.240 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. This is a new start in FY 2019.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Package Boiler Facility **Project Number:** 5163724 **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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia 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:						
D. Contractor Support Cost	-	-	-	-	-	Construction Complete:			Jan 2017			
E. Corps of Engineers Support Cost	-	-	-	-	-	Equipment Installation Complete:			Jan 2017			
F. Other In-House Support Cost	-	-	-	-	-	Prove Out Begins:						
G. Total Facility Project Cost	-	-	-	-	-	Prove Out Complete:						
H. Other Costs	0.197	-	-	-	-	Related Projects						
Total Project Cost	0.197	-	-	-	-							
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$0.197 million supports purchase of critical spare parts for the construction and commissioning of the new package boiler facility at Radford Army Ammunition Plant. The new natural gas facility will supply plant steam demands and comply with the Maximum Achievable Compliance Technology (MACT) standards.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Acid Area Improvements, Ph 3 **Project Number:** 5183735 **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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	2.250	-	-	-	Principal Milestones Month & Year Concept Design Complete: Sep 2020 Final Design Complete: Initial/Final Project Award: Sep 2016 / Jul 2018 Construction Complete: Jul 2020 Equipment Installation Complete: Jul 2020 Prove Out Begins: Aug 2020 Prove Out Complete:						
B. Equipment Cost	-	1.750	-	-	-							
C. Equipment Installation Cost	-	1.600	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	0.130	-	-	-							
Total Project Cost	-	5.730	-	-	-	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$5.730 million supports phase three of repair of critical bulk storage tanks and containment dikes in the acid area at Radford Army Ammunition Plant. Bulk storage tanks vary in age and several existing tanks were installed in the 1940s. Acid bulk storage capacity is required to handle sulfuric acid, oleum, strong nitric acid, weak nitric acid, and processed (pyro) acid. The safe and reliable storage of acids is critical for nitrocellulose manufacturing operations. Containment dikes surrounding these bulk storage tanks have deteriorated and repairs are required to contain an acid release in the event of a catastrophic failure.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Acid Sewer Treatment Upgrades (Lime Slaker) **Project Number:** 5173738 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	1.436	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Sep 2018 Final Design Complete: Initial/Final Project Award: Aug 2017 Construction Complete: Apr 2018 Equipment Installation Complete: Apr 2018 Prove Out Begins: May 2018 Prove Out Complete:						
B. Equipment Cost	0.625	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	0.665	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	2.726	-	-	-	-							
						Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 Procurement dollars in the amount of \$2.726 million support repair and upgrade of the acid sewer treatment facility (lime slaker) at Radford Army Ammunition Plant (AAP). This project will upgrade the single point failure main acid sewer treatment facility at Radford AAP. This includes repairs and installation of new equipment for the removal of grit located between the slaker and the lime slurry tanks. The existing lime slaker has been in operation for over fifty years; routine maintenance and repair is no longer economically viable. The modernized equipment will contain new technologies that will reduce particle size to 40 microns.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

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: **Annual Capacity Before / After (1-8-5): /**

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	5.865	-	5.865	Principal Milestones Concept Design Complete: Final Design Complete: Initial/Final Project Award: May 2019 Construction Complete: Nov 2020 Equipment Installation Complete: Prove Out Begins: Prove Out Complete:	Month & Year					
B. Equipment Cost	-	-	2.750	-	2.750							
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	-	-	0.755	-	0.755							
H. Other Costs	-	-	-	-	-							
Total Project Cost	-	-	9.370	-	9.370							
							Related Projects					
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$9.370 million supports upgrades to three intake pumps in Building 407, traveling screens and other associated support equipment at Radford Army Ammunition Plant (AAP). These pumps 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. This is a new start in FY 2019.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:**
0572EP1000 / Industrial Facilities

Project Title: Near Term NC Line Upgrade **Project Number:** 5195054 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	3.250	-	3.250	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	-	-	3.250	-	3.250							
Related Projects						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$3.250 million supports upgrades to the nitrocellulose (NC) production line at Radford Army Ammunition Plant. This project will replace and upgrade the mixing operation and associated ancillary equipment. This is a new start in FY 2019.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Structural Repair, Assessment & Study **Project Number:** 5XX5088 **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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Sep 2018 Initial/Final Project Award: Jan 2018 / Apr 2019 Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	0.260	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	0.244	-	-	-							
G. Total Facility Project Cost	-	-	1.080	-	1.080							
H. Other Costs	-	-	-	-	-							
Total Project Cost	-	0.504	1.080	-	1.080							
						Related Projects						
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$1.080 million supports structural repair requirements at Radford Army Ammunition Plant. Effort will repair structural deficiencies at production facilities to ensure personnel safety and maintain production continuity.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Alternate Nitrate Ester Manufacturing Facility, Design **Project Number:** 5185090 **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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia 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:																										
D. Contractor Support Cost	-	-	-	-	-	Construction Complete:																										
E. Corps of Engineers Support Cost	-	-	-	-	-	Equipment Installation Complete:																										
F. Other In-House Support Cost	-	-	-	-	-	Prove Out Begins:																										
G. Total Facility Project Cost	-	-	-	-	-	Prove Out Complete:																										
H. Other Costs	-	4.205	-	-	-	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th align="center" colspan="7">Related Projects</th> </tr> <tr> <th align="center">Project Number</th> <th align="center">Title</th> <th align="center">FY & Appn</th> <th align="center">Value (\$ M)</th> <th align="center">Facing</th> <th align="center">Start Date</th> <th align="center">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																										
Total Project Cost	-	4.205	-	-	-																											

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$4.205 million supports modernization effort to design of a new alternate nitrate ester facility at Radford Army Ammunition Plant. This facility will be able to produce nitroglycerin (NG), Diethylene glycol dinitrate (DEDGN), and other nitrate esters. This will expand Radford's ability to produce new propellant formulations, as well as produce DEDGN to support legacy propellants.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: NC Solvent Dewatering, Design **Project Number:** 5195140 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Radford Army Ammunition Plant Facility Location: Radford, Virginia Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Nov 2019 Initial/Final Project Award: Jan 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	-	-	2.160	-	2.160							
Total Project Cost	-	-	2.160	-	2.160							
							Related Projects					
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$2.160 million supports design of a new nitrocellulose (NC) solvent dewatering facility at Radford Army Ammunition Plant. This is a new start in FY 2019.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Rehab Forge Shop Casting Platform **Project Number:** 5185342 **Project Category:**

End Item Supported Model: : M795, 120mm Mortar, M1 HE, 5?/54 **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Scranton Army Ammunition Plant Facility Location: Scranton, Pennsylvania Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	0.850	-	-	-	Principal Milestones Month & Year Concept Design Complete: Jun 2019 Final Design Complete: Initial/Final Project Award: Construction Complete: May 2019 Equipment Installation Complete: Prove Out Begins: Jun 2019 Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	0.183	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	-	1.033	-	-	-							
Related Projects						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2018 Base procurement dollars in the amount of \$1.033 million supports the rehabilitation of the Casting Platform located in the Forge Shop at Scranton Army Ammunition Plant. Given the age of the casting platform, deterioration to the surface areas and joints is allowing water to penetrate into the subway areas below. This is causing further damage to concrete surfaces and supports and eroding the rebar, creating an unsafe working environment and can eventually lead to structural instability or failure. This effort will address the problems with the casting platform, reducing or eliminating the amount of water penetrating into the subway area.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Engineering in Support of Provision of Industrial Facilities **Project Number:** 5XX3046 **Project Category:**

End Item Supported Model: Multiple **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Various Army Ammunition Plants Facility Location: Multiple 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	7.729	8.750	4.015	-	4.015							
Total Project Cost	7.729	8.750	4.015	-	4.015	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$4.015 million supports the procurement of processing and engineering support efforts, including technical and pre-design analyses of future modernization investments for Production Base Support program execution.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 2034A / 02 / 10 **P-1 Line Item Number / Title:** 0572EP1000 / Industrial Facilities

Project Title: Replace Test Instrumentation in Production Acceptance Testing (Ammunition) **Project Number:** 5XX5060 **Project Category:**

End Item Supported Model: Initial Production Acceptance & Product Improvements for Ammunition **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	1.102	1.529	1.458	-	1.458							
Total Project Cost	1.102	1.529	1.458	-	1.458	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:

FY 2019 Base procurement dollars in the amount of \$1.458 million supports replacement of analog video scoring and data collection equipment with a digital capability at the multipurpose impact firing range, which is used for testing munitions; acquires precision, high-dynamic, rugged sensors to include displacement, pyro-shock/acceleration, infrared flash detector, and pressure transducers; and procures high speed digital imaging cameras for ammunition testing that will follow a direct fire projectile's flight path in lieu of using many cameras lined along the flight path. The majority of the instrumentation being upgraded or replaced is obsolete and has met or exceeded its economic life. This instrumentation is required to ensure complete and accurate test data is collected and safety and environmental hazards are minimized. Benefits of this project include increased test efficiencies and decreased costs and risks to Army Program Managers

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2019 Army **Date:** February 2018

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:** 5184073 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Facility Name: Maintenance of Inactive Facilities						
						Facility Location: Various AAPs						
A. Construction Cost	-	-	-	-	-	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:						
F. Other In-House Support Cost	-	-	-	-	-	Construction Complete:						
G. Total Facility Project Cost	-	-	-	-	-	Equipment Installation Complete:						
H. Other Costs	1.870	6.298	6.387	-	6.387	Prove Out Begins:						
Total Project Cost	1.870	6.298	6.387	-	6.387	Prove Out Complete:						
						Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount \$6.387 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 2019 Army **Date:** February 2018

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:** 5188000 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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: 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	0.350	11.234	11.391	-	11.391	Related Projects						
Total Project Cost	0.350	11.234	11.391	-	11.391	Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2019 Base procurement dollars in the amount of \$11.391 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 Lake City and Radford AAP and the layaway of various load, assemble and pack production lines at Milan AAP. Funds will also support the disposal of excess equipment at McAlester AAP.

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	2,792.663	157.361	197.825	157.535	-	157.535	132.578	123.422	174.776	211.677	-	3,947.837
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	2,792.663	157.361	197.825	157.535	-	157.535	132.578	123.422	174.776	211.677	-	3,947.837
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	2,792.663	157.361	197.825	157.535	-	157.535	132.578	123.422	174.776	211.677	-	3,947.837

(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 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 CDT demil support and services and associated PCHT; and international operations, which include the European and Pacific Theatres.

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Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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)				- / 2,327.147	- / 106.025	- / 139.215	- / 122.985	- / -	- / 122.985
P-5	EP1801 / Other Non-Army Service Demil Items (non-SMCA)				- / 30.643	- / 8.647	- / 13.724	- / 15.598	- / -	- / 15.598
P-5	EP1802 / Army Missile Demilitarization				- / 407.522	- / 39.743	- / 42.024	- / 14.274	- / -	- / 14.274
P-5	EP1803 / Non-Army Missile Demilitarization				- / 27.351	- / 2.946	- / 2.862	- / 4.678	- / -	- / 4.678
P-40	Total Gross/Weapon System Cost				- / 2,792.663	- / 157.361	- / 197.825	- / 157.535	- / -	- / 157.535

*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 2019 Base procurement dollars in the amount of \$157.535 million will support the demilitarization of conventional ammunition and missile / missile components (msl/comp) for all Military Services.

FY 2019 funds will support the United States demilitarization (demil) operations of conventional ammunition 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.

As of the end of October 2017, the Single Manager for Conventional Ammunition (SMCA) Resource, Recovery and Disposition Account (B5A Demil Account) contained 430,058 tons of ammunition in CONUS wholesale storage locations: 401,531 tons of conventional ammunition and 28527 tons (175,363 each) of missile components (msl/comp). In FY2017, 51,943 tons of conventional ammunition was demilitarized and 15,813 tons of missile / missile components was demilitarized. Currently for FY2018, 45,761 tons of conventional ammunition and 13,802 tons of missile / missile components is planned.

Stockpile growth and generations: an estimated 32,701 tons of conventional ammunition and an estimated 7,025 tons (32,324 each) of msl/comp is forecast to enter the B5A in FY 2018, and an additional 80,155 tons of conventional ammunition and 6,502 tons (19,694 each) of msl/comp is projected to enter in FY 2019. During FY 2020 through FY 2023, 111,174 tons of conventional ammunition and 29,760 tons (56,637 each) of msl/comp are forecasted to be added into the B5A.

Stockpile growth factors: the demil stockpile is expected to grow as a result of Military Services generations as well as other factors such as cluster munitions and land mine policies as well as the disestablishment of War Reserve Stocks Allies (WRSA) accounts at OCONUS locations. Currently, there are approximately 122.083 tons of cluster munitions in the demil stockpile. An additional 188,787 tons remaining in CONUS outside the B5A and another 127,972 OCONUS.

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	2,327.147	106.025	139.215	122.985	-	122.985
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	2,327.147	106.025	139.215	122.985	-	122.985
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	2,327.147	106.025	139.215	122.985	-	122.985

(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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	81.795	-	-	0.978	-	-	0.308	-	-	2.560	-	-	-	-	-	2.560
DEMOLITION MATERIAL	-	-	0.843	-	-	-	-	-	0.094	-	-	0.928	-	-	-	-	-	0.928
HE DETONATORS/ BOOSTERS	-	-	2.575	-	-	-	-	-	1.506	-	-	0.718	-	-	-	-	-	0.718
HE BOMBS	-	-	44.944	-	-	1.000	-	-	0.974	-	-	0.309	-	-	-	-	-	0.309
HE CARTRIDGES	-	-	132.494	-	-	8.000	-	-	5.235	-	-	8.749	-	-	-	-	-	8.749
GRENADES	-	-	2.839	-	-	0.031	-	-	0.022	-	-	0.019	-	-	-	-	-	0.019
HE DEPTH CHARGES	-	-	17.391	-	-	0.181	-	-	0.613	-	-	0.322	-	-	-	-	-	0.322
CLUSTER BOMBS/ ICM; ANTI-TANK & PERSONNEL	-	-	311.023	-	-	20.000	-	-	23.188	-	-	20.893	-	-	-	-	-	20.893
HE LAND MINES	-	-	86.073	-	-	0.045	-	-	0.025	-	-	-	-	-	-	-	-	-
INERT	-	-	33.484	-	-	1.000	-	-	0.844	-	-	-	-	-	-	-	-	-
MULTIPLE FAMILY	-	-	490.758	-	-	3.000	-	-	6.637	-	-	10.603	-	-	-	-	-	10.603
BULK HIGH EXPLOSIVES	-	-	35.985	-	-	-	-	-	0.003	-	-	-	-	-	-	-	-	-
PROPELLANT CHARGES/INCREMENT CHARGES	-	-	127.728	-	-	5.000	-	-	8.265	-	-	5.038	-	-	-	-	-	5.038
TARGET PRACTICES/ 40MM ANTI-AIRCRAFT	-	-	33.186	-	-	6.000	-	-	7.673	-	-	7.998	-	-	-	-	-	7.998

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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:
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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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
SMALL ARMS AMMO THRU 20MM	-	-	13.589	-	-	1.000	-	-	2.796	-	-	2.796	-	-	-	-	-	2.796
INCINERABLE MUNITIONS/ MISCELLANEOUS	-	-	56.574	-	-	7.000	-	-	7.006	-	-	5.085	-	-	-	-	-	5.085
FUZES	-	-	47.957	-	-	1.000	-	-	1.723	-	-	5.926	-	-	-	-	-	5.926
TRANSPORTATION	-	-	140.219	-	-	5.790	-	-	18.335	-	-	2.500	-	-	-	-	-	2.500
MUNITIONS CHARACTERIZATION	-	-	74.219	-	-	2.500	-	-	1.718	-	-	1.718	-	-	-	-	-	1.718
OCONUS DEMIL - EUCOM	-	-	44.067	-	-	2.000	-	-	2.040	-	-	1.500	-	-	-	-	-	1.500
OCONUS DEMIL - PACOM	-	-	8.998	-	-	1.000	-	-	1.500	-	-	0.850	-	-	-	-	-	0.850
CONTRACT - CONUS DEMIL	-	-	493.015	-	-	40.000	-	-	47.945	-	-	30.945	-	-	-	-	-	30.945
DU Cartridges	-	-	-	-	-	-	-	-	-	-	-	12.028	-	-	-	-	-	12.028
<i>Subtotal: Support - Demilitarization Cost</i>	-	-	2,279.756	-	-	105.525	-	-	138.450	-	-	121.485	-	-	-	-	-	121.485
Support - Program Management Cost																		
Government Management	-	-	47.391	-	-	0.500	-	-	0.765	-	-	1.500	-	-	-	-	-	1.500
<i>Subtotal: Support - Program Management Cost</i>	-	-	47.391	-	-	0.500	-	-	0.765	-	-	1.500	-	-	-	-	-	1.500
Gross/Weapon System Cost	-	-	2,327.147	-	-	106.025	-	-	139.215	-	-	122.985	-	-	-	-	-	122.985

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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:				
Resource Summary			Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)			-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)			30.643	8.647	13.724	15.598	-	15.598
Less PY Advance Procurement (\$ in Millions)			-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)			30.643	8.647	13.724	15.598	-	15.598
Plus CY Advance Procurement (\$ in Millions)			-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)			30.643	8.647	13.724	15.598	-	15.598
<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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	28.913	-	-	8.647	-	-	1.514	-	-	2.750	-	-	-	-	-	2.750
SONOBUOYS	-	-	1.730	-	-	-	-	-	0.455	-	-	2.213	-	-	-	-	-	2.213
CONTRACT - CONUS DEMIL	-	-	-	-	-	-	-	-	11.755	-	-	8.385	-	-	-	-	-	8.385
TRANSPORTATION	-	-	-	-	-	-	-	-	-	-	-	2.250	-	-	-	-	-	2.250
<i>Subtotal: Support - Demilitarization Cost</i>	-	-	30.643	-	-	8.647	-	-	13.724	-	-	15.598	-	-	-	-	-	15.598
Gross/Weapon System Cost	-	-	30.643	-	-	8.647	-	-	13.724	-	-	15.598	-	-	-	-	-	15.598

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Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (Units in Each)				-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)				407.522	39.743	42.024	14.274	-	14.274
Less PY Advance Procurement (\$ in Millions)				-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)				407.522	39.743	42.024	14.274	-	14.274
Plus CY Advance Procurement (\$ in Millions)				-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)				407.522	39.743	42.024	14.274	-	14.274
<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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	188.100	-	-	24.683	-	-	29.164	-	-	8.360	-	-	-	-	-	8.360
LANCE	-	-	3.815	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOW CD/R3	-	-	40.260	-	-	0.750	-	-	0.570	-	-	0.265	-	-	-	-	-	0.265
HELLFIRE	-	-	0.450	-	-	0.074	-	-	0.030	-	-	0.163	-	-	-	-	-	0.163
STINGER	-	-	2.243	-	-	0.143	-	-	0.150	-	-	-	-	-	-	-	-	-
PATRIOT	-	-	1.114	-	-	0.332	-	-	0.380	-	-	-	-	-	-	-	-	-
HONEST JOHN	-	-	0.706	-	-	0.470	-	-	0.300	-	-	-	-	-	-	-	-	-
MISSILE COMPONENTS	-	-	55.286	-	-	6.766	-	-	3.960	-	-	2.409	-	-	-	-	-	2.409
HAWK MOTORS	-	-	2.526	-	-	0.172	-	-	0.235	-	-	-	-	-	-	-	-	-
DEMIL PROCESS IMPROVEMENTS	-	-	76.421	-	-	-	-	-	0.450	-	-	-	-	-	-	-	-	-
TRANSPORTATION	-	-	9.791	-	-	4.244	-	-	4.875	-	-	0.884	-	-	-	-	-	0.884
Subtotal: Support - Demilitarization Cost	-	-	380.712	-	-	37.634	-	-	40.114	-	-	12.081	-	-	-	-	-	12.081
Support - Program Management Cost																		
Government Management	-	-	26.810	-	-	2.109	-	-	1.910	-	-	2.193	-	-	-	-	-	2.193
Subtotal: Support - Program Management Cost	-	-	26.810	-	-	2.109	-	-	1.910	-	-	2.193	-	-	-	-	-	2.193
Gross/Weapon System Cost	-	-	407.522	-	-	39.743	-	-	42.024	-	-	14.274	-	-	-	-	-	14.274

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2019 Army		Date: February 2018
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:
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Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	27.351	2.946	2.862	4.678	-	4.678
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	27.351	2.946	2.862	4.678	-	4.678
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	27.351	2.946	2.862	4.678	-	4.678

(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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	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	-	-	27.351	-	-	2.946	-	-	2.112	-	-	3.508	-	-	-	-	-	3.508
ROCKET MOTORS	-	-	-	-	-	-	-	-	0.750	-	-	1.170	-	-	-	-	-	1.170
<i>Subtotal: Support - Demilitarization Cost</i>	-	-	27.351	-	-	2.946	-	-	2.862	-	-	4.678	-	-	-	-	-	4.678
Gross/Weapon System Cost	-	-	27.351	-	-	2.946	-	-	2.862	-	-	4.678	-	-	-	-	-	4.678

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2019 Army **Date:** February 2018

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	356.953	3.646	3.719	3.771	-	3.771	3.833	3.907	3.913	3.994	-	383.736
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	356.953	3.646	3.719	3.771	-	3.771	3.833	3.907	3.913	3.994	-	383.736
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	356.953	3.646	3.719	3.771	-	3.771	3.833	3.907	3.913	3.994	-	383.736

(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. 4551-4555). 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 2019 Base procurement dollars in the amount of \$3.771 million supports financial and marketing investments to attract revenue-producing tenants to locate on 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.