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

<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1508N: Procurement of Ammo, Navy & MC / BA 02: Proc Ammo, MC / BSA 1: Marine Corps Ammunition	<b>P-1 Line Item Number / Title:</b> 1650 / Artillery Munitions
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<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A	<b>Program Elements for Code B Items:</b> N/A	<b>Other Related Program Elements:</b> N/A
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**Line Item MDAP/MAIS Code:** N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	0.000	105.741	113.582	0.000	220.923	220.923	200.830	202.451	177.828	194.562	Continuing	Continuing
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	0.000	105.741	113.582	0.000	220.923	220.923	200.830	202.451	177.828	194.562	Continuing	Continuing
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority (<i>\$ in Millions</i>)</b>	<b>0.000</b>	<b>105.741</b>	<b>113.582</b>	<b>0.000</b>	<b>220.923</b>	<b>220.923</b>	<b>200.830</b>	<b>202.451</b>	<b>177.828</b>	<b>194.562</b>	<b>Continuing</b>	<b>Continuing</b>

*(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 2020 funding totals include \$0.0M for Base and \$220.923M for Overseas Contingency Operations (OCO); of which \$188.876M is realigned as part of the OCO for Base Requirements. FY 2020 OCO for Base Requirements is OCO funding for base budget requirements in support of the National Defense Strategy. The Budget requests these funds in OCO to comply with the base budget defense caps included in the Budget Control Act of 2011.

Beginning in FY18 this budget represents a consolidation of ammunition line items by functional capability.

The family of artillery munitions includes all 155mm artillery ammunition components. The 155mm artillery components are fired from M777 howitzers, and include: primer, propellant, projectile, and fuze. High explosive artillery ammunition is used against personnel, trucks, electronic surveillance and target acquisition devices, supply points, command and control and communications installations, and mechanized and armored forces. Precision-guided artillery provides accurate, first round fire-for-effect capability, and can achieve reduced collateral damage. Illumination cartridges are used to illuminate the battlefield with light either in visual or near Infrared Spectrum. Smoke cartridges are used to provide obscuration on the battlefield and to mark locations. Included are artillery fuzes such as; point detonating, multi-option, electronic time and precision guided.

Funds prior to FY18 are contained in line items 1473 and 1625.

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

**Appropriation / Budget Activity / Budget Sub Activity:**  
1508N: Procurement of Ammo, Navy & MC / BA 02: Proc Ammo, MC / BSA 1: Marine Corps Ammunition

**P-1 Line Item Number / Title:**  
1650 / Artillery Munitions

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

**Line Item MDAP/MAIS Code:** N/A

Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Artillery, All Types	P-5a, P-21			- / 0.000	- / 86.373	- / 99.986	- / 0.000	- / 144.342	- / 144.342
P-5	1 / Fuze, All Types	P-5a, P-21			- / 0.000	- / 19.368	- / 13.595	- / 0.000	- / 76.581	- / 76.581
<b>P-40</b>	<b>Total Gross/Weapon System Cost</b>				<b>- / 0.000</b>	<b>- / 105.741</b>	<b>- / 113.582</b>	<b>- / 0.000</b>	<b>- / 220.923</b>	<b>- / 220.923</b>

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

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

**Justification:**  
FY 2020 OCO for baseline funding will support the procurement of 155mm High Explosive (HE) M795 with IMX-101 (DODIC DA54). The DA54 is the prime round for the Light Weight 155mm Cannon/Howitzer/ Gun/Artillery piece. The funding will also support the procurement of the prime 155mm HE Training Projectile M1122E1 (DA68), 155mm White Phosphorus (WP) Smoke Projectile M825 (D528) and 155mm Propelling Charge (MACS) M232A2 (DODIC DA67).

FY 2020 funds are also required to support the procurement of artillery fuzes including the Point Detonation (PD) M739A1 (DODIC N340) and the Precision Guidance Kit (PGK) (DODIC NA29). The NA29 technology provides a first-of-its-kind "near-precision" capability. PGK contains a Global Positioning System (GPS) guidance kit with fuzing functions and an integrated GPS receiver to correct the inherent errors associated with ballistic firing solutions. The PGK capability is essential to providing commanders the ability to engage assigned targets while minimizing collateral damage and reducing the number of artillery projectiles required to attack targets.

The FY 2019 to FY 2020 budget increase is attributed to increased product buys to meet user demands, increased price of items procured as we transition to insensitive munitions such as DA54, and the procurement of like in kind artillery munitions.

OCO:  
FY 2020 Direct War OCO funding request of \$32.047M supports procurement of reset munitions 155mm propellant charge M232A2 (DA67), 155mm point detonating fuze M739A1 (N340), and 155mm Precision Guided Kit Fuze (NA29) expended in theater in support of Operation Inherent Resolve (OIR).

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy																Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1508N / 02 / 1						P-1 Line Item Number / Title: 1650 / Artillery Munitions						Aggregated Items Title: Artillery, All Types <sup>(1)</sup>								
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
<b>1) D528 Projectile, 155mm Smoke White Phosphorus M825</b>																				
1.1) D528 Hardware <sup>(†)</sup>	A		-	-	-	-	-	-	-	-	-	-	-	0.000	1,976.76	4,739	9.368	1,976.76	4,739	9.368
1.2) D528 Production Engineering	A		-	-	-	-	-	-	-	-	-	-	-	0.000	-	-	0.522	-	-	0.522
1.3) D528 Acceptance Testing	A		-	-	-	-	-	-	-	-	-	-	-	0.000	-	-	0.110	-	-	0.110
<b>Subtotal: 1) D528 Projectile, 155mm Smoke White Phosphorus M825</b>			-	-	<b>0.000</b>	-	-	-	-	-	-	-	-	<b>0.000</b>	-	-	<b>10.000</b>	-	-	<b>10.000</b>
<b>2) D528 M825 WP SMK</b>																				
2.1) D528 M825 Projectile Recap <sup>(†)</sup>	A		-	-	-	-	-	357.85	5,589	2.000	-	-	-	-	-	-	-	-	-	-
<b>Subtotal: 2) D528 M825 WP SMK</b>			-	-	<b>0.000</b>	-	-	-	-	<b>2.000</b>	-	-	-	-	-	-	-	-	-	-
<b>3) D529 155mm HE M795 w/TNT</b>																				
3.1) D529 M795 LAP <sup>(†)</sup>	A		-	-	-	148.39	71,669	10.635	-	-	-	-	-	-	-	-	-	-	-	-
3.2) D529 M795 Metal Parts <sup>(†)</sup>	A		-	-	-	380.69	73,102	27.829	-	-	-	-	-	-	-	-	-	-	-	-
3.3) D529 TNT Supplemental Charge <sup>(†)</sup>	A		-	-	-	12.36	73,102	0.903	-	-	-	-	-	-	-	-	-	-	-	-
3.4) D529 TNT TYPE I FLAKE (TRINITROTOLUENE) <sup>(†)</sup>	A		-	-	-	4.77	1,935,063	9.230	-	-	-	-	-	-	-	-	-	-	-	-
3.5) D529 Wooden Pallets <sup>(†)</sup>	A		-	-	-	95.77	9,317	0.892	-	-	-	-	-	-	-	-	-	-	-	-
3.6) D529 Production Engineering	A		-	-	-	-	-	1.409	-	-	-	-	-	-	-	-	-	-	-	-
3.7) D529 Acceptance Testing	A		-	-	-	-	-	0.625	-	-	-	-	-	-	-	-	-	-	-	-
<b>Subtotal: 3) D529 155mm HE M795 w/TNT</b>			-	-	<b>0.000</b>	-	-	<b>51.523</b>	-	-	-	-	-	-	-	-	-	-	-	-
<b>4) DA51 155mm HE Training Projectile M1122</b>																				
4.1) DA51 Load, Assemble & Pack (LAP) <sup>(†)</sup>	A		-	-	-	322.85	79,637	25.711	323.80	29,035	9.402	-	-	-	-	-	-	-	-	-
4.2) DA51 Wooden Pallet <sup>(†)</sup>	A		-	-	-	115.85	10,353	1.199	120.00	3,775	0.453	-	-	-	-	-	-	-	-	-
4.3) DA51 Supplemental Charge, PBXNg <sup>(†)</sup>	A		-	-	-	18.62	81,230	1.513	18.99	29,616	0.562	-	-	-	-	-	-	-	-	-

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy																	Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1508N / 02 / 1						P-1 Line Item Number / Title: 1650 / Artillery Munitions						Aggregated Items Title: Artillery, All Types <sup>(1)</sup>								
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
4.4) DA51 TNT Type I Flake <sup>(†)</sup>	A		-	-	-	4.77	238,911	1.140	4.87	87,105	0.424	-	-	-	-	-	-	-	-	-
4.5) DA51 Plug, Lifting, Meltable for IM <sup>(†)</sup>	A		-	-	-	7.90	81,230	0.642	8.06	29,616	0.239	-	-	-	-	-	-	-	-	-
4.6) DA51 Production Engineering	A		-	-	-	-	-	0.281	-	-	0.450	-	-	-	-	-	-	-	-	-
4.7) DA51 ACCEPTANCE TESTING	A		-	-	-	-	-	0.550	-	-	0.350	-	-	-	-	-	-	-	-	-
4.8) DA51 Government Furnished Material	A		-	-	-	-	-	-1.139	-	-	-	-	-	-	-	-	-	-	-	-
<b>Subtotal: 4) DA51 155mm HE Training Projectile M1122</b>			-	-	<b>0.000</b>	-	-	<b>29.897</b>	-	-	<b>11.880</b>	-	-	-	-	-	-	-	-	-
<b>5) DA54 155mm HE M795 W/IMX</b>																				
5.1) DA54 Load, Assemble, Pack (LAP) <sup>(†)</sup>	A		-	-	-	-	-	-	231.11	68,003	15.716	-	-	0.000	235.73	86,986	20.505	235.73	86,986	20.505
5.2) DA54 MELTABLE FUZE PLUG <sup>(†)</sup>	A		-	-	-	-	-	-	8.06	69,363	0.559	-	-	0.000	10.40	88,725	0.923	10.40	88,725	0.923
5.3) DA54 Explosive Fill IMX 104 <sup>(†)</sup>	A		-	-	-	-	-	-	22.34	68,003	1.519	-	-	0.000	22.78	86,986	1.982	22.78	86,986	1.982
5.4) DA54 Supplementary Charge, PBXNG <sup>(†)</sup>	A		-	-	-	-	-	-	18.99	69,363	1.318	-	-	0.000	19.37	88,725	1.719	19.37	88,725	1.719
5.5) DA54 Wooden Pallets <sup>(†)</sup>	A		-	-	-	-	-	-	120.00	8,839	1.060	-	-	0.000	122.39	11,307	1.384	122.39	11,307	1.384
5.6) DA54 Explosive Fill IMX-101 <sup>(†)</sup>	A		-	-	-	-	-	-	14.99	2,244,124	33.639	-	-	0.000	16.48	2,870,538	47.306	16.48	2,870,538	47.306
5.7) DA54 M795 IM Metal Part <sup>(†)</sup>	A		-	-	-	-	-	-	436.92	69,363	30.306	-	-	0.000	437.85	88,725	38.848	437.85	88,725	38.848
5.8) DA54 Production Engineering			-	-	-	-	-	-	-	-	1.676	-	-	0.000	-	-	2.122	-	-	2.122
5.9) DA54 Acceptance Testing			-	-	-	-	-	-	-	-	0.313	-	-	0.000	-	-	0.459	-	-	0.459
<b>Subtotal: 5) DA54 155mm HE M795 W/IMX</b>			-	-	<b>0.000</b>	-	-	-	-	-	<b>86.106</b>	-	-	<b>0.000</b>	-	-	<b>115.248</b>	-	-	<b>115.248</b>
<b>6) DA58 155mm Extended Range, M982 Excalibur 1B</b>																				
6.1) DA58 Complete Round <sup>(†)</sup>	A		-	-	-	65,678.32	69	4.532	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy																Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1508N / 02 / 1						P-1 Line Item Number / Title: 1650 / Artillery Munitions						Aggregated Items Title: Artillery, All Types <sup>(1)</sup>								
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
6.2) DA58 Container Excalibur <sup>(†)</sup>	A		-	-	-	2,100.00	69	0.145	-	-	-	-	-	-	-	-	-	-	-	-
6.3) DA58 Production Engineering	A		-	-	-	-	-	0.276	-	-	-	-	-	-	-	-	-	-	-	-
<b>Subtotal: 6) DA58 155mm Extended Range, M982 Excalibur 1B</b>			-	-	<b>0.000</b>	-	-	<b>4.953</b>	-	-	-	-	-	-	-	-	-	-	-	-
<b>8) DA68, 155mm HE IM Training M1122A1</b>																				
8.1) DA68 Load, Assemble, Pack (LAP) <sup>(†)</sup>	A		-	-	-	-	-	-	-	-	-	-	-	0.000	150.00	20,162	3.024	150.00	20,162	3.024
8.2) DA68 Metal Parts - M1122A1 <sup>(†)</sup>	A		-	-	-	-	-	-	-	-	-	-	-	0.000	338.13	20,565	6.954	338.13	20,565	6.954
8.3) DA68 Supplemental Charge, PBXN9 <sup>(†)</sup>	A		-	-	-	-	-	-	-	-	-	-	-	0.000	19.37	20,565	0.398	19.37	20,565	0.398
8.4) DA68 Plug, Lifting, Meltable For IM <sup>(†)</sup>	A		-	-	-	-	-	-	-	-	-	-	-	0.000	10.40	20,565	0.214	10.40	20,565	0.214
8.5) DA68 Explosive Fill IMX-104 <sup>(†)</sup>	A		-	-	-	-	-	-	-	-	-	-	-	0.000	22.78	80,648	1.837	22.78	80,648	1.837
8.6) DA68 Wooden Pallet, IMX <sup>(†)</sup>	A		-	-	-	-	-	-	-	-	-	-	-	0.000	122.39	2,621	0.321	122.39	2,621	0.321
8.7) DA68 Production Engineering	A		-	-	-	-	-	-	-	-	-	-	-	0.000	-	-	0.261	-	-	0.261
8.8) DA68 Acceptance Testing	A		-	-	-	-	-	-	-	-	-	-	-	0.000	-	-	0.053	-	-	0.053
<b>Subtotal: 8) DA68, 155mm HE IM Training M1122A1</b>			-	-	<b>0.000</b>	-	-	-	-	-	-	-	-	<b>0.000</b>	-	-	<b>13.062</b>	-	-	<b>13.062</b>
<b>9) DA67, Chg Prop 155mm (MACS) M232A2</b>																				
9.1) DA67 Load, Assemble, Pack (LAP) <sup>(†)</sup>	A		-	-	-	-	-	-	-	-	-	-	-	0.000	53.25	28,114	1.497	53.25	28,114	1.497
9.2) DA67, Propellant, M31A2 <sup>(†)</sup>	A		-	-	-	-	-	-	-	-	-	-	-	0.000	20.31	135,509	2.752	20.31	135,509	2.752
9.3) DA67 Container, M232A1 <sup>(†)</sup>	A		-	-	-	-	-	-	-	-	-	-	-	0.000	62.15	5,903	0.367	62.15	5,903	0.367
9.4) DA67 Combustable Cases M232A1 <sup>(†)</sup>	A		-	-	-	-	-	-	-	-	-	-	-	0.000	44.67	28,957	1.293	44.67	28,957	1.293
9.5) DA67 Ignition Propellant, MACS <sup>(†)</sup>	A		-	-	-	-	-	-	-	-	-	-	-	0.000	11.30	1,828	0.021	11.30	1,828	0.021

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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items:</b> PB 2020 Navy															<b>Date:</b> March 2019					
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1508N / 02 / 1					<b>P-1 Line Item Number / Title:</b> 1650 / Artillery Munitions										<b>Aggregated Items Title:</b> Artillery, All Types <sup>(1)</sup>					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
9.6) DA67 Production Engineering	A		-	-	-	-	-	-	-	-	-	-	-	0.000	-	-	0.060	-	-	0.060
9.7) DA67 Acceptance Testing	A		-	-	-	-	-	-	-	-	-	-	-	0.000	-	-	0.042	-	-	0.042
<b>Subtotal: 9) DA67, Chg Prop 155mm (MACS) M232A2</b>			-	-	<b>0.000</b>	-	-	-	-	-	-	-	-	<b>0.000</b>	-	-	<b>6.032</b>	-	-	<b>6.032</b>
<b>Total</b>			-	-	<b>0.000</b>	-	-	<b>86.373</b>	-	-	<b>99.986</b>	-	-	<b>0.000</b>	-	-	<b>144.342</b>	-	-	<b>144.342</b>

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

(†) indicates the presence of a P-5a

**Footnotes:**

<sup>(1)</sup> Pricing is provided by the Army Single Manager for Conventional Ammunition (SMCA) and incorporates other service buys.

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1508N / 02 / 1				P-1 Line Item Number / Title: 1650 / Artillery Munitions				Aggregated Items: Artillery, All Types <sup>(1)</sup>				
Item Number / Title [DODIC]	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
<b>1) D528 Projectile, 155mm Smoke White Phosphorus M825</b>												
1.1) D528 Hardware <sup>(†)</sup>	✓	2020	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	PICATINNY ARSENAL, NJ	Jan 2020	Jul 2022	4,739	1,976.76	N	Jan 2020	
<b>2) D528 M825 WP SMK</b>												
2.1) D528 M825 Projectile Recap		2019	PINE BLUFF ARSENAL / PINE BLUFF, AR	PO	ROCK ISLAND ARSENAL, IL	Oct 2018	Oct 2020	5,589	357.85	Y		
<b>3) D529 155mm HE M795 w/TNT</b>												
3.1) D529 M795 LAP <sup>(†)</sup>		2018	AMERICAN ORDANCE / MIDDLETOWN, IA	C / FFP	ROCK ISLAND ARSENAL, IL	May 2018	May 2020	65,467	148.39	Y		
3.1) D529 M795 LAP <sup>(†)</sup>	✓	2018	AMERICAN ORDANCE / MIDDLETOWN, IA	C / FFP	ROCK ISLAND ARSENAL, IL	May 2018	May 2020	6,202	148.39	Y		
3.2) D529 M795 Metal Parts <sup>(†)</sup>		2018	MEDICO INDUSTRIES / WILKES-BARRE, PA	C / IDDQ	PICATINNY ARSENAL, NJ	Aug 2018	Feb 2020	66,776	380.69	Y		
3.2) D529 M795 Metal Parts <sup>(†)</sup>	✓	2018	MEDICO INDUSTRIES / WILKES-BARRE, PA	C / IDDQ	PICATINNY ARSENAL, NJ	Aug 2018	Feb 2020	6,326	380.69	Y		
3.3) D529 TNT Supplemental Charge		2018	CHEMRING ORDNANCE, INC. / PERRY,FL	C / FFP	ROCK ISLAND ARSENAL, IL	Jan 2018	Jul 2019	66,776	12.36	Y		
3.3) D529 TNT Supplemental Charge	✓	2018	CHEMRING ORDNANCE, INC. / PERRY,FL	C / FFP	ROCK ISLAND ARSENAL, IL	Jan 2018	Jul 2019	6,326	12.36	Y		
3.4) D529 TNT TYPE I FLAKE (TRINITROTOLUENE)		2018	AMERICAN ORDANCE / MIDDLETOWN, IA	C / FFP	ROCK ISLAND ARSENAL, IL	Sep 2018	Sep 2019	1,767,609	4.77	Y		
3.4) D529 TNT TYPE I FLAKE (TRINITROTOLUENE)	✓	2018	AMERICAN ORDANCE / MIDDLETOWN, IA	C / FFP	ROCK ISLAND ARSENAL, IL	Sep 2018	Sep 2019	167,454	4.77	Y		
3.5) D529 Wooden Pallets		2018	KNOX CNTY ASSOC RETARDED CITIZENS / VINCENNES, IN	C / FFP	ROCK ISLAND ARSENAL, IL	Oct 2018	Apr 2020	8,511	95.77	Y		
3.5) D529 Wooden Pallets	✓	2018	KNOX CNTY ASSOC RETARDED CITIZENS / VINCENNES, IN	C / FFP	ROCK ISLAND ARSENAL, IL	Oct 2018	Apr 2020	806	95.77	Y		
<b>4) DA51 155mm HE Training Projectile M1122</b>												
4.1) DA51 Load, Assemble & Pack (LAP) <sup>(†)</sup>		2018	CRANE ARMY AMMUNITION ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Jan 2018	Aug 2020	79,637	322.85	Y		
4.1) DA51 Load, Assemble & Pack (LAP) <sup>(†)</sup>		2019	CRANE ARMY AMMUNITION ACTIVITY / CRANE, IN	PO	PICATINNY ARSENAL, NJ	Jan 2019	Jan 2021	29,035	323.80	Y		
4.2) DA51 Wooden Pallet		2018	KNOX CNTY ASSOC RETARDED CITIZENS / VINCENNES, IN	C / FFP	ROCK ISLAND ARSENAL, IL	Jun 2018	Jun 2019	10,353	115.85	Y		
4.2) DA51 Wooden Pallet		2019	KNOX CNTY ASSOC RETARDED CITIZENS / VINCENNES, IN	C / FFP	ROCK ISLAND ARSENAL, IL	Jan 2019	Jan 2020	3,775	120.00	Y		
4.3) DA51 Supplemental Charge, PBXN9		2018	CHEMRING ORDNANCE, INC. / PERRY,FL	C / IDIQ	ROCK ISLAND ARSENAL, IL	Jan 2018	Jan 2019	81,230	18.62	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1508N / 02 / 1				P-1 Line Item Number / Title: 1650 / Artillery Munitions				Aggregated Items: Artillery, All Types <sup>(1)</sup>				
Item Number / Title [DODIC]	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
4.3) DA51 Supplemental Charge, PBXN9		2019	TO BE SELECTED / UNKNOWN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	29,616	18.99	Y		
4.4) DA51 TNT Type I Flake		2018	GOVERNMENT FURNISHED MATERIAL / TBD	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2018	Mar 2018	238,911	4.77	Y		
4.4) DA51 TNT Type I Flake		2019	TO BE SELECTED / UNKNOWN	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Sep 2020	87,105	4.87	Y		
4.5) DA51 Plug, Lifting, Meltable for IM		2018	POLYMER TECHNOLOGIES, INC / CLIFTON,NJ	C / FFP	PICATINNY ARSENAL, NJ	Oct 2018	Nov 2019	81,230	7.90	Y		
4.5) DA51 Plug, Lifting, Meltable for IM		2019	RTI TECHNOLOGIES / COLUMBIA, CT.	C / FFP	PICATINNY ARSENAL, NJ	Aug 2019	Feb 2020	29,616	8.06	Y		
<b>5) DA54 155mm HE M795 W/IMX</b>												
5.1) DA54 Load, Assemble, Pack (LAP) <sup>(†)</sup>		2019	AMERICAN ORDNANCE / MIDDLETOWN, IA	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Mar 2022	43,039	231.11	Y		
5.1) DA54 Load, Assemble, Pack (LAP) <sup>(†)</sup>	✓	2019	AMERICAN ORDNANCE / MIDDLETOWN, IA	C / FFP	ROCK ISLAND ARSENAL, IL	Mar 2019	Mar 2022	24,964	231.11	Y		
5.1) DA54 Load, Assemble, Pack (LAP) <sup>(†)</sup>	✓	2020	AMERICAN ORDNANCE / MIDDLETOWN, IA	C / FFP	ROCK ISLAND ARSENAL, IL	May 2020	May 2023	86,986	235.73	Y		
5.2) DA54 MELTABLE FUZE PLUG		2019	TO BE SELECTED / UNKNOWN	C / FFP	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	43,900	8.06	Y		
5.2) DA54 MELTABLE FUZE PLUG	✓	2019	TO BE SELECTED / UNKNOWN	C / FFP	PICATINNY ARSENAL, NJ	Mar 2019	Sep 2020	25,463	8.06	Y		
5.2) DA54 MELTABLE FUZE PLUG	✓	2020	TO BE SELECTED / UNKNOWN	C / FFP	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	88,725	10.40	Y		
5.3) DA54 Explosive Fill IMX 104		2019	BAE ORDNANCE SYSTEMS / KINDSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Jun 2019	Dec 2020	43,039	22.34	Y		
5.3) DA54 Explosive Fill IMX 104	✓	2019	BAE ORDNANCE SYSTEMS / KINDSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Jun 2019	Dec 2020	24,964	22.34	Y		
5.3) DA54 Explosive Fill IMX 104	✓	2020	BAE ORDNANCE SYSTEMS / KINDSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	86,986	22.78	Y		
5.4) DA54 Supplementary Charge, PBXN9		2019	TO BE SELECTED / UNKNOWN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2019	Aug 2020	43,900	18.99	Y		
5.4) DA54 Supplementary Charge, PBXN9	✓	2019	TO BE SELECTED / UNKNOWN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2019	Aug 2020	25,463	18.99	Y		
5.4) DA54 Supplementary Charge, PBXN9	✓	2020	TO BE SELECTED / UNKNOWN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	88,725	19.37	Y		
5.5) DA54 Wooden Pallets		2019	TO BE SELECTED / UNKNOWN	SS / FFP	ROCK ISLAND ARSENAL, IL	Aug 2019	Aug 2020	5,594	120.00	Y		
5.5) DA54 Wooden Pallets	✓	2019	TO BE SELECTED / UNKNOWN	SS / FFP	ROCK ISLAND ARSENAL, IL	Aug 2019	Aug 2020	3,245	120.00	Y		



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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1508N / 02 / 1				P-1 Line Item Number / Title: 1650 / Artillery Munitions						Aggregated Items: Artillery, All Types <sup>(1)</sup>			
Item Number / Title [DODIC]	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	
5.5) DA54 Wooden Pallets	✓	2020	TO BE SELECTED / UNKNOWN	SS / FFP	ROCK ISLAND ARSENAL, IL	Feb 2020	Feb 2021	11,307	122.39	Y			
5.6) DA54 Explosive Fill IMX-101 <sup>(ft)</sup>		2019	BAE ORDNANCE SYSTEMS / KINGSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Jun 2019	Oct 2021	1,420,312	14.99	Y			
5.6) DA54 Explosive Fill IMX-101 <sup>(ft)</sup>	✓	2019	BAE ORDNANCE SYSTEMS / KINGSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Jun 2019	Oct 2021	823,812	14.99	Y			
5.6) DA54 Explosive Fill IMX-101 <sup>(ft)</sup>	✓	2020	BAE ORDNANCE SYSTEMS / KINGSPORT, TN	C / IDDQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Jun 2022	2,870,538	16.48	Y			
5.7) DA54 M795 IM Metal Part		2019	TO BE SELECTED / UNKNOWN	C / IDIQ	PICATINNY ARSENAL, NJ	Aug 2019	Apr 2021	43,900	436.92	Y			
5.7) DA54 M795 IM Metal Part	✓	2019	TO BE SELECTED / UNKNOWN	C / IDIQ	PICATINNY ARSENAL, NJ	Aug 2019	Apr 2021	25,463	436.92	Y			
5.7) DA54 M795 IM Metal Part	✓	2020	TO BE SELECTED / UNKNOWN	C / IDIQ	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	88,725	437.85	Y			
<b>6) DA58 155mm Extended Range, M982 Excalibur 1B</b>													
6.1) DA58 Complete Round	✓	2018	Raytheon Missile Systems / Tucson, AZ	C / FFP	PICATINNY ARSENAL, NJ	Jan 2018	Jan 2019	69	65,678.32	Y			
6.2) DA58 Container Excalibur	✓	2018	Raytheon Missile Systems / Tucson, AZ	C / FFP	PICATINNY ARSENAL, NJ	Jan 2018	Aug 2019	69	2,100.00	Y			
<b>8) DA68, 155mm HE IM Training M1122A1</b>													
8.1) DA68 Load, Assemble, Pack (LAP)	✓	2020	TO BE SELECTED / UNKNOWN	C / IDDQ	PICATINNY ARSENAL, NJ	May 2020	Sep 2022	20,162	150.00	Y			
8.2) DA68 Metal Parts - M1122A1	✓	2020	TO BE SELECTED / UNKNOWN	C / IDIQ	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	20,565	338.13	Y			
8.3) DA68 Supplemental Charge, PBXN9	✓	2020	TO BE SELECTED / UNKNOWN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	20,565	19.37	Y			
8.4) DA68 Plug, Lifting, Meltable For IM	✓	2020	TO BE SELECTED / UNKNOWN	C / FFP	PICATINNY ARSENAL, NJ	Feb 2020	Aug 2021	20,565	10.40	Y			
8.5) DA68 Explosive Fill IMX-104	✓	2020	BAE ORDNANCE SYSTEMS / KINGSPORT, TN	C / IDIQ	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2022	80,648	22.78	Y			
8.6) DA68 Wooden Pallet, IMX	✓	2020	TO BE SELECTED / UNKNOWN	SS / FFP	ROCK ISLAND ARSENAL, IL	Feb 2020	Aug 2021	2,621	122.39	Y			
<b>9) DA67, Chg Prop 155mm (MACS) M232A2</b>													
9.1) DA67 Load, Assemble, Pack (LAP)	✓	2020	TO BE SELECTED / UNKNOWN	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2020	Mar 2022	28,114	53.25	Y			
9.2) DA67, Propellant, M31A2	✓	2020	TO BE SELECTED / unknown	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2020	Nov 2021	135,509	20.31	Y			
9.3) DA67 Container, M232A1	✓	2020	TO BE SELECTED / UNKNOWN	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2020	Mar 2021	5,903	62.15	Y			

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**Exhibit P-5a, Procurement History and Planning:** PB 2020 Navy **Date:** March 2019

<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1508N / 02 / 1	<b>P-1 Line Item Number / Title:</b> 1650 / Artillery Munitions	<b>Aggregated Items:</b> Artillery, All Types <sup>(1)</sup>
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Item Number / Title [DODIC]	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
9.4) DA67 Combustable Cases M232A1	✓	2020	TO BE SELECTED / UNKNOWN	C / IDIQ	PICATINNY ARSENAL, NJ	Mar 2020	Mar 2021	28,957	44.67	Y		
9.5) DA67 Ignition Propellant, MACS	✓	2020	TO BE SELECTED / UNKNOWN	C / FFP	PICATINNY ARSENAL, NJ	Mar 2020	Mar 2021	1,828	11.30	Y		

<sup>(†)</sup> indicates the presence of a P-21

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**Exhibit P-21, Production Schedule: PB 2020 Navy** **Date:** March 2019

<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1508N / 02 / 1	<b>P-1 Line Item Number / Title:</b> 1650 / Artillery Munitions	<b>Aggregated Items:</b> Artillery, All Types <sup>(1)</sup>
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Items <i>(Units in Millions, * = &lt; 500)</i>					Fiscal Year 2018													Fiscal Year 2019													BALANCE		
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	Calendar Year 2018													Calendar Year 2019													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			
<b>1) D528 Projectile, 155mm Smoke White Phosphorus M825</b>																																	
1.1) D528 Hardware																																	
✓	27	2020	NAVY	.005	.000	.005																											
<b>3) D529 155mm HE M795 w/TNT</b>																																	
3.1) D529 M795 LAP																																	
	28	2018	NAVY	.065	.000	.065																							.065				
✓	28	2018	NAVY	.006	.000	.006																							.006				
3.2) D529 M795 Metal Parts																																	
	29	2018	NAVY	.067	.000	.067																							.067				
✓	29	2018	NAVY	.006	.000	.006																							.006				
<b>4) DA51 155mm HE Training Projectile M1122</b>																																	
4.1) DA51 Load, Assemble & Pack (LAP)																																	
	30	2018	NAVY	.080	.000	.080																							.080				
	30	2019	NAVY	.029	.000	.029																							.029				
<b>5) DA54 155mm HE M795 W/IMX</b>																																	
5.1) DA54 Load, Assemble, Pack (LAP)																																	
	31	2019	NAVY	.043	.000	.043																							.043				
✓	31	2019	NAVY	.025	.000	.025																							.025				
✓	31	2020	NAVY	.087	.000	.087																							.087				
5.6) DA54 Explosive Fill IMX-101																																	
	32	2019	NAVY	1.420	.000	1.420																							1.420				
✓	32	2019	NAVY	.824	.000	.824																							.824				
✓	32	2020	NAVY	2.871	.000	2.871																							2.871				
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			

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**Exhibit P-21, Production Schedule: PB 2020 Navy** **Date:** March 2019

**Appropriation / Budget Activity / Budget Sub Activity:** 1508N / 02 / 1 **P-1 Line Item Number / Title:** 1650 / Artillery Munitions **Aggregated Items:** Artillery, All Types <sup>(1)</sup>

Items <i>(Units in Millions, * = &lt; 500)</i>					Fiscal Year 2020													Fiscal Year 2021													BALANCE		
O C O #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	Calendar Year 2020													Calendar Year 2021													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			
<b>1) D528 Projectile, 155mm Smoke White Phosphorus M825</b>																																	
1.1) D528 Hardware																																	
✓	27	2020	NAVY	.005	.000	.005				A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.005					
<b>3) D529 155mm HE M795 w/TNT</b>																																	
3.1) D529 M795 LAP																																	
	28	2018	NAVY	.065	.000	.065	-	-	-	-	-	-	-	.014	.016	.016	.012	.008										.000					
✓	28	2018	NAVY	.006	.000	.006	-	-	-	-	-	-	-	.006														.000					
3.2) D529 M795 Metal Parts																																	
	29	2018	NAVY	.067	.000	.067	-	-	-	-	.018	.018	.014	.017														.000					
✓	29	2018	NAVY	.006	.000	.006	-	-	-	-	.003	.002	.002															.000					
<b>4) DA51 155mm HE Training Projectile M1122</b>																																	
4.1) DA51 Load, Assemble & Pack (LAP)																																	
	30	2018	NAVY	.080	.000	.080	-	-	-	-	-	-	-	-	-	.013	.013	.013	.013	.013	.010	.005						.000					
	30	2019	NAVY	.029	.000	.029	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.003	.008	.010	.008				.000					
<b>5) DA54 155mm HE M795 W/IMX</b>																																	
5.1) DA54 Load, Assemble, Pack (LAP)																																	
	31	2019	NAVY	.043	.000	.043	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.043					
✓	31	2019	NAVY	.025	.000	.025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.025					
✓	31	2020	NAVY	.087	.000	.087								A	-	-	-	-	-	-	-	-	-	-	-	-	-	.087					
5.6) DA54 Explosive Fill IMX-101																																	
	32	2019	NAVY	1.420	.000	1.420	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.420					
✓	32	2019	NAVY	.824	.000	.824	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.824					
✓	32	2020	NAVY	2.871	.000	2.871								A	-	-	-	-	-	-	-	-	-	-	-	-	-	2.871					
							O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S			
							C	O	E	A	E	A	P	A	U	U	U	E	C	O	V	E	A	E	A	P	A	U	U	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 2020 Navy** **Date:** March 2019

<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1508N / 02 / 1	<b>P-1 Line Item Number / Title:</b> 1650 / Artillery Munitions	<b>Aggregated Items:</b> Artillery, All Types <sup>(1)</sup>
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Items <i>(Units in Millions, * = &lt; 500)</i>					Fiscal Year 2022												Fiscal Year 2023												BALANCE		
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	Calendar Year 2022												Calendar Year 2023												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L		A U G	S E P
<b>1) D528 Projectile, 155mm Smoke White Phosphorus M825</b>																															
1.1) D528 Hardware																															
✓	27	2020	NAVY	.005	.000	.005	-	-	-	-	-	-	-	-	-	.005													.000		
<b>3) D529 155mm HE M795 w/TNT</b>																															
3.1) D529 M795 LAP																															
	28	2018	NAVY	.065	.065	.000																						.000			
✓	28	2018	NAVY	.006	.006	.000																						.000			
3.2) D529 M795 Metal Parts																															
	29	2018	NAVY	.067	.067	.000																						.000			
✓	29	2018	NAVY	.006	.006	.000																						.000			
<b>4) DA51 155mm HE Training Projectile M1122</b>																															
4.1) DA51 Load, Assemble & Pack (LAP)																															
	30	2018	NAVY	.080	.080	.000																						.000			
	30	2019	NAVY	.029	.029	.000																						.000			
<b>5) DA54 155mm HE M795 W/IMX</b>																															
5.1) DA54 Load, Assemble, Pack (LAP)																															
	31	2019	NAVY	.043	.000	.043	-	-	-	-	-	.005	.005	.005	.005	.005	.005	.010	.003									.000			
✓	31	2019	NAVY	.025	.000	.025	-	-	-	-	-	.005	.005	.005	.005	.005												.000			
✓	31	2020	NAVY	.087	.000	.087	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.010	.010	.010	.013	.013	.031
5.6) DA54 Explosive Fill IMX-101																															
	32	2019	NAVY	1.420	.000	1.420	.250	.250	.250	.250	.250	.170																.000			
✓	32	2019	NAVY	.824	.000	.824	.250	.250	.324																			.000			
✓	32	2020	NAVY	2.871	.000	2.871	-	-	-	-	-	-	-	.250	.250	.250	.250	.250	.250	.500	.500	.371						.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 2020 Navy** **Date:** March 2019

<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1508N / 02 / 1	<b>P-1 Line Item Number / Title:</b> 1650 / Artillery Munitions	<b>Aggregated Items:</b> Artillery, All Types <sup>(1)</sup>
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Items <i>(Units in Millions, * = &lt; 500)</i>					Fiscal Year 2024													Fiscal Year 2025												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 2 3	B A L D U E A S O F 1 O C T	Calendar Year 2024													Calendar Year 2025												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P	
<b>1) D528 Projectile, 155mm Smoke White Phosphorus M825</b>																																
1.1) D528 Hardware																																
✓	27	2020	NAVY	.005	.005	.000																								.000		
<b>3) D529 155mm HE M795 w/TNT</b>																																
3.1) D529 M795 LAP																																
	28	2018	NAVY	.065	.065	.000																							.000			
✓	28	2018	NAVY	.006	.006	.000																							.000			
3.2) D529 M795 Metal Parts																																
	29	2018	NAVY	.067	.067	.000																							.000			
✓	29	2018	NAVY	.006	.006	.000																							.000			
<b>4) DA51 155mm HE Training Projectile M1122</b>																																
4.1) DA51 Load, Assemble & Pack (LAP)																																
	30	2018	NAVY	.080	.080	.000																							.000			
	30	2019	NAVY	.029	.029	.000																							.000			
<b>5) DA54 155mm HE M795 W/IMX</b>																																
5.1) DA54 Load, Assemble, Pack (LAP)																																
	31	2019	NAVY	.043	.043	.000																							.000			
✓	31	2019	NAVY	.025	.025	.000																							.000			
✓	31	2020	NAVY	.087	.056	.031	.013	.013	.005																				.000			
5.6) DA54 Explosive Fill IMX-101																																
	32	2019	NAVY	1.420	1.420	.000																							.000			
✓	32	2019	NAVY	.824	.824	.000																							.000			
✓	32	2020	NAVY	2.871	2.871	.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 2020 Navy **Date:** March 2019

<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1508N / 02 / 1	<b>P-1 Line Item Number / Title:</b> 1650 / Artillery Munitions	<b>Aggregated Items:</b> Artillery, All Types <sup>(1)</sup>
---------------------------------------------------------------------------------	--------------------------------------------------------------------	-----------------------------------------------------------------

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	PINE BLUFF ARSENAL - PINE BLUFF, AR	9,000	12,000	15,000	6	4	30	34	6	4	30	34
2	AMERICAN ORDANCE - MIDDLETOWN, IA	8,100	16,000	20,000	11	11	24	35	6	6	24	30
3	MEDICO INDUSTRIES - WILKES-BARRE, PA	10,000	35,000	40,000	11	11	12	23	6	6	12	18
4	CRANE ARMY AMMUNITION ACTIVITY - CRANE, IN	5,000	13,000	30,000	6	6	24	30	6	6	24	30
5	AMERICAN ORDANCE - MIDDLETOWN, IA	81,000	130,000	200,000	8	8	36	44	8	8	36	44
6	BAE ORDANCE SYSTEMS - KINGSPORT, TN			TBD	0	0	0	0	0	0	0	0

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

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

**UNCLASSIFIED**

<b>Exhibit P-5, Cost Analysis: PB 2020 Navy</b>		<b>Date:</b> March 2019
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1508N / O2 / 1		<b>P-1 Line Item Number / Title:</b> 1650 / Artillery Munitions
		<b>Item Number / Title [DODIC]:</b> 1 / Fuze, All Types

<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :	<b>MDAP/MAIS Code:</b>
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<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020 Base</b>	<b>FY 2020 OCO</b>	<b>FY 2020 Total</b>
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	0.000	19.368	13.595	0.000	76.581	76.581
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	0.000	19.368	13.595	0.000	76.581	76.581
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
<b>Total Obligation Authority (\$ in Millions)</b>	<b>0.000</b>	<b>19.368</b>	<b>13.595</b>	<b>0.000</b>	<b>76.581</b>	<b>76.581</b>

*(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 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
<b>Hardware - N340 Fuze Point Detonating M739A1 Cost</b>																		
Recurring Cost																		
1.1.1) N340 Complete Fuze <sup>(†)</sup>	-	-	0.000	71.93	4,576	0.329	-	-	0.000	-	-	0.000	74.84	198,567	14.861	74.84	198,567	14.861
1.1.2) N340 Productiong Engineering	-	-	0.000	-	-	0.162	-	-	0.000	-	-	0.000	-	-	0.999	-	-	0.999
1.1.3) N340 Acceptance Testing	-	-	0.000	-	-	0.011	-	-	0.000	-	-	0.000	-	-	0.800	-	-	0.800
<i>Subtotal: Recurring Cost</i>	-	-	0.000	-	-	0.502	-	-	0.000	-	-	0.000	-	-	16.660	-	-	16.660
<i>Subtotal: Hardware - N340 Fuze Point Detonating M739A1 Cost</i>	-	-	0.000	-	-	0.502	-	-	0.000	-	-	0.000	-	-	16.660	-	-	16.660
<b>Hardware - NA29 Precisiong Guided Kit (NPGK) Cost</b>																		
Recurring Cost																		
2.1.1) NA29 Complete Fuze <sup>(†)</sup>	-	-	0.000	6,821.92	2,418	16.496	6,934.14	1,593	11.046	-	-	0.000	7,286.95	7,631	55.607	7,286.95	7,631	55.607
2.1.2) NA29 Production Engineering	-	-	0.000	-	-	1.010	-	-	1.247	-	-	0.000	-	-	1.287	-	-	1.287
2.1.3) NA29 PGK NET SUPPORT	-	-	0.000	-	-	0.500	-	-	0.205	-	-	0.000	-	-	1.698	-	-	1.698
<i>Subtotal: Recurring Cost</i>	-	-	0.000	-	-	18.006	-	-	12.498	-	-	0.000	-	-	58.592	-	-	58.592
Non Recurring Cost																		



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<b>Exhibit P-5, Cost Analysis: PB 2020 Navy</b>		<b>Date:</b> March 2019
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1508N / 02 / 1	<b>P-1 Line Item Number / Title:</b> 1650 / Artillery Munitions	<b>Item Number / Title [DODIC]:</b> 1 / Fuze, All Types
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :		<b>MDAP/MAIS Code:</b>

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

Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
2.2.1) NA29 DOTC GPS Obsolesc.	-	-	0.000	-	-	0.186	-	-	0.671	-	-	0.000	-	-	1.329	-	-	1.329
2.2.2) NA29 Melody II Qual	-	-	0.000	-	-	0.235	-	-	0.132	-	-	0.000	-	-	0.000	-	-	0.000
2.2.3) NA29 CINCO Buy	-	-	0.000	-	-	0.101	-	-	0.060	-	-	0.000	-	-	0.000	-	-	0.000
2.2.4) NA29 MELODY ASIC II Chip	-	-	0.000	-	-	0.338	-	-	0.234	-	-	0.000	-	-	0.000	-	-	0.000
<i>Subtotal: Non Recurring Cost</i>	-	-	0.000	-	-	0.860	-	-	1.097	-	-	0.000	-	-	1.329	-	-	1.329
<i>Subtotal: Hardware - NA29 Precision Guided Kit (NPGK) Cost</i>	-	-	0.000	-	-	18.866	-	-	13.595	-	-	0.000	-	-	59.921	-	-	59.921
<b>Gross/Weapon System Cost</b>	-	-	0.000	-	-	19.368	-	-	13.595	-	-	0.000	-	-	76.581	-	-	76.581

**Remarks:**

Pricing is provided by the Army Single Manager for Conventional Ammunition (SMCA) and incorporates other service buys.

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

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**Exhibit P-5a, Procurement History and Planning: PB 2020 Navy** **Date:** March 2019

<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1508N / 02 / 1	<b>P-1 Line Item Number / Title:</b> 1650 / Artillery Munitions	<b>Item Number / Title [DODIC]:</b> 1 / Fuze, All Types
---------------------------------------------------------------------------------	--------------------------------------------------------------------	------------------------------------------------------------

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
1.1.1) N340 Complete Fuze <sup>(†)</sup>		2018	ACTION MANUFACTURING INC / Bristol, PA	C / IDIQ	PICATINNY ARSENAL, NJ	Nov 2018	Nov 2021	4,576	71.93	Y		
1.1.1) N340 Complete Fuze <sup>(†)</sup>	✓	2020	ACTION MANUFACTURING INC / Bristol, PA	C / IDIQ	PICATINNY ARSENAL, NJ	Aug 2020	Aug 2023	198,567	74.84	Y		
2.1.1) NA29 Complete Fuze <sup>(†)</sup>		2018	NORTHROP GRUMMAN INNOVATION SYSTEMS / PLYMOUTH, MN	SS / FFP	PICATINNY ARSENAL, NJ	Mar 2018	Mar 2020	2,304	6,821.92	Y		
2.1.1) NA29 Complete Fuze <sup>(†)</sup>	✓	2018	NORTHROP GRUMMAN INNOVATION SYSTEMS / PLYMOUTH, MN	SS / FFP	PICATINNY ARSENAL, NJ	Mar 2018	Mar 2020	114	6,821.92	Y		
2.1.1) NA29 Complete Fuze <sup>(†)</sup>		2019	NORTHROP GRUMMAN INNOVATION SYSTEMS / PLYMOUTH, MN	SS / FFP	PICATINNY ARSENAL, NJ	Mar 2019	Mar 2021	1,593	6,934.14	Y		
2.1.1) NA29 Complete Fuze <sup>(†)</sup>	✓	2020	NORTHROP GRUMMAN INNOVATION SYSTEMS / PLYMOUTH, MN	SS / FFP	PICATINNY ARSENAL, NJ	Mar 2020	Mar 2022	7,631	7,286.95	Y		

<sup>(†)</sup> indicates the presence of a P-21

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**Exhibit P-21, Production Schedule:** PB 2020 Navy **Date:** March 2019

**Appropriation / Budget Activity / Budget Sub Activity:** 1508N / 02 / 1 **P-1 Line Item Number / Title:** 1650 / Artillery Munitions **Item Number / Title [DODIC]:** 1 / Fuze, All Types

Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2018												Fiscal Year 2019												BALANCE	
O C O #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	Calendar Year 2018												Calendar Year 2019												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
1.1.1) N340 Complete Fuze																															
	1	2018	NAVY	4.576	.000	4.576																								4.576	
✓	1	2020	NAVY	198.567	.000	198.567																								198.567	
2.1.1) NA29 Complete Fuze																															
	2	2018	NAVY	2.304	.000	2.304																								2.304	
✓	2	2018	NAVY	.114	.000	.114																								.114	
	2	2019	NAVY	1.593	.000	1.593																								1.593	
✓	2	2020	NAVY	7.631	.000	7.631																								7.631	

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**Exhibit P-21, Production Schedule: PB 2020 Navy** **Date:** March 2019

**Appropriation / Budget Activity / Budget Sub Activity:** 1508N / 02 / 1 **P-1 Line Item Number / Title:** 1650 / Artillery Munitions **Item Number / Title [DODIC]:** 1 / Fuze, All Types

Cost Elements <i>(Units in Thousands)</i>				Fiscal Year 2020														Fiscal Year 2021												BALANCE			
O C O #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	Calendar Year 2020														Calendar Year 2021												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P		
1.1.1) N340 Complete Fuze																																	
	1	2018	NAVY	4.576	.000	4.576	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.576				
✓	1	2020	NAVY	198.567	.000	198.567																						198.567					
2.1.1) NA29 Complete Fuze																																	
	2	2018	NAVY	2.304	.000	2.304	-	-	-	-	-	.152	.152	.152	.190	.190	.190	.190	.210	.210	.210	.225	.233					.000					
✓	2	2018	NAVY	.114	.000	.114	-	-	-	-	-	.038	.038	.038														.000					
	2	2019	NAVY	1.593	.000	1.593	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.126	.126	.126	.126	.126	.126	.139	.698			
✓	2	2020	NAVY	7.631	.000	7.631																						7.631					
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			

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**Exhibit P-21, Production Schedule:** PB 2020 Navy **Date:** March 2019

<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1508N / 02 / 1	<b>P-1 Line Item Number / Title:</b> 1650 / Artillery Munitions	<b>Item Number / Title [DODIC]:</b> 1 / Fuze, All Types
---------------------------------------------------------------------------------	--------------------------------------------------------------------	------------------------------------------------------------

Cost Elements <i>(Units in Thousands)</i>					Fiscal Year 2022													Fiscal Year 2023										B A L A N C E		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	Calendar Year 2022													Calendar Year 2023										
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N		J U L	A U G
1.1.1) N340 Complete Fuze																														
	1	2018	NAVY	4.576	.000	4.576	-	4.576																					.000	
✓	1	2020	NAVY	198.567	.000	198.567	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35.000	35.000	128.567
2.1.1) NA29 Complete Fuze																														
	2	2018	NAVY	2.304	2.304	.000																						.000		
✓	2	2018	NAVY	.114	.114	.000																						.000		
	2	2019	NAVY	1.593	.895	.698	.139	.139	.139	.139	.142																	.000		
✓	2	2020	NAVY	7.631	.000	7.631	-	-	-	-	-	.672	.662	.662	.662	.662	.662	.662	.662	.662	.662	.662	.662	.339				.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 2020 Navy **Date:** March 2019

<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1508N / 02 / 1	<b>P-1 Line Item Number / Title:</b> 1650 / Artillery Munitions	<b>Item Number / Title [DODIC]:</b> 1 / Fuze, All Types
---------------------------------------------------------------------------------	--------------------------------------------------------------------	------------------------------------------------------------

Cost Elements <i>(Units in Thousands)</i>						Fiscal Year 2024												Fiscal Year 2025												BALANCE				
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2023	BAL DUE AS OF 1 OCT	Calendar Year 2024												Calendar Year 2025															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P			
1.1.1) N340 Complete Fuze																																		
	1	2018	NAVY	4.576	4.576	.000																									.000			
✓	1	2020	NAVY	198.567	70.000	128.567	35.000	35.000	32.900	25.667																								.000
2.1.1) NA29 Complete Fuze																																		
	2	2018	NAVY	2.304	2.304	.000																									.000			
✓	2	2018	NAVY	.114	.114	.000																									.000			
	2	2019	NAVY	1.593	1.593	.000																									.000			
✓	2	2020	NAVY	7.631	7.631	.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 2020 Navy **Date:** March 2019

<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1508N / 02 / 1	<b>P-1 Line Item Number / Title:</b> 1650 / Artillery Munitions	<b>Item Number / Title [DODIC]:</b> 1 / Fuze, All Types
---------------------------------------------------------------------------------	--------------------------------------------------------------------	------------------------------------------------------------

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	ACTION MANUFACTURING INC - Bristol, PA	20,000	35,000	500,000	10	10	36	46	10	10	36	46
2	NORTHROP GRUMMAN INNOVATION SYSTEMS - PLYMOUTH, MN	3,330	11,000	22,000	13	9	27	36	3	6	24	30

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

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