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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 1508N: Procurement of Ammo, Navy & MC / BA 01: Proc Ammo, Navy / BSA 1: Navy Ammunition	P-1 Line Item Number / Title: 0151 / Airborne Rockets, All Types
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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: 0204162N, 0206138M
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	863.931	82.497	116.119	79.318	1.184	80.502	81.798	87.375	90.722	93.355	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	863.931	82.497	116.119	79.318	1.184	80.502	81.798	87.375	90.722	93.355	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	863.931	82.497	116.119	79.318	1.184	80.502	81.798	87.375	90.722	93.355	Continuing	Continuing

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

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

Description:

Combat and training inventory requirements of rocket and rocket components establish the Total Munitions Requirement (TMR) in accordance with the Naval Munitions Requirements process (NMRP). Production is for complete units/operationally configured units to satisfy the requirement of applicable specifications of Airborne Rockets, All types.

The 2.75-inch and 5.00-inch rockets variants are employed by both rotary and fixed wing platforms in the Close Air Support (CAS), Military Operations in Urban Terrain (MOUT), and counter-Fast Attack Craft/ Fast Inshore Attack Craft (counter-FAC/FIAC) mission areas.

The M282 Multi-Purpose Penetrator (MPP) warhead provides the Combatant Commanders greatly enhanced weaponing options to engage targets protected by urban and cave environments. After completing a planned product improvement initiative, the M282 will be certified for fielding with the Advanced Precision Kill Weapon System (APKWS) guidance section. The M282 is a low-cost penetrator warhead that addresses an urgent need for continuing Overseas Contingency Operations and will directly improve aviation fire support to the Marine Air-Ground Task Force.

The MK152 warhead significantly improves the Insensitive Munitions (IM) reaction characteristics over the M151 warhead; greatly increasing safety and reducing restrictions on Marine Corps and Navy shipboard operations. MK152 warheads are authorized for shipboard operations with Advanced Precision Kill Weapon System (APKWS) guidance sections. Overseas Contingency Operations funding provides replenishment of warhead inventory expended in combat.

Rocket Launchers provides for 2.75 Inch Rocket Launchers including the LAU-61 G/A Digital Rocket Launcher (DRL) and LAU-68 F/A.

Advanced Precision Kill Weapon System (APKWS) is a DoN-led System Development and Demonstration (SD&D) program to develop and integrate a low-cost Semi Active Laser (SAL) guidance section to enhance the precision of 2.75-inch unguided rockets. APKWS is a small, lightweight, mid-body guidance section that can be assembled with existing unguided rocket components (Mk 66 Mod 4 rocket motors and M151/MK152/M282 warheads), and can be fired from 2.75-inch rocket launchers. Compared to unguided rockets, APKWS offers greater precision, increased stored kills per aircraft sortie, reduced collateral damage, and improved effectiveness against soft and lightly armored targets from standoff ranges to enhance crew survivability.

Miscellaneous Items provides for procurement of various rocket components not to exceed a total cost of 500K per year per component.

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Appropriation / Budget Activity / Budget Sub Activity: 1508N: Procurement of Ammo, Navy & MC / BA 01: Proc Ammo, Navy / BSA 1: Navy Ammunition		P-1 Line Item Number / Title: 0151 / Airborne Rockets, All Types
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0204162N, 0206138M
Line Item MDAP/MAIS Code: N/A		
<p>Product Improvement (PIP) provides for modifications and upgrades to products within Airborne Rockets, All types. Efforts include configuration changes involving production, engineering, manufacturing, installation and testing that increases system or combat effectiveness to extend the useful military life of an item, and/or to improve the item within the current performance envelope.</p>		

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Appropriation / Budget Activity / Budget Sub Activity: 1508N: Procurement of Ammo, Navy & MC / BA 01: Proc Ammo, Navy / BSA 1: Navy Ammunition	P-1 Line Item Number / Title: 0151 / Airborne Rockets, All Types
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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: 0204162N, 0206138M
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Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 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	Airborne Rockets, All Types				- / 863.931	- / 82.497	- / 116.119	- / 79.318	- / 1.184	- / 80.502
P-40	Total Gross/Weapon System Cost				- / 863.931	- / 82.497	- / 116.119	- / 79.318	- / 1.184	- / 80.502

*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 2018 baseline funding is required to procure 2.75-inch rocket components - to include rocket motors, warheads, Advanced Precision Kill Weapon System (APKWS) guidance sections, rocket launchers and containers - to enable low-cost area suppression as well as precision engagements from US Marine Corps (USMC) H-1 and AV-8B aircraft in low collateral damage Close Air Support (CAS) operations, and from US Navy (USN) H-60 aircraft to neutralize Fast Attack Craft/Fast Inshore Attack Craft (FAC/FIAC) threats.

MK-66 rocket motor inventory requirements are increasing due to current combat operations and pre deployment training primarily driven by increased platform usage. FY 2018 procurement quantities increase from FY 2017 to ensure inventory is maintained.

LAU-61 G/A and LAU-68 F/A launcher inventory requirements are increasing for both combat operations and pre deployment training primarily driven by increased platform usage. FY 2018 procurement quantities increase to ensure inventory is maintained.

In addition, FY 2018 baseline funding is required to address product improvements needed for obsolete components designed and produced over 40 years ago as well as the production engineering and integrated logistics support efforts needed for all 2.75-inch rocket components.

Airborne Rockets product improvement efforts are required to reduce production cost, extend component life and to improve Combat effectiveness on pace with platform Combat system improvements. The modular rocket product improvements program is designed to upgrade the current rockets systems motors, warheads, launchers and guidance sections to take advantage of current and future upgrades to numerous platforms. The long term acquisition strategy for small guided rocket systems and launchers PIP is to reduce weight and improve reliability.

OCO:
 FY 2018 Overseas Contingency Operations (OCO) funding is required to replenish munitions and components that were expended in direct support of combat operations in theater. These operations were in support of Operation Freedom's Sentinel.

MK-66 rocket motors are required for combat operations, and OCO funding will aid in the replenishment of rocket motor inventory levels. The MK-66 motor is used as the component motor in all 2.75-inch rocket configurations. Due to an increase in pre-deployment training as well as combat operations, additional procurements are required to maintain the operational capability of the warfighter and to ensure inventory is maintained.

The MK-152 warhead with the MK-435 fuze allows the warfighter to engage the enemy at closer ranges, increasing accuracy with a safer, more reliable warhead. This provides sufficient inventory to support the current OCO operational tempo with warheads thereby providing greater lethality and reducing collateral damage.

APKWS OCO funding is required to replenish inventory that has been expended in combat operations and will challenge the Navy and Marine Corp's ability to effectively counter the FAC/FIAC threat.

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Appropriation / Budget Activity / Budget Sub Activity: 1508N: Procurement of Ammo, Navy & MC / BA 01: Proc Ammo, Navy / BSA 1: Navy Ammunition		P-1 Line Item Number / Title: 0151 / Airborne Rockets, All Types
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0204162N, 0206138M
Line Item MDAP/MAIS Code: N/A		
<p>OCO funding is also required for production engineering support of rocket components procured and produced to replenish OCO expenditures. Failure to replenish OCO rocket component expenditures will require USMC H-1 aircraft to employ more expensive weapons (i.e. Hellfire) to neutralize low-cost, soft/lightly armored targets and simultaneously challenge the ability of the USN H-60 fleet to effectively counter the FAC/FIAC threat.</p>		

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy																Date: May 2017				
Appropriation / Budget Activity / Budget Sub Activity: 1508N / 01 / 1						P-1 Line Item Number / Title: 0151 / Airborne Rockets, All Types						Aggregated Items Title: Airborne Rockets, All Types								
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
1) Rockets Hardware																				
1.1) (Q5040) MK 66 ROCKET MOTOR (MOD 4) ⁽¹⁾	A		988.14	329,836	325.925	457.76	26,479	12.121	495.23	41,411	20.508	505.14	45,718	23.094	505.14	380	0.192	505.14	46,098	23.286
1.2) (Q5041) MK 71 ROCKET MOTOR	A		-	-	56.296	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.3) (Q5042) MK 66 ROCKET MOTOR (MOD 6)	A		-	-	0.585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.4) (Q5200) SMOKEY SAM	A		685.34	5,800	3.975	-	-	-	167.51	2,000	0.335	170.86	2,000	0.342	-	-	-	170.86	2,000	0.342
Subtotal: 1) Rockets Hardware			-	-	386.781	-	-	12.121	-	-	20.843	-	-	23.436	-	-	0.192	-	-	23.628
2) Rocket Warheads																				
2.1) (Q5030) WTU1/B INERT WARHEAD ⁽²⁾	A		153.03	127,572	19.522	95.18	7,649	0.728	97.08	7,643	0.742	99.02	7,624	0.755	-	-	-	99.02	7,624	0.755
2.2) (Q5080) MK 146 HE WARHEAD	A		18,431.82	1,100	20.275	-	-	-	1,669.57	541	0.903	1,702.96	541	0.921	-	-	-	1,702.96	541	0.921
2.3) (Q5090) MK 149 WARHEAD ⁽³⁾	A		22,968.57	509	11.691	-	-	-	599.79	1,490	0.894	611.79	1,191	0.729	-	-	-	611.79	1,191	0.729
2.4) (Q5897) WTU-11/ B WARHEAD	A		-	-	1.025	-	-	-	434.11	500	0.217	442.79	500	0.221	-	-	-	442.79	500	0.221
2.5) (Q5898) M282 MULTI-PURPOSE PENETRATOR (MPP) ⁽⁴⁾	A		3,349.61	5,426	18.175	-	-	1.362	3,518.70	40	0.141	3,589.07	39	0.140	-	-	-	3,589.07	39	0.140
2.6) (Q5899) MK 152 WARHEAD	A		1,398.12	53,949	75.427	-	-	-	1,630.50	100	0.163	1,663.00	100	0.166	1,663.00	37	0.062	1,663.00	137	0.228
Subtotal: 2) Rocket Warheads			-	-	146.115	-	-	2.090	-	-	3.060	-	-	2.932	-	-	0.062	-	-	2.994
3) Rocket Launchers																				
3.1) (Q5895) LAU-68 F/A (2.75") ⁽⁵⁾	A		19,374.57	1,455	28.190	17,895.83	48	0.859	18,264.71	102	1.863	18,620.97	184	3.426	-	-	-	18,620.97	184	3.426
3.2) (Q5900) LAU-61 G/A (2.75-Inch) DIGITAL ROCKET LAUNCHER ⁽⁶⁾	A		57,129.63	162	9.255	58,470.48	29	1.696	60,827.16	81	4.927	62,049.34	110	6.825	-	-	-	62,049.34	110	6.825
Subtotal: 3) Rocket Launchers			-	-	37.445	-	-	2.555	-	-	6.790	-	-	10.251	-	-	-	-	-	10.251
4) APKWS																				
4.1) (Q5896) APKWS G&C SECTIONS ⁽⁷⁾	A		28,043.31	6,304	176.785	28,704.21	1,929	55.370	29,278.30	2,165	63.388	29,863.86	1,179	35.209	29,863.44	31	0.926	29,863.64	1,210	36.135
Subtotal: 4) APKWS			-	-	176.785	-	-	55.370	-	-	63.388	-	-	35.209	-	-	0.926	-	-	36.135
5) Other																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 1508N / 01 / 1 **P-1 Line Item Number / Title:** 0151 / Airborne Rockets, All Types **Aggregated Items Title:** Airborne Rockets, All Types

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
5.1) (Q5871) MISCELLANEOUS ITEMS	A		-	-	7.646	-	-	0.100	-	-	0.100	-	-	0.100	-	-	-	-	-	0.100
5.2) (Q5870) CONTAINERS	A		-	-	24.960	-	-	0.992	-	-	1.176	-	-	1.247	-	-	-	-	-	1.247
Subtotal: 5) Other			-	-	32.606	-	-	1.092	-	-	1.276	-	-	1.347	-	-	-	-	-	1.347
6) (Q5800) Integrated Logistics Support (ILS)																				
6.1) ROCKET WARHEADS-ILS	A		-	-	3.365	-	-	0.172	-	-	0.175	-	-	0.182	-	-	-	-	-	0.182
6.2) ROCKET LAUNCHERS-ILS	A		-	-	0.622	-	-	0.101	-	-	0.103	-	-	0.107	-	-	-	-	-	0.107
6.3) APKWS-ILS	A		-	-	0.296	-	-	0.049	-	-	0.350	-	-	0.052	-	-	-	-	-	0.052
6.4) OTHER-ILS	A		-	-	0.036	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 6) (Q5800) Integrated Logistics Support (ILS)			-	-	4.319	-	-	0.322	-	-	0.628	-	-	0.341	-	-	-	-	-	0.341
7) (Q5850) Product Improvement (PIP)																				
7.1) ROCKET MOTORS - PIP	A		-	-	-	-	-	0.049	-	-	0.002	-	-	0.052	-	-	-	-	-	0.052
7.2) ROCKET WARHEADS-PIP	A		-	-	13.916	-	-	0.200	-	-	0.203	-	-	0.221	-	-	-	-	-	0.221
7.3) ROCKET LAUNCHERS-PIP	A		-	-	0.020	-	-	0.500	-	-	0.002	-	-	0.553	-	-	-	-	-	0.553
7.4) APKWS-PIP ⁽⁸⁾	A		-	-	5.657	-	-	3.813	-	-	14.871	-	-	2.291	-	-	-	-	-	2.291
Subtotal: 7) (Q5850) Product Improvement (PIP)			-	-	19.593	-	-	4.562	-	-	15.078	-	-	3.117	-	-	-	-	-	3.117
8) (Q5830) Production Engineering Support (PES)																				
8.1) ROCKET MOTORS-PES	A		-	-	12.945	-	-	0.646	-	-	0.659	-	-	0.714	-	-	-	-	-	0.714
8.2) ROCKET WARHEADS-PES	A		-	-	26.600	-	-	2.916	-	-	0.686	-	-	0.723	-	-	-	-	-	0.723
8.3) ROCKET LAUNCHERS-PES	A		-	-	6.358	-	-	0.179	-	-	0.182	-	-	0.197	-	-	-	-	-	0.197
8.4) APKWS-PES ⁽⁹⁾	A		-	-	14.384	-	-	0.644	-	-	3.529	-	-	1.051	-	-	0.004	-	-	1.055
Subtotal: 8) (Q5830) Production Engineering Support (PES)			-	-	60.287	-	-	4.385	-	-	5.056	-	-	2.685	-	-	0.004	-	-	2.689
Total			-	-	863.931	-	-	82.497	-	-	116.119	-	-	79.318	-	-	1.184	-	-	80.502

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

Footnotes:

⁽¹⁾ (Q5040) MK 66 ROCKET MOTOR (MOD 4): Pricing is provided by the Army and incorporates other customer buys. The unit price fluctuates depending on the total procurement.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy	Date: May 2017
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Appropriation / Budget Activity / Budget Sub Activity: 1508N / 01 / 1	P-1 Line Item Number / Title: 0151 / Airborne Rockets, All Types	Aggregated Items Title: Airborne Rockets, All Types
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- ⁽²⁾ (Q5030) WTU1/B INERT WARHEAD: Pricing provided by the Army and incorporates other services' buys. Baseline unit cost is dependent on total quantities from the Army. WTU-1/B warheads are procured via competitive contract led by the Army.
- ⁽³⁾ (Q5090) MK 149 WARHEAD: Pricing provided by the Army and incorporates other services' buys.
- ⁽⁴⁾ (Q5898) M282 MULTI-PURPOSE PENETRATOR: Pricing provided by the Army and incorporates other services' buys.
- ⁽⁵⁾ (Q5895) LAU-68 F/A (2.75 inch): Unit cost may vary due to procurement of several components (such as launcher skin material, thermal coat material, safety switches, intervalometers and/or detent mechanisms).
- ⁽⁶⁾ (Q5900) LAU-61 G/A (2.75"): Unit cost may vary due to procurement of several components (such as launcher skin material, thermal coat material, safety switches, launcher electronics components and/or detent mechanisms).
- ⁽⁷⁾ (Q5896) APKWS G&C SECTIONS: Pricing is provided by the Navy and depends on other customer buys. The unit price fluctuates depending on the total procurement. (Q5896) APKWS G&C SECTIONS: FY17 In the FY17 Amended Budget Submission FY17 funding was added to support the procurement of Advanced Precision Kill Weapons System (APKWS). Additional funding and quantity was added for Blue in Support of Green (BISOG) APKWS II F/A-18A-D Capability and to address a Joint Urgent Operational Need (JUON) requirement for APKWS in support of direct warfighter readiness requirements.
- ⁽⁸⁾ (Q5850) APKWS-PIP: FY17 was increased above inflation to execute verification flights to collect, analyze and review data in support of APKWS F/A-18A-D Flight Clearance Issuance.
- ⁽⁹⁾ (Q5830) APKWS-PES: FY17 was increased above inflation to verify APKWS Capability on F/A-18A-D.