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EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE 0604214N, AV-8B AIRCRAFT - ENG DEV		
COST (\$ in Millions)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Total PE Cost	19.517	21.682	17.360	26.277	14.790	12.485	12.662	12.882
0652 AV-8B	19.517	21.682	17.360	26.277	14.790	12.485	12.662	12.882

(U) A. MISSION DESCRIPTION AND BUDGET ITEM

JUSTIFICATION: The program provides AV-8B Design, Development, Integration and Test of the following improvements: The Engine Life Management Program (ELMP), Escape System, Joint Mission Planning System (JMPS), Block upgrade H6.0 to various Mission Systems such as Tactical Aircraft Moving Map Capability (TAMMAC), communications system, navigation equipment, H4.0/Weapons carriage expansion and countermeasures, and Aircraft Handling/Readiness Management Plan (RMP). The JMPS/AVJMPS is required as part of the DON directed migration to a common Navy and Marine Corps mission planning system. The TAMMAC is the avionics system that replaced the aging/obsolete AN/ASQ-196 digital map set and the AN/ASQ-194 data storage set presently installed. A/C Handling and performance is all engineering activities for development and design to support aircraft safety flight clearance and concept exploration to support POM objectives. PMA-257's Evolutionary Acquisition Strategy includes Design, Development, Integration and Test activity under the consolidated effort of Block Developments: H4.0, H5.0, H6.0, H7.0 H8.0 and follow-on systems. TAMMAC is planned for incorporation into Block H4.0. H6.0 block upgrade will provide upgrades to the aircraft communications system for interoperability within the Network-centric warfare operational area. Additionally, the program provides weapons carriage expansion by design, development, integration and testing of additional precision guided and linked programmable weapon capabilities, digital close air support improvements, and video and data link improvements. The H5.0 also provides weapons carriage capability of the listening pod on centerline/station 4. This is an upgrade to the standard AV-8B aircraft capability. H7.0 Block upgrade will provide additional communications/data link upgrades and weapon expansion. H8.0 provides the follow-on step toward an integrated air picture within the Battle Space Network via Multifunctional Information Distribution System (MIDS)/MIDS/RS-Link-16 participation within the Global Information Grid (GIG). The ELMP is a comprehensive plan to increase safety of flight and operational readiness of the AV-8B F402-RR-408 Engine and accessories. PMA-257 will accomplish this mission by conducting Engineering Project Description (EPD) investigations and performing a series of planned Accelerated Simulated Mission Endurance Test (ASMET) to derive engineering improvements to the engine. The Escape System qualifies an improved ejection seat to reduce the risk of injury to aircrew. The RMP is required to ensure the AV-8B air vehicle's sustained mission available, safe and reliable operational readiness until end of service. Air vehicle sustainment requires component and system analyses, technical planning, identification and diagnosis of problems and the development and testing and flight clearance of engineering solutions in the areas of flight and crew safety, structural integrity, obsolescence, systems reliability and maintainability, inventory preservation, or other emergent material or equipment conditions affecting AV-8B systems readiness. Activities include research/analysis for system safety deficiency corrections, fuel system safety improvements, structural analyses, monitoring and integrity analysis, component obsolescence analyses including development of display computer replacement and alternatives explorations for aging equipment, reliability improvement analyses and design developments.

Title IX GWOT Supplemental was provided for the AV-8B Litening on Centerline Development in FY06 and FY07 for \$4.5M and \$6.656 respectively. FY 2007 Title IX GWOT Supplemental funding was also provided for the AV-8B Low Pressure Compressor LPC1 Blade, \$1.2M.

B. PROGRAM CHANGE SUMMARY

Funding:	FY 2006	FY 2007	FY 2008	FY 2009
Previous President's Budget:	15.322	13.878	12.643	16.451
Current BES:	19.517	21.682	17.360	26.277
Total Adjustments	4.195	7.804	4.717	9.826
Summary of Adjustments				
Congressional Reductions	-0.036			
Congressional Rescissions				
Congressional Undistributed Reductions	-0.277	-0.052		
Congressional Increases	4.508	7.856		
Economic Assumptions			0.086	0.306
Miscellaneous Adjustments			4.631	9.520
Subtotal	4.195	7.804	4.717	9.826

Schedule: The H4.0 development schedule had a 2-3 QTR slip due GPS Software issues, H5.0 development schedule has a 1-2 quarter impact due to ALE-47 Software requirements. The display computer schedule has moved to the left. The H6.0 additions were driven by ongoing collaborative efforts of PMA-257, Allies (Spain, Italy, and UK) and PMA-209 Common Avionics to initiate design and integration efforts of the H6.0 communication enhancement capabilities. H8.0 additions are driven by pending efforts/tasking of evaluating Link-16 via the MIDS/RS-LINK system with SPAWAR and PMA-209 Common Avionics. The schedule has been updated to reflect planned ELMP contract award.

Technical: N/A

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2007			
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604214N, AV-8B AIRCRAFT - ENG DEV			PROJECT NUMBER AND NAME 0652, AV-8B				
COST (\$ in Millions)		FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0652 AV-8B		19.517	21.682	17.360	26.277	14.790	12.485	12.662	12.882
RDT&E Articles Qty									

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The program provides AV-8B Design, Development, Integration and Test of the following improvements: The Engine Life Management Program (ELMP), Escape System, Tactical Aircraft Moving Map Capability (TAMMAC) and Aircraft Handling/Readiness Management Plan (RMP). The ELMP is a comprehensive plan to increase safety of flight and operational readiness of the AV-8B F402-RR-408 Engine and Gas Turbine Starter (GTS). PMA-257 will accomplish this mission by the Component Improvement Program and conduct Engineering Project Description investigations and performing a series of planned Accelerated Simulated Mission Endurance Tests (ASMET) to derive engineering improvements to the engine. The Escape System qualifies an improved ejection seat to reduce the risk of injury to aircrew. The JMPS/AVJMPS is required as part of the DON directed migration to a common Navy and Marine Corps mission planning system and TAMMAC functionality in H4.0 block development. H6.0 includes weapons carriage expansion efforts and provides the first step toward Battle Space Networking interoperability within the Netcentric OP-area. PMA-257 is working closely with PMA-209 common avionics and the Allies (Spain, Italy and the UK) on this effort. A/C Handling and performance is all engineering activities for development and design to support aircraft safety flight clearance and concept exploration for resolution of emergent service life and readiness issues.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

Development of RMP ECP's		FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost		4.033	3.963	7.925	12.757
RDT&E Articles Qty					

Conduct system analyses, identification and diagnoses of problems and the development and testing of engineering solutions in the areas of flight and crew safety, structural integrity, obsolescence, systems reliability and maintainability, inventory preservation, or other emergent material or equipment conditions affecting AV-8B systems readiness. Address known and emergent readiness improvements and correction of deficiencies and issues including obsolescence and structural fatigue. Activities include: component obsolescence analyses including development of display computer replacement and alternatives explorations for the air data computer and other aging equipment, crew ejection system and other safety deficiency corrections; fuel system safety improvements; structural analyses, monitoring, and integrity modifications; reliability improvement analyses and design developments.

Completion of ASMET III Testing		FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost		4.515	7.820	7.083	9.613
RDT&E Articles Qty					

Testing, analysis and integration to improve safety of flight and operational readiness of the AV-8B Engine and accessories. Plan and complete ASMET IV testing and develop new engine design efforts. Research, analysis, and develop design changes for engine accessories. Formalize Engine design development efforts based off of ASMET III and incorporate into the engine. Address performance, reliability and obsolescence of F402 Engine Monitoring System by improving operator awareness and troubleshooting capability for maintainers.

Completed Development and DT Testing of H4.0/FY 2006		FY 2007	FY 2008	FY 2009	
Accomplishments / Effort / Sub-total Cost		10.969	9.899	2.352	3.907
RDT&E Articles Qty					

H4.0 Block Upgrade Development including AV-8B Joint Mission Planning System (AVJMPS) improvements and integration of the Tactical Moving Map Capability (TAMMAC). H5.0 Block Upgrade provides Dual Mode Laser Guided Bombs (DMLGB), Litening Centerline/Station 4 (Improvement of current weapons carriage capability), Early Variable Message Format (VMF) Communication Development, H4.0/TAMMAC Software Trouble Reports (STRs).

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2007
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604214N, AV-8B AIRCRAFT - ENG DEV	PROJECT NUMBER AND NAME 0652, AV-8B

C. OTHER PROGRAM FUNDING SUMMARY:	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
APN BLI 051400, AV-8B Series Modification	47.161	57.538	37.549	51.719	37.298	29.200	23.000	22.643	125.583	431.691
RDTE PE 0604215N PU 0572 Joint Services Stand	61.609	57.008	92.733	86.169	54.999	19.686	19.224	16.067		407.495

D. ACQUISITION

STRATEGY: All efforts under Aircraft Handling/RMP provide investigations and analysis of testing and flight clearance authorization necessary to assess overall system capability and integration of projects. Funding for the Engine Life Management Program (ELMP) will be placed on a cost type contract to Rolls Royce to address safety of flight issues, top readiness degraders, engine removal and mission failure drivers in order to improve Fleet readiness and cost of ownership. It is also developed to assess life management program issues and design fixes for any service revealed deficiencies. PMA-257's Evolutionary Acquisition Strategy includes Design, Development, Integration and Test activity under the consolidated effort of Block Developments: H2.0, H4.0, H5.0, H6.0, H7.0 H8.0 and following systems. The development and integration of JMPS/AVJMPS occurred concurrently with H2.0. Additional improvements are included in H.40 TAMMAC is planned for incorporation into Block H4.0. H6.0 provides weapons carriage expansion efforts and the first step toward Battle Space Networking interoperability within the Netcentric OP-area. H8.0 provides the follow-on step toward an integrated air picture within the Battle Space Network via MIDS/RS-Link-16 participation within the GIG. H5.0 Block Upgrade provides Dual Mode Laser Guided Bombs (DMLGB), Litening Centerline/Station 4 (Improvement of current weapons carriage capability), PMA-257 is working closely with the Allies (Spain, Italy, UK) and PMA-209 Common Avionics on this effort for H6.0 and H8.0.

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E,N / BA-5		0604214N, AV-8B AIRCRAFT - ENG DEV				0652, AV-8B						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Primary Hdw Development	VARIOUS	TBD				.849	Various	3.569	Various	1.482	8.114	
Primary Hdw Development	C-CPFF	ROLLS-ROYCE PLC, BRISTOL GB	10.987	2.507	Dec 2006	3.500	Dec 2007	3.025	Dec 2008	14.353	34.372	34.372
Primary Hdw Development	C-CPFF	MCDONNELL DOUGLAS CORP, SAINT LOUIS, MO		.462	Dec 2006	3.298	Dec 2007	3.474	Dec 2008		7.234	7.234
Primary Hdw Development	C-CPFF	Goodrich Power Systems, PITSTONE, BU		2.500	Dec 2006	.850	Dec 2007	1.500	Dec 2008	11.978	16.828	16.828
Primary Hdw Development	WX	NAWCWD, CHINA LAKE CA	37.473			1.307	Nov 2007	2.676	Nov 2008		42.616	
Primary Hdw Development	VARIOUS	VARIOUS	9.402	.177	Various						9.579	
Systems Engineering	VARIOUS	MCDONNELL DOUGLAS CORP, SAINT LOUIS, MO		1.312	Dec 2006	.690	Dec 2007				2.002	2.002
Systems Engineering	VARIOUS	MCDONNELL DOUGLAS CORP, SAINT LOUIS, MO	1.859					2.511	Various	.468	4.838	
Systems Engineering	VARIOUS	VARIOUS	.579	1.409	Various	.274	Various	.195	Dec 2008	1.317	3.774	3.774
Systems Engineering	VARIOUS	NAWCWD, PT MUGU CA	.015		Various		Various		Various		.015	
SUBTOTAL PRODUCT DEVELOPMENT			60.314	8.367		10.768		16.950		29.598	129.372	64.210

SUPPORT												
Configuration Mgmt	VARIOUS	VARIOUS	.169	.040	Various	.041	Various	.043	Various	.192	.485	
Engineering & Tech Svcs (N	IDIQ	L-3 COMMUNICATIONS TITAN CORPORATION, MARLTON, NJ	.113								.113	.113
Integrated Logistics Sup	WX	NAWCAD, PATUXENT RIVER MD	.746	.255	Nov 2006	.261	Nov 2007	.268	Nov 2008	Continuing	Continuing	
Software Development	VARIOUS	DCMA BOEING ST LOUIS, ST LOUIS, MO	4.606	.707	Various	.923	Various	1.793	Various		8.796	
Software Development	WX	NAWCWD, CHINA LAKE CA	.662	3.600	Feb 2007	.724	Nov 2007	1.289	Nov 2008	1.040	8.134	
Software Development	VARIOUS	VARIOUS	11.062	1.191	Various		Various		Various		12.253	
Studies & Analysis	VARIOUS	VARIOUS	.279	.505	Various	.632	Various	.400	Various	Continuing	Continuing	
Support	VARIOUS	TBD	5.268								5.268	
Technical Data	CPFF	ADVANCED SYSTEMS MANAGEMENT SOLUTION JV, VIENNA,	.823	.629	May 2007	.465	May 2008	.533	May 2009	2.338	4.788	4.788
SUBTOTAL SUPPORT			23.727	6.927		3.046		4.326		Continuing	Continuing	

TEST & EVALUATION												
Developmental Test & Eval	WX	NAWCWD, CHINA LAKE CA	35.488	.750	Nov 2006	.355	Nov 2007	.512	Nov 2008	.958	38.063	
Deopmental Test & Eval	CPFF	MCDONNELL DOUGLAS CORP, SAINT LOUIS, MO						.171	VARIOUS	.294	.465	.465
Operational Test & Eval	WX	VARIOUS	.480	.550	Nov 2006	.500	Nov 2007	.500	Nov 2008		2.469	
Opererational Test & Eval	WX	OPER T & E FOR CD 30, NORFOLK VA	19.458							1.282	20.740	
Test Assets	CPFF	MCDONNELL DOUGLAS CORP, SAINT LOUIS, MO						1.173	Mar 2009		1.173	1.173
SUBTOTAL TEST & EVALUATION			55.426	1.300		.855		2.355		2.534	62.910	1.638

Remarks: Developmental Test & Eval: Added McDonnell Douglas Corp, St. Louis for display computer test assets as part of RMP.

MANAGEMENT												
Contractor Engineering Support	VARIOUS	VARIOUS	.605			.451		.494		1.724	3.274	
ENGINEERING & TECH SRVC (N	VARIOUS	VARIOUS	.625	.395	Nov 2006	.228	Nov 2007	.229	Nov 2008	.992	2.470	
Government Engineering Supp	VARIOUS	VARIOUS	4.713	.618	Nov 2006	1.181	Nov 2007	1.078	Nov 2008	3.795	11.386	
MGT & PROF SUPPT SRVC (NON	VARIOUS	VARIOUS	1.144	.885	Nov 2006	.369	Nov 2007	.377	Nov 2008	1.580	4.354	
Program Management Support	VARIOUS	VARIOUS	1.499	.793	Nov 2006	.362	Nov 2007	.368	Nov 2008	1.027	4.049	
Program Management	VARIOUS	NAWCWD, CHINA LAKE CA		2.237	VARIOUS						2.237	
Travel	TO	VARIOUS	.365	.160	VARIOUS	.100	VARIOUS	.100	VARIOUS	.400	1.125	
SUBTOTAL MANAGEMENT			8.952	5.088		2.691		2.646		9.518	28.895	

Remarks:

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Exhibit R-3 Cost Analysis (page 1)						DATE:		February 2007		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT		PROJECT NUMBER AND NAME						
RDT&E,N / BA-5		0604214N, AV-8B AIRCRAFT - ENG DEV		0652, AV-8B						
Total Cost			148.419	21.682		17.360		26.277	Continuing	Continuing

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EXHIBIT R4, Schedule Profile

DATE:

February 2007

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT

PROJECT NUMBER AND NAME

RDT&E, N / BA-5

0604214N, AV-8B AIRCRAFT - ENG DEV

0652, AV-8B

Fiscal Year	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones	H2.0/AVJMPS IOC ★				H4.0/TAMMAC OTRR ☆				H4.0 IOC ☆				TAMMAC IOC ☆				H7.0 SRR ☆				H7.0 CDR ☆				H7.0 OTRR ☆							
	H5.0 SRR ★				H5.0 CDR ★				H5.0 PDR ★				H5.0 IOC ☆				H6.0 OTRR ☆				H6.0 PDR ☆				H6.0 IOC ☆							
					H6.0 SRR ☆				H6.0 CDR ☆				H6.0 PDR ☆				RMP DC OTRR ☆				RMP DC IOC ☆											
System Development	H4.0/TAMMAC				H5.0 DMLGB, Litening Sta 4, Early VMF Comm Dev, TAMMAC				RMP Display Computer (DC)				H6.0 Wpns carriage exp, Comm Net and Other Enhancements				H7.0 Wpns carriage exp, Comm Networking and Other Enhancements															
Engine Life Management Program Contract Award	ELMP →				ELMP →				ELMP →				ELMP →				ELMP →				ELMP →											
Software Deliveries	H2.0/AVJMPS ▲				H4.0/TAMMAC ▲				H5.0 Litening on Centerline/Station 4 ▲				H6.0 ▲								H7.0 ▲											
Test & Evaluation Milestones													RMP Display Computer DT																			
Development Test	H4.0 TAMMAC DT				H5.0 LPOD on 4 DT				H6.0 DT				H7.0 DT																			
Operational Test					H4.0 OT				H5.0 OT				H6.0 OT				RMP Display Computer OT				H7.0 OT											

R-1 Shopping List Item No 84

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Exhibit R-4a, Schedule Detail						DATE:		
APPROPRIATION/BUDGET ACTIVITY						PROJECT NUMBER AND NAME		
RDT&E,N / BA-5		PROGRAM ELEMENT			0652, AV-8B			
		0604214N, AV-8B AIRCRAFT - ENG DEV						
Schedule Profile	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
ELMP CONTRACT AWARD	2Q	1Q	1Q	1Q	1Q	1Q	1Q	1Q
H2.0/AVJMPS IOC	1Q							
H4.0 TAMMAC SYSTEM DEVELOPMENT	1Q-4Q	1Q-2Q						
H 4.0/TAMMAC DT	1Q-4Q	1Q-2Q						
H4.0/TAMMAC OTRR		2Q						
H4.0/TAMMAC OT		2Q-3Q						
H4.0/TAMMAC S/W DELIVERY		4Q	1Q					
H4.0 TAMMAC IOC			4Q					
H5.0 DMLGB,LITSTA4,VMF,STR SYS DEVELOPMENT	1Q-4Q	1Q-4Q	1Q-3Q					
H5.0 SRR	3Q							
H5.0 PDR	4Q							
H5.0 CDR		1Q						
H5.0 DT		1Q-4Q	1Q-3Q					
H5.0 OTRR			3Q					
H5.0 OT			3Q-4Q					
H5.0 S/W DELIVERY				1Q				
H5.0 IOC				2Q				
H6.0 WPNS CARRIAGE EXP COMM NETWORK SYS DEV		2Q-4Q	1Q-4Q	1Q-4Q				
H6.0 SRR			1Q					
H6.0 PDR			2Q					
H6.0 CDR			3Q					
H6.0 DT			4Q	1Q-4Q				
H6.0 OTRR				4Q				
H6.0 OT				4Q	1Q-2Q			
H6.0 S/W DELIVERY					3Q			
H6.0 IOC						1Q		
H7.0 WPNS CARRIAGE EXP COMM NETWORK SYS DEV					1Q-4Q	1Q-4Q	1Q-3Q	
H7.0 SRR					2Q			
H7.0 PDR					3Q			
H7.0 CDR					4Q			
H7.0 DT						2Q-4Q	1Q-3Q	
H7.0 OTRR							4Q	
H7.0 OT							4Q	1Q
H7.0 S/W DELIVERY								3Q
RMP DISPLAY COMPUTER SYSTEM DEVELOPMENT			1Q-4Q	1Q-4Q	1Q-4Q			
RMP DISPLAY COMPUTER SRR			2Q					