

EXHIBIT R-2, RDT&E Budget Item Justification							DATE:	
							February 2006	
APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE		
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /						0604214N, AV-8B AIRCRAFT - ENG DEV		
BA 5								
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Total PE Cost	19.335	15.322	13.878	12.643	16.451	12.407	12.103	
0652 AV-8B	18.373	15.322	13.878	12.643	16.451	12.407	12.103	
9546 LITENING POD DOWNLINK DEVELOPMENT	.962							
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>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, and Weapons carriage expansion, and lastly countermeasures 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. PMA-257 will accomplish this mission by conducting Engineering Project Description (EPD) 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. 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: OSCAR, H2.0, H4.0, H6.0, H8.0 and follow-on systems. TAMMAC is planned for incorporation into Block H4.0. H6.0 will include upgrades to the communications system driven by Netcentric warfare operational requirements, and weapon system expansion. 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 Global Information Grid (GIG). The Litening Pod Analysis of Alternatives (AOA), \$4.2M congressionally funded project, is for the next generation AV-8B Litening Intelligence, Surveillance, and Reconnaissance (ISR) pod with video link capability to Forward Air Controllers and other ground recipients in support of real time digital Close Air Support missions. The scope of this AOA includes an analysis and demonstration of available systems that can be readily integrated into the existing Litening targeting pods in fleet AV-8B, F/A-18, and Forward Air Controller (FAC) ground station hardware currently employed and or in development for all US Armed Forces with the specific goals of greater inteoperability and commonality of aircraft and ground based hardware. The RMP provides for the requirements analyses, technical planning, design, development, test and flight clearance of solutions for systems safety, reliability, supportability, obsolescence or other material or equipment conditions affecting AV-8B weapons system mission readiness. Fast Tactical Imagery/Compact Remote Tactical Imagery Relay (FTI/CRTIR), \$1M congressionally funded project, will allow the AV-8B to capture still images from the Litening Pod and other onboard sensors and transmit them between aircraft computers and ground stations.</p>								

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EXHIBIT R-2a, RDT&E Project Justification								DATE:	February 2006
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /		PROGRAM ELEMENT NUMBER AND NAME 0604214N, AV-8B AIRCRAFT - ENG DEV					PROJECT NUMBER AND NAME 0652/9546 AV-8B		
	BA 5								
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011		
Project Cost	19.335*	15.322	13.878	12.643	16.451	12.407	12.103		
RDT&E Articles Qty									
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: 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 ELM 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.</p> <p>*Total program includes a Congressional Add (Project Unit 9546) of \$1M which was reduced by \$17K for congressional undistributed reductions and execution reductions of \$21K resulting in a net \$962K for the AOA. Project Unit 0652 includes a Congressinal Add of \$4.2 for the AOA for the next generation AV-8B Litening Intelligence, Surveillance, and Reconnaissance (ISR) pod with video link capability to Forward Air Controllers and other ground recipients in support of real time digital Close Air Support missions. Additional Congressional funding of \$1M is to support FTI/CRTIR which will allow the AV-8B to capture still image from the Litening Pod and other onbaord sensors and transmit them between aircraft computers and ground stations.</p>									

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N /	BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604214N, AV-8B AIRCRAFT - ENG DEV	PROJECT NUMBER AND NAME 0652/9546 AV-8B
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	FY 2005	FY 2006	FY 2007	
H4.0/H6.0/TACTICAL MOVING MAP CAPABILITY(TAMMAC)	13.535	5.167	3.256	
RDT&E Articles Qty				

H4.0 Block Upgrade Development including JMPS/AVJMPS improvements and integration of TAMMAC. H6.0 Block Upgrade is part of the Evolutionary Acquisition approach providing new aircraft capabilities following the H4.0 block upgrade. H6.0 provides the first step toward Battle Space Networking by upgrading the communication system for interoperability within the Netcentric OP-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. H8.0 capabilities will follow H6.0 block upgrade.

Litening Downlink AOA will perform the concept exploration, demonstration, and limited fielding of a follow-on AV8B Litening targeting POD. The scope of the AOA includes review/determination of methods to deliver real-time video and data link communications with AV-8B's targeting pods, other aircraft based systems, GIG and associated FAC ground stations.

FTI/CRTIR will allow the AV-8B to capture still images from the Litening Pod and other onboard sensors and transmit them between aircraft computers and ground stations. This funding will provide for the development, demonstration and evaluation of the CRTIR system on the AV8B aircraft. Flight Station Clearance efforts for flight qualification testing to carry LASER guided bombs and other weapons expansion initiatives such as carriage of targeting pod on station 4 are ongoing.

	FY 2005	FY 2006	FY 2007	
ENGINE LIFE MANAGEMENT PLAN /ASMET	5.513	8.233	4.435	
RDT&E Articles Qty				

Testing, analysis and integration to improve safety of flight and operational readiness of the AV-8B Engine. Formalize engine design development efforts to be incorporated into the engine. Complete ASMET III testing of the AV-B engine and formalize Engine design development efforts based off of ASMET III and incorporate into the engine.

	FY 2005	FY 2006	FY 2007	
AIRCRAFT HANDLING/READINESS MANAGE PLAN	.287	1.922	6.187	
RDT&E Articles Qty				

Conduct study of AV-8B Obsolescence (Laser Maverick & other) issues & continue aircraft handling and performance investigations to improve safety and increase operational performance. Address readiness improvements and correction of deficiencies/issues including obsolescence, structural fatigue, parachute assemblies and trajectory divergence. Obsolescence solutions will be designed and developed for the avionics and other systems components including the display computer.

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APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 5	0604214N, AV-8B AIRCRAFT - ENG DEV	0652/9546 AV-8B

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	13.140	15.556	13.949
Current BES / President's Budget:	19.335	15.322	13.878
Total Adjustments	6.195	-0.234	-0.071

Summary of Adjustments

Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.362	-0.163	
Congressional Increases	0.003		
Economic Assumptions		-0.071	0.140
Miscellaneous Adjustments	6.560		-0.211
Subtotal	6.201	-0.234	-0.071

Schedule: JMPS/AVJMPS OTRR, OT & IOC schedule moved to the right 1 QTR due to schedule slip in the JMPS build 5. The H4.0 development schedule had a 2-3 QTR impact due to OSCAR and H2.0 technical issues. Schedule updated to reflect planned ELMP contract award. 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 evaluating Link-16 via the MIDS/RS-LINK system with SPAWAR and PMA-209 Common Avionics.

Technical:

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
APN BLI 051400, AV-8B Series Modifications	33.854	35.670	20.506	17.967	25.191	15.915	15.769	86.812	251.684
RDTE PU 0572 Joint Services Standard Services/Navy Avion	55.946	79.180	110.318	97.693	46.394	33.683	29.753		452.967

E. 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: OSCAR, H2.0, H4.0, H6.0, 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 MIDS/RS-Link-16 participation within the GIG. 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.

UNCLASSIFIED

R-1 Shopping List Item No 85

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, Page 4 of 8)

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)									DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 5		PROGRAM ELEMENT 0604214N, AV-8B AIRCRAFT - ENG DEV				PROJECT NUMBER AND NAME 0652/9546 AV-8B						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Primary Hdw Development	VARIOUS	MCDONNELL DOUGLAS, SAINT LOUIS, MO	10.504					1.313	VARIOUS	24.104	35.921	35.921
Primary Hdw Development	VARIOUS	VARIOUS	13.561	3.562	VARIOUS	7.022	VARIOUS	2.215	Mar-07	19.508	45.868	45.868
Primary Hdw Dev-Display Computer	C-CPFF	MCDONNELL DOUGLAS, SAINT LOUIS, MO						1.279	Nov-06	5.615	6.894	6.894
Systems Engineering	VARIOUS	VARIOUS		.252	Nov-04	.987	Nov-06	2.430	Nov-06	1.376	5.045	
Sys Eng-Aft Struct Mod	WX	NADEP, CHERRY POINT NC						2.498	Nov-06		2.498	
Sys Engineering	WX	NAWCWD, CHINA LAKE CA	30.964	1.729	Nov-04						32.693	
SUBTOTAL PRODUCT DEVELOPMENT			55.029	5.543		8.009		9.735		50.603	128.919	
Remarks: Primary Hdw Development - Display Computer - As part of RMP, this funding provides a replacement display computer which may be utilized in all versions of the AV-8B aircraft. Aircraft Integration referenced in PB06 FY06 and FY07 for RMP has been moved into systems engineering to more accurately reflect the work performed under RMP												
Delta between PB06 FY05/FY06 and this budget in FY05 Primary Hdw Dev - ELMP - Funding for DT planned for China Lake will be performed by Rolls Royce.												
SUPPORT												
Configuration Mgmt	WX	NAWCAD, PATUXENT RIVER MD		.050	Nov-04	.196	Nov-05	.130	Nov-06	Continuing	Continuing	
Integrated Logistics Sup	WX	NAWCAD, PATUXENT RIVER MD		.289	Nov-04	.302	Nov-05	.260	Nov-06	Continuing	Continuing	
Software Development	VARIOUS	NORTHROP GRUMMAN		4.703	Jul-05						4.703	4.703
Software Development	WX	NAWCWD, CHINA LAKE CA	4.808	4.687	Dec-04	2.312	Nov-05					
Software Development	VARIOUS	VARIOUS		1.125	VARIOUS	.251	VARIOUS	1.326	VARIOUS	Continuing	Continuing	
Develop Support Equip	VARIOUS	VARIOUS		.125	Nov-04	.274	VARIOUS				.399	
Technical Data	CPFF	VARIOUS		.150	Jun-05						.150	.150
SUBTOTAL SUPPORT			4.808	11.128		3.335		1.716		Continuing	Continuing	
Remarks: In PB-06 Studies & Analyses for FY06 and FY07 was referenced, these funds have been realigned to Systems Engineering and Primary Hdw Dev to better reflect the requirements of RMP. Delta's between PB06 FY05 and this budget are due to Congressional increases for Litening Pods and supplemental funds received for Station Flight Clearance.												

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Exhibit R-3 Cost Analysis (page 1)									DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N / BA 5		0604214N, AV-8B AIRCRAFT - ENG DEV				0652/9546 AV-8B						
TEST & EVALUATION												
DEVELOPMENTAL TEST & EVAL	WX	VARIOUS	34.983	.487	Apr-05					Continuing	Continuing	
OPERATIONAL TEST & EVALUATION	WX	NAWCWD, CL/COMOPTEVFOR	19.458			1.676	Mar-06				21.134	
SUBTOTAL TEST & EVALUATION			54.441	.487		1.676				Continuing	Continuing	
Remarks: FY05 Adjustments due to testing performed at Rolls Royce vice China Lake. Mission Systems DT moved to Operational Test to reflect project phase.												
MANAGEMENT												
CONTRACTOR ENG SUPPORT	VARIOUS	VARIOUS	48.960	1.012	VARIOUS	.301	VARIOUS	.709	VARIOUS	1.719	52.701	
GOVERNMENT ENG SUPPORT	WX	NAWCAD, PATUXENT RIVER MD	2.909	.923	VARIOUS	1.000	VARIOUS	1.082	VARIOUS	3.573	9.487	
PROGRAM MGMT SUPPORT	WX	NAWCAD, PATUXENT RIVER MD				.771	VARIOUS	.405	VARIOUS	.874	2.049	
TRAVEL	TO	NAVAIRHQ , PATUXENT RIVER MD	.637	.242	VARIOUS	.231	VARIOUS	.231	VARIOUS	.603	1.944	
SBIR ASSESSMENT												
SUBTOTAL MANAGEMENT			52.506	2.177		2.302		2.427		6.769	66.181	
Remarks: Cost grow th in FY05 attributed to Congressional increases and supplemental funding.												
Total Cost			166.784	19.336		15.322		13.878		Continuing	Continuing	
Remarks: Totals might not add due to rounding												

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DATE:

February 2006

PROJECT NUMBER AND NAME

0652/9546 AV-8B

[illegible]**Exhibit R-4, Schedule Profile**

R-1 Shopping List Item No 85

(Exhibit R-4, page 7 of 8)

CLASSIFICATION:

UNCLASSIFIED

Exhibit R-4a, Schedule Detail

DATE:

February-06

APPROPRIATION/BUDGET ACTIVITY

RDT&E, N / BA-5

PROJECT NUMBER AND NAME

0652/9546 AV-8B

Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY2009	FY 2010	FY 2011
ELMP Contract Award	2Q	2Q	2Q			1Q	
H2.0 OT	1Q-3Q						
AVJMPS OT	4Q						
H4.0 TAMMAC SYSTEM DEVELOPMENT	1Q-4Q	1Q-4Q	1Q				
H4.0 TAMMAC DDR	1Q						
H 4.0/TAMMAC DT	1Q-4Q	1Q-2Q					
H4.0/TAMMAC OTRR		2Q					
H4.0/TAMMAC OT		2Q-4Q	1Q				
H4.0/TAMMAC S/W Delivery			1Q				
H4.0 TAMMAC IOC			2Q				
H6.0 Battle Space Networking/JTRS-Warrior	4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q		
H6.0 SRR		2Q-3Q					
H6.0 PDR		4Q					
H6.0 CDR		4Q					
H6.0 DT			1Q-4Q	1Q			
H6.0 OT			4Q	1Q-4Q	1Q		
H6.0 IOC					1Q		
H8.0 Battle Space Networking/JTRS-Warrior			4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q
H8.0 SRR				1Q			
H8.0 PDR				2Q			
H8.0 CDR				4Q			
H8.0 SW DELIVERY							1Q
H8.0 DT					3Q-4Q	1Q--3Q	
H8.0 OT						2Q-4Q	1Q
H8.0 IOC							1Q
RMP DISPLAY COMPUTER SYSTEM DEVELOPMENT			1Q-4Q	1Q-4Q	1Q-4Q	1Q	
RMP DISPLAY COMPUTER PDR			1Q				
RMP DISPLAY COMPUTER CDR			3Q				
RMP DISPLAY COMPUTER OTRR					3Q		
RMP DISPLAY COMPUTER DT				3Q-4Q	1Q-3Q		
RMP DISPLAY COMPUTER OT					3Q-4Q	1Q	
RMP DISPLAY COMUTER IOC							4Q
AVJMPS OTRR	4Q						
H2.0/AVJMPS IOC		1Q					