

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2005</b>
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APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE						
<b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>		0604214N / AV-8B Aircraft						
COST (\$ in Millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY2011
Total PE Cost	<b>10.340</b>	<b>13.140</b>	<b>15.556</b>	<b>13.949</b>	<b>12.703</b>	<b>16.535</b>	<b>12.621</b>	<b>12.376</b>
0652 AV-8B	<b>10.340</b>	<b>12.157</b>	<b>15.556</b>	<b>13.949</b>	<b>12.703</b>	<b>16.535</b>	<b>12.621</b>	<b>12.376</b>
9546 - Litening Pod		<b>0.983</b>						

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**  
 (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, Escape System, Joint Mission Planning System (JMPS), 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. 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 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 will replace 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 and following systems. TAMMAC is planned for incorporation into Block H4.0. The Litening Pod Analysis of Alternatives (AOA) funding is for the next generation AV-8B Litening Intelligence, Surveillance, and Reconnaissance (ISR) pod with video link capability to Forward Air Controllers (FAC) and other ground recipients in support of real time digital Close Air Support (CAS) missions. The scope of this Analysis of Alternatives (AOA) includes an analysis of available systems that can be readily integrated into the existing Litening targeting pods in fleet AV-8B, F/A-18 D, and Forward Air Controller ground station hardware currently employed and or in development for all US Armed Forces with the specific goals of greater inteoperability and commonality of hardware.

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EXHIBIT R-2a, RDT&E Project Justification						DATE: <b>February 2005</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604214N / AV-8B AIRCRAFT			PROJECT NUMBER AND NAME 0652 / AV-8B			
COST (\$ in Millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	<b>10.340</b>	<b>13.140</b>	<b>15.556</b>	<b>13.949</b>	<b>12.703</b>	<b>16.535</b>	<b>12.621</b>	<b>12.376</b>
RDT&E Articles Qty								

**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 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 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. The TAMMAC is the avionics system that will replace 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.

\* Include Congressional Add (Project Unit 9546) of \$1M which was reduced by \$17K for congressional undistributed reductions resulting in a net \$983K for the AOA.

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**B. Accomplishments/Planned Program**

	FY 04	FY 05	FY 06	FY07
Aircraft Handling/Readiness Management Plan	0.025	0.284	1.951	6.219
RDT&E Articles Quantity				

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 display computer.

	FY 04	FY 05	FY 06	FY07
Engine Life Management Plan (ELMP)/ASMET	5.007	5.952	8.359	4.458
RDT&E Articles Quantity				

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-8B engine and formalize Engine design development efforts based off of ASMET III and incorporate into the engine.

	FY 04	FY 05	FY 06	FY 07
H4.0/Tactical Aircraft Moving Map Capability (TAMMA)	5.308	5.921	5.246	3.272
RDT&E Articles Quantity				

H4.0 Block Development including JMPS and program initiation of TAMMAC Design and Functional Analysis and Allocation is underway. H4.0/TAMMAC Systems Requirements Review occurred Sep 04 with Critical Design Review Dec 04. The H4.0 development schedule had a 1 QTR impact due to OSCAR and H2.0 technical issues.

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APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
<b>RDT&amp;E, N / BA-5</b>	0604214N / AV-8B AIRCRAFT	0652 / AV-8B

**C. PROGRAM CHANGE SUMMARY:**

Funding:	FY 2004	FY 2005	FY 2006	FY 2007
Previous President's Budget:	8.630	12.284	15.119	11.209
Current BES/President's Budget	10.340	13.140	15.556	13.949
Total Adjustments	1.710	0.856	0.437	2.740

Summary of Adjustments

Congressional program reductions				
Congressional undistributed reductions		-0.125		
Congressional rescissions				
SBIR/STTR Transfer	-0.022			
Other Adjustments		-0.019	0.278	2.558
Economic Assumptions			0.159	0.182
Reprogrammings	1.732			
Congressional increases		1.000		
Subtotal	1.710	0.856	0.437	2.740

Schedule:

AVJMPS DT, OTRR, OT & IOC schedule moved to the right 1 QTR due to PMA-281 schedule slip in delivering the JMPS build 5. The H4.0 development schedule had a 1 QTR impact due to OSCAR and H2.0 technical issues. Schedule updated to reflect planned ELMP contract award.

Technical:

Not Applicable

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**Exhibit R-2, RD TEN Budget Item Justification**  
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EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2005</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604214N / AV-8B AIRCRAFT			PROJECT NUMBER AND NAME 0652 / AV-8B				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY2011</u>	<u>To Complete</u>	<u>Total Cost</u>
APN BLI 051400, AV-8B Series Modifications	64.016	25.908	34.862	20.612	18.134	25.477	17.387	17.518	84.054	307.968
<b>E. ACQUISITION STRATEGY:</b>										
<p>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 and following systems. The development and integration of JMPS/AVJMPS is occurring concurrently with H2.0. TAMMAC is planned for incorporation into Block H4.0.</p>										

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Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2005</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					0652/AV-8B				
RDT&E, N / BA-5			0604214N / AV-8B AIRCRAFT									
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various	10.504	0.386	02/05			3.130	11/06	3.848	17.867	17.867
Primary Hdw Dev. - Ejection Seat	C/CPFF	Various	2.639								2.639	2.639
Primary Hdw Dev. - ELMP	C/CPFF	Rolls Royce	13.561	1.159	12/04	1.442	12/05	0.854	12/06	12.413	29.429	29.429
Primary Hdw Dev. - H20	C/CPFF	Ratheon / Boeing	5.603								5.603	5.603
Primary Hdw Dev. - Other	Various	Various	1,360.587								1,360.587	1,360.587
Systems Engineering	WX	NAWC-WD China Lake	30.964			0.410	11/05	0.414	11/06	1.000	32.788	
Systems Engineering	WX	NAWC-AD Pax	3.310							16.782	20.092	
Systems Engineering	WX	NAWC-AD NADEP	11.104								11.104	
Training Development	WX	TSD, ORLANDO				1.000	11/05				1.000	
Aircraft Integration	CPFF	Boeing St Louis				0.075	11/05	0.530	11/06		0.605	0.605
Award Fees												
Subtotal Product Development			1,438.272	1.545		2.927		4.928		34.043	1,481.715	
Remarks:												
Software Development - JMPS	WX	NAWC-WD China Lake	4.808	5.339	02/05	2.204	02/06	3.179	02/07	Continuing	Continuing	
Development Support	Various	Various		0.125	11/04	0.274	11/05	0.310	11/06	Continuing	Continuing	
Integrated Logistics Support	WX	NAWC-AD Pax		0.289	01/05	0.308	11/05				0.597	
Configuration Management	WX	NAWC-AD Pax		0.050	02/05						0.050	
Technical Data	CPFF	Boeing		0.283	06/05	0.480					0.763	0.763
Studies & Analyses	TBD	TBD				0.607	11/05	0.705	11/06	Continuing	Continuing	
GFE												
Award Fees												
Subtotal Support			4.808	6.085		3.873		4.194		Continuing	Continuing	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2005</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NUMBER AND NAME				
<b>RDT&amp;E, N / BA-5</b>			0604214N / AV-8B AIRCRAFT					0652 / AV-8B				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWC-WD China Lake	34.983	2.653	02/05	5.225	02/06	2.065	02/07	Continuing	Continuing	
Operational Test & Evaluation	WX	NAWC-WD China Lake	19.458			0.500	11/05			1.250	21.208	
Test Assets	Various	USAF/NAWCAD-PX						0.200	11/06		0.200	
Subtotal T&E			54.441	2.653		5.725		2.265		Continuing	Continuing	
Remarks:												
Contractor Engineering Support	T&M	DCS Corp	48.960	0.570	12/04	1.210	12/05	0.991	12/06	2.359	54.090	54.090
Government Engineering Support	WX	NAWC-AD/WD	2.909	1.163	10/04	1.658	10/05	1.393	10/06	13.434	20.557	
Travel	WX	NAWC-AD PAX	0.637	0.140	10/04	0.164	10/05	0.177	10/06	0.442	1.560	
SBIR Assessment												
Subtotal Management			52.506	1.873		3.031		2.562		16.235	76.207	
Remarks:												
Total Cost			1,550.027	12.157		15.556		13.949		Continuing	Continuing	
Remarks:												

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**Exhibit R-2, RDTEB Budget Item Justification**  
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**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail				DATE: <b>February 2005</b>				
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROJECT NUMBER AND NAME 0652 / AV-8B					
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY2009	FY 2010	FY 2011
ELMP Contract Award	1Q	1Q	1Q					
H 4.0/TAMMAC PIR	2Q							
TAMMAC PDR / CDR	4Q	1Q						
H 4.0/TAMMAC DT		3Q-4Q	1Q-2Q					
H4.0/TAMMAC OTRR			2Q					
H4.0/TAMMAC OT			3Q-4Q					
H4.0/TAMMAC S/W Delivery				1Q				
H4.0 TAMMAC IOC				1Q				
RMP DISPLAY COMPUTER PDR				2Q				
RMP DISPLAY COMPUTER CDR								
RMP DISPLAY COMPUTER OTRR								
RMP DISPLAY COMPUTER DT								
RMP DISPLAY COMPUTER OT								
RMP DISPLAY COMUTER IOC								

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