

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					R-1 ITEM NOMENCLATURE 0604245N, H-1 UPGRADES			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	4.452	3.772	32.830					
2279 4BW / 4BN Upgrade	4.452	3.772	32.830					
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:								
<p>The mission of the AH-1W attack helicopter is to provide rotary wing close air support, anti-armor, armed escort, armed/visual reconnaissance, survivability enhancements, and fire support coordination capabilities under day/night and adverse weather conditions. The mission of the UH-1N utility helicopter is to provide command and control and combat assault support under day/night and adverse weather conditions and special operations support; supporting arms coordination and aeromedical evacuation. Major modifications for both aircraft include 168 AH-1W's converted to AH-1Z's, build 58 new AH-1Z's, remanufacture ten (10) H-1N helicopters and build 113 new UH-1Y models. Upgrades include: a new 4-bladed, composite rotor system with semi-automatic blade fold, new performance matched transmissions, T700 Engine Digital Electronic Control Units (DECUs), new 4-bladed tail rotors and drive systems, more effective stabilizers, upgraded landing gear, tail pylon structural modifications, and common, fully integrated cockpits and avionics systems. This upgrade will add 10,000 flight hours to AH-1Z/UH-1Y airframes. The fully integrated cockpits will reduce operator workload and improve situational awareness, thus increasing safety and reducing the rate of aircraft attrition. They will provide considerable growth potential for future weapon systems and avionics, which will significantly increase mission effectiveness and survivability. The cockpits will also include integration of onboard mission planning, communications, digital fire control, self-navigation, night navigation/targeting, and weapon systems management in nearly identical crew stations, which significantly reduces training requirements. This upgrade maximizes commonality between the two aircraft and provides needed improvements in crew and passenger survivability, payload, power available, endurance, range, airspeed, maneuverability and supportability.</p>								

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APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5		0604245N, H-1 UPGRADES

B. PROGRAM CHANGE SUMMARY:

Funding:	FY08	FY09	FY10
FY09 President's Budget:	3.531	3.795	3.955
FY10 President's Budget:	4.452	3.772	32.830
Total Adjustments	0.921	-0.023	28.875

Summary of Adjustments			
Congressional Rescissions			
Congressional Adjustments		-0.013	
SBIR/STTR/FTT Assessments	0.021		
Program Adjustments	0.900		28.876
Rate/Misc Adjustments		-0.010	-0.001
Subtotal	0.921	-0.023	28.875

Schedule:

OPEVAL phase II completed May 2008 and was necessary due to technical issues with the Helmet Mounted Sight Display (HMSD) system and transitioning of EMD aircraft to the operational configuration. The OPEVAL Phase II test report was completed August 2008 and supported the 4Q FY08 MS-III decision on the UH-1Y and an additional phase of OPEVAL for the AH-1Z. A third phase of OPEVAL is planned for March 2010 to complete IOT&E on the AH-1Z. In addition, H-1 will begin a correction of deficiencies program in FY10. The correction of deficiencies will attempt to address issues discovered during OT and follow-on testing including improved TSS performance, structural life improvements to cuff/yokes, blade/blade fold improvements, survivability enhancements, and ship envelope expansion. Bi-annual System Configuration Set (SCS)

Technical:

Not applicable.

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EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604245N, H-1 UPGRADES			PROJECT NUMBER AND NAME 2279 4BW / 4BN Upgrade			
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Project Cost	4.452	3.722	32.830					
RDT&E Articles Qty								
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>The mission of the AH-1W attack helicopter is to provide rotary wing close air support, anti-armor, armed escort, armed/visual reconnaissance, survivability enhancements, and fire support coordination capabilities under day/night and adverse weather conditions. The mission of the UH-1N utility helicopter is to provide command and control and combat assault support under day/night and adverse weather conditions and special operations support; supporting arms coordination and aeromedical evacuation. Major modifications for both aircraft include 168 AH-1W's converted to AH-1Z's, build 58 new AH-1Z's, remanufacture ten (10) H-1N helicopters and build 113 new UH-1Y models. Upgrades include: a new 4-bladed, composite rotor system with semi-automatic blade fold, new performance matched transmissions, T700 Engine Digital Electronic Control Units (DECUs), new 4-bladed tail rotors and drive systems, more effective stabilizers, upgraded landing gear, tail pylon structural modifications, and common, fully integrated cockpits and avionics systems. This upgrade will add 10,000 flight hours to AH-1Z/UH-1Y airframes. The fully integrated cockpits will reduce operator workload and improve situational awareness, thus increasing safety and reducing the rate of aircraft attrition. They will provide considerable growth potential for future weapon systems and avionics, which will significantly increase mission effectiveness and survivability. The cockpits will also include integration of onboard mission planning, communications, digital fire control, self-navigation, night navigation/targeting, and weapon systems management in nearly identical crew stations, which significantly reduces training requirements. This upgrade maximizes commonality between the two aircraft and provides needed improvements in crew and passenger survivability, payload, power available, endurance, range, airspeed, maneuverability and supportability.</p>								

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B. Accomplishments/Planned Program

Product Development	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.000	0.000	18.466	
RDT&E Articles Quantity				

Prime Contractor will perform product development efforts including survivability enhancements, completion and fatigue testing. Additional FY10 funding is for improvements to cuff/yokes, bladefold, and avionics upgrades.

Support Development	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.463	1.022	5.991	
RDT&E Articles Quantity				

Conduct software development efforts to support development testing and address operational testing results.

Test and Evaluation	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.540	0.100	2.928	
RDT&E Articles Quantity				

Conduct software development efforts to support design, development, integration of sensor processing technologies, and tactical decision tools to expand hardware and software capabilities.

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B. Accomplishments/Planned Program (Cont.)				
Program Management Support	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	0.589	0.650	2.295	
RDT&E Articles Quantity				
<div style="border: 1px solid black; min-height: 60px; margin-top: 5px;"> Perform contractor engineering and technical support including risk analysis in support of development activities and travel. </div>				
Software Support	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	2.860	2.000	3.150	
RDT&E Articles Quantity				
<div style="border: 1px solid black; min-height: 60px; margin-top: 5px;"> Correct development support efforts to correct deficiencies as a result of operational testing, conduct component fatigues testing, and technical data analysis. </div>				

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EXHIBIT R-2a, RDT&E Project Justification		DATE:	May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604245N, H-1 UPGRADES	2279 4BW / 4BN Upgrade	
C. OTHER PROGRAM FUNDING SUMMARY:			
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
BLI 017800, UH-1Y/AH-1Z	416.824	534.463	835.357
 D. ACQUISITION STRATEGY:			
<p>The USMC H-1 Upgrades is an ACAT 1D program which encompasses Engineering and Manufacturing Development of the new end-items prior to a production approval decision. The prime contract is a sole source to Bell Helicopter Textron, Inc.</p>			

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Exhibit R-3 Cost Analysis (page 1)										DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, BA-5			0604245N, H-1 UPGRADES				2279 4BW / 4BN Upgrade						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date						
TEST AND EVALUATION													
Developmental Test & Evaluation	WX/PX	NAWCAD, Pax River MD	35.252	0.100	12/08	2.928	12/09						
Developmental Test & Evaluation	VARIOUS	Various	14.906										
Operational Test & Evaluation	WX/PX	Various	19.744			4.081	12/09						
Operational Test & Evaluation	WX/PX	Various	2.406										
Subtotal T&E			72.308	0.100		7.009							
Remarks:													
MANAGEMENT													
Contractor Engineering Support	C-FFP	Various	5.992	0.180	10/08	1.180	10/09						
Procurement Fees	VARIOUS	Various	0.005										
Program Management Support	C-FFP	Various	9.469	0.180	10/08	0.775	10/09						
SBIR Assessment	IPR/MIPR	DEF Contractor MGT CMD	0.072										
Travel	WX/PX	Various	3.630	0.290	10/08	0.340	10/09						
Subtotal Management			19.168	0.650		2.295							
Remarks:													
Total Cost			1,353.320	3.772		32.830							
Remarks:													

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Exhibit R-4a, Schedule Detail				DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT 0604245N, H-1 UPGRADES			PROJECT NUMBER AND NAME 2279 4BW / 4BN Upgrade		
Schedule Profile		FY 2008	FY 2009	FY 2010			
Full Rate Production (FRP) Milestone III UH-1Y		4Q UH-1Y		4Q AH-1Z			
IOC		4Q UH-1Y					
Operational Evaluation (OPEVAL PHASE II)		2Q-4Q					
Operational Evaluation (OPEVAL PHASE III)				2Q-4Q			
Low-Rate Initial Production I Delivery		1Q					
Low-Rate Initial Production II Delivery		1Q-3Q					
Low-Rate Initial Production III Delivery		3Q-4Q	1Q				
Low-Rate Initial Production IV Delivery			2Q-4Q				
Full Rate Production Start		4Q	2Q	2Q			
Full Rate Production (FRP) Delivery				1Q-4Q			

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