CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **February 2005**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5**					R-1 ITEM NOMENCLATURE 0604245N USMC H-1 Upgrades			
COST ($ in Millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	**98.412**	**173.046**	**42.012**	**7.700**	**3.620**	**3.680**	**3.815**	**3.940**
2279 USMC H-1 Upgrades	**98.412**	**173.046**	**42.012**	**7.700**	**3.620**	**3.680**	**3.815**	**3.940**

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The mission of the AH-1W attack helicopter is to provide rotary wing close air support, anti-armor, armed escort, armed/visual reconnaissance 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 that remanufacture AH-1W/UH-1N's into AH-1Z/UH-1Y's include: a new 4-bladed, composite rotor system with semi-automatic bladefold, 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 remanufacture 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 remanufacture maximizes commonality between the two aircraft and provides needed improvements in crew and passenger survivability, payload, power available, endurance, range, airspeed, maneuverability and supportability.

Note: FY2005 column of the FY2006 President's Budget for RDT&E reflects the addition of a proposed $42M Prior Approval Reprogramming (DD1415-1).

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2005**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604245N USMC H-1 Upgrades				PROJECT NUMBER AND NAME 2279 USMC H-1 Upgrades			
COST ($ in Millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**98.412**	**173.046**	**42.012**	**7.700**	**3.620**	**3.680**	**3.815**	**3.940**
RDT&E Articles Qty								

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The mission of the AH-1W attack helicopter is to provide rotary wing close air support, anti-armor, armed escort, armed/visual reconnaissance 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 that remanufacture AH-1W/UH-1N's into AH-1Z/UH-1Y's include: a new 4-bladed, composite rotor system with semi-automatic bladefold, 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 remanufacture 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 remanufacture maximizes commonality between the two aircraft and provides needed improvements in crew and passenger survivability, payload, power available, endurance, range, airspeed, maneuverability and supportability.

Note: FY2005 column of the FY2006 President's Budget for RDT&E reflects the addition of a proposed $42M Prior Approval Reprogramming (DD1415-1).

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604245N USMC H-1 Upgrades	2279 USMC H-1 Upgrades

B. Accomplishments/Planned Program

	FY 04	FY 05	FY 06	FY07
Technical design & development	74.265	124.045	29.000	2.240
RDT&E Articles Quantity				

Conduct pre-flight ground test and first flight of UH-1Y. Continue tooling validation and assembly of remaining EMD aircraft including structural test. Conduct envelope expansion and complete electrical demonstration. Continue development of integrated software. Conduct Software development efforts to support development testing and address operational testing results.

	FY 04	FY 05	FY 06	FY07
Program development testing	16.012	23.681	2.500	
RDT&E Articles Quantity				

Program developmental testing includes: live fire test & evaluation, non-firing loads and vibrations, IAS validation and weapons check, structural demonstration, Operational Test Readiness Review (OTRR), firing loads and vibrations, sea trials, IAS validation, weapons check, weapons system accuracy, and EMI testing.

	FY 04	FY 05	FY 06	FY07
Training and Logistics Support	2.382	5.446		
RDT&E Articles Quantity				

Various field activities will perform level of repair analysis, logistics support analysis, reliability centered maintenance analysis, configuration management, and integrated mechanical diagnostics.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604245N USMC H-1 Upgrades	2279 USMC H-1 Upgrades

B. Accomplishments/Planned Program (Cont.)

	FY 04	FY 05	FY 06	FY07
Software Support	2.800	10.337	5.100	5.190
RDT&E Articles Quantity				

Conduct Software development efforts to support development testing and address operational testing results. FY07 is to conduct development support efforts.

	FY 04	FY 05	FY 06	FY07
Component Fatigue Testing	1.387	7.977	4.000	0.000
RDT&E Articles Quantity				

Conduct development support efforts to correct deficiencies as a result of operational test; conduct component fatigue testing; and technical data analysis.

	FY 04	FY 05	FY 06	FY07
Contractor Technical Support	1.566	1.560	1.412	0.270
RDT&E Articles Quantity				

Perform contractor engineering and technical support including risk analysis, in support of development activities, and travel.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604245N USMC H-1 Upgrades	2279 USMC H-1 Upgrades

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2004	FY 2005	FY 2006	FY 2007
Previous President's Budget:	90.965	90.389	10.907	7.723
Current BES/President's Budget	98.412	173.046	42.012	7.700
Total Adjustments	7.447	82.657	31.105	-0.023
Summary of Adjustments				
Congressional program reductions				
Congressional undistributed reductions		-1.273		
Congressional rescissions				
SBIR/STTR Transfer	-1.621			
Other Adjustments		-0.070	31.012	-0.190
Economic Assumptions			0.093	0.167
Reprogrammings	9.068			
Congressional increases		84.000		
Subtotal	7.447	82.657	31.105	-0.023

Schedule:

Additional effort has been integrated into the remaining EMD schedule due to technical issues with tailboom annealing, rocket gas ingestion and weapons system integration which defers a MS III decision for Full Rate Production to 4QFY06 and adds a 3rd Lot of LRIP

Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604245N USMC H-1 Upgrades	PROJECT NUMBER AND NAME 2279 USMC H-1 Upgrades

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
P-1 LI #9, UH-1Y/AH-1Z (4BN/4BW)	308.562	198.858	307.479	434.942	471.633	443.578	482.196	501.74	TBD	TBD
Quantity	9	7	10	18	21	21	22	23	149	280

E. ACQUISITION STRATEGY:

The USMC H-1 Upgrades is an ACAT 1D program which encompasses Engineering and Manufacturing Development of new end-items prior to a production approval decision. The prime contract is a sole source to Bell Helicopter Textron, Inc.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2005				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604245N USMC H-1 Upgrades			PROJECT NUMBER AND NAME 2279 USMC H-1 Upgrades							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY06 Cost	FY06 Award Date	FY 07 Cost	FY07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	SS CPFF	Bell Helicopter, Ft. Worth, TX	902.341	124.045	10/04	29.000	11/05			0.000	1,055.386	1,055.386
Anciliary Hdw Development											0.000	
Training Development	WR	Various	6.212							0.000	6.212	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	WR	Various	66.022	5.270	Various					0.000	71.292	
Licenses											0.000	
Tooling											0.000	
GFE	Various	Various	21.050	2.648	10/04					0.000	23.698	
Award Fees*	WR	Bell Helicopter, Ft. Worth, TX	12.668							0.000	12.668	12.668
Subtotal Product Development			1,008.293	131.963		29.000		0.000		0.000	1,169.256	
*Remarks: Effective 1 May 00, cost plus incentive fee (CPIF) applies. Original contract was was a SS CPAF contract. Total award fee pool $47,496,152, and to date $12,668,250 has been awarded. Period #1 was 90%, period #2 87%, period #3 90%, period #4 77%, period #5 76%, and period #6 was 0%. Award fee activity was terminated on 30 April 2000.												
Development Support	Various	Various	1.387	7.977	11/04	4.000	11/05	4.252	10/06	8.043	25.659	
Software Dev. Electronics											0.000	
Software Dev. Weapons Integration	Various	Various	2.800	5.067	11/04	5.100	11/05	3.178	10/06	6.112	22.257	
Integrated Logistics Support	Various	Various	23.383	2.798	11/04						26.181	
Configuration Management	Various	Various	0.957								0.957	
Technical Data											0.000	
Studies & Analysis											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			28.527	15.842		9.100		7.430		14.155	75.054	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2005**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604245N USMC H-1 Upgrades				PROJECT NUMBER AND NAME 2279 USMC H-1 Upgrades						
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	Various	NAWC Patuxent River	35.252	16.881	11/04	2.500	11/05				54.633	
Operational Test & Evaluation	Various	NAWC Patuxent River	2.406	5.147	11/04						7.553	
Live Fire Test & Evaluation	Various	NAWC China Lake		1.653	10/04						1.653	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			37.658	23.681		2.500		0.000		0.000	63.839	
Remarks:												
Contractor Engineering Support	C FFP	Various	4.670	0.745	11/04	0.571	11/05				5.986	5.986
Government Engineering Support											0.000	
Program Management Support	C FFP	Various	5.767	0.545	11/04	0.571	11/05				6.883	6.883
Travel	WR	Various	2.117	0.270	11/04	0.270	11/05	0.270	11/06	0.900	3.827	
Transportation											0.000	
Subtotal Management			12.554	1.560		1.412		0.270		0.900	16.696	
Remarks:												
Total Cost			1,087.032	173.046		42.012		7.700		15.055	1,324.845	
Remarks:												

R-1 SHOPPING LIST - Item No. 93

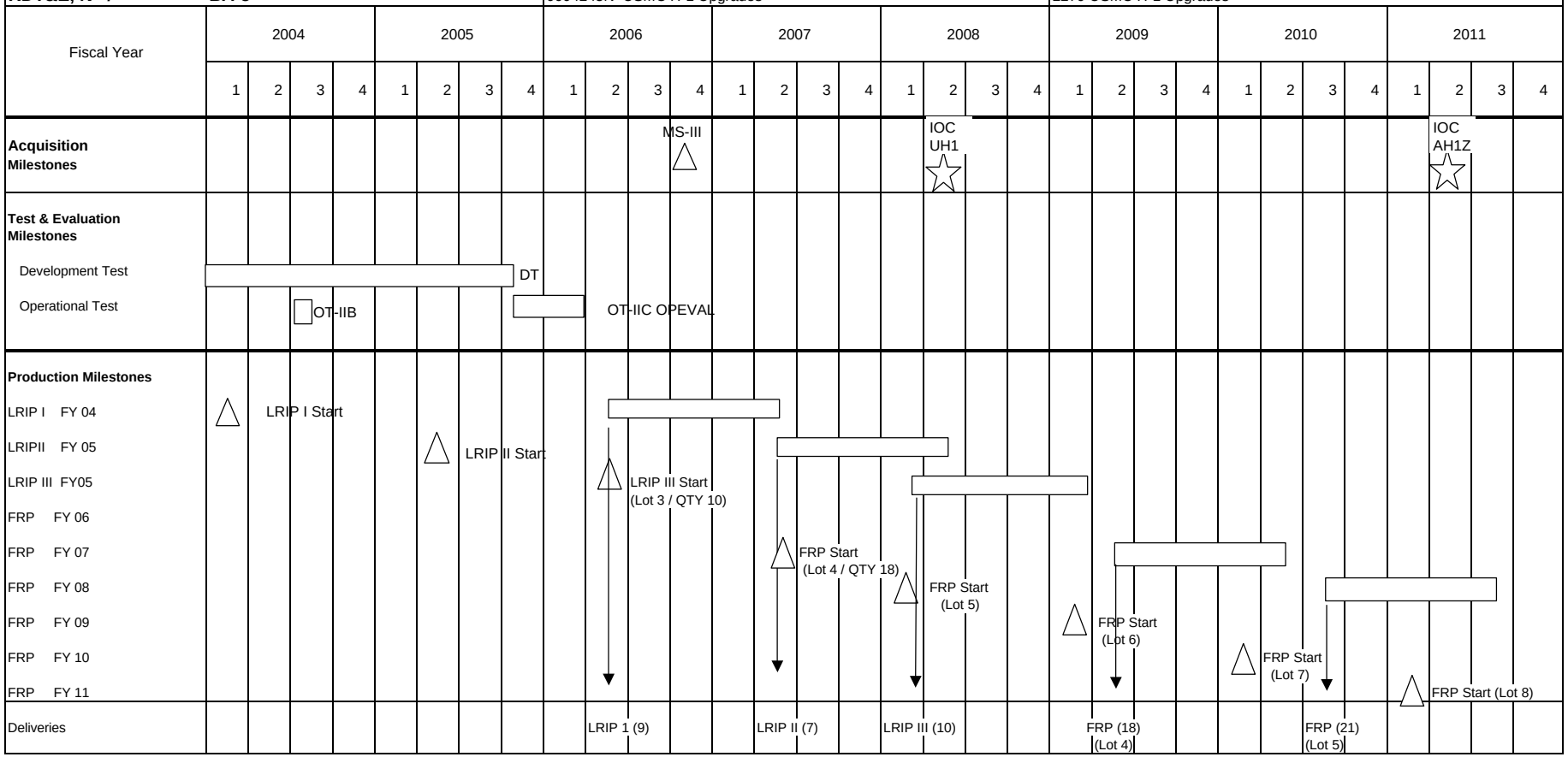
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: February 2005

APPROPRIATION/BUDGET ACTIVITY: RDT&E, N / BA-5

PROGRAM ELEMENT NUMBER AND NAME: 0604245N USMC H-1 Upgrades

PROJECT NUMBER AND NAME: 2279 USMC H-1 Upgrades



CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2005**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT 0604245N USMC H-1 Upgrades				PROJECT NUMBER AND NAME 2279 USMC H-1 Upgrades			
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Full Rate Production (FRP) Decision Milestone III			4Q					
IOC-UH1Y								
IOC-AH1Z								
Developmental Testing (DT)	1Q-4Q	1Q-4Q						
Operational Testing (OT-IIB)	3Q							
Operational Evaluation (OT-IIC) (OPEVAL)		4Q	1Q					
Start Low-Rate Initial Production I (LRIP I)	1Q							
Low-Rate Initial Production I Delivery			2Q - 4Q	1Q-2Q				
Start Low-Rate Initial Production II (LRIP II)		2Q						
Low-Rate Initial Production II Delivery				2Q-4Q				
Start Low-Rate Initial Production III (LRIP III)			2Q					
Low-Rate Initial Production III Delivery								
Full Rate Production Start (FRP) (Lot 4)				2Q				
Full Rate Production (FRP) Delivery (Lot 4)								
Full Rate Production Start (FRP) (Lot 5)								
Full Rate Production (FRP) Delivery (Lot 5)								
Full Rate Production Start (FRP) (Lot 6)								
Full Rate Production Start (FRP) (Lot 7)								
Full Rate Production Start (FRP) (Lot 8)								

This schedule reflects a change to the program baseline including a pending $42M FY05 prior approval reprogramming action. A PDR and APB have been submitted by the Program Office and are pending approval by the MDA.

This RDT&E budget reflects a pending $42M FY05 prior approval reprogramming action.