

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE:	
							February 2004	
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE			
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					0604216N Multi-Mission Helicopter Upgrade Development			
COST (\$ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost		89.943	76.141	78.757	48.224	18.912	14.037	0.000
H1707 MMH Upgrade Development		84.250	76.141	78.757	48.224	18.912	14.037	0.000
H3053 MH-60S AMCM								
H9215 MH-60 PMLCC		3.251						
H9216 MH-60 Helicopter FLIR		2.442						
<b>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b> From program inception through FY99, Project H1707 was funded under P.E. 0604212N, ASW & Other Helo Development, Project Unit H1707.  H1707 - The MH-60R Multi-Mission Helicopter provides battle group protection and adds significant capability in coastal littorals and regional conflicts. The MH-60R Multi-Mission Helicopter represents a significant avionics improvement to the H-60 series helicopters by enhancing primary mission areas of Undersea Warfare (USW) and Surface Warfare (SUW). Airborne Low Frequency Sonar (ALFS) will be added to enhance the existing acoustic suite. An added Multi-Mode Radar includes an Inverse Synthetic Aperture Radar mode (ISAR) (permits stand-off classification of hostile threats). An improved Electronics Surveillance Measures system (ESM) will enable passive detection and targeting of radar sources not currently detectable. Integration of Tactical Common Data Link (TCDL) , will be incorporated into the MH-60R as part of Block-I. FY03 and out reflects a new production procurement strategy.  H9215 - The MH-60R Multi-Mission Helicopter Preventative Maintenance Life Cycle Criteria (PMLCC) (Congressional Add)).  H9216 - The MH-60R Multi-Mission Helicopter FLIR housing configuration (Congressional Add).								

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 Exhibit R-2, RDTEN Budget Item Justification  
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EXHIBIT R-2a, RDT&E Project Justification						DATE: <b>February 2004</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>				PROJECT NUMBER AND NAME H1707 MMH Upgrade Development			
COST (\$ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	84.250	76.141	78.757	48.224	18.912	14.037	0.000
RDT&E Articles Qty							

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

From program inception through FY99, the program was funded under P.E. 0604212N, ASW & Other Helo Development, Project Unit H1707.

The MH-60R Multi-Mission Helicopter provides battle group protection and adds significant capability in coastal littorals and regional conflicts. The MH-60R Multi-Mission Helicopter represents a significant avionics improvement to the H-60 series helicopters by enhancing primary mission areas of Undersea Warfare (USW) and Surface Warfare (SUW). Airborne Low Frequency Sonar (ALFS) will be added to enhance the existing acoustic suite. An added Multi-Mode Radar includes an Inverse Synthetic Aperture Radar mode (ISAR) (permits stand-off classification of hostile threats). An improved Electronics Surveillance Measures system (ESM) will enable passive detection and targeting of radar sources not currently detectable. Integration of Tactical Common Data Link (TCDL) , will be incorporated into the MH-60R as part of Block-I. FY03 and out reflects a new production procurement strategy.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2004</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROJECT NUMBER AND NAME H1707 MMH Upgrade Development

**B. Accomplishments/Planned Program**

	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	59.050	26.400	8.800
RDT&E Articles Quantity			

Avionics system software and hardware development and integration to include: RADAR mode development, ESM development, acoustics and post processing, mission planning, weapons, stores and self defense, data fusion, logistics products including Integrated Electronic Technical Manuals, boresighting equipment and integration. Support aircraft integration, problem investigation and resolution, lab management and upgrades, hardware investigations, and repairs in support of the test program. ILS support, Program Management support, Risk Management Board support, and subvendor support.

	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	4.600	5.825	0.926
RDT&E Articles Quantity			

Completed and delivered Airframe test articles (FY02). Airframe test articles engineering support, GFE repair, and risk management board support. Procurement of Digital Mock-up and weight reduction studies, Integrated Self Detection integration development and vibration testing.

	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	5.274	5.586	4.315
RDT&E Articles Quantity			

Avionics engineering specialties, Integrated Logistics Support, Contractor Services Support, System Engineering, Program Management and Travel as required to support the MH-60R developmental program and test activities (DT-IIC).

	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	14.882	11.130	4.316
RDT&E Articles Quantity			

MH-60R Mission Avionics testing.

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROJECT NUMBER AND NAME H1707 MMH Upgrade Development	
<b>B. Accomplishments/Planned Program</b>			
	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.444	0.400	0.400
RDT&E Articles Quantity			
Avionics Acoustics (including ALFS) processor development, integration and testing. Correct deficiencies encountered during testing and integration in			
	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			
RDT&E Articles Quantity			
Airframe Dynamic Component engineering and Logistics evaluation and analysis of impacts to the MH-60R design. Continued to build test coupons and perform certification testing.			
	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		17.500	40.600
RDT&E Articles Quantity			
Avionics Block I Upgrade software and hardware development and integration effort to include: digital torpedo, integrated Satellite Communication Demand Assign Multiple Access Waveform (SATCOM DAMA), low light Multi-Spectral Targeting System Forward Looking Infrared (MTS FLIR) system, RADAR Low Probability of Intercept (LPI) mode development, Link 16, and Joint Mission Planning System (JMPS) migration.			
	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		1.800	2.600
RDT&E Articles Quantity			
Airframe Block I Upgrade software and hardware development and integration for the right hand extended pylon.			

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**Exhibit R-2a, RDTEN Project Justification**  
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EXHIBIT R-2a, RDT&amp;E Project Justification

DATE:

**February 2004**

APPROPRIATION/BUDGET ACTIVITY

**RDT&E, N / BA-5**

PROJECT NUMBER AND NAME

H1707 MMH Upgrade Development

**B. Accomplishments/Planned Program**

	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		2.500	6.800
RDT&E Articles Quantity			

Avionics Block I Upgrade engineering specialties, Integrated Logistics Support, Contractor Services Support, Systems Engineering, and Program Management as required.

	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		5.000	10.000
RDT&E Articles Quantity			

Avionics Mission Block I Upgrade Mission Testing and Evaluation efforts.

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**Exhibit R-2a, RDTEN Project Justification**

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## CLASSIFICATION:

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604216N Multi-Mission Helicopter Upgrade Dev	PROJECT NUMBER AND NAME H1707 MMH Upgrade Development

**C. PROGRAM CHANGE SUMMARY:**

	FY 2003	FY 2004	FY 2005
Funding:			
Previous President's Budget:	87.012	76.998	79.152
Current BES/President's Budget	84.250	76.141	78.757
Total Adjustments	-2.762	-0.857	-0.395
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions		-0.857	
Congressional rescissions			
SBIR/STTR Transfer	-1.625		
Economic Assumptions			-0.166
Reprogrammings	-1.137		
Other Navy/OSD Adjustments			-0.229
Congressional increases			
Subtotal	-2.762	-0.857	-0.395

Schedule:

Milestone III (MS-III) was changed from 3Q/05 to 2Q/05 in accordance with the approved Acquisition Program Baseline (APB) dated 14 October 2003. The current schedule reflects the addition of Lockheed Martin contract award for the Block-I Upgrade effort planned for 2Q/04, the Sikorsky contract award planned for 2Q/04, the addition of Block-I DT-IIIA testing planned for 2Q/04-3Q/06, and OT-IIIA testing planned for 4Q/06-2Q/07.

Technical:

Not Applicable.

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Exhibit R-2a, RDTEEN Project Justification  
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## CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2004</b>																																
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME PE 0604216N Multi-Mission Helicopter Upgrade Dev			PROJECT NUMBER AND NAME H1707 MMH Upgrade Development																																		
<p><b>D. OTHER PROGRAM FUNDING SUMMARY:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 35%;"><u>Line Item No. &amp; Name</u></th> <th style="text-align: right; width: 8%;"><u>FY 2003</u></th> <th style="text-align: right; width: 8%;"><u>FY 2004</u></th> <th style="text-align: right; width: 8%;"><u>FY 2005</u></th> <th style="text-align: right; width: 8%;"><u>FY 2006</u></th> <th style="text-align: right; width: 8%;"><u>FY 2007</u></th> <th style="text-align: right; width: 8%;"><u>FY 2008</u></th> <th style="text-align: right; width: 8%;"><u>FY 2009</u></th> <th style="text-align: right; width: 8%;"><u>To Complete</u></th> <th style="text-align: right; width: 8%;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>APN-1 (BLI - 018200)</td> <td style="text-align: right;">117.238</td> <td style="text-align: right;">385.645</td> <td style="text-align: right;">409.095</td> <td style="text-align: right;">613.456</td> <td style="text-align: right;">816.527</td> <td style="text-align: right;">1,135.673</td> <td style="text-align: right;">1,167.362</td> <td style="text-align: right;">4,066.131</td> <td style="text-align: right;">8,711.127</td> </tr> <tr> <td>APN-6 Initial Spares (BLI-060510)</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">49.579</td> <td style="text-align: right;">45.253</td> <td style="text-align: right;">74.843</td> <td style="text-align: right;">0.774</td> <td style="text-align: right;">5.787</td> <td style="text-align: right;">0.773</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">189.272</td> </tr> </tbody> </table> <p>Related RDT&amp;E            (U) PE 0604507N Enhanced Modular Signal Processor            (U) PE 0604212N ASW &amp; Other Helo Development (LAMPS MK-III Data Link)            (U) PE 0604261N Acoustic Search Sensors            (U) PE 0604216N H-60 Helicopter Components Preventative Maintenance Life Cycle Criteria (PMLCC). PU: H9215            (U) PE 0604216N H-60 Helicopter FLIR Housing Configuration. PU: 9216</p> <p><b>E. ACQUISITION STRATEGY:</b></p> <p>The MH-60R acquisition strategy has been revised based on the program restructure, which occurred in FY2002. The restructure encompassed a replan of the EMD-II contract resulting in a change in contract type from Cost Plus Fixed Fee (CPFF) to Cost Plus Award Fee (CPAF) and inclusion of Sikorsky in development efforts. The restructure also extended the test schedule, which will culminate in a Milestone III (MS-III) and Initial Operating Capability (IOC) in FY2005. The program includes an evolutionary acquisition Block I Upgrade effort which is scheduled to begin in FY2004.</p> <p><b>F. MAJOR PERFORMERS:</b></p>										<u>Line Item No. &amp; Name</u>	<u>FY 2003</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>To Complete</u>	<u>Total Cost</u>	APN-1 (BLI - 018200)	117.238	385.645	409.095	613.456	816.527	1,135.673	1,167.362	4,066.131	8,711.127	APN-6 Initial Spares (BLI-060510)	0.000	49.579	45.253	74.843	0.774	5.787	0.773	0.000	189.272
<u>Line Item No. &amp; Name</u>	<u>FY 2003</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>To Complete</u>	<u>Total Cost</u>																														
APN-1 (BLI - 018200)	117.238	385.645	409.095	613.456	816.527	1,135.673	1,167.362	4,066.131	8,711.127																														
APN-6 Initial Spares (BLI-060510)	0.000	49.579	45.253	74.843	0.774	5.787	0.773	0.000	189.272																														

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## CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE:				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604216N Multi-Mission Helicopter Upgrade Dev			H1707 MMH Upgrade Development						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Pri Hdw Dev, Avionics	SS/CPAF	Lockheed Martin, Owego NY	517.475	59.050	12/02	26.400	12/03	8.800	12/04		611.725	611.725
Ancillary Hdw Dev, ALFS	SS/CPIF	Raytheon, Rhode Island	27.952								27.952	27.952
Pri Hdw Dev, Avionics Common Cockpit	SS/CPIF	Lockheed Martin, Owego NY	70.530								70.530	70.530
Pri Hdw Dev, Avionics Acoustics	SS/CPIF	Lockheed Martin, Owego NY	10.618	0.444	02/03	0.400	02/04	0.400	02/05		11.862	11.862
Pri Hdw Dev, Airframe TA	SS/CPAF	Sikorsky, Stratford, CT	52.047	4.600	02/03	5.825	02/04	0.926	01/05		63.398	63.398
Pri Hdw Dev, Airframe PADS	SS/CPIF	Sontech, Bedford, NH	17.769								17.769	17.769
GFE	BOA	Sikorsky, Stratford, CT	4.238								4.238	4.238
Pri Hdw Dev, Airframe Dyn Com Analysis	SS/CPIF	Sikorsky, Stratford, CT	10.999								10.999	10.999
Aircraft Integration (ATIRCM)	SS/CPFF	Lockheed Martin, Owego NY	3.964								3.964	3.964
Pri Hdw Dev, Avionics Block I	SS/CPAF	Lockheed Martin, Owego NY				17.500	01/04	40.600	01/05	28.600	86.700	86.700
Pri Hdw Dev, Airframe Block I	SS/CPAF	Sikorsky, Stratford, CT				1.800	01/04	2.600	01/05	0.400	4.800	4.800

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Exhibit R-3, Project Cost Analysis  
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Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2004</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RD&amp;E, N / BA-5</b>			PROGRAM ELEMENT 0604216N Multi-Mission Helicopter Upgrade Dev			PROJECT NUMBER AND NAME H1707 MMH Upgrade Development						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	Various	41.151	12.975	Various	9.279	12/03				63.405	
Operational Test & Evaluation	WX	NAWC-AD, Pax River	0.961	1.705	01/03	1.755	03/04	4.316	TBD		8.737	
Live Fire Test & Evaluation	WX	NAWC-WD, China Lake	1.752	0.339	02/03	0.096	12/03				2.187	
Block I Test & Evaluation	WX	NAWC-AD, Pax River				5.000	12/03	10.000	TBD	37.400	52.400	
Subtotal T&E			43.864	15.019		16.130		14.316		37.400	126.729	
Remarks:												
Contractor Engineering Support	MIPR	CECOM, Ft. Monmouth, NJ	3.296								3.296	
Government Engineering Support	RX	NAWC-AD Pax River	5.233	2.822	Various	1.462	12/03	0.938	TBD	0.868	11.323	
Program Management Support	RX	MISC Activities	5.870	0.039	04/03	0.688	12/03	0.442	TBD	0.300	7.339	
Travel	WX	NAWC-AD Pax River	4.200	0.918	Various	1.700	Various	1.700	TBD	0.500	9.018	
SBIR Assessment												
Subtotal Management			18.599	3.779		3.850		3.080		1.668	30.976	
Remarks:												
Total Cost			899.202	84.250		76.141		78.757		81.173	1,219.523	
Remarks:												

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EXHIBIT R4, Schedule Profile																								DATE:								
APPROPRIATION/BUDGET ACTIVITY												PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME								
RDT&E, N / BA-5												0604216N Multi-Mission Helicopter Upgrade Development												H1707 MMH Upgrade Development								
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	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				
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\* Not required for Budget Activities 1, 2, 3, and 6

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