

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE:			
								June 2001			
APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7						0305207N Manned Reconnaissance Systems					
COST (\$ in Millions)	Prior Years Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost	32.526	39.582	46.014	29.231						Continuing	Continuing
* Z0117 Reef Point		0.396	2.188	7.049						Continuing	Continuing
** E2673 F/A-18E/F Tactical Reconnaissance (SHARP)	** 32.526	*** 39.186	**** 43.826	22.182						Continuing	Continuing
* Executed at a higher level of classification - no project R2, project unit changed from R0117 to Z0117.											
** Includes \$2,817 executed under PE 0204136N, Project E2350 (FY1998) and R2673 (FY1999)											
*** Was executed under projects R2673, E2673, & E2808											
**** The FY 2001 budget reflects an \$18.000 million Congressional add for SHARP risk reduction executed under E2808 and a \$1.000 million Congressional add for a sensor upgrade project.											
Quantity of RDT&E Articles		2	3								5
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Provides funds for the development of a dual-spectral-band reconnaissance pod camera system capable of being deployed on tactical aircraft. The camera will have simultaneous visible and infrared imaging capability and provide digital images in national standard formats. The system will be capable of collecting imagery, recording on-board, and transmitting simultaneously to a ground receiving station. Cameras operating in multiple spectral bands will be introduced as the technology evolves. The target aircraft is the F/A-18E/F. A prototype system will be flight demonstrated by June 2001. Provision will be made to accommodate transmission of Synthetic Aperture Radar (SAR) data. The system will operate semi-autonomously from the aircraft maximizing standard interfaces. Emphasis will be placed on using commercially available subsystems and components in an open architecture so that evolutionary designs in cameras, processors, transmitters, and recorders can be introduced seamlessly via competitive procurement procedures. An aggressive development schedule will be embraced driving toward an operational capability by May 2003. The purpose of the aggressive development schedule is to have an operational capability ready to replace the F-14 Tactical Air Reconnaissance Pod System (TARPS) due to retire beginning in 2003.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it encompasses engineering and manufacturing development for upgrade of existing systems.</p>											

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Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 1 of 8)

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EXHIBIT R-2a, RDT&E Project Justification								DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305207N Manned Reconnaissance Systems					PROJECT NUMBER AND NAME E2673 F/A-18E/F Tactical Reconnaissance (SHARP)					
COST (\$ in Millions)	Prior Years Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost	32.526	39.186	43.826	22.182	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
RDT&E Articles Qty		2	3								5

*Includes \$2,817 executed under PE 0204136N, project E2350 (FY 1998) and funding executed under PE 0305207N, project R2673 (FY 1999).

**Was executed under projects R2673, E2673, & E2808 in FY 2000. The FY 2000 budget reflects a \$9,000 thousand Congressional add for SHARP risk reduction (E2808).

*** The FY 2001 budget reflects an \$18,000 thousand Congressional add for SHARP risk reduction, executed under E2808, and a \$1.000 million Congressional add for a sensor upgrade project.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Shared Reconnaissance Pod (SHARP) provides funds for the development of a dual-spectral-band reconnaissance pod camera system capable of being deployed on tactical aircraft. The camera will have simultaneous visible and infrared imaging capability and provide digital images in national standard formats. The system will be capable of collecting imagery, recording on-board, and transmitting simultaneously to a ground receiving station. Cameras operating in multiple spectral bands will be introduced as the technology evolves. The target aircraft is the F/A-18E/F. A prototype system will be flight demonstrated by June 2001. Provision will be made to accommodate transmission of Synthetic Aperture Radar (SAR) data. The system will operate semi-autonomously from the aircraft maximizing standard interfaces. Emphasis will be placed on using commercially available subsystems and components in an open architecture so that evolutionary designs in cameras, processors, transmitters, and recorders can be introduced seamlessly via competitive procurement procedures. An aggressive development schedule will be embraced driving toward an operational capability by May 2003.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2000 ACCOMPLISHMENTS:

- (U) (\$.480) Coordinated Project Management development of the activities/contractors developing Rapid Prototype.
- (U) (\$.099) Integrated SHARP Rapid Prototype sensor.
- (U)(\$1.846) Completed integration and tested the SHARP subsystems for Rapid Prototype.
- (U) (\$2.575) Completed logistics plan and performed preliminary design of support equipment to ensure the Rapid Prototype can be transitioned to a fleet asset.
- (U) (\$1.531) Flight tested sensors to evaluate their performance and compared to operational requirements document (ORD) requirements.
- (U)(\$.662) Coordinated Program Management activities during the engineering, manufacturing, and development (EMD) phase of the program.

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Exhibit R-2a, RDTE Project Justification
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EXHIBIT R-2a, RDT&E Project Justification		DATE:
		June 2001
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0305207N Manned Reconnaissance Systems	E2673 F/A-18 Tactical Reconnaissance
<ul style="list-style-type: none">- (U)(\$.583) Performed system engineering to ensure design meets ORD requirements and can be transitioned to a design that is producible and supportable. Identified trades that can be considered as part of the cost as an independent variable process.- (U) (\$1.122) Performed systems engineering to develop EDM pods and designed/developed the (software/hardware) Interface to the F/A-18 aircraft. Coordinated with other subsystems (F/A-18 Electronic Warfare, Weapons, and Radar) to ensure system compatibility. Coordinated with ground station activities to ensure compatibility.- (U) (\$.500) Completed F/A-18 System Configuration Set (SCS) software for Rapid Prototype. Incorporated and tested the software upgrade for F/A-18 minimal integration for demo of Rapid Prototype.- (U) (\$3.200) Began F/A-18 SCS software. Upgraded demo tape for F/A-18 E/F aircraft. Updated Tactical Aircraft Mission Planning System (TAMPS) for new sensors/design.- (U) (\$3.348) Began Reconnaissance (RECCE) Management System (RMS) software design for EMD phase. Designed Built-In-Test (BIT) software to support Reliability and Maintainability (R&M) requirements. Upgraded integration labs/instrumentation.- (U) (\$2.208) Completed RECCE Management System (RMS) design for the Rapid Prototype.- (U) (\$16.483) Began SHARP Engineering Development Model(EDM) development. Completed pod design for EMD phase and fabricated 4 EDMs and 1 set of WRA's.- (U) (\$3.949) Completed SHARP prototype pod development. Completed prototype pod design and fabrication.- (U) (\$.600) Developed SHARP unique changes to datalink.		
2. FY 2001 PLANS:		
<ul style="list-style-type: none">- (U) (\$.800) Program Management to coordinate development activities during the EMD Phase of the Program.- (U) (\$1.100) Continue systems engineering to develop EDM pods, design/develop the (software/hardware) interface to the F/A-18 aircraft. Coordinate with other subsystems (F/A-18 EW, Weapons and Radar) to ensure system compatibility. Coordinate with ground station activities to ensure compatability.- (U) (\$5.872) Continue SHARP EDM development. Upgrade design as needed to support pod qualification. Complete pod design for EMD phase and fabricate 2 EDM pods. Integrate Weapons Replaceable Assembly (WRA)'s and begin initial aircraft integration on F/A-18 E/F aircraft.- (U) (\$11.202) Procure sensor for EMD phase.- (U) (\$.600) Continue work on F/A-18 SCS software. Begin integration and testing of the SHARP subsystems.		

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Exhibit R-2a, RDTE Project Justification
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		June 2001
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDTE, N / BA-7	0305207N Manned Reconnaissance Systems	E2673 F/A-18 Tactical Reconnaissance
<p>- (U) (\$5.642) Complete coding for RMS to support integration of the EMD phase. Begin BIT software development and testing and begin integration to the F/A-18E/F SCS.</p> <p>- (U) (\$7.820) Procure SHARP subsystem units.</p> <p>- (U) (\$3.716) Begin integration and testing of the SHARP EDM pod. Perform initial E3 testing, Carrier Suitability testing, and Initial Operation Testing to support Low Rate Initial Production.</p> <p>- (U) (\$6.674) Complete logistics plan and perform preliminary design of support equipment to ensure the Rapid Prototype can be transitioned to a fleet asset.</p> <p>- (U) (\$.400) Procure EMD Datalink</p> <p>3. FY 2002 PLANS:</p> <p>- (U) (\$.330) Continue program management to coordinate development activities during the EMD Phase of the Program.</p> <p>- (U) (\$.280) Continue to perform systems engineering to develop EDM pods, design/develop the (software/hardware) interface to the F/A-18 aircraft. Coordinate with other subsystems (F/A-18 EW, Weapons, and Radar), to ensure system compatibility. Coordinate with ground station activities to ensure compatibility.</p> <p>- (U) (\$12.171) Procure five additional sensors for EMD phase and one Squadron Ground Station.</p> <p>- (U) (\$.450) Continue build of F/A-18 SCS software. Integration and test of the SHARP subsystems.</p> <p>- (U) (\$4.463) Complete coding for RMS to support integration of the EMD phase. Continue BIT software development and testing, and begin integration to the F/A-18E/F SCS.</p> <p>- (U) (\$4.488) Continue integration and test of the SHARP EDM pod. Continue performing initial E3 testing, Carrier Suitability testing, and Initial Operation Testing to support Low Rate Initial Production.</p>		

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APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME																																																	
RDT&E, N / BA-7			0305207N Manned Reconnaissance Systems			E2673 F/A-18 Tactical Reconnaissance																																																	
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td></td> <td style="text-align: right;">FY2000</td> <td style="text-align: right;">FY2001</td> <td style="text-align: right;">FY2002</td> </tr> <tr> <td>(U) FY 2001 President's Budget:</td> <td style="text-align: right;">39.340</td> <td style="text-align: right;">25.271</td> <td style="text-align: right;">22.244</td> </tr> <tr> <td>(U) Adjustments from the President's Budget:</td> <td style="text-align: right;">-0.154</td> <td style="text-align: right;">18.555</td> <td style="text-align: right;">-0.062</td> </tr> <tr> <td>(U) FY 2002 President's Budget Submit:</td> <td style="text-align: right;">39.186</td> <td style="text-align: right;">43.826</td> <td style="text-align: right;">22.182</td> </tr> </table> <p>CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: The FY 2000 decrease of \$.154 million is due to a Congressional Rescission. The FY 2001 net increase of \$18.555 million is due to a Congressional increase of \$18.0 million for ongoing SHARP EMD efforts, a Congressional increase of \$1.0 million for a sensor upgrade project, a \$.310 million decrease for a Congressional Reduction, a \$.039 million decrease for reprioritization of requirements within the Navy, a \$.096 million decrease for a Congressional Rescission. The FY 2002 net decrease of \$.062 million is due to an increase of \$.054 million for additional SHARP funding and a decrease of \$.116 million due to economic assumptions.</p> <p>(U) Schedule: FY 2000: EMD POD Contract award shifted from 2Q/00 to 3Q/00 to align with Milestone II decision which was granted March 2000.</p> <p style="margin-left: 40px;">FY2003: TECHEVAL shifted from 1Q/03 to 2Q/03 due to reduced EMD assets. Milestone III decision shifted from 2Q/03 to 2Q/04 to due to delay in sensor award. Sensor Contract awarded February 2001.</p> <p>(U) Technical: Not Applicable.</p> <p>(U) C. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Line Item No. & Name</u></th> <th style="text-align: right;">FY 2000</th> <th style="text-align: right;">FY 2001</th> <th style="text-align: right;">FY 2002</th> <th style="text-align: right;">FY 2003</th> <th style="text-align: right;">FY 2004</th> <th style="text-align: right;">FY 2005</th> <th style="text-align: right;">FY 2006</th> <th style="text-align: right;">FY 2007 To Complete</th> <th style="text-align: right;">Total Cost</th> </tr> </thead> <tbody> <tr> <td>F/A-18E/F Fighter (Hornet) APN-1 (Ancillary Equipment)</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> <td style="text-align: right;">12.922</td> <td></td> <td></td> <td></td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> </tr> <tr> <td colspan="10"> <p>(U) C. RELATED RDT&E</p> <p>(U) PE0305206N (Airborne Reconnaissance Advance Development)</p> <p>(U) PE0204236N (F/A-18 Squadrons)</p> <p>(U) PE0305208N (JSIPS)</p> </td> </tr> </tbody> </table>											FY2000	FY2001	FY2002	(U) FY 2001 President's Budget:	39.340	25.271	22.244	(U) Adjustments from the President's Budget:	-0.154	18.555	-0.062	(U) FY 2002 President's Budget Submit:	39.186	43.826	22.182	<u>Line Item No. & Name</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007 To Complete	Total Cost	F/A-18E/F Fighter (Hornet) APN-1 (Ancillary Equipment)	0	0	12.922				0	0	0	<p>(U) C. RELATED RDT&E</p> <p>(U) PE0305206N (Airborne Reconnaissance Advance Development)</p> <p>(U) PE0204236N (F/A-18 Squadrons)</p> <p>(U) PE0305208N (JSIPS)</p>									
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Exhibit R-2a, RD TEN Project Justification
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EXHIBIT R-2a, RDT&E Project Justification			DATE: June 2001																										
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0305207N Manned Reconnaissance Systems	PROJECT NUMBER AND NAME E2673 F/A-18 Tactical Reconnaissance																											
<p>(U) D. ACQUISITION STRATEGY: The SHARP program consists of three separate procurements.</p> <ol style="list-style-type: none"> 1. The pod will be procured with an order on a Cost Plus Fixed-Fee (CPFF)/IDIQ contract to Raytheon, Indy. 2. The sensor is being procured competitively with a Cost Plus Fixed Fee (CPFF) contract. 3. The digital recorder will be procured competitively with a FPI or CPFF contract. <p>(U) E. SCHEDULE PROFILE:</p> <table border="1"> <thead> <tr> <th></th> <th><u>FY 2000</u></th> <th><u>FY 2001</u></th> <th><u>FY 2002</u></th> <th><u>TO COMPLETE</u></th> </tr> </thead> <tbody> <tr> <td>(U) Program Milestones</td> <td>3Q/00 MS-II</td> <td></td> <td>1Q/02 LRIP</td> <td></td> </tr> <tr> <td>(U) Engineering Milestones</td> <td>1Q/00 CDR (Prototype)</td> <td>4Q/01 Prototype Complete 4Q/01 CDR (EMD)</td> <td></td> <td></td> </tr> <tr> <td>(U) T&E Milestones</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Contract Milestones</td> <td>3Q/00 EMD POD Contract</td> <td>2Q/01 Sensor Award</td> <td></td> <td></td> </tr> </tbody> </table>						<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>TO COMPLETE</u>	(U) Program Milestones	3Q/00 MS-II		1Q/02 LRIP		(U) Engineering Milestones	1Q/00 CDR (Prototype)	4Q/01 Prototype Complete 4Q/01 CDR (EMD)			(U) T&E Milestones					(U) Contract Milestones	3Q/00 EMD POD Contract	2Q/01 Sensor Award		
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>TO COMPLETE</u>																									
(U) Program Milestones	3Q/00 MS-II		1Q/02 LRIP																										
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Exhibit R-2a, RDTE Project Justification
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Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-7			0305207N Manned Reconnaissance Systems			E2673 F/A-18 Tactical Reconnaissance						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Prototype POD Development	SS/FP-LOE	Raytheon, Indianapolis, IN	14.373	7.820	11/00					Continuing	Continuing	Continuing
Prototype Sensor (3 suppliers)	C/FFP	Various	2.507							Continuing	Continuing	Continuing
Prototype RMS Cards	C/Plus	Space Dyn Lab, Logan , UT	3.500							Continuing	Continuing	Continuing
Procure EMD Sensor	C/FFP	Recon Optical, Barrington, IL		11.171	02/01	10.791	11/01			Continuing	Continuing	Continuing
ILS Facilities (Ship Shore)	SS/FP-LOE	Raytheon, Indianapolis, IN		1.000	11/00					Continuing	Continuing	Continuing
Squadron Ground Station	TBD	TBD				1.380	11/01			Continuing	Continuing	Continuing
EMD POD Development	SS/FP-LOE	Raytheon, Indianapolis, IN	16.303	6.600	11/00	0.200	11/01			Continuing	Continuing	Continuing
Software Engineering Development	WR	NAWCWD, China Lake, CA	5.434	4.665	11/00	4.116	11/01			Continuing	Continuing	
Systems Engineering/RMS Dev.	WR	NRL, Washington, DC	8.509							Continuing	Continuing	
Product Development	WR	NAWCWD, China Lake, CA	5.982	3.974	11/00	1.407	11/01			Continuing	Continuing	
ILS Support	WR	NAWCWD, Lakehurst, NJ	0.992	0.877	11/00					Continuing	Continuing	
Misc. Product Development	WR	Various	1.286	1.294	11/00					Continuing	Continuing	
Misc. Hardware Proc./Upgrades	WR	NRL, Washington, DC	4.050							Continuing	Continuing	
Subtotal Product Development			62.936	37.401		17.894				Continuing	Continuing	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7			PROGRAM ELEMENT 0305207N Manned Reconnaissance Systems			PROJECT NUMBER AND NAME E2673 F/A-18 Tactical Reconnaissance						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Product Test & Integration	WR	NAWCAD, Pax River, MD	8.177	5.735		3.759				Continuing	Continuing	
Operational Test & Evaluation	WR	OPTEVFOR		0.017	11/00	0.083	11/00			Continuing	Continuing	
Subtotal T&E			8.177	5.752		3.842				Continuing	Continuing	
Remarks:												
Contractor Support/Travel/Misc.	Various	NAVAIR, Patuxent River, MD	0.599	0.673		0.446				Continuing	Continuing	
Subtotal Management			0.599	0.673		0.446				Continuing	Continuing	
Remarks:												
Total Cost			71.712	43.826		22.182				#VALUE!	#VALUE!	
Remarks:												

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Exhibit R-3, Project Cost Analysis
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