

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: JUNE 2001			
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA5					SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost			33.530						CONT.	CONT.
5" Rolling Airframe Missile/20167			4.808						CONT.	CONT.
NATO SEASPARROW/ 20173			28.722						CONT.	CONT.
Quantity of RDT&E Articles										
<p>A. Mission Description and Budget Item Justification</p> <p>The funding for this program was previously included in the Ship Self Defense - PE 0604755N . This program element provides funding for the development of systems that fulfill a portion of the third phase of the ship self defense: Engage. Development in this line will focus on hard kill capabilities in which missiles are used to intercept incoming ASCMs.</p> <p>(U) ENGAGEMENT: Both missile and terminal gun system improvements necessary to meet their requirements are being addressed via NATO SEASPARROW Missile System (NSSMS) (20173) and 5" Rolling Airframe Missile (RAM) (20167). Missile improvements are to include improved kinematic performance plus advanced seeker and low elevation fuzing/warhead capabilities.</p>										

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Exhibit R-2, RDT&E Budget Item Justification
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APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA5	R-1 ITEM NOMENCLATURE SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N																									
<p>B. Program Change Summary:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;"></th> <th style="width: 15%; text-align: center;">FY 2000</th> <th style="width: 15%; text-align: center;">FY 2001</th> <th style="width: 20%; text-align: center;">FY 2002</th> </tr> </thead> <tbody> <tr> <td>FY 2001 President's Budget Submit:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Appropriated Value:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Adjustments to FY2000/2001 Appropriated Value</td> <td></td> <td></td> <td></td> </tr> <tr> <td>FY2001 President's Budget:</td> <td></td> <td></td> <td style="text-align: right;">33.530</td> </tr> <tr> <td>FY 2002 PRESBUD Submit:</td> <td></td> <td></td> <td style="text-align: right;">33.530</td> </tr> </tbody> </table> <p>Funding:</p> <p>FY02: The net change in the NATO SEASPARROW Program is for the completion of the U.S. share of the EMD Cooperative effort and ESSM TECHEVAL/OPEVAL on a AEGIS DDG (+\$17.0), 5in Rolling Airframe Missile HAS adjustment (+\$1.4) and minor price adjustments (-\$0.46) added to the original amount previously included in PE 0604755N (+15.590).</p> <p>Schedule: Not applicable.</p> <p>Technical: Not Applicable.</p>				FY 2000	FY 2001	FY 2002	FY 2001 President's Budget Submit:				Appropriated Value:				Adjustments to FY2000/2001 Appropriated Value				FY2001 President's Budget:			33.530	FY 2002 PRESBUD Submit:			33.530
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EXHIBIT R-2a, RDT&E Project Justification							DATE: JUNE 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N				PROJECT NAME AND NUMBER NATO SEASPARROW/20173					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost			28.722						CONT	CONT
RDT&E Articles Qty										

A. Mission Description and Budget Item Justification: This project encompasses two (2) primary efforts to enhance ship self defense:

- (U) EVOLVED SEASPARROW MISSILE (ESSM):** A cooperative effort among 10 NATO SEASPARROW Nations, including the U.S., to improve the capability of the SEASPARROW Missile to counter the low altitude, highly maneuverable Anti-Ship Cruise Missile threat. The program consists of evolving the SEASPARROW Missile through the development of a new rocket motor with tail control; thrust vector control and ordnance (warhead) upgrade; modifications to the MK 41 VLS to fire from a single cell with 4 ESSM (QuadPack); and modifications to the NATO SEASPARROW Missile System (NSSMS) to provide ESSM capability.
- (U) NATO SEASPARROW- MK 91 Rearchitecture/SDSMS** The MK 91 Rearchitecture Program integrates NSSMS into the Ship Self Defense System (SSDS) Architecture to provide ship missile defense utilizing an open architected system. This effort consists of combining the Firing Officer Console and Radar Set Console functionality into a single Advanced Display System Console (AN/UYQ-70); modifying the Signal Data Processor and eliminating the MK 157 Computer Signal Data Converter and System Evaluation and Trainer, and redistributing this functionality within SSDS compatible microprocessors. This approach will eliminate the analog, point-to-point architecture, limited input-output channel and computer processing reserve deficiencies resident in the existing MK 57 NSSMS, and is required for ESSM. This modification also allows for full exploitation of the capabilities of the future ESSM and provides significant reductions (over 50%) in NSSMS cost of ownership and manning requirements.

Note: This Project was included in the Ship Self Defense PE 0604755N for FY 01 and Prior Years.

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Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-2a, RDT&E Project Justification		DATE: JUNE 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N BA-5	PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE(Engage: Hard Kill) 0604756	PROJECT NAME AND NUMBER NATO SEASPARROW/20173
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. (U) FY 2002 PLAN</p> <p>(U) <i>ESSM</i>:</p> <p>(U) (\$27.646) Complete AEGIS S Band development. Conduct U.S. Unique DT-IIC/OT-IIC firings on SDTS. Conduct TECHEVAL/OPEVAL (DT-IIE/OT-IID) on Aegis Platforms. Complete the cooperative and sole ESSM EMD effort.</p> <p>(U) <i>NATO SEASPARROW</i>:</p> <p>(U) (\$1.076) Complete development of computer program suite for the NSSMS MK 57 Mod 7 (ReArchitecture) for CVNs with SSDS Mk 2 Mod 1. Support Integration testing with SSDS Mk 2 Mod 1 at Wallops Island. Enter CSIT for CVN 76 with SSDS Mk 2 Mod 0 at ICSTF. Address all deficiencies accruing from either Wallops Island or ICSTF testing.</p>		

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Exhibit R-2a, RDT&E Project Justification
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Exhibit R-3 Cost Analysis (page 1)							DATE: JUNE 2001					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N BA-5			SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N			NATO SEASPARROW/20173						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
ESSM-Primary Hardware Development	LC/CPAF	HUGHES/RAYTHEON	120.687					9.485	10/01		130.172	130.172
		TDW	3.746								3.746	3.746
Ancillary Hardware Development	CPAF	LOCKHEED/UDLP	43.985								43.985	43.985
Systems Engineering	VARIOUS	VARIOUS	21.263					0.959	10/01		22.222	NA
NATO-Primary Hdwe Dev		HUGHES/RAYTHEON	29.098					1.026	11/01	CONT	CONT	
Software Development		TRACOR	2.346							CONT	CONT	
Systems Engineering		VARIOUS	4.385					0.000	10/01	CONT	CONT	
Subtotal Product Development			225.510					11.470		CONT	CONT	CONT
Remarks:												
ESSM												
Integrated Logistics Support	WR	NSWC PHD	2.818					0.500			3.318	
Engr Support	WR	VARIOUS	2.923					0.916	10/01		3.839	
NATO-MK 91/SDSMS												
ENGR SUPPORT	WR	VARIOUS	5.091					0.000	10/01	CONT	CONT	
Subtotal Support			10.832					1.416		CONT	CONT	
Remarks:												
Remarks:												

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Exhibit R-3, Project Cost Analysis
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Exhibit R-3 Cost Analysis (page 1)										DATE:		
APPROPRIATION/BUDGET ACTIVITY										JUNE 2001		
RDT&E, N BA-5												
PROGRAM ELEMENT										PROJECT NAME AND NUMBER		
SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N										NATO SEASPARROW/20173		
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWC CL/PT Mugu	2.421					9.353	10/01		CONT	
SDTS/DT OT IIC	WR	NAWC WS	3.732								6.000	
OPEVAL/TECHEVAL	WR	VARIOUS (CORONA,APL, Dahlgren,NSWC PHD	1.050					5.130	10/01		CONT	
Subtotal T&E			7.203					14.483				
Remarks:												
ESSM-ENGR SPT	VARIOUS	VARIOUS	4.046					0.268	VARIOUS		CONT	
ESSM-PM SPT	VARIOUS	VARIOUS	0.471								0.471	
ESSM-LABOR	PD/WR		2.567					0.845	VARIOUS		CONT	
ESSM - TRAVEL	PD/WR		0.860					0.185	VARIOUS		CONT	
ESSM- MISC	VARIOUS	VARIOUS	1.880					0.005	VARIOUS		CONT	
NATO TRAVEL/MISC	VARIOUS	VARIOUS	1.333					0.050	VARIOUS		CONT	
Subtotal Management			11.157					1.353				
Remarks:												
Total Cost			254.702					28.722		CONT	CONT	
Remarks: The Firings of the ESSM aboard the Self Defense Test Ship in FY 02 are critical for the qualification and acceptance testing in a shipboard enviroment. The TECHEVAL /OPEVAL will provide the first guided intercept from a AEGIS Platform to Test Out the Weapon System and obtain Milestone III for the ESSM Full Rate Production.												

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Exhibit R-3, Project Cost Analysis
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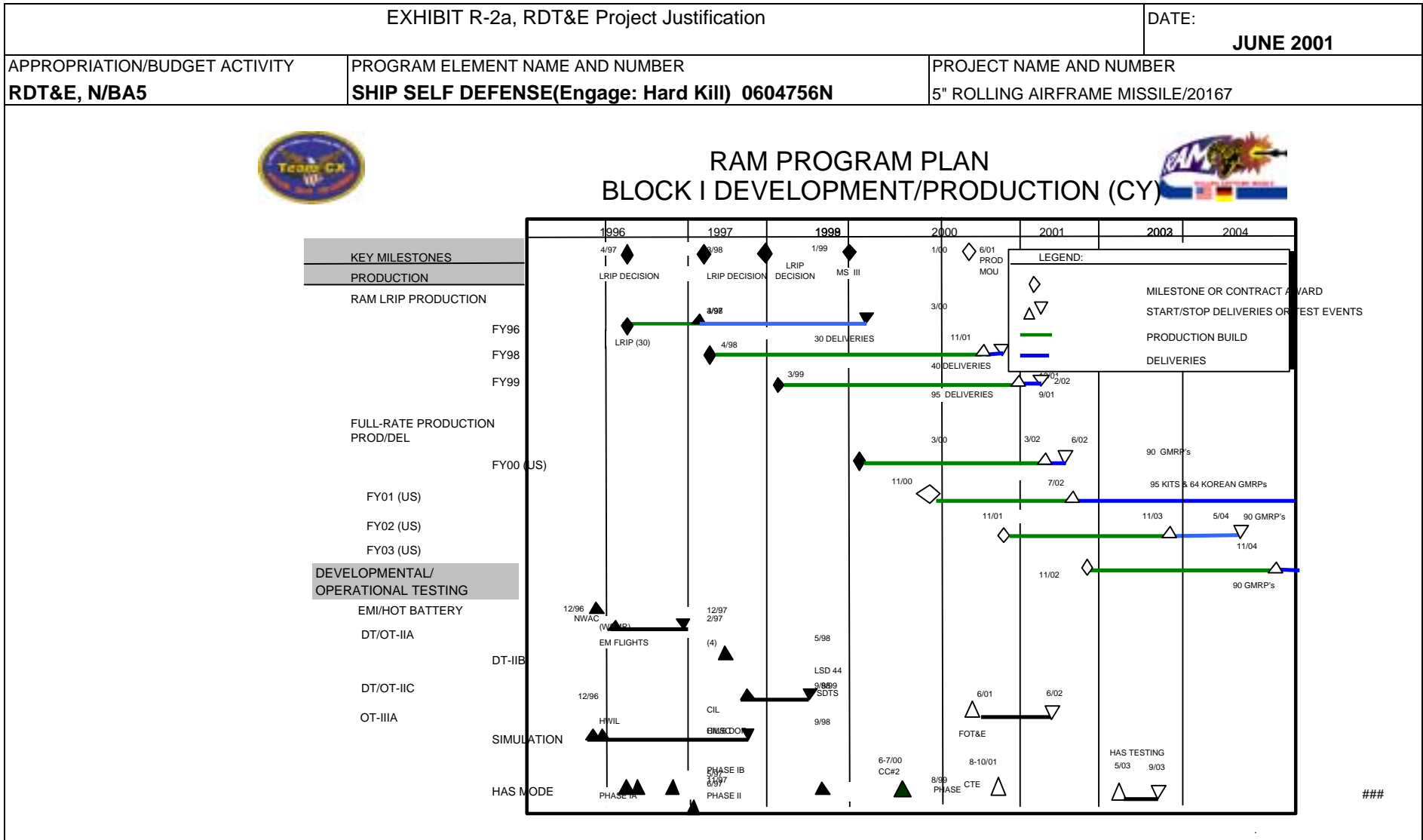
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EXHIBIT R-2a, RDT&E Project Justification							DATE: JUNE 2001			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER					
RDT&E, N/BA5	SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N				5" ROLLING AIRFRAME MISSILE/20167					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost			4.808						Continuing	Continuing
RDT&E Articles Qty										
<p>A. Mission Description and Budget Item Justification: The purpose of this program is to develop a surface-to-air self-defense system utilizing a dual mode, passive Radio frequency/Infared 5" Ram Rolling Airframe Missile. The baseline system (Block 0) provides a self-defense capability against active radar-guided anti-ship missiles and was developed on an equal cost share basis with the Government of the Federal Republic of Germany. The RAM Block 1 provides a capability against passive anti-ship missiles, very low altitude missiles, and maneuvering missiles through the incorporation of an infrared all-the-way mode seeker and improved fuze.</p> <p>The RAM Block 1/Helo Air Surface (HAS) upgrade program is a joint requirement of the US and Germany agreed to in a Memorandum of Understanding (MOU) signed by both parties. This effort will provide an additional capability against helicopters, aircraft and surface craft. This system is designed to counter anti-ship cruise missile raids and other threats to provide for ship survivability with accurate terminal guidance, proven lethality, and no shipboard post launch dependence. SSDS/HAS Integration and Testing will continue through FY 2007.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS</p> <p>1. (U) FY 2002 PLAN:</p> <ul style="list-style-type: none"> - (U) (\$3.960) SSDS/HAS Integration Support - (U) (\$.848) Continue HAS Mode Development <p>Note: This Project was included in the Ship Self Defense PE 0604755N for FY 01 and Prior Years.</p>										

EXHIBIT R-2a, RDT&E Project Justification								DATE: JUNE 2001																																		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5	PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N					PROJECT NAME AND NUMBER 5" ROLLING AIRFRAME MISSILE/20167																																				
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	<u>FY 2000</u>	<u>FY2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>To Complete</u>	<u>Total Cost</u>																																
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Exhibit R-2, RDT&E Project Justification
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Exhibit R-3 Cost Analysis (page 1)									DATE: JUNE 2001			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA5			SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N			5" ROLLING AIRFRAME MISSILE/20167						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware/Softwr Developmt	SS/CPFF	Raytheon Co., Tucson, AZ	59.088					0.617	11/01	CONT.	CONT.	CONT.
SSDS/HAS Integration Support	SS/CPFF	JHU/APL, Laurel, MD	5.538					0.850	11/01	CONT.	CONT.	CONT.
SSDS/HAS Integration Support	SS/CPFF	Raytheon Co, San Diego, CA	0.000					1.026	11/01	CONT.	CONT.	CONT.
HAS Support	SS/CPFF	JHU/APL, Laurel, MD	0.000					0.536	11/01	CONT.	CONT.	CONT.
Miscellaneous	Various	Various	228.978					1.669	11/00	CONT.	CONT.	CONT.
Subtotal Product Development			293.604					4.698		CONT.	CONT.	CONT.
Remarks: Primary Hardware Development transitions into Test & Evaluation.												
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			0.000					0.000		0.000	0.000	0.000
Remarks:												

Exhibit R-3 Cost Analysis (page 2)								DATE: JUNE 2001				
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RDT&E, N/BA5			SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N			5" ROLLING AIRFRAME MISSILE/20167						
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DT&E/OT&E/FOT&E	SS/CPAF	Raytheon Co., Tucson, AZ	6.626					0.000		CONT.	CONT.	CONT.
DT&E/OT&E		China Lake, CA/PHD, CA	7.685					0.000		CONT.	CONT.	N/A
FOT&E		China Lake, CA/PHD, CA	0.000					0.000		CONT.	CONT.	N/A
Miscellaneous		Various	5.003					0.000		CONT.	CONT.	CONT.
Subtotal T&E			19.314					0.000		CONT.	CONT.	CONT.
Remarks:												
Cost Categories												
MANAGEMENT												
Miscellaneous	Various	Various	3.142					0.110	11/01	CONT.	CONT.	CONT.
Subtotal Management			3.142					0.110		CONT.	CONT.	CONT.
Remarks:												
Total Cost			316.06	5.689		3.734		4.808		Continuing	Continuing	CONT.
Remarks:												