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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Navy **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204413N: <i>Amphibious Tactical Supt Units</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	11.452	5.085	8.435	7.240	-	7.240	12.613	7.731	3.230	3.259	Continuing	Continuing
2231: <i>LCU Replacement</i>	11.452	5.085	8.435	6.940	-	6.940	12.013	7.731	3.230	3.259	Continuing	Continuing
2909: <i>Amphibious Lighterage Development</i>	0.000	0.000	0.000	0.300	-	0.300	0.600	0.000	0.000	0.000	0.000	0.900

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

A. Mission Description and Budget Item Justification

Technology Transition: Provides for research efforts on Landing Craft Air Cushion (LCAC) Future Naval Capabilities to transfer technologies to functional uses on current LCACs. Current technology initiatives include the following: sustainability/readiness/performance analysis; LCAC communication improvements; development and qualification of Full Authority Digital Engine Controller (FADEC) for LCAC engines; new torque meter design for ETF40B engines; active shaft balancing system; fuel efficiency initiatives.

Landing Craft Utility Replacement (LCU(R)) Capabilities Based Assessment (CBA) will define mission, identify and evaluate capabilities, identify and assess potential solutions, and evaluate operational risk in order to provide recommendations for validation authority for high speed, high capacity assault craft replacement.

<u>B. Program Change Summary (\$ in Millions)</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014 Base</u>	<u>FY 2014 OCO</u>	<u>FY 2014 Total</u>
Previous President's Budget	5.214	8.435	4.621	-	4.621
Current President's Budget	5.085	8.435	7.240	-	7.240
Total Adjustments	-0.129	0.000	2.619	-	2.619
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.129	0.000			
• Program Adjustments	0.000	0.000	4.287	-	4.287
• Rate/Misc Adjustments	0.000	0.000	-1.668	-	-1.668

Change Summary Explanation

Technical: Not applicable.

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Schedule: Added funds to complete LCU(R) RDT&E efforts before new start procurement commences in FY17. Efforts include development of requirements documentation, design development, Integrated Logistics Support planning, Test and Evaluation Master Plan (TEMP) development, and Early Operational Assessment (EOA).		

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 7: Operational Systems Development					R-1 ITEM NOMENCLATURE PE 0204413N: Amphibious Tactical Supt Units				PROJECT 2231: LCU Replacement			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
2231: LCU Replacement	11.452	5.085	8.435	6.940	-	6.940	12.013	7.731	3.230	3.259	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0		0	0	0	0	0		
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
A. Mission Description and Budget Item Justification												
Current technology initiatives include the following: sustainability/readiness/performance analysis; LCAC communications improvements; development and qualification of FADEC for LCAC engines; new torque meter design for ETF40B engines; active shaft balancing system; fuel efficiency initiatives.												
LCU(R): CBA will define mission, identify and evaluate capabilities, identify and assess potential solutions, and evaluate operational risk in order to provide recommendations for validation authority for high speed, high capacity assault craft replacement.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)										FY 2012	FY 2013	FY 2014
Title: LCAC RDT&E,N and LCU Replacement										5.085	8.435	6.940
										Articles: 0	0	0
FY 2012 Accomplishments:												
FY12 LCAC: Completed development and achieved qualification of FADEC; conducted sea trials for LCAC fuel efficiency and FADEC; upgraded and performed test and evaluation of active shaft balancing system; redesigned tester for Digital Electronic Sequencing Unit (DESU); finalized torque meter design and performed qualification testing.												
FY12 LCU(R): Updated Feasibility Design Studies (FDS) and began development of requirements documentation, to include the Initial Capabilities Document (ICD).												
FY 2013 Plans:												
FY13 LCAC: Conduct analysis and testing of new commercial non-skid products; research commercial products for low cost skirt fasteners; research commercial wireless radios and corrosion improvements for Halon bottles.												
FY13 LCU(R): Initiate Analysis of Alternatives (AoA); begin Materiel Solution Analysis (MSA); draft Capability Development Document (CDD); conduct Alternative System Review (ASR) and System Requirements Review (SRR).												
FY 2014 Plans:												
FY14 LCAC: Perform full-scale testing of composite vehicle ramps and underway testing of composite propulsion shafting (entire drive train); research and test improved bow thruster bearings to achieve increased reliability.												

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0204413N: Amphibious Tactical Supt Units				PROJECT 2231: LCU Replacement				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)										FY 2012	FY 2013	FY 2014
FY14 LCU(R): Continue development of CDD; complete MSA and the AoA; initiate preliminary design and contract design; conduct System Functional Review (SFR); begin Test and Evaluation Master Plan (TEMP) development; develop Reliability, Availability, Maintainability-Cost (RAM-C) rationale report; achieve Milestone A.												
Accomplishments/Planned Programs Subtotals										5.085	8.435	6.940
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost	
• OPN 0970: Amphibious Tactical Support Units	0.000	16.645	14.431		14.431	8.273	6.692	6.806	6.929	5.356	67.760	
• SCN 5139: LCAC SLEP	84.076	47.930	80.987		80.987	83.576	85.059	87.267	88.806	0.000	640.277	
• SCN 5100: LCU Replacement	0.000	0.000	0.000		0.000	0.000	0.000	18.000	30.300	Continuing	Continuing	
Remarks												
D. Acquisition Strategy												
Technology Transition - RDT&E efforts commenced in FY06. Multiple contracts and Field Activities are involved through FY18 to complete the various projects.												
E. Performance Metrics												
FY12 LCAC: Complete development and achieve qualification of FADEC; conduct sea trials for LCAC fuel efficiency and FADEC; upgrade and perform test and evaluation of active shaft balancing system; redesign tester for Digital Electronic Sequencing Unit (DESU); finalize torque meter design and perform qualification testing.												
FY12 LCU(R): Update Feasibility Design Studies (FDS) and begin development of requirements documentation, to include the Initial Capabilities Document (ICD).												
FY13 LCAC: Conduct analysis and testing of new commercial non-skid products; research commercial products for low cost skirt fasteners; research commercial wireless radios and corrosion improvements for Halon bottles.												
FY13 LCU(R): Initiate Analysis of Alternatives (AoA); begin Materiel Solution Analysis (MSA); draft Capability Development Document (CDD); conduct Alternative System Review (ASR) and System Requirements Review (SRR).												
FY14 LCAC: Perform full-scale testing of composite vehicle ramps and underway testing of composite propulsion shafting (entire drive train); research and test improved bow thruster bearings to achieve increased reliability.												
FY14 LCU(R): Continue development of CDD; complete MSA and the AoA; initiate preliminary design and contract design; conduct System Functional Review (SFR); begin Test and Evaluation Master Plan (TEMP) development; develop Reliability, Availability, Maintainability-Cost (RAM-C) rationale report; achieve Milestone A.												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 7: Operational Systems Development						R-1 ITEM NOMENCLATURE PE 0204413N: Amphibious Tactical Supt Units						PROJECT 2231: LCU Replacement			
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Component Development	WR	NSWC CD:Philadelphia, PA	4.570	1.652	Mar 2012	1.253	Mar 2013	0.000		-		0.000	0.000	7.475	
Systems Engineering	WR	NSWC CD:Philadelphia, PA	1.908	0.300	Mar 2012	1.021	Mar 2013	1.342	Feb 2014	-		1.342	7.354	11.925	
LCU Replacement	Various	Various:Various	0.000	0.700	Mar 2012	3.373	Mar 2013	4.000	Mar 2014	-		4.000	10.800	18.873	
Subtotal			6.478	2.652		5.647		5.342		0.000		5.342	18.154	38.273	
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	WR	NSWC PCD:Panama City, FL	2.451	1.345	May 2012	1.694	Apr 2013	1.301	Mar 2014	-		1.301	5.713	12.504	
LCU Replacement	Various	Various:Various	0.000	0.300	May 2012	0.627	Apr 2013	0.000		-		0.000	Continuing	Continuing	Continuing
Subtotal			2.451	1.645		2.321		1.301		0.000		1.301			
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental T & E	WR	Various:Various	0.287	0.000		0.000		0.000		-		0.000	0.000	0.287	
Operational T & E	WR	NSWC PCD:Panama City, FL	0.365	0.216	Mar 2012	0.196	Apr 2013	0.230	Feb 2014	-		0.230	1.032	2.039	
Test Assets	WR	NSWC PCD:Panama City, FL	0.474	0.221	Mar 2012	0.155	Apr 2013	0.000		-		0.000	0.000	0.850	
Subtotal			1.126	0.437		0.351		0.230		0.000		0.230	1.032	3.176	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy												DATE: April 2013				
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 7: Operational Systems Development							R-1 ITEM NOMENCLATURE PE 0204413N: Amphibious Tactical Supt Units					PROJECT 2231: LCU Replacement				
Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Engineering Support	WR	Various:Various	0.726	0.000		0.000		0.000		-		0.000	0.000	0.726		
Program Management Support	WR	NSWC PCD:Panama City, FL	0.596	0.351	Jun 2012	0.116	Jun 2013	0.067	Feb 2014	-		0.067	1.334	2.464		
Travel	WR	NAVSEA:Not Specified	0.064	0.000		0.000		0.000		-		0.000	0.000	0.064		
DAWDF	MIPR	OSD:Not Specified	0.011	0.000		0.000		0.000		-		0.000	0.000	0.011		
Subtotal			1.397	0.351		0.116		0.067		0.000		0.067	1.334	3.265		
			All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals			11.452	5.085		8.435		6.940		0.000		6.940				
Remarks The LCU Replacement line has been added to indicate a new program for the Landing Craft Utility which is projected to reach Milestone A by 2014.																

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Navy

DATE: April 2013

APPROPRIATION/BUDGET ACTIVITY

1319: Research, Development, Test & Evaluation, Navy

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

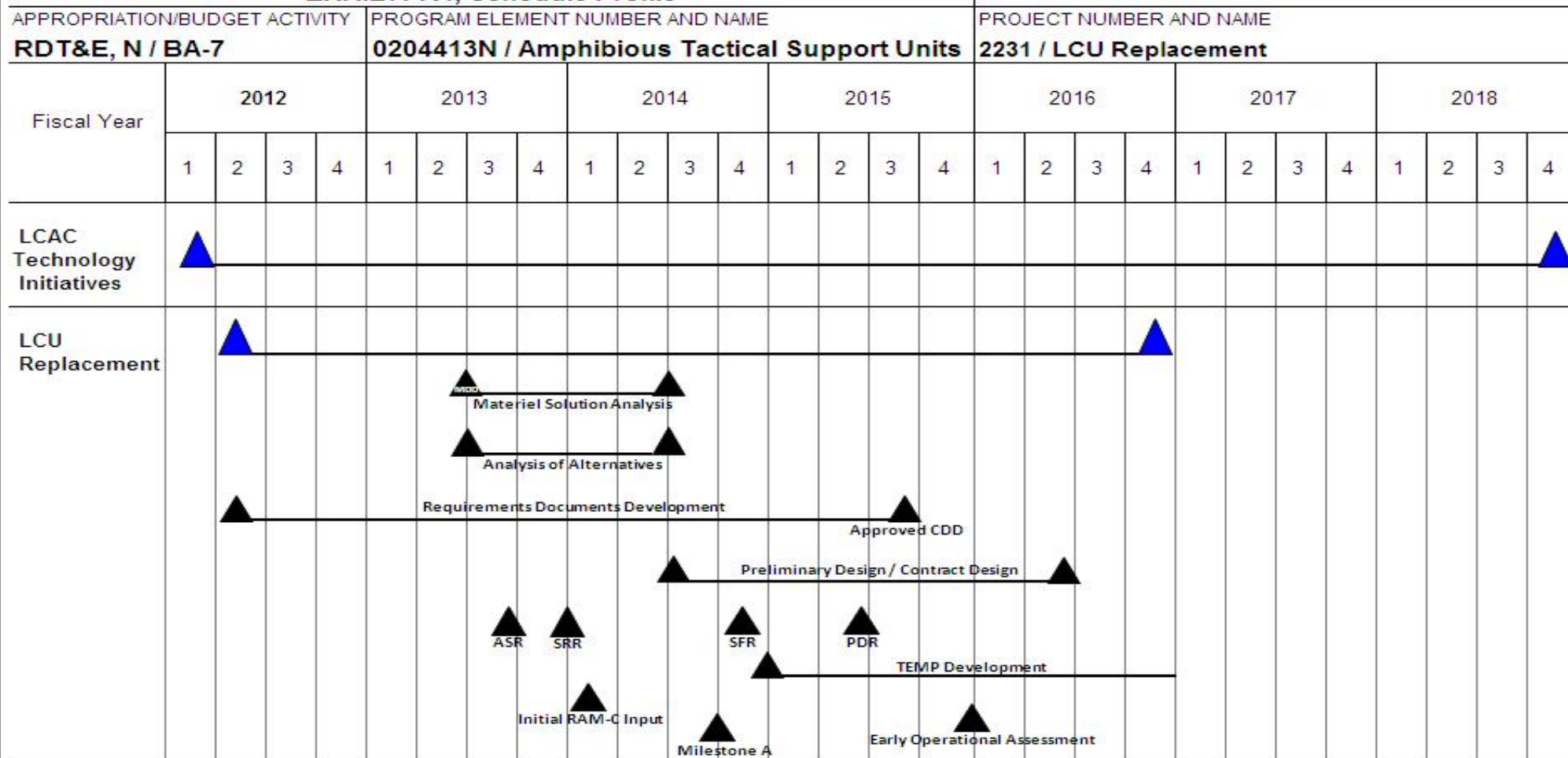
PE 0204413N: Amphibious Tactical Supt

Units

PROJECT

2231: LCU Replacement

EXHIBIT R4, Schedule Profile



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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204413N: <i>Amphibious Tactical Supt Units</i>	PROJECT 2231: <i>LCU Replacement</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 2231</i>				
LCAC Technology Initiatives	1	2012	4	2018
LCU Replacement	2	2012	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>					R-1 ITEM NOMENCLATURE PE 0204413N: <i>Amphibious Tactical Supt Units</i>				PROJECT 2909: <i>Amphibious Lighterage Development</i>			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
2909: <i>Amphibious Lighterage Development</i>	0.000	0.000	0.000	0.300	-	0.300	0.600	0.000	0.000	0.000	0.000	0.900
Quantity of RDT&E Articles	0	0	0	0		0	0	0	0	0		
[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012 ^{##} The FY 2014 OCO Request will be submitted at a later date												
A. Mission Description and Budget Item Justification												
The Sealift support amphibious vehicle which will be the Lighter Amphibious Resupply Cargo, 5 ton (LARC-V) Replacement, provides amphibious equipment and personnel transport and near shore salvage and diving capability. It is a vital piece of equipment required for the execution of the Naval Beach group and Underwater Construction Team missions.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)										FY 2012	FY 2013	FY 2014
Title: New Accomplishment/Planned Program Entry										0.000	0.000	0.300
Articles:												0
FY 2014 Plans: Commence Technology Investigation in FY14, NAVFAC HQ, NAVFAC field activity and other agencies are involved in this effort.												
Accomplishments/Planned Programs Subtotals										0.000	0.000	0.300
C. Other Program Funding Summary (\$ in Millions)												
N/A												
Remarks												
D. Acquisition Strategy												
RDT&E funding is required to begin development of a replacement amphibious vehicle to support OPLAN and Required Operational Capability/Potential Operation Environment (ROC/POE) requirements of the NGBs and UCTs. Technology Investigation to commence in FY14, Naval Facilities Engineering Command (NAVFAC)HQ, NAVFAC field activity and other agencies are involved in this effort.												
E. Performance Metrics												
TBD												

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PE 0204413N: *Amphibious Tactical Supt Units*
 Navy

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Navy										DATE: April 2013									
APPROPRIATION/BUDGET ACTIVITY										R-1 ITEM NOMENCLATURE									
1319: Research, Development, Test & Evaluation, Navy										PE 0204413N: Amphibious Tactical Supt Units									
BA 7: Operational Systems Development										PROJECT									
										2909: Amphibious Lighterage Development									

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
Proj 2909																												
Development of acquisition and design requirements for Amphibious Vehicle Replacement																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204413N: <i>Amphibious Tactical Supt Units</i>	PROJECT 2909: <i>Amphibious Lighterage Development</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2909				
Development of acquisition and design requirements for Amphibious Vehicle Replacement	1	2014	4	2015