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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Navy **Date:** March 2014

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 7: Operational Systems Development</i>					R-1 Program Element (Number/Name) PE 0204413N / <i>Amphibious Tactical Supt Units</i>							
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	0.000	6.091	4.382	4.609	-	4.609	11.026	8.166	1.671	1.724	Continuing	Continuing
2231: <i>SC(X)(R)</i>	0.000	6.091	4.382	4.027	-	4.027	11.026	8.166	1.671	1.724	Continuing	Continuing
2909: <i>Amphibious Lighterage Development</i>	0.000	-	-	0.582	-	0.582	-	-	-	-	-	0.582

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

Landing Craft Air Cushion (LCAC) Technology Transition: Provides for research and development efforts on LCAC Future Naval Capabilities to transfer technologies to functional uses on current LCACs. Current technology initiatives include sustainability/readiness/performance analyses, LCAC communication improvements, development and qualification of Full Authority Digital Engine Controller (FADEC) for LCAC engines, new torque meter design for LCAC ETF40B engines, Marine Rotor Active Balancing System (MRABS), and LCAC fuel efficiency initiatives.

Surface Connector (X) Replacement (SC(X)(R)): Replacement program for the current Landing Craft Utility (LCU) 1610 class craft. A class of craft that has significantly exceeded its 20-year planned service life. SC(X)(R) will provide similar payload, range, speed, and interoperability. Procurement is currently scheduled to begin in FY18.

B. Program Change Summary (\$ in Millions)

	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	8.435	7.240	12.613	-	12.613
Current President's Budget	6.091	4.382	4.609	-	4.609
Total Adjustments	-2.344	-2.858	-8.004	-	-8.004
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-2.858			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-1.522	-			
• SBIR/STTR Transfer	-0.060	-			
• Program Adjustments	-	-	-4.000	-	-4.000
• Rate/Misc Adjustments	-0.001	-	-4.004	-	-4.004
• Congressional General Reductions Adjustments	-0.761	-	-	-	-

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<u>Change Summary Explanation</u> FY 2013 reductions include sequestration and a reprogramming action realigning funds to PE 0603564N PROJ. 2474 to properly price LX(R) design. FY 2014 reduction reflects the Department's decision to realign program requirements with expenditures. FY 2015 reductions reflect the Department's decision to reduce contracted services, properly phase program requirements with expenditures, and delay the SC(X)(R) RDT&E efforts to better align with procurement commencing in FY 2018.		

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy **Date:** March 2014

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204413N / <i>Amphibious Tactical Supt Units</i>	Project (Number/Name) 2231 / <i>SC(X)(R)</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
2231: <i>SC(X)(R)</i>	-	6.091	4.382	4.027	-	4.027	11.026	8.166	1.671	1.724	Continuing	Continuing
Quantity of RDT&E Articles	0.000	-	-	-	-	-	-	-	-	-		

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A. Mission Description and Budget Item Justification

Landing Craft Air Cushion (LCAC) Technology Transition: Provides for research and development efforts on LCAC Future Naval Capabilities to transfer technologies to functional uses on current LCACs. Current technology initiatives include sustainability/readiness/performance analyses, LCAC communication improvements, development and qualification of Full Authority Digital Engine Controller (FADEC) for LCAC engines, new torque meter design for LCAC ETF40B engines, Marine Rotor Active Balancing System (MRABS), and LCAC fuel efficiency initiatives.

Surface Connector (X) Replacement (SC(X)(R)): Replacement program for the current Landing Craft Utility (LCU) 1610 class craft. A class of craft that has significantly exceeded its 20-year planned service life. SC(X)(R) will provide similar payload, range, speed, and interoperability. Procurement is currently scheduled to begin in FY18.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2013	FY 2014	FY 2015
Title: LCAC RDT&E,N and LCU Replacement	6.091	4.382	4.027
Articles:	-	-	-
FY 2013 Accomplishments:			
FY13 LCAC: Conducted analyses and testing of new commercial non-skid products; researched commercial products for low cost skirt fasteners; researched commercial wireless radios and corrosion improvements for Halon bottles.			
FY13 SC(X)(R): Began Materiel Solution Analysis (MSA) and continued development of requirements documentation, to include the Analysis of Alternatives (AoA) (FY13, Q4); conducted concept and feasibility design studies; conducted Alternative Systems Review (ASR) (FY13, Q4); successful Gate 1 Review.			
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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Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204413N / <i>Amphibious Tactical Supt Units</i>	Project (Number/Name) 2231 / SC(X)(R)

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
FY14 SC(X)(R): Complete MSA and the AoA; draft Capability Document Development (CDD); initiate indicative design; conduct Software Specification Review (SSR); complete Reliability, Availability, Maintainability-Cost (RAM-C) rationale report; begin development of Test and Evaluation Master Plan (TEMP); conduct Gate 2 Review and achieve Milestone A.			
<i>FY 2015 Plans:</i> FY15 LCAC: Perform full-scale testing of all-in-one LCAC power supply capable of charging craft batteries, powering 28VD electronics and providing 60Hz 115VAC power; develop technologies to prevent moisture intrusion into craft windows; develop auxiliary power unit controller to improve visibility and equipment reliability.			
FY15 SC(X)(R): Begin preliminary design and contract design; conduct System Functional Review (SFR) and Preliminary Design Review (PDR); initiate Life Cycle Sustainment Plan (LCSP) development; begin integrated developmental and operational testing; conduct Gate 3 Review.			
Accomplishments/Planned Programs Subtotals	6.091	4.382	4.027

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• OPN 0970: <i>Amphibious Tactical Support Units</i>	15.557	14.431	7.158	-	7.158	5.625	5.730	5.848	5.988	-	123.273
• SCN 5139: <i>LCAC SLEP</i>	85.717	80.987	40.485	-	40.485	81.304	83.500	85.054	-	-	1,507.521
• SCN 5100: <i>SC(X)(R) Procurement</i>	-	-	-	-	-	-	-	33.842	41.663	-	75.505

Remarks

D. Acquisition Strategy

Technology Transition - RDT&E efforts commenced in FY06. Multiple contracts and Field Activities are involved through FY19 to complete the various projects.

E. Performance Metrics

FY13 LCAC: Conducted analyses and testing of new commercial non-skid products; researched commercial products for low cost skirt fasteners; researched commercial wireless radios and corrosion improvements for Halon bottles.

FY13 SC(X)(R): Began Materiel Solution Analysis (MSA) and continued development of requirements documentation, to include the Analysis of Alternatives (AoA) (FY13, Q4); conducted concept and feasibility design studies; conducted Alternative Systems Review (ASR) (FY13, Q4); successful Gate 1 Review.

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<p>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.</p> <p>FY14 SC(X)(R): Complete MSA and the AoA; draft Capability Document Development (CDD); initiate indicative design; conduct Software Specification Review (SSR); complete Reliability, Availability, Maintainability-Cost (RAM-C) rationale report; begin development of Test and Evaluation Master Plan (TEMP); conduct Gate 2 Review and achieve Milestone A.</p> <p>FY15 LCAC: Perform full-scale testing of all-in-one LCAC power supply capable of charging craft batteries, powering 28VD electronics and providing 60Hz 115VAC power; develop technologies to prevent moisture intrusion into craft windows; develop auxiliary power unit controller to improve visibility and equipment reliability.</p> <p>FY15 SC(X)(R): Begin preliminary design and contract design; conduct System Functional Review (SFR) and Preliminary Design Review (PDR); initiate Life Cycle Sustainment Plan (LCSP) development; begin integrated developmental and operational testing; conduct Gate 3 Review.</p>		

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Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204413N / <i>Amphibious Tactical Supt Units</i>	Project (Number/Name) 2909 / <i>Amphibious Lighterage Development</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
2909: <i>Amphibious Lighterage Development</i>	-	-	-	0.582	-	0.582	-	-	-	-	-	0.582
Quantity of RDT&E Articles	0.000	-	-	-	-	-	-	-	-	-		

The FY 2015 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 (NBG) and Underwater Construction Team (UCT) missions.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2013	FY 2014	FY 2015
Title: New Accomplishment/Planned Program Entry	-	-	0.582
Articles:	-	-	-
FY 2013 Accomplishments: N/A			
FY 2014 Plans: New Start Project not funded for FY14 "Technology investigation unfunded outyear requirement". FY14 Not Funded: Commence Technology Investigation in FY14, NAVFAC HQ, NAVFAC field activity and other agencies are involved in this effort.			
FY 2015 Plans: Work on research for the propulsion systems and human interface with replacement near shore amphibious initiatives.			
Accomplishments/Planned Programs Subtotals	-	-	0.582

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 NBGs and UCTs. Technology Investigation to commence in FY15, Naval Facilities Engineering Command (NAVFAC)HQ, NAVFAC field activity and other agencies are involved in this effort.

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E. Performance Metrics

FY15:

15 Oct 2014 Award Engineering and Manufacturing Development (EMD) contract

15 Dec 2014 Award Low Rate Initial Production (LRIP) contract