

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2000			
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA 5					Ship Contract Design/Live Fire T&E PE 0604567N					
COST (\$ in Millions)		FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to Complete	Total Cost
Total PE Cost		37.767	60.283	62.204	81.933	76.009	38.233	27.500	Continuing	Continuing
Smart Propulsor Product Model	32646	2.903	0.000	0.000	0.000	0.000	0.000	0.000	TBD	TBD
Carrier Contract Design	42301	30.988	35.271	38.311	25.394	24.113	25.789	27.458	Continuing	Continuing
Ship Contract Design	S1803	2.647	23.742	23.893	54.560	49.064	12.444	0.042	Continuing	Continuing
Ship Specifications	S2197	1.229	1.262	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Live Fire Test & Evaluation	S2198	0.000	0.000	0.000	1.979	2.832	0.000	0.000	Continuing	Continuing
LHA Replacement	S2465	0.000	0.008	0.000	0.000	0.000	0.000	0.000	TBD	TBD
Quantity of RDT&E Articles		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

A. Mission Description and Budget Item Justification: This Program Element (PE) directly supports the Navy's Shipbuilding Plan by providing for the development of all post Feasibility Study (Usually after Milestone I) engineering, programmatic and acquisition documentation (except DD 21 which is covered by PE 0604300N). This includes ship specifications (including performance specifications) and contractual documentation associated with acquisition of Navy ships. This line also supports the Congressionally mandated Live Fire Test and Evaluation program for new ship designs.

Contract Design has traditionally been the engineering development of the technical and contractual definition of the ship design (including ship specifications and drawings) to a level of detail sufficient for prospective shipbuilders to make a sound estimate of the construction cost and schedule. Additionally, the contract design package developed under this PE has provided the technical baseline from which the Navy selects the shipbuilder who then develops the detail design package required to support the construction and eventual delivery of the ship. This PE also supports the development of design methodologies which facilitate and optimize the transition from ship design documents to efficient production of new ships and ship conversions, and supports engineering planning and ship affordability studies.

Under Acquisition Reform for new design ships, traditional distinct phasing of the design process has been replaced with a continuous concurrent engineering Integrated Product and Process Development (IPPD) process extending through and after contract award. This serves to maintain the focus of multi-discipline teams consisting of the government, shipbuilder, system programs, and suppliers. Government/Industry Integrated Product Team(s) (IPTs) will utilize the IPPD process to develop the design in an Integrated Product and Data Environment (IPDE). The design approach is part of an acquisition strategy that is based on commercial practices and incorporates a phased technical definition. This may involve continuing efforts (where Milestone I has not occurred, and/or after Milestone II) in those cases where IPTs would be disrupted after Feasibility Study conclusion and/or award of a shipbuilding contract.

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APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA 5	R-1 ITEM NOMENCLATURE Ship Contract Design/Live Fire T&E PE 0604567N																						
<p>B. Program Change Summary:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 45%;"></th> <th style="width: 15%; text-align: right;">FY 1999</th> <th style="width: 15%; text-align: right;">FY 2000</th> <th style="width: 25%; text-align: right;">FY 2001</th> </tr> </thead> <tbody> <tr> <td>FY 2000 President's Budget:</td> <td style="text-align: right;">45.263</td> <td style="text-align: right;">61.135</td> <td style="text-align: right;">69.531</td> </tr> <tr> <td>Appropriated Value:</td> <td style="text-align: right;">40.534</td> <td style="text-align: right;">61.135</td> <td></td> </tr> <tr> <td>Adjustment to FY 1999/2000 Appropriated Value/ FY 2000 President's Budget:</td> <td style="text-align: right;">-7.496</td> <td style="text-align: right;">-.852</td> <td style="text-align: right;">-7.327</td> </tr> <tr> <td>FY 2001 PRES Budget Submit:</td> <td style="text-align: right;">37.767</td> <td style="text-align: right;">60.283</td> <td style="text-align: right;">62.204</td> </tr> </tbody> </table> <p>February 2000 Funding: FY 99 adjustments due to ADC(X) funding transfer to PE 0603564N (-\$5.928) and misc adjustments (-1.568). FY 00 adjustments due to Strategic Sourcing Redistribution (-0.017) and SSST Competitive Award (-0.500) and across the board reductions (-0.335). FY 01 adjustments due to Carrier Adjustment (+20.000) from FY 04, ADC(X) funding elimination (-3.842), Strategic Sourcing Redistribution (-.395), offsets to finance high priority O&M,N deficiencies (-.491), misc adjustments (-.750), Newport News Shipbuilding (-20.620) and S2197 zeroing (-1,229)</p> <p>Schedule: Schedule changes will be identified in the R-2a exhibits.</p> <p>Technical: Not Applicable.</p>					FY 1999	FY 2000	FY 2001	FY 2000 President's Budget:	45.263	61.135	69.531	Appropriated Value:	40.534	61.135		Adjustment to FY 1999/2000 Appropriated Value/ FY 2000 President's Budget:	-7.496	-.852	-7.327	FY 2001 PRES Budget Submit:	37.767	60.283	62.204
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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2000			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER					
RDT&E, N/BA 5	Ship Contract Design/LFT&E PE 0604567N				Carrier Contract Design 42301					
COST (\$ in Millions)		FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to Complete	Total Cost
Project Cost		30.988	35.271	38.311	25.394	24.113	25.789	27.458	Continuing	Continuing
RDT&E Articles Qty		0	0	0	0	0	0	0	N/A	N/A
<p>A. Mission Description and Budget Item Justification: This project encompasses CVN 77 and CVN (X) Contract Design efforts. The traditional distinct phasing of the design process for aircraft carriers has been replaced with a continuous concurrent engineering regime incorporating the methodology, measurement, and management elements of the Navy's Integrated Product and Process Development (IPPD) process, extending it beyond contract award. CVN 77 Combat Systems integration will be design budgeted at contract award to allow further system development. This will ensure that the latest technologies are properly incorporated to accommodate the long design and build schedules typical of aircraft carriers. The IPPD process serves to maintain the focus of multi-discipline teams consisting of the government, shipbuilder, aviation programs, and suppliers. Government/Industry Integrated Product Team(s) (IPTs) utilize the IPPD process to develop the design in an Integrated Product and Data Environment (IPDE). The design approach is part of an acquisition strategy that is based on incorporating best available commercial practices and a phased technical definition.</p> <p>The CVN 77 research and development investment identifies and validates transition technologies for incorporation into the CVN 77 design. These technologies will enhance shipboard workload reductions, reduce life cycle costs for CVN 77, provide benefits to the other nine ships of the NIMITZ class, and mitigate future risk for CVN (X). The pivotal investment area is transition technology insertion into, and the functional combining of, combat, command & control, communications, aviation, and intelligence systems into a cohesive integrated system. This effort will be herein referred to as Combat Systems Integration.</p> <p>FY 1999 Accomplishments: (Project Number change from S2301 to 42301)</p> <p>(U) (\$10.497) Contract Design – Developed Contract Design package for ship award. Continued refinement of design issues and resolution of pending decisions on technology insertion or process changes with priority on near term advanced procurements and fabrication starts planned in FY00 and FY01. Efforts included further updates to the contract data package including design drawings and specifications. The updates accommodated changes to the ship, its systems, and equipment necessitated by equipment obsolescence, operational needs, and incorporation of newer systems/technologies. Continued IPPD/IPDE efforts, which will increase sortie generation rate. Commenced efforts to reconfigure or redesign hangar bays to optimize movement, maintenance and storage of aircraft and associated aviation services. Commenced Air Operations simulation efforts in support of topside/island design efforts.</p>										

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EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER	PROJECT NAME AND NUMBER
RDT&E, N/BA 5	Ship Cont Design/Live Fire T&E PE 0604567	Carrier Contract Design 42301
<p>(U) (\$11.491) Combat Systems Integration – Completed Phase I, Requirements Definition, by addressing improvements targeted at reducing operational and support costs of the ship's war fighting systems. Initiatives focused on reducing the number of systems through the use of "multi-function" radars and flat planar antenna arrays, data exchange across operational areas, data fusion, and integrated displays for operators. Completed functional requirement documents for command and control, weapons and sensors, external communications, mission planning, computing architecture, ship interface boundaries, and test and evaluation. Identified and commenced trade studies intended to reduce cost without degrading operational performance. Commenced Phase II; completed competitive solicitation for Combat Systems Integration concepts and design process. Evaluated proposals and commenced competitive Combat Systems Integration design development.</p> <p>(U) (\$9.000) Propulsion and Electric Power Generation – Evaluated the consolidated throttle control concept and started design of the remote electric plant control panel (EPCP). Tested preliminary models of a pressurizer control system and began development. Completed testing and qualified the MSS valve actuators. Began re-design of purification system to reduce maintenance costs. Initiated development of improved shielding to reduce the use of lead and reduce life cycle costs.</p> <p>FY 2000 PLAN:</p> <p>(U) (\$10.867) Contract Design – This effort completes remaining required updates to the contract package necessary to support advanced procurement/advanced construction, and continues the contract design effort to support full construction. The update accommodates changes to the ship, its systems, and equipment necessitated by equipment obsolescence, operational need, and incorporation of newer systems/technology. Continue IPPD/IPDE efforts.</p> <p>(U) (\$14.404) Combat Systems Integration – Complete Phase II competitive solicitation for Combat Systems Integration concepts and design process. Continue monitoring improvements targeted at reducing the operational and support costs of the ship's war fighting systems. Initiatives remain focused on reducing the number of systems through the use of "multi-function" radars and flat planar antenna arrays, data exchange across operational areas, data fusion, and integrated displays for operators. Complete trade studies, including those that result in cost reductions without degrading operational performance into the design development. Evaluate and complete competitive Combat Systems Integration design development and integrate into the ship contract data package. Commence Phase III Design Refinement. Refine Combat Systems Integration design and integrate into the ship design.</p> <p>(U) (\$10.000) Propulsion and Electric Power Generation – Develop validation models for consolidated throttle control and remote EPCP and begin testing. Continue development of the pressurizer control system. Complete development of a re-designed purification system and begin testing. Continue development of improved shielding. Begin development of updated detectors and valve control system to accommodate generic instrumentation.</p>		

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RDT&E, N/ BA 5		Ship Cont Design/Live Fire T&E PE 0604567			Carrier Contract Design 42301																																																						
<p>FY 2001 PLAN:</p> <p>(U) (\$26.567) Combat Systems Integration – Continue Phase III Design Refinement. Continue monitoring improvements targeted at reducing the operational and support costs of the ship’s Warfare Systems, including the traditional combat system, C4ISR, and aviation functional requirements. Initiatives remain focused on reducing the number of systems through the use of “multi-function” radars and flat planar antenna arrays, data exchange across operational areas, data fusion, and integrated displays for operators. Continue cooperative radar developments with DD-21 program regarding integration of aviation functions into the MFR and VSR, thereby eliminating the need for certain aviation unique radars. Continue exploring additional areas for cooperation with DD-21 such as combat system software integration and common computing. Commence the Warfare Systems Integration detailed design development phase, including required new technology system developments that enable data exchange across operational areas, data fusion and integration. Continue refinement of Warfare Systems Integration design and integrate into the ship design.</p> <p>(U) (\$11.744) Propulsion and Electric Power Generation – Develop shipboard equipment for consolidated throttle control and remote EPCP. Complete development of the pressurizer control system. Continue testing of the purification system and complete drawings and procedure changes. Complete development and drawings for improved shielding. Complete development and testing of detectors and continue development of valve control system.</p>																																																											
<table border="0"> <thead> <tr> <th style="text-align: left;">B. Other Program Funding Summary</th> <th style="text-align: right;">FY 1999</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;">To Complete</th> <th style="text-align: right;">Total Cost</th> </tr> </thead> <tbody> <tr> <td>PE 0603512N/42208 Carrier Sys Development</td> <td style="text-align: right;">18.739</td> <td style="text-align: right;">111.040</td> <td style="text-align: right;">122.521</td> <td style="text-align: right;">128.428</td> <td style="text-align: right;">57.468</td> <td style="text-align: right;">63.534</td> <td style="text-align: right;">58.479</td> <td style="text-align: right;">Continuing</td> <td style="text-align: right;">Continuing</td> </tr> <tr> <td>PE 0603512N/42693 Carrier Sys Definition</td> <td style="text-align: right;">34.237</td> <td style="text-align: right;">24.529</td> <td style="text-align: right;">14.362</td> <td style="text-align: right;">13.088</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> <td style="text-align: right;">Continuing</td> <td style="text-align: right;">Continuing</td> </tr> <tr> <td>PE 0603512N/42678 Carrier Tech Insertion</td> <td style="text-align: right;">48.400</td> <td style="text-align: right;">0</td> <td style="text-align: right;">48.400</td> </tr> <tr> <td>BLI 200100 Carrier Replacement Program</td> <td style="text-align: right;">122.897</td> <td style="text-align: right;">749.601</td> <td style="text-align: right;">4,075.522</td> <td style="text-align: right;">146.826</td> <td style="text-align: right;">428.159</td> <td style="text-align: right;">1,323.287</td> <td style="text-align: right;">128.834</td> <td style="text-align: right;">Continuing</td> <td style="text-align: right;">Continuing</td> </tr> </tbody> </table>										B. Other Program Funding Summary	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Cost	PE 0603512N/42208 Carrier Sys Development	18.739	111.040	122.521	128.428	57.468	63.534	58.479	Continuing	Continuing	PE 0603512N/42693 Carrier Sys Definition	34.237	24.529	14.362	13.088	0	0	0	Continuing	Continuing	PE 0603512N/42678 Carrier Tech Insertion	48.400	0	0	0	0	0	0	0	48.400	BLI 200100 Carrier Replacement Program	122.897	749.601	4,075.522	146.826	428.159	1,323.287	128.834	Continuing	Continuing
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BLI 200100 Carrier Replacement Program	122.897	749.601	4,075.522	146.826	428.159	1,323.287	128.834	Continuing	Continuing																																																		

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EXHIBIT R-2a, RDT&E Project Justification		DATE:								
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER	PROJECT NAME AND NUMBER								
RDT&E, N/BA 5	Ship Cont Design/Live Fire T&E PE 0604567	Carrier Contract Design 42301								
<p>C. Acquisition Strategy: The Carrier acquisition strategy is that CVN 77 and follow-on hulls will be acquired/managed using a phased technology insertion or “evolutionary” strategy. Technologies will include island redesign (topside) with multi function and volume search radars, as well as other technologies which will reduce total ownership costs on CVN 77 and the previous nine ships of the NIMITZ class, while mitigating risk for CVNX. As with past NIMITZ class carriers, the CVN 77 will be awarded as a sole source FPIF contract to Newport News Shipbuilding.</p> <p>D. Schedule:</p> <table><tr><td>Program Milestones</td><td>CVN 68 Class has been approved at Milestone III</td></tr><tr><td>Engineering Milestones</td><td>CVN 68 Class has been approved at Milestone III</td></tr><tr><td>T&E Milestones</td><td>CVN 68 Class has been approved at Milestone III</td></tr><tr><td>Contract Milestones</td><td>CVN 68 Class has been approved at Milestone III</td></tr></table>			Program Milestones	CVN 68 Class has been approved at Milestone III	Engineering Milestones	CVN 68 Class has been approved at Milestone III	T&E Milestones	CVN 68 Class has been approved at Milestone III	Contract Milestones	CVN 68 Class has been approved at Milestone III
Program Milestones	CVN 68 Class has been approved at Milestone III									
Engineering Milestones	CVN 68 Class has been approved at Milestone III									
T&E Milestones	CVN 68 Class has been approved at Milestone III									
Contract Milestones	CVN 68 Class has been approved at Milestone III									

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Exhibit R-3 Cost Analysis (page 2)							DATE: February 2000					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA 5			Ship Cont Design/Live Fire T&E PE 0604567			Carrier Contract Design 42301						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Tooling											0.000	
GFE											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			32.949	30.988		35.271		38.311		Continuing	Continuing	Continuing
Remarks:												

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2000			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA 5		PROGRAM ELEMENT NAME AND NUMBER Ship Contract Design/LFT&E PE 0604567N			PROJECT NAME AND NUMBER Ship Contract Design S1803					
COST (\$ in Millions)		FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to Complete	Total Cost
Project Cost		2.647	23.742	23.893	54.560	49.064	12.444	0.042	Continuing	Continuing
RDT&E Articles Qty		0	0	0	0	0	0	0	N/A	N/A

A. Mission Description and Budget Item Justification: This project supports development of all technical, programmatic and contractual documentation required after feasibility studies for the acquisition of various ships in the Navy's Shipbuilding Program. The major effort is the engineering development of the technical and contractual definition of the ship's design (e.g. ship specifications and drawings), with sufficient details for the prospective shipbuilder to make a sound estimate of construction cost and schedule. It also serves as the technical definition from which the shipbuilder develops the shipbuilding detailed design and testing package required to build and test the ship. This funding also provides for Navy retention of unique ship design knowledge. It provides the Navy with a digital, ship design knowledge base, including lessons learned, required to ensure that a proper development, analysis and evaluation can be conducted of any current or future planned Navy ship. This data base will serve as the basis to evaluate and qualify any future ship design. Another area this project funds is the development of specific Navy ship criteria and standards for newly developed technologies. Additionally, as new laws are passed, new safety regulations and environmental criteria are developed and other legal/Congressional requirements identified, this project funds the translation into Navy ship design criteria and standards. This project also funds the translation of the traditional Ship Specifications into performance-based criteria, which will serve for the future acquisition of Navy Ships.

FY 1999 PLAN:

(U) (\$ 2.647) Commenced CG Modernization Contract Design.

FY 2000 PLAN:

(U) (\$ 6.980) Continue Planning Yard CG Modernization Contract Design.

(U) (\$ 2.000) Commence CG Government Team support for design products.

(U) (\$ 2.000) Commence CG Electronic System design.

(U) (\$ 5.137) Commence T-ADC(X) Industry teams to support Engineering Design efforts.

(U) (\$ 7.000) Commence T-ADC(X) Government/Industry teams, develop RFP and support Source Selection.

(U) (\$ 0.625) Commence Trimaran Design.

FY 2001 PLAN:

(U) (\$17.097) Continue Planning Yard CG Modernization Contract Design.

(U) (\$ 2.850) Continue CG Government Team support for design products, including ship design data base and specifications.

(U) (\$ 2.850) Continue CG Electronic System design.

(U) (\$ 1.096) Continue Trimaran Design.

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2000				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA 5			Ship Contract Design/Live Fire T&E PE 0604567N			Ship Contract Design S1803						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Class Drawings	SS/CPAF	Ingalls Shipbuilding, Pascag	Cont.	2.400	Note 1	6.980	Continuing	17.097	Note 1	Continuing	Continuing	Continuing
Electronic Systems	C/CPAF	LMGES, Morristown, NJ	0.000	0.000	N/A	2.000	Note 1	2.850	Note 1	Continuing	Continuing	Continuing
Ship Integration/Systems Engineerin	C/CPFF	JJMA, Arlington VA	Continuing	0.037	Note 1	4.500	Note 1	0.500	Note 1	Continuing	Continuing	Continuing
Ship Integration/Systems Engineerin	C/CPFF	Gibbs & Cox	Continuing	0.000	Note 1	0.500	Note 1	0.500	Note 1	Continuing	Continuing	Continuing
Equipment Support	WR	NSWC SSES, Philadelphi, PA	Continuing	0.000	N/A	0.000	N/A	1.000	11/00	Continuing	Continuing	Continuing
Engineering Design	MISC	Shipyards TBD	Continuing	0.000	N/A	4.657	MISC	0.000	N/A	0.000	4.657	5.400
Award Fees			0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Subtotal Product Development			Continuing	2.437		18.637		21.947		Continuing	Continuing	Continuing
Remarks: Note 1. Existing Contract												
Engineering Support	Misc	Misc	Continuing	0.200	Misc	3.095	Misc	0.942	Misc	Continuing	Continuing	Continuing
Software Development			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Training Development			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Integrated Logistics Support			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Configuration Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Technical Data			0.000	0.000		0.000		0.000		0.000	0.000	0.000
GFE			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Subtotal Support			Continuing	0.200		3.095		0.942		Continuing	Continuing	Continuing
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2000		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA 5			Ship Contract Design/Live Fire T&E PE 0604567N			Ship Contract Design S1803						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Operational Test & Evaluation	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Tooling	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
GFE	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
Contractor Engineering Support			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Government Engineering Support	Misc	Misc	Continuing	0.000	Misc	1.000	Misc	0.000	Misc	Continuing	Continuing	Continuing
Program Management Support	Misc	Misc	Continuing	0.000	Misc	1.000	Misc	1.004	Misc	Continuing	Continuing	Continuing
Travel	N/A	N/A	Continuing	0.010	Misc	0.010	Misc	0.000	Misc	Continuing	Continuing	Continuing
Labor (Research Personnel)			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Overhead			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Subtotal Management			Continuing	0.010		2.010		1.004		Continuing	Continuing	Continuing
Remarks:												
Total Cost			Continuing	2.647		23.742		23.893		Continuing	Continuing	Continuing
Remarks:												

R-1 SHOPPING LIST - Item No. 111 -12 of 111 -19

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 12 of 19)

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2000																																	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER																																			
RDT&E, N/BA 5	Ship Contract Design/Live Fire T&E PE 0604567N				Ship Specifications S2197																																			
COST (\$ in Millions)		FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to Complete	Total Cost																														
Project Cost		1.229	1.262	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing																														
RDT&E Articles Qty		0	0	0	0	0	0	0	N/A	N/A																														
<p>A. Mission Description and Budget Item Justification: This project funds the development, improvement, and update of NAVSEA cognizant acquisition specifications including integration of Federal and Military Specifications, handbooks, general specifications for Ships of the U.S. Navy and COTS equipment/systems into a Performance Based , bidable ship contract design acquisition package. These documents are required to reflect the latest technologies (i.e. open systems architecture for information and power systems), manufacturing techniques, environmental requirements, hazardous material reduction, safety and legal/Congressional requirements. Development of a Performance Specification Expert Systems is scheduled to commence development in FY 03.</p> <p>FY 1999 ACCOMPLISHMENTS: (U) (\$ 0.500) Continued to develop, improve and update NAVSEA cognizant acquisition specifications. Continued development of specification data base and Open Systems architecture. (U) (\$0.729) Continued development of Performance Based Ship Acquisition Specification Program.</p> <p>FY 2000 PLAN: (\$0.500) Continue to develop, improve and update NAVSEA cognizant acquisition specifications. Continue development of specification data base and Open Systems architecture. (\$0.762) Continue development of Performance Based Ship Acquisition Specification Program.</p> <p>B. Other Program Funding Summary</p> <table border="1"> <thead> <tr> <th></th> <th>FY 1999</th> <th>FY 2000</th> <th>FY 2001</th> <th>FY 2002</th> <th>FY 2003</th> <th>FY 2004</th> <th>FY 2005</th> <th>To Complete</th> <th>Total Cost</th> </tr> </thead> <tbody> <tr> <td>PE 0603563N Ship Concept Advanced Design</td> <td>9.613</td> <td>28.659</td> <td>0.162</td> <td>2.968</td> <td>3.892</td> <td>3.844</td> <td>3.843</td> <td>Continuing</td> <td>Continuing</td> </tr> <tr> <td>PE 0603564N Ship Preliminary Design & Feasibility Studies</td> <td>6.706</td> <td>11.945</td> <td>46.896</td> <td>4.944</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>Continuing</td> <td>Continuing</td> </tr> </tbody> </table> <p>C. Acquisition Strategy: N/A D. Schedule Profile: N/A</p>												FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Cost	PE 0603563N Ship Concept Advanced Design	9.613	28.659	0.162	2.968	3.892	3.844	3.843	Continuing	Continuing	PE 0603564N Ship Preliminary Design & Feasibility Studies	6.706	11.945	46.896	4.944	0.000	0.000	0.000	Continuing	Continuing
	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Cost																															
PE 0603563N Ship Concept Advanced Design	9.613	28.659	0.162	2.968	3.892	3.844	3.843	Continuing	Continuing																															
PE 0603564N Ship Preliminary Design & Feasibility Studies	6.706	11.945	46.896	4.944	0.000	0.000	0.000	Continuing	Continuing																															

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2000					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER							
RDT&E, N/BA 5			0604567N Ship Contract Design LF T&E			Ship Specifications S2197							
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Primary Hardware Development			0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000	
Ancillary Hardware Development			0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000	
Performance Based Specifications	C/CPFF	JJMA, Arlington, VA	Continuing	0.654	Note 1	0.693	N/A	0.000	N/A	Continuing	Continuing	Continuing	
Specification Improvements	C/CPFF	AME, Arlington, VA	Continuing	0.150	Note 1	0.469	N/A	0.000	N/A	Continuing	Continuing	Continuing	
Specification Improvements	Misc.	Misc.	Continuing	0.306	Misc.	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing	
GFE			0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000	
Award Fees			0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000	
Subtotal Product Development			Continuing	1.110		1.162		0.000		Continuing	Continuing	Continuing	
Remarks: Note 1. Existing Contract													
Development Support Equipment	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	N/A	
Software Development	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	N/A	
Training Development	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	N/A	
Integrated Logistics Support	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	N/A	
Configuration Management	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	N/A	
Technical Data	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	N/A	
GFE	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	N/A	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	N/A	
Remarks:													

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Exhibit R-3 Cost Analysis (page 2)							DATE: February 2000					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA 5			PE 0604567N Ship Contract Design/LFT&E			Ship Specifications S2197						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Operational Test & Evaluation	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Tooling	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
GFE	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Government Engineering Support	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Program Management Support	C/CPFF	ROH, Arlington, VA	Continuing	0.119	Note 1	0.100	Note 1	0.000	Note 1	Continuing	Continuing	Continuing
Travel	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Labor (Research Personnel)	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Overhead	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Subtotal Management			Continuing	0.119		0.100		0.000		Continuing	Continuing	Continuing
Remarks: Note 1: This is an existing level of effort contract which will be funded by tasks each FY.												
Total Cost			Continuing	1.229		1.262		0.000		Continuing	Continuing	Continuing
Remarks:												

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2000			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA 5	PROGRAM ELEMENT NAME AND NUMBER Ship Contract Design LFT&E 0604567N				PROJECT NAME AND NUMBER LHA Replacement S2465					
COST (\$ in Millions)	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to Complete	Total Cost
Project Cost	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.000	TBD	TBD
RDT&E Articles Qty	0	0	0	0	0	0	0	0	N/A	

A. Mission Description and Budget Item Justification: The five ships of the LHA 1 Class are scheduled to reach the end of their 35 year service life starting in 2011. Replacement ships are required to support amphibious operations.

The LHA 1 class is a multi purpose amphibious assault ship delivered to the Navy in the 1970's. The design merged the flight deck of an LPH and a vehicle and well deck of an LPD. The design allowed the use of helicopters and landing craft to conduct amphibious assault, from the ship that carried most of the Marines. As technology has evolved, new amphibious assault systems have been introduced into service (e.g. LCAC) which required the modification of the LHA design, resulting in the LHD 1 Class. New systems being developed require advances in ship capabilities. The MV-22 and the JSF are currently in development and, in order to fully integrate these systems, a ship with greater flight deck capability and improved stability is required. Future programs such as the CH-53E and AH-1W replacement aircraft will further stress current ship designs. As new USMC operational doctrine is developed such as OMFTS and Seabased logistics, the aviation mission requirements will grow.

FY 1999 ACCOMPLISHMENTS: N/A

FY 2000 PLAN:
(\$ 0.008) Commence LHA Replacement design.

FY 2001 PLAN: N/A

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EXHIBIT R-2a, RDT&E Project Justification								DATE:																															
								February 2000																															
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER																																
RDT&E, N/BA 5			Ship Contract Design/Live Fire T&E PE 0604567N				LHA Replacement 2465																																
<p>B. Other Program Funding Summary</p> <table border="1"> <thead> <tr> <th></th> <th>FY 1999</th> <th>FY 2000</th> <th>FY 2001</th> <th>FY 2002</th> <th>FY 2003</th> <th>FY 2004</th> <th>FY 2005</th> <th>To Complete</th> <th>Total Cost</th> </tr> </thead> <tbody> <tr> <td>PE 0603563N Ship Concept Advanced Design</td> <td>9.613</td> <td>28.659</td> <td>0.162</td> <td>2.968</td> <td>3.892</td> <td>3.844</td> <td>3.843</td> <td>Continuing</td> <td>Continuing</td> </tr> <tr> <td>PE 0603564N Ship Preliminary Design & Feasibility Studies</td> <td>6.706</td> <td>11.945</td> <td>46.896</td> <td>4.944</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>Continuing</td> <td>Continuing</td> </tr> </tbody> </table> <p>C. Acquisition Strategy: The acquisition strategy will see a design competition in the early contract design phase (Phase I) with a down select to a single industry team for Phase II. Detail design and construction would be awarded to a single industry team. The new design strategy will depend on the final amount of available funding. In any case, the Navy will conduct an Analysis of Alternatives (AOA) and identify design requirements. Industry teams may then compete for the Phase I Contract Design with a down select for Phase II. The Detail Design and Construction could be awarded to that team or competed.</p> <p>D. Schedule: The contract award is currently planned for a FY 05 award.</p>											FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Cost	PE 0603563N Ship Concept Advanced Design	9.613	28.659	0.162	2.968	3.892	3.844	3.843	Continuing	Continuing	PE 0603564N Ship Preliminary Design & Feasibility Studies	6.706	11.945	46.896	4.944	0.000	0.000	0.000	Continuing	Continuing
	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Cost																														
PE 0603563N Ship Concept Advanced Design	9.613	28.659	0.162	2.968	3.892	3.844	3.843	Continuing	Continuing																														
PE 0603564N Ship Preliminary Design & Feasibility Studies	6.706	11.945	46.896	4.944	0.000	0.000	0.000	Continuing	Continuing																														

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2000			
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT PE 0604567N			PROJECT NAME AND NUMBER						
RDT&E, N/BA 5				Ship Contract Design/Live Fire T&E			LHA Contract Design S2465						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location		Total PY s Cost	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Ancillary Hardware Development	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Systems Engineering	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Licenses	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Tooling	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
GFE	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Award Fees	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Subtotal Product Development				0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:													
Development Support Equipment	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Software Development	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Training Development	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Integrated Logistics Support	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Configuration Management	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Technical Data	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
GFE	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Subtotal Support				0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:													

R-1 SHOPPING LIST - Item No. 111 -18 of 111 -19

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 18 of 19)

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Exhibit R-3 Cost Analysis (page 2)								DATE: February 2000				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT PE 0604567N			PROJECT NAME AND NUMBER						
RDT&E, N/BA 5			Ship Contract Design/Live Fire T&E			LHA Contract Design S2465						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	
Operational Test & Evaluation	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	
Tooling	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	
GFE	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Design Management Support	C/CPFF	AME, Arlington VA	0.000	0.000	N/A	0.008	Note 1	0.000	N/A	Continuing	Continuing	Continuing
Government Engineering Support	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	N/A
Program Management Support	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	N/A
Travel	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	N/A
Labor (Research Personnel)	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	N/A
Overhead	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	N/A
Subtotal Management			0.000	0.000		0.008		0.000		Continuing	Continuing	Continuing
Remarks: Note 1. Existing Contract												
Total Cost			0.000	0.000		0.008		0.000		Continuing	Continuing	Continuing
Remarks:												

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