EXHIBIT R-2, RDT&E Budget Item Justification								DATE: **February 2002**		
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA 5**					R-1 ITEM NOMENCLATURE Ship Contract Design/Live Fire T&E PE 0604567N					
COST ($ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost		**78.624**	**142.848**	**184.545**	**93.339**	**75.458**	**55.408**	**58.220**	**Continuing**	**Continuing**
Carrier Contract Design 42301		**48.238**	**97.644**	**132.033**	**69.550**	**48.927**	**25.199**	**28.530**	**Continuing**	**Continuing**
Ship Contract Design S1803		**30.386**	**44.213**	**52.512**	**21.748**	**9.232**	**5.934**	**5.443**	**Continuing**	**Continuing**
Ship Specifications S2197		**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**Continuing**	**Continuing**
Live Fire Test & Evaluation S2198		**0.000**	**0.000**	**0.000**	**2.041**	**2.922**	**0.000**	**0.000**	**Continuing**	**Continuing**
LHA Replacement S2465		**0.000**	**0.000**	**0.000**	**0.000**	**14.377**	**24.275**	**24.247**	**TBD**	**TBD**
Titanium WTD/Hatchcover S9073		**0.000**	**0.991**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**N/A**	**N/A**
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 (usually after Program Initiation) of engineering, programmatic and acquisition documentation including 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 respective 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/tools 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 IPT efforts where Program Initiation has not occurred, and/or after Milestone B.

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA 5**	R-1 ITEM NOMENCLATURE Ship Contract Design/Live Fire T&E PE 0604567N

B. Program Change Summary:

	FY 2001	FY2002	FY2003
FY 2002 President's Budget:	77.488	89.388	
Appropriated Value:	78.204	131.388	
Adjustments to FY 2001/2002 Appropriated Value/FY 2002 President's Budget:	0.420	11.460	
FY 2003 Pres Budget Submit:	78.624	142.848	184.545

Funding:

FY 2001 adjustment due to Misc.(+.420).

FY 2002 adjustment for VSR Island Design CVN 77 (+12.734) and Section 8123: Management Reform (-1.274).

FY 2003 adjustmen: None

Technical: Not Applicable.

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2002**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N/BA 5**	PROGRAM ELEMENT NAME AND NUMBER **Ship Contract Design/LFT&E PE 0604567N**				PROJECT NAME AND NUMBER Carrier Contract Design 42301				
COST ($ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	**48.238**	**97.644**	**132.033**	**69.550**	**48.927**	**25.199**	**28.530**	**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 encompasses CVN 77 and CVNX Contract Design and CVNX LFT&E 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 Warfare Systems Integration effort will be managed within a technology change management process at contract award to allow further system development. This will ensure that the latest technologies are properly incorporated during the 8 year construction period for an Aircraft Carrier, without costly contract changes. 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 Teams (IPTs) utilize the IPPD process within an Integrated Data Environment (IDE) to design and develop ship construction Contract Data Packages (CDPs). The Future Carrier design approach is part of an acquisition strategy that is based on incorporating best available commercial practices and a phased technical definition.

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, traditional combat system, Command, Control, Computers and Communications, Intelligence, Surveillance and Reconnaissance (C4ISR), and aviation functions into a cohesive integrated system. This effort will be herein referred to as Warfare Systems Integration (WSI).

CVNX Total Ship Integration, the integration of major systems into ship design, is a continuation of the effort commenced within PE0603512N, PU 42693. This investment in CVNX 1 design starts in FY 02 and continues through FY 05. This design integration effort includes redesign and rearrangement of ship components; redesign of hull, mechanical and electrical (HM&E) and auxiliary systems (air-conditioning and ventilation, power distribution, airborne noise management, reduction of steam, environmental safety and health (ESH) and interface control); redesign of water production and tankage; electric loads analysis; redesign of power distribution; analysis and redesign of structure; analysis, tracking and management of changes in weight distribution and stability; and analysis and redesign of survivability systems.

The CVNX contract design effort encompasses those efforts required to develop the contract data package necessary to support CVNX 1 procurement. The CVNX LFT&E effort consists of vulnerability and susceptibility assessments of the new CVNX design and accomplishes congressionally mandated LFT&E.

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2002**
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	

FY 2001 ACCOMPLISHMENTS:

(U) ($28.758) Warfare Systems Integration – Contract system baseline established. Continued system baseline design refinement. Conducted System Requirements Review (SRR) and System Functional Review (SFR). Continued monitoring improvements targeted at reducing the operational and support costs of the ship's Warfare Systems, specifically for data exchange across operational areas, data fusion, and integrated displays for operators. Continued cooperative radar developments with DD-21 program regarding integration of MFR and VSR and trade studies required to mitigate risk and neck-down to more achievable solutions. Commenced the information infrastructure detailed design development, including required new technology system and software developments that enable data exchange across operational areas, data fusion and integration. Continued refinement of Warfare Systems Integration design and integrate into the ship design. These efforts continued to support forward fit of the new CVN 77 warfare system to the future CVNX class of nuclear aircraft carriers.

(U) ($11.744) Propulsion and Electric Power Generation – Started development of shipboard equipment for consolidated throttle control and remote EPCP. Completed development and drawings for improved shielding. Completed development and testing of detectors and continued development of valve control system. Continued testing of the purification system and completed drawings and procedure changes.

(U) ($7.736) SmartProduct Model - Obtained design data to advance the development of the smart product model of the CVN/CVNX. Augmented the design development of the smart product model for additional areas of the ship to provide for cost effective insertion of new technologies through reduction of engineering effort required to incorporate changes and to support more productive automated manufacturing.

FY 2002 PLAN:

(U) ($86.413) Future Carrier design – Commence resolution of future carrier design issues and update contract data package, including sytem descriptions, system diagrams, design drawings and specifications in areas where near- term LLTM advanced purchase and early fabrication work may be impacted. The update will accommodate changes to future carriers, future carrier systems, and future carrier equipment necessitated by equipment obsolescence, operational need, and the need to incorporate newer systems/technology to meet ORD requirements and reduce Total Ownerships Cost (TOC). Conduct Total Ship Integration through the IPPD process to incorporate the design changes required to the legacy baseline design for definition at the total system level. Complete conceptual baseline design (including a New Propulsion Plant, Electromagnetic Aircraft Launching System (EMALS), Zonal Electrical Distribution System, Electrical Auxiliaries, Reverse Omosis Distillate Units, Integrated Warfare Systems, and overall Total Ship Integration Efforts to close System Requirement Review Gaps, Conduct In-Process Design Review and continue development of engineering design package documentation.

(U) ($1.947) Propulsion and Electric Power Generation – Complete development of consolidated throttle control and remote EPCP. Complete testing of purification system. Complete development of valve control system.

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2002**
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	

FY 2002 PLAN CONTINUED

(U) ($9.284) - CVNX LFT&E - Conduct, through completion, a vulnerability assessment of the CVNX design to address LFT&E concerns identified in the TEMP. Conduct susceptibility assessment of the CVNX design. Resolve low confidence areas in analytical models for LFT&E concerns, and conduct LFT&E surrogate test program. This includes testing of Damage Prevention Protection System, DAPS components, underwater protection features (innerbottom structure and Torpedo Side Protection System), dynamic test of hull girder models and conduct of recoverability tests.

FY 2003 PLAN

(U) ($122.733) Future Carrier Design – Continue resolution of design issues and update of the contract data package, including design drawings and specifications in areas where near- term LLTM advanced purchase and early fabrication work may be impacted. The update will accommodate changes to the ship, its systems and equipment necessitated by equipment obsolescence, operational need, and incorporation of newer systems/technology. Continue Total Ship Integration through the IPPD process to incorporate the design changes required to the legacy baseline design for definition at the total system level. Continue Warfare System design refinement and conduct fourth of seven software build Critical Design Reviews (CDR). Continue monitoring improvements targeted at reducing the operational and support costs of the ship's Warfare Systems, specifically for data exchange across operational areas, data fusion, and integrated displays for operators. Continue development of system selection decision data packages, continue building the Warfare Systems Integration design contract data package (CDP) and integrate into the ship design. Continue development of requirements necessary to support WSI DT/OT in accordance with DOT&E guidance. Sustain efforts in accordance with the Navy's warfare system life cycle support strategy to insure compatibility and consistency between Navy warfare system development efforts coducted by designated PARMS, and concurrent efforts by the shipbuilder's electronic systems integrator.

(U) ($9.300) - CVNX LFT&E - Continue to conduct susceptibility assessment of the CVNX design. Resolve low confidence areas in analytical models for LFT&E concerns and continue to conduct LFT&E surrogate test program. This includes continuation of testing Damage Prevention Protection System, DAPS components, underwater protection features (innerbottom structure and Torpedo Side Protection System), dynamic test of hull girder models and conduct of recoverability tests.

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2002**
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	

B. Other Program Funding Summary	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total
PE 0603512N/42208 Carrier Sys Development	117.791	123.359	81.095	84.265	87.404	60.654	44.291	Continuing	Continuing
PE 0603512N/42693 Carrier Sys Definition	13.854	33.435	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
BLI 200100 Carrier Replacement Program	4,143.600	136.000	308.835	243.703	397.916	417.377	2,645.398	Continuing	Continuing

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 include “multi-function” radars and flat planar antenna arrays, data exchange across operational areas, data fusion, and integrated displays for operators, 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 Ship Detail Design and Construction Contract has been awarded as a sole source FPIF contract to Newport News Shipbuilding. However, the development and procurement of the new Integrated Warfare System was awarded to Newport News Shipbuilding as a CPAF contract.

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

Exhibit R-3 Cost Analysis (page 1) | DATE: **February 2002**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N/BA 5** | PROGRAM ELEMENT: **Ship Cont Design/Live Fire T&E PE 0604567** | PROJECT NAME AND NUMBER: Carrier Contract Design 42301

Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY Cost	FY 01 Cost	FY 01 Award Date	FY 2002 Cost	FY 02 Award Date	FY 2003 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product Development CVN 77	PR,SS	Newpt News Shipbldg, Va	33.413	29.517	01/01	50.807	12/01	71.473	12/02	Cont.	Cont.	Cont.
	SS,CPFF	Bettis Atomic Power Labs,Pa	29.000	11.744	10/00	1.947	10/01	0.000		0.000	42.691	42.691
	WR	NAWC Lakehurst NJ, Pax Md	3.618	0.360	03/01	1.680	12/01	3.560	12/02	Cont.	Cont.	Cont.
	WR	NSWC Dahlgren Va	8.320	3.383	12/00	4.200	12/01	6.020	12/02	Cont.	Cont.	Cont.
	GSA	Nichols Advance Marine, Va	3.049	0.000		0.000		0.000		Cont.	Cont.	Cont.
	PD/WR	SPAWAR, Ca	2.110	0.820	11/00	1.760	12/01	4.482	12/02	Cont.	Cont.	Cont.
	WR	NSWC Carderock MD	1.324	0.100	12/00	0.135	12/01	0.200	12/02	Cont.	Cont.	Cont.
	FAD	PEO DD 21	1.200	0.000	11/00	0.000		0.000		Cont.	Cont.	Cont.
	Various	Miscellaneous (under $1M)	15.619	2.314	11/00	5.262	01/02	5.955	01/03	Cont.	Cont.	Cont.
Product Development CVNX	C	NNS				13.486	12/01	18.935	12/02			
	WR	NAWC Lakehurst NJ				1.103	12/01	2.335	12/02			
	MAC	Anteon				0.553		4.927	12/02			
	Various	Miscellaneous (under $1M)				5.200		4.846	12/02			
		NAVAIR, Pax River				2.227						
Subtotal Product Development			97.653	48.238		88.360		122.733		Cont.	Cont.	Cont.

Note: PY total includes S2431

Development Support Equipment			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			0.000	0.000		0.000		0.000		0.000	0.000	0.000

Exhibit R-3 Cost Analysis (page 2) | DATE: **February 2002**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N/BA 5** | PROGRAM ELEMENT: **Ship Cont Design/Live Fire T&E PE 0604567** | PROJECT NAME AND NUMBER: Carrier Contract Design 42301

Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total Award Cost	FY 01 Cost	FY 01 Award Date	FY 2002 Cost	FY 02 Award Date	FY 2003 Cost	FY 03 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	
Live Fire Test & Evaluation	TBD	NSWC CD, MD				7.392	12/01	7.370	12/02	Cont.	Cont.	Cont.
	Contract	NNS				1.000	10/01	1.000	10/02	Cont.	Cont.	Cont.
	Various	Miscellaneous (under $1M)				0.892		0.930				
Subtotal T&E			0.000	0.000		9.284		9.300		Cont.	Cont.	
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			97.653	48.163		97.644		132.033		Cont.	Cont.	Cont.
Remarks:												

EXHIBIT R-2a, RDT&E Project Justification								DATE: **February 2002**	
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 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost		**30.386**	**44.213**	**52.512**	**21.748**	**9.232**	**5.934**	**5.443**	**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 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 Ship and supports the development of design methodologies/tools which facilitate and optimize the transition from ship design documents to efficient production of new ships and ship conversions.

FY 2001 Accomplishments:
(U) ($14.000) Continue Planning Yard CG Modernization Contract Design.
(U) ($ 7.000) Continue CG Government Team support for design products, including ship design data base and specifications.
(U) ($ 2.000) Continue CG Electronic System design.
(U) ($ 0.554) Continue Trimaran Design.
(U) ($ 6.832) Commence Littoral Support Fast Patrol Craft Design.

FY 2002 PLAN:
(U) ($8.011) Continue Planning Yard CG Modernization Contract Design.
(U) ($ 6.159) Continue CG Government Team support for design products, including ship design data base and specifications.
(U) ($ 1.650) Continue CG Electronic System design.
(U) ($ 6.493) Continue JCC(X) Ship Design Acquisition Documents for Decision Review
(U) ($5.300) Continue JCC(X) Early Industry Concept Study Efforts
(U) ($12.900) Commence JCC(X) Government Support for Design Products including Design Trade Studies, Performance Specifications and Statement of Work
(U) ($1.300) Commence JCC(X) Mission Package Evolutionary Requirements Definition
(U) ($2.400) Commence JCC(X) Definitizing Ship Functional Design

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2002**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER	PROJECT NAME AND NUMBER	
RDT&E, N/BA 5	**Ship Contract Design/LFT&E PE 0604567N**	Ship Contract Design S1803	

FY 2003 PLAN:
(U) ($7.616) Continue Planning Yard CG Modernization Contract Design
(U) ($7.096) Continue CG Government Team support design products, including ship design data base and specifications
(U) ($2.876) Commence Manpower and Training studies
(U) ($22.000) Commence JCC(X) Functional Design
(U) ($5.324) Commence JCC(X) Mission Package Interface Design Definition
(U) ($5.200) Continue JCC(X) Government Team support for acquisition and design products including management of design data and specifications
(U) ($2.400) Continue JCC(X) Early Industry Design Studies

B. Other Program Funding Summary	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total
PE 0603563N Ship Concept Advanced Design	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
PE 0603564N Ship Preliminary Design & Feasibility Studies	$19.993	$9.868	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

C. Acquistion Strategy:
For CG Modernization: The Planning Yard and NAVSEA team will perform required studies. These studies will lead to the development of detail design/integration products for installation of CG work packages including Land Attack and AADC. The conversion packages will be completed coastwide.

For JCC(X): The plan is for a FY 06 SCN ship award. This decision will be subject to a review of RDT&E resources based on the JROC validated ORD.

D. Schedule:

For CG Modernization: Awards for this funding are scheduled for FY 02 - FY 07 to support the CG Conversion Program of Record Installations in FY 06 (1), FY 07 (2), FY 08 (4), and FY 09 (4) .

For JCC(X): Award is scheduled for FY 06.

Exhibit R-3 Cost Analysis (page 1) | DATE: **February 2002**

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 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CG Mod Class Drawings	SS/CPAF	Ingalls Shipbuilding, Pascago	Continuing	9.930	Continuing	8.011	Note 1	7.616	Note 1	Continuing	Continuing	Continuing
CG Mod Electronic Systems	C/CPAF	LMGES, Morristown, NJ	Continuing	6.050	Note 1	1.000	Note 1			Continuing	Continuing	Continuing
Ship Integration/Systems Engineering	C/CPFF	JJMA, Arlington VA	Continuing	0.676	Note 1	0.520	Note 1			Continuing	Continuing	Continuing
Ship Integration/Systems Engineering	C/CPFF	CSCAME,Arlington, VA	Continuing	0.600	Note 1	4.000	Note 1	5.500	Note 1	Continuing	Continuing	Continuing
Ship Integration	C/CPFF	Lockheed Martin	Continuing	0.000	N/A	0.000	N/A	1.150	Note 1	Continuing	Continuing	Continuing
Equipment Support	WR	NSWC, MD/PA/VA	Continuing	2.500	N/A	5.332	11/01	4.250	TBD	Continuing	Continuing	Continuing
Engineering Design	MISC	Shipyards /TBD	Continuing	0.000	MISC	14.747	TBD			0.000	Continuing	Continuing
Ship Integration/Systems Engineering	C/CPFF	Gibbs and Cox	Continuing	0.000	N/A	0.620	TBD			0.000	Continuing	Continuing
Ship Integration/Systems Engineering	MISC	MISC	Continuing	0.546	MISC							
JCC(X) Mission System Design	WR	SPAWAR, San Diego,CA	Continuing	0.000	N/A	3.891	TBD	5.507	TBD	Continuing	Continuing	Continuing
JCC(X) Ship Functional Design	TBD	TBD	0.000	0.000	N/A	0.000	N/A	16.412	TBD	Continuing	Continuing	Continuing
JCC(X) Mission Package Interface	TBD	TBD	0.000	0.000	N/A	0.000	N/A	3.000	TBD	Continuing	Continuing	Continuing
Littoral Craft Design	PD	ONR, Arlington,VA	Continuing	6.808	11/00	0.000	N/A			0.000	7.944	7.944
Subtotal Product Development				27.110		38.121		43.435		Continuing	Continuing	Continuing

Remarks: Note 1. Existing Contract

Engineering Support	Misc	Misc		1.873	Misc	0.000			Misc	Continuing	Continuing	Continuing
Software Development				0.000		0.000				0.000	0.000	0.000
CG Mod Training Development	WR	ATRC, Misc		0.365		1.269	Misc	2.988	Misc	0.000	0.000	1.269
Integrated Logistics Support				0.000		0.000				0.000	0.000	0.000
Configuration Management				0.000		0.000				0.000	0.000	0.000
Technical Data				0.000		0.000				0.000	0.000	0.000
GFE				0.000		0.000				0.000	0.000	0.000
Subtotal Support			Continuing	2.238		1.269		2.988		Continuing	Continuing	Continuing

Remarks:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2002**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N/BA 5**		PROGRAM ELEMENT Ship Contract Design/Live Fire T&E PE 0604567N				PROJECT NAME AND NUMBER Ship Contract Design S1803						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	CPFF	Logicon	0.000	0.000	N/A	0.000	N/A	1.020	Note 1	0.000	1.020	0.000
Operational Test & Evaluation	N/A	N/A	0.000	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	0.000	0.000
GFE	N/A	N/A	0.000	0.000	N/A	0.000	N/A		N/A	0.000	0.000	0.000
Subtotal T&E			0.000	0.000		0.000		1.020		0.000	1.020	0.000
Remarks: Note 1 - Existing Contract												
Contractor Engineering Support		Misc	0.000	0.000		1.573	Misc	1.100	Misc	0.000	2.673	2.710
Government Engineering Support	Misc	Misc	Continuing	0.000	Misc	1.550	Misc	2.588	Misc	Continuing	Continuing	Continuing
Program Management Support	Misc	Misc	Continuing	0.998	Misc	1.500	Misc	1.281	Misc	Continuing	Continuing	Continuing
Travel	N/A	N/A	Continuing	0.040	Misc	0.200	Misc	0.100	Misc	Continuing	Continuing	Continuing
Labor (Research Personnel)			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
Subtotal Management			Continuing	1.038		4.823		5.069		Continuing	Continuing	Continuing
Remarks:												
Total Cost			Continuing	30.386		44.213		52.512		Continuing	Continuing	Continuing
Remarks:												

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2002**			
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 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost		**0.000**	**0.000**	**0.000**	**0.000**	**14.377**	**24.275**	**24.247**	**TBD**	**TBD**
RDT&E Articles Qty		**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 assaults. 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, AAAV 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-1Z replacement aircraft will further stress current ship designs. To facilitate new USMC operational doctrine, such as OMFTS, STOM and Seabased logistics, the operational requirements will increase.

FY 2001 PLAN: N/A

FY 2002 PLAN: N/A

FY 2003 PLAN: NA

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2002**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N/BA 5**	PROGRAM ELEMENT NAME AND NUMBER Ship Contract Design/Live Fire T&E PE 0604567N	PROJECT NAME AND NUMBER LHA Replacement 2465	

B. Other Program Funding Summary	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total
PE 0603563N Ship Concept Advanced Design	0.000	3.469	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
PE 0603564N Ship Preliminary Design & Feasibility Studies	14.912	4.992	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

Exhibit R-3 Cost Analysis (page 1) | DATE: **February 2002**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N/BA 5** | PROGRAM ELEMENT **PE 0604567N** **Ship Contract Design/Live Fire T&E** | PROJECT NAME AND NUMBER: LHA Contract Design S2465

Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Systems Integration	TBD	TBD	0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing
System Studies	TBD	TBD	0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing
Systems Engineering	C/CPFF	CSC AME Arlington,VA	0.000	0.000	Note 1	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing
Systems Engineering	C/CPFF	JJMA Arlington, VA	0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing
Systems Engineering	W/R	NSWC CD, Carderock, MD	0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing
Systems Engineering	W/R	NSWC DD, Dahlgren, VA	0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing
	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing
Subtotal Product Development			0.000	0.000		0.000		0.000		Continuing	Continuing	Continuing

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	Continuing	Continuing	Continuing
Software Development	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing
Training Development	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing
Integrated Logistics Support	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing
Configuration Management	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing
Technical Data	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing
GFE	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing
Subtotal Support			0.000	0.000		0.000		0.000		Continuing	Continuing	Continuing

Remarks:

Exhibit R-3 Cost Analysis (page 2)											DATE: **February 2002**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N/BA 5**			PROGRAM ELEMENT **PE 0604567N** **Ship Contract Design/Live Fire T&E**			PROJECT NAME AND NUMBER LHA Contract Design S2465					**37073**		
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location		Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 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	N/A	N/A		0.000	0.000	N/A	0.000	N/A	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	Continuing	Continuing	Continuing
Program Management Support	TBD	TBD		0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing
Travel	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing
Labor (Research Personnel)	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing
Overhead	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing
Subtotal Management				0.000	0.000		0.000		0.000		Continuing	Continuing	Continuing
Remarks: Note 1. Existing Contract													
Total Cost				0.000	0.000		0.000		0.000		Continuing	Continuing	Continuing
Remarks:													