

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Navy **Date:** April 2022

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604454N / LX (R)
---	--

COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	111.174	10.005	3.344	26.630	-	26.630	18.289	16.040	16.984	17.287	Continuing	Continuing
2474: <i>LPD Flight II Design & Total Integration</i>	111.174	10.005	3.344	26.630	-	26.630	18.289	16.040	16.984	17.287	Continuing	Continuing

Program MDAP/MAIS Code:
Project MDAP/MAIS Code(s): 542

A. Mission Description and Budget Item Justification

LPD 17 Flight II will replace LSD-41 Class ships and LSD-49 Class ships for embark, transport, control, insert, sustainment, and extract of Marine Air-Ground Task Force elements and supporting forces by helicopters, landing craft, and amphibious vehicles. Cost reduction and affordability efforts are required to continue pursuing affordability initiatives. This program element includes the planning & documentation for Live Fire Test & Evaluation (LFT&E), Developmental Test and Evaluation (DT&E) and Follow-on Operational Test and Evaluation (FOT&E) tests required for LPD 17 Flight II. LPD 28 and LPD 29 will be used to conduct these test events as they incorporate LPD Flight II changes prior to the first Flight II Ship, LPD 30. LPD FLT II were planned to replace remaining LSD ships as the ships are eventually removed from service and decommissioned. The LSD's will reach end of service life (ESL) in FY28.

The FY 2018 Defense Appropriations Act authorized the procurement of LPD 30. Per signed Acquisition Decision Memorandum, LPD 17 Flight II will meet the Capabilities Development Document for LX(R) and shall subsume all previous LX(R) efforts.

B. Program Change Summary (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	10.158	3.344	0.000	-	0.000
Current President's Budget	10.005	3.344	26.630	-	26.630
Total Adjustments	-0.153	0.000	26.630	-	26.630
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.153	0.000			
• Program Adjustments	0.000	0.000	0.000	-	0.000
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000
• Adjustments to Budget Year	-	-	26.630	-	26.630

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Navy Date: April 2022

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604454N / LX (R)
---	--

Change Summary Explanation

The FY 2023 funding request was reduced by \$3.531 million to account for the availability of prior year execution balances.

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy										Date: April 2022		
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0604454N / LX (R)				Project (Number/Name) 2474 / LPD Flight II Design & Total Integration			
COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
2474: LPD Flight II Design & Total Integration	111.174	10.005	3.344	26.630	-	26.630	18.289	16.040	16.984	17.287	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Project MDAP/MAIS Code: 542

A. Mission Description and Budget Item Justification

LPD 17 Flight II will replace LSD-41 Class ships and LSD-49 Class ships for embark, transport, control, insert, sustainment, and extract of Marine Air-Ground Task Force elements and supporting forces by helicopters, landing craft, and amphibious vehicles. Cost reduction and affordability efforts are required to continue pursuing affordability initiatives. This program element includes the planning & documentation for Live Fire Test & Evaluation (LFT&E) and Operational Evaluation (OPEVAL) tests required for the lead ship LPD 30. LPD 28, LPD 29, LPD 30 will be used to conduct these test events as they incorporate LPD Flight II changes prior to the lead Flight II Ship. LPD FLT II were planned to replace remaining LSD ships as the ships are eventually removed from service and decommissioned. The LSD's will reach end of service life (ESL) in FY28.

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

	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: LPD Flight II DESIGN/TOTAL SHIP INTEGRATION	10.005	3.344	26.630	0.000	26.630
Articles:	-	-	-	-	-
FY 2022 Plans: Continue to work with Naval Warfare Centers and the shipbuilder on Integrated Topside integration activities to mitigate (E3) risks and Enterprise Air Surveillance Radar (EASR) integration analysis. Continue High Temperature Superconducting (HTS) Degaussing efforts with the development and integration of Integrated Product Teams (IPTs) and development of Government use Integrated Logistics Support (ILS) products based on OEM vendor support documentation. High Temperature Superconducting (HTS) Full Ship Demonstration and Initial installation activities continue on the ship as the fully integrated system is initially installed and evaluated. Begin environmental testing of HTS components. The Cybersecurity requirements for HTS Degaussing, new/unique Contractor Furnished Equipment (CFE), and Government Furnished Equipment (GFE) systems will be developed to support the Risk Management Framework (RMF) Steps 1-6. Define the appropriate controls, documenting the system configuration certifications, and system tests required to operate these IT systems in accordance with current cybersecurity guidance, regulation and policy. Develop interface changes needed to ECS DAU system as a result of Common Rail Main Propulsion Diesel Engine (MPDE) fielding. Flight II Network updates will be developed and tested in the lab. Efforts will be conducted to ensure					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604454N / LX (R)	Project (Number/Name) 2474 / LPD Flight II Design & Total Integration

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

	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
<p>new construction fielding of Interior Communications Data Network (ICDN) and Navigation Critical Distribution System (NCDS) will be operable with other connected systems being fielded in new construction.</p> <p>Continue with HM&E and Amphibious Mission system integration studies, cost reduction studies, small business innovative research and technology transition, and environmental qualification testing. Continue with Unmanned Systems demonstration testing, amphibious ship integration requirements studies, and amphibious ship launch and recovery concept design evaluation. Initiate studies for design improvements, equipment testing, and qualification of systems of lessons learned/items identified during LFT&E and OPEVAL assessments.</p> <p>Continue to lead T&E Working-level Integrated Product Team (WIPT) meetings with stakeholders to continue execution of TEMP Rev. D inclusive of conduct of all T&E working groups and coordination with Operational Test Activities.</p> <p>Finalize detailed DT&E test event plans for Flight II, including Ship to Shore Connector Interface testing and USMC C4I - CANES integration testing to occur on LPD 28 for Flight II. Continue development of LFT&E Modeling and Simulation to support LPD 17 Flight II LFT&E and provide input to the Survivability Assessment for Flight II.</p> <p>FY 2023 Base Plans: During FY 2023 the LPD LFT II RDT&E program transitions from planning to execution of the LPD FLT II test plan. This requires the Program Office to continue to lead T&E Working-level Integrated Product Team (WIPT) meetings with stakeholders, development and execution of the LPD 17 Flt II TEMP inclusive of conducting all T&E working groups, and coordinating with Operational Test Activities. Begin active conduct of DT-D1 Test Events on LPD 28 to include execution of Dynamic Interface Testing (DIT) of LPD 17 Flight II Aviation capability on LPD 28. DIT event execution involves all costs associated with obtaining the services of the following Rotary/Tilt Rotor Aircraft: AH-1Z, UH-1Y, H-53E, H-53K, H-60, MV-22 and the RQ-21 Unmanned Aerial System; to include the air and maintenance crews, fuel costs for the three-week event; and analysis to establish Safe Operating Envelops for each aircraft. This event is vital to resolve LPD 17 Flight II DT&E/OT&E aviation requirements and support LPD 28 aviation certification. LFT&E Modeling and Simulation (M&S) efforts will transition to execution of computing-time intensive runs of the Advanced Survivability Assessment Program (ASAP) for total ship survivability assessment, the Navy Enhanced Sierra Mechanics (NESM) for Underwater Explosive/Shock simulation, and the Integrated Recoverability Model (IRM) for total ship recoverability assessment. Each LFT&E M&S proponent will develop Verification and Validation packages for ASAP, NESM and IRM to support Accreditation IAW SECNAVINST 5200.46. LFT&E M&S results support</p>					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604454N / LX (R)	Project (Number/Name) 2474 / LPD Flight II Design & Total Integration

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

	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
development of the DODI 5000.85 and DODI 5000.89 required Survivability Assessment Report (SAR). DT&E for Cybersecurity Survivability will include conducting the manpower and equipment intensive Cyber Cooperative Vulnerability Identification (CVI) and Adversarial Cyber DT&E (ACD) for each LPD Network Enclave: Combat. C4I, NAV, HM&E, and Aviation. The Program Office also must initiate Advanced Procurement of 35 High-Speed Maneuvering Surface Targets (HSMTs) to support Surface Warfare (SUW) self-defense DT&E and OT&E to resolve the updated Flight II SUW capability requirement. Additionally, cost growth between FY22 and FY23 also reflects the deferral of events/activities originally planned for FY22 to FY23.					
FY 2023 OCO Plans: N/A					
FY 2022 to FY 2023 Increase/Decrease Statement: The \$23.286M increase from \$3.344M in FY 2022 to \$26.630M in FY 2023 is to conduct the Developmental, Operational, and Live Fire Test and Evaluation of the LPD 17 Flight II, including addressing all new or modified requirements for surface warfare self-defense, cyber survivability, joint interoperability, and aviation operations. The Flight II test program transitions from test planning to test execution, with the delivery of LPD 28 in FY22 and the start of the Operational Test and Evaluation test events. LPD 28, LPD 29, and LPD 30 will be used to conduct these test events as they incorporate LPD Flight II changes prior to the lead Flight II Ship. Events planned to occur in FY23 include Dynamic Interface Test for LPD 28/Flight II, USMC - Flight II CANES/C4I Integration Test, and Ship to Shore Connector Interface Test. The FY23 Live Fire Test and Evaluation effort will compute time-intensive runs of the Advanced Survivability Assessment Program (ASAP) for total ship survivability assessment, the Navy Enhanced Sierra Mechanics (NESM) for Underwater Explosive/Shock simulation, and the Integrated Recoverability Model (IRM) for total ship recoverability assessment in support of Flight II survivability assessment.					
Accomplishments/Planned Programs Subtotals	10.005	3.344	26.630	0.000	26.630

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

Line Item	FY 2021	FY 2022	FY 2023	FY 2023	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Cost To	
			Base	OCO	Total					Complete	Total Cost
• SCN/3010: LPD Flight II	1,127.801	310.636	1,673.000	-	1,673.000	0.000	0.000	0.000	0.000	0.000	5,696.637
• SCN/5300: Completion of Prior Year Shipbuilding Programs	0.000	0.000	0.000	-	0.000	0.000	14.600	0.000	1.800	0.000	16.400

Remarks

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604454N / LX (R)	Project (Number/Name) 2474 / LPD Flight II Design & Total Integration

D. Acquisition Strategy

Sole Source to Huntington Ingalls Industries.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy **Date:** April 2022

Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604454N / LX (R)	Project (Number/Name) 2474 / LPD Flight II Design & Total Integration
--	--	---

Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Design/Systems Integration	C/CPIF	CSC, Alion, ICI : Washington, DC	32.928	0.000		0.000		0.000		-		0.000	0.000	32.928	-
Design/Systems Integration	WR	NSWC Carderock/ SSES Philadelphia : NSWC Beth, MD/ SSES Philadelphia, PA	28.969	4.415	Oct 2020	0.075	Dec 2021	0.000		-		0.000	Continuing	Continuing	Continuing
Design/Systems Integration	WR	NSWC Dahlgren : Dahlgren, VA	3.637	0.090	Oct 2020	0.090	Dec 2021	0.000		-		0.000	Continuing	Continuing	Continuing
Design/Systems Integration	WR	PEO C4I, PEO IWS : Washington, DC	7.401	0.073	Dec 2020	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Design/Systems Integration	WR	NAWC Lakehurst : Lakehurst, NJ	2.056	0.000		0.049	Dec 2021	0.000		-		0.000	0.000	2.105	-
Design/Systems Integration	WR	NSWC, Panama City : Panama City, FL	1.125	0.340	Oct 2020	0.125	Dec 2021	0.000		-		0.000	Continuing	Continuing	Continuing
Design/Systems Integration	WR	NSWC, Port Hueneme : Port Hueneme, CA	1.270	0.000		0.000		0.000		-		0.000	0.000	1.270	-
Design/Systems Integration	C/CPFF	HII, General Dynamics : Various	32.891	0.000		0.000		0.000		-		0.000	0.000	32.891	-
Design/Systems Integration	WR	NAVSEALOGCEN : Mechanicsburg, PA	0.647	0.000		0.000		0.000		-		0.000	0.000	0.647	-
Systems Engineering and Integration	C/CPFF	Huntington : Pascagoula, MS	0.000	1.175	Oct 2020	1.000	Jan 2022	0.000		-		0.000	0.000	2.175	-
Design/Systems Integration	WR	NSWCPD : Philadelphia, PA	0.000	0.000		1.000	Jan 2022	0.000		-		0.000	0.000	1.000	-
Subtotal			110.924	6.093		2.339		0.000		-		0.000	Continuing	Continuing	N/A

Remarks
The \$2.339 decrease from \$2.339 in FY 2022 to \$0 in FY 2023 demonstrates the shift of the program as it transitions from planning to execution of the LPD FLT II test plan.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy **Date:** April 2022

Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604454N / LX (R)	Project (Number/Name) 2474 / LPD Flight II Design & Total Integration
--	--	---

Test and Evaluation (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test and Evaluation	C/BA	COTF : Norfolk, VA	0.250	0.235	Oct 2020	0.075	Jan 2022	0.780	Oct 2022	-		0.780	0.000	1.340	-
Test and Evaluation	WR	NSWCCD : Bethesda, MD	0.000	1.325	Oct 2020	0.280	Jan 2022	1.962	Oct 2022	-		1.962	0.000	3.567	-
Test and Evaluation	WR	NSWC PC : Panama City, FL	0.000	0.200	Oct 2020	0.000		1.635	Oct 2022	-		1.635	0.000	1.835	-
Test and Evaluation	WR	NSWCPD : Philadelphia, PA	0.000	0.075	Oct 2020	0.000		2.480	Oct 2022	-		2.480	0.000	2.555	-
T&E Contractor Support	C/CPIF	ICI,SERCO, G&C/ : Washington, DC	0.000	1.274	Oct 2020	0.637	Dec 2021	2.640	Oct 2022	-		2.640	0.000	4.551	-
Test and Evaluation	WR	NAVAIR : Various	0.000	0.788	Oct 2020	0.003	Dec 2021	9.598	Oct 2022	-		9.598	0.000	10.389	-
Test and Evaluation	WR	JITC : Fort Huachuca, AZ	0.000	0.015	Dec 2020	0.000		0.075	Oct 2022	-		0.075	0.000	0.090	-
Test and Evaluation	MIPR	MCOTEA : Quantico, VA	0.000	0.000		0.010	Dec 2021	0.020	Oct 2022	-		0.020	0.000	0.030	-
Test and Evaluation - SUW Targets for DT&E/OT&E	TBD	TBD : TBD	0.000	0.000		0.000		6.175	Oct 2022	-		6.175	0.000	6.175	-
Test and Evaluation - Cyber DT&E Execution	TBD	Various : Various	0.000	0.000		0.000		0.790	Oct 2022	-		0.790	0.000	0.790	-
Test and Evaluation - USMC-Canes Integration Test	TBD	Various : Various	0.000	0.000		0.000		0.250	Oct 2022	-		0.250	0.000	0.250	-
Test and Evaluation - WIPT and Working Group SME Supt	TBD	Various : Various	0.000	0.000		0.000		0.225	Oct 2022	-		0.225	0.000	0.225	-
Subtotal			0.250	3.912		1.005		26.630		-		26.630	0.000	31.797	N/A

Remarks
 The \$25.625M increase from \$1.005M in FY 2022 to \$26.630M in FY 2023 is to conduct the Developmental, Operational, and Live Fire Test and Evaluation of the LPD 17 Flight II, including addressing all new or modified requirements for surface warfare self-defense, cyber survivability, joint interoperability, and aviation operations. The Flight II test program transitions from test planning to test execution, with the delivery of LPD 28 in FY22 and the start of the Operational Test and Evaluation test events. LPD 28, LPD 29, and LPD 30 will be used to conduct these test events as they incorporate LPD Flight II changes prior to the lead Flight II Ship.

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604454N / LX (R)	Project (Number/Name) 2474 / LPD Flight II Design & Total Integration

Fiscal Year	2021				2022				2023				2024				2025				2026				2027			
Quarter	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
Acquisition Milestones					LPD 31 Start of Const				LPD 32 DD&C Award																			
T&E Milestones	DT&E				OT&E																							
	LFT&E																											
Technical Reviews																												

Note: LPD 30 and 31 have COVID-related risk to schedule, which has delayed the start of construction of LPD 31 in FY22 from 3 QTR to 4 QTR. The program is still working to analyze and understand this risk and any resulting ship milestone delays.

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604454N / LX (R)	Project (Number/Name) 2474 / LPD Flight II Design & Total Integration

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2474				
Developmental Test and Evaluation Phase	1	2021	3	2026
Live Fire Test and Evaluation Phase	2	2021	4	2027
Operational Test & Evaluation Begins	1	2022	4	2027
LPD 31 Start of Construction	4	2022	4	2022
LPD 32 Detail Design & Construction Award	3	2023	3	2023