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## **LPD 17 San Antonio Class Amphibious Transport Dock (LPD 17)**

As of FY 2021 President's Budget

Defense Acquisition Management  
Information Retrieval  
(DAMIR)

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## Common Acronyms and Abbreviations for MDAP Programs

Acq O&M - Acquisition-Related Operations and Maintenance  
ACAT - Acquisition Category  
ADM - Acquisition Decision Memorandum  
APB - Acquisition Program Baseline  
APPN - Appropriation  
APUC - Average Procurement Unit Cost  
\$B - Billions of Dollars  
BA - Budget Authority/Budget Activity  
Blk - Block  
BY - Base Year  
CAPE - Cost Assessment and Program Evaluation  
CARD - Cost Analysis Requirements Description  
CDD - Capability Development Document  
CLIN - Contract Line Item Number  
CPD - Capability Production Document  
CY - Calendar Year  
DAB - Defense Acquisition Board  
DAE - Defense Acquisition Executive  
DAMIR - Defense Acquisition Management Information Retrieval  
DoD - Department of Defense  
DSN - Defense Switched Network  
EMD - Engineering and Manufacturing Development  
EVM - Earned Value Management  
FOC - Full Operational Capability  
FMS - Foreign Military Sales  
FRP - Full Rate Production  
FY - Fiscal Year  
FYDP - Future Years Defense Program  
ICE - Independent Cost Estimate  
IOC - Initial Operational Capability  
Inc - Increment  
JROC - Joint Requirements Oversight Council  
\$K - Thousands of Dollars  
KPP - Key Performance Parameter  
LRIP - Low Rate Initial Production  
\$M - Millions of Dollars  
MDA - Milestone Decision Authority  
MDAP - Major Defense Acquisition Program  
MILCON - Military Construction  
N/A - Not Applicable  
O&M - Operations and Maintenance  
ORD - Operational Requirements Document  
OSD - Office of the Secretary of Defense  
O&S - Operating and Support  
PAUC - Program Acquisition Unit Cost

PB - President's Budget  
PE - Program Element  
PEO - Program Executive Officer  
PM - Program Manager  
POE - Program Office Estimate  
RDT&E - Research, Development, Test, and Evaluation  
SAR - Selected Acquisition Report  
SCP - Service Cost Position  
TBD - To Be Determined  
TY - Then Year  
UCR - Unit Cost Reporting  
U.S. - United States  
USD(AT&L) - Under Secretary of Defense (Acquisition, Technology and Logistics)  
USD(A&S) - Under Secretary of Defense (Acquisition and Sustainment)

## Program Information

**Program Name**

LPD 17 San Antonio Class Amphibious Transport Dock (LPD 17)

**DoD Component**

Navy

## Responsible Office

CAPT Scot Searles  
LPD 17 Amphibious Transport Dock  
Ship Program Office (PMS317)  
PEO Ships  
Washington, DC 20376-2401

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**Date Assigned:** January 31, 2020

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## References

**SAR Baseline (Development Estimate)**

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated June 17, 1996

**Approved APB**

Navy Acquisition Executive (NAE) Approved Acquisition Program Baseline (APB) dated January 8, 2019

## **Mission and Description**

The LPD 17 Flight I San Antonio Class Amphibious Transport Dock Ship (LPD 17) is the functional replacement for the LPD 4 Austin class, LSD 36 Anchorage class, LKA 113 Charleston class, and LST 1179 Newport classes of Amphibious Ships for embarking, transporting and landing elements of a Marine landing force in an assault by helicopters, landing craft, amphibious vehicles, and by a combination of these methods to conduct the primary amphibious warfare mission in order to win the current and future fight.

The LPD 17 Flight II ships are the functional replacement for the LSD 41/49 Class ships.

These ships support amphibious assault, special operations or expeditionary warfare missions and serve as aviation platforms for amphibious warfare. They are agile, versatile, multi-mission platforms that are adaptable with wide ranging utility. Core missions for an independently operating LPD 17 and embarked Marines include: Embassy Reinforcement, Maritime Interception Operations, Non-Combatant Evacuation Operations, Humanitarian Assistance/Disaster Response, Theater Security Cooperation, Tactical Recovery of Aircraft and Personnel, and Limited Amphibious Raids. All of these missions require an LPD 17 with organic aviation capacity, sufficient command and control capability to support all platform and embarked force needs, and sufficient medical capability and capacity required to support the operational force.



## Executive Summary

### Program Highlights Since Last Report

The LPD 17 Class has delivered 11 Flight I ships currently operating as Fleet assets. Collectively they have successfully completed 25 deployments since the program inception in 1994. The final two Flight I ships are under construction at Huntington Ingalls Industries in Pascagoula, Mississippi. LPD 28 and LPD 29 are transition ships to phase in design, producibility, and fact-of-life changes as the program moves from LPD Flight I to LPD Flight II. LPD 30 is the first LPD Flight II ship.

USS PORTLAND (LPD 27) completed Post Shakedown Availability in August 2019. LPD 27 has transferred to the In-Service Program Office (PMS 407) and is beginning workups for her first deployment.

FORT LAUDERDALE (LPD 28) is 62% complete as of December 2019. Upcoming production milestones planned for CY 2020 include: ship launch, Air Conditioning Light Off, Electronic Systems Light Off, Fuel On Load, Electrical Generator Light Off, and Combat Systems Light Off. The ship christening ceremony for LPD 28 is scheduled for May 2020. LPD 28 is projected to deliver in the Fall of CY 2021.

RICHARD M. McCOOL JR. (LPD 29) is 22% complete as of December 2019. The ship is projected to deliver in the Summer of CY 2023.

HARRISBURG (LPD 30) detail design and construction contract was awarded on March 25, 2019 and Start Fab is planned for 3Q FY 2020. On October 10, 2019 the former Secretary of the Navy, the Honorable Mr. Richard Spencer announced that LPD 30 will be named for the city of Harrisburg, Pennsylvania. The Integrated Baseline Review for LPD 30 was conducted in partnership with the shipbuilder to assess the production plan and establish the EVM baseline in November 2019.

The FY 2020 National Defense Authorization Act provided incremental funding authority for the Detail Design & Construction (DD&C) of LPD 31. The FY 2020 Consolidated Appropriations Act provides \$524.1M of full funding for LPD 31. The remaining full funding for LPD 31 is budgeted in FY 2021.

There are no significant software-related issues with this program at this time.



<b>History of Significant Developments Since Program Initiation</b>
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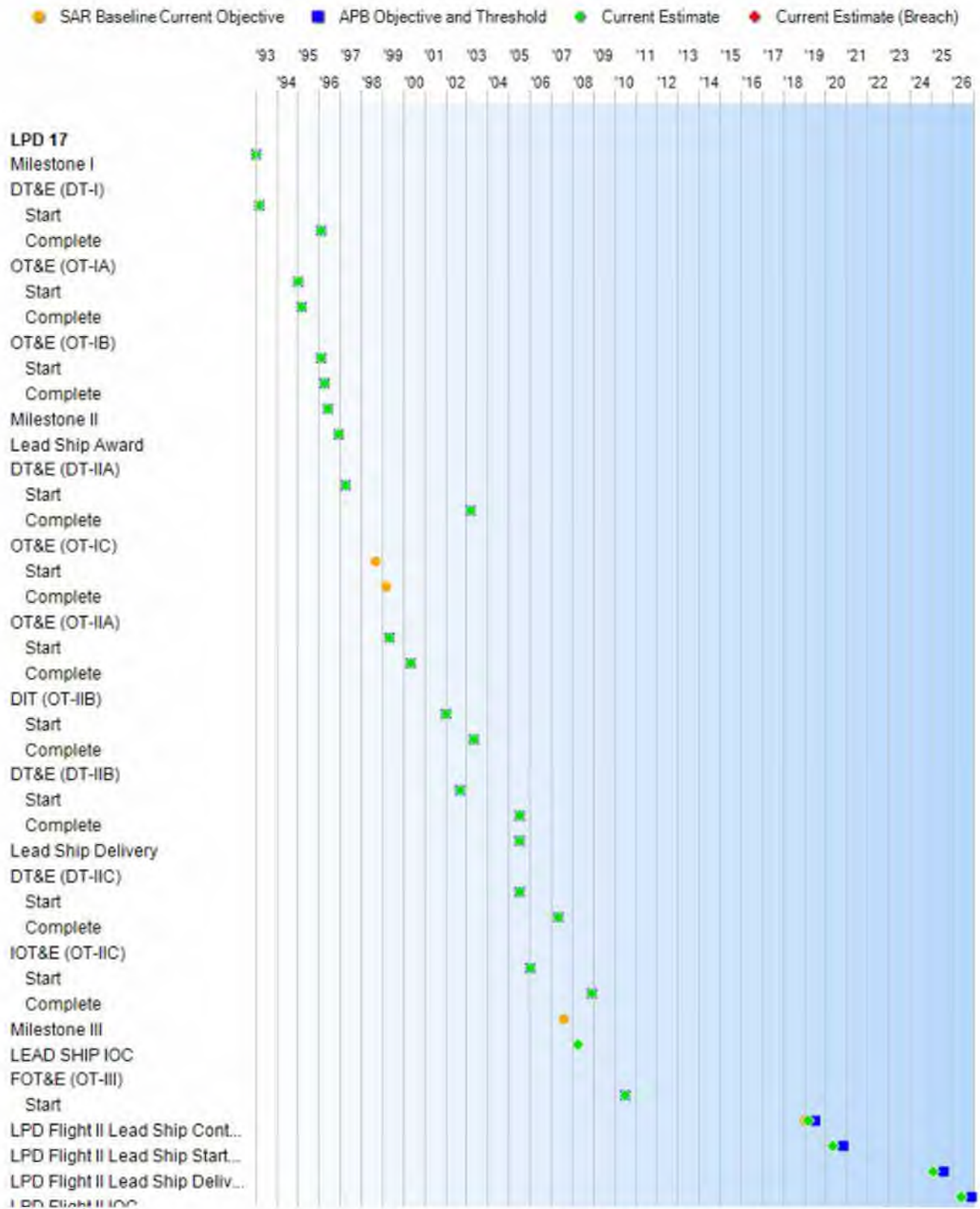
History of Significant Developments Since Program Initiation	
Date	Significant Development Description
September 1990	JROC Validates LX Mission Needs Statement.
January 1993	Defense Acquisition Board Milestone I Approval.
October 1994	PMS 317 Program Office established.
May 1996	Operational Requirements Document (Rev. 03) Approval.
June 1996	Defense Acquisition Board Milestone II approval.
December 1996	Lead ship (LPD 17) contract award.
July 2005	Lead ship (LPD 17) delivered.
August 2005	Hurricane Katrina causes significant damage to the Gulf Coast with the shipyards at Avondale, LA and Pascagoula, MS.
January 2006	Lead ship commissioned (LPD 17).
August 2008	First deployment of lead ship (LPD 17).
April 2014	LX(R) Analysis of Alternatives completed.
February 2016	LX(R) CDD Signed.
April 2018	LPD Flight II ADM Signed. LX(R) subsumed into the SAN ANTONIO Class Program.
August 2018	Long Lead Time Material contract for first LPD Flight II ship (LPD 30) awarded.
November 2018	Flight II Acquisition Strategy signed.
January 2019	APB revised to add LPD 17 Flight II ships.
March 2019	LPD Flight II lead ship (LPD 30) DD&C contract award.

# Threshold Breaches

<b>APB Breaches</b>		
<b>Schedule</b>		<input type="checkbox"/>
<b>Performance</b>		<input type="checkbox"/>
<b>Cost</b>	RDT&E	<input type="checkbox"/>
	Procurement	<input type="checkbox"/>
	MILCON	<input type="checkbox"/>
	Acq O&M	<input type="checkbox"/>
<b>O&amp;S Cost</b>		<input type="checkbox"/>
<b>Unit Cost</b>	PAUC	<input type="checkbox"/>
	APUC	<input type="checkbox"/>

<b>Nunn-McCurdy Breaches</b>		
<b>Current UCR Baseline</b>		
	PAUC	None
	APUC	None
<b>Original UCR Baseline</b>		
	PAUC	None
	APUC	None

## Schedule





LPD Flight II/III



Schedule Events				
Events	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate
Milestone I	Jan 1993	Jan 1993	Jan 1993	Jan 1993
DT&E (DT-I)				
Start	Mar 1993	Mar 1993	Mar 1993	Mar 1993
Complete	Feb 1996	Feb 1996	Feb 1996	Feb 1996
OT&E (OT-IA)				
Start	Jan 1995	Jan 1995	Jan 1995	Jan 1995
Complete	Mar 1995	Mar 1995	Mar 1995	Mar 1995
OT&E (OT-IB)				
Start	Feb 1996	Feb 1996	Feb 1996	Feb 1996
Complete	Apr 1996	Apr 1996	Apr 1996	Apr 1996
Milestone II	Jun 1996	Jun 1996	Jun 1996	Jun 1996
Lead Ship Award	Aug 1996	Dec 1996	Dec 1996	Dec 1996
DT&E (DT-IIA)				
Start	Sep 1996	Apr 1997	Apr 1997	Apr 1997
Complete	Aug 1998	Mar 2003	Mar 2003	Mar 2003
OT&E (OT-IC)				
Start	Sep 1998	N/A	N/A	N/A
Complete	Mar 1999	N/A	N/A	N/A
OT&E (OT-IIA)				
Start	Jun 2003	May 1999	May 1999	May 1999
Complete	Sep 2003	May 2000	May 2000	May 2000
DIT (OT-IIB)				
Start	N/A	Jan 2002	Jan 2002	Jan 2002
Complete	N/A	May 2003	May 2003	May 2003
DT&E (DT-IIB)				
Start	Sep 1998	Sep 2002	Sep 2002	Sep 2002
Complete	Jun 2002	Jul 2005	Jul 2005	Jul 2005
Lead Ship Delivery	Jun 2002	Jul 2005	Jul 2005	Jul 2005
DT&E (DT-IIC)				
Start	Jul 2002	Jul 2005	Jul 2005	Jul 2005
Complete	Jan 2004	May 2007	May 2007	May 2007
IOT&E (OT-IIC)				
Start	N/A	Jan 2006	Jan 2006	Jan 2006

Complete	N/A	Dec 2008	Dec 2008	Dec 2008
Milestone III	Aug 2007	N/A	N/A	N/A
LEAD SHIP IOC	Jan 2004	Apr 2008	Apr 2008	Apr 2008
<b>FOT&amp;E (OT-III)</b>				
Start	Jan 2011	Jul 2010	Jul 2010	Jul 2010
LPD Flight II Lead Ship Contract Award	N/A	Jan 2019	Jul 2019	Mar 2019
LPD Flight II Lead Ship Start Fabrication	N/A	May 2020	Nov 2020	May 2020
LPD Flight II Lead Ship Delivery	N/A	Feb 2025	Aug 2025	Feb 2025
LPD Flight II IOC	N/A	Jun 2026	Dec 2026	Jun 2026

#### Change Explanations

None

#### Notes

LPD 28 scheduled delivery September 2021; OWLD March 2023.

LPD 29 scheduled delivery July 2023; OWLD February 2025.

LPD 30 scheduled delivery February 2025; OWLD August 2026.

#### Acronyms and Abbreviations

DIT - Design Integration Testing  
 DT - Developmental Test  
 DT&E - Developmental Test and Evaluation  
 FOT&E - Follow-on Operational Test and Evaluation  
 IOT&E - Initial Operational Test and Evaluation  
 OT - Operational Test  
 OT&E - Operational Test and Evaluation  
 OWLD - Obligation Work Limiting Date



## Performance

Performance Characteristics				
SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Demonstrated Performance	Current Estimate
Mobility				
Sustained Speed (Kts)				
23	23	21.5	24	24
Endurance ((NM)(K) @ Kts)				
10/22	10/22	9.5/20	10.6/20	10.6/20
Amphibious Warfare Embarkation (Net)				
Troops				
750	750	650	720	720
Vehicles (Sq Ft)(k)				
25	25	22	22	22
Cargo (Cubic Feet)(k)				
25	25	22	34	34
Bulk Fuel (Gals)(k)				
325	325	250	307	307
LCAC				
2	2	1(+1)	2	2
VTOL Land/Launch Spots (CH-46 or CH-53E or MV-22)				
4/3/2	4/3/2	4/2/2	4/2/2	4/2/2
VTOL Maint/Storage (CH-46 or CH-53E or MV-22)				
3/1/1	3/1/1	2/1/1	2/1/1	2/1/1
Ship To Shore Capability (LCAC)				
Sustained Operations (reload 6 LCACs)(mins)				
220	220	285	274	274
Operational Availability (Ao)				
.90	.90	.80	.92	.92
LPD Flight II Operational Availability (Ao)				
N/A	.80	(T=O) .80		.80
LPD Flight II Bulk Fuel (Gallons) (K)				
N/A	310	(T=O) 310		310
LPD Flight II Troops				
N/A	552	(T=O) 552		552



LPD Flight II Vehicles (Square Feet) (K)				
N/A	20.88	(T=O) 20.88		20.88
LPD Flight II Cargo (Cubic Feet) (K)				
N/A	28 (after 0.75 broken stow factor is applied)	(T=O) 28 (after 0.75 broken stow factor is applied)		28 (after 0.75 broken stow factor is applied)
LPD Flight II LCAC/SSC / LCU Spots				
N/A	2 / 1	(T=O) 2 / 1		2 / 1
LPD Flight II Aircraft Refueling and Arming				
N/A	Simultaneous refueling and electrical service of four (4) aircraft and re-arming/de-arming of two (2) aircraft in any combination of MV-22, CH-53, H-1, and H-60	(T=O) Simultaneous refueling and electrical service of four (4) aircraft and re-arming/de-arming of two (2) aircraft in any combination of MV-22, CH-53, H-1, and H-60		Simultaneous refueling and electrical service of four (4) aircraft and re-arming/de-arming of two (2) aircraft in any combination of MV-22, CH-53, H-1, and H-60
LPD Flight II VTOL Land and Launch Spots				
N/A	Two (2) primary and four (4) expanded launch spots	(T=O) Two (2) primary and four (4) expanded launch spots		Two (2) primary and four (4) expanded launch spots

#### Requirements Reference

ORD Revision 3 dated April 8, 1996 and CDD for Amphibious Ship Replacement Program (LX(R)) dated October 17, 2016 - LPD Flight II only

#### Change Explanations

None

#### Notes

Demonstrated Performance for Sustained Speed and Vehicles (Sq Ft) reflect performance during LPD 17 BT.

Demonstrated Performance for Troops, Cargo (Cubic Feet), LCAC, and VTOL Land/Launch Spots reflect measurements taken during LPD 17 Sail Away Trials.

Demonstrated Performance for Bulk Fuel, VTOL Maintenance/Storage, and Sustained Operations reflect performance during LPD 17 Class IOT&E events.

Demonstrated Performance for Ao reflects performance cited in the LPD 17 Class OPEVAL report dated January 2010.

**Acronyms and Abbreviations**

Ao - Operational Availability  
BT - Builder's Trials  
Gals - gallons  
IOT&E - Initial Operational Test and Evaluation  
K/k - Thousands  
Kts - Knots  
LCAC - Landing Craft Air Cushion  
mins - minutes  
NM - Nautical Miles  
OPEVAL - Operational Evaluation  
Sq Ft - square feet  
VTOL - Vertical Take-Off and Landing

## Track to Budget

### RD&E

Appn	BA	PE	
Navy	1319	05	0604311N
	<b>Project</b>	<b>Name</b>	
	2283	LPD 17 Class Systems Integration (Shared) (Sunk)	
Navy	1319	04	0604454N
	<b>Project</b>	<b>Name</b>	
	2474	LPD Flight II Design & Integration	

### Procurement

Appn	BA	PE	
Navy	1611	03	0204411N
	<b>Line Item</b>	<b>Name</b>	
	3010	LPD Flight II	
	3036	LPD-17	
Navy	1611	05	0204411N
	<b>Line Item</b>	<b>Name</b>	
	5110	Outfitting	(Shared)
	5300	Completion of Prior Year Shipbuilding Programs	(Shared)



## Cost and Funding

### Cost Summary

Total Acquisition Cost						
Appropriation	BY 1996 \$M			BY 1996 \$M	TY \$M	
	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Development Estimate	Current APB Development Objective
RDT&E	78.7	276.1	303.7	260.4	77.8	354.2
Procurement	8939.4	29073.7	31981.1	28654.0	10684.0	51527.3
Flyaway	--	--	--	28654.0	--	--
Recurring	--	--	--	28616.9	--	--
Non Recurring	--	--	--	37.1	--	--
Support	--	--	--	0.0	--	--
Other Support	--	--	--	0.0	--	--
Initial Spares	--	--	--	0.0	--	--
MILCON	0.0	0.0	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0
Total	9018.1	29349.8	N/A	28914.4	10761.8	51881.5

#### Current APB Cost Estimate Reference

POE dated November 05, 2018

#### Cost Notes

A Program Office Estimate has been completed for the LPD 17 Class in the previous year. The estimate was developed using actuals through LPD 27, the Estimate at Completion for LPD 28 & LPD 29, and applying a historically demonstrated learning curve.

Total Quantity			
Quantity	SAR Baseline Development Estimate	Current APB Development	Current Estimate
RDT&E	0	0	0
Procurement	12	26	26
Total	12	26	26

## Cost and Funding

### Funding Summary

Appropriation Summary									
FY 2021 President's Budget / December 2019 SAR (TY\$ M)									
Appropriation	Prior	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
RDT&E	289.5	12.5	10.2	5.3	3.1	3.1	3.2	0.0	326.9
Procurement	24382.1	542.8	1209.8	68.2	1865.4	8.4	1878.8	21227.4	51182.9
MILCON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2021 Total	24671.6	555.3	1220.0	73.5	1868.5	11.5	1882.0	21227.4	51509.8
PB 2020 Total	24791.3	278.3	1685.3	94.5	1770.6	49.9	2016.0	21114.1	51800.0
Delta	-119.7	277.0	-465.3	-21.0	97.9	-38.4	-134.0	113.3	-290.2

Quantity Summary										
FY 2021 President's Budget / December 2019 SAR (TY\$ M)										
Quantity	Undistributed	Prior	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Development	0	0	0	0	0	0	0	0	0	0
Production	0	14	0	1	0	1	0	1	9	26
PB 2021 Total	0	14	0	1	0	1	0	1	9	26
PB 2020 Total	0	14	0	1	0	1	0	1	9	26
Delta	0	0	0	0	0	0	0	0	0	0

## Cost and Funding

### Annual Funding By Appropriation

Annual Funding							
1319   RDT&E   Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1990	--	--	--	--	--	--	0.5
1991	--	--	--	--	--	--	4.9
1992	--	--	--	--	--	--	1.2
1993	--	--	--	--	--	--	10.3
1994	--	--	--	--	--	--	28.0
1995	--	--	--	--	--	--	10.8
1996	--	--	--	--	--	--	9.2
1997	--	--	--	--	--	--	4.3
1998	--	--	--	--	--	--	12.9
1999	--	--	--	--	--	--	1.3
2000	--	--	--	--	--	--	2.3
2001	--	--	--	--	--	--	0.2
2002	--	--	--	--	--	--	0.5
2003	--	--	--	--	--	--	5.6
2004	--	--	--	--	--	--	3.1
2005	--	--	--	--	--	--	7.4
2006	--	--	--	--	--	--	8.5
2007	--	--	--	--	--	--	4.8
2008	--	--	--	--	--	--	0.3
2009	--	--	--	--	--	--	--
2010	--	--	--	--	--	--	4.2
2011	--	--	--	--	--	--	0.4
2012	--	--	--	--	--	--	6.4
2013	--	--	--	--	--	--	1.5
2014	--	--	--	--	--	--	15.4
2015	--	--	--	--	--	--	32.5
2016	--	--	--	--	--	--	73.4
2017	--	--	--	--	--	--	24.7
2018	--	--	--	--	--	--	9.4
2019	--	--	--	--	--	--	5.5
2020	--	--	--	--	--	--	12.5
2021	--	--	--	--	--	--	10.2
2022	--	--	--	--	--	--	5.3
2023	--	--	--	--	--	--	3.1
2024	--	--	--	--	--	--	3.1



2025	--	--	--	--	--	--	3.2
Subtotal	--	--	--	--	--	--	326.9

Annual Funding							
1319   RDT&E   Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	BY 1996 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1990	--	--	--	--	--	--	0.6
1991	--	--	--	--	--	--	5.4
1992	--	--	--	--	--	--	1.3
1993	--	--	--	--	--	--	10.8
1994	--	--	--	--	--	--	28.7
1995	--	--	--	--	--	--	10.9
1996	--	--	--	--	--	--	9.1
1997	--	--	--	--	--	--	4.2
1998	--	--	--	--	--	--	12.5
1999	--	--	--	--	--	--	1.2
2000	--	--	--	--	--	--	2.2
2001	--	--	--	--	--	--	0.2
2002	--	--	--	--	--	--	0.5
2003	--	--	--	--	--	--	5.1
2004	--	--	--	--	--	--	2.7
2005	--	--	--	--	--	--	6.4
2006	--	--	--	--	--	--	7.1
2007	--	--	--	--	--	--	3.9
2008	--	--	--	--	--	--	0.2
2009	--	--	--	--	--	--	--
2010	--	--	--	--	--	--	3.3
2011	--	--	--	--	--	--	0.3
2012	--	--	--	--	--	--	4.8
2013	--	--	--	--	--	--	1.1
2014	--	--	--	--	--	--	11.3
2015	--	--	--	--	--	--	23.5
2016	--	--	--	--	--	--	52.1
2017	--	--	--	--	--	--	17.2
2018	--	--	--	--	--	--	6.4
2019	--	--	--	--	--	--	3.7
2020	--	--	--	--	--	--	8.2
2021	--	--	--	--	--	--	6.5
2022	--	--	--	--	--	--	3.3
2023	--	--	--	--	--	--	1.9
2024	--	--	--	--	--	--	1.9
2025	--	--	--	--	--	--	1.9
Subtotal	--	--	--	--	--	--	260.4

Annual Funding 1611   Procurement   Shipbuilding and Conversion, Navy							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1996	1	1051.9	--	--	1051.9	--	1051.9
1997	--	--	--	--	--	--	--
1998	--	96.0	--	--	96.0	--	96.0
1999	1	653.2	--	--	653.2	--	653.2
2000	2	1557.6	--	--	1557.6	--	1557.6
2001	--	592.3	--	--	592.3	--	592.3
2002	--	418.5	--	--	418.5	--	418.5
2003	1	1240.8	--	--	1240.8	--	1240.8
2004	1	1654.8	--	--	1654.8	--	1654.8
2005	1	1314.2	--	--	1314.2	--	1314.2
2006	1	3303.0	--	--	3303.0	--	3303.0
2007	--	469.2	--	--	469.2	--	469.2
2008	1	1600.4	--	--	1600.4	--	1600.4
2009	1	1040.0	--	--	1040.0	--	1040.0
2010	--	1233.0	--	--	1233.0	--	1233.0
2011	--	58.5	--	--	58.5	--	58.5
2012	1	1951.5	--	--	1951.5	--	1951.5
2013	--	392.1	--	--	392.1	--	392.1
2014	--	57.1	--	--	57.1	--	57.1
2015	--	1076.0	--	--	1076.0	--	1076.0
2016	1	654.0	--	--	654.0	--	654.0
2017	1	1895.8	--	--	1895.8	--	1895.8
2018	1	1823.1	--	--	1823.1	--	1823.1
2019	--	249.1	--	--	249.1	--	249.1
2020	--	542.8	--	--	542.8	--	542.8
2021	1	1209.8	--	--	1209.8	--	1209.8
2022	--	68.2	--	--	68.2	--	68.2
2023	1	1865.4	--	--	1865.4	--	1865.4
2024	--	8.4	--	--	8.4	--	8.4
2025	1	1878.8	--	--	1878.8	--	1878.8
2026	1	2163.7	--	--	2163.7	--	2163.7
2027	1	2046.7	--	--	2046.7	--	2046.7
2028	1	2083.8	--	--	2083.8	--	2083.8
2029	1	2174.6	--	--	2174.6	--	2174.6
2030	1	2166.7	--	--	2166.7	--	2166.7
2031	1	2264.0	--	--	2264.0	--	2264.0
2032	1	2291.1	--	--	2291.1	--	2291.1
2033	1	2411.0	--	--	2411.0	--	2411.0
2034	1	2557.6	--	--	2557.6	--	2557.6
2035	--	124.6	--	18.5	143.1	--	143.1

2036	--	127.1	--	51.1	178.2	--	178.2
2037	--	129.6	--	30.3	159.9	--	159.9
2038	--	132.2	--	--	132.2	--	132.2
2039	--	134.9	--	--	134.9	--	134.9
2040	--	137.6	--	--	137.6	--	137.6
2041	--	104.8	--	--	104.8	--	104.8
2042	--	72.4	--	--	72.4	--	72.4
2043	--	5.1	--	--	5.1	--	5.1
Subtotal	26	51083.0	--	99.9	51182.9	--	51182.9



Annual Funding 1611   Procurement   Shipbuilding and Conversion, Navy							
Fiscal Year	Quantity	BY 1996 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1996	1	1024.9	--	--	1024.9	--	1024.9
1997	--	--	--	--	--	--	--
1998	--	90.1	--	--	90.1	--	90.1
1999	1	603.5	--	--	603.5	--	603.5
2000	2	1403.4	--	--	1403.4	--	1403.4
2001	--	515.9	--	--	515.9	--	515.9
2002	--	362.5	--	--	362.5	--	362.5
2003	1	1015.9	--	--	1015.9	--	1015.9
2004	1	1307.4	--	--	1307.4	--	1307.4
2005	1	994.2	--	--	994.2	--	994.2
2006	1	2413.7	--	--	2413.7	--	2413.7
2007	--	327.8	--	--	327.8	--	327.8
2008	1	1081.3	--	--	1081.3	--	1081.3
2009	1	681.8	--	--	681.8	--	681.8
2010	--	781.2	--	--	781.2	--	781.2
2011	--	35.9	--	--	35.9	--	35.9
2012	1	1170.4	--	--	1170.4	--	1170.4
2013	--	230.5	--	--	230.5	--	230.5
2014	--	32.9	--	--	32.9	--	32.9
2015	--	607.6	--	--	607.6	--	607.6
2016	1	361.7	--	--	361.7	--	361.7
2017	1	1027.0	--	--	1027.0	--	1027.0
2018	1	967.6	--	--	967.6	--	967.6
2019	--	129.6	--	--	129.6	--	129.6
2020	--	276.9	--	--	276.9	--	276.9
2021	1	605.1	--	--	605.1	--	605.1
2022	--	33.4	--	--	33.4	--	33.4
2023	1	896.8	--	--	896.8	--	896.8
2024	--	4.0	--	--	4.0	--	4.0
2025	1	868.1	--	--	868.1	--	868.1
2026	1	980.2	--	--	980.2	--	980.2
2027	1	909.0	--	--	909.0	--	909.0
2028	1	907.3	--	--	907.3	--	907.3
2029	1	928.3	--	--	928.3	--	928.3
2030	1	906.8	--	--	906.8	--	906.8
2031	1	928.9	--	--	928.9	--	928.9
2032	1	921.6	--	--	921.6	--	921.6
2033	1	950.8	--	--	950.8	--	950.8
2034	1	988.9	--	--	988.9	--	988.9
2035	--	47.2	--	7.0	54.2	--	54.2

2036	--	47.2	--	19.0	66.2	--	66.2
2037	--	47.2	--	11.1	58.3	--	58.3
2038	--	47.2	--	--	47.2	--	47.2
2039	--	47.2	--	--	47.2	--	47.2
2040	--	47.2	--	--	47.2	--	47.2
2041	--	35.3	--	--	35.3	--	35.3
2042	--	23.9	--	--	23.9	--	23.9
2043	--	1.6	--	--	1.6	--	1.6
Subtotal	26	28616.9	--	37.1	28654.0	--	28654.0



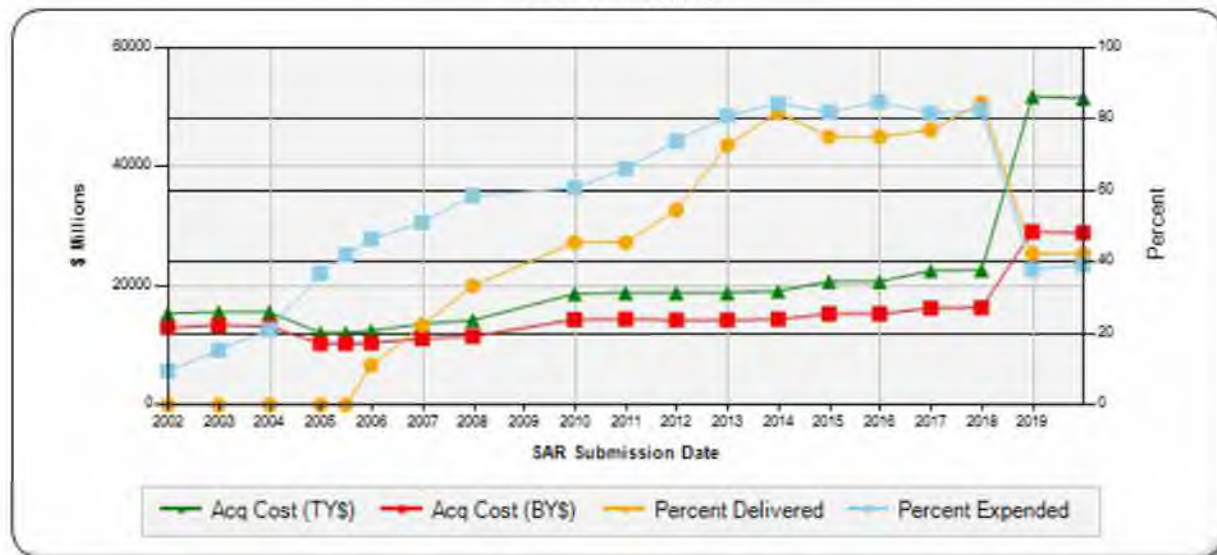
Cost Quantity Information		
1611   Procurement   Shipbuilding and Conversion, Navy		
Fiscal Year	Quantity	End Item Recurring Flyaway (Aligned With Quantity) BY 1996 \$M
1996	1	1812.3
1997	--	--
1998	--	--
1999	1	1160.7
2000	2	2343.3
2001	--	--
2002	--	--
2003	1	1315.5
2004	1	1248.3
2005	1	1135.2
2006	1	1219.2
2007	--	--
2008	1	1300.8
2009	1	1289.7
2010	--	--
2011	--	--
2012	1	1279.4
2013	--	--
2014	--	--
2015	--	--
2016	1	1061.9
2017	1	1033.7
2018	1	1006.9
2019	--	--
2020	--	--
2021	1	1021.3
2022	--	--
2023	1	935.5
2024	--	--
2025	1	908.8
2026	1	947.9
2027	1	944.3
2028	1	943.1
2029	1	941.3
2030	1	940.9
2031	1	941.9
2032	1	943.8
2033	1	952.5
2034	1	988.7

2035	--	--
2036	--	--
2037	--	--
2038	--	--
2039	--	--
2040	--	--
2041	--	--
2042	--	--
2043	--	--
<hr/>		
Subtotal	26	28616.9

## Charts

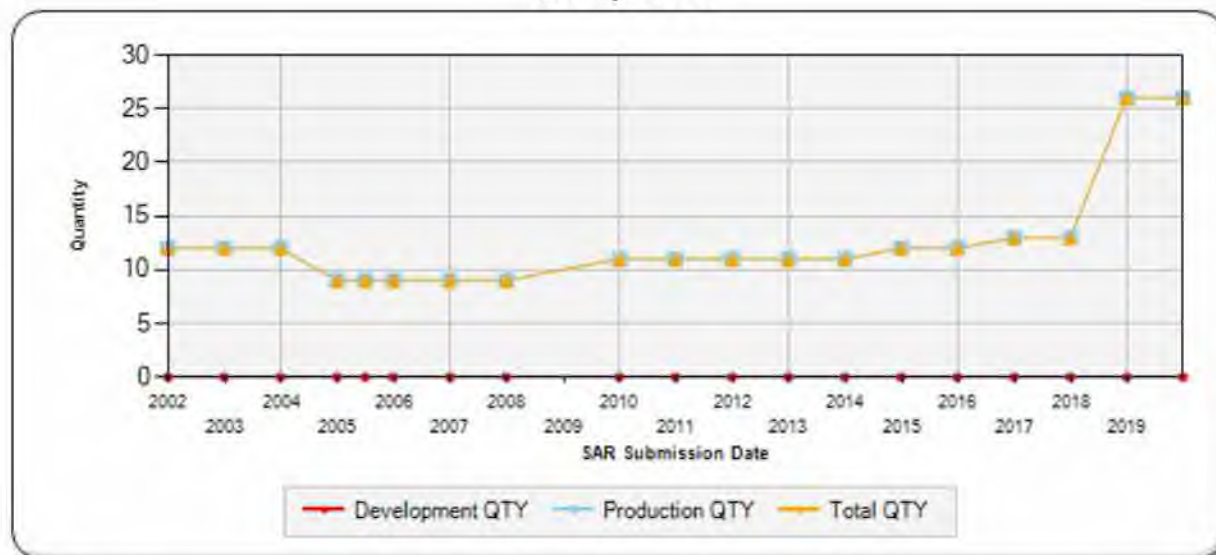
### LPD 17 first began SAR reporting in December 1997

Program Acquisition Cost - LPD 17  
Base Year 1996 \$M

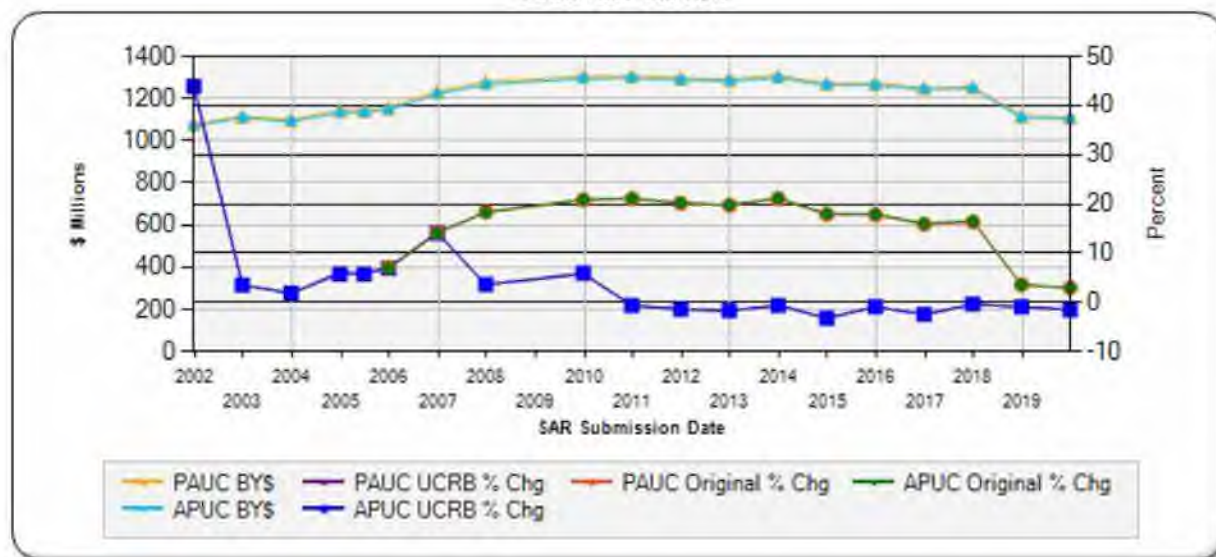


A Assistant Secretary of the Navy (Research, Development and Acquisition) (ASN (RD&A)) ADM was signed on April 10, 2018 that directed that LX(R) shall be subsumed into the SAN ANTONIO Class ACAT IC Program and managed as LPD Flight II. As a result, the number of ships in the class increased from 13 to 26 which increased Acquisition Cost (TY\$ & BY\$) and decreased the percent delivered and expended.

Quantity - LPD 17



A ASN (RD&A) ADM was signed on April 10, 2018 that directed that LX(R) shall be subsumed into the SAN ANTONIO Class ACAT IC Program and managed as LPD Flight II. As a result of this decision, the number of ships in the class increased from 13 to 26.

Unit Cost - LPD 17  
Base Year 1996 \$M



## Risks

### Significant Schedule and Technical Risks

Significant Schedule and Technical Risks	
Current Estimate (December 2019)	
1.	Enterprise Air Search Radar (EASR) Integration and Test: LPD 29 will be the first ship to test, integrate, and operate the EASR radar. If the EASR system is not fully integrated into the combat system, then it will impact Post Delivery and Developmental Test / Operational Test schedule and cost. Mitigation: Participation in the EASR integration working groups and close coordination with IWS 2.0 as the system provider and other stakeholders such as LHA and CVN.
2.	Next Generation Surface Search Radar (NGSSR) Developmental Design Maturation: If program objectives to re-use existing mast design locations for SPS-73 are not achieved for NGSSR, then starting with LPD 29 and LPD 30, additional shipbuilder Non-Recurring Engineering to accommodate the new design and topside design may impact antenna foundations, structure, and implement necessary conjunctive changes with other systems. Mitigation: Participation in NGSSR engineering reviews and program milestone reviews to ensure close coordination with PEO Integrated Warfare Systems and stakeholders.

## Risks

### Risk and Sensitivity Analysis

Risks and Sensitivity Analysis	
Current Baseline Estimate (January 2019)	
1.	The current baseline estimate reflects the POE for the APB, approved by the Assistant Secretary of the Navy (Research, Development and Acquisition) (ASN (RD&A)) on January 8, 2019.
Original Baseline Estimate (June 1996)	
1.	The original baseline estimate for the program is from the Milestone II development APB decision of June 17, 1996.
Revised Original Estimate (October 2005)	
1.	The revised original baseline estimate for the program is from the restructure APB decision of October 31, 2005.
Current Procurement Cost (December 2019)	
1.	A ASN (RD&A) ADM dated April 10, 2018 directed that LX(R) shall be subsumed into the SAN ANTONIO Class ACAT IC Program and managed as LPD Flight II. An APB update reflecting an increase in the number of ships in the class from 13 to 26 was signed on January 8, 2019.



**Low Rate Initial Production**

Item	Initial LRIP Decision	Current Total LRIP
<b>Approval Date</b>	6/17/1996	4/10/2018
<b>Approved Quantity</b>	12	15
<b>Reference</b>	Milestone II ADM	LPD Flight II ADM
<b>Start Year</b>	1996	1996
<b>End Year</b>	2016	2021

The Current Total LRIP Quantity is more than 10% of the total production quantity which is standard for shipbuilding programs.

## Foreign Military Sales

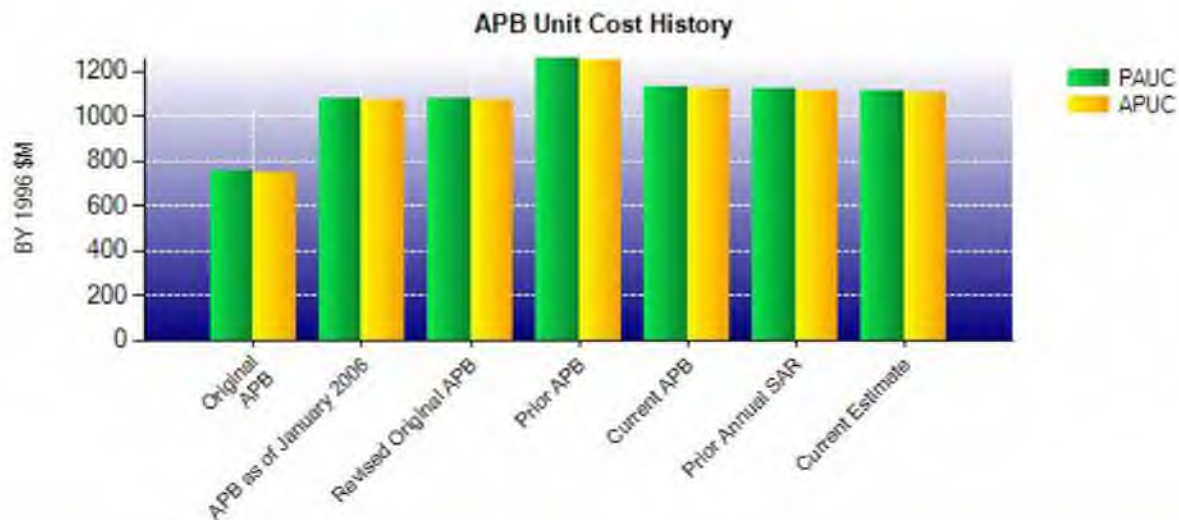
None

## Nuclear Costs

None

## Unit Cost

Current UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 1996 \$M	BY 1996 \$M	% Change
	Current UCR Baseline (Jan 2019 APB)	Current Estimate (Dec 2019 SAR)	
Program Acquisition Unit Cost			
Cost	29349.8	28914.4	
Quantity	26	26	
Unit Cost	1128.838	1112.092	-1.48
Average Procurement Unit Cost			
Cost	29073.7	28654.0	
Quantity	26	26	
Unit Cost	1118.219	1102.077	-1.44
Original UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 1996 \$M	BY 1996 \$M	% Change
	Revised Original UCR Baseline (Oct 2005 APB)	Current Estimate (Dec 2019 SAR)	
Program Acquisition Unit Cost			
Cost	12955.2	28914.4	
Quantity	12	26	
Unit Cost	1079.600	1112.092	+3.01
Average Procurement Unit Cost			
Cost	12842.4	28654.0	
Quantity	12	26	
Unit Cost	1070.200	1102.077	+2.98



APB Unit Cost History					
Item	Date	BY 1996 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	Jun 1996	751.508	744.950	896.817	890.333
APB as of January 2006	Oct 2005	1079.600	1070.200	1283.233	1273.642
Revised Original APB	Oct 2005	1079.600	1070.200	1283.233	1273.642
Prior APB	Oct 2017	1259.992	1251.431	1752.654	1743.885
Current APB	Jan 2019	1128.838	1118.219	1995.442	1981.819
Prior Annual SAR	Dec 2018	1118.708	1108.338	1992.308	1979.119
Current Estimate	Dec 2019	1112.092	1102.077	1981.146	1968.573

### SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY \$M)									
PAUC Development Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
896.817	42.215	70.019	92.265	0.000	669.438	210.450	-0.058	1084.329	1981.146

Current SAR Baseline to Current Estimate (TY \$M)									
Initial APUC Development Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
890.333	42.212	73.509	92.031	0.000	660.096	210.450	-0.058	1078.240	1968.573



SAR Baseline History				
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate
Milestone I	Jan 1993	Jan 1993	N/A	Jan 1993
Milestone II	Jul 1995	Jun 1996	N/A	Jun 1996
Milestone III	Oct 2003	Aug 2007	N/A	N/A
IOC	Oct 2003	Jan 2004	N/A	Apr 2008
Total Cost (TY \$M)	59.1	10761.8	N/A	51509.8
Total Quantity	N/A	12	N/A	26
PAUC	N/A	896.817	N/A	1981.146

**Cost Variance**

Summary TY \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Development Estimate)	77.8	10684.0	--	10761.8
Previous Changes				
Economic	+0.2	+1045.0	--	+1045.2
Quantity	--	+14375.9	--	+14375.9
Schedule	+6.1	+2392.8	--	+2398.9
Engineering	--	--	--	--
Estimating	+258.8	+17489.2	--	+17748.0
Other	--	+5471.7	--	+5471.7
Support	--	-1.5	--	-1.5
Subtotal	+265.1	+40773.1	--	+41038.2
Current Changes				
Economic	-0.1	+52.5	--	+52.4
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-15.9	-326.7	--	-342.6
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-16.0	-274.2	--	-290.2
Total Changes	+249.1	+40498.9	--	+40748.0
Current Estimate	326.9	51182.9	--	51509.8

Summary BY 1996 \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Development Estimate)	78.7	8939.4	--	9018.1
Previous Changes				
Economic	--	--	--	--
Quantity	--	+5830.8	--	+5830.8
Schedule	+4.8	+1083.6	--	+1088.4
Engineering	--	--	--	--
Estimating	+186.1	+9884.6	--	+10070.7
Other	--	+3078.4	--	+3078.4
Support	--	--	--	--
Subtotal	+190.9	+19877.4	--	+20068.3
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-9.2	-162.8	--	-172.0
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-9.2	-162.8	--	-172.0
Total Changes	+181.7	+19714.6	--	+19896.3
Current Estimate	260.4	28654.0	--	28914.4

Previous Estimate: December 2018

RDT&E	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-0.1
Miscellaneous adjustments to RDTE funding. (Estimating)	-9.3	-16.0
Adjustment for current and prior escalation. (Estimating)	+0.1	+0.1
RDT&E Subtotal	-9.2	-16.0

Procurement	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	+52.5
Adjustment for Congressional Recission of FY 2019 AP (Estimating)	-53.6	-102.9
Miscellaneous adjustments to post delivery and outfitting. (Estimating)	-8.6	-17.3
LPD 31 incrementally funded between FY 2020 and FY 2021. (Estimating)	-217.7	-435.1
Revised estimate for GFE funding for Enterprise Air Surveillance Radar (EASR) for LPD 29 (Estimating)	-9.5	-19.0
Revised estimate for GFE funding for Ship Self Defense System for LPD 28. (Estimating)	+5.2	+10.3
Revised estimate for GFE funding for Enterprise Air Surveillance Radar (EASR) for LPD 29. (Estimating)	+7.0	+14.3
Revised estimate for GFE funding for Ship Self Defense System for LPD 29. (Estimating)	+5.0	+10.2
Adjustment for LPD 31 to incrementally fund between FY 2020 and FY 2021. (Estimating)	+141.3	+277.0
Revised estimate for LPD 27 Full Funding. (Estimating)	-11.5	-19.1
Revised estimate for LPD 33 Full Funding. (Estimating)	-52.3	-113.2
Correction to PB20 amount. (Estimating)	-7.4	-14.0
Revision to LPD Flight II Advance Procurement. (Estimating)	+7.8	+14.0
Revised estimate for cost-to-complete funding for LPD 29. (Estimating)	+4.6	+9.5
Revised funding estimate for LPD 32. (Estimating)	+52.3	+108.7
Revised funding requirements for LPD 28, LPD 29, and LPD 30. (Estimating)	-2.1	+2.4
Adjustment for current and prior escalation. (Estimating)	-4.3	-7.9
Revised estimate to reflect application of new outyear inflation indices. (Estimating)	-19.0	-44.6
Procurement Subtotal	-162.8	-274.2



## Contracts

### Contract Identification

**Appropriation:** Procurement  
**Contract Name:** LPD 28  
**Contractor:** Huntington Ingalls Industries  
**Contractor Location:** 1000 Access Road  
 Pascagoula, MS 39567-0149  
**Contract Number:** N00024-16-C-2431  
**Contract Type:** Fixed Price Incentive(Firm Target) (FPIF)  
**Award Date:** December 19, 2016  
**Definitization Date:** December 19, 2016

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
N/A	N/A	N/A	N/A	N/A	N/A		

### Cost and Schedule Variance Explanations

Cost and Schedule Variance reporting is not required on this (FPIF) contract.

### General Contract Variance Explanation

In accordance with Section 830(a)(2) of the FY 2020 National Defense Authorization Act, which requires a SAR to be submitted "in unclassified form without any designation relating to dissemination control" this SAR section has omitted information that is ~~For Official Use Only~~.

### Notes

LPD 28 construction is being performed at Huntington Ingalls Industries (HII), Pascagoula, Operations.

**Contract Identification**

**Appropriation:** Procurement  
**Contract Name:** LPD 29  
**Contractor:** Huntington Ingalls Industries  
**Contractor Location:** 1000 Access Road  
 Pascagoula, MS 39567  
**Contract Number:** N00024-16-C-2431/29  
**Contract Type:** Fixed Price Incentive(Firm Target) (FPIF)  
**Award Date:** February 16, 2018  
**Definitization Date:** February 16, 2018

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
N/A	N/A	N/A	N/A	N/A	N/A		

**Cost and Schedule Variance Explanations**

Cost and Schedule Variance reporting is not required on this (FPIF) contract.

**General Contract Variance Explanation**

In accordance with Section 830(a)(2) of the FY 2020 National Defense Authorization Act, which requires a SAR to be submitted "in unclassified form without any designation relating to dissemination control" this SAR section has omitted information that is ~~For Official Use Only~~.

**Notes**

LPD 29 construction is being performed at Huntington Ingalls Industries (HII), Pascagoula, Operations.

**Contract Identification**

**Appropriation:** Procurement  
**Contract Name:** LPD 30  
**Contractor:** Huntington Ingalls Industries  
**Contractor Location:** 1000 Access Road  
Pascagoula, MS 39567  
**Contract Number:** N00024-18-C-2406/30  
**Contract Type:** Fixed Price Incentive(Firm Target) (FPIF)  
**Award Date:** March 25, 2019  
**Definitization Date:** March 25, 2019

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
N/A	N/A	N/A	N/A	N/A	N/A		

**Cost and Schedule Variance Explanations**

Cost and Schedule Variance reporting is not required on this (FPIF) contract.

**General Contract Variance Explanation**

In accordance with Section 830(a)(2) of the FY 2020 National Defense Authorization Act, which requires a SAR to be submitted "in unclassified form without any designation relating to dissemination control" this SAR section has omitted information that is ~~For Official Use Only~~.

**Notes**

LPD 30 construction is being performed at Huntington Ingalls Industries (HII), Pascagoula, Operations.



## Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	0	0	0	--
Production	11	11	26	42.31%
Total Program Quantity Delivered	11	11	26	42.31%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	51509.8	Years Appropriated	31
Expended to Date	20138.0	Percent Years Appropriated	57.41%
Percent Expended	39.10%	Appropriated to Date	25226.9
Total Funding Years	54	Percent Appropriated	48.97%

The above data is current as of February 10, 2020.



## Operating and Support Cost

### Cost Estimate Details

<b>Date of Estimate:</b>	December 31, 2019
<b>Source of Estimate:</b>	POE
<b>Quantity to Sustain:</b>	26
<b>Unit of Measure:</b>	Ship
<b>Service Life per Unit:</b>	40.00 Years
<b>Fiscal Years in Service:</b>	FY 2005 - FY 2083

The cost element data for the LPD 17 class was pulled from the Naval Visibility and Management of Operating & Support Costs (VAMOSC) database for 2009 through 2018. The average crew size for an LPD 17 class ship over this timeframe was 388.

Per Assistant Secretary of the Navy (Research, Development and Acquisition) ADM, LX(R) was subsumed into the LPD program as a Flight II; and the O&S estimate has been revised to reflect 26 vice 13 ships.

### Sustainment Strategy

Life cycle engineering and support contracts with the shipbuilder and the Integrated Shipboard Electronics contractor, along with In Service Engineering Agent support contracts, are in place to support sustainment efforts.

Responsibilities have been divided to leverage strengths; the shipbuilder maintains the planning yard while the in-service program office manages life-cycle maintenance, modernization, and logistics. Phased maintenance and dry dock availabilities are planned on a standard cycle; and continuous maintenance availabilities are conducted in between.

This strategy has proven to be effective for the first thirteen ships of the class and will be adopted for the Flight II ships.

### Antecedent Information

The LPD 17 San Antonio Class Amphibious Transport Dock Ship (LPD 17) is the functional replacement for the LPD 4, LSD 36, LKA 113, and LST 1179 classes of amphibious ships. Of these four ship classes, the LPD 4 class is most analogous to the LPD 17 class in terms of profile, configuration, and crew size; and thus, the LPD 4 class was selected as the antecedent for purposes of O&S cost comparisons. The cost element data for the LPD 4 class was pulled from the Naval VAMOSC database for all available years of data. The LPD 4 average annual cost per ship was extended using a quantity of 26 ships and expected service life of 40 years to mirror the LPD 17 Class profile and expected service life. The estimate also incorporated actual LPD 4 commissioning and decommissioning profiles. The average annual costs per LPD 4 class ship were calculated in BY 1996 dollars for each cost element.

The cost element estimates for the LPD 4 class were not revised since last year's SAR submission; with the decommissioning of USS PONCE in 2017, all LPD 4 class ships have been decommissioned.

Average crew size for an LPD 4 class ship was 364.

Annual O&S Costs BY1996 \$M		
Cost Element	LPD 17 Average Annual Cost Per Ship	LPD 4 (Antecedent) Average Annual Cost Per Ship
Unit-Level Manpower	16.230	12.300
Unit Operations	4.500	3.900
Maintenance	11.210	8.600
Sustaining Support	1.050	0.900
Continuing System Improvements	4.100	2.400
Indirect Support	14.000	8.300
Other	0.000	0.000
Total	51.090	36.400

Item	Total O&S Cost \$M			
	LPD 17			LPD 4 (Antecedent)
	Current Development APB Objective/Threshold		Current Estimate	
Base Year	57876.0	63663.6	53134.0	37856.0
Then Year	177795.0	N/A	167379.0	N/A

#### Equation to Translate Annual Cost to Total Cost

The total O&S cost estimates for both the LPD 17 class and LPD 4 class are based on 26 ships over the same 40-year life cycle timeframe. The estimates were calculated using the following formula.

(Total Average Annual Cost per Hull x 26 hulls x 40 years)

LPD 17: \$51.09M x 26 x 40 = \$53,134M

LPD 4: \$36.4M x 26 x 40 = \$37,856M

O&S Cost Variance		
Category	BY 1996 \$M	Change Explanations
Prior SAR Total O&S Estimates - Dec 2018 SAR	53248.0	
Programmatic/Planning Factors	0.0	
Cost Estimating Methodology	0.0	
Cost Data Update	-114.0	Refinement of data to include updated actuals.
Labor Rate	0.0	
Energy Rate	0.0	
Technical Input	0.0	
Other	0.0	
Total Changes	-114.0	
Current Estimate	53134.0	



The total Operating & Support estimate has been revised to include the most recent VAMOSC data from CY2009 - CY2018.

**Disposal Estimate Details**

Date of Estimate:	February 11, 2019
Source of Estimate:	POE
Disposal/Demilitarization Total Cost (BY 1996 \$M):	132.6

The disposal cost estimate per ship is unchanged.