



## Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-542



### **LPD 17**

As of December 31, 2010

Defense Acquisition Management  
Information Retrieval  
(DAMIR)

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**UNCLASSIFIED**

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## Program Information

### Designation And Nomenclature (Popular Name)

LPD 17 AMPHIBIOUS TRANSPORT DOCK

### DoD Component

Navy

## Responsible Office

### Responsible Office

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**Date Assigned** August 25, 2009

## References

### SAR Baseline (Development Estimate)

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

### Approved APB

DAE Approved Acquisition Program Baseline (APB) dated December 28, 2010

## Mission and Description

The LPD 17 Class Amphibious Transport Dock Ship is the functional replacement for the LPD 4, LSD 36, LKA 113, and LST 1179 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.

## Executive Summary

USS MESA VERDE (LPD 19) departed for her maiden deployment in January 2010 supporting Operation United Response in Haiti prior to transiting the Atlantic and providing humanitarian assistance to a stranded Iranian vessel while conducting routine maritime security operations in the Arabian Gulf. The ship returned to homeport in July 2010. One month later, USS NEW ORLEANS (LPD 18) completed her second overseas deployment.

The summer also marked USS GREEN BAY'S (LPD 20) successful demonstration of selected systems to the Board of Inspection and Survey (INSURV) and her transfer to the amphibious ship in-service support program office at the end of August. During the year, USS NEW YORK (LPD 21) continued to progress through the post delivery test and trials phase completing Combat System Ship Qualification Testing (CSSQT) and a Post Shakedown Availability (PSA) while conducting preparations for her upcoming Final Contract Trials.

As of December 31, 2010, Northrop Grumman Shipbuilding (NGSB) production efforts on LPDs 22/23/24/25 were 89%, 74%, 77%, and 43% complete, respectively. SAN DIEGO (LPD 22) and ARLINGTON (LPD 24) were both launched during the year; and ANCHORAGE (LPD 23) is on track to launch in February 2011. The planned closure of Avondale and proposed spin-off of Northrop Grumman's shipbuilding division have introduced some cost and schedule risks to the ships in construction. Class-wide schedule incentives have been put in place to promote improved performance, increased focus has been placed on unit pre-outfitting and system completion at launch, and independent spin-off experts are advising Program Executive Office (PEO) Ships and individual program offices.

Main engine reliability issues have been observed on four of the first five LPD 17 class ships. The root cause of those issues can be traced back to lube oil cleanliness. A major redesign of the lube oil filtration system was completed in early 2010. Damaged bearings and lube oil piping segments have been replaced on all affected ships. New filters and modified strainers have been or will be installed on all delivered ships, as individual schedules permit. New flushing procedures have been developed and implemented; LPD 22 and follow ships will all be delivered with the new designs and components.

Commander Operational Test and Evaluation Force's (COMOPTEVFOR) Initial Operational Test and Evaluation (IOT&E) report was signed on January 29, 2010 and assessed the LPD 17 class ship as operationally effective but not operationally suitable. The ship met all original Key Performance Parameters (KPPs) providing enhanced force capability over multiple legacy ship classes, increased lift capability, and significant increase in range/depth of command and control capacity; but training and system reliability issues exist. In June 2010, Director of Operational Test and Evaluation (DOT&E) assessed LPD 17 as not effective, suitable, and survivable in a combat environment identifying three major issues – critical system reliability, self defense, and damage recovery. That assessment was based on previous reports, as well as raw modeling data and informal information; and their primary concerns relate to performance and readiness of critical systems. The Program Office has completed its review of those operational test reports, developed corrective action plans, and resolved or is in process of resolving the deficiencies cited.

Follow-on Operational Test and Evaluation (FOT&E), which commenced in July 2010, is being conducted by the Navy's COMOPTEVFOR and the Marine Corps Operational Test and Evaluation Activity (MCOTEA) under DOT&E oversight to confirm these corrective actions resolve the problems noted by DOT&E. The evaluation is scheduled to run into 2012.

The LPD 17 Class Strike Team continues to address and resolve reliability issues identified in recent test/evaluation reports, as well as those discovered during normal shipboard evolutions. To date, seventy-three class issues have been identified with forty-six being resolved and twenty-seven still being evaluated to determine proper corrective actions.

The Milestone Decision Authority provided authorization to proceed with contract award of LPDs 26 and 27 in December 2010. Negotiations for the LPD 26 detail design and construction contract are nearing completion. Those negotiations will serve as the basis of a priced option for design and construction of the eleventh LPD 17 class ship (LPD 27). The first increment of LPD 27 Long Lead Time Material (LLTM) was awarded in October 2010; and the program office continues to track LLTM procurements for both LPD 26 and 27.

In December 2010, the Acquisition Program Baseline (APB) change to reflect LPD 26 and 27 and various schedule milestones was approved; and the program was delegated to an Acquisition Category (ACAT) IC status.

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

### Threshold Breaches

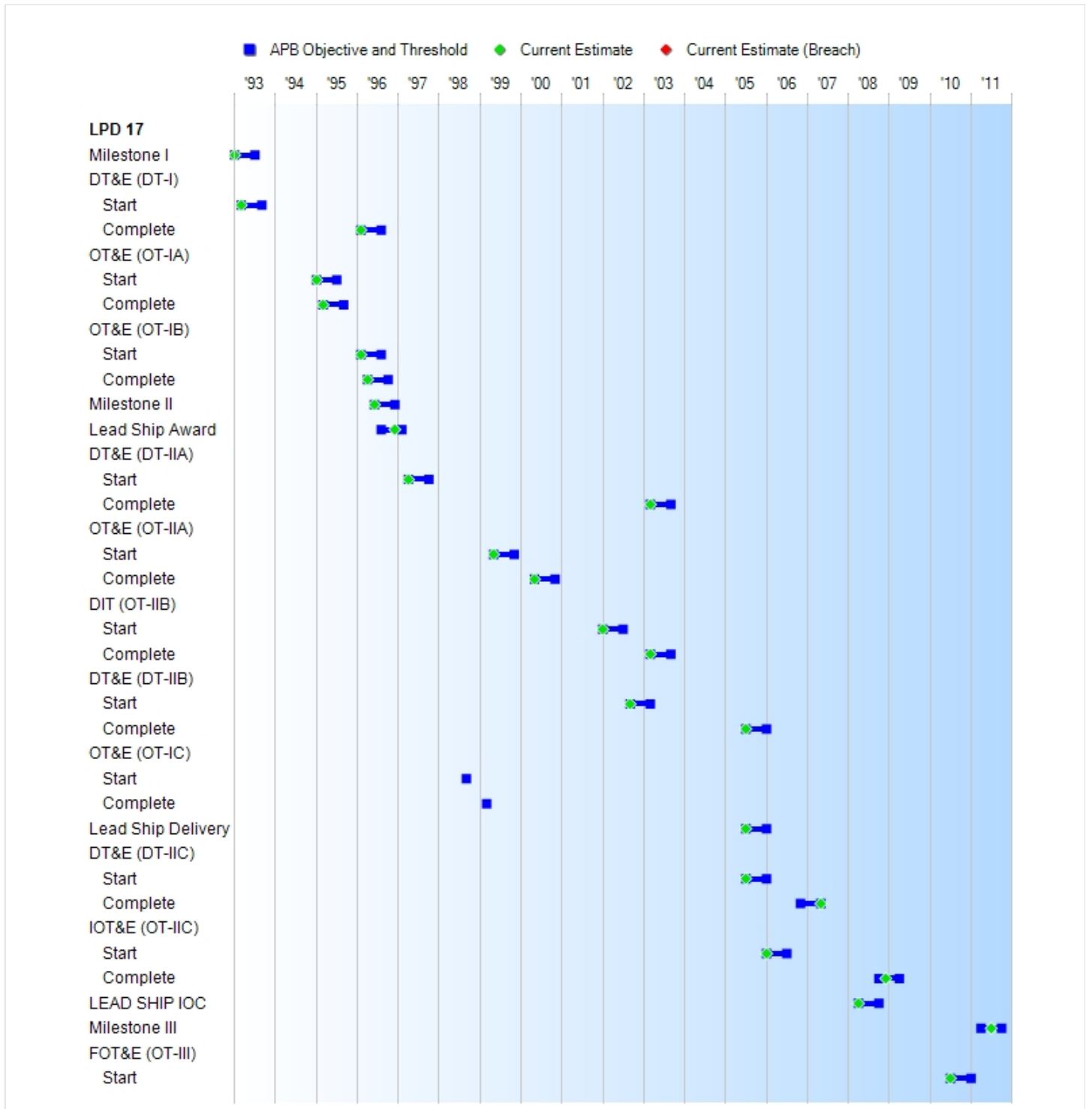
| APB Breaches |  |  |
|--------------|--|--|
|--------------|--|--|

|                    |             |                          |
|--------------------|-------------|--------------------------|
| <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>Unit Cost</b>   | PAUC        | <input type="checkbox"/> |
|                    | APUC        | <input type="checkbox"/> |

| Nunn-McCurdy Breaches |  |  |
|-----------------------|--|--|
|-----------------------|--|--|

|                              |      |      |
|------------------------------|------|------|
| <b>Current UCR Baseline</b>  |      |      |
|                              | PAUC | None |
|                              | APUC | None |
| <b>Original UCR Baseline</b> |      |      |
|                              | PAUC | None |
|                              | APUC | None |

**Schedule**



| <b>Milestones</b>  | <b>SAR Baseline Dev Est</b> | <b>Current APB Development Objective/Threshold</b> |          | <b>Current Estimate</b> |
|--------------------|-----------------------------|--|----------|-------------------------|
| Milestone I        | JAN 1993                    | JAN 1993   | JUL 1993 | JAN 1993                |
| DT&E (DT-I)        |                             |  |          |                         |
| Start              | MAR 1993                    | MAR 1993   | SEP 1993 | MAR 1993                |
| Complete           | FEB 1996                    | FEB 1996   | AUG 1996 | FEB 1996                |
| OT&E (OT-IA)       |                             |  |          |                         |
| Start              | JAN 1995                    | JAN 1995   | JUL 1995 | JAN 1995                |
| Complete           | MAR 1995                    | MAR 1995   | SEP 1995 | MAR 1995                |
| OT&E (OT-IB)       |                             |  |          |                         |
| Start              | FEB 1996                    | FEB 1996   | AUG 1996 | FEB 1996                |
| Complete           | APR 1996                    | APR 1996   | OCT 1996 | APR 1996                |
| Milestone II       | JUN 1996                    | JUN 1996   | DEC 1996 | JUN 1996                |
| Lead Ship Award    | AUG 1996                    | AUG 1996   | FEB 1997 | DEC 1996                |
| DT&E (DT-IIA)      |                             |  |          |                         |
| Start              | SEP 1996                    | APR 1997   | OCT 1997 | APR 1997                |
| Complete           | AUG 1998                    | MAR 2003   | SEP 2003 | MAR 2003                |
| OT&E (OT-IIA)      |                             |  |          |                         |
| Start              | JUN 2003                    | MAY 1999   | NOV 1999 | MAY 1999                |
| Complete           | SEP 2003                    | MAY 2000   | NOV 2000 | MAY 2000                |
| DIT (OT-IIB)       |                             |  |          |                         |
| Start              | N/A                         | JAN 2002   | JUL 2002 | JAN 2002                |
| Complete           | N/A                         | MAR 2003   | SEP 2003 | MAR 2003                |
| DT&E (DT-IIB)      |                             |  |          |                         |
| Start              | SEP 1998                    | SEP 2002   | MAR 2003 | SEP 2002                |
| Complete           | JUN 2002                    | JUL 2005   | JAN 2006 | JUL 2005                |
| OT&E (OT-IC)       |                             |  |          |                         |
| Start              | SEP 1998                    | N/A  | N/A      | N/A                     |
| Complete           | MAR 1999                    | N/A  | N/A      | N/A                     |
| Lead Ship Delivery | JUN 2002                    | JUL 2005   | JAN 2006 | JUL 2005                |
| DT&E (DT-IIC)      |                             |  |          |                         |
| Start              | JUL 2002                    | JUL 2005   | JAN 2006 | JUL 2005                |
| Complete           | JAN 2004                    | NOV 2006   | MAY 2007 | MAY 2007                |
| IOT&E (OT-IIC)     |                             |  |          |                         |
| Start              | N/A                         | JAN 2006   | JUL 2006 | JAN 2006                |
| Complete           | N/A                         | OCT 2008   | APR 2009 | DEC 2008                |
| LEAD SHIP IOC      | JAN 2004                    | APR 2008   | OCT 2008 | APR 2008                |
| Milestone III      | AUG 2007                    | APR 2011   | OCT 2011 | JUL 2011                |

(Ch-1)



| <b>cont.</b>      |                                 |  |          |                             |
|-------------------|---------------------------------|--|----------|-----------------------------|
| <b>Milestones</b> | <b>SAR Baseline<br/>Dev Est</b> | <b>Current APB<br/>Development<br/>Objective/Threshold</b> |          | <b>Current<br/>Estimate</b> |
| FOT&E (OT-III)    |                                 |  |          |                             |
| Start             | JAN 2011                        | JUL 2010   | JAN 2011 | JUL 2010                    |

**Acronyms And Abbreviations**

- DIT - Design Integration Testing
- DT - Developmental Test
- DT&E - Developmental Test and Evaluation
- FOT&E - Follow-on Operational Test and Evaluation
- IOC - Initial Operational Capability
- IOT&E - Initial Operational Test and Evaluation
- OT - Operational Test
- OT&E - Operational Test and Evaluation

**Change Explanations**

(Ch-1) Milestone III estimate changed from April 2011 to July 2011 to align with the timeline for development of the Service Cost Position.

**Performance**

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

(Ch-1)

**Requirements Source:**

Operational Requirements Document Revision 3 dated April 8, 1996

**Acronyms And Abbreviations**

- K/k - Thousands
- Kts - Knots
- LCAC - Landing Craft Air Cushion
- NET - This is not an acronym - it should read as 'Net'
- NM - Nautical Miles
- VTOL - Vertical Take-Off and Landing

**Change Explanations**

(Ch-1) Operational Availability estimate changed from .92 to .80 to reflect unplanned availability period for LPD 17.

**Memo**

Demonstrated performance for Sustained Speed and Vehicles (Sq Ft) reflect performance during LPD 17 Builder's Trials (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 Maint/Storage, and Sustained Operations reflect performance during LPD 17 Class Initial Operational Test and Evaluation (IOT&E) events.

Demonstrated performance for Operational Availability reflects performance cited in the LPD 17 class Operational Evaluation (OPEVAL) report dated January 2010.

## Track To Budget

### RDT&E

|           |              |                 |          |        |
|-----------|--------------|-----------------|----------|--------|
| APPN 1319 | BA 05        | PE 0604311N     | (Navy)   |        |
|           | Project 2283 | LPD Development | (Shared) | (Sunk) |

### Procurement

|           |          |                             |          |  |
|-----------|----------|-----------------------------|----------|--|
| APPN 1611 | BA 01    | PE 0204411N                 | (Navy)   |  |
|           | ICN 0981 | Items Less Than \$5M        | (Shared) |  |
| APPN 1611 | BA 03    | PE 0204411N                 | (Navy)   |  |
|           | ICN 3036 | Shipbuilding and Conversion |          |  |
| APPN 1611 | BA 05    | PE 0204411N                 | (Navy)   |  |
|           | ICN 5110 | Shipbuilding and Conversion | (Shared) |  |
|           | ICN 5300 | Shipbuilding and Conversion | (Shared) |  |

Funding in BA 01 / ICN 0981 is for non-acquisition related efforts and is not included in the Acquisition Program Baseline (APB) objective.

## Cost and Funding

### Cost Summary

#### Total Acquisition Cost and Quantity

| Appropriation  | BY1996 \$M           |   |         | BY1996 \$M       | TY \$M               |                                   |                  |
|----------------|----------------------|---|---------|------------------|----------------------|-----------------------------------|------------------|
|                | SAR Baseline Dev Est | Current APB Development Objective/Threshold |         | Current Estimate | SAR Baseline Dev Est | Current APB Development Objective | Current Estimate |
| RDT&E          | 78.7                 | 111.3                                       | 122.4   | 116.1            | 77.8                 | 114.0                             | 120.1            |
| Procurement    | 8939.4               | 14347.1                                     | 15781.8 | 14263.1          | 10684.0              | 18714.0                           | 18714.8          |
| Flyaway        | 8939.4               | --  | --      | 14263.1          | 10684.0              | --                                | 18714.8          |
| Recurring      | 8939.4               | --  | --      | 14191.6          | 10684.0              | --                                | 18597.8          |
| Non Recurring  | 0.0                  | --  | --      | 71.5             | 0.0                  | --                                | 117.0            |
| Support        | 0.0                  | --  | --      | 0.0              | 0.0                  | --                                | 0.0              |
| Other Support  | 0.0                  | --  | --      | 0.0              | 0.0                  | --                                | 0.0              |
| Initial Spares | 0.0                  | --  | --      | 0.0              | 0.0                  | --                                | 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               | 14458.4                                     | N/A     | 14379.2          | 10761.8              | 18828.0                           | 18834.9          |

Confidence level for our estimate is 90%. Five ships have been delivered to the Fleet. The four ships in construction are under fixed price contracts; and the last two ships will be awarded as fixed price contracts. The program's confidence level will increase as those two ships are placed on contract and go through the construction process.

| Quantity    | SAR Baseline Dev Est | Current APB Development | Current Estimate |
|-------------|----------------------|-------------------------|------------------|
| RDT&E       | 0                    | 0                       | 0                |
| Procurement | 12                   | 11                      | 11               |
| Total       | 12                   | 11                      | 11               |

**Cost and Funding****Funding Summary**

**Appropriation and Quantity Summary**  
**FY2012 President's Budget / December 2010 SAR (TY\$ M)**

| <b>Appropriation</b> | <b>Prior</b> | <b>FY2011</b> | <b>FY2012</b> | <b>FY2013</b> | <b>FY2014</b> | <b>FY2015</b> | <b>FY2016</b> | <b>To Complete</b> | <b>Total</b> |
|----------------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------------|--------------|
| RDT&E                | 120.1        | 0.0           | 0.0           | 0.0           | 0.0           | 0.0           | 0.0           | 0.0                | 120.1        |
| Procurement          | 16237.4      | 79.1          | 1991.5        | 148.7         | 77.3          | 64.1          | 55.6          | 61.1               | 18714.8      |
| 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 2012 Total        | 16357.5      | 79.1          | 1991.5        | 148.7         | 77.3          | 64.1          | 55.6          | 61.1               | 18834.9      |
| PB 2011 Total        | 16284.6      | 79.1          | 2017.3        | 136.0         | 23.7          | 28.0          | 90.5          | 0.0                | 18659.2      |
| Delta                | 72.9         | 0.0           | -25.8         | 12.7          | 53.6          | 36.1          | -34.9         | 61.1               | 175.7        |

| <b>Quantity</b> | <b>Undistributed</b> | <b>Prior</b> | <b>FY2011</b> | <b>FY2012</b> | <b>FY2013</b> | <b>FY2014</b> | <b>FY2015</b> | <b>FY2016</b> | <b>To Complete</b> | <b>Total</b> |
|-----------------|----------------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------------|--------------|
| Development     | 0                    | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0                  | 0            |
| Production      | 0                    | 10           | 0             | 1             | 0             | 0             | 0             | 0             | 0                  | 11           |
| PB 2012 Total   | 0                    | 10           | 0             | 1             | 0             | 0             | 0             | 0             | 0                  | 11           |
| PB 2011 Total   | 0                    | 10           | 0             | 1             | 0             | 0             | 0             | 0             | 0                  | 11           |
| Delta           | 0                    | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0                  | 0            |

## Cost and Funding

### Annual Funding By Appropriation

#### Annual Funding TY\$

#### 1319 | RDT&E | Research, Development, Test, and Evaluation, Navy

| Fiscal Year     | Quantity | End Item Recurring Flyaway TY \$M | Non End Item Recurring Flyaway TY \$M | Non Recurring Flyaway TY \$M | Total Flyaway TY \$M | Total Support TY \$M | Total Program TY \$M |
|-----------------|----------|-----------------------------------|---------------------------------------|------------------------------|----------------------|----------------------|----------------------|
| 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            | --       | --                                | --                                    | --                           | --                   | --                   | 4.0                  |
| <b>Subtotal</b> | --       | --                                | --                                    | --                           | --                   | --                   | <b>120.1</b>         |

## Annual Funding BY\$

## 1319 | RDT&amp;E | Research, Development, Test, and Evaluation, Navy

| Fiscal Year     | Quantity | End Item Recurring Flyaway<br>BY 1996 \$M | Non End Item Recurring Flyaway<br>BY 1996 \$M | Non Recurring Flyaway<br>BY 1996 \$M | Total Flyaway<br>BY 1996 \$M | Total Support<br>BY 1996 \$M | Total Program<br>BY 1996 \$M |
|-----------------|----------|---|---|--------------------------------------|------------------------------|------------------------------|------------------------------|
| 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            | --       | --  | --  | --                                   | --                           | --                           | 3.1                          |
| <b>Subtotal</b> | --       | --  | --  | --                                   | --                           | --                           | <b>116.1</b>                 |



**Annual Funding TY\$**  
**1611 | Procurement | Shipbuilding and Conversion, Navy**

| <b>Fiscal Year</b> | <b>Quantity</b> | <b>End Item Recurring Flyaway TY \$M</b> | <b>Non End Item Recurring Flyaway TY \$M</b> | <b>Non Recurring Flyaway TY \$M</b> | <b>Total Flyaway TY \$M</b> | <b>Total Support TY \$M</b> | <b>Total Program TY \$M</b> |
|--------------------|-----------------|--|--|-------------------------------------|-----------------------------|-----------------------------|-----------------------------|
| 1996               | 1               | 1051.8                                   | --   | --                                  | 1051.8                      | --                          | 1051.8                      |
| 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               | --              | 593.6                                    | --   | --                                  | 593.6                       | --                          | 593.6                       |
| 2002               | --              | 418.2                                    | --   | --                                  | 418.2                       | --                          | 418.2                       |
| 2003               | 1               | 1241.7                                   | --   | --                                  | 1241.7                      | --                          | 1241.7                      |
| 2004               | 1               | 1655.6                                   | --   | --                                  | 1655.6                      | --                          | 1655.6                      |
| 2005               | 1               | 1314.3                                   | --   | --                                  | 1314.3                      | --                          | 1314.3                      |
| 2006               | 1               | 3312.7                                   | --   | --                                  | 3312.7                      | --                          | 3312.7                      |
| 2007               | --              | 469.2                                    | --   | --                                  | 469.2                       | --                          | 469.2                       |
| 2008               | 1               | 1599.0                                   | --   | --                                  | 1599.0                      | --                          | 1599.0                      |
| 2009               | 1               | 1030.1                                   | --   | --                                  | 1030.1                      | --                          | 1030.1                      |
| 2010               | --              | 1244.4                                   | --   | --                                  | 1244.4                      | --                          | 1244.4                      |
| 2011               | --              | 79.1                                     | --   | --                                  | 79.1                        | --                          | 79.1                        |
| 2012               | 1               | 1991.5                                   | --   | --                                  | 1991.5                      | --                          | 1991.5                      |
| 2013               | --              | 148.7                                    | --   | --                                  | 148.7                       | --                          | 148.7                       |
| 2014               | --              | 23.3                                     | --   | 54.0                                | 77.3                        | --                          | 77.3                        |
| 2015               | --              | 26.1                                     | --   | 38.0                                | 64.1                        | --                          | 64.1                        |
| 2016               | --              | 30.6                                     | --   | 25.0                                | 55.6                        | --                          | 55.6                        |
| 2017               | --              | 61.1                                     | --   | --                                  | 61.1                        | --                          | 61.1                        |
| <b>Subtotal</b>    | <b>11</b>       | <b>18597.8</b>                           | <b>--</b>                                    | <b>117.0</b>                        | <b>18714.8</b>              | <b>--</b>                   | <b>18714.8</b>              |

**Annual Funding BY\$**  
**1611 | Procurement | Shipbuilding and Conversion, Navy**

| <b>Fiscal Year</b> | <b>Quantity</b> | <b>End Item Recurring Flyaway BY 1996 \$M</b> | <b>Non End Item Recurring Flyaway BY 1996 \$M</b> | <b>Non Recurring Flyaway BY 1996 \$M</b> | <b>Total Flyaway BY 1996 \$M</b> | <b>Total Support BY 1996 \$M</b> | <b>Total Program BY 1996 \$M</b> |
|--------------------|-----------------|---|---|--|----------------------------------|----------------------------------|----------------------------------|
| 1996               | 1               | 1024.8  | --  | --                                       | 1024.8                           | --                               | 1024.8                           |
| 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               | --              | 517.0   | --  | --                                       | 517.0                            | --                               | 517.0                            |
| 2002               | --              | 362.2   | --  | --                                       | 362.2                            | --                               | 362.2                            |
| 2003               | 1               | 1016.6  | --  | --                                       | 1016.6                           | --                               | 1016.6                           |
| 2004               | 1               | 1308.0  | --  | --                                       | 1308.0                           | --                               | 1308.0                           |
| 2005               | 1               | 995.3   | --  | --                                       | 995.3                            | --                               | 995.3                            |
| 2006               | 1               | 2426.4  | --  | --                                       | 2426.4                           | --                               | 2426.4                           |
| 2007               | --              | 330.5   | --  | --                                       | 330.5                            | --                               | 330.5                            |
| 2008               | 1               | 1096.5  | --  | --                                       | 1096.5                           | --                               | 1096.5                           |
| 2009               | 1               | 691.8   | --  | --                                       | 691.8                            | --                               | 691.8                            |
| 2010               | --              | 821.7   | --  | --                                       | 821.7                            | --                               | 821.7                            |
| 2011               | --              | 51.4  | --  | --                                       | 51.4                             | --                               | 51.4                             |
| 2012               | 1               | 1274.3  | --  | --                                       | 1274.3                           | --                               | 1274.3                           |
| 2013               | --              | 93.6  | --  | --                                       | 93.6                             | --                               | 93.6                             |
| 2014               | --              | 14.4  | --  | 33.4                                     | 47.8                             | --                               | 47.8                             |
| 2015               | --              | 15.9  | --  | 23.1                                     | 39.0                             | --                               | 39.0                             |
| 2016               | --              | 18.3  | --  | 15.0                                     | 33.3                             | --                               | 33.3                             |
| 2017               | --              | 35.9  | --  | --                                       | 35.9                             | --                               | 35.9                             |
| <b>Subtotal</b>    | <b>11</b>       | <b>14191.6</b>                                | <b>--</b>   | <b>71.5</b>                              | <b>14263.1</b>                   | <b>--</b>                        | <b>14263.1</b>                   |

Nonrecurring flyaway includes funding for program closeout costs in FY 2014- 2016.

**Cost Quantity Information****1611 | Procurement | Shipbuilding and Conversion, Navy**

| <b>Fiscal Year</b> | <b>Quantity</b> | <b>End Item<br/>Recurring<br/>Flyaway<br/>(Aligned<br/>with<br/>Quantity)<br/>BY 1996<br/>\$M</b> |
|--------------------|-----------------|---|
| 1996               | 1               | 1813.9  |
| 1997               | --              | --  |
| 1998               | --              | --  |
| 1999               | 1               | 1164.2  |
| 2000               | 2               | 2356.5  |
| 2001               | --              | --  |
| 2002               | --              | --  |
| 2003               | 1               | 1315.9  |
| 2004               | 1               | 1235.7  |
| 2005               | 1               | 1137.9  |
| 2006               | 1               | 1220.0  |
| 2007               | --              | --  |
| 2008               | 1               | 1323.5  |
| 2009               | 1               | 1276.3  |
| 2010               | --              | --  |
| 2011               | --              | --  |
| 2012               | 1               | 1347.7  |
| 2013               | --              | --  |
| 2014               | --              | --  |
| 2015               | --              | --  |
| 2016               | --              | --  |
| 2017               | --              | --  |
| <b>Subtotal</b>    | <b>11</b>       | <b>14191.6</b>  |

**Low Rate Initial Production**

|                          | <b>Initial LRIP Decision</b> | <b>Current Total LRIP</b> |
|--------------------------|------------------------------|---------------------------|
| <b>Approval Date</b>     | 6/17/1996                    | 6/17/1996                 |
| <b>Approved Quantity</b> | 12                           | 12                        |
| <b>Reference</b>         | ADM                          | ADM                       |
| <b>Start Year</b>        | 1996                         | 1996                      |
| <b>End Year</b>          | 2015                         | 2015                      |

12 ship Low Rate Initial Production has been approved for this program per Acquisition Decision Memorandum dated June 17, 1996.

**Foreign Military Sales**

None

**Nuclear Cost**

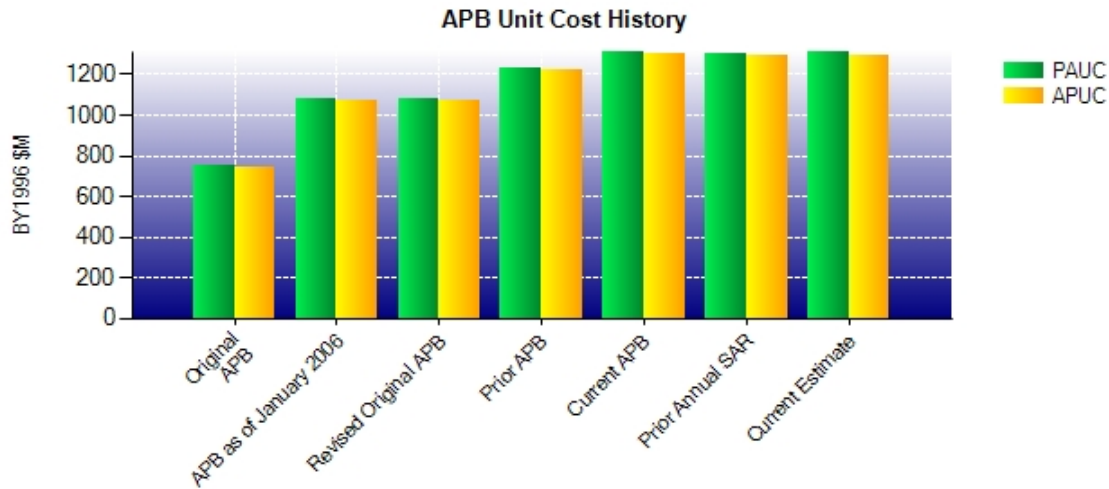
None

**Unit Cost****Unit Cost Report**

|   | <b>BY1996 \$M</b>                                  | <b>BY1996 \$M</b>                          |                        |
|---|--|--|------------------------|
| <b>Unit Cost</b>                            | <b>Current UCR<br/>Baseline<br/>(DEC 2010 APB)</b> | <b>Current Estimate<br/>(DEC 2010 SAR)</b> | <b>BY<br/>% Change</b> |
| <b>Program Acquisition Unit Cost (PAUC)</b> |  |  |                        |
| Cost  | 14458.4  | 14379.2                                    |                        |
| Quantity                                    | 11   | 11   |                        |
| Unit Cost                                   | 1314.400   | 1307.200                                   | -0.55                  |
| <b>Average Procurement Unit Cost (APUC)</b> |  |  |                        |
| Cost  | 14347.1  | 14263.1                                    |                        |
| Quantity                                    | 11   | 11   |                        |
| Unit Cost                                   | 1304.282   | 1296.645                                   | -0.59                  |

|   | <b>BY1996 \$M</b>   | <b>BY1996 \$M</b>                          |                        |
|---|---|--|------------------------|
| <b>Unit Cost</b>                            | <b>Revised<br/>Original UCR<br/>Baseline<br/>(OCT 2005 APB)</b> | <b>Current Estimate<br/>(DEC 2010 SAR)</b> | <b>BY<br/>% Change</b> |
| <b>Program Acquisition Unit Cost (PAUC)</b> |   |  |                        |
| Cost  | 12955.2   | 14379.2                                    |                        |
| Quantity                                    | 12  | 11   |                        |
| Unit Cost                                   | 1079.600  | 1307.200                                   | +21.08                 |
| <b>Average Procurement Unit Cost (APUC)</b> |   |  |                        |
| Cost  | 12842.4   | 14263.1                                    |                        |
| Quantity                                    | 12  | 11   |                        |
| Unit Cost                                   | 1070.200  | 1296.645                                   | +21.16                 |

### Unit Cost History



|                               | Date     | BY1996 \$M |          | TY \$M   |          |
|-------------------------------|----------|------------|----------|----------|----------|
|                               |          | PAUC       | APUC     | PAUC     | APUC     |
| <b>Original APB</b>           | JUN 1996 | 751.508    | 744.950  | 896.817  | 890.333  |
| <b>APB as of January 2006</b> | OCT 2005 | 1079.600   | 1070.200 | 1283.233 | 1273.642 |
| <b>Revised Original APB</b>   | OCT 2005 | 1079.600   | 1070.200 | 1283.233 | 1273.642 |
| <b>Prior APB</b>              | MAY 2007 | 1233.711   | 1221.344 | 1510.444 | 1497.778 |
| <b>Current APB</b>            | DEC 2010 | 1314.400   | 1304.282 | 1711.636 | 1701.273 |
| <b>Prior Annual SAR</b>       | DEC 2009 | 1304.518   | 1293.964 | 1696.291 | 1685.373 |
| <b>Current Estimate</b>       | DEC 2010 | 1307.200   | 1296.645 | 1712.264 | 1701.345 |

### SAR Unit Cost History

#### Current SAR Baseline to Current Estimate (TY \$M)

| Initial PAUC<br>Dev Est | Changes |         |        |       |         |         |       |         | PAUC<br>Current Est |
|-------------------------|---------|---------|--------|-------|---------|---------|-------|---------|---------------------|
|                         | Econ    | Qty     | Sch    | Eng   | Est     | Oth     | Spt   | Total   |                     |
| 896.817                 | 67.118  | -52.843 | 83.245 | 0.000 | 529.627 | 188.300 | 0.000 | 815.447 | 1712.264            |

#### Current SAR Baseline to Current Estimate (TY \$M)

| Initial APUC<br>Dev Est | Changes |         |        |       |         |         |       |         | APUC<br>Current Est |
|-------------------------|---------|---------|--------|-------|---------|---------|-------|---------|---------------------|
|                         | Econ    | Qty     | Sch    | Eng   | Est     | Oth     | Spt   | Total   |                     |
| 890.333                 | 67.100  | -53.434 | 82.691 | 0.000 | 526.355 | 188.300 | 0.000 | 811.012 | 1701.345            |

## SAR Baseline History

| <b>Item/Event</b>           | <b>SAR<br/>Planning<br/>Estimate (PE)</b> | <b>SAR<br/>Development<br/>Estimate (DE)</b> | <b>SAR<br/>Production<br/>Estimate (PdE)</b> | <b>Current<br/>Estimate</b> |
|-----------------------------|---|--|--|-----------------------------|
| 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  | JUL 2011                    |
| IOC                         | OCT 2003                                  | N/A  | N/A  | N/A                         |
| Total Cost (TY \$M)         | 59.1                                      | 10761.8                                      | N/A  | 18834.9                     |
| Total Quantity              | N/A                                       | 12   | N/A  | 11                          |
| Prog. Acq. Unit Cost (PAUC) | N/A                                       | 896.817                                      | N/A  | 1712.264                    |

**Cost Variance****Cost Variance Summary**

| <b>Summary Then Year \$M</b> |                  |                |               |                |
|------------------------------|------------------|----------------|---------------|----------------|
|                              | <b>RDT&amp;E</b> | <b>Proc</b>    | <b>MILCON</b> | <b>Total</b>   |
| SAR Baseline (Dev Est)       | 77.8             | 10684.0        | --            | 10761.8        |
| Previous Changes             |                  |                |               |                |
| Economic                     | +0.2             | +611.0         | --            | +611.2         |
| Quantity                     | --               | -1478.1        | --            | -1478.1        |
| Schedule                     | +6.1             | +909.6         | --            | +915.7         |
| Engineering                  | --               | --             | --            | --             |
| Estimating                   | +36.0            | +5741.3        | --            | +5777.3        |
| Other                        | --               | +2071.3        | --            | +2071.3        |
| Support                      | --               | --             | --            | --             |
| <b>Subtotal</b>              | <b>+42.3</b>     | <b>+7855.1</b> | <b>--</b>     | <b>+7897.4</b> |
| Current Changes              |                  |                |               |                |
| Economic                     | --               | +127.1         | --            | +127.1         |
| Quantity                     | --               | --             | --            | --             |
| Schedule                     | --               | --             | --            | --             |
| Engineering                  | --               | --             | --            | --             |
| Estimating                   | --               | +48.6          | --            | +48.6          |
| Other                        | --               | --             | --            | --             |
| Support                      | --               | --             | --            | --             |
| <b>Subtotal</b>              | <b>--</b>        | <b>+175.7</b>  | <b>--</b>     | <b>+175.7</b>  |
| <b>Total Changes</b>         | <b>+42.3</b>     | <b>+8030.8</b> | <b>--</b>     | <b>+8073.1</b> |
| CE - Cost Variance           | 120.1            | 18714.8        | --            | 18834.9        |
| CE - Cost & Funding          | 120.1            | 18714.8        | --            | 18834.9        |



| <b>Summary Base Year 1996 \$M</b> |                  |                |               |                |
|-----------------------------------|------------------|----------------|---------------|----------------|
|                                   | <b>RDT&amp;E</b> | <b>Proc</b>    | <b>MILCON</b> | <b>Total</b>   |
| SAR Baseline (Dev Est)            | 78.7             | 8939.4         | --            | 9018.1         |
| Previous Changes                  |                  |                |               |                |
| Economic                          | --               | --             | --            | --             |
| Quantity                          | --               | -1325.1        | --            | -1325.1        |
| Schedule                          | +4.8             | +410.1         | --            | +414.9         |
| Engineering                       | --               | --             | --            | --             |
| Estimating                        | +32.6            | +4671.6        | --            | +4704.2        |
| Other                             | --               | +1537.6        | --            | +1537.6        |
| Support                           | --               | --             | --            | --             |
| <b>Subtotal</b>                   | <b>+37.4</b>     | <b>+5294.2</b> | <b>--</b>     | <b>+5331.6</b> |
| Current Changes                   |                  |                |               |                |
| Economic                          | --               | --             | --            | --             |
| Quantity                          | --               | --             | --            | --             |
| Schedule                          | --               | --             | --            | --             |
| Engineering                       | --               | --             | --            | --             |
| Estimating                        | --               | +29.5          | --            | +29.5          |
| Other                             | --               | --             | --            | --             |
| Support                           | --               | --             | --            | --             |
| <b>Subtotal</b>                   | <b>--</b>        | <b>+29.5</b>   | <b>--</b>     | <b>+29.5</b>   |
| <b>Total Changes</b>              | <b>+37.4</b>     | <b>+5323.7</b> | <b>--</b>     | <b>+5361.1</b> |
| CE - Cost Variance                | 116.1            | 14263.1        | --            | 14379.2        |
| CE - Cost & Funding               | 116.1            | 14263.1        | --            | 14379.2        |

Previous Estimate: December 2009

| <b>Procurement</b>  | <b>\$M</b>       |                  |
|---|------------------|------------------|
| <b>Current Change Explanations</b>  | <b>Base Year</b> | <b>Then Year</b> |
| Revised escalation indices. (Economic)  | N/A              | +127.1           |
| Adjustment for current and prior escalation. (Estimating)   | -57.6            | -83.6            |
| Additional funding added to fund ships to ceiling. (Estimating)   | +15.5            | +15.2            |
| Program closeout funding added to cover costs associated with shutting down the production line. (Estimating) | +71.6            | +117.0           |
| <b>Procurement Subtotal</b>   | <b>+29.5</b>     | <b>+175.7</b>    |

**Contracts**

**Appropriation: Procurement**

Contract Name **LPD 22**  
 Contractor Northrop Grumman Shipbuilding  
 Contractor Location Pascagoula, MS  
 Contract Number, Type N00024-06-C-2222/22, FPIF  
 Award Date June 01, 2006  
 Definitization Date June 01, 2006

| Initial Contract Price (\$M) |         |     | Current Contract Price (\$M) |         |     | Estimated Price At Completion (\$M) |                 |
|------------------------------|---------|-----|------------------------------|---------|-----|-------------------------------------|-----------------|
| Target                       | Ceiling | Qty | Target                       | Ceiling | Qty | Contractor                          | Program Manager |
| 1097.0                       | 1210.2  | 1   | 1103.0                       | 1216.5  | 1   | 1216.5                              | 1216.5          |

| Variance                                  | Cost Variance | Schedule Variance |
|---|---------------|-------------------|
| Cumulative Variances To Date (12/26/2010) | -91.6         | -35.8             |
| Previous Cumulative Variances             | -44.9         | -35.0             |
| Net Change                                | -46.7         | -0.8              |

**Cost And Schedule Variance Explanations**

The unfavorable net change to the cost variance has been driven by additional manning required to manage schedule slips in key trade areas, complete rework efforts, and supervise correction of cable planning problems. Material escalation costs have also been a factor. Furthermore, costs have been incurred to replace material that was damaged due to exposure to inclement weather.

The unfavorable net change to the schedule variance has been driven by the late receipt of outsourced units, some of which were also incomplete. Additional work from pipe weld inspections and subsequent corrections, as well as delays in manufacturing and cable installation, have also contributed to the unfavorable variance.

**Contract Comments**

LPD 22 ship construction is being performed at Northrop Grumman Shipbuilding Pascagoula operations.

The difference between initial and current contract price is attributed to the February 2007 execution of the Advance Agreement on Recovery of Hurricane Losses between the U.S. Government and Northrop Grumman and the incorporation of engineering change proposals.

Material escalation costs have been a factor in the Program Manager's estimate reaching ceiling. Poor craft performance and alignment of plans/resources, along with inconsistent manning, have impacted LPD 22's delivery date. The new class build plan emphasizing higher pre-outfitting and levels of completion at launch has been incorporated into all LPD 17 class ships under construction.

**Appropriation: Procurement**

Contract Name **LPD 23**  
 Contractor Northrop Grumman Shipbuilding  
 Contractor Location Pascagoula, MS  
 Contract Number, Type N00024-06-C-2222/23, FPIF  
 Award Date June 01, 2006  
 Definitization Date June 01, 2006

| Initial Contract Price (\$M) |         |     | Current Contract Price (\$M) |         |     | Estimated Price At Completion (\$M) |                 |
|------------------------------|---------|-----|------------------------------|---------|-----|-------------------------------------|-----------------|
| Target                       | Ceiling | Qty | Target                       | Ceiling | Qty | Contractor                          | Program Manager |
| 1127.6                       | 1243.5  | 1   | 1124.9                       | 1240.4  | 1   | 1240.4                              | 1240.4          |

| Variance                                  | Cost Variance | Schedule Variance |
|---|---------------|-------------------|
| Cumulative Variances To Date (12/26/2010) | -65.7         | -45.5             |
| Previous Cumulative Variances             | -24.9         | -13.4             |
| Net Change                                | -40.8         | -32.1             |

**Cost And Schedule Variance Explanations**

The unfavorable net change to the cost variance has been driven by late and out of sequence unit erections, along with material shortages and incomplete testing prior to erection. Over-manning on some efforts, increased focus on quality assurance, and subsequent correction of deficiencies have increased actual costs. Material escalation costs have also been a factor.

The unfavorable net change to the schedule variance has been driven by improper alignment of individual shop schedules. Unavailable/late receipt of units from predecessor crafts has led to delays in subsequent unit erection schedules.

**Contract Comments**

LPD 23 ship construction is being performed at Northrop Grumman Shipbuilding Avondale operations.

The difference between initial and current contract price is due to the incorporation of engineering change proposals.

Material escalation costs have been a factor in the Program Manager's estimate reaching ceiling. The new class build plan emphasizing higher pre-outfitting and levels of completion at launch has been incorporated into all LPD 17 class ships under construction.

**Appropriation: Procurement**

Contract Name **LPD 24**  
 Contractor Northrop Grumman Shipbuilding  
 Contractor Location Pascagoula, MS  
 Contract Number, Type N00024-06-C-2222/24, FPIF  
 Award Date November 06, 2006  
 Definitization Date November 06, 2006

| Initial Contract Price (\$M) |         |     | Current Contract Price (\$M) |         |     | Estimated Price At Completion (\$M) |                 |
|------------------------------|---------|-----|------------------------------|---------|-----|-------------------------------------|-----------------|
| Target                       | Ceiling | Qty | Target                       | Ceiling | Qty | Contractor                          | Program Manager |
| 1184.0                       | 1297.3  | 1   | 1177.6                       | 1290.3  | 1   | 1290.3                              | 1290.3          |

| Variance                                  | Cost Variance | Schedule Variance |
|---|---------------|-------------------|
| Cumulative Variances To Date (12/26/2010) | -84.3         | -56.3             |
| Previous Cumulative Variances             | -15.0         | -28.6             |
| Net Change                                | -69.3         | -27.7             |

**Cost And Schedule Variance Explanations**

The unfavorable net change to the cost variance has been driven by incomplete assemblies from outsourced vendors and inexperienced labor. Improper work sequencing has resulted in the need for excessive overtime; and additional oversight has been required in some trades. Insufficient budgeting and estimating of work scope have also contributed to the unfavorable variance. Efforts to improve quality and establish higher accountability levels has slowed productivity rates and increased dependency on apprentice/contract labor needed to meet manpower demands. Material escalation costs have also been a factor.

The unfavorable net change to the schedule variance has been driven by insufficient manning levels in some earlier work stations leading to unit completion delays and reduced progress levels. Late equipment installation and unit integration have hindered subsequent production schedules.

**Contract Comments**

LPD 24 ship construction is being performed at Northrop Grumman Shipbuilding Pascagoula operations.

The difference between initial and current contract price is due to the incorporation of engineering change proposals.

Material escalation costs have been a factor in the Program Manager's estimate reaching ceiling. Poor craft performance and alignment of plans/resources, along with inconsistent manning, have impacted LPD 24's delivery date. The new class build plan emphasizing higher pre-outfitting and levels of completion at launch has been incorporated into all LPD 17 class ships under construction.

**Appropriation: Procurement**

Contract Name **LPD 25**  
 Contractor Northrop Grumman Shipbuilding  
 Contractor Location Pascagoula, MS  
 Contract Number, Type N00024-06-C-2222/25, FPIF  
 Award Date December 21, 2007  
 Definitization Date December 21, 2007

| Initial Contract Price (\$M) |         |     | Current Contract Price (\$M) |         |     | Estimated Price At Completion (\$M) |                 |
|------------------------------|---------|-----|------------------------------|---------|-----|-------------------------------------|-----------------|
| Target                       | Ceiling | Qty | Target                       | Ceiling | Qty | Contractor                          | Program Manager |
| 1212.8                       | 1349.9  | 1   | 1209.1                       | 1345.6  | 1   | 1345.6                              | 1345.6          |

| Variance                                  | Cost Variance | Schedule Variance |
|---|---------------|-------------------|
| Cumulative Variances To Date (12/26/2010) | -52.4         | -93.1             |
| Previous Cumulative Variances             | -0.9          | -23.9             |
| Net Change                                | -51.5         | -69.2             |

**Cost And Schedule Variance Explanations**

The unfavorable net change to the cost variance has been driven by poor performance in assembly/erection of some units requiring additional manning to meet desired completion rates. Insufficient manning, related to both skill level and head count, and late receipts of units in some trades have also contributed to the unfavorable variance. Material escalation costs have also been a factor.

The unfavorable net change to the schedule variance has been driven by late unit erections and material/unit receipt in some trades. Complex assemblies and configurations have required more effort than originally planned; and delays on preceding hulls are impacting LPD 25 schedule performance.

**Contract Comments**

LPD 25 ship construction is being performed at Northrop Grumman Shipbuilding Pascagoula operations.

The difference between initial and current contract price is due to the incorporation of engineering change proposals.

Material escalation costs have been a factor in the Program Manager's estimate reaching ceiling. The new class build plan emphasizing higher pre-outfitting and levels of completion at launch has been incorporated into all LPD 17 class ships under construction.

## Deliveries and Expenditures

| Deliveries To Date                 | Plan To Date | Actual To Date | Total Quantity | Percent Delivered |
|------------------------------------|--------------|----------------|----------------|-------------------|
| Development                        | 0            | 0              | 0              | --                |
| Production                         | 5            | 5              | 11             | 45.45%            |
| Total Program Quantities Delivered | 5            | 5              | 11             | 45.45%            |

| Expenditures and Appropriations (TY \$M) |         |                            |         |
|--|---------|----------------------------|---------|
| Total Acquisition Cost                   | 18834.9 | Years Appropriated         | 22      |
| Expenditures To Date                     | 12452.9 | Percent Years Appropriated | 78.57%  |
| Percent Expended                         | 66.12%  | Appropriated to Date       | 16436.6 |
| Total Funding Years                      | 28      | Percent Appropriated       | 87.27%  |

Expenditures reflect data through February 7, 2011.

## Operating and Support Cost

### Assumptions And Ground Rules

The costs include all personnel, equipment, supplies, software and services including support associated with operating, modifying, maintaining, supplying, training and supporting the LPD 17 Program. Cost elements were reviewed and updated to reflect FY09 rates for manpower, material, maintenance, fuel, and disposal, as well as the current manning levels for LPD 17 class ships.

Cost estimate sources are Total Ownership Cost (TOC) and Contract Data Requirements List (CDRL). Total O&S costs reflect a service life of forty years per ship.

Depot maintenance costs were updated to reflect current availabilities and mandays.

Date of most recent estimate is December 2010.

| Costs BY1996 \$M                        |   |  |
|---|---|--|
| Cost Element                            | LPD 17<br>AVG ANNUAL COST PER LPD<br>CLASS HULL | LPD 4<br>AVG ANNUAL COST PER LPD<br>CLASS HULL |
| Unit-Level Manpower                     | 17.7  | --   |
| Unit Operations                         | 9.4   | --   |
| Maintenance                             | 6.9   | --   |
| Sustaining Support                      | 0.3   | --   |
| Continuing System Improvements          | 0.0   | --   |
| Indirect Support                        | 0.0   | --   |
| Other                                   | 9.2   | --   |
| Total Unitized Cost (Base Year 1996 \$) | 43.5  | --   |

| Total O&S Costs \$M | LPD 17  | LPD 4 |
|---------------------|---------|-------|
| Base Year           | 19140.0 | --    |
| Then Year           | 39950.0 | --    |

The antecedent programs for the LPD 17 are the LPD 4, LSD 36, LKA 113, or LST 1179. The program office is researching to acquire the operating and support cost information for the LPD 4 program as it is the closest configuration to the LPD 17. The results of that research will be provided in the next SAR.