# Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-180

# DDG 51

As of December 31, 2011

Defense Acquisition Management
Information Retrieval
(DAMIR)

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## Program Information

**Designation And Nomenclature (Popular Name)**

DDG 51 Arleigh Burke Class Guided Missile Destroyer (DDG 51)

**DoD Component**

Navy

## Responsible Office

**Responsible Office**

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**Date Assigned** May 23, 2011

## References

**SAR Baseline (Production Estimate)**

Decision Coordinating Paper #1337 Revision 1, Change 1 of August 22, 1986

**Approved APB**

Navy Acquisition Executive (NAE) Approved Acquisition Program Baseline (APB) dated May 10, 2011

## Mission and Description

The DDG 51 is a multi-mission guided missile destroyer designed to operate offensively and defensively, independently, or as units of Carrier Strike Groups (CSG), Expeditionary Strike Groups (ESG), and Missile Defense Action Groups in multi-threat environments that include air, surface, and subsurface threats. These ships will respond to Low Intensity Conflict/Coastal and Littoral Offshore Warfare (LIC/CALOW) scenarios as well as open ocean conflict providing or augmenting power projection, forward presence requirements, and escort operations at sea. Flight IIA ships have introduced new capabilities, Cooperative Engagement Capability (CEC) and a MK-45 Gun that will provide improved air and anti-missile defense and improved land attack.

The DDG 51 Class ships provide outstanding combat capability and survivability characteristics while considering procurement and lifetime support costs. They feature extraordinary seakeeping and low observability characteristics.

The DDG 51 features the AEGIS Weapon System (AWS), which has quick reaction time, high firepower, and improved Electronic Countermeasures (ECM) capability in Anti-Air Warfare (AAW). The ships' Anti-Submarine Warfare (ASW) System provides superior long range multi-target detection and engagement capability with two embarked Light Airborne Multi-Purpose System (LAMPS) MK-III helicopters (Flight IIA, DDG 79 and follow-on ships). DDG 91 and follow-on ships employ the littoral variant SPY-1D(V). The Advanced Tomahawk Weapon Control System (DDGs 79-95) and the Tactical Tomahawk Weapons Control System (DDG 96 and follow-on ships) allow employment of multiple variants of Tomahawk missiles for strike warfare. The MK-45 gun weapon system provides significant capability for surface warfare, land attack, and air defense. The CEC is being installed on DDG 51 Class Ships to promote Network Centric Warfare capability. The AWS is the heart of an integrated combat system that provides area coverage and command/control focus in all dimensions of Naval Warfighting and Joint Military Operations: Anti-Aircraft Warfare (AAW); Anti-Submarine Warfare (ASW); Anti-Surface Warfare (ASUW); Command, Control, Communications, Computers & Intelligence (C4I); and Strike Warfare (STW). FY 2010 and follow ships will provide Ballistic Missile Defense capability. The FY 2013 President's Budget includes the introduction of Flight III, via an Engineering Change Proposal (ECP), beginning in FY 2016.

Structural features are an all steel hull and deckhouse with vital spaces protected and located within the hull. The ship employs a gas turbine propulsion system with Controllable Pitch Propellers similar to the CG 47 class.

The DDG 51 Destroyer is being produced to fulfill a surface combatant requirement to provide air dominance, maritime dominance and land attack capability.

## Executive Summary

The Arleigh Burke Class has delivered 61 (DDG 51-111) ships to date, including one since the last SAR: USS SPRUANCE (DDG 111), built by General Dynamics (GD) Bath Iron Works (BIW) in Bath, ME, which was delivered on April 15, 2011. The remaining ship (DDG 112) of the original 62 ship program is in construction at BIW. The FY 2010 DoD Appropriations and Authorizations Acts provided funding for the continuation of the program, with the first new ship (DDG 113) appropriated since FY 2005.

The Navy has instituted several initiatives to reduce cost associated with FY 2010 and follow DDG 51 Class ships. These ships will maintain a stable configuration baseline without adverse impact to mission readiness, vulnerability, survivability, or safety. The Navy has significantly increased the use of competitive contracts in lieu of sole source contracts. DDG 51 Class hulls will use refurbished assets from retiring Navy ships instead of buying new equipment. The use of contracts across multiple ship classes will be used to produce better prices for the Navy.

The Navy awarded the DDG 113 and DDG 114 ship construction contracts to Huntington Ingalls Industries (HII) on June 15, 2011 and September 26, 2011, respectively. The DDG 115 ship construction contract was awarded to GD BIW on September 26, 2011, with a priced option for DDG 116. The Navy intends to exercise the option for the DDG 116 ship construction contract in the second quarter of FY 2012.

The Navy requests Congressional approval for an FY 2013-2017 Multi Year Procurement (MYP). An MYP will allow the program to achieve procurement of nine ships at significant savings, while providing for a stable industrial base for shipbuilders in Maine and Mississippi, for the AEGIS Weapon Systems procurement in New Jersey, and for Government Furnished Equipment (GFE) vendors across the rest of the country.

The FY 2013 President's Budget (PB) submission requests $3,048.6M for two ships in FY 2013, and $466.3M Advanced Procurement to support the FY 2013- 2017 MYP.

The DDG 51 Class Program has achieved numerous significant production milestones since the last report:

- USS WILLIAM P LAWRENCE (DDG 110) Commissioned June 4, 2011 in Mobile, AL.

- DDG 111 (SPRUANCE) Super Trial March 14, 2011 in Bath, ME.

- DDG 111 (SPRUANCE) Delivered April 15, 2011 in Bath, ME.

- USS SPRUANCE (DDG 111) Commissioned October 1, 2011 in Key West, FL.

- DDG 112 (MICHAEL MURPHY) Launch/Float Off May 8, 2011 in Bath, ME.

- DDG 112 (MICHAEL MURPHY) AEGIS Light Off June 17, 2011 in Bath, ME.

- DDG 115 (TBD) Start Fabrication Ceremony February 22, 2012 in Bath, ME.

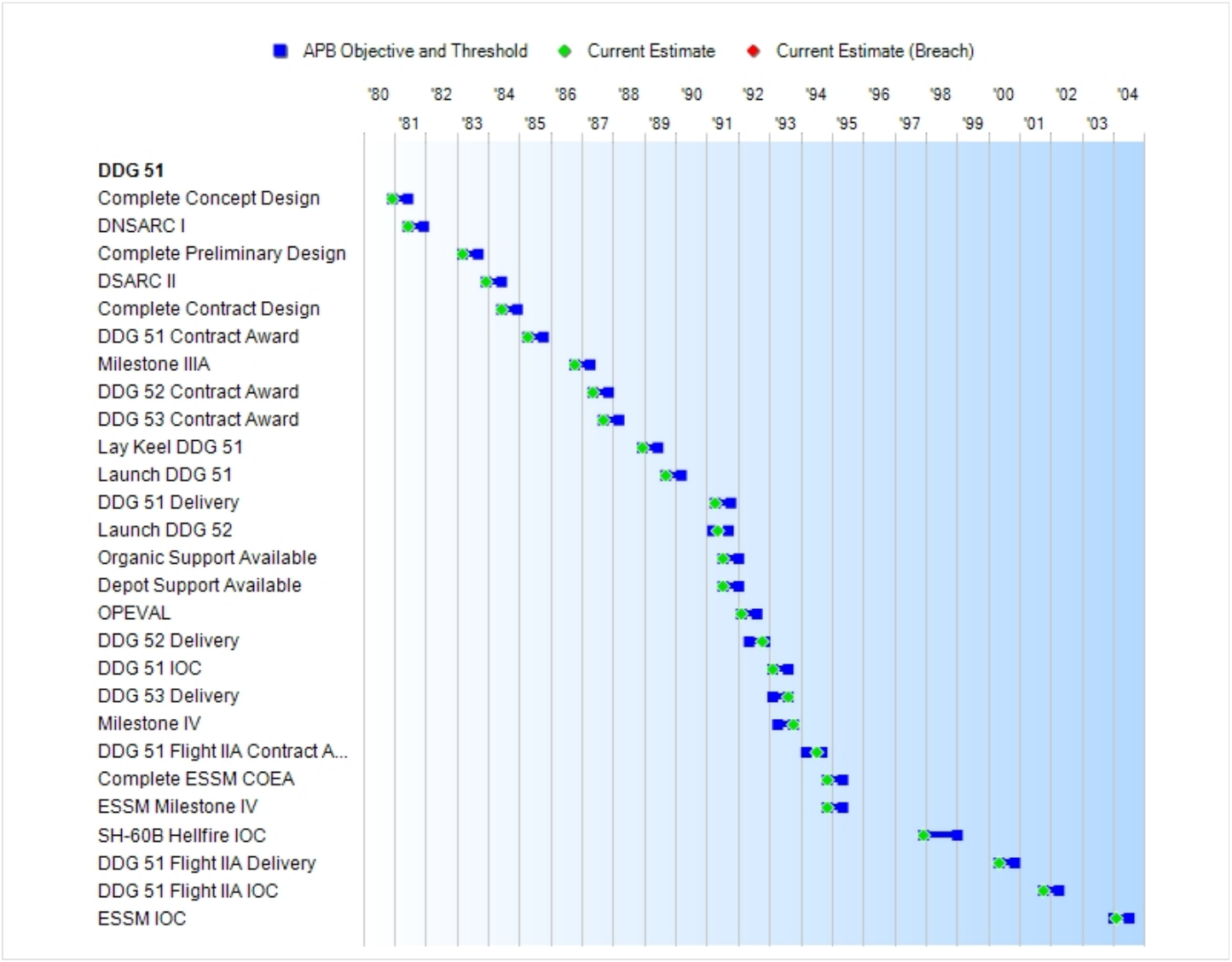
There are no significant software-related issues with this program at this time.

## Threshold Breaches

| APB Breaches | | |
|---|---|---|
| **Schedule** | | ☐ |
| **Performance** | | ☐ |
| **Cost** | RDT&E | ☐ |
| | Procurement | ☐ |
| | MILCON | ☐ |
| | Acq O&M | ☐ |
| **Unit Cost** | PAUC | ☐ |
| | APUC | ☐ |

| Nunn-McCurdy Breaches | | |
|---|---|---|
| **Current UCR Baseline** | | |
| | PAUC | None |
| | APUC | None |
| **Original UCR Baseline** | | |
| | PAUC | None |
| | APUC | None |

## Schedule


APB Objective and Threshold
Current Estimate
Current Estimate (Breach)
'80
'81
'82
'83
'84
'85
'86
'87
'88
'89
'90
'91
'92
'93
'94
'95
'96
'97
'98
'99
'00
'01
'02
'03
'04
DDG 51
Complete Concept Design
DNSARC I
Complete Preliminary Design
DSARC II
Complete Contract Design
DDG 51 Contract Award
Milestone IIIA
DDG 52 Contract Award
DDG 53 Contract Award
Lay Keel DDG 51
Launch DDG 51
DDG 51 Delivery
Launch DDG 52
Organic Support Available
Depot Support Available
OPEVAL
DDG 52 Delivery
DDG 51 IOC
DDG 53 Delivery
Milestone IV
DDG 51 Flight IIA Contract A...
Complete ESSM COEA
ESSM Milestone IV
SH-60B Hellfire IOC
DDG 51 Flight IIA Delivery
DDG 51 Flight IIA IOC
ESSM IOC

| Milestones | SAR Baseline Prod Est | Current APB Production Objective/Threshold | | Current Estimate |
|---|---|---|---|---|
| Complete Concept Design | N/A | DEC 1980 | JUN 1981 | DEC 1980 |
| DNSARC I | JUN 1981 | JUN 1981 | DEC 1981 | JUN 1981 |
| Complete Preliminary Design | N/A | MAR 1983 | SEP 1983 | MAR 1983 |
| DSARC II | DEC 1983 | DEC 1983 | JUN 1984 | DEC 1983 |
| Complete Contract Design | N/A | JUN 1984 | DEC 1984 | JUN 1984 |
| DDG 51 Contract Award | APR 1985 | APR 1985 | OCT 1985 | APR 1985 |
| Milestone IIIA | OCT 1986 | OCT 1986 | APR 1987 | OCT 1986 |
| DDG 52 Contract Award | JAN 1987 | MAY 1987 | NOV 1987 | MAY 1987 |
| DDG 53 Contract Award | N/A | SEP 1987 | MAR 1988 | SEP 1987 |
| Lay Keel DDG 51 | N/A | DEC 1988 | JUN 1989 | DEC 1988 |
| Launch DDG 51 | N/A | SEP 1989 | MAR 1990 | SEP 1989 |
| DDG 51 Delivery | N/A | APR 1991 | OCT 1991 | APR 1991 |
| Launch DDG 52 | N/A | MAR 1991 | SEP 1991 | MAY 1991 |
| Organic Support Available | N/A | JUL 1991 | JAN 1992 | JUL 1991 |
| Depot Support Available | N/A | JUL 1991 | JAN 1992 | JUL 1991 |
| OPEVAL | N/A | FEB 1992 | AUG 1992 | FEB 1992 |
| DDG 52 Delivery | N/A | MAY 1992 | NOV 1992 | OCT 1992 |
| DDG 51 IOC | OCT 1990 | FEB 1993 | AUG 1993 | FEB 1993 |
| DDG 53 Delivery | N/A | FEB 1993 | AUG 1993 | AUG 1993 |
| Milestone IV | N/A | APR 1993 | OCT 1993 | OCT 1993 |
| DDG 51 Flight IIA Contract Award | N/A | MAR 1994 | SEP 1994 | JUL 1994 |
| Complete ESSM COEA | N/A | NOV 1994 | MAY 1995 | NOV 1994 |
| ESSM Milestone IV | N/A | NOV 1994 | MAY 1995 | NOV 1994 |
| SH-60B Hellfire IOC | N/A | DEC 1997 | JAN 1999 | DEC 1997 |
| DDG 51 Flight IIA Delivery | N/A | MAY 2000 | NOV 2000 | MAY 2000 |
| DDG 51 Flight IIA IOC | N/A | OCT 2001 | APR 2002 | OCT 2001 |
| ESSM IOC | N/A | JAN 2004 | JUL 2004 | FEB 2004 |

## Acronyms And Abbreviations

COEA - Cost and Operational Effectiveness Analysis
DNSARC - Department of the Navy System Acquisition Review Council
DSARC - Defense System Acquisition Review Council
ESSM - Evolved Sea Sparrow Missile
IOC - Initial Operational Capability
OPEVAL - Operational Evaluation

## Change Explanations

None

## Performance

| Characteristics | SAR Baseline Prod Est | Current APB Production Objective/Threshold | | Demonstrated Performance | Current Estimate | |
|---|---|---|---|---|---|---|
| SHIP: | | | | | | |
| Length (ft) | 466 | N/A | N/A | 471 | 471 | |
| Beam (ft) | 59 | N/A | N/A | 59 | 59 | |
| Navigational Draft (ft) | 30.6 | N/A | N/A | 31.0 | 31.0 | |
| Displacement (long tons) | 8300 | N/A | N/A | 9300 | 9300 | |
| Propulsion LM (Gas Turbine) | 2500 | N/A | N/A | 2500 | 2500 | |
| Accommodations | 341 | N/A | N/A | 314 | 314 | |
| MOBILITY: | | | | | | |
| Speed (knots) | 30 | 30 | 30 | 30 | 30 | |
| Armament | | | | | | |
| Anti-Submarine Warfare | | | | | | |
| ASW System | AN/SQQ-89 | N/A | N/A | AN/SQQ-89 | AN/SQQ-89 | |
| ASROC | VLA | N/A | N/A | VLA | VLA | |
| Helo | SEAHAWK; LAMPS | 2 EMBARKED HELOS | 2 EMBARKED HELOS | 2 Embarked Helos | 2 Embarked Helos | |
| Anti-Air Warfare | | | | | | |
| Launchers | MK 41 VLS | N/A | N/A | MK 41 VLS | MK 41 VLS | |
| Missiles | SM-2 MR | N/A | N/A | SM-2 MR | SM-2 MR | |
| Missile Fire Control System | 3 MK 99 | N/A | N/A | 3 MK 99 | 3 MK 99 | |
| Guns | 2 PHALANX | N/A | N/A | 2 PHALAN X | 2 PHALAN X/ESSM | |
| Anti-Surface/Strike Warfare | | | | | | |
| Guns | 1 5"/54 | N/A | N/A | 1 5"/62 | 1 5"/62 | (Ch-1) |
| Gunfire Control System | MK 160 | N/A | N/A | MK 160 | MK 160 | |
| Anti-Ship Cruise Missile | HARPOON | N/A | N/A | N/A | N/A | |
| Cruise Missile | TOMAHAWK | N/A | N/A | TOMAHAWK | TOMAHAWK | |
| Electronic Warfare | SLQ-32 SRBOC | N/A | N/A | SLQ-32, SRBOC, Combat DF | SLQ-32, SRBOC, Combat DF | |
| Radars | | | | | | |
| Surface | SPS-67 | N/A | N/A | SPS-67 | SPS-67 | |
| 3D | SPY-1D | N/A | N/A | SPY-1D | SPY-1D | |
| MINE WARFARE: | | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Detection Range of Moored/Floating Mine (YDS) | N/A | 1000 | 800 | 1400 | 1400 |

**Requirements Source:**
Operational Requirements Document (ORD) for DDG 51 Flight IIA, dated April 15, 1994

## Acronyms And Abbreviations

ASROC - Anti-Submarine Rocket
ASW - Anti-Submarine Warfare
DF - Direction Finding
ESSM - Evolved Sea Sparrow Missile
ft - Feet
HELO - Helicopter
MK - Mark
MR - Medium Range
SM-2 - Standard Missile 2
SRBOC - Super Rapid Blooming Off-Board Chaff
VLA - Vertical Launching ASROC (Anti-Submarine Rocket)
VLS - Vertical Launching System
YDS - Yards

## Change Explanations

(Ch-1) Anti-Surface/ Strike Warfare Guns changed from 5"/54 to 5"/62 gun reflects additional enhanced capability.

## Memo

Demonstrated Performance and Current Estimate are for the Flight IIA configuration. Production Estimates are from the Flight II configuration. Demonstrated Performance characteristics reflect testing through the Test & Evaluation Master Plan (TEMP) 801-OT-IIIH report dated July 20, 2006.

Classified Performance information is provided in the classified annex to this submission.

## Track To Budget

| | | | | |
|---|---|---|---|---|
| **RDT&E** | | | | |
| APPN 1319 | BA 04 | PE 0603564N | (Navy) | |
| | Project K0408<br>Project K0409 | Preliminary Design<br>Feasibility Studies | | (Sunk) |
| APPN 1319 | BA 05 | PE 0604303N | (Navy) | |
| | Project K1776 | AEGIS Weapon System Mods | | (Sunk) |
| APPN 1319 | BA 05 | PE 0604307N | (Navy) | |
| | Project K1447 | AEGIS Combat System Engineering | (Shared) | |
| **Procurement** | | | | |
| APPN 1611 | BA 02 | PE 02042222N | (Navy) | |
| | ICN 2122 | DDG 51 CLASS DESTROYERS | | |
| APPN 1611 | BA 05 | PE 02042222N | (Navy) | |
| | ICN 5110 | DDG 51 CLASS DESTROYERS Outfitting and Post Delivery | (Shared) | |
| **MILCON** | | | | |
| APPN 1205 | | PE 0204228N | (Navy) | |
| | Project 263 | AEGIS Computer Center Building Addition | | (Sunk) |
| APPN 1205 | | PE 0605896N | (Navy) | |
| | Project 261 | Battle Force Combatant Education Facility | | (Sunk) |

## Cost and Funding

## Cost Summary

**Total Acquisition Cost and Quantity**

| | BY1987 $M | | | BY1987 $M | TY $M | | |
|---|---|---|---|---|---|---|---|
| Appropriation | SAR Baseline Prod Est | Current APB Production Objective/Threshold | | Current Estimate | SAR Baseline Prod Est | Current APB Production Objective | Current Estimate |
| RDT&E | 979.8 | 3031.8 | 3335.0 | 2914.0 | 916.6 | 3954.6 | 3753.4 |
| Procurement | 15948.3 | 57095.5 | 62805.1 | 56286.4 | 19173.1 | 84417.5 | 83539.7 |
| Flyaway | 15948.3 | -- | -- | 56286.4 | 19173.1 | -- | 83539.7 |
| Recurring | 15948.3 | -- | -- | 55154.2 | 19173.1 | -- | 81953.5 |
| Non Recurring | 0.0 | -- | -- | 1132.2 | 0.0 | -- | 1586.2 |
| 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 | 25.6 | 34.8 | 38.3 | 37.6 | 27.8 | 41.0 | 44.5 |
| Acq O&M | 0.0 | 0.0 | -- | 0.0 | 0.0 | 0.0 | 0.0 |
| Total | 16953.7 | 60162.1 | N/A | 59238.0 | 20117.5 | 88413.1 | 87337.6 |

Confidence Level For the Current APB Cost is 86% - Eighty percent (80%) of the ships are complete with a confidence level of 100%. Remaining future ships are budgeted at a 50% confidence level as reflected in Navy cost estimating curves.

| Quantity | SAR Baseline Prod Est | Current APB Production | Current Estimate |
|---|---|---|---|
| RDT&E | 0 | 0 | 0 |
| Procurement | 23 | 75 | 75 |
| Total | 23 | 75 | 75 |

## Cost and Funding

## Funding Summary

**Appropriation and Quantity Summary**
**FY2013 President's Budget / December 2011 SAR (TY$ M)**

| Appropriation | Prior | FY2012 | FY2013 | FY2014 | FY2015 | FY2016 | FY2017 | To Complete | Total |
|---|---|---|---|---|---|---|---|---|---|
| RDT&E | 3175.4 | 54.8 | 77.5 | 146.3 | 118.7 | 89.6 | 91.1 | 0.0 | 3753.4 |
| Procurement | 64552.2 | 2112.5 | 3522.5 | 2024.5 | 3034.2 | 3565.9 | 4119.2 | 608.7 | 83539.7 |
| MILCON | 44.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 44.5 |
| Acq O&M | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| PB 2013 Total | 67772.1 | 2167.3 | 3600.0 | 2170.8 | 3152.9 | 3655.5 | 4210.3 | 608.7 | 87337.6 |
| PB 2012 Total | 67921.0 | 2167.3 | 3635.3 | 3436.3 | 3274.1 | 2779.1 | 4552.3 | 651.2 | 88416.6 |
| Delta | -148.9 | 0.0 | -35.3 | -1265.5 | -121.2 | 876.4 | -342.0 | -42.5 | -1079.0 |

| Quantity | Undistributed | Prior | FY2012 | FY2013 | FY2014 | FY2015 | FY2016 | FY2017 | To Complete | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Development | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Production | 0 | 65 | 1 | 2 | 1 | 2 | 2 | 2 | 0 | 75 |
| PB 2013 Total | 0 | 65 | 1 | 2 | 1 | 2 | 2 | 2 | 0 | 75 |
| PB 2012 Total | 0 | 65 | 1 | 2 | 2 | 2 | 1 | 2 | 0 | 75 |
| Delta | 0 | 0 | 0 | 0 | -1 | 0 | 1 | 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 |
|---|---|---|---|---|---|---|---|
| 1980 | -- | -- | -- | -- | -- | -- | 10.5 |
| 1981 | -- | -- | -- | -- | -- | -- | 35.3 |
| 1982 | -- | -- | -- | -- | -- | -- | 102.0 |
| 1983 | -- | -- | -- | -- | -- | -- | 150.7 |
| 1984 | -- | -- | -- | -- | -- | -- | 121.1 |
| 1985 | -- | -- | -- | -- | -- | -- | 138.8 |
| 1986 | -- | -- | -- | -- | -- | -- | 93.5 |
| 1987 | -- | -- | -- | -- | -- | -- | 100.4 |
| 1988 | -- | -- | -- | -- | -- | -- | 93.4 |
| 1989 | -- | -- | -- | -- | -- | -- | 52.3 |
| 1990 | -- | -- | -- | -- | -- | -- | 41.2 |
| 1991 | -- | -- | -- | -- | -- | -- | 87.5 |
| 1992 | -- | -- | -- | -- | -- | -- | 87.2 |
| 1993 | -- | -- | -- | -- | -- | -- | 110.6 |
| 1994 | -- | -- | -- | -- | -- | -- | 102.7 |
| 1995 | -- | -- | -- | -- | -- | -- | 89.6 |
| 1996 | -- | -- | -- | -- | -- | -- | 87.3 |
| 1997 | -- | -- | -- | -- | -- | -- | 82.5 |
| 1998 | -- | -- | -- | -- | -- | -- | 78.3 |
| 1999 | -- | -- | -- | -- | -- | -- | 155.4 |
| 2000 | -- | -- | -- | -- | -- | -- | 232.6 |
| 2001 | -- | -- | -- | -- | -- | -- | 143.5 |
| 2002 | -- | -- | -- | -- | -- | -- | 230.7 |
| 2003 | -- | -- | -- | -- | -- | -- | 199.0 |
| 2004 | -- | -- | -- | -- | -- | -- | 135.3 |
| 2005 | -- | -- | -- | -- | -- | -- | 126.0 |
| 2006 | -- | -- | -- | -- | -- | -- | 113.4 |
| 2007 | -- | -- | -- | -- | -- | -- | 69.2 |
| 2008 | -- | -- | -- | -- | -- | -- | 37.4 |
| 2009 | -- | -- | -- | -- | -- | -- | 8.7 |
| 2010 | -- | -- | -- | -- | -- | -- | 16.8 |
| 2011 | -- | -- | -- | -- | -- | -- | 42.5 |
| 2012 | -- | -- | -- | -- | -- | -- | 54.8 |
| 2013 | -- | -- | -- | -- | -- | -- | 77.5 |
| 2014 | -- | -- | -- | -- | -- | -- | 146.3 |
| 2015 | -- | -- | -- | -- | -- | -- | 118.7 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2016 | -- | -- | -- | -- | -- | -- | 89.6 |
| 2017 | -- | -- | -- | -- | -- | -- | 91.1 |
| **Subtotal** | **--** | **--** | **--** | **--** | **--** | **--** | **3753.4** |

**Annual Funding BY$**
**1319 | RDT&E | Research, Development, Test, and Evaluation, Navy**

| Fiscal Year | Quantity | End Item Recurring Flyaway BY 1987 $M | Non End Item Recurring Flyaway BY 1987 $M | Non Recurring Flyaway BY 1987 $M | Total Flyaway BY 1987 $M | Total Support BY 1987 $M | Total Program BY 1987 $M |
|---|---|---|---|---|---|---|---|
| 1980 | -- | -- | -- | -- | -- | -- | 14.0 |
| 1981 | -- | -- | -- | -- | -- | -- | 43.1 |
| 1982 | -- | -- | -- | -- | -- | -- | 118.3 |
| 1983 | -- | -- | -- | -- | -- | -- | 167.3 |
| 1984 | -- | -- | -- | -- | -- | -- | 129.8 |
| 1985 | -- | -- | -- | -- | -- | -- | 144.2 |
| 1986 | -- | -- | -- | -- | -- | -- | 94.4 |
| 1987 | -- | -- | -- | -- | -- | -- | 98.5 |
| 1988 | -- | -- | -- | -- | -- | -- | 88.7 |
| 1989 | -- | -- | -- | -- | -- | -- | 47.6 |
| 1990 | -- | -- | -- | -- | -- | -- | 36.1 |
| 1991 | -- | -- | -- | -- | -- | -- | 73.9 |
| 1992 | -- | -- | -- | -- | -- | -- | 71.6 |
| 1993 | -- | -- | -- | -- | -- | -- | 88.7 |
| 1994 | -- | -- | -- | -- | -- | -- | 80.9 |
| 1995 | -- | -- | -- | -- | -- | -- | 69.2 |
| 1996 | -- | -- | -- | -- | -- | -- | 66.3 |
| 1997 | -- | -- | -- | -- | -- | -- | 61.9 |
| 1998 | -- | -- | -- | -- | -- | -- | 58.3 |
| 1999 | -- | -- | -- | -- | -- | -- | 114.3 |
| 2000 | -- | -- | -- | -- | -- | -- | 168.7 |
| 2001 | -- | -- | -- | -- | -- | -- | 102.7 |
| 2002 | -- | -- | -- | -- | -- | -- | 163.4 |
| 2003 | -- | -- | -- | -- | -- | -- | 138.9 |
| 2004 | -- | -- | -- | -- | -- | -- | 91.9 |
| 2005 | -- | -- | -- | -- | -- | -- | 83.4 |
| 2006 | -- | -- | -- | -- | -- | -- | 72.8 |
| 2007 | -- | -- | -- | -- | -- | -- | 43.3 |
| 2008 | -- | -- | -- | -- | -- | -- | 23.0 |
| 2009 | -- | -- | -- | -- | -- | -- | 5.3 |
| 2010 | -- | -- | -- | -- | -- | -- | 10.0 |
| 2011 | -- | -- | -- | -- | -- | -- | 24.9 |
| 2012 | -- | -- | -- | -- | -- | -- | 31.6 |
| 2013 | -- | -- | -- | -- | -- | -- | 44.0 |
| 2014 | -- | -- | -- | -- | -- | -- | 81.6 |
| 2015 | -- | -- | -- | -- | -- | -- | 65.0 |
| 2016 | -- | -- | -- | -- | -- | -- | 48.2 |
| 2017 | -- | -- | -- | -- | -- | -- | 48.2 |
| **Subtotal** | **--** | **--** | **--** | **--** | **--** | **--** | **2914.0** |

Research, Development, Test, and Evaluation (RDT&E) figures represent DDG 51 Program's portion of the shared appropriations.

**Annual Funding TY$**
**1611 | Procurement | Shipbuilding and Conversion, 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 |
|---|---|---|---|---|---|---|---|
| 1984 | -- | 78.5 | -- | -- | 78.5 | -- | 78.5 |
| 1985 | 1 | 846.6 | -- | 299.2 | 1145.8 | -- | 1145.8 |
| 1986 | -- | 98.1 | -- | -- | 98.1 | -- | 98.1 |
| 1987 | 3 | 2326.7 | -- | 158.2 | 2484.9 | -- | 2484.9 |
| 1988 | -- | 9.6 | -- | -- | 9.6 | -- | 9.6 |
| 1989 | 4 | 2876.5 | -- | -- | 2876.5 | -- | 2876.5 |
| 1990 | 5 | 3569.5 | -- | 13.5 | 3583.0 | -- | 3583.0 |
| 1991 | 4 | 3145.3 | -- | 3.6 | 3148.9 | -- | 3148.9 |
| 1992 | 5 | 3982.0 | -- | 38.3 | 4020.3 | -- | 4020.3 |
| 1993 | 4 | 3381.4 | -- | 7.9 | 3389.3 | -- | 3389.3 |
| 1994 | 3 | 2703.5 | -- | 86.9 | 2790.4 | -- | 2790.4 |
| 1995 | 3 | 2780.1 | -- | 37.8 | 2817.9 | -- | 2817.9 |
| 1996 | 2 | 2292.4 | -- | 61.7 | 2354.1 | -- | 2354.1 |
| 1997 | 4 | 3549.9 | -- | 38.8 | 3588.7 | -- | 3588.7 |
| 1998 | 4 | 3426.1 | -- | 110.5 | 3536.6 | -- | 3536.6 |
| 1999 | 3 | 2674.5 | -- | 44.2 | 2718.7 | -- | 2718.7 |
| 2000 | 3 | 2651.1 | -- | 30.1 | 2681.2 | -- | 2681.2 |
| 2001 | 3 | 3232.1 | -- | -- | 3232.1 | -- | 3232.1 |
| 2002 | 3 | 3287.9 | -- | 14.4 | 3302.3 | -- | 3302.3 |
| 2003 | 2 | 2657.8 | -- | 63.1 | 2720.9 | -- | 2720.9 |
| 2004 | 3 | 3372.3 | -- | 4.7 | 3377.0 | -- | 3377.0 |
| 2005 | 3 | 3672.3 | -- | 8.9 | 3681.2 | -- | 3681.2 |
| 2006 | -- | 505.7 | -- | -- | 505.7 | -- | 505.7 |
| 2007 | -- | 417.2 | -- | -- | 417.2 | -- | 417.2 |
| 2008 | -- | 93.2 | -- | -- | 93.2 | -- | 93.2 |
| 2009 | -- | 324.0 | -- | -- | 324.0 | -- | 324.0 |
| 2010 | 1 | 2467.8 | -- | 121.8 | 2589.6 | -- | 2589.6 |
| 2011 | 2 | 2974.9 | -- | 11.6 | 2986.5 | -- | 2986.5 |
| 2012 | 1 | 1992.3 | -- | 120.2 | 2112.5 | -- | 2112.5 |
| 2013 | 2 | 3492.7 | -- | 29.8 | 3522.5 | -- | 3522.5 |
| 2014 | 1 | 2024.5 | -- | -- | 2024.5 | -- | 2024.5 |
| 2015 | 2 | 3034.2 | -- | -- | 3034.2 | -- | 3034.2 |
| 2016 | 2 | 3362.7 | -- | 203.2 | 3565.9 | -- | 3565.9 |
| 2017 | 2 | 4041.4 | -- | 77.8 | 4119.2 | -- | 4119.2 |
| 2018 | -- | 130.2 | -- | -- | 130.2 | -- | 130.2 |
| 2019 | -- | 84.3 | -- | -- | 84.3 | -- | 84.3 |
| 2020 | -- | 89.3 | -- | -- | 89.3 | -- | 89.3 |
| 2021 | -- | 117.7 | -- | -- | 117.7 | -- | 117.7 |
| 2022 | -- | 128.5 | -- | -- | 128.5 | -- | 128.5 |
| 2023 | -- | 58.7 | -- | -- | 58.7 | -- | 58.7 |
| **Subtotal** | **75** | **81953.5** | **--** | **1586.2** | **83539.7** | **--** | **83539.7** |

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

| Fiscal Year | Quantity | End Item Recurring Flyaway BY 1987 $M | Non End Item Recurring Flyaway BY 1987 $M | Non Recurring Flyaway BY 1987 $M | Total Flyaway BY 1987 $M | Total Support BY 1987 $M | Total Program BY 1987 $M |
|---|---|---|---|---|---|---|---|
| 1984 | -- | 78.5 | -- | -- | 78.5 | -- | 78.5 |
| 1985 | 1 | 829.8 | -- | 293.3 | 1123.1 | -- | 1123.1 |
| 1986 | -- | 94.0 | -- | -- | 94.0 | -- | 94.0 |
| 1987 | 3 | 2179.7 | -- | 148.2 | 2327.9 | -- | 2327.9 |
| 1988 | -- | 8.7 | -- | -- | 8.7 | -- | 8.7 |
| 1989 | 4 | 2540.5 | -- | -- | 2540.5 | -- | 2540.5 |
| 1990 | 5 | 3064.1 | -- | 11.6 | 3075.7 | -- | 3075.7 |
| 1991 | 4 | 2626.6 | -- | 3.0 | 2629.6 | -- | 2629.6 |
| 1992 | 5 | 3241.6 | -- | 31.2 | 3272.8 | -- | 3272.8 |
| 1993 | 4 | 2725.2 | -- | 6.3 | 2731.5 | -- | 2731.5 |
| 1994 | 3 | 2127.6 | -- | 68.4 | 2196.0 | -- | 2196.0 |
| 1995 | 3 | 2163.6 | -- | 29.4 | 2193.0 | -- | 2193.0 |
| 1996 | 2 | 1765.1 | -- | 47.5 | 1812.6 | -- | 1812.6 |
| 1997 | 4 | 2692.2 | -- | 29.4 | 2721.6 | -- | 2721.6 |
| 1998 | 4 | 2541.1 | -- | 82.0 | 2623.1 | -- | 2623.1 |
| 1999 | 3 | 1952.6 | -- | 32.3 | 1984.9 | -- | 1984.9 |
| 2000 | 3 | 1887.5 | -- | 21.5 | 1909.0 | -- | 1909.0 |
| 2001 | 3 | 2224.7 | -- | -- | 2224.7 | -- | 2224.7 |
| 2002 | 3 | 2250.3 | -- | 9.8 | 2260.1 | -- | 2260.1 |
| 2003 | 2 | 1719.5 | -- | 40.9 | 1760.4 | -- | 1760.4 |
| 2004 | 3 | 2105.4 | -- | 3.0 | 2108.4 | -- | 2108.4 |
| 2005 | 3 | 2195.4 | -- | 5.3 | 2200.7 | -- | 2200.7 |
| 2006 | -- | 292.1 | -- | -- | 292.1 | -- | 292.1 |
| 2007 | -- | 230.7 | -- | -- | 230.7 | -- | 230.7 |
| 2008 | -- | 50.0 | -- | -- | 50.0 | -- | 50.0 |
| 2009 | -- | 169.1 | -- | -- | 169.1 | -- | 169.1 |
| 2010 | 1 | 1257.3 | -- | 62.0 | 1319.3 | -- | 1319.3 |
| 2011 | 2 | 1486.6 | -- | 5.8 | 1492.4 | -- | 1492.4 |
| 2012 | 1 | 978.7 | -- | 59.0 | 1037.7 | -- | 1037.7 |
| 2013 | 2 | 1686.6 | -- | 14.3 | 1700.9 | -- | 1700.9 |
| 2014 | 1 | 960.5 | -- | -- | 960.5 | -- | 960.5 |
| 2015 | 2 | 1414.0 | -- | -- | 1414.0 | -- | 1414.0 |
| 2016 | 2 | 1539.4 | -- | 93.0 | 1632.4 | -- | 1632.4 |
| 2017 | 2 | 1817.4 | -- | 35.0 | 1852.4 | -- | 1852.4 |
| 2018 | -- | 57.5 | -- | -- | 57.5 | -- | 57.5 |
| 2019 | -- | 36.6 | -- | -- | 36.6 | -- | 36.6 |
| 2020 | -- | 38.1 | -- | -- | 38.1 | -- | 38.1 |
| 2021 | -- | 49.3 | -- | -- | 49.3 | -- | 49.3 |
| 2022 | -- | 52.9 | -- | -- | 52.9 | -- | 52.9 |
| 2023 | -- | 23.7 | -- | -- | 23.7 | -- | 23.7 |
| **Subtotal** | **75** | **55154.2** | **--** | **1132.2** | **56286.4** | **--** | **56286.4** |

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

| Fiscal Year | Quantity | End Item Recurring Flyaway (Aligned with Quantity) BY 1987 $M |
|---|---|---|
| 1984 | -- | -- |
| 1985 | 1 | 934.6 |
| 1986 | -- | -- |
| 1987 | 3 | 2343.8 |
| 1988 | -- | -- |
| 1989 | 4 | 2633.0 |
| 1990 | 5 | 3161.1 |
| 1991 | 4 | 2669.3 |
| 1992 | 5 | 3310.6 |
| 1993 | 4 | 2672.8 |
| 1994 | 3 | 2117.9 |
| 1995 | 3 | 2157.8 |
| 1996 | 2 | 1560.7 |
| 1997 | 4 | 2633.1 |
| 1998 | 4 | 2812.0 |
| 1999 | 3 | 2146.5 |
| 2000 | 3 | 2052.8 |
| 2001 | 3 | 2129.2 |
| 2002 | 3 | 2351.1 |
| 2003 | 2 | 1590.2 |
| 2004 | 3 | 2198.5 |
| 2005 | 3 | 2232.5 |
| 2006 | -- | -- |
| 2007 | -- | -- |
| 2008 | -- | -- |
| 2009 | -- | -- |
| 2010 | 1 | 1095.0 |
| 2011 | 2 | 1761.6 |
| 2012 | 1 | 964.1 |
| 2013 | 2 | 1560.7 |
| 2014 | 1 | 852.6 |
| 2015 | 2 | 1541.8 |
| 2016 | 2 | 1744.7 |
| 2017 | 2 | 1926.2 |
| 2018 | -- | -- |
| 2019 | -- | -- |
| 2020 | -- | -- |
| 2021 | -- | -- |

| | | |
|---|---|---|
| 2022 | -- | -- |
| 2023 | -- | -- |
| **Subtotal** | **75** | **55154.2** |

**Annual Funding TY$**
**1205 | MILCON | Military Construction, Navy and Marine Corps**

| Fiscal Year | Total Program TY $M |
|---|---|
| 1986 | 4.6 |
| 1987 | -- |
| 1988 | 14.7 |
| 1989 | 8.5 |
| 1990 | -- |
| 1991 | -- |
| 1992 | -- |
| 1993 | -- |
| 1994 | -- |
| 1995 | -- |
| 1996 | -- |
| 1997 | -- |
| 1998 | 13.2 |
| 1999 | -- |
| 2000 | -- |
| 2001 | 3.5 |
| **Subtotal** | **44.5** |

**Annual Funding BY$**
**1205 | MILCON | Military Construction, Navy and Marine Corps**

| Fiscal Year | Total Program BY 1987 $M |
|---|---|
| 1986 | 4.5 |
| 1987 | -- |
| 1988 | 13.4 |
| 1989 | 7.5 |
| 1990 | -- |
| 1991 | -- |
| 1992 | -- |
| 1993 | -- |
| 1994 | -- |
| 1995 | -- |
| 1996 | -- |
| 1997 | -- |
| 1998 | 9.7 |
| 1999 | -- |
| 2000 | -- |
| 2001 | 2.5 |
| **Subtotal** | **37.6** |

## Low Rate Initial Production

| | Initial LRIP Decision | Current Total LRIP |
|---|---|---|
| **Approval Date** | 10/30/1986 | 10/30/1986 |
| **Approved Quantity** | 9 | 9 |
| **Reference** | Milestone IIIA review decision memorandum | Milestone IIIA review decision memorandum |
| **Start Year** | 1985 | 1985 |
| **End Year** | 1989 | 1989 |

Limited Production was granted by the Milestone IIIA review decision memorandum of October 30, 1986, which granted production approval through FY 1989. The Current Total Low Rate Initial Production (LRIP) Quantity is more than 10% of the total procurement quantity which is standard for shipbuilding programs.

## Foreign Military Sales

| Country | Date of Sale | Quantity | Total Cost $M | Memo |
|---|---|---|---|---|
| Australia | 7/15/2011 | 2 | 1192.0 | Date cited is date of last case sale. |
| Norway | 4/22/2011 | 8 | 241.0 | Date cited is date of last case sale. |
| Japan | 12/6/2010 | 111 | 3621.0 | Date cited is date of last case sale. |
| South Korea | 2/12/2009 | 4 | 1148.0 | Date cited is date of last case sale. |
| Spain | 8/11/2006 | 9 | 1285.0 | Date cited is date of last case sale. |

Quantity numbers above reflect Foreign Military Sales cases, rather than ships. Cases are agreements between the United States and an eligible foreign country to provide defense articles, training, and/or services for purchase. Cases can be related to procurements (e.g., Ordalt or standard missile), training (e.g., AEGIS shipboard training or replacement crew training), and program management support (e.g., Combat System Ship Qualification Test). Case quantity numbers reflect all cases, open and closed.

## Nuclear Cost

None.

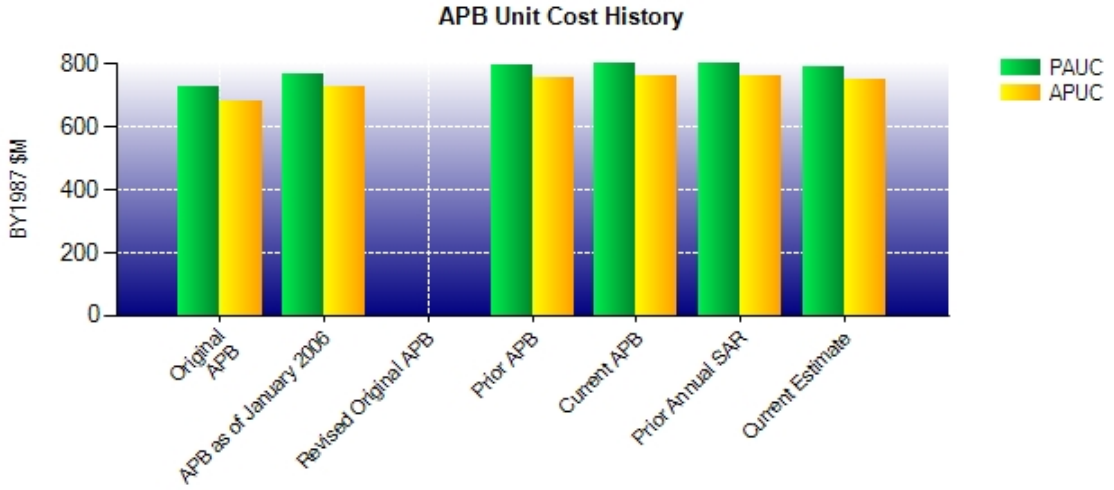
## Unit Cost

## Unit Cost Report

| Unit Cost | BY1987 $M Current UCR Baseline (MAY 2011 APB) | BY1987 $M Current Estimate (DEC 2011 SAR) | BY % Change |
|---|---|---|---|
| Program Acquisition Unit Cost (PAUC) | | | |
| Cost | 60162.1 | 59238.0 | |
| Quantity | 75 | 75 | |
| Unit Cost | 802.161 | 789.840 | -1.54 |
| Average Procurement Unit Cost (APUC) | | | |
| Cost | 57095.5 | 56286.4 | |
| Quantity | 75 | 75 | |
| Unit Cost | 761.273 | 750.485 | -1.42 |

| Unit Cost | BY1987 $M Original UCR Baseline (FEB 1988 APB) | BY1987 $M Current Estimate (DEC 2011 SAR) | BY % Change |
|---|---|---|---|
| Program Acquisition Unit Cost (PAUC) | | | |
| Cost | 16723.8 | 59238.0 | |
| Quantity | 23 | 75 | |
| Unit Cost | 727.122 | 789.840 | +8.63 |
| Average Procurement Unit Cost (APUC) | | | |
| Cost | 15745.3 | 56286.4 | |
| Quantity | 23 | 75 | |
| Unit Cost | 684.578 | 750.485 | +9.63 |

## Unit Cost History




| | | BY1987 $M | | TY $M | |
|---|---|---|---|---|---|
| | Date | PAUC | APUC | PAUC | APUC |
| **Original APB** | FEB 1988 | 727.122 | 684.578 | 883.152 | 843.209 |
| **APB as of January 2006** | AUG 2002 | 766.675 | 725.342 | 1031.612 | 981.022 |
| **Revised Original APB** | N/A | N/A | N/A | N/A | N/A |
| **Prior APB** | MAR 2010 | 796.555 | 759.297 | 1131.565 | 1085.962 |
| **Current APB** | MAY 2011 | 802.161 | 761.273 | 1178.841 | 1125.567 |
| **Prior Annual SAR** | DEC 2010 | 802.199 | 761.273 | 1178.888 | 1125.567 |
| **Current Estimate** | DEC 2011 | 789.840 | 750.485 | 1164.501 | 1113.863 |

### SAR Unit Cost History

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

| Initial PAUC Prod Est | Changes | | | | | | | | PAUC Current Est |
|---|---|---|---|---|---|---|---|---|---|
| | Econ | Qty | Sch | Eng | Est | Oth | Spt | Total | |
| 874.674 | -55.996 | 67.100 | 20.968 | 72.836 | 184.919 | 0.000 | 0.000 | 289.827 | 1164.501 |

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

| Initial APUC Prod Est | Changes | | | | | | | | APUC Current Est |
|---|---|---|---|---|---|---|---|---|---|
| | Econ | Qty | Sch | Eng | Est | Oth | Spt | Total | |
| 833.613 | -54.677 | 95.569 | 19.036 | 61.299 | 159.023 | 0.000 | 0.000 | 280.250 | 1113.863 |

## SAR Baseline History

| Item/Event | SAR Planning Estimate (PE) | SAR Development Estimate (DE) | SAR Production Estimate (PdE) | Current Estimate |
|---|---|---|---|---|
| Milestone I | JUN 1981 | JUN 1981 | JUN 1981 | JUN 1981 |
| Milestone II | MAY 1983 | DEC 1983 | DEC 1983 | DEC 1983 |
| Milestone III | AUG 1986 | AUG 1986 | OCT 1986 | OCT 1986 |
| IOC | N/A | N/A | OCT 1990 | FEB 1993 |
| Total Cost (TY $M) | 10953.5 | 14910.6 | 20117.5 | 87337.6 |
| Total Quantity | 9 | 14 | 23 | 75 |
| Prog. Acq. Unit Cost (PAUC) | 1217.056 | 1065.043 | 874.674 | 1164.501 |

## Cost Variance

## Cost Variance Summary

| Summary Then Year $M | | | | |
|---|---|---|---|---|
| | RDT&E | Proc | MILCON | Total |
| SAR Baseline (Prod Est) | 916.6 | 19173.1 | 27.8 | 20117.5 |
| Previous Changes | | | | |
| Economic | -109.9 | -4890.0 | +0.1 | -4999.8 |
| Quantity | -- | +50515.6 | -- | +50515.6 |
| Schedule | +144.9 | +1365.4 | -- | +1510.3 |
| Engineering | +1054.5 | +4910.0 | +16.7 | +5981.2 |
| Estimating | +1948.5 | +13343.4 | -0.1 | +15291.8 |
| Other | -- | -- | -- | -- |
| Support | -- | -- | -- | -- |
| Subtotal | +3038.0 | +65244.4 | +16.7 | +68299.1 |
| Current Changes | | | | |
| Economic | +10.9 | +789.2 | -- | +800.1 |
| Quantity | -- | -- | -- | -- |
| Schedule | -- | +62.3 | -- | +62.3 |
| Engineering | -205.9 | -312.6 | -- | -518.5 |
| Estimating | -6.2 | -1416.7 | -- | -1422.9 |
| Other | -- | -- | -- | -- |
| Support | -- | -- | -- | -- |
| Subtotal | -201.2 | -877.8 | -- | -1079.0 |
| Total Changes | +2836.8 | +64366.6 | +16.7 | +67220.1 |
| CE - Cost Variance | 3753.4 | 83539.7 | 44.5 | 87337.6 |
| CE - Cost & Funding | 3753.4 | 83539.7 | 44.5 | 87337.6 |

| Summary Base Year 1987 $M | | | | |
|---|---|---|---|---|
| | RDT&E | Proc | MILCON | Total |
| SAR Baseline (Prod Est) | 979.8 | 15948.3 | 25.6 | 16953.7 |
| Previous Changes | | | | |
| Economic | -- | -- | -- | -- |
| Quantity | -- | +31444.9 | -- | +31444.9 |
| Schedule | +89.1 | +274.7 | -- | +363.8 |
| Engineering | +615.4 | +2715.6 | +11.9 | +3342.9 |
| Estimating | +1347.5 | +6712.0 | +0.1 | +8059.6 |
| Other | -- | -- | -- | -- |
| Support | -- | -- | -- | -- |
| Subtotal | +2052.0 | +41147.2 | +12.0 | +43211.2 |
| Current Changes | | | | |
| Economic | -- | -- | -- | -- |
| Quantity | -- | -- | -- | -- |
| Schedule | -- | -- | -- | -- |
| Engineering | -114.5 | -141.1 | -- | -255.6 |
| Estimating | -3.3 | -668.0 | -- | -671.3 |
| Other | -- | -- | -- | -- |
| Support | -- | -- | -- | -- |
| Subtotal | -117.8 | -809.1 | -- | -926.9 |
| Total Changes | +1934.2 | +40338.1 | +12.0 | +42284.3 |
| CE - Cost Variance | 2914.0 | 56286.4 | 37.6 | 59238.0 |
| CE - Cost & Funding | 2914.0 | 56286.4 | 37.6 | 59238.0 |

Previous Estimate: December 2010

| RDT&E | $M | |
|---|---|---|
| **Current Change Explanations** | **Base Year** | **Then Year** |
| Revised escalation indices. (Economic) | N/A | +10.9 |
| Adjustment for current and prior escalation. (Estimating) | -0.7 | -1.3 |
| Reduction in Advanced Missile Defense Radar (AMDR) integration requirements. (Engineering) | -114.5 | -205.9 |
| Revised estimate to reflect application of new outyear escalation indices. (Estimating) | -5.3 | -9.6 |
| Funding to complete Flight III study. Flight III, to be introduced in FY 2016, will incorporate AMDR capability. (Estimating) | +4.8 | +8.3 |
| Revised estimates for Flight III preliminary analysis and design efficiencies. (Estimating) | -2.1 | -3.6 |
| RDT&E Subtotal | -117.8 | -201.2 |

| Procurement | $M | |
|---|---|---|
| **Current Change Explanations** | **Base Year** | **Then Year** |
| Revised escalation indices. (Economic) | N/A | +789.2 |
| Stretch-out procurement buy profile by moving one ship from FY 2014 to FY 2016 (Schedule) | 0.0 | +62.3 |
| Reduction in Flight III Air and Missile Defense Radar (AMDR) planned capability requirements. (Engineering) | -141.1 | -312.6 |
| Adjustment for current and prior escalation. (Estimating) | -113.8 | -225.9 |
| Revised estimates to reflect Congressional budget reductions in FY 2010 and FY 2011. (Estimating) | -46.2 | -91.9 |
| Revised estimates for Outfitting and Post Delivery efficiencies. (Estimating) | -54.5 | -121.7 |
| Revised estimates for ship construction and Government Furnished Equipment associated with Multi Year Procurement (FY 2013- FY 2017) and program efficiencies (Estimating) | -192.6 | -413.9 |
| Revised estimate to reflect application of new outyear escalation indices (Estimating) | -260.9 | -563.3 |
| Procurement Subtotal | -809.1 | -877.8 |

## Contracts

**Appropriation: Procurement**

| | |
|---|---|
| Contract Name | **DDG 113 DDG 51 Class Guided Missile Destroyer** |
| Contractor | HUNTINGTON-INGALLS, INC |
| Contractor Location | Pascagoula, MS 39567 |
| Contract Number, Type | N00024-11-C-2309/113, FPIF |
| Award Date | June 15, 2011 |
| Definitization Date | June 15, 2011 |

| Initial Contract Price ($M) | | | Current Contract Price ($M) | | | Estimated Price At Completion ($M) | |
|---|---|---|---|---|---|---|---|
| Target | Ceiling | Qty | Target | Ceiling | Qty | Contractor | Program Manager |
| 773.6 | 852.5 | 1 | 771.6 | 850.2 | 1 | 762.9 | 775.7 |

| Variance | Cost Variance | Schedule Variance |
|---|---|---|
| Cumulative Variances To Date | -6.4 | -9.4 |
| Previous Cumulative Variances | -- | -- |
| Net Change | -6.4 | -9.4 |

**Cost And Schedule Variance Explanations**

The unfavorable cumulative cost variance is due to minor production issues that do not impact the program in this early stage of contract performance reporting.

The unfavorable cumulative schedule variance is due to minor production issues that do not impact the program in this early stage of contract performance reporting.

**Contract Comments**

The difference between the initial contract price target and the current contract price target is due to negotiated changes to the contract.

DDG 113 was a sole source annual procurement contract awarded for the FY 2010 ship. It was awarded on June 15, 2011. Target Price, Ceiling Price, and Estimated Price At Completion do not include performance incentives. Contract Price does not include Indefinite Delivery/Indefinite Quantity (IDIQ) items that do not impact the negotiated Target Cost.

This is the first time this contract is being reported.

**Appropriation: Procurement**

| | |
|---|---|
| Contract Name | **DDG 114 DDG 51 Class Guided Missile Destroyer** |
| Contractor | HUNTINGTON-INGALLS, INC |
| Contractor Location | PASCAGOULA, MS 39567 |
| Contract Number, Type | N00024-11-C-2307/114, FPIF |
| Award Date | September 26, 2011 |
| Definitization Date | September 26, 2011 |

| Initial Contract Price ($M) | | | Current Contract Price ($M) | | | Estimated Price At Completion ($M) | |
|---|---|---|---|---|---|---|---|
| Target | Ceiling | Qty | Target | Ceiling | Qty | Contractor | Program Manager |
| 687.6 | 787.6 | 1 | 687.6 | 787.6 | 1 | | 705.4 |

| Variance | Cost Variance | Schedule Variance |
|---|---|---|
| Cumulative Variances To Date | 0.0 | 0.0 |
| Previous Cumulative Variances | -- | -- |
| Net Change | +0.0 | +0.0 |

**Cost And Schedule Variance Explanations**

None

**Contract Comments**

The DDG 114 was a competitive bid annual procurement awarded to Ingalls for one of two FY 2011 ships. Target Price, Ceiling Price, and Estimated Price At Completion do not include performance incentives. Contract price does not include Indefinite Delivery/Indefinite Quantity (IDIQ) items that do not impact the negotiated Target Cost.

Contract Performance reporting is anticipated to commence soon and will be reported in the next SAR. Contractor Estimated Price at Completion will be provided at that time.

This is the first time this contract is being reported.

| Appropriation: Procurement | |
|---|---|
| Contract Name | **DDG 115 DDG 51 Class Guided Missile Destroyer** |
| Contractor | GENERAL DYNAMICS (BIW) |
| Contractor Location | BATH, ME 04530 |
| Contract Number, Type | N00024-11-C-2305/115, FPIF |
| Award Date | September 26, 2011 |
| Definitization Date | September 26, 2011 |

| Initial Contract Price ($M) | | | Current Contract Price ($M) | | | Estimated Price At Completion ($M) | |
|---|---|---|---|---|---|---|---|
| Target | Ceiling | Qty | Target | Ceiling | Qty | Contractor | Program Manager |
| 669.6 | 749.3 | 1 | 669.6 | 749.3 | 1 | 675.3 | 671.0 |

| Variance | Cost Variance | Schedule Variance |
|---|---|---|
| Cumulative Variances To Date | -3.7 | -4.1 |
| Previous Cumulative Variances | -- | -- |
| Net Change | -3.7 | -4.1 |

**Cost And Schedule Variance Explanations**

The unfavorable cumulative cost variance is due to minor production anomalies in the very early stage of contract performance reporting that have no impact on the program.

The unfavorable cumulative schedule variance is due to minor production anomalies in the very early stage of contract performance reporting that have no impact on the program.

**Contract Comments**

The DDG 115 was a competitive bid annual procurement awarded to Bath Iron Works for one of two FY 2011 ships. Target Price, Ceiling Price, and Estimated Price At Completion do not include performance incentives. Contract price does not include Indefinite Delivery/Indefinite Quantity (IDIQ) items that do not impact the negotiated Target Cost.

There have been no negotiated contract changes to the contract.

This is the first time this contract is being reported.

**Appropriation: Procurement**

| | |
|---|---|
| Contract Name | **DDG 113/114/115 AWS Production** |
| Contractor | LOCKHEED MARTIN (LM) |
| Contractor Location | MOORESTOWN, NJ 08057 |
| Contract Number, Type | N00024-09-C-5110, FPIF/CPIF/CPAF/CPFF/FFP |
| Award Date | September 21, 2009 |
| Definitization Date | October 14, 2010 |

| Initial Contract Price ($M) | | | Current Contract Price ($M) | | | Estimated Price At Completion ($M) | |
|---|---|---|---|---|---|---|---|
| Target | Ceiling | Qty | Target | Ceiling | Qty | Contractor | Program Manager |
| 200.7 | N/A | 3 | 266.3 | N/A | 3 | 254.5 | 260.4 |

| Variance | Cost Variance | Schedule Variance |
|---|---|---|
| Cumulative Variances To Date | +4.2 | +1.2 |
| Previous Cumulative Variances | -- | -- |
| Net Change | +4.2 | +1.2 |

**Cost And Schedule Variance Explanations**

The favorable cumulative cost variance is due to labor and material cost efficiencies.

The favorable cumulative schedule variance is due to completion of tasks earlier than planned.

**Contract Comments**

The difference between the initial contract price target and the current contract price target is due to the definitization of the DDG 115 system.

This contract currently includes funding for 3 systems (FY 2010-2011). AEGIS Weapon Systems are funded as follows: DDG 113 (FY 2010) and DDG 114/115 (FY 2011).

The contract is a hybrid of fixed price and cost reimbursement line items, including Fixed Price Incentive Firm-Target (FPIF), Cost Plus Incentive Fee (CPIF), Cost Plus Award Fee (CPAF), Cost Plus Fixed Fee (CPFF), and Firm Fixed Price (FFP). All of these line items are included in the Contract Target Price, however not all line items have a comparable ceiling price. The Initial Ceiling Price and Current Ceiling Price have been set to N/A to show that there is no set ceiling price for the entire contract.

This is the first time this contract is being reported.

## Deliveries and Expenditures

| Deliveries To Date | Plan To Date | Actual To Date | Total Quantity | Percent Delivered |
|---|---|---|---|---|
| Development | 0 | 0 | 0 | -- |
| Production | 61 | 61 | 75 | 81.33% |
| Total Program Quantities Delivered | 61 | 61 | 75 | 81.33% |

| Expenditures and Appropriations (TY $M) | | | |
|---|---|---|---|
| Total Acquisition Cost | 87337.6 | Years Appropriated | 33 |
| Expenditures To Date | 59153.9 | Percent Years Appropriated | 75.00% |
| Percent Expended | 67.73% | Appropriated to Date | 69939.4 |
| Total Funding Years | 44 | Percent Appropriated | 80.08% |

## Operating and Support Cost

**Assumptions And Ground Rules**

The Program baseline Operating & Support (O&S) estimate projects for a 75 ship buy, encompassing nine different baseline configurations and three different hull variants (Flights). Estimates are primarily derived from the Navy's Visibility And Management of Operating and Support Cost (VAMOSC) database. Estimates are based on data collected through 2011 for operational hulls DDG 51 through DDG 107, and DDG 109 for both shipyard and Government Furnished Equipment (GFE) systems. Estimates are based on a service life of 35 years. Disposal costs are not included.

Manpower optimization initiatives have been sought to leverage new technology and reduce costs. Reductions have been achieved across all DDG 51 Class Flights. For example, initial Flight IIA Billet Allotment (BA) was 333 officers and enlisted personnel. Policies have been implemented and new technologies deployed to reduce billets by 35 to 298, as reflected in the Ship Manpower Document (SMD), dated September 2011, for Flight IIA (DDG 103-110).

The increase in unit cost from the 2010 SAR is related to increased manning assignments and higher maintenance costs, partially offset by lower fuel costs. Unit level manpower increased due to the additional four personnel (average) assigned. Maintenance costs increased as the ships were underway for a longer period prior to entering the maintenance availability. The unit cost increase of $1.44M for 75 ships with a service life of 35 years led to the overall program increase of $3.774B.

The Antecedent System shown below is the CG 47 Program. The CG 47 Class was used since it is the only other ship class with the AEGIS Weapon System installed. CG 47 estimates are based on 27 ships with a service life of 35 years.

(Cost estimate was updated January 2012).

| Costs BY1987 $M | | |
|---|---|---|
| **Cost Element** | **DDG 51 Average Annual Cost Per Ship** | **CG 47 Program Average Annual Cost Per Ship** |
| Unit-Level Manpower | 13.64 | 15.67 |
| Unit Operations | 5.39 | 5.77 |
| Maintenance | 7.27 | 13.41 |
| Sustaining Support | 0.75 | 0.86 |
| Continuing System Improvements | 0.78 | 2.39 |
| Indirect Support | 5.97 | 6.78 |
| Other | -- | -- |
| Total Unitized Cost (Base Year 1987 $) | 33.80 | 44.88 |

| Total O&S Costs $M | DDG 51 | CG 47 Program |
|---|---|---|
| Base Year | 88725.0 | 42411.0 |
| Then Year | 189610.5 | 67907.0 |