DDG 51 Program

Surface Navy Association
Washington, DC
11 January 2017

Presented by:
CAPT Casey Moton, USN
DDG 51 Program Manager
PMS 400D
Agenda

• DDG 51 Shipbuilding Profile
• DDG 113-121 Production Status
• Flight III Update
• Summary
Highlights

• DDG 113 (first HII restart ship) delivered December 2016 after successful Trials

• DDG 115 (first BIW restart ship) successful trials, on track to deliver February 2016

• Seven additional ships under construction at HII and BIW with five more under contract in the FY13-17 MYP

• Both shipyards in execution and preparing for introduction of Flight III ships
DDG 51 Class Shipbuilding Profile

**FUTURE AWARD**

| # of Ships | 1 | 2 | 5 | 4 | 5 | 4 | 3 | 2 | 4 | 3 | 3 | 2 | 3 | 2 | 3 | 2 | 3 | 2 | 3 | 2 |
| **FY**     | 85| 86| 87| 88| 89| 90| 91| 92| 93| 94| 95| 96| 97| 98| 99| 00| 01| 02| 03| 04|
| **63 Delivered to Fleet** | 51| 52| 54| 59| 64| 68| 73| 77| 80| 83| 85| 89| 93| 96| 99| 102|105|107|110|113|114|
| **13 Under Contract** | 53| 55| 60| 65| 69| 74| 78| 81| 84| 86| 90| 94| 97|100|103|106|108|111|114|116|
| **FY02-05 MYP** | 56| 61| 66| 70| 75| 79| 82| 87| 91| 95| 98|101|104|109|112|113|116|119|121|123|
| **FY98-01 MYP** | 57| 62| 67| 71| 76| 81| 85| 88| 92|106|110|113|116|119|122|125|128|131|134|137|
| **FY13-17 MYP** | 58| 63| 72| 76| 80| 84| 88| 92|106|110|113|116|119|122|125|128|131|134|137|140|

- **Flight I**: 21 Ships
- **Flight II**: 7 Ships
- **Flight IIA**: 45 Ships
- **Flight III**: 13 Ships

**ACQUISITION STRATEGIES**

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competition For Work</td>
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<tr>
<td>Negotiated Allocation</td>
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</tr>
<tr>
<td>Competition for Profit (PRO)</td>
<td>8</td>
</tr>
<tr>
<td>Multi-Year (PRO)</td>
<td>34</td>
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<tr>
<td>TBD</td>
<td>10</td>
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<tr>
<td><strong>Total</strong></td>
<td>86</td>
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**ACQUISITION STRATEGIES**

- **BIW**: 34 Ships
- **Ingalls**: 29 Ships

** UNDER DELIVERED CONTRACT TOTAL**

- **BIW**: 34 Ships
- **Ingalls**: 29 Ships

*Congress authorized and appropriated incremental funding for an additional DDG 51 class ship in FY16 which the Navy plans to procure in the Flight III configuration pending negotiations and receipt of FY17 appropriations. Hull numbers will also be determined based on negotiations and FY17 appropriations.*
DDG 113, 114, 117, 119, 121 Status (HII)

• DDG 113 (Delivered)
  − Trial ALPHA completed 29 Aug 2016
  − Trial BRAVO completed 26 Oct 2016
  − Trial CHARLIE completed 04 Nov 2016
  − Delivery completed 7 Dec 2016

• DDG 114 (88% complete)
  − ALO completed 06 Jun 2016
  − MELO planned Jan 2017
  − ALPHA/BRAVO trials planned May 2017

• DDG 117 (61% complete)
  − Lay Keel completed 11 Sept 2015
  − Launch completed 11 Nov 2016
  − ALO planned July 2017

• DDG 119 (37% complete)
  − Start Fab completed 06 July 2015
  − Lay Keel completed 23 May 2016

• DDG 121 (19% complete)
  − Start Fab achieved 27 Apr 2016
  − Lay Keel planned Feb 2017
DDG 115, 116, 118, 120 Status (BIW)

- **DDG 115 (98% complete)**
  - Trial ALPHA completed 18 Oct 2016
  - Trial BRAVO completed 17 Nov 2016
  - Trial CHARLIE completed 16 Dec 2016
  - Delivery planned Feb 2017

- **DDG 116 (75% complete)**
  - Lay Keel completed 06 Nov 2015
  - ALO scheduled Apr 2017
  - Launch scheduled Apr 2017

- **DDG 118 (20% complete)**
  - Start Fab completed Aug 2015
  - Lay Keel planned Feb 2018

- **DDG 120 (3% complete)**
  - Start Fab milestone achieved on 11 Sep 2016
  - Lay Keel planned Jan 2019
161025-N-AT101-721 GULF OF MEXICO (Oct. 25-26 2016) The pre-commissioning unit John Finn (DDG 113) conducts builder's trials, Oct. 24. John Finn, built by Huntington Ingalls Shipbuilding, will conduct the final phase of builder's trials, known as acceptance trials, in early November. (U.S. Navy video by Petty Officer First Class Maddelin Angebrand/Released)
**Flight III Changes**

**AN/SPY-6(V)1: AMDR-S SPY+15dB**
- 14.1 ft x 13.6 ft x 5 ft Array Structure
- Replaces AN/SPY-1D(V)

**Full Load Operational Displacement Enhancement System (FLODES)**
- Added starboard enclosure and stacked RHIBs

**AC Plant**
- 5 x 300 Ton HES-C AC Plants Replacing 5 x 200 Ton AC Plants

**4160VAC Electric Plant**
- 3 x 4MW, 4160 VAC SSGTGs replacing 3 x 3MW, 450 VAC SSGTGs
- Add transformers, PCMs, modified switchgear
- Modified controls for MCS and MFMs

**Enclosures**
- Added starboard enclosure and stacked RHIBs

**Heptafluoropropane (HFP)**
- HFP in Gas Turbine Modules & Flammable Liquid Storerooms

**Increased Innerbottom Scantlings**
- Adds 90 LT to improve KG

**BL 10 / TI 16 for Flight III Upgrade to AWS**
- Remaining obsolescence and roll-down impact changes are TBD

**Water Mist**
- Baseline change to install Water Mist in Machinery Spaces to Replace Halon 1301

**Habitability Changes and roll-down impacts to incorporate AN/SPY-6(V)1 and equipment**
Flight III Distributive Systems Status

- Completed Preliminary Design Review (PDR) Sep 2015
- Critical Design Review (CDR) May 2016
- First delivery to Land Based Engineering Site (LBES) Nov 2017
- First Flight III order placed by shipyard December 2016

- Completed PDR Feb 2015
- Completed CDR Sep 2015
- Test Readiness Review (TRR) Jan 2017
- First Delivery to LBES Q3FY17

- Variable Speed Drive (VSD) CDR2 Completed Nov 2015
- VSD First Article Test (FAT) completed Mar 2016
- Chiller FAT ongoing (vibration and shock testing)
Flight III Design / Review Progression

• Flight III Preliminary Design Review (PDR) complete September 2015
• Critical Design Review (CDR) complete November 2016
• Initial Functional Design and Transition Design complete; Zone Design in progress; Will be complete before start of construction

<table>
<thead>
<tr>
<th>2015</th>
<th>2016</th>
<th>2017</th>
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<tbody>
<tr>
<td>Apr</td>
<td>May</td>
<td>Jun</td>
</tr>
<tr>
<td>Functional DBET Drop</td>
<td>Detail DBET Drop</td>
<td>Functional DBET Drop</td>
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<tr>
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<td>3/31/16</td>
<td>10/19/15</td>
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<td>LYS Initial Functional Design (IFD)</td>
<td>LYS Transition Design (TD)</td>
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<td>LYS Zone Design (ZD)</td>
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<tr>
<td>10/26/15</td>
<td>FYS Zone Design (ZD)</td>
<td>12/15/17</td>
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Flight III Design Progressing to Support Start of Construction with a Mature / Stable Design
Summary

• Initial DDG 51 Restart Ships at each shipyard have completed successful trials, and first ship delivered
• Shipyards reestablishing serial DDG 51 production, 13 more ships on contract through FY17
• Flight III Detail Design efforts on track for start of construction
• Flight III acquisition efforts in progress with shipbuilders

Delivering capability to the fleet for current and future missions