DDG 51 Program Update

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• Both DDG 51 shipyards, Huntington Ingalls Industries – Ingalls Shipbuilding (HII) and General Dynamics – Bath Iron Works (BIW) in serial production
  – 70 ships delivered to date including 8 ships since program restart
    - HII – DDG 113, DDG 114, DDG 117, DDG 119, DDG 121 (delivered 30 November 2021)
    - BIW – DDG 115, DDG 116, DDG 118 (delivered 08 March 2021)
  – 19 more ships on contract through Fiscal Year 2022 (FY22); 12 under construction

• First Flight III ship (DDG 125) on track to deliver in April 2023
  – DDG 125 is 71% complete; launched 4 June 2021; 4160VAC switchboards, HES-C air conditioning plants, and SPY-6 support equipment lit off
  – Aegis Light Off (ALO) achieved 17 December; combat systems testing in progress
  – Seven Flight III ships under construction (DDGs 125-126, DDGs 128-132)

• Land-based test sites continue to support Flight III test and activation
  – Combat Systems Engineering Development Site (CSEDS) in Moorestown, NJ: Baseline 10 (BL10) software & SPY-6 equipment installed and lit off; integration testing ongoing
  – Land Based Engineering Site (LBES) in Philadelphia, PA: Electric Plant integration complete; Machinery Control System software integration ongoing

Maintaining course and speed on delivering Flight III capability
DDG 121 (Delivered)
Delivered Nov 2021
Commissioning planned Apr 2022

DDG 123 (89% complete)
ALO completed 9 Jul 2021
Builder’s Trials planned Spring 2022

DDG 125 (71% complete)
ALO achieved 17 Dec 2021
Builder’s Trials planned Fall 2022

DDG 128 (27% complete)
Lay Keel achieved 29 Jun 2021
Launch planned late 2022

DDG 129 (12% complete)
Start Fab achieved 7 Jan 2021
Lay Keel planned Spring 22

DDG 131 (<1% complete)
Start Fab achieved 6 Dec 21
Production Status (BIW)

**DDG 118 (Delivered)**
- Delivered 8 Mar 2021
- Commissioned 8 Dec 21

**DDG 120 (89% complete)**
- Christened 2 Oct 2021
- Builder’s Trials planned Spring 2022

**DDG 122 (75% complete)**
- Keel Laid 25 Jan 2020
- Christening & Launch planned Spring 2022

**DDG 124 (57% complete)**
- Keel Laid 21 May 2021

**DDG 126 (14% complete)**
- Start Fab achieved 3 Mar 2020
- Keel lay planned 2023

**DDG 127 (36% complete)**
- Keel lay planned Spring 2022

**DDG 130 (~2% complete)**
- Start Fab achieved 14 May 2021

**DDG 132 (<1% complete)**
- Start Fab achieved 16 Nov 2021
Flight III Changes

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

**AC Plant**
- 5 x 350 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 ship service transformers, PCMs, modified switchgear
- Modified controls for MCS and MFMs

**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)

**BL 10 / TI 16 for Flight III Upgrade to AWS**
- Added 3 Warfare Commander consoles

**Rapid Removal Routes**
- Incorporates reservations for depot level structural cuts to facilitate future Combat Systems equipment upgrades

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

**Heptafluoropropane (HFP)**
- HFP in Gas Turbine Modules & Flammable Liquid Storerooms replaces Halon 1301

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

**Habitability Changes** and roll-down impacts to incorporate AN/SPY-6(V)1 and equipment

**Capability Increase**
- Enabling Changes
- Other Changes
• **Flight III Electric Plant Testing at LBES**
  – Conducting integration testing of 4160VAC electric plant (EP) systems from generator through power conversion module
  – EP remote light off through Machinery Control System software achieved 10 December
  – Machinery Control System software delivery ongoing to support DDG 125 builder’s trials

• **BL10 and SPY-6 Power Distribution Testing at CSEDS**
  – Conducting integration testing of ship-representative power, Aegis BL10 combat system, and AN/SPY-6(V)1 array
  – SPY-6 array initial light off achieved April 2021
  – First Baseline 10 software delivery ongoing to support combat systems test program at HII
• DDG 125 is the first Flight III ship
  – Flight III baseline consists of the integration of the AN/SPY-6(V)1 radar along with upgrades to the electrical power and cooling capacity plus additional associated changes

• Construction on Track
  – Ship currently 71% complete

• Production Milestones
  ✓ Start Fab: 07 May 2018
  ✓ Lay Keel: 07 Oct 2019
  ✓ Float Off: 04 Jun 2021
  ✓ 4160VAC Light off: 06 Nov 2021
  ✓ SPY-6 Light off: 15 Dec 2021
  ✓ AEGIS Light Off: 17 Dec 2021
    – GLO/MELO: Feb – May 2022
    – Trials: Sep 2022 – Jan 2023
    – Delivery: Apr 2023
• DDG 51 continues to provide backbone of surface fleet
• Both shipyards building and delivering ships, including 8 since program restart with 19 more on contract
• Flight III will provide advanced capability and crucial capacity to pace the threat

Delivering capability to the fleet for current and future missions