Supervisors of Shipbuilding

**SUPSHIP Bath**
- DDG51 (Arleigh Burke Class)
- DDG1000 (Zumwalt Class)
- LCS1 (Freedom Class)
- T-AO205 (John Lewis Class)
- T-ESB (Expeditionary Sea Base)

**SUPSHIP Gulf Coast**
- DDG51 (Arleigh Burke Class)
- LHA6 (America Class)
- LPD17 (San Antonio Class)
- LPD17 Flight II (LX[R])
- LCAC (Landing Craft)
- Small Boats (LCU, 40PB)
- T-ATS (Tug & Salvage Fleet)
- UISS (Unm Influence Sweep Sys)
- LCS2 (Independence Class)
- T-EPF (Spearhead Class)

**SUPSHIP Newport News**
- CVN78 (Ford Class)
- Carrier Repair / Inactivation
- Carrier Refueling (RCOH)
- SSN-VA (Virginia Class)
- SSBN-CLB (Columbia Class)
- Submarine Repair
- MTS Inactivation

**Coming soon:**
- FF, T-AS(X), T-AGOS(X), T-ARC

**7 Major Shipbuilders & Smaller yards**
- 60,000 employees
- $228+ B Contract Value
- ~$14B Annual Shipbuilder Progress Payments

**NAVSEA 04Z**
- 1 CAPT (Vacant)
- 10 Civilians

**1243 Direct CivPers**
- 310 Reimb CivPers
- + 118 Military
- 1671 Total

(Ren 30 Sep 18)
Enabling the Drive to 355 Ships!

Have Fun
Stay Safe

Ready in 2020

Leading desired behaviors:
- Choose to be in a good mood
- EAA/MWR Activities
- Command picnic
- Command Holiday party
- Special emphasis programs

LEADERSHIP CHALLENGE: Create Direction, Alignment and Commitment
Six Frigates: The Epic History of the Founding of the U.S. Navy

- Revolutionary War
- War of 1812
- Barbary Pirates
- Ship Construction
  - Pots of Money (TOC)
- How do we achieve a Culture of Affordability in Shipbuilding?
  - If you don’t like change……
Digital Transformation Video

integrated Digital Shipbuilding (iDS)
Digital Transformation: Digital Portfolio

- Model-based Manufacturing
- Visual Build Management
- Laser Scanning / Reality Capture
- Augmented Reality
- Shipyard Work Integrated Management System (SWIMS)
- Mobile Shipbuilder
- Visual Work Instructions

Full 3D Product Model and PLM

Visual Planning
Digital Transformation: Digital Products

Visual Build Management (VBM) - **DEMO**

- For construction supervisors
- Powerful visual tool for sequencing, coordinating, and managing assembly work
- Marries visualization, best practice sequencing, critical-chain project management, and eventually advanced analytics

  **How it helps**
  - Defines optimal sequence for complex major assemblies
  - Reduces waiting
  - Reduces rework (one trade undoing another’s work)
  - Mitigates affects of inherent variability in our business (e.g., weather effects, etc)

3D Interactive Visual Work Instructions (VWIs) - **DEMO**

- Craftsmen-focused
- Digital, 3D interactive replacement for drawings
- Detailed, step-by-step instructions for production
- Delivered on a mobile device

  **How it helps**
  - Less off-the-job time (e.g., getting drawings)
  - Higher first time quality
  - Faster time-to-talent: Complex work now assigned to junior mechanics
  - Fewer turnbacks to Engineering
  - Higher shipbuilder engagement; Less frustration
Visual Work Instructions

Construction Drawings → Work Package → Product Model → Visual Work Instruction
Digital Transformation: Major Work Streams

New Programs

- FORD-Class Carriers: CVN 80/81
  - Fully annotated 3D Product Model
  - Visual Work Instructions (VWI) replace drawings
  - Visual Build Management (VBM) for all complex work
  - Fully saturated mobile workforce
  - Fully-deployed MES via SAP
  - Augmented Reality apps in high-value areas

Ongoing New Construction

- FORD-Class Carriers: CVN 79
  - Partially annotated 3D Product Model
  - Increasing use of 3D and 2D digital VWIs
  - VBM in high-value applications
  - Largely mobile workforce
  - Fully-deployed MES
  - Augmented Reality apps in high-value areas

In-Service Ships

- Nimitz-Class Carrier Overhaul
  - Limited 3D Product Models
  - Increasing use of Laser Scanning to digitize ship geometry
  - 3D and 2D digital VWIs in pockets
  - Partially mobile workforce
  - Fully-deployed MES
  - Augmented Reality apps in high-value areas

- COLUMBIA Class Ballistic Missile Subs

- VIRGINIA Class Attack Subs

- Submarine Fleet Support
Submarine Modular Construction
Countdown to Zero Day: Stuxnet and the Launch of the World’s First Digital Weapon
Closing Thoughts

• Culture of Affordability in Shipbuilding doesn’t mean overall savings for the Navy
  – Must figure out how to Maintain them (Integrate Public and Private Shipyards)