Surface Shipbuilding: A Look Ahead

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Program Executive Officer, Ships
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**PEO Ships Acquisition Programs**

Six PMSs
9 ACAT I
2 ACAT II
3 ACAT III
1 ACAT IV-T
29 NON-ACAT
FMS

DDG 1000
CAPT Jim Downey

LPD 17
CAPT Darren Plath

Active Appropriations Managed in FY13
$35.6B in FY13

PMS 500
$4.6B

PMS 317
$4.8B

PMS 400D
$11.7B

PMS 325
$5.4B

PMS 385
$2.4B

PMS 377
$6.7B

Support Ships / Boats & Craft

T-AKE / T-AO(X) / T-AGM
Frank McCarthey

DDG 51
CAPT Mark Vandroff

DDG 51
CAPT Mark Vandroff

LPD 17
CAPT Darren Plath

LHA(R) / AADS / SSC / LCU
SC(X)R
CAPT Chris Mercer

JHSV
CAPT Henry Stevens

MLP

AFSB

JHSV
CAPT Henry Stevens

MLP

AFSB

JHSV
CAPT Henry Stevens

MLP

AFSB

JHSV
CAPT Henry Stevens

MLP

AFSB

JHSV
CAPT Henry Stevens

MLP

AFSB

JHSV
CAPT Henry Stevens

MLP

AFSB
Affordability

- Focus on cost and execution performance and production
- Mature design plans before start of construction
- Focus on long-term contracts (Multi-Year Procurement, Block Buy)
- Fixed-price type contracts
- Active Navy management of material (Government/Contractor Furnished Equipment)
- Fee aligned with risk
  - Flexible, open designs enabled by defined interfaces and modularity

Wholeness

- New ships and shipboard systems must arrive at the Fleet materially ready to operate
  - Includes ILS (Technical documents, PMS, and Outfitting)
  - Training
- Quality
“To accomplish something new is not only objectively more difficult than to do something known and tried many times, but one would not feel like doing it even if there were no objective difficulties.”

--Joseph A. Schumpeter

“It must be remembered that there is nothing more difficult to plan, more uncertain of success, nor more dangerous to manage than the creation of a new order of things. For the initiator has the enmity of all who would profit by the preservation of the old institutions, and merely lukewarm defenders in those who would gain by the new ones.”

--Niccolo Machiavelli
DDG 51 Class Shipbuilding Profile

Program Executive Office, Ships

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Surface Combatant
Stable vs. Dynamic Design Elements

STABLE
- Propulsion
- Hull
- Messing & Berthing
- Vulnerability / Damage Control
- Distributed Systems

DYNAMIC
- Aircraft
- Sensors, Antennas & Arrays
- Weapons
- Unmanned Vehicles
- Combat Systems & C4ISR

Note 1: Possible provision for parallel mid-body for future flights
Note 2: Distributed Systems must be capable of supporting dynamic systems (service life allowance / space & weight)
## Combat System Development vs. Ship Design and Construction

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Combat Systems</th>
<th>Ship Design &amp; Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timeline</td>
<td>Short</td>
<td>Long</td>
</tr>
<tr>
<td>Expertise required</td>
<td>Electronics, software</td>
<td>HM&amp;E, Hardware</td>
</tr>
<tr>
<td>Configuration</td>
<td>Volatile</td>
<td>Stable</td>
</tr>
<tr>
<td>Effect on Design Ship Service Life</td>
<td>Little influence</td>
<td>Strong driver</td>
</tr>
<tr>
<td>Effect on Actual Ship Service Life</td>
<td>Strong driver – can’t cost effectively update</td>
<td>Moderate driver – Ships decommissioned early</td>
</tr>
</tbody>
</table>

### Affordability continues to become increasingly important

**Modular adaptable ship technologies enable ships to affordably remain operationally relevant over their service life**
# PEO Ships Workload

<table>
<thead>
<tr>
<th>Ships Under Construction</th>
<th>Add’l Ships Under Contract</th>
<th>Pending Award (FY14)</th>
<th>To Deliver (FY14)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 DDG 51 class (DDG 113, 114, 115, 116)</td>
<td>9 ships (FY13-17 MYP)</td>
<td>1 FY13 option 1 FY14 ship</td>
<td>----</td>
</tr>
<tr>
<td>3 DDG 1000 class (DDG 1000, 1001, 1002)</td>
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<tr>
<td>2 LPD 17 class (LPD 26, 27)</td>
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</tr>
<tr>
<td>1 LHA (LHA 6)</td>
<td>1 LHA (LHA 7)</td>
<td>---</td>
<td>1 LHA (LHA 6)</td>
</tr>
<tr>
<td>3 JHSV (JHSV 3-5)</td>
<td>5 JHSV (JHSV 6-10)</td>
<td>---</td>
<td>2 JHSV (JHSV 3-4)</td>
</tr>
<tr>
<td>1 T-AGS (T-AGS 66)</td>
<td></td>
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<tr>
<td>1 MLP (MLP 2)</td>
<td>1 MLP (MLP 3)</td>
<td>1 AFSB (MLP 4)</td>
<td>1 MLP (MLP 2)</td>
</tr>
<tr>
<td>2 AGOR (AGOR 27, 28)</td>
<td></td>
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<tr>
<td>9 SSC (SSC 1-9)</td>
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</tbody>
</table>

| Total | 17 | 25 | 3 | 4 |
“The winds and the waves are always on the side of the ablest navigators.”

Edward Gibbon, (1737-1794)