The Ship Acquisition Process: Status and Opportunities

NDIA Expeditionary Warfare Conference
24 October 07

RDML Chuck Goddard
Program Executive Officer, Ships
Tomorrow’s Navy in design and construction

<table>
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<tr>
<th>Concept Refinement</th>
<th>Technology Development</th>
<th>System Development &amp; Demonstration</th>
<th>Production &amp; Deployment</th>
<th>Operations &amp; Support</th>
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<tr>
<td>JHSS</td>
<td>MPF(F)</td>
<td>LCS</td>
<td>LPD 17</td>
<td>Small Boats</td>
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<td>JMAC</td>
<td></td>
<td>DDG 1000</td>
<td>T-AKE</td>
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<td>CG(X)</td>
<td>JHSV</td>
<td>LHA 6</td>
<td>LHD 8</td>
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<td>JCC(X)</td>
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<td>LCAC SLEP</td>
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Program Executive Office, Ships
ZUMWALT (DDG 1000) Class Today

- Designated DDG 1000 ZUMWALT Class Apr 06
- Detail design contracts awarded in Aug 06 to NGSS and BIW
- Construction contracts to be awarded 2008 to NGSS and BIW
- Mission System Equipment contacts awarded to Raytheon (Jan 07) and BAE (Jun 07)
- Navy is planning to re-sequence first ship set of Mission Systems Equipment to BIW
FREEDOM (LCS 1) Class Today

• Navy Program Review
  – Both design approaches satisfy validated need
  – For a 55-ship class, the critical issue is cost of production
  – Need to converge to one configuration to maximize efficiencies in production and minimize operation and maintenance costs

• Way Ahead
  – Deliver LCS 1 and 2
  – Contain cost growth the budget
  – Keep the momentum
    ▪ Continue Flight 0 in FY 08 and 09
  – Build to the future – Flight 1
ARLEIGH BURKE (DDG 51) Class Today

Acquisition Strategies
- Competition For Work: 26
- Negotiated Allocation: 6
- Competition for Profit (PRO): 6
- Multi-Year (PRO): 24

Program Executive Office, Ships

All DDG 51 Class Ships Have Been Awarded
SAN ANTONIO (LPD 17) Class Today

• USS SAN ANTONIO (LPD 17)
  – Delivered Jul 06
  – Commissioned Jan 06

• NEW ORLEANS (LPD 18)
  – Delivered Dec 06
  – Commissioned Mar 07

• MESA VERDE (LPD 19)
  – Delivered Sept 07
  – Commissioning scheduled for Dec 07 in Panama City

• GREEN BAY (LPD 20)
  – 84% complete
  – Delivery in 2008

• NEW YORK (LPD 21)
  – 61% complete
  – Launch in late 2007

• SAN DIEGO (LPD 22) – Keel laid May 07

• ANCHORAGE (LPD 23) – Keel laid Sept 07

• ARLINGTON (LPD 24) – Started fab. Aug 07

• SOMERSET (LPD 25) – Start fab. 08
LHD 8 / LHA 6 Today

- LHD 8 under construction
  - Delivers Nov 08
- LHA 6 $2.4B construction contract awarded 1 Jun 07
LEWIS AND CLARK (T-AKE 1) Class Today

- T-AKE 1 USNS LEWIS AND CLARK
  - Delivered 20 Jun 06
  - Very successful OPEVAL
- T-AKE 2 USNS SACAGAWEA
  - Delivered 27 Feb 07
- T-AKE 3 USNS ALAN SHEPARD
  - Delivered Jul 07
- T-AKE 4 USNS RICHARD E. BYRD
  - Delivers Nov 07
- T-AKE 5 USNS ROBERT E. PEARY
  - Ship is 41% complete
  - Delivers Jun 08
- T-AKE 6 USNS AMELIA EARHART
  - Delivers Nov 08
- T-AKE 7
  - Keel laying 7 Nov
- T-AKE 8-10
  - Material ordered
Maritime Prepositioning Force (Future) MPF(F)

• Program Capability
  – To provide Combatant/Joint Force Commanders a highly flexible operational and logistics support capability
  – Meet widely varied expeditionary missions ranging from delivering combat ready personnel ashore in support of an Expeditionary Strike Force (ESF)
  – Conduct independent operations in a permissive environment for Humanitarian Assistance, Global War on Terrorism (GWOT) or other smaller scale contingency ops.

• Way Ahead
  – Issue RFP to accomplish Phase One preliminary design in FY 08
Joint High Speed Vessel (JHSV) Today

• Program Capability
  – High speed lift ship capable of transporting cargo and personnel across intratheater distances
  – Can transport combat ready personnel and equipment
  – Can offload in austere ports without reliance on infrastructure

• Way Ahead
  – Award Phase One preliminary design contracts in early FY 08, and detail design and construction contract in late FY 08
The question is not who is right or wrong…

…the question is how will the Navy and industry change historical cost behavior.

The CNO and CBO plans both state the need to control costs.
Vision – Fewer Ship Types and Models

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Types</th>
<th>Number of Models</th>
<th>Alternative Fleet</th>
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<tbody>
<tr>
<td>2007</td>
<td>21</td>
<td>29</td>
<td></td>
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<tr>
<td>2020</td>
<td>19</td>
<td>27</td>
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<td></td>
<td>6</td>
<td>9</td>
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*Note: Types excludes support and MPF(F)*

Potential to neck down to 9 ship models
Potential Amphibious Strategy

Today’s Fleet

- LHA 1
- LHD
- LSD 41
- LSD 49
- LPD 4
- LPD 17

Next Fleet

- LHD 8
- LHA 6
- LPD 17

Future Fleet

- L (X)

We can reduce to one ship type
Potential Surface Combatant Strategy

**Today’s Fleet**
- FFG 7
- CG-47
- DDG-51
- DDG-72
- DDG-79

**Next Fleet**
- DDG-72
- DDG-79
- LCS-A
- LCS-B
- DDG-1000

**Future Fleet**
- LCS
- DDG-1000
- CG(X)

We can maximize reuse
Unique HM&E Varieties in the Fleet

- Masts & Kingposts - 47
- Diesel Engine - 187
- Gas Turbine Engine - 30
- Reduction Gear - 641
- Clutches & Couplings – 1,113
- Shaftings - 141
- Bearings - 383
- Propulsors - 125
- Rudder - 34
- Motors – 7,125
- Ship Service Generators - 57
- Emergency Generators - 53
- Frequency Converters - 52
- Pumps – 4,171
- Valves – 37,709
- A/C units - 123
- Distilling Plants - 82
- Air Compressors - 203

We need more commonality to reduce total cost
Material cost offers most cost reduction opportunity
Alternative Contracting Strategies

- Develop “A-Teams” for ship negotiation
- Emphasize contract clauses for cost visibility
- Separate risk-laden work packages from ship construction scope
- Adopt corporate procurement practices
- Encourage industry to operate as a joint venture
- Realign Navy to maximize leverage as one buyer

And more…

Change the Status Quo

Increasing Complexity

Achievable

Increasingly Difficult
• We can reduce the types/models of ships and warfare systems baselines resulting in much lower costs
  ➢ Program Level AoA guidance should emphasize re-use

• The majority of the shipbuilding costs over FYDP is material we procure on a program basis with each contractor
  ➢ Change our contracting strategy to a “portfolio basis”
  ➢ Reduce number of components and standardize

• Modularity offers the ability to reconfigure our ships and potential to reduce integration and modernization costs
  ➢ Focus our systems engineering on cross platform modularity
Building Tomorrow’s Fleet

• Relative stability key to OUR future
• Affordability is paramount
  – Commonality
  – Minimal Changes
  – Portfolio Management