Navy Shipbuilding Industrial Base

May 11, 2011
David J. Berteau
Senior Adviser and Director,
Defense-Industrial Initiatives
Report Documentation Page

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. REPORT DATE
MAY 2011

2. REPORT TYPE

3. DATES COVERED
00-00-2011 to 00-00-2011

4. TITLE AND SUBTITLE
Navy Shipbuilding Industrial Base

5a. CONTRACT NUMBER

5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER

5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

6. AUTHOR(S)

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Center for Strategic & International Studies, Defense-Industrial Initiatives Group, Washington, DC, 20006

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)

10. SPONSOR/MONITOR’S ACRONYM(S)

11. SPONSOR/MONITOR’S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

13. SUPPLEMENTARY NOTES
Presented at the Naval Postgraduate School’s 8th Annual Acquisition Research Symposium, 10-12 May 2011, Seaside, CA. U.S. Government or Federal Rights License

14. ABSTRACT

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:

a. REPORT
unclassified

b. ABSTRACT
unclassified

c. THIS PAGE
unclassified

17. LIMITATION OF ABSTRACT
Same as Report (SAR)

18. NUMBER OF PAGES
13

19a. NAME OF RESPONSIBLE PERSON

Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std Z39-18
Navy Shipbuilding Industrial Base

- Key questions remain unanswered
  - How many ships are needed, and what types?
  - For what missions? To which purposes?
- 313 ship Navy goal in 2010 QDR
- “Low 320s” goal in Navy testimony on FY 2012 budget
- For industrial base assessment, the required number of Navy ships required and their capabilities is imprecise and evolving
Defense Spending and Deficit Trends

Source: Congressional Budget Office; Office of Management and Budget actual and projected; analysis by CSIS Defense-Industrial Initiatives Group
Navy Shipbuilding Industrial Base

- What makes up the Navy Shipbuilding Industrial Base?
  - Ship construction yards, both large and mid-tier
  - Construction workforce at shipyards
  - Design and engineering workforce
  - Supplier base
  - Combat systems
- For today, focus first on ship construction yards
Navy Shipbuilding Industrial Base – Core Shipyards

- Electric Boat (EB)
- Bath Iron Works (BIW)
- National Steel and Shipbuilding Company (NASSCO)
- Newport News
- Ingalls Shipbuilding – Pascagoula, Pascagoula facility
- Ingalls Shipbuilding – Pascagoula, Avondale facility
- Mid-tier (LCS) yards
  - Marinette Marine (Wisconsin)
  - Austal (Alabama)
## Defense Companies on the Fortune 100 List

**1988**

<table>
<thead>
<tr>
<th>Rank</th>
<th>Company</th>
<th>Revenue ($ millions)</th>
<th>Profits ($ millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>McDonnell Douglas</td>
<td>$13,146.0</td>
<td>$313.0</td>
</tr>
<tr>
<td>30</td>
<td>Lockheed Corporation</td>
<td>11,370.0</td>
<td>421.0</td>
</tr>
<tr>
<td>39</td>
<td>General Dynamics</td>
<td>9,344.0</td>
<td>437.0</td>
</tr>
<tr>
<td>53</td>
<td>Raytheon</td>
<td>7,659.0</td>
<td>445.0</td>
</tr>
<tr>
<td>69</td>
<td>Northrop Grumman</td>
<td>6,053.0</td>
<td>4.</td>
</tr>
<tr>
<td>79</td>
<td>Martin Marietta</td>
<td>5,165.0</td>
<td>231.0</td>
</tr>
<tr>
<td>96</td>
<td>Litton Industries</td>
<td>4,420.0</td>
<td>138.0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>$57,157.0</td>
<td>$2,079.0</td>
</tr>
</tbody>
</table>

% of Fortune 100: 4.4%

# of Companies: 7

**2008**

<table>
<thead>
<tr>
<th>Rank</th>
<th>Company</th>
<th>Revenue ($ millions)</th>
<th>Profits ($ millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>57</td>
<td>Lockheed Martin</td>
<td>$41,862.0</td>
<td>$3,033.0</td>
</tr>
<tr>
<td>76</td>
<td>Northrop Grumman</td>
<td>32,032.0</td>
<td>1,790.0</td>
</tr>
<tr>
<td>87</td>
<td>General Dynamics</td>
<td>27,294.0</td>
<td>2,072.0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>$101,188.0</td>
<td>$6,895.0</td>
</tr>
</tbody>
</table>

% of Fortune 100: 1.5%

# of Companies: 3

**Source:** Fortune Magazine, “Fortune 500”; analysis by CSIS Defense-Industrial Initiatives Group
Navy Shipbuilding Industrial Base – Challenges

• Number one challenge is affordability – how can we have a shipbuilding industrial base that can produce the ships we need for the funding we are likely to get
• Parallel challenge is how to use competition to sustain the industrial base and prevent allocation of contracts without regard to cost
• Industry no longer competitive on global market
• Workforce (construction and design/engineering) hard to sustain
• Supplier base too often one-deep, with little overall knowledge industry-wide
• All of these challenges will get worse as budgets decline and defense industry becomes a smaller part of the US economy
Navy Shipbuilding Industrial Base – Threats to Affordability

- Chronic underutilization of capacity – production rates are too low to use the full capacity of the major shipyards
- Overhead costs increase faster than inflation
- Sub-optimum use of cost-engineering tradeoffs
- Stakeholder objectives not aligned
Navy Shipbuilding Industrial Base – Three Broad Categories

- Nuclear shipyards – EB and NNS
- Large Surface Combatants – BIW, Ingalls
- Large Amphibious and Auxiliary Ships – Ingalls, NASSCO
- Issues differ for each category, solutions also need to differ
Navy Shipbuilding Industrial Base – Status and Future Prospects

- Nuclear shipyards – existing programs (carriers, Virginia-class submarines) combine with ORP for sufficient demand to use base capacity
- Large Surface Combatants – projected construction rates below capacity, below historical rates, creating serious potential underutilization (with LCS complication)
- Large Amphibious and Auxiliary Ships – similar low rate problem to Large Surface Combatants
Navy Shipbuilding Industrial Base - Aligning Requirements, Resources, and Programs

• Affordability means making cost-engineering tradeoffs and incorporating the results into requirements, programs, and funding

• Three simple challenges
  • Get the fleet to agree to changes in specs and requirements
  • Get the Navy to agree to lower spending in some accounts
  • Get the companies to give up revenue
Navy Shipbuilding Industrial Base – Competition or Allocation

• Allocation Option
  • Align 5 broad categories with 5 major shipyards
• Competition Options
  • Beyond competitive dual sourcing
Navy Shipbuilding Industrial Base – Conclusions

• Uncertain requirements, future missions
• Size of fleet will vary over time
• Shipbuilding industrial base has excess capacity UNLESS affordability can be achieved AND requirements-cost tradeoffs can be incorporated
• Acquisition options: allocation or competition