Defense Modernization Plans through the 2020s: Addressing the Bow Wave

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Introduction

• Modernization Bow Wave:
  • A phrase commonly used to describe long-term modernization plans that depend on a significant increase in future funding.
  • Typically forms as the overall defense budget declines and programs are delayed or stretched into the future.

• Scope of Study:
  • Focuses on 120 major acquisition programs over the next 15 years
  • Does not include operation and sustainment costs or “black” programs

• Primary Data Sources:
  • FY2016 President’s Budget Request
  • December 2014 Selected Acquisition Reports
  • 30-year aviation and shipbuilding plans
  • NNSA Stockpile Stewardship and Management Plan
The Hollow Buildup of the 2000s

DoD Procurement and RDT&E Budget Authority (in FY2016 Dollars)

FY85  FY86  FY87  FY88  FY89  FY90  FY91  FY92  FY93  FY94  FY95  FY96  FY97  FY98  FY99  FY00  FY01  FY02  FY03  FY04  FY05  FY06  FY07  FY08  FY09  FY10  FY11  FY12  FY13  FY14  FY15

$300B

$250B

$200B

$150B

$100B

$50B

$0B

War Budget

Base Budget
# Major Programs Canceled in Development 2001-2010

<table>
<thead>
<tr>
<th>Program Name</th>
<th>Service</th>
<th>Sunk Costs (in then-year dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Future Combat Systems (FCS)</td>
<td>Army</td>
<td>$18.1B</td>
</tr>
<tr>
<td>RAH-66 Comanche Armed Reconnaissance and Attack Helicopter</td>
<td>Army</td>
<td>$7.9B</td>
</tr>
<tr>
<td>National Polar-orbiting Operational Environmental Satellite System (NPOESS)</td>
<td>Air Force / NOAA</td>
<td>$5.8B</td>
</tr>
<tr>
<td>Airborne Laser (ABL)</td>
<td>Air Force</td>
<td>$5.2B</td>
</tr>
<tr>
<td>Future Imagery Architecture (FIA) Electro-Optical Imagery Satellites</td>
<td>NRO</td>
<td>$4.8B</td>
</tr>
<tr>
<td>VH-71 Presidential Helicopter</td>
<td>Marine Corps</td>
<td>$3.7B</td>
</tr>
<tr>
<td>Expeditionary Fighting Vehicle (EFV)</td>
<td>Marine Corps</td>
<td>$3.3B</td>
</tr>
<tr>
<td>Transformational SATCOM (TSAT)</td>
<td>Air Force</td>
<td>$3.2B</td>
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<tr>
<td>XM2001 Crusader Self-Propelled Howitzer</td>
<td>Army</td>
<td>$2.2B</td>
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<tr>
<td>E-10 Multi-sensor Command and Control Aircraft (MC2A)</td>
<td>Air Force</td>
<td>$1.9B</td>
</tr>
<tr>
<td>Space Based Infrared Systems (SBIRS) – Low</td>
<td>Air Force</td>
<td>$1.5B</td>
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<tr>
<td>Space Radar</td>
<td>Air Force</td>
<td>$0.6B</td>
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<tr>
<td>Advanced SEAL Delivery System (ASDS)</td>
<td>Navy</td>
<td>$0.6B</td>
</tr>
<tr>
<td>Armed Reconnaissance Helicopter</td>
<td>Army</td>
<td>$0.5B</td>
</tr>
<tr>
<td>Aerial Common Sensor</td>
<td>Army / Navy</td>
<td>$0.4B</td>
</tr>
<tr>
<td>CG(X) Next Generation Cruiser</td>
<td>Navy</td>
<td>$0.2B</td>
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<tr>
<td>CSAR-X Combat Rescue Helicopter</td>
<td>Air Force</td>
<td>$0.2B</td>
</tr>
<tr>
<td>Next Generation Bomber</td>
<td>Air Force</td>
<td>$0.1B</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>$59B</strong></td>
</tr>
</tbody>
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Overall Major Acquisition Program Bow Wave

Projected Budget Authority (in 2016 Dollars)

PB16 FYDP

Army
DoE/Defense Agencies
Air Force
Navy/Marine Corps


$0B $10B $20B $30B $40B $50B $60B $70B $80B $90B

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6
Air Force Major Programs

Projected Budget Authority (in 2016 Dollars)

- Air and Missile Defense
- Missiles and Munitions
- Nuclear Forces
- Space and Communications
- Aircraft

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Navy / USMC Major Aircraft Programs

Projected Budget Authority (in 2016 Dollars)

- MH-60S
- IDECM
- MQ-8
- F/A-XX
- EA-18G
- MH-60R
- V-22
- H-1 Upgrades
- CH-53K
- V-92A
- KC-130J
- UCLASS
- MQ-4C
- Next-Gen Jammer

Years: 2015 to 2030
Risks and Alternatives
Funding Constraints of the BCA

- Actual
- PB12
- PB13
- PB14
- PB15
- PB16
- BBA 2013 Budget Deal
- BBA 2015 Budget Deal
- Post-Super Committee BCA Caps
- ATRA 2012 Budget Deal

Total National Defense Base Discretionary Budget (in FY16 dollars)
Potential for Cost Overruns

• Funding projections do not include potential cost overruns
• Prior studies have identified trends in cost overruns
  • Average growth of 57% in development and 34% in procurement (RAND 2008)
  • Average total growth of 46% (RAND 2006)
  • Correlation between magnitude of cost growth and programs initiated in a declining budget environment (IDA 2014)
• Errors in initial estimates are the single largest driver of cost growth
• Overruns are a significant risk for programs still in early development (e.g. LRS-B, JLTV, Ohio Replacement, etc.)
Industrial Base and Oversight Capacity

- RDT&E and Procurement Budget Authority (in FY2016 dollars)
- Total Acquisition Workforce

Graph showing trends from FY1 to FY15.

- DoD Acquisition Budget
- Total Acquisition Workforce

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Alternative 1: Ask for More Money

Projected Budget Authority (in FY 2016 dollars)

- Extra Needed for Bow Wave
- PB16 Plan
- Current BCA Budget Caps

FY15 FY16 FY17 FY18 FY19 FY20 FY21 FY22
Alternative 2: Cut Other Defense Programs

Annual Savings from Force Structure Cuts

- Army BCT (A/C): $1.7–1.8B
- Carrier Strike Group + Air Wing: $2.8–3.0B
- Air Force Fighter Wing (A/C): $1.8–2.6B
- Marine Infantry Regiment (A/C): $0.3B
Alternative 3: Rebalance Among Major Programs

Projected Budget Authority for FY 2016 to FY 2030 (in 2016 Dollars)

- **F-35**
- **BMDS**
- **Ohio Replacement**
- **Virginia-Class SSN**
- **LRS-B**
- **DDG 51**
- **KC-46A**
- **EELV**
- **Ford-Class Carrier**
- **GBSD**

Legend:
- **FY16-20**
- **FY21-26**
- **FY26-30**
Some of the Changes Already Announced

• Air Force:
  • Procurement of 75 additional MQ-9 Reapers
  • Slip in LRS-B funding due to contract award delay

• Navy:
  • Reduction of 12 LCS ships
  • Maintaining production of DDG-51s at two per year
  • Accelerating Virginia Payload Module
  • Increasing F-35B/C buy over FYDP
Questions?