FY13 Munitions Delivered

- Mortar
  - 60mm – 226,381
  - 81mm – 438,042
  - 120mm – 62,967

- Artillery
  - Artillery Projectiles – 221,772
  - Artillery Fuzes – 111,905
  - Energetics
    - 60/81/120mm Mortar Ignition Cartridges – 520,564
    - 60/81/120mm Mortar Propelling Charges – 1,776,325
    - 155mm MACS M232A1 – 322,795
  - XM982 Excalibur – 845
  - XM395 APMI – 1,356
  - XM1156 PGK – 1,842

Approx $650 Million Ammo Delivered
FY14 Munitions Planned Deliveries

- **Artillery Rounds**
  - 75mm – 0
  - 105mm – 81,464
  - 155mm – 162,623
  - Fuzes – 210,000

- **Mortar Rounds**
  - 60mm – 401,934
  - 81mm – 789,626
  - 120mm – 110,062

- **Precision**
  - XM982 Excalibur – 2357 1a-2 rds, 1428 lb rds
  - PGK – 1953

- **Energetics**
  - Ignition Cartridges-750,008 (60, 81,120mm Mortar)
  - Mortar Propelling Charges – 1,814,562 (60, 81,120mm Mortar)
  - MACS M232A1– 706,650

Approx $793 Million Ammo to be Delivered
XM1156 Precision Guidance Kit (PGK)

Requirement:

Key Performance Parameters

Net Ready:
- Incorporated into Digital Fire Support Systems: AFATDS; M109A6 (Paladin); M777A2 (LW155); EPIAFS; GPS

Reliability by IOC:
- 0.92 (T); 0.97 (O)

Accuracy:
- ≤50m CEP (T); ≤30m CEP (O)

Attributes

Munition / Platform Types:
- 155mm High Explosive Projectiles: M795, M549A1
- M109A6 (Paladin), M777A2 (LW155)

Baseline Program Schedule:

<table>
<thead>
<tr>
<th>Task</th>
<th>FY 2012</th>
<th>FY 2013</th>
<th>FY 2014</th>
<th>FY 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>PGK EMD Design Verification Phase</td>
<td></td>
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<tr>
<td>Govt Qualification Part 1</td>
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<tr>
<td>Govt Qualification Part 2</td>
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<tr>
<td>Milestone C (Mar 2013)</td>
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<tr>
<td>Production/Deployment</td>
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<tr>
<td>Full Materiel Release</td>
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<tr>
<td>(4Q 2014)</td>
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<tr>
<td>Initial Operational Cap.</td>
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<tr>
<td>(1Q 2015)</td>
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</tbody>
</table>

Issues/Status:

- PGK Exceeding Accuracy KPP Threshold of 50 meter CEP
- Program is on track to meet 92% Reliability KPP by IOC
- Fielded to Operation Enduring Freedom (OEF) via Urgent Material Release (UMR) (Mar 2013): being used in combat
- Production of Full Material Release (FMR) version underway following Milestone C (Mar 2103)
  - First Article Testing underway
  - Initial Operational Test & Evaluation Jan-Feb 2014
  - Full Material Release: 4QFY14
  - Initial Operational Capability: 1QFY15
## FY14 Planned Acquisitions

<table>
<thead>
<tr>
<th>Product</th>
<th>Projected Award Date</th>
<th>Dollar Amount</th>
<th>Contract Type</th>
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</thead>
<tbody>
<tr>
<td>MACS Combustible Cases</td>
<td>1QFY14</td>
<td>$32.9</td>
<td>SS</td>
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<tr>
<td>M739 Fuze</td>
<td>1QFY14</td>
<td>$83M</td>
<td>NTIB</td>
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<tr>
<td>M1 HE Metal Parts</td>
<td>2QFY14</td>
<td>$9M</td>
<td>SS</td>
</tr>
<tr>
<td>PGU-43B, PGU-44B, PGU-45B LAP</td>
<td>3QFY14</td>
<td>$37M</td>
<td>NTIB</td>
</tr>
<tr>
<td>M819 Gas Absorbent Modules (GAMS)</td>
<td>3QFY14</td>
<td>$5.9M</td>
<td>SBSA</td>
</tr>
<tr>
<td>120mm M931 (FRPC), M933A1 and M934A1 High Explosive (HE) Mortar Cartridge LAP</td>
<td>3QFY14</td>
<td>$85M</td>
<td>NTIB</td>
</tr>
<tr>
<td>Mortar Weapon Systems: 60mm, 81mm, and 120mm, both lightweight and Legacy Systems and the M326 120mm Mortar Stowage Kit (MSK).</td>
<td>3QFY14</td>
<td>$297M</td>
<td>NTIB</td>
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<tr>
<td>M762A1 Safe &amp; Arm (S&amp;A) Assemblies</td>
<td>3QFY14</td>
<td>$7.6M</td>
<td>NTIB</td>
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<tr>
<td>120mm Mortar Fuze Adapter</td>
<td>3QFY14</td>
<td>$14M</td>
<td>8a</td>
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<tr>
<td>M734A1 Multi Option Fuze &amp; M783 PD/DLY Fuze</td>
<td>4QFY14</td>
<td>$156.5M</td>
<td>NTIB</td>
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<tr>
<td>M795 Artillery Projectile Bodies</td>
<td>4QFY14</td>
<td>$17.2M</td>
<td>NTIB</td>
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<tr>
<td>Mortar Fire Control Systems</td>
<td>4QFY14</td>
<td>$22M</td>
<td>F&amp;O</td>
</tr>
</tbody>
</table>
Conventional Funding – Over Time

Program Dollars ($M)

FY 06-13 AVG = $704M

FY 14-19 AVG = $360M

48.9% Decrease

Funding Profile Based on FY15 POM/BES

Conventional Funding does not include Excalibur and Precision Guidance Kit
### Industrial Base Challenges

**Challenges**

- **Declining Budget vs. Industrial Base Sustainment**
  - Fuze
  - Propellant/Energetics/Melt-pour
  - Metal Parts Forging
  - Illum Candle/Smoke Mfg

- **Counterfeit Parts**
  - GPS receiver Module
  - SRAM

- **International Competition**
  - Fewer World Market Opportunities
  - Increasing CONUS Involvement by Foreign Based Companies

**Activities**

- Continue to Support PEO IB Strategic Plan and “Watch List”
  - Renewed emphasis on Make or Buy process
- Restated Industrial Base Concern to G-8
- Assessing Future Acquisitions to Minimize impact
- Tightened Contract/Language to Verify Component OEM Authenticity
- Increased FMS Focus
- Leveraging Stockpile Surplus Where Possible
- Supporting CRADA Approach to Address DCS Opportunities
1. Enhanced / Scalable / Affordable Lethality / Cannon Cluster Replacement Munition for More Efficient Target Engagements
2. Insensitive Munitions and Advanced Propellants
3. Multi-Spectral, Non-Toxic, Non-Incendiary, Persistent Screening Smoke
4. Extended Range Capabilities (HE, Illum, Smoke) for 120mm and 155mm munitions
5. Improved 6-DOF NABK Ballistics
6. Network Assisted GPS for Precision Indirect Fires in Degraded GPS Signal Environments [Funded via AFATDS FY13-15 RDTE MDEP]
7. Common Affordable Precision Munitions Components and Systems (including MEMS-based Precision IMU, GPS AJ/AS, VAPP, and 20 yr Pre-Launch Power Source)
8. Advanced Next Generation Fuzing (including Multi-spectral Height of Burst (HOB) Fuze Replacement with Anti-Tamper/Anti-Reverse Engineering (i.e. NGPS with built-in DEF))
9. Migration to Next Generation M-Code Military GPS User Equipment (MGUE)
10. Training Aids and Improvements

Continue to Coordinate with ARDEC & ARL WMRD Senior Leadership to Leverage Techbase Funding