NDIA Joint Armaments Conference
PM Panel

COL Paul Hill
Project Manager

May 2012

Equipping US and Allied Warfighters with World Class Direct Fire Combat and Training Ammunition Through Strategic Life Cycle Management
Project Manager Maneuver Ammunition Systems

Product Manager
COL Paul Hill

Deputy Project Manager
Mr. William Sanville

Product Manager
Small Caliber
LTC Philip Clark

Product Director
Medium Caliber
Mr. Chris Seacord

Business Management
Mr. Bob Kowalski

Systems Engineering & Technology Integration
Mr. Tom Coradeschi

Product Manager
Large Caliber
LTC Brian Gruchacz

Product Director
NSA
LTC Chris Lehner

DISTRIBUTION STATEMENT A:
Approved for Public Release; distribution unlimited.
Support to Warfighter

- New Rounds Fielded in FY11
  - 5.56mm Enhanced Performance Round (EPR)
    - Performance Improvement - Army Top 10 - Packard Award

- New Rounds/Technologies in FY12/13
  - 5.56mm EPR Tracer
  - 5.56mm M1037 SRTA
  - 7.62mm M80A1 “EPR”
    - Performance improvement
  - 30mm M789 Improved Propellant
    - Safety/Performance improvement
  - 105mm M724A2 TPFSDS-T
  - 120mm Advanced Case System & Improved Propellant
    - Safety improvements

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<th>Deliveries: FY11</th>
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<td>Small Caliber</td>
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DISTRIBUTION STATEMENT A:
Approved for Public Release; distribution unlimited.
### FY13 PRES BUD (Army)

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<td>19,730</td>
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Expect Army Funding to remain relatively strong in future budgets
S&T Priorities

Small Caliber
(Enable Dismount Fight)

- Lightweight Cases / Ammo
- Day / Night Low-Observable Trace

Medium Caliber
(More Effectiveness - Increase Training Realism)

- 30/40mm Air Burst Capability
- 40mm Non-Dud Producing Technology

Large Caliber
(Maintain Overmatch)

- DU Replacement Technology
- Advanced Multi-Purpose Capability
PM-MAS Business Opportunities

**FY12/FY13 Major Competitions**

- LCAAP-$8.4B (FY13-22) Requirements/IDIQ/Facilities
- Non Standard Ammo $250M (FY12-17) BOA/IDIQ orders
- 40mm Non-Dud Producing - $49M (FY13-14) Multiple FFP Contracts w/option
- .300 WinMag - $26M (FY14-18) Requirements
- 40mm Non Recurring Engineering - $25M (FY13-18) Multiple Award IDIQs

**Other Competitions**
- PA 125 cans-$11.5M
- .38 Cal & .45 Cal - $7M

DISTRIBUTION STATEMENT A: Approved for Public Release; distribution unlimited.
## Industrial Base Challenges

<table>
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<th>Small Caliber</th>
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<td><strong>Challenges:</strong></td>
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<td>Maintain LCAAP &amp; Second Source</td>
<td>Maintaining a minimum of two Sources in cost effective manner</td>
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<td>Support EPR &amp; Leaded Production</td>
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<td>Can we keep Depleted Uranium (DU) Base?</td>
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<td>Medium Caliber</td>
<td>- RIFLE -</td>
<td>- CANNON CALIBER -</td>
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<td>- 105/120mm -</td>
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### Challenges:

**Small Caliber**
- Maintain LCAAP & Second Source
- Support EPR & Leaded Production

**Medium Caliber**
- Keeping LCAAP & Second Source
- Maintaining a minimum of two Sources in cost effective manner

**Large Caliber**
- Keeping two sources in cost effective manner
- Can we keep Depleted Uranium (DU) Base?

### Outlook:
1. Base will have to shrink
2. Looking for innovative way to keep & address 40mm Pyro and DU Base
Facts of Life

- Higher priority on Obligations
- Less funds in out years
- Return to full spectrum training
  - Greater proportion of training vs. tactical ammunition in future budgets
- Sequestration: Potential major impact but not known to what extent
NDIA Joint Armaments
Heading into the Future

LTC Philip R. Clark
Product Manager, Small Caliber Ammunition

May 2012

Distribution Statement A:
Approved for Public Release; distribution is unlimited.
Dated: 8 May 2012
Small Caliber Ammunition

5.56MM, 7.62MM, 9MM, .50 CAL
Accomplishments

- M855A1 SCAMP transition to production
- M856A1 Trace release/production
- Completed UMR of Mk248 Mod 0 cartridge
- M2AP Parts Kits
- M82A1 Bottlenose Blank Contract Award and Initial Delivery
- Second Source Small Cal Ammo Contract
# Small Caliber Ammunition Roadmap

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**Efforts Ongoing in Every Caliber**

*Propellant Optimization, Velocity Improvements, Temperature Sensitivity, Lightweight Cases, Wirebound Elimination*

**Funded**

**Unfunded**

**No Requirement**
Future Focus

- 7.62mm Green Ammo (M80A1 Ball & M62A1 Trace)
- .38/.45 Cal Pistol Contract
- .300 WinMag
  - Support expanded fielding of XM2010 with Mk248 Mod 0
  - Full materiel release Mk248 Mod 1 cartridge with XM2010
- Increased competition on low density items
- Lightweight cartridge case strategy – Pending release of market survey
- One-Way, non-pyrotechnic tracer
Agenda

- Medium Caliber Ammunition
- Medium Caliber Priorities
- Future Opportunities
- 40mm Non-Dud Producing (NDP) Requirements
- GCV Ammunition
  - Requirements
  - Potential Candidate Rounds
Medium Caliber Ammunition

20mm

25mm

30mm x 113

30mm x 173

40mm L60

High Velocity

Low Velocity

40mm Grenades
Medium Caliber Priorities

- Maintain Industrial Base (IB)
  - Maintain Two Sources for End Items and Key Components
  - Continue to Reduce Single Points of Failure
  - Encourage Contractor and Supplier Growth

- Develop Acquisition Strategies
  - Promote Competition while Sustaining IB Investment
  - Price Balanced with IB Concerns

- Oversee Production
  - Quality vs. Quantity
  - Meet Contract Requirements
  - Right-Size Production Lines and Workforce

- Promote Continuous Improvement
  - Improve Quality
  - Reduce Cost

- Product Improvements/New Requirements
  - Push the Design to its Maximum Potential
  - Match Warfighter Requirements to New Technology
Future Opportunities

- **Validated Requirements**
  - Low and High Velocity 40mm Non-Dud Producing Cartridges
  - LW30mm Training Practice Spotter
  - LW30mm HEDP Increased Lethality

- **Emerging Requirements**
  - Ground Combat Vehicle Program Cannon Family of Munitions

- **Warfighter Interests**
  - Air Burst (all calibers)
  - Door Breaching (40mm LV)
  - Programmable Munitions (all calibers)
  - Increased Lethality
40mm NDP Requirements

- (KPP1) Non Dud Producing / Unexploded Ordnance
- (KPP2) Weapon Compatibility
- (KPP3) Impact Signature
- (KSA1) Impact Signature Visibility
- (KSA2) Reliability
- (KSA3) Accuracy/ Dispersion
GCV Ammunition Requirements

- Solution could be 25mm up to 50mm, but most likely solution is 30 x 173mm
- Draft Capability Development Document has specific threshold requirements that can only be met with 30 x 173mm or larger armament solution
  - There is a desire for Airburst capability to defeat various dismounted infantry targets (HEI is recognized, less effective alternative)
  - There is a need for an armor-piercing (AP) round to defeat material threats
  - There is associated need for a training round for each tactical round

- Potential Candidate Rounds:
  - MK239 – NTIB
  - MK317 – NTIB
  - MK320 – Foreign
  - MK238 – NTIB
  - MK266 – NTIB
  - MK310 – NTIB
  - MK258 – Foreign
  - MK268 – Foreign
Points Of Contact

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Product Director  
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Mr. Kenneth Insco  
Deputy Product Director  
Medium Caliber Ammunition  
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(973) 724-5256
NDIA Joint Armaments

LTC Brian Gruchacz
PM Large Caliber Ammunition
15 May 2012

Distribution Statement A:
Approved for Public Release; distribution is unlimited.
Dated: 8 May 2012
Large Caliber Ammunition

120mm, 105mm Training & Tactical Ammunition

DISTRIBUTION STATEMENT A:
Approved for Public Release; distribution unlimited.
Large Caliber Focus and Outlook

- Continue Tank Training Cartridge Production
- Implement Safety Enhancements
- 5th Generation 120mm Kinetic Energy Development
- Set Conditions for Advanced Multi-Purpose Development
- Foreign Military Sales
- Maintain Inventory Readiness
Advanced Multi Purpose (AMP) Overview and Status

- 120mm Multi Purpose Munition with Three Modes of Operation (Point Detonate, Delay, & Airburst)
- Provides User with New Capabilities
  - Defeat ATGM Teams Beyond 500m
  - Breach Reinforced Concrete Walls
- Consolidates Capabilities of Four Current 120mm Munitions
  - Reduced Logistical Burden
  - Addresses Aging Stockpile Issues
  - Battlecarry Single Munition for Multiple Targets
- ADL Required to Program Mode and Range - Leverage Ongoing Abrams and M829E4 ADL Integration Efforts
- CDD Approved JUN 08
- Funding Line for FY13 EMD Program Start Was Zeroed – Future Funding and Schedule are TBD

Current Stockpiled Munitions

- M830 HEAT-MP-T
- M830A1 HEAT-MP-T
- M908 HE-OR-T
- M1028 Canister

Current Capabilities

| Bunkers |
| Dismounts < 500m |
| Light Armor |
| Obstacle Reduction |

Future Munition

- Advanced Multi-Purpose (AMP)

Added Capabilities

- Breach Reinforced Walls
- ATGM Defeat (500m to 2000m)
120mm Safety Enhancements
M14 Propellant Replacement

- Eliminate or Significantly Reduce Residual Solvents (Contributing Factor to Tank Fires)

- Three Phases
  - Phase I (Complete) – Develop Formulation, Demonstrate Feasibility, and Downselect
  - Phase II (Ongoing) – Replicate Results in Expanded Charge Establishment and Charge Verification (CE/CV) Test
  - Phase III – M1002 and M865 Qualification Testing

- ATK Contracted to Complete Phases II and III

- GD-OTS and BAE Qualification Included During Phase III

- ECP New Propellant in FY13 Training Round Contracts
120mm Safety Enhancements
Advance Case System (ACS)

**Moves Bond Joint from Forward to Rear of the Cartridge**

- Current Bond Joint Can Catch on Transition Area of 2nd Gen Loader’s Tray
- Case Damage Results
- Residual Solvent (Ether) Escapes
- Ether is Susceptible to Ignition from Static Discharge
HERO Primer

- **Background**
  - HERO (Hazards of Electromagnetic Radiation to Ordnance)
  - Current Primer Does Not Meet HERO Cartridge Requirement (MIL-STD-464A)
  - Restricts Ammo Handling Outside Container in Certain RF Conditions

- **Objective**
  - HERO Compliance, Fewer Parts, Reduced Labor, Lower Cost, Less Critical Defects
  - Meet Electrostatic Discharge (ESD) Standards
  - Compatible with Current Tank Fire Control

- **Schedule**
  - Contract Award – Pending
  - M829E4 E3 Testing – NOV 12
  - Cartridge Qualification – APR 13
  - ECP HERO Primer – JUN 13
Conclusion

- Continue Tank Training Cartridge Production
- Implement Safety Enhancements
- 5th Generation 120mm Kinetic Energy Development
- Set Conditions for Advanced Multi-Purpose Development
- Foreign Military Sales
- Maintain Inventory Readiness

Questions?