2018 NDIA Armament Systems Forum

Small Arms Systems Track
Wednesday, 9 MAY 2018

7-10 MAY 2018

COL Hector Gonzalez, Project Manager, Maneuver Ammunition Systems
US Army Program Executive Office Ammunition
Picatinny Arsenal, NJ 07806-5000
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Project Manager Maneuver Ammunition Systems (PM MAS)

- 105mm, 120mm Tank Ammunition
- 5.56mm, 7.62mm, 9mm, .50 CAL
- Lake City Army Ammunition Plant (LCAAP)

- 20mm, 25mm, 30mm, 40mm
- Foreign Small Cal, Medium Cal, RPG, Mortars, Artillery

Provides Acquisition, Program & Engineering Management Expertise in Support of:

- Developing and Acquiring all Direct Fire Ammunition for the Army (5.56mm to 120mm)
- Acquiring Direct Fire Ammunition for Air Force, Navy, Marine Corps & SOCOM in support of DoD’s Single Manager for Conventional Ammunition (SMCA)
- Acquiring Non-DoD Standard Ammunition in Support of Allied Forces
- Direct Support to Cross Functional Teams
Support to Warfighter

**FY17 Total $1.5B**

**QTY Deliveries:** FY17
- Small Caliber: 782M
- Medium Caliber: 16M
- Large Caliber: 58K
- SAWs: 110M
- **TOTAL QTY:** 908M

**FY18 Fielding**
- 20mm M940 JUONS
- 30mm Stryker Suite (4)

**PRODUCTION**
- XM1158, Advanced Armor Piercing (ADVAP)
- 7.62mm One Way Luminescence (OWL)
- 30mm Airburst
- 30mm Stryker Lethality
- 40mm High Velocity (HV) TP
- .50 CAL Reduced Range Ammunition (RRA)

**DEVELOPMENT**
- 40mm Reduced Range Ammunition (RRA)
- 30mm Reduced Range Ammunition (RRA)
- 40mm Low Velocity (LV) TP-DNT
- 40mm HEAB
- 120mm Advanced Multi-Purpose (AMP)
- 120mm M829A4
- 105mm M724A2

**SMALL CALIBER**
- XM1158, Advanced Armor Piercing (ADVAP)
- 7.62mm One Way Luminescence (OWL)
- 7.62mm Reduced Range Ammunition (RRA)
- .50 CAL Reduced Range Ammunition (RRA)

**MEDIUM CALIBER**
- 30mm Airburst
- 30mm Stryker Lethality
- 40mm I-HEDP
- 40mm Door Breach
- 40mm HEAB
- 40mm Low Velocity (LV) TP-DNT
- 40mm High Velocity (HV) TP-DNT

**LARGE CALIBER**
- 120mm Advanced Multi-Purpose (AMP)
- 120mm M829A4
- 105mm M724A2
# PB19 All Services (FY17-FY19)

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<th>FY17</th>
<th>FY18</th>
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*PROJECTED*
## Future PM MAS Competitive Opportunities

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<thead>
<tr>
<th>Program/ Item/ Description</th>
<th>Projected RFP Release</th>
<th>Projected Award Date</th>
<th>Potential Contract Value</th>
<th>Contract Strategy</th>
<th>Contract Type</th>
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<tr>
<td>Medium Caliber Family</td>
<td>MAR 18</td>
<td>AUG 18</td>
<td>$2B</td>
<td>Limited Competition</td>
<td>IDIQ</td>
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<td>40mm, HEAB</td>
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<td>Large Caliber Support</td>
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<td>OCT 18</td>
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<td>PM MAS Support</td>
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<td>Dummy, Drilled, Inert</td>
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<td>JAN 19</td>
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<td>40mm, LV Door Breach</td>
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<td>MAR 19</td>
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<td>12 Gauge Breaching</td>
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Small Caliber Ammunition
Future Capabilities

7-10 MAY 2018

LTC Drew Lunoff, Product Director, Small
Caliber Ammunition
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Small Caliber Ammunition Family

5.56mm

9mm

7.62mm

.50 Cal.

M199A1 DDI
M1037 SRTA
M862 SRTA
M200 Blank
M193 Ball
M855 Ball
M856A1 Trace
M995 AP
M855A1 EPR
M882 Ball
MK243 JHP
M917 DDI
M973 SRTA
M974 SRTA
M993 AP
M62 Trace
M62A1 Trace
M80 Ball
M80A1 EPR
M82 Blank
M82 Blank
M276 Dim Trace
M118 Ball
MK248 Mod 0
LSCA RRA

M1041
M1071
M1042

M1A1 Blank
M33 Ball
M32 Ball
M17 Trace
M20 API-T
M8 API
M8 API
M211 API
MK257 API-DT
M263 AP
M962 SLAP-T
M903 SLAP
M860 Tracer
M858 Ball
M2A1 DDI

M249

M2 Browning

M240

.22 Long Rifle
12 Gauge Buckshot
M1030 Breach
M1041
M1071
M1042

Shotshells

CCMCK
### Potential Future Technologies

<table>
<thead>
<tr>
<th>Technology</th>
<th>Description</th>
<th>Impact</th>
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<tbody>
<tr>
<td><strong>Advanced Armor Piercing (ADVAP)</strong></td>
<td>Provide overmatch capability vs. broad spectrum of hard targets</td>
<td>Increase Lethality</td>
</tr>
<tr>
<td><strong>One Way Luminescence (OWL)</strong></td>
<td>Significantly reduced signature preventing threat from tracing round back to shooter while providing Enhanced Performance Round (EPR) effects in the tracer</td>
<td>Enhance Warfighter Survivability &amp; Enhance Lethality</td>
</tr>
<tr>
<td><strong>Lightweight Small Caliber Ammunition (LSCA)</strong></td>
<td>Reduce Warfighter burden</td>
<td>Lighten Warfighter Load</td>
</tr>
<tr>
<td><strong>Reduced Range Ammo (RRA)</strong></td>
<td>Reduce maximum range while maintaining tactically relevant training range</td>
<td>Improve Warfighter Training</td>
</tr>
<tr>
<td><strong>All Purpose Tactical Cartridge (APTC)</strong></td>
<td>Improve .50 caliber capability to include overmatch capability against broad spectrum of targets; implement LSCA and OWL</td>
<td>Increase Lethality / Lighten Warfighter Load / Enhance Warfighter Survivability</td>
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<tr>
<td><strong>Next Generation Squad Automatic (NGSAR) Ammunition</strong></td>
<td>Provide leap ahead performance at squad level including improved overmatch against a broad spectrum of targets</td>
<td>Increase Lethality / Lighten Warfighter Load / Enhance Warfighter Survivability</td>
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### Timeline

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<tr>
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- **Materiel Devel. Decision (MDD)**
- **Preliminary Design Review (PDR)**
- **Milestone B (MS B)**
- **Critical Design Review (CDR)**
- **Milestone C (MS C)**
- **Fielding Decision (FD)**

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**Research & Development**

- **Plan / Facilitize for Production**
- **Production**
# Small Caliber DOTC Opportunities

<table>
<thead>
<tr>
<th>AMM-19-01</th>
<th>Next Generation Family of Ammunition projectile, components and subassemblies</th>
<th>...development and delivery of prototype Government designed projectiles, components and subassemblies for small arms weapons systems below .50 caliber. The contractor will explore alternate manufacturing methods to machine, cast, and manufacture the prototype parts … then develop new prototypes based on new methods and designs</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMM-19-02</td>
<td>Close Combat Mission Capability Kit (CCMCK) &amp; ammunition for the Next Generation Weapon Systems</td>
<td>...innovative and cost-effective... low velocity marking ammunition. The system will provide normal environmental/weapon employment cues (aiming, firing, ejection, immediate action, load, and re-load, etc.) and immediate target feedback through force-on-force, interactive live fire scenario task, and mission execution</td>
</tr>
<tr>
<td>AMM-19-03</td>
<td>Small caliber propellant</td>
<td>...propellant that could improve performance, safety, and producibility…prototype propellants shall include analysis by state-of-the-art analytical techniques including Insensitive Munitions/Final Hazards Classification, performance, characterization, functionality, and qualification testing</td>
</tr>
<tr>
<td>AMM-19-04</td>
<td>Tracer cartridges for the Next Generation Family of Ammunition</td>
<td>...innovative and cost-effective tracer cartridge for the Next Generation Squad Automatic Rifle (NGSAR) / Next Generation Carbine (NGSC)</td>
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<tr>
<td>AMM-19-05</td>
<td>Reduced Range Training Cartridges for the Next Generation Family of Ammunition</td>
<td>...innovative and cost-effective Reduced Range Training Ammunition (RRTA) for the Next Generation Squad Automatic Rifle (NGSAR) / Next Generation Squad Carbine (NGSC)… to allow soldiers to effectively train with standard service ammunition on ranges with reduced Surface Danger Zones (SDZ)</td>
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<tr>
<td>AMM-19-06</td>
<td>[Lightweight] ammunition, components, or sub-assemblies</td>
<td>...development of lightweight small caliber ammunition and components. The prototypes shall provide a minimum of 10% overall weight savings for cartridges, subassemblies and components</td>
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<tr>
<td>AMM-19-07</td>
<td>Ammunition, components, or sub-assemblies</td>
<td>...removal of lead from its small caliber cartridges configurations… the prototypes will be fully utilized through demonstrations/testing</td>
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</table>

**Enhanced White Papers Due in BIDS by 15 MAY 2018**
**Small Caliber DOTC Opportunities (cont.)**

| AMM-19-08 | Projectiles, cases, cartridges, and other cartridge components for .50 caliber and below | ...development and evaluation of prototype solutions to enhance performance, affordability, manufacturability, test requirements, consistency, and environmental effects in small caliber ammunition. Enhancements can include, but are not limited to, alternative components, subcomponents, ancillary components, energetics, test materials/equipment, and reduced product variability. Environmental effects improvements can include, but are not limited to, materials and technology to reduce cartridge effects on the environment and environmental effects on the cartridge such as: corrosion prevention, removal of lead in ammunition systems, solvent-less waterproofing, and mercury replacement. |
| AMM-19-09 | prototype projectiles, propellants, cartridge configurations, and process control methods for .50 caliber and below | ...technical solutions to enhance dispersion performance and/or consistency. Enhancements can include but are not limited to reduction in dispersion requirement for acceptance and/or reduction in lot to lot dispersion performance. |
| AMM-19-10 | prototype hardware, inspection systems, and process control methods for .50 caliber and below | ...eliminate the contamination of key nonconforming and/or erroneous components/product throughout the manufacturing process. Solutions can include but are not limited to, containers, process control, and inspection systems/methods. |
| AMM-19-11 | small caliber (.50 caliber and below) projectiles containing alternate tracer systems and/or trace system components | ...development, improvement, optimization, and/or manufacture of alternate tracer ...only be visible from behind the projectile... |
| AMM-19-12 | ammunition, components, or sub-assemblies of projectile and cartridge configurations | ...development of... Reduced Range Ammunition. This program seeks to leverage and develop Non-Developmental Items (NDI), Commercial-Off-The-Shelf (COTS) solutions, and new technology concepts and prototypes that maintain or improve effective range, accuracy, reduce weight, reduce cost, improve health effects for Soldiers, and/or reduce the maximum range (Surface Danger Zone) |
| AMM-19-13 | cartridges cases, and assemblies related to Small Caliber Ammunition and Weapons | ...development of alternative cartridge case configurations that enhance performance, increase lethality, reduce weight, reduce cost, or improve health effects for soldiers. The technologies shall be applicable to traditional shouldered cases or nontraditional designs such as Cased Telescoped (CT), caseless, sub-caliber or others. Prototypes may be intended as drop in solutions for current weapons or be in support of next generation weapon systems. |
Medium Caliber Ammunition
Future Capabilities

7-10 MAY 2018

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US Army Program Executive Office Ammunition
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973.724.2090
Medium Caliber Ammunition

- 20mm
- 25mm
- 30mm x 113
- 30mm x 173
- 40mm L60

- MK244, M940, PGU27, PGU28, PGU30, M791, M792, M793, M910, PGU23, PGU26, PGU32, M919, M788, M789, MK238, MK239, MK258, MK266, MK310, MK317, PGU14, PGU15, PGU13B1, PGU-9

- Super Cobra
- AH-1
- F-18 Hornet
- F-16 Fighting Falcon
- F-15 Eagle
- AC-130
- AC-130
- F-35
- Stryker
- Bradley
- LAV
- Apache
- LPD-17
- A-10
- Blackhawk
- M320
- 40mm High Velocity
- 40mm Low Velocity

- MK19
- M918E1, M430A1, M918, M385A1
- M781E1, M433, M781, M992, M662, M661, M585, M583A1, M326

DISTRIBUTION STATEMENT A: Approved for Public Release; Distribution is Unlimited
## Medium Caliber Development Program Overview

### Program Timeline

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<td>30x173mm Stryker Lethality (FMR)</td>
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<td>DOTC Award 2</td>
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# Medium Caliber DOTC Opportunities

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<th>Description</th>
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<td>AMM-18-14</td>
<td>Integrated multi-mode selectable fuze and setter for M789 cartridge and M230 weapon system</td>
<td>Selectable proximity airburst munition for the Apache</td>
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<td>AMM-18-16</td>
<td>Next Generation technologies for medium caliber cannon ammunitions</td>
<td>Archer and ARAPS</td>
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<td>AMM-18-17</td>
<td>30x113mm cannon caliber ammunition</td>
<td>Linked Ammo for JLTV</td>
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<td>AMM-18-26</td>
<td>Next generation 40mm grenade cartridge ammunition</td>
<td>40mm C-UAS and SRAP</td>
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<td>AMM-19-05</td>
<td>40mm High Velocity XM1176 High Explosive Dual Purpose Airburst (HEDP AB)</td>
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<td>AMM-19-06</td>
<td>40mm Low Velocity XM1167 Door Breaching</td>
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<td>AMM-19-08</td>
<td>Multi-Mode Selectable Proximity Airburst 30x113mm</td>
<td>LW30</td>
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<tr>
<td>AMM-19-09</td>
<td>30x173mm Programmable Airburst</td>
<td>Stryker Platform w/ 30mm cannon</td>
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Questions?