

PEO Ammunition Overview



July 2004

COL Nate Sledge
Project Manager, Combat Ammunition Systems



Single Manager for Conventional Ammunition (SMCA)



- **SMCA Mission:** Manage DoD conventional ammunition, and personnel and training functions



SMCA Total:
\$1.3B for FY04,
166 items
All Services



- **Objectives:** Achieve the highest possible degree of efficiency and effectiveness in the DoD operations required to acquire top quality conventional ammunition for U.S. Forces





Primary Objectives

- **Unify & Integrate Ammunition Management Under One Single Chain of Command...by Consolidating Responsibility and Resource Management in the PEO**
- **Develop a Unified Munitions Acquisition Strategy**
 - ✓ Integrate Requirements...Training, War Reserve, & Modernization
 - ✓ Include SMCA Mission
 - ✓ By Munition Family
- **Develop an Industrial Base Strategy (Organic and Commercial)**
- **Identify and Optimize Key Business Processes**

**Authority and Accountability...
For Meeting Full Military Requirement For all Ammo Families**



PEO Ammo Organization



PEO Ammunition
 BG Paul Izzo PEO
 Mr. Kevin Fahey DPEO



Industrial Base
 Mr. Matt Zimmerman
 APEO Industrial Base

**Washington, D.C.
 Liaison Team**



Close Combat Systems
 Mr. Jim Sutton PM



Combat Ammo Systems - Indirect Fire
 COL Nate Sledge PM



Maneuver Ammo System - Direct Fire
 Mr. Bill Sanville PM



Joint Services
 COL Jeff Gwilliam PM

Networked Munitions/
 Munitions /
 Countermine

Demolitions /
 Non-Lethal

Mortars

Excalibur

Large Caliber

Medium &
 Small Caliber

DEMIL



Close Combat Systems Mission



Equip Soldiers with Close Combat Systems for:

Assured Mobility

Intelligent Munitions System
 Anti-Personnel Landmine
 Alternative (APLA)
 Countermine
 Demolitions

Force Protection

APLA
 Countermine
 Non-Lethal
 Pyro/Flares
 EOD Equipment

Close Battle

Hard Target Defeat
 Demolitions
 Hand Grenades
 Non-Lethal
 Pyro/Flares



SBCT Volcano

15 Prime Contractors

- 30 Contracts

GOCOs
 JMC

R&D Establishments

- TARDEC
- ARDEC
- ARL
- CERDEC

Combat Developers

- USAES
- USAMPS
- USAFAS
- USASOC
- USAIS
- USMC



Bunker Defeat Munition



AN/PSS-14
 Mine Detecting Set (HSTAMIDS)



M67 Hand Grenade



Selectable Lightweight
 Attack Munition



Non-Lethal Capability Set



PM Joint Services Mission



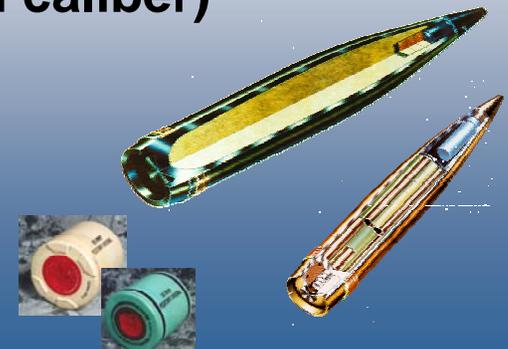
- **Execute Single Manager for Conventional Ammunition (SMCA) acquisition functions**

- ✓ **Manage the execution of other services' acquisitions not currently managed by other PEO Ammo PMs**



(e.g. bombs, pyrotechnics, propellant and explosives)

- ✓ **Coordinate management of other services' acquisitions managed by other PEO Ammo PMs (e.g. artillery, cannon, small and medium caliber)**
- ✓ **Oversight of PM Demil**



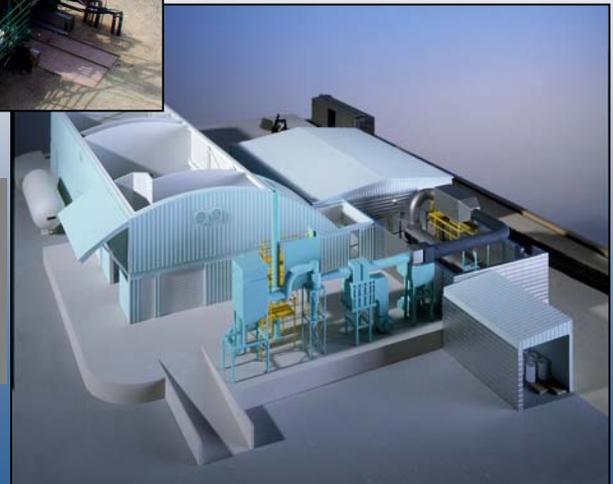


Demilitarization

Demil Mission: Perform life cycle management of demilitarization, disposal, and resource recovery and recycling (R3) of conventional munitions for all services, and DoD and US Gov't Agencies



**Demil Total FY03:
\$ 70M per year
For R&D and
Production**





Industrial Base Transformation



Sizing Up the Problem ...

- **Munitions Production Base Capacity**
 - ✓ **Down 68% Last 10 Years**
 - ✓ **Currently Underutilized**
- **Single Sources**
 - ✓ **71 of 302 Critical Components**
- **Minimal Incentives for Contractor Capital Investment**
- **Manufacturing Capability**
 - ✓ **Currently Focused on Legacy Systems**
 - ✓ **Marginal Future Munitions Capacity**
- **Surge Capability Virtually Non-Existent**





Industrial Base Strategic Plan



**7 Overarching
Strategies**

**30 Tactical
Strategies**

Strategic Goals:

- 1. Transform to Meet Current and Future Requirements**
- 2. Modernize Utilized Manufacturing Capacity**
- 3. Balance Industrial Base & Acquisition Management Risk**
- 4. Operate Efficiently and Effectively**
- 5. Incentivize Industry to Reinvest in Capital Equipment and Processes**



Sample Overarching Strategies:

- 1. Acquisitions Will Determine and Posture the Production Base.**
- 2. Acquisitions and Investments Will be Synchronized to Assure Required Manufacturing Capabilities Remain Available.**
- 3. Opportunities for Greater Joint Service Activity Will be Identified and Implemented.**

Outlines Goals and Tactics to Shape the Industrial Base



PEO Ammo – Initiatives



- **Greening Small caliber ammo**
- **Designing for Demilitarization**
- **Improving asset visibility in time of war**
- **Implementing the DoD's RFID/UID policy**
- **Supporting the Army's Modularity initiative**
- **Demilitarizing OIF and OEF munitions stockpiles**
- **Procuring M67 acrylic bag and green ammo for 105mm**
- **Expanding small arms production capacity to meet wartime needs**
- **Fire support munitions modernization (precision, range, robustness)**
- **Light weight mortar: ballistic computer and 81mm weapon base plate**
- **Coordinating with industry and government to reach consensus on smart and precision weapons cost estimation techniques**
- **Emphasizing Six Sigma disciplined processes through Executive training**



Where We Are Today

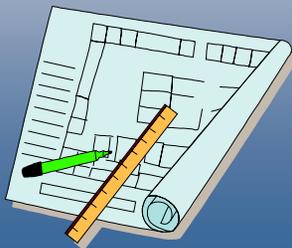


➤ Single Manager for Conventional and Advanced Ammunition

- ✓ ASA(ALT) Named SMCA – 8 Jan 2003
- ✓ PEO Ammunition Named SMCA Executor – 16 Apr 2003
- ✓ SMCA Charter in Service Review
- ✓ All FY04 Service Funding Goes thru PEO Ammunition
- ✓ PM's are Engaging Other Services
- ✓ Formed SMCA Acquisition Council



➤ Metrics – Covering All SMCA Functional Areas



- All Major Issues Resolved
- Moving Forward With Execution
- Measuring Improvements



Summary – The Ammunition Enterprise is ...



- Supporting Current Operations/Planning Future
- Improving Ammunition Life-Cycle Practices
- Focused, Well-Trained Workforce
- Leveraging World Class Capabilities & Technologies
- Vital to the development of products for the Future Joint Force





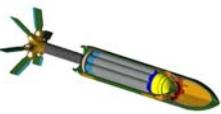
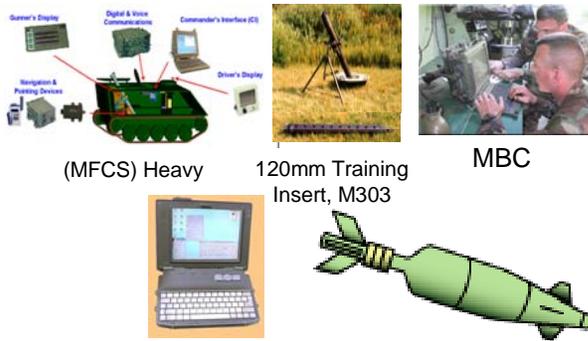
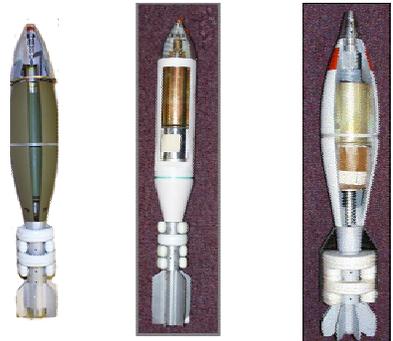
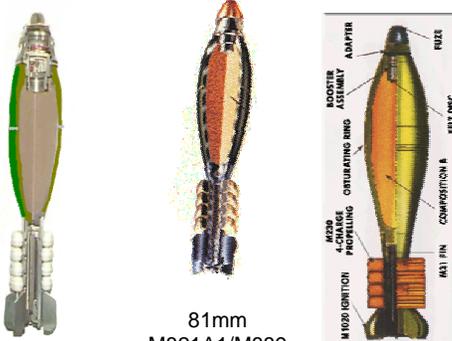
PM Combat Ammunition Systems



Artillery

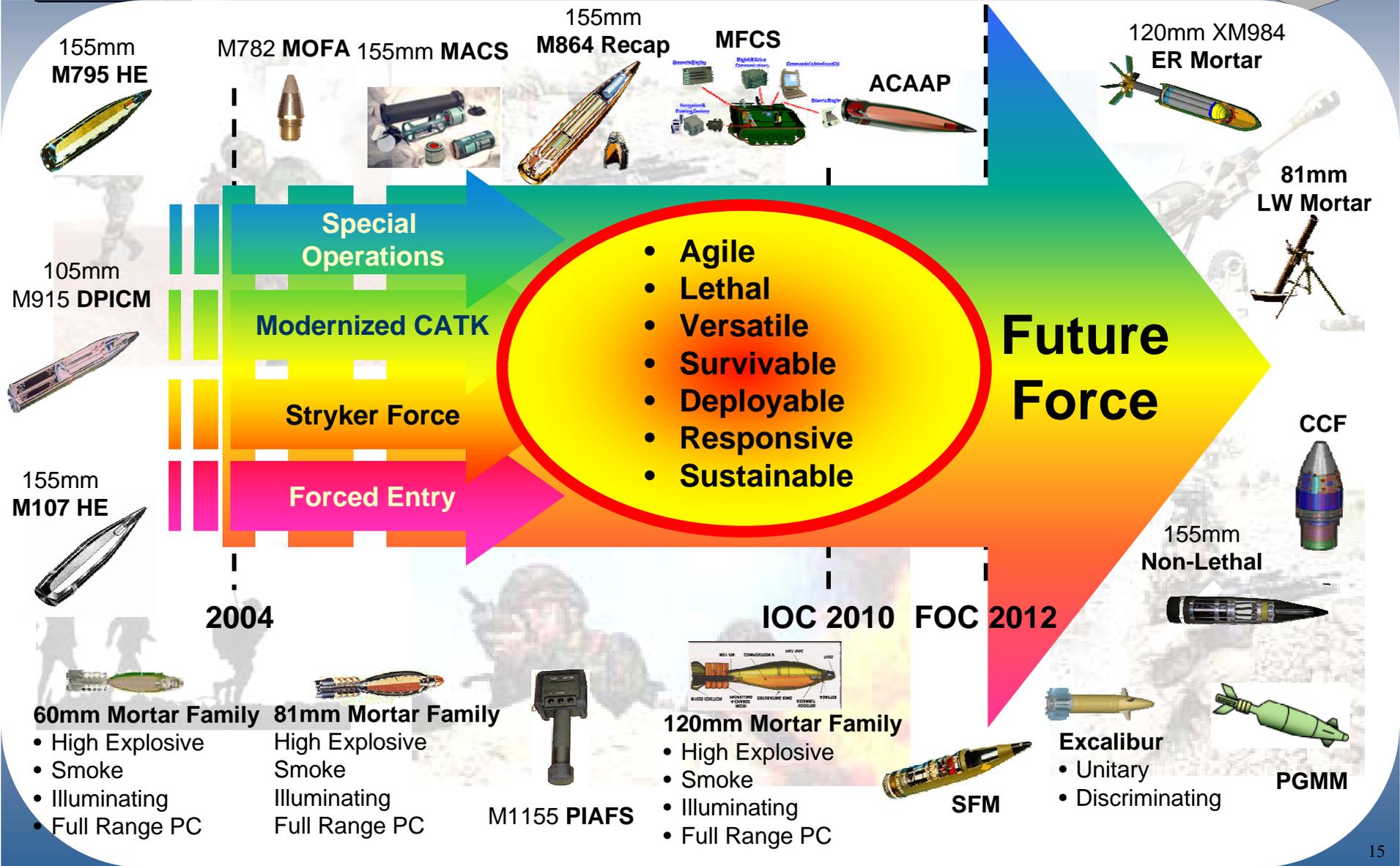
 <p>LCCM</p>	 <p>Excalibur Unitary</p>	 <p>M782 MOFA</p>	 <p>M1155 PIAFS 105mm M314A3 Illum</p>	 <p>105mm M915 DPICM 155mm M795 HE Projectile</p>	 <p>Time M767 MOUT MK399 MOD1 M782 MOFA M762 ET</p>	 <p>75mm M337A2 Blank 155mm M231/M232 Prop</p>	
Concept		Development		Production			

Mortars

 <p>120mm XM984 DPICM</p>	 <p>(MFCS) Heavy 120mm Training Insert, M303 MBC Mortar Fire Control System - Light (MFCS-L) 120mm XM395 (PGMM)</p>	 <p>60mm M769 FRPC 81mm M853A1 Illum 120mm M983 IR</p>	 <p>60mm M720A1 HE 81mm M821A1/M889 A1 HE 120mm M934 HE</p>
Concept	Development	Production	Sustainment



Army Transformation: How We Fit In





Transforming Army Indirect Fires

Networked through Battle Command

Fully Interoperable with Joint systems

Mobile (Strategic and Tactical)

Responsive & Integrated with Maneuver

Lethal (through precision and volume)

Precise Effects with Area Options

Reduced Sustainment

Ability to Mass Effects

24/7, All-Weather, All-Terrain



Challenges

- Strategic Deployability
- Networked Capability (C4)
- Tactical Mobility
- Target Location (ISR)
- Accuracy / Rate of Fire
- Precision Munitions
- Discriminating Munitions

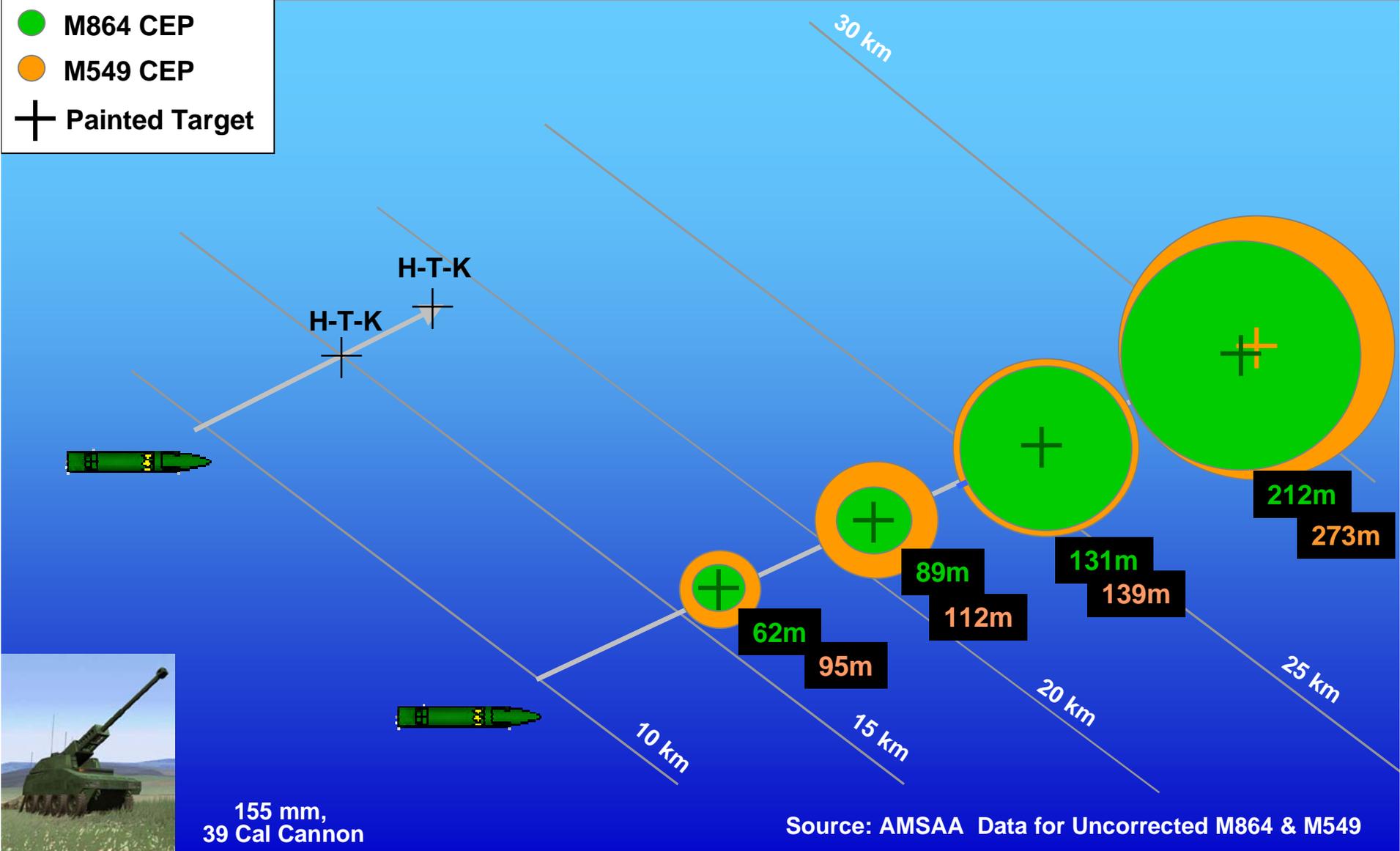
To achieve **Destructive, Suppressive and Protective** effects while **minimizing collateral damage** taking advantage of **emerging technology**



Today's Cannon Artillery



- M864 CEP
- M549 CEP
- + Painted Target



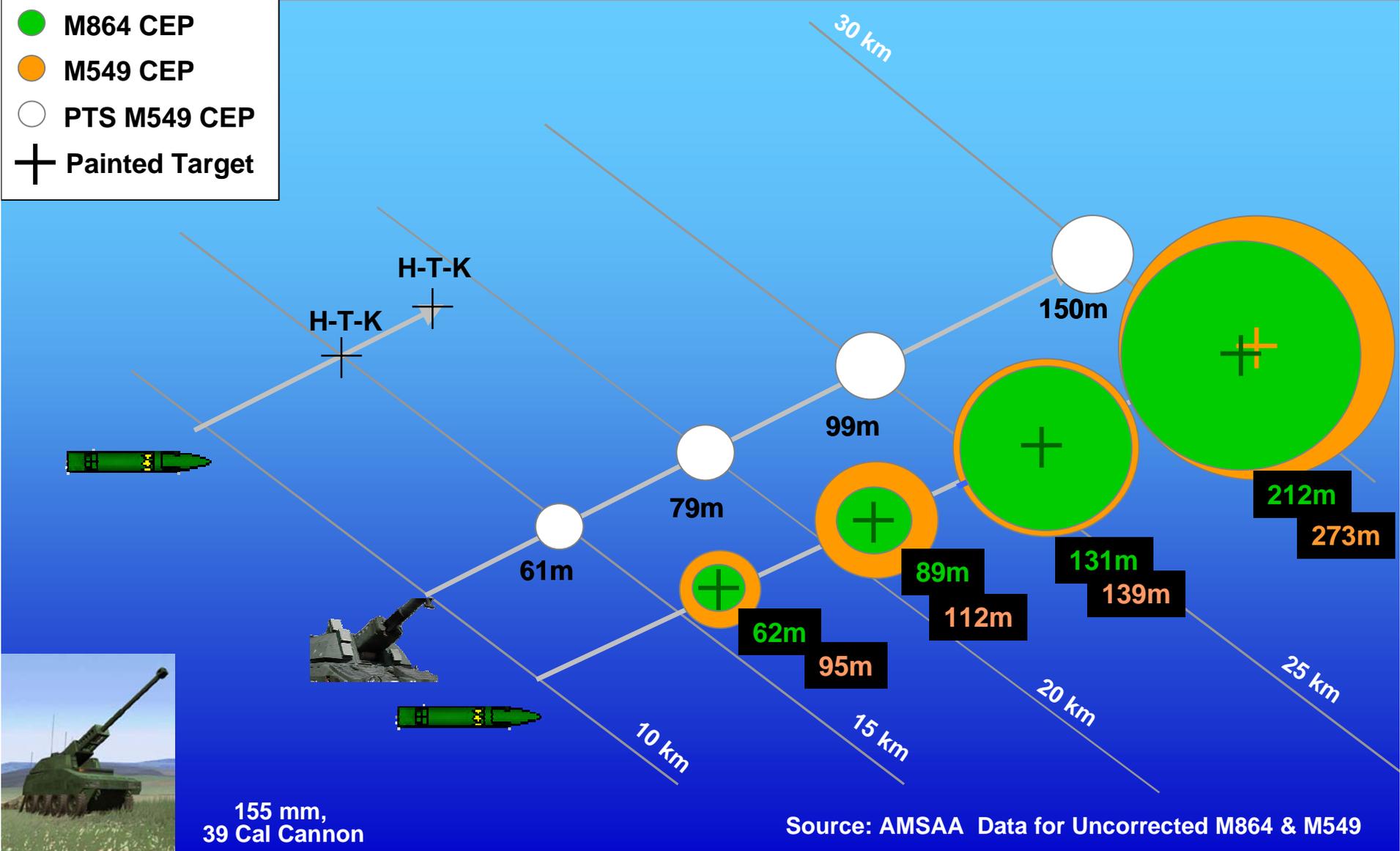
Source: AMSAA Data for Uncorrected M864 & M549



Future Cannon Artillery Without Munitions Improvements



- M864 CEP
- M549 CEP
- PTS M549 CEP
- ✚ Painted Target



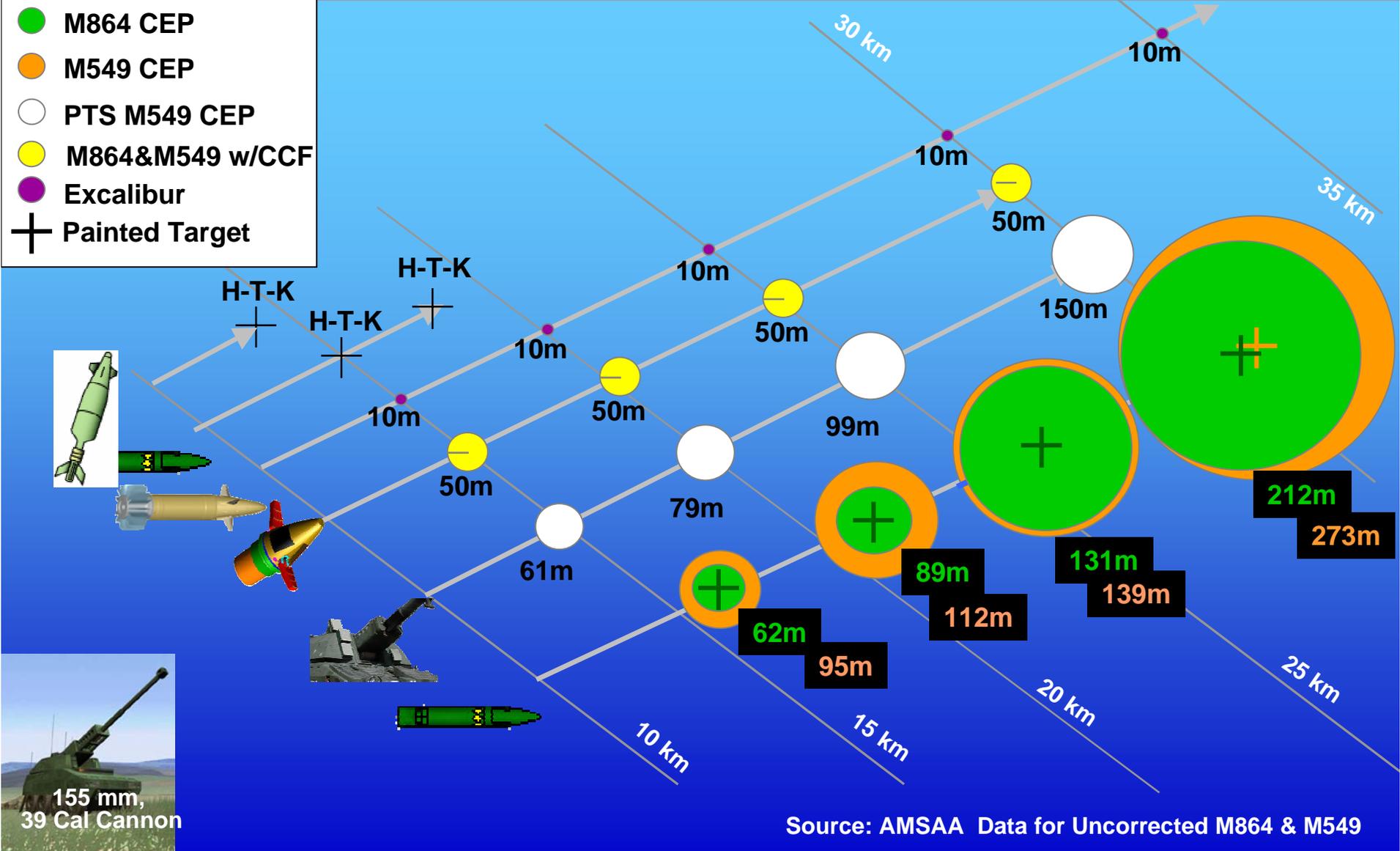
Source: AMSAA Data for Uncorrected M864 & M549



Cannon Scalable Precision The Future Force



- M864 CEP
- M549 CEP
- PTS M549 CEP
- M864&M549 w/CCF
- Excalibur
- + Painted Target



Source: AMSAA Data for Uncorrected M864 & M549



Highest Priority Programs

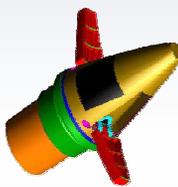


**Precision
Accuracy
Range
Lethality
Robustness**

System Description:
A NATO-size fuze that provides ballistic course correction for spin stabilized artillery projectiles

Requirements:
Low cost, fuze-sized module resulting in projectile CEP <50M at max range

Goal: Near Precision
IC: FY07 **IOC:** FY10
Status: Developing co-operative program with Navy
POC: Mr. Russ Hill



Course Correcting Fuze

System Description:
Precision Guided, Extended Range 155mm projectile

Requirements:
Greatly increased precision and reduced collateral damage

Goal: Precision, Range **ACAT:** I
IC: FY06 (LW155) **IOC:** FY08
Status: SDD
POC: LTC Jeffrey Wilson



Excalibur

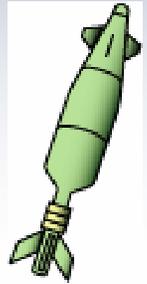
System Description:
Precision strike round with extended range and enhanced lethal mechanism technology

Requirements:
Capability to hit point targets

Goal: Range, Lethality, Accuracy
ACAT: II
IOC: FY10

Status: SDD contract award scheduled 3QFY04, following JROC approval.

POC: Mr. Pete Burke



Precision Guided Mortar Munition

System Description: Links mortar fires with the digital battlefield

Requirements: Allow mortar crews to send and receive digital call for fire messages

Goal: Accuracy, Responsiveness
IOC: FY03

Status: Fielding
POC: MR. Tom Bradley



Mortar Fire Control System

System Description:
Submunition Fuze to reduce battlefield UXO

Requirements: UXO less than 1%

Goal: Lethality, Safety
IOC: FY04

Status: In Production

POC: Mr. Bill Vogt



Self-Destruct Fuzes

System Description:
Autonomous, fire and forget, all weather 155mm SFM projectile

Requirements: Destroy or Immobilize stationary SPHs and other hard point targets

Goal: Lethality

IOC: N/A **Status:** Accessing foreign NDI projectile compliance with JBMOU

System Description: Extended range NDI projectiles

Requirements:
Increased Lethality through Pff technology

Goal: Range, Ballistic Similitude

IOC: FY06

Status: Safety Testing

POC: Mr. John Irizarry



Sensor Fuzed Munitions



Other Developments



120mm ER Mortar

System Description:

Inductively settable Multi-Option Fuze for Artillery

Requirements: Compatible with bursting projectiles



Goal: Reduced Logistic Burden & HOB accuracy
IOC: FY04 **Status:** In Production
POC: Mr. Tony Barreiro

MOFA

Arms Room Concept

System Description: Provide Light Forces maneuver commanders with 81mm and 120mm mortar support

Requirements: HQDA G3 approved BOIP change July 03

Goal: Lethality, Range, Flexibility

IOC: Fielding

Status: Seeking additional funding

POC: Mr. Ed Lewis

Goal: Dispense Less-Lethal Payloads
IOC: TBD **Status:** Concept Studies
POC: Mr. Steve Hromnak

Non-Lethal Munitions

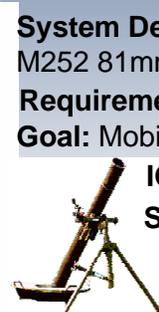
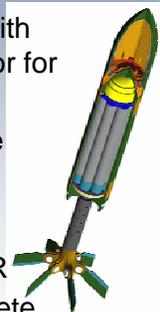
System Description:

Designed for kinetic energy mitigation of carrier to minimize collateral damage

Requirements: Lightweight with Parachute Delivery
Goal: Dispense Less-Lethal Payloads

IOC: TBD **Status:** Concept Studies

POC: Mr. Steve Hromnak



Lt. Wt. Mortar

System Description: STO to reduce the weight of the M252 81mm Mortar System

Requirements: 30 to 40% lighter weapon system

Goal: Mobility, Portability

IOC: TBD

Status: Trade Studies

POC: Mr. Ed Lewis

Goal: Increased Range, Reduced Costs

IOC: M231 – FY03, M232 – FY04

Status: In Production, Fielding

POC: Mr. Jim Rutkowski



System Description:

Modular propellant 155mm artillery ammunition

Requirements: Auto-Loading

Goal: Increased Range, Reduced Costs

IOC: M231 – FY03, M232 – FY04

Status: In Production, Fielding

POC: Mr. Jim Rutkowski

MACS

M864 Recap

System Description: "Like new" DPICM rounds with grenade Self Destruct Fuzes (SDFs) for the Stryker Brigade Combat Teams

Requirements: Submunition Self Destruct capability for 155mm artillery ammunition

Goal: Recapitalization, Safety (<1% UXO)

IOC: FY05

Status: Recap Feasibility Study Ongoing

POC: Mr. David Kondas

System Description:

Anti-Materiel 60mm HE bearing

Requirements: Perform a side by side comparison of the MAPAM Cartridge, analyzing Lethality and Effectiveness

Goal: Lethality **IOC:** TBD **Status:** SDD

POC: Mr. John Slivovsky

60mm Modernization



Support to FCS NLOS - Cannon



SMOA Programs

- Excalibur (XM982)

155mm Ammunition

- High Explosive (HE)
- Rocket Assist Projectiles (RAP) and Basebleed
- Dual Purpose Improved Conventional Munitions (DPICM)
- Sense and Destroy Armor (SADARM)
- Illumination Area
- Denial Munitions
- Training/Practice

Developmental Ammunition

- Sensor Fuzed Munitions (SFM)
- Advanced Cannon Artillery Ammunition Program (ACA²P)
- Non-Lethal

Fuzes and Fuze Setter

- Multi-Option Fuze for Artillery (MOFA)
- Electronic Time Fuze (M762/767)
- Point Detonating Fuzes

Developmental Fuzes and Fuze Setter

- Course Correcting Fuze (CCF)
- Enhanced PIAFS (EPIAFS)

Propellants

- Modular Artillery Charge System (MACS)





Support to FCS NLOS - Mortar



SMOA Programs

- Mortar Fire Control Systems (MFCS) Software
- Precision Guided Mortar Munition (PGMM)



Conventional 120mm Ammunition

- HE
- IR Illumination
- VL Illumination
- Smoke
- Full Range Training



Developmental Ammunition

- Future Extended Range Ammunition (FERA)
- Lethal, Non-Lethal, and Special Purpose





Enabling Technologies



SFM

Automation

Ammo Marking

Inventory Control

Ammo Condition Indicators

**ATR/
Discrimination Tech**

IFF

MEMS Fuzing

Telemetry/Datalink

Rocket Assist Tech

Force-Level Models

Fire Control Algorithms

Decision Support Tools

THE HIGHEST CALIBER



Hooah!



Joint Lethality