Panel # 1  Joint Commodity Requirements

Panel # 2  Organic Base Discussion
Panel #1

Dennis Brogan  JMC
Santo Lombardo  PM, CCS
Bob Goldberg  PM, CAS
Carl Roller  PM, MAS
Jim Loehrl  JMC
ADVANCED PLANNING BRIEFING
TO INDUSTRY

JOINT MUNITIONS PROGRAMS
BOMBS / ENERGETICS / NAVY GUN
AMMO / PYROTECHNICS

Mr. Jim Loehrl
13 Feb 03
TOPICS

- BOMBS
  - PRODUCTION PROGRAMS - EXISTING
- ENERGETICS
  - PRODUCTION PROGRAMS – POTENTIAL
- NAVY GUN AMMO
  - PRODUCTION PROGRAMS - EXISTING
- PYROTECHNICS
  - PRODUCTION PROGRAMS - EXISTING
MK 80 Series Bomb Bodies
BLU-109 Empty Case
Bomb Fins
Bomb Cables
Bomb Lugs
Aluminum Powder
25lb Practice Bombs
MK4-3 Signal Cartridge
CBU-97 (D-2)/B
Sensor Prox FZU-39 (D-2)/B
Bomb Bodies
- MK80 Series – Sole source to IMCO
- BLU-109 – Restricted to US/Canada
- BDU-50 – CDI – FY03 – Restricted to US/Canada (Planned)

Fins
- BSU-86/B – Full & open
- All Others – Small business set aside

Lugs – Small business set aside

Cables – Restricted to US/Canada
Aluminum Powder – Full & open
(Commercial Item, under FAR Part 12)

Cartridge Signals (Practice Bombs) – Full & open

25 lb Practice Bomb – Small business set aside

LAP of all Bombs performed at McAlester AAP
(GOGO)
TNT
- 5Yr competitive best value contract (NTIB)
- RFP to be formally issued Feb 03
- Requests combination of reclamation, manufacture and purchase OCONUS
LAP supported by GFM & CFM (Navy)

5”/54 CAL GFM:
- Projectile body – Competitive US & Canada
- CTG case – Sole source to Norris
- Dummy nose plug – Small business set aside

76mm GFM:
- Projectile body - Competitive US & Canada
- CTG case - Sole source to Norris
- Fuze – Full and open
- Dummy nose plug – Small business set aside
NAVY GUN AMMO TRENDS

Fiscal Year

Quantity

Fiscal Year

03 04 05 06 07 08 09

NAVY GUN AMMO

Graph showing trends in Navy gun ammo quantity from Fiscal Year 2003 to 2009.
PYROTECHNICS - EXISTING PRODUCTION PROGRAMS

- **Infared Countermeasure Flares**
  - MJU-7A/B & 10B
  - M206 (Army configuration)

- **Signals**
  - Smoke and Illum Signal MK124
  - Smoke Signal MK131
  - Personnel Distress Signal AP25
  - Personnel Distress Kit MK79

- **Marine Location Markers**
  - MK58 Marine Location Marker
  - MK25-3/4 Marine Location Marker
IR FLARES
- Restricted competition between Kilgore and Armtec
- FY04 plus three years – Full and open

SIGNALS
- Small business set aside

MARINE LOCATION MARKERS
- MK25 SERIES - Full and open competition
- MK58 – Planned sole source for FY03
Opportunities may exist with:
- Bomb components
- TNT
- Navy gun ammo components
- IR Flares/Signals/Markers

Opportunities are funding and requirement dependent
Small Caliber (5.56mm, 7.62mm, .50 Cal, Misc)
Medium Caliber (20mm, 25mm, 30mm, 40mm)
Large Caliber (105mm Tank, 120mm Tank)

Mr Carl Roller
Cost Analysis Team Leader
13 Feb 2003
TOPICS

- Influences on Ammunition
- Acquisition Approaches
  - Large Caliber
  - Medium Caliber
  - Small Caliber
- Existing Programs
  - Research and Development
  - Production
- Potential Configuration Changes
  - Cost Reduction
  - “Green” Ammo
- Potential Programs
  - Research and Development
INFLUENCES ON AMMUNITION

- RDTE Emphasis on Future Combat System
  - Precision Munitions
- Industrial Base Issues
- Increased Training Tempo
- Specialized Lethality Requirements
  - Thermobaric
  - Canister
  - Wall Breaching
- Environmental Issues
- Insensitive Munitions
- Training Safety
  - Dud reducing ammunition
ACQUISITION APPROACHES

- Large Caliber
  - 120mm Tank Tactical – System Contractor, Performance Specification
  - 120mm Tank Training – System Contractor(s), Multiyear, TDP
  - 105mm – System Contractor, Performance Specification

- Medium Caliber
  - 20mm, 25mm, 30mm – System Contractor(s), TDP
  - 40mm Grenades – Component Breakout / System, TDP

- Small Caliber
  - System Contractor – Requirements Contract, TDP
EXISTING R&D PROGRAMS

- Large Caliber
  - Mid Range Munition
  - XM1002
  - XM1028
  - XM1040

- Medium Caliber
  - M910E1
EXISTING R&D CONTRACTS

- XM1002 TPMP-T 120mm
  - Contract w/Alliant Techsystems
    ➔ R&D: FY00-FY03
    ➔ Production Starts: FY04
    ➔ Second Source Competition – FY04

- XM1028 Canister 120mm
  - Contract w/GDOTS
    ➔ R&D: FY02-FY04
    ➔ Production: FY04-06

- Mid-Range Munition for FCS
  - Proof of Principal Contracts w/Alliant and Raytheon
  - Downselect for SDD at end of FY03 (pending availability of funds)
UPCOMING R&D CONTRACTS

- XM1040 Canister 105mm
  - Contract in Source Selection
  - R&D: FY03-FY04
  - Production Starts: FY04

- XM910E1 TPFSDS-T 25mm
  - RFP issuance imminent
  - R&D: FY03-FY05
  - Production Starts: FY05
## LARGE CALIBER PRODUCTION

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<th>FY03</th>
<th>FY04</th>
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# SMALL CALIBER PRODUCTION
(5.56 / 7.62 MM)

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<td>M855 Ball Linked</td>
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# SMALL CALIBER PRODUCTION (.50 CAL / MISC)

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<td>4 Ball / 1 Tracer</td>
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## Shotgun Shells

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## 9mm / Misc

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20mm/25mm/30mm families
  – Material Change programs to reduce cost or improve environmental conditions where suitable

Small Calibers & 40mm Grenades
  – Material Change programs to reduce cost or improve environmental conditions where suitable
POTENTIAL R&D PROGRAMS

- Large Caliber (FCS)
  - Mid-Range Munition SDD
  - Advanced Kinetic Energy
  - Advanced Multi-Purpose

- Medium Caliber (FCS)
  - Ammunition for FCS Medium Caliber Systems
    - Airburst
    - Armor Piercing
    - Trainers
Opportunities May Exist With:

- 120mm Ammo for ABRAMS and FCS
- 105mm Ammo for MGS
- 25mm Ammo for BRADLEY
- 20mm for Aviation
- 30mm for Aviation & Ground Systems
- Medium Caliber for FCS
- Small Calibers
- Sub-Contracting Through System Contractors

Opportunities – Funding and Requirement Dependent

PM MAS POC: Mr. Bruce Potter, 973.724-4173, bpotter@pica.army.mil
Topics

- R & D PROGRAMS
- PRODUCTION PROGRAMS
R&D Programs

- XM 982 Excalibur
- Precision Guided Mortar Munition
- HE IM Program
- XM 784 Electronic Time Fuze
- 120mm Monopack
- Advanced Conventional Artillery Ammunition Program
- Enhanced 120mm Mortar Family
- Next Generation 120mm Mortar Family
- Artillery Cost Correction Fuze
- Smart Artillery Projectiles
XM 982 Excalibur

- Contract with Raytheon & Bofors
  - FY06: Unitary Milestone C
  - FY08: Unitary IOC
**SYSTEM DESCRIPTION:**

The Precision Guided Mortar Munition (PGMM) will be a precision strike round with extended range and enhanced lethal mechanism technology. It will be capable of a first round defeat of high value/payoff hard point targets such as bunkers, command and control centers. PGMM greatly enhances BCT effectiveness, and is required by its ORD. PGMM is implementing a blocked approach to reduce risk and ensure affordability.
High Explosive (HE), Insensitive Munition (IM)
M934A1E1 w/M734A1 Fuze

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<th>FY02</th>
<th>FY03</th>
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**SYSTEM CHARACTERISTICS:**

- **Range:**
  - Minimum: 300m
  - Maximum: 7200m
- **Probable Error:**
  - Range: 1.5%
  - Deflection: 1.0%
- **Effectiveness:** 50% Improvement over 4.2” M329A1 HE
- **Reliability:** 0.97 at 80% Confidence
- **IM Performance Targets:**
  - Cook-Off: Type V Desired; Type IV Required
  - Sympathetic Detonation: Type V Desired; Type II Required
  - Bullet Impact: Type V Desired; Type IV Required
  - Fragment Impact: Type V Desired; Type IV Required
- Maintains interfaces with standard M1020/M234 Propulsion System, M734A1 MO Fuze, and M31 Fin Assembly.
- M734A1 MO Fuze will utilize IM-enhanced Booster
- Maintains interfaces with M1094 Carrier ammunition storage racks
Fuze, Electronic Time (ET), XM784/XM785

**SYSTEM CHARACTERISTICS:**

- Safety Per MIL-STD-1316 (Dual Environ Safety)
- Cartridge Compatibility:
  - 60 mm (M721 Illum & M767 IR Illum)
  - 81 mm (M853A1 Illum, XM816 IR Illum & M819 RP Smoke)
  - 120 mm (XM930 Illum, XM983 IR Illum)
- Hand Settable Required (Inductive Set Desired)
  - Self Illuminating
- Reliability 98%
- Set Time 5 – 99.9 Seconds (0.1 Sec Increments)
- Cannot Significantly Degrade Cartridge Range
- 20 Year Shelf Life (Controlled Environment)
- Minimum Arming Distance: 200 Meters
SYSTEM CHARACTERISTICS:

- Replace the current Fiber Tube and Metal Container with a lightweight monopack container.
- Reduce layers of packaging and overall weight of package containers (from 18 lbs to 8 lbs per round).
- Provide ammo with full protection throughout the logistics systems and while in vehicle storage racks.

<table>
<thead>
<tr>
<th>Program Milestones</th>
<th>FY01</th>
<th>FY02</th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
<th>FY06</th>
<th>FY07</th>
<th>FY08</th>
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<tbody>
<tr>
<td>Contract</td>
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<td>Incorporate ECP into TDP</td>
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</table>
Advanced Conventional Artillery Ammunition Program (ACAAP)

ACAAP Objectives - Quality Non Developmental Items options for meeting Army’s Ammunition replenishment requirement buys and transformation objectives

Denel Family of Munitions –
- Family of 105mm Artillery projectiles compatible with US 105mm Howitzers
- Family of 155mm artillery projectiles qualified for 39 and 52 caliber guns

Status
- Nov 2001 - PM CAS conducted a world-wide search for a family of ammunition to meet the FCS requirements. The General Dynamics Ordnance and Tactical Systems/Denel team was selected.
- May 2002 – Congress approved PM CAS ACAAP Foreign Comparative Testing proposal for the families of 105mm and 155mm ammunition for safety and gun qualification.
- Formal safety assessment of the family of ammunition commences March 2003 with Type Classification planned for 2005.
Mortars Programs
In Support of FCS

- Enhanced 120mm Family
- Next Generation 120mm Family
FCS 120mm Ammunition Requirements

Enhanced Conventional 120mm Family
- High Explosive
- Smoke
- Illuminating
- Training

Next Generation 120mm Family
- DPICM
- High Explosive
- Smoke
- Illuminating
- Training
- Non-lethal

Direct Fire
Breech Loadable
8-10Km Range

Inductive Fuze Set Capability
- Direct Fire
Auto Loadable
12-15 Km Range

FCS demands improved 120mm mortar ammunition – currently unfunded
Mortar Systems Evolution
Ammunition

Today

- 3 families of ammo (120mm, 81mm, 60mm)
- Highly Collateral Damage
- Anti-Personnel
- Area Weapon – Large CEP
- Drop Fired
- Multi-Option, Hand Settable Fuzing
- Max Range 7,200 Meters (120mm)

FCS Technology Enablers

- Low Cost Course Correction
- Inductive Fuze Setting
- Modular Charges for Automatic Loading
- Composite Materials
- Electronic/Self Destruct Fuzing

FCS

Need PGMM
Plus New Family of
Extended Range
120mm Mortar Munitions!

- Precision
  - high value targets
  - low collateral damage
- Extended ranges (12-15 km)
- Area Suppression w/Greater Accuracy
- Automated Loading/Handling
- Automated Fuze Setting
- Reduced Logistics Burden

PGMM
ER- DPICM
As of 31 Dec 02
Artillery Course Correcting Fuze (CCF)

**SYSTEM DESCRIPTION:**
A NATO-size fuze that provides ballistic course correction for spin stabilized artillery projectiles.

**SPECIAL FEATURES:**
- Improves effectiveness of artillery munitions by minimizing delivery errors.
- Adaptable to all 155mm ammo (stockpile and developmental).
- Reduces Collateral Damage & Logistics Burden.

**CAPABILITIES:**
- Analysis underway to determine optimum corrections 20-100 meters CEP.

**MILESTONE:**
- Prototype testing complete 2QFY05
- MS B 3QFY05

**SYSTEM CHARACTERISTICS:**
- Provides course correction for current stockpile, spin stabilized munitions and future extended range munitions
- Low cost, fuze sized module
- Used in lieu of standard fuze
- Enhanced effectiveness by reduced delivery error
- Reduced collateral damage and Logistics Burden
**Smart Artillery Projectiles**

**Joint Ballistic Memorandum of Agreement (JBMOMU)**

**Special Features:**
- **SMArt155** - Product improved (longer stand-off) with millimeter wave radar, radiometer and infrared sensors currently in production.

**System Description:**
An advance “Fire and Forget” smart 155mm Artillery projectiles to defeat SPHs and lightly armored targets effective day or night, in all weather and environmental conditions.

**Acquisition Phase:**
- **SMArt155** - Non Developmental Item
- **Bonus** - Non Developmental Item

**Prime Contractor:**
- **SMArt155** - Developed by GIWS with US marketing by ATK
- **Bonus** - Developed by: BOFORS Defence (a wholly owned subsidiary of United Defense) and GIAT Industries

**Capabilities:**
- Accept performance as designed.
- Safety certification to US standard.
- Firing tables/software upgrades leverages foreign efforts.
- Assessing additional testing required.
60mm
- High Explosive (HE), M720A1
- High Explosive (HE), M768
- White Phosphorous (WP), Smoke, M722A1
- Visible Light Illum, M721
- Infrared Illum, M767
- Full Range Practice Cartridge, M769
- High Explosive (HE), M888

81mm
- Red Phosphorous (RP), Smoke, M819
- Visible Light Illum, M853A1
- Infrared Illum, M816

120mm
- High Explosive (HE), M934A1
- White Phosphorous (WP) Smoke, M929
- Visible Light Illum, XM930
- Infrared Illum, M983
Best Value Competition focused on quality

Primarily “Multiple Year” contracts
  ✓ Priced Options in ranged quantities
  ✓ Use of Multi-year contracts where feasible
  ✓ Multi-year floor
  ✓ Options for program changes and replenishment

Active partnership between Government Engineering Team & Suppliers

Continuous evolutionary product improvement

Active management of industrial base

Achieve economy/standardize/insert technology throughout mortar ammo family

PM Mortars Overarching Conventional Ammo Acquisition Strategy
PM Mortars Overarching Ammunition Acquisition Strategy (cont)

- PM Mortars Acquisition Strategy Yields
  - Ongoing Production Contracts
  - Product/Process Improvements

1st Production Buy

- 120mm M934A1 HE Insensitive Munition Program FY05
- XM784/XM785 Electronic Time Fuze MC FY05
- 81mm HE Insensitive Munitions Program ECP end of FY04
- Black Powder Coating
- Generic Ignition Cartridge (60mm, 81mm, 120mm) FY04
- 120mm Monopack FY04
## Currently Open Mortars Ammunition Contracts

<table>
<thead>
<tr>
<th>Contractor</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chamberlain</td>
<td>120mm Shell Bodies</td>
</tr>
<tr>
<td>DZI</td>
<td>LAP - M720A1/M768</td>
</tr>
<tr>
<td>GDOTS</td>
<td>Propellant Charges</td>
</tr>
<tr>
<td>Medico</td>
<td>Shell Bodies - 60mm/81mm</td>
</tr>
<tr>
<td>SNC</td>
<td>Fuzes</td>
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<tr>
<td>Junghans</td>
<td>Fuzes</td>
</tr>
<tr>
<td>Lockheed Martin</td>
<td>Fins</td>
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<tr>
<td>Other (12)</td>
<td>Various</td>
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</tbody>
</table>

**Currently Open Contracts:**
- 13% DZI
- 12% GDOTS
- 12% Medico
- 12% SNC
- 5% Lockheed Martin
- 7% Junghans
- 9% SNC
- 15% Other (12)
- 27% Chamberlain
- 13% Lockheed Martin

Total of 19 contracts are currently open.
Family of Conventional Mortars Ammunition

60mm, 81mm & 120mm

- High Explosive: Multi-Option Fuze (Combat Round)
- Visible Light Illumination
- Infrared Illumination
- Full Range Training Round
- High Explosive: Point Detonation Fuze (Training)
- Smoke
- Short Range Training Round

14 rounds currently in production
<table>
<thead>
<tr>
<th>Artillery Production Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>75mm M337A2 Blank</td>
</tr>
<tr>
<td>105mm M1 HE Recap</td>
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<tr>
<td>105mm M1 HE Crimp (USAF)</td>
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<tr>
<td>105mm M314A3 Illum</td>
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<tr>
<td>105mm M915 DPICM Cartridge</td>
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<tr>
<td>155mm M107 HE</td>
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<tr>
<td>155mm M795 HE Projectile</td>
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<tr>
<td>155mm M110A2 WP Smoke</td>
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<td>155mm M864 Recap</td>
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<td>155mm M804A1 Practice</td>
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<td>155mm M231/M232 MACS</td>
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<tr>
<td>M782 Multi Option Fuze Artillery</td>
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<tr>
<td>M762A1/M767A1 Electronic Time Fuze</td>
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</tbody>
</table>
75mm M337A2 Blank

- Multiple Year contract (FY99-03) w/AO at IAAAP
- FY03 Quantity = 92,070

Consists of a cartridge case (brass or aluminum) containing loosely packed black powder and a press-fitted percussion primer. A fiberglass wad is inserted over the black powder and a polystyrene closing cup is cemented in place with a polyester resin adhesive. When the firing pin of the weapon strikes the primer, a flash is generated which ignites the black powder charge producing flash, smoke, and a loud report to simulate weapon firing.
The M1 is a semi-fixed 105mm Cartridge consisting of the M14B4 Cartridge Case, M28 Percussion Primer, M67 Propelling Charge, a fuze and a projectile containing a TNT or Comp B explosive filler. This recap effort will swap out the prop charges, primers, and cartridge case (as required). Maintenance is planned to be accomplished on-site at Blue Grass and McAlester.
105mm M1 Mod is an Air Force unique round where the cartridge is “crimped” to the projectile to prevent separation. The contractor is required to inspect, x-ray, chemical test, rework and crimp acceptable M1 rounds to become M1 (MOD). The M1 (MOD) program uses the M14 brass cartridge case, the M28A2 primer, the M67 prop charge, and the FMU-153.
The M314A3 is a semi-fixed illuminating cartridge which includes an M14 Cartridge Case, M28 Percussion Primer, M67 Propelling Charge, the M577 or M762 Fuze, and a projectile which contains a pinned base plug, a black powder expelling charge, an illuminating canister with anti-rotational vanes, and a parachute assembly which is connected to the closed end of the canister. The canister contains an illuminating filler covered by a thin layer of first fire composition. The M314A3 is used to Illuminate targets for engagement/observation or provide light for movement (navigation); provides an average luminosity of 450K candle power for 1 minute.
# 105mm, M915 DPICM

## Program Milestones

<table>
<thead>
<tr>
<th>Program Milestones</th>
<th>FY02</th>
<th>FY03</th>
<th>FY04</th>
<th>FY05</th>
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<td>M234 Production Readiness</td>
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<td>M234 Battery FAT/Prod.</td>
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<td>M234 SDF FAT/Prod.</td>
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<td>M915 LAP &amp; PQT</td>
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<tr>
<td>TC STD &amp; Full Materiel Release</td>
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<tr>
<td>M915 LAP</td>
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42 Grenade, DP: M80 w/ M234 SD Fuze

**System Description**

To Provide Light Infantry With Extended Range and Enhanced Lethality Against Personnel and Materiel Targets

**Acquisition Strategy**

- Demonstrate battery and fuze production line to meet rate.
- Build ~ 500k M234 SDFs
- Type Classify M915 Standard
- Full Materiel Release for M915
- LAP 11k M915 projectiles for inventory
- Seek funding for FY04-05 to prevent production break
- Planning for future buys using system contractor.
The M107 projectile was the Army’s conventional standard HE projectile for all 155mm Howitzers and is being replaced with the M795 projectile. This projectile may be loaded with either TNT or Comp B explosives. The normal cavity model (D571) will not accommodate a proximity-type fuze. The deep-cavity model (D544) has a supplementary charge of 0.3 lbs which may be removed to allow the use of proximity fuzes.
### Projectile, 155mm, M795

#### US Army Requirements – 416,000 rounds
- Current: 416,000
- Award Contracts:
  - FY01: 294,112
  - FY02: 121,888

#### US Marines Corps Requirements – 344,000 rounds
- Upcoming: 344,000
- Award Contracts: 32,856

#### System Description:
The M795 projectile is employed against personnel, trucks, electronic surveillance and target acquisition devices, supply points, command and control and communications (C3) installations, and mechanized and armored forces.

### Program Milestone

<table>
<thead>
<tr>
<th>Program Milestone</th>
<th>FY01</th>
<th>FY02</th>
<th>FY03</th>
<th>FY04</th>
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<th>FY07</th>
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<tbody>
<tr>
<td>US Army (416,000) Current</td>
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<td>294,112</td>
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<td>121,888</td>
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<tr>
<td>USMC (344,000) Upcoming</td>
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<td>32,856</td>
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<td>Award Contracts</td>
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**Welded Rotating Band**

**High Fragmenting Steel Body**

**Explosive Filler**
- (23.8 LBS. TNT)
155mm M110A2 WP Smoke

- **155mm M110A2 WP Smoke**
  - Metal Parts
    - Single year (FY 02) contract w/IMT
    - Contract option available
    - FY03 Quantity = 9,042
  - M54A1 Burster
    - Single year contract w/AO at MLAAP
    - LAP performed at PBA

- **Acquisition Strategy**
  - Metal Parts – North American Base
  - M54A1 Burster - Competitive
  - LAP performed at PBA

- **Program Strategy**
  - Full Rate Production

- **Current Status**
  - Preparing documents for approval

---

The projectile is a hollow steel shell filled with white phosphorous. An explosive burster runs down the center of the entire length of the shell. The M110A2 uses a Composition B5 explosive burster. A PD fuze is normally used with these projectiles. The ballistics of these shells are the same as the HE, M107 projectile.
M864 Recap

- **Acquisition Strategy** –
  - Open Competition for LAP; though restricted to US/Canada
  - Gov’t vs. Contractor System Integration TBD
  - Gov’t Design/Test Data Provided for Info

- **Program Strategy**
  - FY03: Phase I - Feasibility Study
  - FY04: Phases II & III: Materiel Change & Qual
  - FY05: Production

- **Current Status**
  - Three SDFs under development/evaluation (downselect to two by FY04)
  - RFP in 2Q FY03 for Phase I w/ options for Phases II & III
155mm M804A1 Practice

- **Acquisition Strategy**
  - Metal Parts – Competitive
  - LAP – Crane
  - Miscellaneous Components - Competitive

- **Program Strategy**
  - Multiple year contract(s)

- **Current Status**
  - Preparing documents for approval

A heavy wall, hollow core forged steel shell with no explosive filler. It is similar in weight and external configuration of the M107. A small smoke canister produces a visible signature upon projectile impact.
155mm M231/M232 MACS

155mm M231 & M232 (MACS) Propelling Charges

✓ Component Breakout

• Combustible Case Assemblies
  - Armtec Defense Products (Sole Source)
  - FY02 Option
  - 5-year MY Contract (FY03-07) Pending

• Core Igniter Propellant
  - GD-St. Marks Powder (Sole Source)
  - 3rd Year of 5-year MY (FY00-04)

• Metal Ammunition Containers
  - FY02 Basic with FY03 Option - Delsasco
  - Competitive Small-Business Set-Aside
  - 5-year MY Contract (FY04-08) Planned

• Main Charge Propellant (PAP7993) for M231
  - ATK-Radford AAP
  - Basic Year (FY03) with Options (FY04-05)

• Main Charge Propellant (M30A2) for M232
  - Expro Chemical (Sole Source)
  - Basic Contract (FY03) with 2 Options Years (FY04-05) Pending

• Load, Assemble & Pack (L.A.P.)
  - FY03 Option - GD-OTS
  - Basic Contract (FY04) with 2 Options Years (FY05-06) Planned
  - Limited to U.S./Canada, TDP, Best Value Award

Production Initiated FY00

FY02 L.A.P. QTY = 781,000 charges
FY03 L.A.P. QTY = 1,312,000 charges
M782 Multi Option Artillery Fuze / M762A1/M767A1 ET Fuze

- **M782 Multi Option Artillery Fuze**
  - ✔ Contract w/Alliant
    - Contract Awarded 9/00
    - FY00-FY01
  - ✔ Contract w / L3 - KDI
    - Multi Year Contract Awarded 9/02
    - FY02-FY05

- **M762A1/M767A1 ET Fuze**
  - ✔ Contract w / L3 - BT
    - Contract Awarded 9/01
    - FY01-FY05
Summary Point of Contacts

- PM CAS  
  COL Nathaniel Sledge 973-724-2003

- DPM CAS  
  Mr. Patrick Serao 973-724-2110

- XM 982 Excalibur  
  LTC Jeff Wilson 973-724-3152

- Mortars  
  LTC Larry Hollingsworth 973-724-3636

- PGMM  
  Mr. Peter Burke 973-724-5802

- Mortar Ammunition  
  Mr. John Slivovsky 973-724-3665

- Artillery Ammunition  
  Mr. Armando Herrera 973-724-5247

- MACS  
  Mr. Jim Rutkowski 973-724-2394

- JMC Rep  
  Ms Celia Hadden 309-782-6491

- Life Cycle Mgmt  
  Mr. Robert Goldberg 973-724-2713
Office of the Project Manager
for
Close Combat Systems

Presented by Santo Lombardo
Chief, Munitions Division
OPM-CCS
973-724-6460
Lombardo@pica.army.mil
PM CCS
In Stride Ammo Modernization

Strategies
- Performance Spec / Best Value
- Re Engineering in Production
- Work Future Funding Stream

Lead Horses
- Shoulder Launched
- Hand Grenades
- Bangalore Torpedo
- Pyrotechnics

Decade of Most Recent Type Classification
FCS RELATED PROGRAMS

- IMS (FCS Core)
- FCS-ASTAMIDS (FCS Complementary)
- FCS-GSTAMIDS (FCS Complementary)
- Mongoose (FCS Complementary: Pending)

- Synchronized W / FCS Schedule
- First Unit Equipped 2008
- Initial Operation Capability 2010
- PM-FCS / PM-CCS/PM- NV/ RSTA MOA
- Work with FCS LSI
EXISTING R&D PROGRAMS

Future Combat System (FCS) Related: IMS (Core)

Technology Development Phase:
  In Source Selection
  Award up to 2 contracts
  Start Date: FY03    Finish Date: FY05

SDD & LRIP Phase:
  New Contract, Competition Limited to TD Contractors
  Start Date: FY05    Finish Date: FY08

Full Rate Production Phase:
  Option or Full & Open Competition:
  Start Date: FY08    Finish Date: FY11

The IMS is an FCS Core System that is an integrated system of sensors, lethal and non-lethal munitions, software and communications that is capable of autonomous, unattended employment for the detection, discrimination, classification, identification and engagement of selected targets in accordance with the commander’s intent. (FCS ORD, Annex E, Section 4, Appendix B, dated 22 Jan 03)
EXISTING R&D PROGRAMS

Mongoose (Explosive Standoff Minefield Clearer)

- Contract Status: SD&D BAE Systems
- Start Date: FY 01
- Finish Date: FY 05
- Production Start: FY05
Shoulder Launched Munitions

Best Value Bunker Defeat Munition (UAW Increment One)

XM141 Bunker Defeat Munition

AT- 4 (Confined Space)
EXISTING PRODUCTION PROGRAMS

Shoulder Launched Munitions

XM141 Bunker Defeat Munition
Sole Source Firm Fixed Price Contract
w/Talley Defense Systems
Last Year of 3 year contract
Fielding is in progress
Best Value Bunker Defeat Munition (UAW Increment One)
    Competitive Best Value
    Technical & Operational Capabilities Key Factors
    5 year, Multi-year contract
    R&D CLIN for additional improvements
    Industry Day 5 Mar 03

XM141 Bunker Defeat Munition
    Sole Source Firm Fixed Price Contract w/ Talley Defense Systems
    Continue Supply Pending Qualification of Best Value BDM

AT-4 (Confined Space)
    Sole Source Firm Fixed Price Contract w/ ATK & Saab Bofors
    1 year contract w / options
    Potential FY 04 Production
Grenades

M228 Practice Fuze

M67 Fragmenting Hand Grenade

M18 Smoke Grenade Family

M90 66MM Launched Smoke Grenade

M84 Stun Grenade

Lightweight Hand Grenade
EXISTING PRODUCTION PROGRAMS

Grenades

M228 Practice Fuze
  Competitive Contract w/Martin Electronics
  Year 3 of competitive 3 year contract
  Army FY03 qty = 1765K

M67 Fragmenting Hand Grenade
  Fuze – year 3 of 3 year contract w/Martin Electronics
  Body – years 3 & 4 of 4 year contract w / Aerojet
  LAP – Delivery Order with DZI Lonestar on Facility Use Contract
  Army FY01 Qty = 152K
  Army FY03 Qty = 465K
EXISTING PRODUCTION PROGRAMS

Grenades

M18 Smoke Grenade Family
  Work Order with Pine Bluff Arsenal
  Army FY03 qty = 214K

M90 66MM Launched Smoke Grenade
  Work Order with Pine Bluff Arsenal
  Army FY03 qty = 24K

M84 Stun Grenade
  Year 3 of 3 year contract w/Universal Propulsion Co
  Army FY03 qty = 31K
POTENTIAL PRODUCTION PROGRAMS

Grenades

Production Grenade Fuze Increased Capacity

- Meet Increased Training Requirements For:
  - M228, M213, M201A1, 7M units / Yr Total
- Best Value Competition
- Non-Recurring Effort For Producibility Improvements
- Multiple Options For Production
- Production Prove Out

Lightweight Hand Grenade

- User Requirements Being Developed
- Competition Based on Best Value
Grenades

Enhanced Pyrotechnic (EP) Grenade Fuze
  Improved Storage Reliability Replacement for M213 Fuze
  Interim Solution until Electro Mechanical Replacement
  Non Developmental Item
  Production Start FY05 Full & Open Competition

Electro Mechanical (EM) Grenade Fuze
  Improved Storage Reliability Replacement for EP and M213 Fuze
  Modified Non Developmental Item
  Qualification Contract Award FY03
  Production Start FY07
Pyrotechnics

M30 Main Tank Gun Simulator
M31 Direct/Indirect Simulator
M116A1 Hand Grenade Simulator
M117 Booby Trap Simulator
M206 Countermeasure Flare
M125/M127/M158/M159 Signal Illumination
M74A1 Projectile Airburst Simulator
M211/M212 Advanced Infrared Countermeasure Flare
EXISTING PRODUCTION PROGRAMS

Pyrotechnic Munitions

M30 Main Tank Gun Simulator
  Sole Source to Comet
  Option 2 of 3
  Army FY03 Qty = 292K

Carries a simulated UBL and simulates a Main Gun Firing Signature

M31 Direct/Indirect Simulator
  Sole Source to Comet
  Option 2 of 3
  Army FY03 Qty = 145K

Simulates a hit/kill by direct/indirect fire in a training environment (NTC/Home Station)
EXISTING PRODUCTION PROGRAMS

Pyrotechnic Munitions

M116A1, M117 Simulators
  Competitive, Base with Options (Grucci)
  Nov 02 Contract Award Date

M206 Countermeasure Flare
  Restricted Competition (Kilgore(55%), Armtec (45%))
  Contract Awarded Aug 02
  Year 1 of 3 Options
POTENTIAL PRODUCTION PROGRAMS

Pyrotechnic Munitions

M125, M127, M158, M159 Signal Illum
Small Business Set Aside Competitive 3 yr
Jul 03 Contract Award Date

M74A1 Projectile Airburst Simulator
SBSA
Jul 03 Contract Award Date
M211 Advanced Infrared Countermeasure Flare  
Sole Source – 5 yr (Alloy Surfaces)  
Feb 03 Contract Award Date

M212 Advanced Infrared Countermeasure Flare  
Sole Source – Option for 4 th of 5 yr (ATK Thiokol)  
Feb 03 Contract Award Date
Networked Munitions

APLA: Track 1 - Spider

APLA: Track 3 – Mixed Landmine System Alternatives (MLSA)
EXISTING R&D PROGRAMS

Networked Munitions

APLA: Track 1 - Spider

- Contract Status: Joint Venture w/ ATK & Textron Systems (50/50)
- R & D SDD Phase: 33 Month effort (Sept FY02 – June FY05)
- Milestone C (TC): Jul FY05
- First Production Deliveries: Mar 07

REPEATER BOOSTS RF COMMO LINK RANGE (UP TO 3KM)
RF COMMO LINK
MUNITION CONTROL UNITS (MCU’s)
SOLDIER CONTROLLER WITH REMOTE CONTROL UNIT (RCU)
Networked Munitions

APLA: Track 3 – Mixed Landmine System Alternatives (MLSA)

Contract Status:
Source Selection Complete
Plan to award up to two CAD phase development contracts
Program on hold
Anti-Personnel Obstacle Breaching System (APOBS)

Bangalore Torpedo
EXISTING PRODUCTION PROGRAMS

Countermine

Anti-Personnel Obstacle Breaching System (APOBS)
USMC Competitive Contract w/Ensign Bickford
Year 3 of competitive 5 year contract
Army FY03 Qty = 401
Cut in non-electric initiator

Description

- Joint Program – USMC is Lead Service
- Rocket Propelled Line Charge, 45 meters in length, with 108 Fragmentation Munitions
- Certified Insensitive Munition (Class V Item)
- Two Actuation Methods
  - Delay (Initiate @ rocket - 23 sec min delay)
  - Command (Initiate from stand-off position)
- Inert Training Aids fielded to TSC’s & Schools
- Two man portable/deployable (62 - 63 lbs each)
- Deploys (delay mode) < 2 minutes from 35 meter standoff
- Clears both AP Mines and Wire Obstacles
- Provides footpath 0.6 – 1.0 meters wide
- Partial Replacement for Bangalore Torpedo
Potentially Production Programs

Countermine

Bangalore Torpedo

Developed and fielded during WWII (1943). Used for countermine and obstacle clearing missions.

Current configuration A2 designed in late 1950's. Five foot long tubes.

User Requested Shorter Length for Soldier Load.

Materiel Change to shorten the length of each tube from 5 ft to 2 ½ ft.

FY03-FY09 to buy Qty of 25000 Units.

Award Full and Open Production Contract for New Configuration Dec 03
Demolitions

Rapid Wall Breacher Kit (RWBK)
M151/152 Boosters
M81 Igniter
M19 Dual Blasting Cap W/200ft Mini Tubes
M21/23 Blasting Caps W/ 500ft/ 1000ft Mini Tubes
M14/M15/M18 Delay Blasting Caps
M300 Fighting Position Excavator (FPE) Kit & M301 FPE Reload Kit
SLAM Improvement
POTENTIAL R&D PROGRAMS

Demolition Munitions

Rapid Wall Breacher Kit

Soldier Entry Through Wall Capability
Acquisition- Competitive Best Value
Performance Requirement Document
Status: Posted CBD Feb 03
Contract Award: FY03
Production Start FY05
EXISTING PRODUCTION PROGRAMS

Demolition Munitions

M151/152 Boosters
  FY02 Production Contractor: Ensign-Bickford Aerospace & Defense

M19 Dual Blasting Cap W/200 ft Mini Tubes
  In 2nd Year Of A 5 Year Competitively Awarded Contract With Shock Tube Systems, Inc.
  Production: 25k Per Year

M21/23 Blasting Caps W/ 500ft/ 1000 ft Mini Tubes
  In 2nd Year Of A 5 Year Competitively Awarded Contract With Ensign-Bickford Aerospace & Defense
  Production: 20k/ 40k Per Year

M300 Fighting Position Excavator (FPE) Kit & M301 FPE Reload Kit
  Current Contract with ATK
POTENTIAL PRODUCTION PROGRAMS

Demolition Munitions

FY04 ID/IQ Contract Will Be Competitively Awarded and Will Include The Following Items:

- M151 & M152 Boosters FY03 Quantities: 260k M151 & 350k M152
- M14 & M18 Delay Blasting Caps
- M15 Delay Blasting Cap
- Training Versions Of The M14, M15 & M152

M300 Fighting Position Excavator (FPE) Kit & M301 FPE Reload Kit

- FY04 Production Contract Will Be Awarded Competitively
- Quantities: 2000 M300 & 4000 M301

M81 Igniter

- FY03 Contract To Be Awarded March ’03
- Full & Open Competition with Options
- Supplies Army & Marines
Demolition Munitions

SLAM Improvement
Competitive 3 Year Contract FY03
Competitive Production FY06 - Currently Unfunded
Non-Lethal Munitions

XM102 Reloadable Stun Grenade
XM104 Non Lethal Bursting Hand Thrown Grenade
L96A1 66mm Anti-Riot Irritant Grenade
L97A1 66mm Anti-Riot Irritant Grenade
M98 66mm Canister (Diversionary Flash Bang)
M99 66mm Canister (Rubber Ball)
M84 Diversionary Flash Bang/Stun Hand Grenade
M1012 12 Gauge Non-Lethal Point Control Cartridge
M1013 12 Gauge Non-Lethal Crowd Dispersal Cartridge
M1006 40mm Non Lethal Cartridge
M1029 40mm Crowd Dispersal Cartridge (CDC)
EXISTING R&D PROGRAMS

XM102 Reloadable Stun Grenade
   Contract Status: Sole Source Contract Awarded to UPCO, Phoenix, AZ
   Start Date: Nov 02
   Finish Date: Apr 03
   Production Start: Feb 03 (2,658 units)

POTENTIAL R&D PROGRAMS

XM104 Non Lethal Bursting Hand Thrown Grenade
   Contract Status: Not awarded (Program on Hold)
   Start Date: 
   Finish Date: 
   Production Start:
EXISTING PRODUCTION PROGRAMS

Non-Lethal Munitions

L96A1 66mm Anti-Riot Irritant Grenade
L97A1 66mm Anti-Riot Irritant Grenade (Practice)
  Competitive Contract awarded
  Contractor:  PW Defence, UK
  Year 2 Each (option up to 12,000) of competitive 2 year contract

M98 66mm Canister (Diversionary Flash Bang)
  On-going Task Order Contract
  Contractor:  Pine Bluff Arsenal, Arkansas
  Army FY03 Qty = 1167

M99 66mm Canister (Rubber Ball)
  On-going Task Order Contract
  Contractor:  Pine Bluff Arsenal, Arkansas
  Army FY03 Qty = 1167
EXISTING PRODUCTION PROGRAMS

Non-Lethal Munitions

M84 Diversionary Flash Bang/Stun Hand Grenade
  Sole Source Contract with UPCO, Phoenix, Arizona
  Option 1 of FY00 Contract
  Army FY03 Qty = 24,500

M1012 12 Gauge Non-Lethal Point Control Cartridge
  Competitive Contract to be awarded Feb 03
  Contractor: Defense Technology, Casper, WY
  Year 1 of competitive 3 year contract
  Army FY03 Qty = 72,000 (Option #1 - 100,000; Option #2 - 100,000)

M1013 12 Gauge Non-Lethal Area Dispersal Cartridge
  Competitive Contract to be awarded Feb 03
  Contractor: Defense Technology, Casper, WY
  Year 1 of competitive 3 year contract
  Army FY03 Qty = 130,000 (Option #1 - 100,000; Option #2 – 100,000)
Non-Lethal Munitions

M1006 40mm Sponge Non Lethal Cartridge
  Competitive Production Contract
  Contractor: AMTEC, Minnesota
  Army FY03 Qty = UFR

M1029 40mm Crowd Dispersal Cartridge (CDC)
  Competitive Production Contract
  Contractor: Defense Technology of America, Casper, WY
  Army FY03 Qty = UFR
SUMMARY

- CCS Programs Supporting FCS
- Still Assimilating Newly Assigned Ammo Families
- Best Value Competition & Technology Updates in Production are the Norm
- Programs Supported in the POM
- We Welcome and Encourage Industry Ideas
POINTS OF CONTACT

**OMM-MCD**

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**HQ, JMC, JMC-OFC-CDC**

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