Long Range Advanced Cannon
Artillery Ammunition

25 Mar 2003
Agenda

- Advanced Cannon Artillery Ammunition Program (ACA²P)
- ACA²P Technologies for Full Spectrum Operations
PM CAS Artillery Ammunition Strategy

- Field Advanced Cannon Artillery Ammunition for the Objective Force:
  - Full spectrum effects
  - 30 Km Range (threshold)
  - Ballistic Similitude
  - Improved Accuracy
  - Reduced logistics burden
  - Affordable
Advanced Cannon Artillery Ammunition Program (ACA²P)

• US Army program to . . . .
  • Achieve Army Artillery Transformation requirements
  • Field a complete “family” of non-developmental (NDI) conventional 105mm & 155mm artillery ammunition
  • Recapitalize older stocks and improve inventory
  • Reinvigorate U.S. ammo production base
  • Alleviate strain on stockpile readiness

Denel & GD-OTS Teamed in N. America

105 & 155mm Denel
Denel 155 Ammunition Suite

**UNASSISTED**
- M2000 High Explosive
- M2001 DPICM
- M2002 Smoke
- M2003 Illumination
- M2004 Red Phosphorus
- M1999 Practice

**ASSISTED WITH BASE BLEED**
- M2000 High Explosive
- M2001 DPICM
- M2002 Smoke
- M2003 Illumination
- M2004 Red Phosphorus
- M1999 Practice

**EXTENDED RANGE HE**
- M2005 VLAP
Increased Operational Range
(U.S. 155mm compared with GD/Denel)

M485 Illum
M483 DPICM
17.5 Km

M107 HE
18.1 Km

M795 HE
M825 Smoke
22.5 Km

M864 ER-DPICM
28.3 Km

M549 HE RAP
30 Km

NLOS-C

33% increase in range from 39 Caliber

M2000 HE
M2001 DPICM
M2002 Smoke
M2003 Illum
M2004 Red Phos

M2005 VLAP PFF
40+ Km

BT = Boat Tail
BB = Base Bleed

GENERAL DYNAMICS
Ordnance and Tactical Systems
Increased Operational Reach
U.S. and Denel 105mm Range Comparison

M119

M1 HE 11.5 Km
M760 HE 14 Km
M2020 BT HE 15 Km
M2020 BB HE 18.4 Km
M913 HERA 19.5 Km

LEO

M 2020 Pff HE
M 2019 HE
M 0101 Smoke
M 0102 ILLUM
M 0102 Prac

BT = Boat Tail
BB = Base Bleed
Increased Operational Reach

Enhanced Force
Lethality and Survivability through:
- Conventional payloads
- Course Correcting Fuzes
- Scaleable effects
- Less Lethal Munitions
-Insensitive Munitions
ACA²P Technologies

- Ranges exceeding 30 km from 39 caliber gun; M2005 V-LAP achieves +40 km, thus achieving NLOS-C requirements
- Aerodynamic profile aids in achieving long range accuracy requirement
- Lethality using Pre-formed Fragmentation (PFF)
- Ballistically Matched Ammunition Family; requires only one ballistic firing table.
- Infra-red Illumination
- Environmentally friendly, cool burning Bi-spectral smoke
- Field interchangeable Base-bleed & Boat-tail units reduce logistics
Technology Demonstrated - 29 Jan 2003 in RSA

Red Phosphorus

Bi-spectral smoke

IR illumination

Base bleed

Boat tail

PFF

Phosphorus
Joint ACA²P Users

Artillery Platforms for Objective, SBCT, and Legacy Forces

- M119
- M198
- XM777
- M109A6
- USAF AC-130
- USN DD(X) AGS

A Common Artillery Ammunition Solution

Other Service Platforms
Cannon Artillery Program Strategy

- Type classify 105mm and 155mm HE by FY05
- Conduct Engineering Assessment of IR Illumination and Bi-spectral smoke in FY03
- Continue Operational Analyses
- Production of artillery will remain in N. America using existing ammunition industrial base
- PM Combat Ammunition Systems (PM CAS) has program management responsibility