



U.S. ARMY ARMAMENT, RESEARCH,
DEVELOPMENT, & ENGINEERING CENTER



Malcolm Baldrige
National
Quality
Award
2007 Award
Recipient



TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

ARDEC Tech Base Overview

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US Army RDECOM-ARDEC

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14 February 2008

Not Picatinny

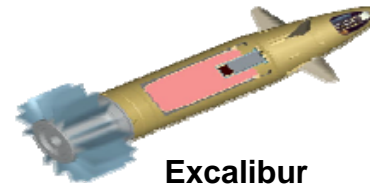




- ***The home of Army Lethality -***
Our products assure decisive victory and bring our people home!
- ***We work with soldiers to develop new lethality systems, improve fielded weapons, and to quickly solve field problems***
- ***We provide the “teeth” in Army Weapons – over 90% of the Army’s Lethality***
- ***Our products are “on-point” with the warfighter everyday***
- ***We have over 160 CRADAs with industry!***



Lightweight Dismounted Mortar



Excalibur



Lightweight Handheld Mortar
Ballistic Computer, XM32



Plasma Arc Furnace

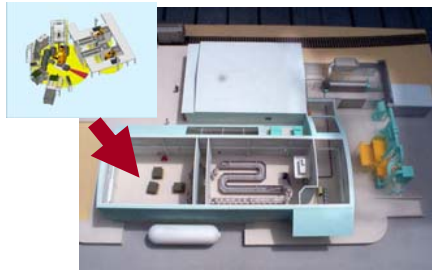
DEMIL

R&D

PROD

SUPPORT
TOTAL
LIFE
CYCLE

FIELD SUPPORT



Cryofracture



M240B 7.62MM Machine Gun



40mm Multi-Shot Launcher



Lake City Army Ammunition Plant
5.56/7.62



- 2007 Nonprofit sector added to Malcolm Baldrige National Quality Award (MBQA)
- MBQA considered international standard for organizational excellence
- **In 2007, ARDEC was:**
 - One of fourteen nonprofit applicants
 - Only Army applicant (one of four DoD applicants)
 - Only DoD applicant to receive site visit
 - One of five winners (84 applicants)
 - First co-recipient in nonprofit sector
- ARDEC joins the ranks of the 72 elite companies who have won this award since its inception in 1988



Transitioning technology to PMs

- Executive Black Belt project
- Tough problem as we don't control requirements or funding

Balance portfolio between current and future force needs

- 42% Current Force vs 58% Future Force (based on transition date)
- As well as conventional and “disruptive”

Dispel Myth that Army/DoD has “Enough Lethality”

- PBD 753 lost 10% over FY06-11 POM
- Lethality is Survivability

Commonality of Technologies to Achieve Affordable Solutions Drive Investments

Joint Services Technology Application Ongoing

..... Transition to PM/Field - #1 Goal for all ATOs

Major Lethality Technology Investments

Extended Area Protection & Survivability

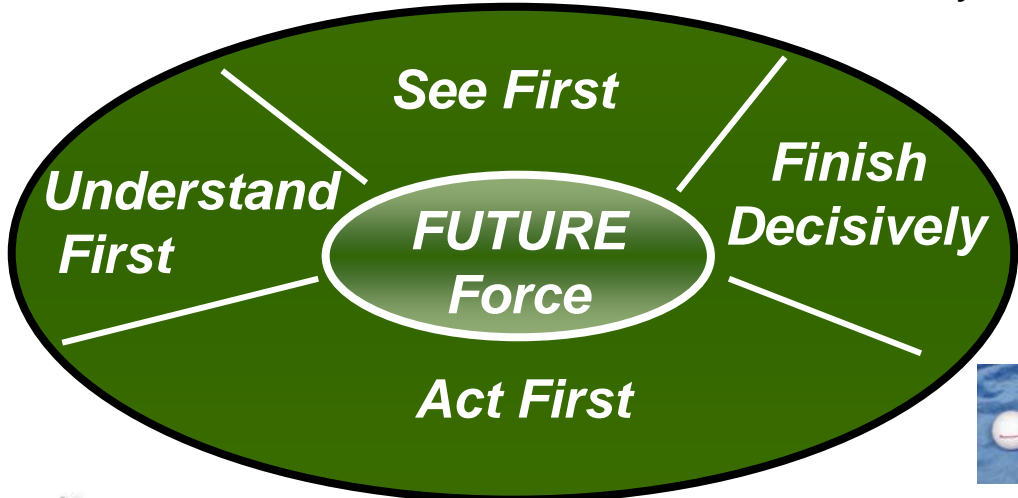
Networked Lethality

Acoustic/Seismic Sensors

KE Active Protection System Interceptors

Common Smart Munitions

EM Gun



Multi-Mode Warheads

MEMS S&A Fuze & Power
MEMS IMU

SWORDS w/Remote Armament System

Mid-Range Munition

Scaleable Effects

LtWt Dismounted Mortar

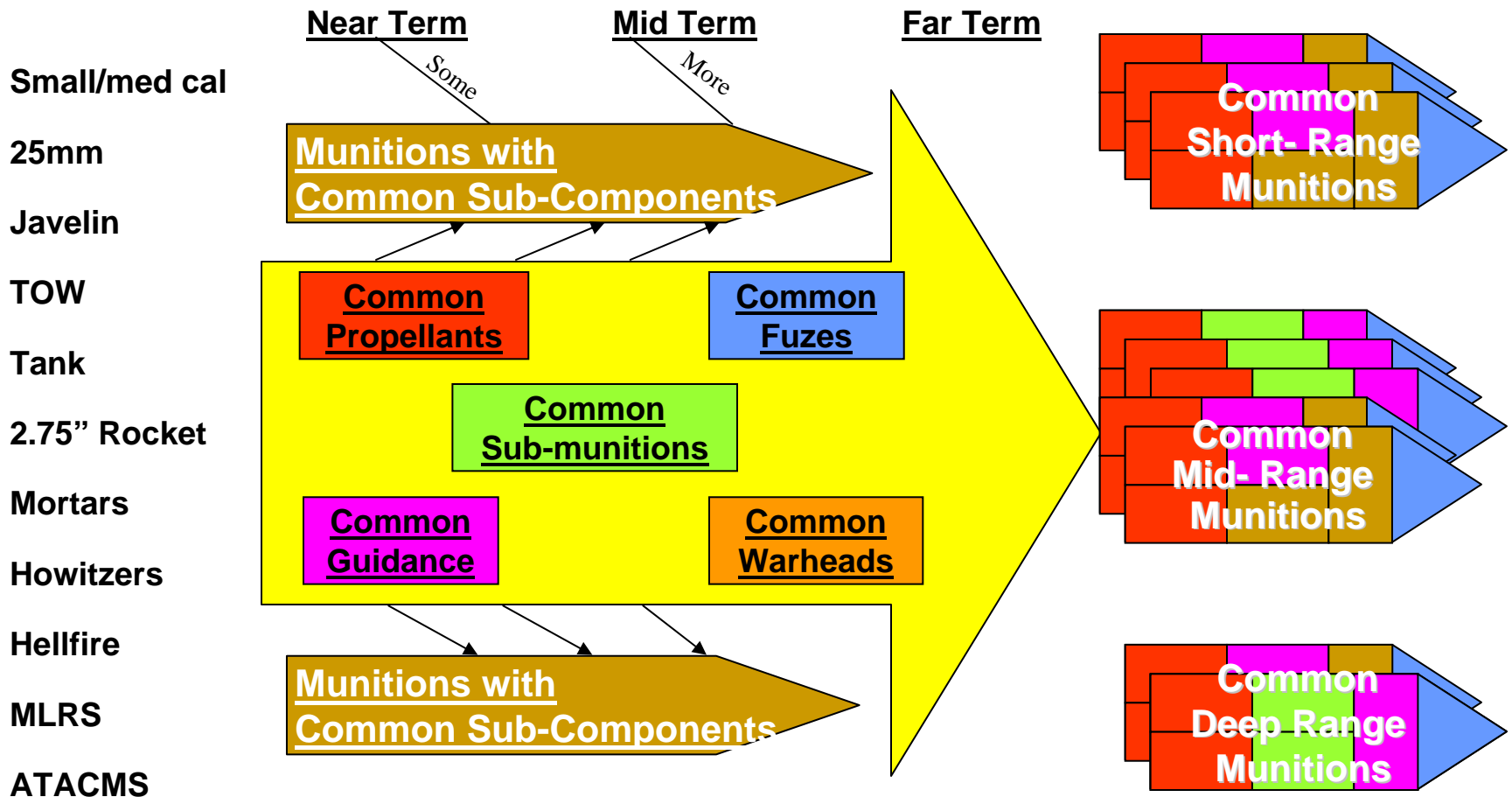
Novel/Nano-Structured Energetics

LtWt Small Arms Technologies

CURRENT MUNITIONS

COMMONALITY PLAN

ENDSTATE

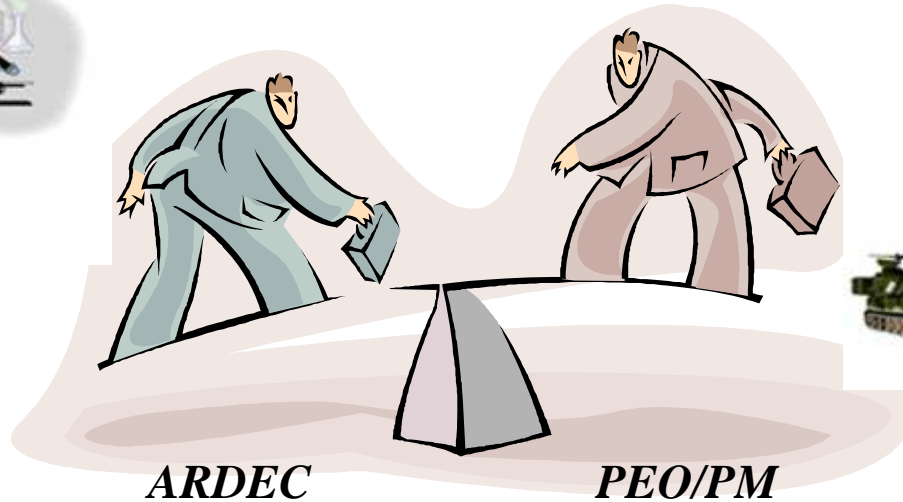


.....Low Cost Common Components for all Joint Conventional Munitions

**Technology
Push**



Tech Base Planning
for 6.2/6.3/6.7



ARDEC

PEO/PM

**Technology
Pull**



Tech Base QMB

ARDEC Science Board formed in FY07
For networking & collaboration within ARDEC:
Examines future tech requirements; Identifies enabling technologies;
Reviews technology solutions

**Rapid Transition
Of Technology**

(Technology, Components, Systems & Subsystems)
Science Board is the communications
Tool for academia, industry, InSitech,
ARDEC

PM Program Objective Memorandum (POM) Planning
For System Design & Demonstration



LW120 Gun w/Advance Muzzle Brake



Ammo Handling



600VDC Electric Turret drives

FCS 120mm LOS BLOS System



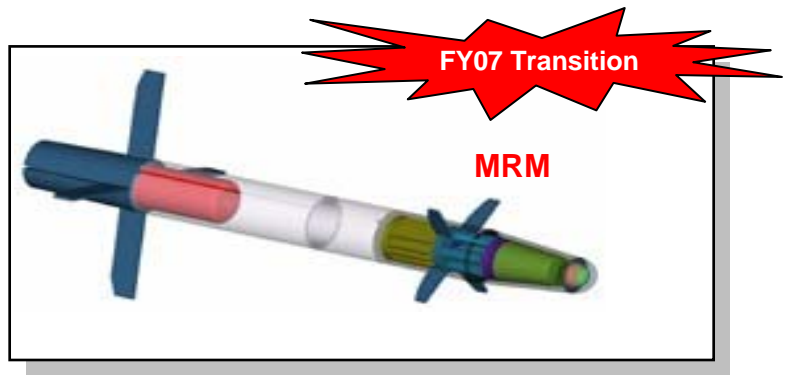
Hardstand installed 120 mm Mortar / Mount during Check Out Test at Picatinny

Objective NLOS Mortar Technology



M252

Lightweight Dismounted Mortar

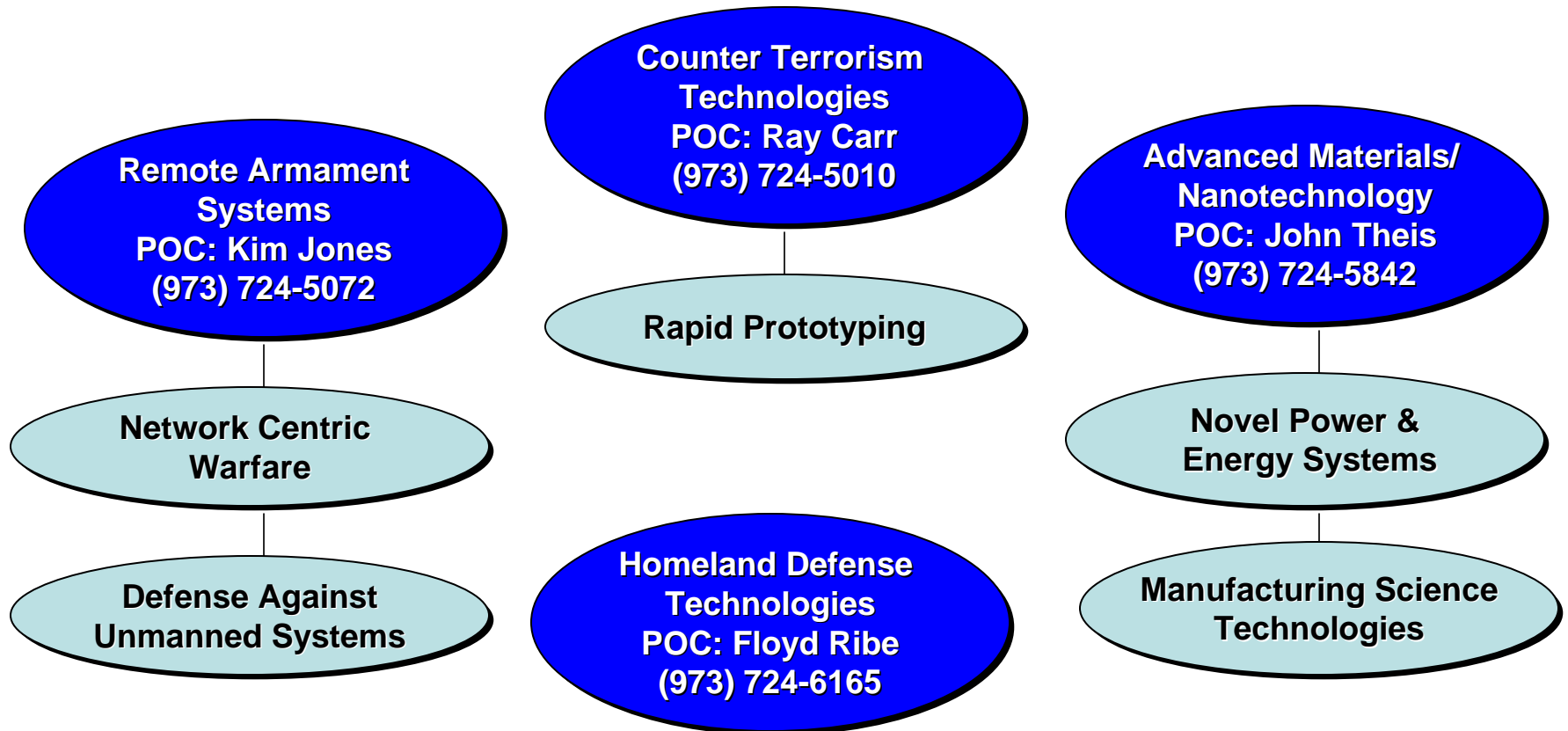


FY07 Transition

MRM

MCS & Abrams Ammunition System Technologies – Mid Range Munition

- ARDEC expertise applies to emerging capability gaps.
- ARDEC is leveraging S&T for current and future threats:



ARDEC is Actively Seeking Investment Partners in These Areas

- ▲ Industry/Government Tech Base investment must be **focused on warfighter gaps**– both from Combat Developer (TRADOC) and Materiel Developer (PEO/PM)
- ▲ “Best of Breed” low-cost, multipurpose munition components are needed – **IP concerns must be not impede this and must be negotiated up front**
- ▲ Industry proposals must be timed to support Army budget process - **Out-of-cycle proposals by exception only**
- ▲ **DOTC vehicle being revamped to comply with law**

.....Continued Dialog to Leverage Collaboration Opportunities

What can Industry do to help us- **THINK SWAP-C (Size Weight and Power- Cost)**

- Detect, Neutralize and Defeat IEDs/mines
- Affordable precision – UPC around \$10K
- Efficient, reliable power sources for Smart Munitions
- High Density Packaged Power for EM and DE Weapons
- No UXO
- Prognostics and Diagnostics capabilities
- Improved Reliability across our munitions

- ▲ ATOs/Tech Base – POC: Allan Aprea, (973) 724-5015
- ▲ Test Agreements/IR&D/CRADA – POC: Tim Ryan, (973) 724-7953
- ▲ Rapid Prototyping – POC: Andy Perich, (973) 724-3175
- ▲ DOTC – POC: Don Geiss, (973) 724-3386
- ▲ Small Arms Consortium – POC: Frank Puzycki, (973) 724-6081

.....Continued Dialog to Leverage Collaboration Opportunities

- ▲ **We are a nation at war – ARDEC seeks to partner with PEOs and industry to accelerate fielding of advanced technologies in support of current operations**
- ▲ **ARDEC is maintaining investments in Future Force technologies**
- ▲ **ARDEC has a strong desire to develop joint technology programs with industry, other RDECOM partners, other government agencies and coalition partners**
- ▲ **Need to dispel the myth that “we have enough lethality”**

Questions?



- BACK UP

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