ARDEC Tech Base Overview
Ms. Barbara Machak
US Army RDECOM-ARDEC
Associate Technical Director for Technology
14 February 2008
Not Picatinny
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!
ARDEC Mission
Life Cycle Engineering & Support

R&D
- Lightweight Dismounted Mortar
- Plasma Arc Furnace
- Excalibur
- Lightweight Handheld Mortar
- Ballistic Computer, XM32

DEMIL
- Cryorfracture
- M240B 7.62MM Machine Gun

SUPPORT
- TOTAL LIFE CYCLE

PROD
- 40mm Multi-Shot Launcher

FIELD SUPPORT
- Lake City Army Ammunition Plant
- 5.56/7.62

Lake City Army Ammunition Plant

TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.
• 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
- Multi-Mode Warheads
- EM Gun
- MEMS IMU
- Mid-Range Munition
- MEMS S&A Fuze & Power
- SWORDS w/Remote Armament System
- LtWt Dismounted Mortar
- Novel/Nano-Structured Energetics
- LtWt Small Arms Technologies

See First
Understand First
Finish Decisively
Act First

FUTURE Force

TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.
Technology Investment Strategy

CURRENT MUNITIONS

- Small/med cal
- 25mm
- Javelin
- TOW
- Tank
- 2.75" Rocket
- Mortars
- Howitzers
- Hellfire
- MLRS
- ATACMS

COMMONALITY PLAN

- Near Term
- Mid Term
- Far Term

- Munitions with Common Sub-Components
- Common Propellants
- Common Sub-munitions
- Common Guidance
- Common Warheads
- Common Fuzes

ENDSTATE

- Common Short-Range Munitions
- Common Mid-Range Munitions
- Common Deep Range Munitions

…..Low Cost Common Components for all Joint Conventional Munitions
**ARDEC – Customer/Supplier Synergy in Tech Base**

**Technology Push**

Tech Base Planning for 6.2/6.3/6.7

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

**ARDEC**

**PEO/PM**

**Rapid Transition Of Technology**

(Technology, Components, Systems & Subsystems)

Science Board is the communications Tool for academia, industry, InSitech, ARDEC

**Technology Pull**

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

**Tech Base QMB**

**TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.**
Technology “Good News” Recent Transitions

Thanks to our Industry Partners! - We couldn’t do it without you!!!
Emerging Investment Areas

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

- **Remote Armament Systems**
  POC: Kim Jones
  (973) 724-5072

- **Network Centric Warfare**

- **Defense Against Unmanned Systems**

- **Counter Terrorism Technologies**
  POC: Ray Carr
  (973) 724-5010

- **Rapid Prototyping**

- **Homeland Defense Technologies**
  POC: Floyd Ribe
  (973) 724-6165

- **Advanced Materials/ Nanotechnology**
  POC: John Theis
  (973) 724-5842

- **Novel Power & Energy Systems**

- **Manufacturing Science Technologies**

**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
Areas of Interest

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
Teaming with ARDEC

- 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
In Summary

- 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
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”
**Inputs**
- FY09 ATO Guidance
- TRADOC Capability Gaps/Shortfalls
- PEO Ammo Technology Shortfalls
- PEO Soldier Technology Shortfalls
- PEO GCS Technology Shortfalls
- PEO MS Technology Shortfalls
- ARDEC Core Competencies
- ARDEC Emerging Technology Areas

---

**Formulate ARDEC Strategy**
- Transition to PM/Field - #1 Goal for all ATOs
- Commonality of Technologies to Achieve Affordability
- Collaboration/Leveraging Opportunities

---

**PM/PEO/Customer Coordination**
- Consolidated Prioritized List
- Synergy With PM Roadmaps and TRADOC Gaps
- QMB Convened To Evaluate Proposals Against Factors
- Develop 1-N List

---

**ARDEC Review & Prioritization Cycle**

---

**ARDEC Final Approval**

---

**Funded as Non ATO**

---

**Is this an ATO?**

---

**RDECOM IPT Approval**

---

**ATO Submittal**

---

20