Future Ammo Logistics Initiatives
11 June 2008
Ammunition Logistics
R&D Strategic Plan

OBJECTIVE:
- Develop strategy for ammunition logistics system improvements
- Synchronize current and future US Army ammunition logistics R&D efforts
- Develop organizational relationships between key ammunition logistics system stakeholders
- Leverage and develop joint programs with other Services and Department of Defense programs

Multi-agency Six-Sigma IPT
Joint Modular Intermodal Distribution System (JMIDS)  
Joint Capabilities Technology Demonstration (JCTD)

JMIDS - A system of standard sized multimodal modular containers, platforms, and off the shelf information tags

Benefit – JMIDS enables rapid/“seamless” movement of supplies by air, land and sea

Mission: Evaluate JMIDS Military Utility and transition to program of record

Participants
Lead Service: ARMY ARDEC
Partnering Service: US Navy
Sponsoring CoCOM: USTRANSCOM
Technical Manager: ARMY, ARDEC
Operational Manager: TRANSCOM, J5
Deputy Op Manager: USACASCOM
Indep.Test Agency: COMOPTEVFOR
Transition Manager: ARMY, ARDEC
Program of Record: ARMY, PM-FSS
DoD Agencies: DLA
Supporting Services: USMC, USAF
Supporting CoCOMs: JFCOM

Interlocking  
Intermodal  
Re-configurable  
Joint Compatibility
JMIDS
A System of New Capabilities

- Moveable Tie-down Rings
- Collapsible Container Interlocks
- Adaptable Aircraft Interlocks
- AIT Nesting
- Satellite Tracking
- RFID Sensor Tags
- Manual/Auto Tie-down
- STD Size/Configuration
- Collapsible
- Helo Sling-Lift

TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.
**JMIC Capabilities**

**FEATURES**
- Integrated tracks for ISO-7166 fittings internal and external
- Collapsible to 1/3 height without tools
- Lockable panels, removable for content access, even while stacked
- Top liftable and interlockable
- AIT - integrated protected location
- 4-way fork truck & pallet jack entry
- Accessories - lock in casters, bins, shelves, and more...

**HANDLING & SHIPPING**
- Rapid Ship Upload without reconfiguration
- APPROVED for vertical and connected ship - ship replenishment
- Compatible with all classes of supply throughout DOD
- Size optimized for ISO containers - 16 JMICS in a 20' with minimal dunnage
- Eliminates the need for repackaging - Ability to span the COMPLETE logistic cycle to the "LAST TACTICAL MILE"

**SYSTEM FLEXIBILITY**
- Multiple size JMIC capability - double long, double high, ...
- Varied types - including user defined special purpose JMICS
- Stackable and interlockable - varied sizes and types
- Future Capabilities:
  - Automated Storage & Retrieval Systems
  - Trailers, flatacks, and magazine decks, equipped with integrated interlock fittings - eliminating chains, and straps

**TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.**
Bridging the Gap to Future Packaging

Current

- Containers are all different sizes
- Requires slow and manpower intensive blocking, bracing and strapping

Future Vision

- Standard size containers
- Six standard sized sub-module containers will accommodate nearly all munitions and other supplies

Bridging the Gap to Future Packaging
Objective: Conduct unmanned resupply of FCS Manned Ground Vehicles: NLOS-C, MCS & NLOS-M

- JMIC & HEMTT-LHS Compliant
- Autonomous Re-supply of main weapon ammo only
- Interface with ammo in legacy packaging
Objective: Conduct Emergency Freedrop resupply from moving helicopters at low altitudes

Goals:
• Inexpensive—$100 per package
• Low altitude drops - 50 to 100 feet
• Hovering or moving 65 to 130 knots
• Easily recovered by 2 Soldiers w/o MHE
• 100% Survivability

Accomplishments:
• Conducted prototype drop tests at Rutgers U & Tobyhanna AAD
• Transition Agreement with PM FSS

Cooperative effort in support of G-4 - Logistics Innovation Agency
Objective: Develop a suite of solutions from low tech low cost to high tech to enhance confidence of munitions readiness throughout its lifecycle

**Thermochromic Color Changing Materials**
- Irreversible visual indication of temperature exposure
- Research to tailor the materials for various temperatures and exposure times

**Electronic Environmental Sensors**
- Electronic sensor device developed by PNNL
- Prognostic Algorithms can be integrated into the device
- RF or hardware interface
- Down loads to ASIS-MHP

**Joint Modular Intermodal Distribution System - AIT**
- Introduced temperature and humidity enable RFID TAG at the pallet level compatible with ITV server
- Evaluated Satellite communication tags

**Thermochromic Color Changing Materials**
- COTS Passive shock sensor
- Range needs to be increased to meet Ammo requirements
Virtual Engineering Center

• Established at Picatinny & Rock Island
• Helps customers to evaluate design concepts, accelerate project schedules and saves time and money by eliminating costly building of physical models
• Supported PM-SKOT & USMC maintenance system design projects
PROBLEM: Ammunition accountability brigade and below lack accuracy & timeliness resulting in suboptimal logistics related actions. Updates are manual, ad hoc and infrequent and therefore not conducive to anticipatory resupply.

Round counting sensors and/or modified Fire Control Software capture ammo expenditures

Ammo Data sent via Vehicle’s FBCB2

Bradley Paladin Abrams

For Health Management System (VHMS) equipped vehicles

Brigade Tactical Op Center
Property Book Unit Supply Enhanced (PBUSE)

Ammunition Data sent via Vehicle’s FBCB2

Accurate Data = Improved Decision Making & Responsiveness

National Inventory Control Point Accountable System

Leveraging:
- Benet Labs Barrel Fatigue Sensors
- PM-HBCT VHMS

TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.
IM Explosive and Venting Technologies help mitigate thermal threat
(Example: Slow Cook-off test result)

Without IM Technologies

Recent incidents remind us of the seriousness of explosive safety
We don’t need another Doha !!!

With IM Technologies
LRED
3-D Technology Integration
and IETM Application
Ammunition Adage

A Soldier can survive in Combat

Forever Without Mail

30 Days Without Food

3 Days Without Water

3 Minutes Without Air

But Not One Second Without Ammunition!
Al Galonski
Chief, Future Concepts Div, LRED &
Chief, AMMOLOG Div, PM-Joint Service
(973)724-2349
al.galonski@us.army.mil