Army Logistics Update

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Agenda

- Munitions Readiness
- Why Munitions Readiness?
- Ammo Funding
- Logistics Operations Supporting Southwest Asia: Munitions Support
- Precision Munitions: Excalibur and Guided MLRS
- Hellfire Missile Development
- OIF Drawdown Challenges, OEF Plus Up
- Diagnostics and Prognostics for High Value Critical Munitions
- Missile Sustainment Science & Technology
- Army Transformation Done Right
- Questions?
- Munitions: Way Ahead
Munitions Readiness Report

Status Dec 02

Today
Munitions Readiness

- Sustain Current Stockpile
- Reset Munitions
  - Repair
  - Repackage
  - Properly Locate
- Replace Munitions Consumed in Current Operations
- Demilitarize Excess, Obsolete and Unserviceable Munitions
Why Munitions Readiness?

Because not everyone has our standards:

Persistent Conflict, Expeditionary Deployment Cycles
Arm\n\ny\n\nf\n\ng\n\nNumbers reflect only Army conventional ammo. Does not include missile funding.
Logistics Operations
Supporting Southwest Asia:
Munitions Support
Ammunition Supply Points in Iraq

From Little Rock to Augusta
598 Miles

- MOSUL (Marez)
- Q WEST (Scorpian)
- KIRKUK (Warrior)
- BALAD (LSA Anaconda)
- AL ASAD
- TAJI (Al Taji)
- BAGHDAD (Liberty)
- TALLIL (Adder)

From Indianapolis to Jacksonville
698 Miles

- TIKRIT (Speicher)
Ammunition Supply Points in Afghanistan

- Bagram Air Field
- FOB Fenty
- FOB Sharana
- FOB Salerno

From Little Rock to Charlotte
772 Miles

From Baltimore to Baton Rouge
1,181 Miles
Munitions Provided to OEF/OIF: 2001 to 2009

- Missiles
- Cbt Spt
- Demo
- Artillery
- Rockets
- Bombs
- Large Cal
- Med Cal
- Small

Approx 21,800 tractor trailers. A bumper-to-bumper convoy 219 miles long. The distance between NYC & Washington DC!
Precision Munitions:
Excalibur and Guided MLRS
Why Precision Munitions?

- Precision munitions improve lethality and tactical effectiveness
- Reduces collateral damage through precise targeting and warhead adaptation
- Reduces the logistical footprint
- Provides an answer to the Cluster Munitions capability gap
Excalibur Concept of Operations

- Precision Delivery Regardless of Range
- Limits Collateral Damage
- Decreases Volume of Fire Per Engagement
- Enhances Soldier Survivability

Deploy Canards prior to Apogee (Ballistic prior to Apogee)

GPS Acquisition and Track

Impact Near Vertical for Max Lethality

Fragmenting Warhead

Structure Top Attack (Detonation after Penetration)

Mission Planning

- Gun Target Location
- Trajectory Information
- GPS Crypto Keys
- Precise Time
- Fuze Setting
- Power

Latitude / Longitude / Altitude

Top Attack, 3 Fuzing Modes:
- Height of Burst
- Point Detonating
- Delay/Penetration

Sensors:
- M707 Knight w/FS3
- Stryker FSV w/FS3
- M7 & M2A3 BFIST
- Shadow PIP TUAV
Excalibur Accuracy

147 Conventional Rounds (M549)

3 Excalibur Rounds

- Urban Command Post
- 20m X 20m Structure
- 10m Target Location Error (TLE)

Excalibur accuracy minimizes collateral damage and munitions required
Guided MLRS

Unitary
Unique
Components

Electronic Safe & Arm Fuze (ESAF)
Warhead
Prox Sensor
Radome
Control Actuation System
Canards
Battery
Nose Cap

GMLRS
Common
Components

Spring Fins
Roll Joint Motor
Guidance Processor Electronics

Alternative
Warhead
Unique
Components

M270A1
HIMARS

Fuze TBD
Prox Sensor TBD

ADAPT // INNOVATE // ANTICIPATE // ALWAYS READY
Guided MLRS

- Precise targeting reduces collateral damage
- Demonstrated 98% reliability, BDA shows high effectiveness
- Precision/effectiveness reduces the log tail – less munitions required to service targets
- First system to test Alternative Warhead concepts
  - Maintain area weapons capability
  - AW to comply with DOD Cluster Munitions policy
Hellfire Missile Development
HELLFIRE Warhead Coverage

Shaped Charge Warhead
Shaped Charge Warhead w/ Steel Frag Sleeve
Blast Frag Warhead w/ MAC

Integrated Blast Frag Sleeve (IBFS) Warhead

Main Battle Tanks (MBT)
Air Defense Systems
Commercial Vehicles (Pickups, SUV)
Patrol Craft & Ships

Heavy & Light Armored Vehicles
Personnel in Open
Small Boats

Thin Skinned Vehicles
Transporter Erector Launcher
C2 Node

Personnel in Open

Artillery Systems

Pssk Against MBT
Range Of Targets

Buildings
Bunkers & Caves

Pssi Brick over Block
Hellfire Warhead Development

**Shaped Charge Warhead**


**Shaped Charge w/ Frag Sleeve**

- Anti- personnel versions AGM-114 F-A, K-2A, P-2A

**Blast Fragmentation Warhead**

- Blast version AGM 114M
- Thermobaric version w/ Metal Augmentation Charge AGM-114N

**Integrated Blast Frag Sleeve Warhead**

- Future All- purpose warhead for version AGM-114R IBFS
Other Topics

OIF Drawdown Challenges
OEF Plus Up
Diagnostics and Prognostics
Missile Sustainment Science & Technology
OIF Drawdown Challenges

417 Forward Operating Bases in Iraq

- 51 BCT Equivalents
- 143K US Military Personnel, Coalition and Civilians
- 147K Contractors
- 22 Supply Support Activities
- 240K Truckloads
- 8K Convoys
- 10K Truckloads Per Month
- 119 Shiploads
- 21K STONs of Supplies

5-Step Process:
1- Consume
2- Redistribute
3- Transfer
4- Donate
5- DRMS Turn-In
A Snapshot of Redeployment/Retrograde

The Requirement:
31M Pieces of Equipment
2.8M Property Book Items
178K is TPE worth about $16.5B
34K Tons of Ammo
90K Containers

51 BCT Equivalents in Iraq

Customs Surge Capacity:
4 BCTs/month

Revised Ground Transportation Capacity:
4 BCTs/month

Current Customs Capacity:
2.75 BCTs/month
OEF Ramp-Up

- All Class V resupply is by air (ALOC)

- Environment requires munitions that can fire at higher angles
  - Excalibur 155 – working and used
  - 105mm Howitzer
  - 120mm Mortar
  - Hellfire Conversion (Blast Frag) and 30mm HE for Apache
Diagnostics and Prognostics for High Value Critical Munitions

**Hellfire Captive Carry Health Monitor**
- Captive Carry and Power-On Hours
- Battery Usage, Temperature, Humidity

**Guided Multiple Launch Rocket System Transportation and Handling Monitoring System**
- 300 Hours Transport Vibration
- Temperature, Humidity
- Universal Prognostic/Diagnostic Interrogator

Continuous monitoring provides an accurate history of the environmental conditions the ammunition has been exposed to.
Missile Sustainment Science & Technology

- NASA Ames - Chemical Sensor (1cm x 1cm)
- Morgan Stanley Assoc. - No-power shock MEMS, no-power humidity MEMS and module prototype
- Ridgetop Group – Power Supply Prognostics
- Purdue Univ - Impact Damage Detection in Rocket Motor Composites
- WDI – GMLRS Prognostics Studies
- GMLRS Health Monitor
- AATD - Flight Testing of HF Design Prototypes
- Increment 1 HELLFIRE Health Monitor
- WDI- Min Smoke Propellant Aging Studies
- RTTC - HELLFIRE II Prognostics Studies
Army Transformation Done Right

Vision

- A fundamental change in how the Army does business
- Apply proven business principles to challenges faced by the Army

Desired Effects

- Maximizing return on taxpayer’s dollar
- A culture that incentivizes good stewardship of Army resources
- A culture of continuous improvement

Payoff is an Army which **effectively and efficiently provides the necessary forces and capabilities** to the Combatant Commanders in support of National Security and Defense Strategies
Questions?
Precision Munitions: Way Ahead

- Army continues to develop precision munitions capabilities
- Scalable warheads/lethality; produce lethal effects while reducing collateral damage
- Modernize ammunition through product improvements, produce effective munitions that do not leave the “aftermath” of war behind
- Closing the capability gap caused by the policy on Cluster Munitions
- Address the increasing demilitarization stockpile
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