

# **U.S. ARMY MATERIEL COMMAND**

**Mr. Gary Motsek**

**Deputy G-3 Support Operations, AMC**

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## **Depot Maintenance Transformation**

***Presented at DoD Maintenance Symposium***

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**25 October 2005**

***Need to be faster, more agile, less bureaucratic – Need to fight this everyday***

**Arsenals**



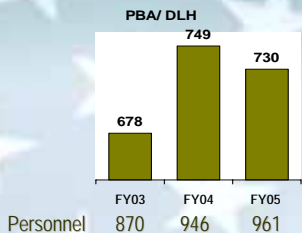
**Depots**



# Army Depots and Arsenals

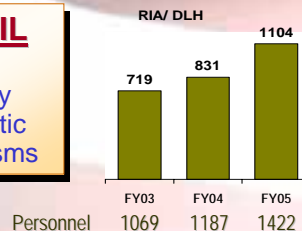
## Pine Bluff, AR (PBA)

- White/Red Phosphorus
- Smoke/Obscurants
- Chem/Bio Protective Equipment/Kits



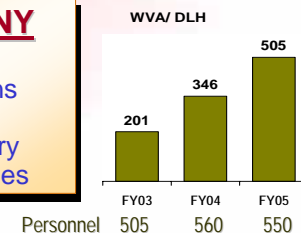
## Rock Island, IL (RIA)

- Towed Artillery
- Hydro-Pneumatic Recoil Mechanisms



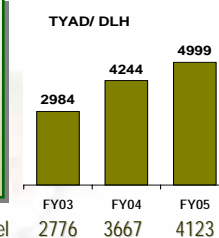
## Watervliet, NY (WVA)

- Tank Cannons
- Mortars
- Towed Artillery
- Recoilless Rifles



## Tobyhanna AD

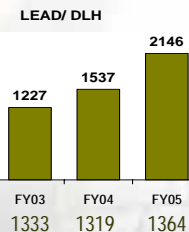
- Communications & Electronics
- Avionics
- Missile Guidance & Control



**CECOM**  
COMMUNICATIONS-ELECTRONICS LIFE CYCLE MANAGEMENT COMMAND  
FORT MONMOUTH, NJ

## Letterkenny AD

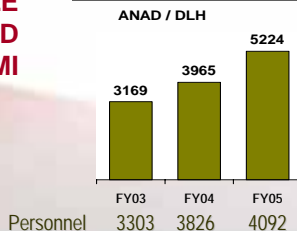
- Tactical Missile Ground Support Equipment



**AMCOM** - AVIATION AND MISSILE LIFE CYCLE MANAGEMENT COMMAND  
HUNTSVILLE, AL

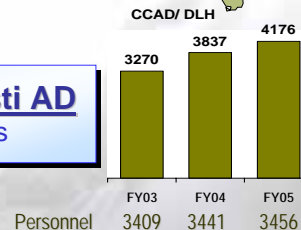
## Anniston AD

- Combat Vehicles
- Small Arms
- Artillery



## Corpus Christi AD

- Helicopters



## Red River AD

- Bradley and MLRS
- Tactical/Combat Wheeled Vehicles
- Missile Recertification

Missile Recertification Moved to Letterkenny Army Depot in BRAC 2005 Decision

**TACOM**  
TANK-AUTOMOTIVE AND ARMAMENTS LIFE CYCLE MANAGEMENT COMMAND  
WARREN, MI

**Depot FY05 Workload Approx 20M DLHs → 26M DLHs in FY06**

**NOTE for DLH Graphs:**  
Depots plot as Millions  
Arsenals plot in Thousands



# Depots and Arsenals

## Depots

- Complete End Item Overhaul
- Component Overhaul
- Remanufacturing
- Other Military Service Work
- Other Government Work
- Public-Private Partnerships on-site
  - ✓ *Manufacturing*
  - ✓ *Maintenance*
- Fabrication of Commercially Unavailable Components and Parts
  - ✓ *Reverse Engineering*
  - ✓ *Flexible Light Manufacturing*
- Depot Field Teams In-Theater

## Arsenals

- Complete Manufacturing Plant
- National Security Insurance Policy
- Unique Capabilities:
  - ✓ *New Weapons Prototyping*
  - ✓ *End Item Production*
  - ✓ *Spare/Repair Parts Production*
- Two Types of Arsenals:
  - ✓ *Hard Iron (Watervliet, Rock Island)*
  - ✓ *Chemical (Pine Bluff)*

## Currently Working 24/7

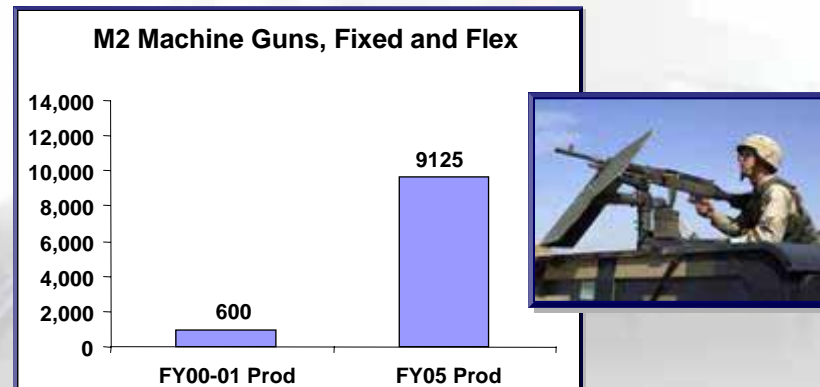
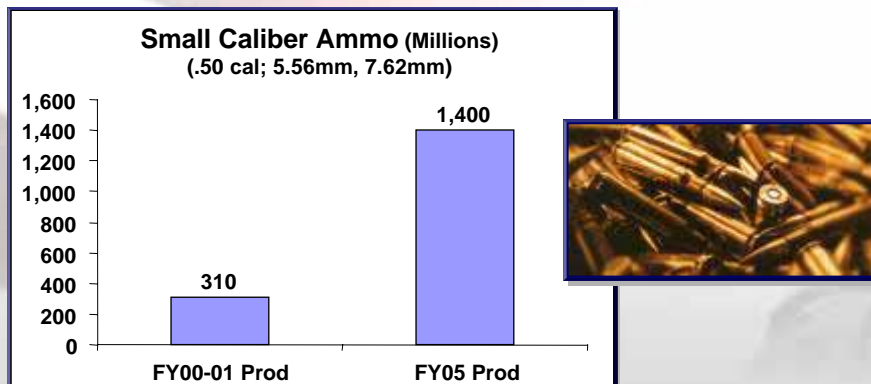
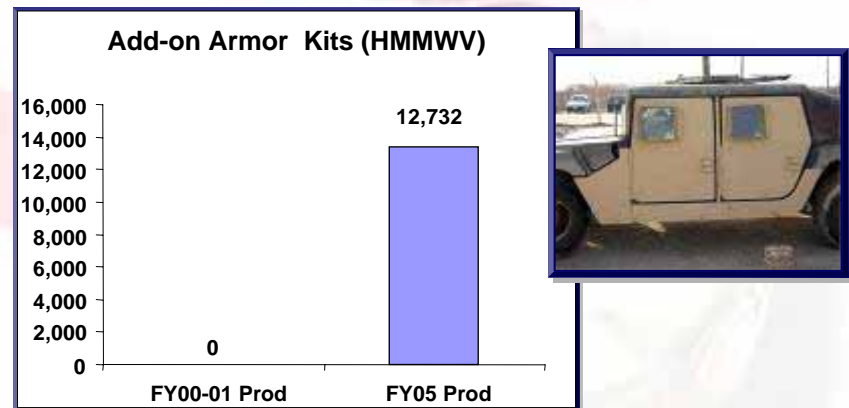
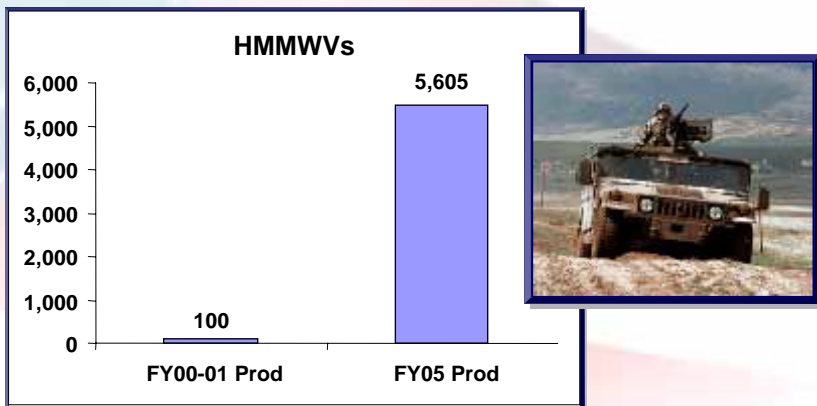
- ANAD:** Currently working 2 shifts, 11 hours per day, 6 days a week in all production areas. On average, 20% of work is second shift.
- CCAD:** Currently 24/7 in two machine shops, avionics and rotary wing (blade) work centers, and in engines/components, all weapons systems, and UH-60/AH-64/UH-1N (Navy)/Pavehawk (AF) airframes. Overall 16% third shift, 31% second, 53% first.
- LEAD:** Operating 24 hours, 5 days a week in MLRS, Circuit Cards, Cables and Harnesses, 2 paint prep areas, Systems Test, Machine Shops, Armor, Sheet Metal Fabrication, and HMMWV. Over the total depot, second and third shifts comprise 5% of workload each; 90% accomplished first shift.
- PBA:** Currently no three shift operations. 6% of work force on second shift.
- RIA:** 24/7 for M939 Armor, MK93 Mount, RRMC, Small Arms Gages, and M7 Pedestal. Over entire arsenal, 85% of work on first shift, 10% on second, 5% on third.
- RRAD:** 24/7 in Rubber Products; 24/5 in Paint, Paint Prep, Transportation, Secondary Items, and Surface Support; 20/4 in Light Tactical (HMMWV), Heavy Tactical (HEMMT, Trucks), and Combat Vehicles; 10/6 in Secondary Machine Shop.
- TYAD:** 24/7 shifts working Firefinder, TACSAT Terminals, Sheet Metal, Mutes/Minimutes/Transmitters, Electronic Shelters and Vans, Paint, and Sandblast. 5.6% of work on third shift, 5.1% on second shift.
- WVA:** Watervliet is working 24/7 in Armor and Support areas, 2 shifts in other areas. Overall workforce is 6% on third shift, 20% on second.



# The Accelerated Pace of the Army Industrial Base at War

## Army Materiel Command

- Depot output for 2006 will double 2001 (aircraft, small arms, combat and tactical vehicles, ground support, communications-electronics)
- At least some portions of all Army depots and arsenals working 24/7
- Ammo plants also multi-shifted
- Sample production increases:



Total HMMWV  
 RRAD = 3,573  
 LEAD = 1,406  
 MMA = 422  
 Total = 5,401

# Red River Army Depot Production Status

**EXAMPLE**

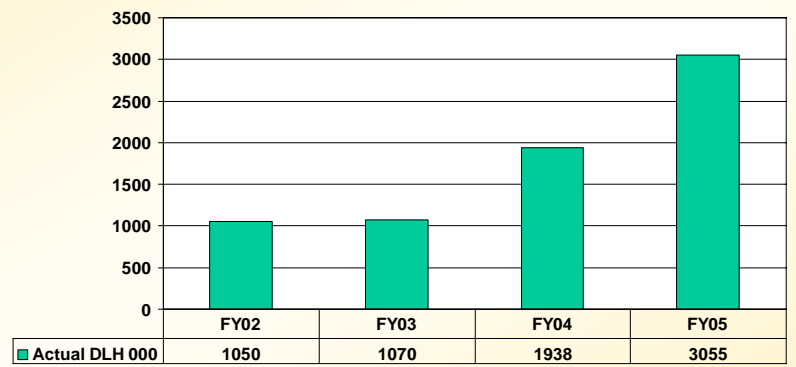
The Scheduled Qty thru End FY05 includes both RRAD and Contractor production.

    = SORTS System

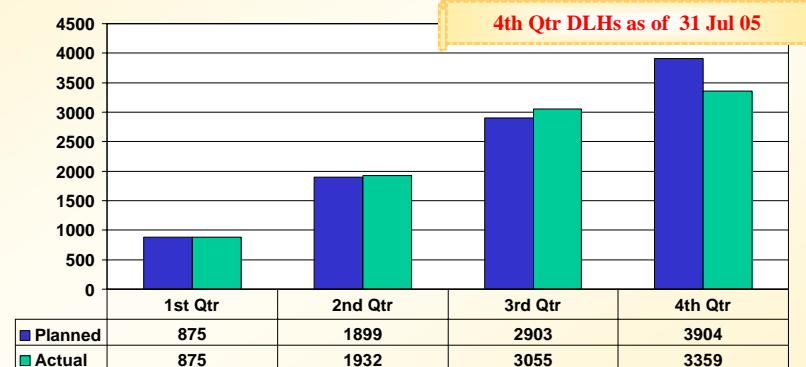
[PP] = Partnering Arrangements

SYSTEM	FY00 - FY01 Average Monthly Production	FY05 Planned Monthly Production	Un-serv/ on hand for Induction	Scheduled Qty Completions thru 31Jul 05	Actual Qty Completed thru 31 Jul 05	Scheduled Qty Completions Thru end FY05
HMMWV	44	353	377	2514	2880	3,573
BFVS	12	26	547	110/160	137/160	145/227
MLRS	7	3	42	38	42	36
HEMTT FOV	7	39	223	261	261	331
6/10K Forklift	7	13	66	26	41	68
5 ton Truck	6	43	210	431	465	544
SEE	12	29	112	208	208	277
Crane	12	2	10	19	19	19
Roadwheels	1	6,982	27,023	75,618	65,902	93,318
Track	6,492	15,000	308,562	233,175	306,278	358,096
Bradley XMNS	79	70	518	393	414	504

RRAD 3Q Execution FY02 – FY05  
 In 000 Direct Labor Hours  
 (Total Maintenance Mission)



RRAD FY05 Planned vs Actual Execution  
 In Cumulative 000 Direct Labor Hours  
 (Total Maintenance Mission)



# Setting the Force: What We've Done ... What We're Doing

## ARMY PLAN

The Army will undertake a disciplined, orderly reconstitution to restore combat power.

The Army will implement lessons from Desert Storm, OEF, OIF, and operations in the Balkans to refine and improve our efforts.

### Depot Spt to Other Svcs

~ \$ 193M (Examples)

Tanks & Small Arms – USMC  
Helicopters – USAF & USN  
Missile Guid – USAF  
Navigation, Radars – USAF  
Threat Emitter – USAF  
HMMWVs – USAF  
Chem Alarms - USAF



1,555 Tracked vehicles  
9,426 HMMWV  
7,074 Trucks  
3,579 Trailers

82,500 Small Arms  
9,600 M2      7,000 M203  
8,400 M249    4,300 M4  
2,600 M240    30,000 M16  
19,600 M9      1,000 MK19

1,833\* Aircraft  
421 AH-64  
257 CH-47  
878 UH-60  
277 OH-58  
(\*not inclusive of SOA)  
Inclusive of OIF 3

3,691 Commo/Electric

2775 Missile Systems  
15,032 Missile Rounds  
50,000 Short Tons of  
Ammunition

9 Patriot Battalions  
112 MLRS

## ARMY / INDUSTRY PARTNERSHIP

- Coordinated AMC & PEO / PM logistics plan
- Workloading organic & commercial sources

**Aviation** Bell; Boeing; DynCorp(CSC); Defense Support Systems; Lear Siegler Inc.; Honeywell International, Inc; Sikorsky Aircraft Corp. Lesko; Foster Miller

**Tracked Vehicles** General Dynamics Land Systems; BAE

**Wheeled Vehicles** Oshkosh Truck Co. (OTC); Stewart & Stevenson; Maine Military Authority; Armor Holdings, Inc.; SwRI

**Construction Equipment/Material Handling Equipment** Caterpillar; Kalmar; JLG Industries; Jerome Increase Case

**Chemical Defense Equipment** Smith Detection Company; General Dynamics Land Systems; Bechtel; Hunter Manufacturing

**Soldier Systems** Guild Association, Inc.; Maine Military Authority

**Small Arms** General Dynamics Armament & Technical Products; Colt Defense; FN Manufacturing Inc.

**Missile Systems** Raytheon

**Commo/Electronics** R.A. Miller; Engineering & Professional Services; Raytheon; Lockheed Martin; ITT Defense; Rockwell Collins Gov't Systems; BAE Systems; SAFT America; Northrop Grumman Mission Systems; ManTech

**Generators** Technical & Management Service Corporation; Engineered Support Services

**Ammunition** Alliant Techsystems, Inc.; Esterline Armtec

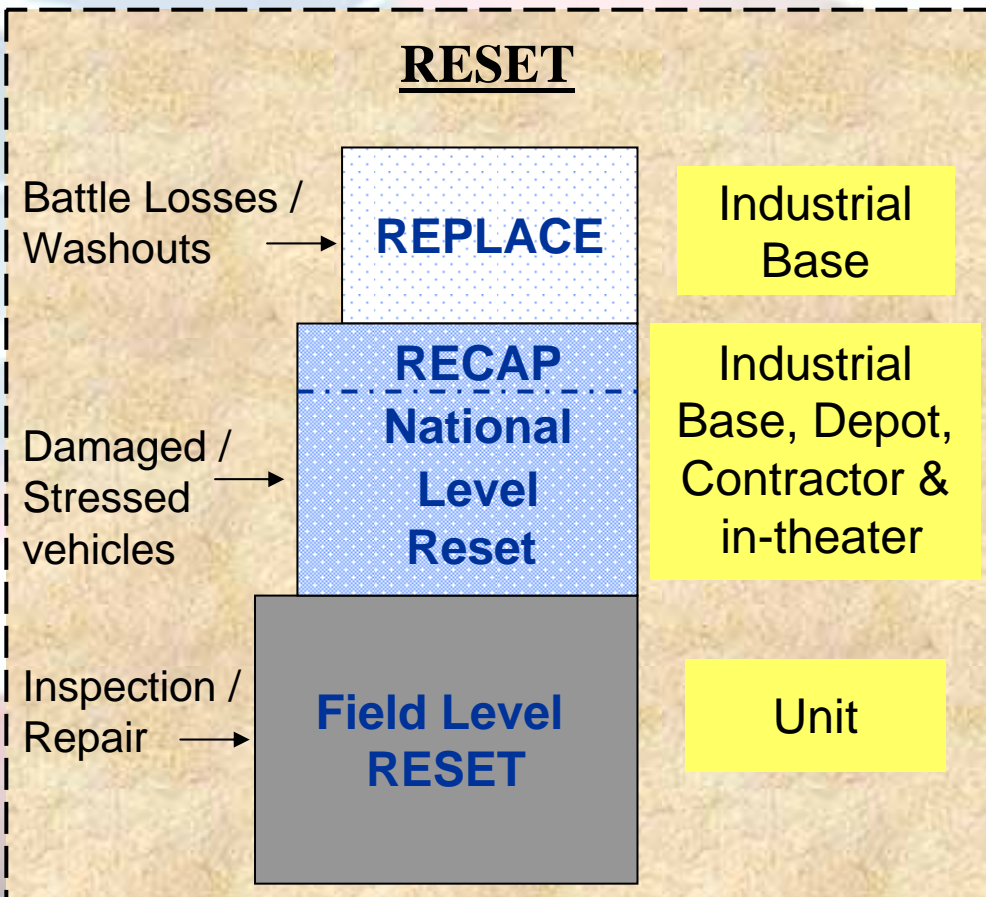


Not all inclusive

Thru FY05 Workload

# RESET – The Strategy

A generic term that represents a series of actions to restore units to a desired level of combat capability commensurate with mission requirements and availability of resources.



- **Replace** – battle losses and washouts from the repair process (procure new).
- **Recapitalize** – to zero miles/zero hours to account for damage/stress.
- **Reset Repair (National Level)** – work performed to correct equipment faults that are *above the Organizational/Direct Support (ORG/DS) level*; performed by base Directorate of Logistics, contractors, and Army's industrial base.
- **Reset Work (Field Level)** – work performed to correct equipment faults that are performed *at ORG/DS level*; performed by unit level by soldiers, augmented by contractor as required.

- **Automatic Reset List** – Automatically Inducted into National level Reset.
- **Reorganize** – Reset units to a modular design in support of Army Campaign Plan.

**RECAP may be chosen over Reset, even at higher initial cost, when life-cycle costs are lowered.**



# Initiatives

- **Lean / Six Sigma - >200 Individual Events in FY05 at Maintenance Depots**
- **CITE Designations**
- **Performance Based Logistics**
- **Partnership . . . Partnership . . . Partnership**
- **Supply Support to Depot Maintenance**  
i.e. - Customer Pay, Integrated Prime Vendor, Kitting

**Depot Is a Capability . . . *Not a Location***





# Depot Maintenance and Readiness

## *Lessons Learned*

- **Depot Production Schedule is directly tied to:**
  - Deployment and Re-deployment of Army and Joint forces
  - Rates of consumption of reparable components
  - Modularity
- **Meeting production schedules requires:**
  - LEANed-out processes
  - Private Partner involvement
  - Forward Repair Activities
  - Accountability of suppliers – parts deliveries must be strictly tied to production schedules, only 100% is complete success
  - Managing “seed assets” coming from the units for repair as strictly as repaired items going back
  - Flexible workforce





# Tuesday, 25 October



- **11:30 AM: Lunch**
  - Buffet in BJCC Exhibit Hall
  - Walkway to BJCC – from Sheraton atrium
  - Identification badge required for entry
- **2:00 PM: 5 Breakout Sessions**
  - Located on 1<sup>st</sup> & 3rd floors (BJCC East Meeting Rooms)
  - Sessions run concurrently—select only one
- **4:00 PM: Exhibit Hall opens**
- **4:30–6:00 PM: Reception in Exhibit Hall**
- **7:00 PM: Reception at Barber Vintage Motorsports Museum**