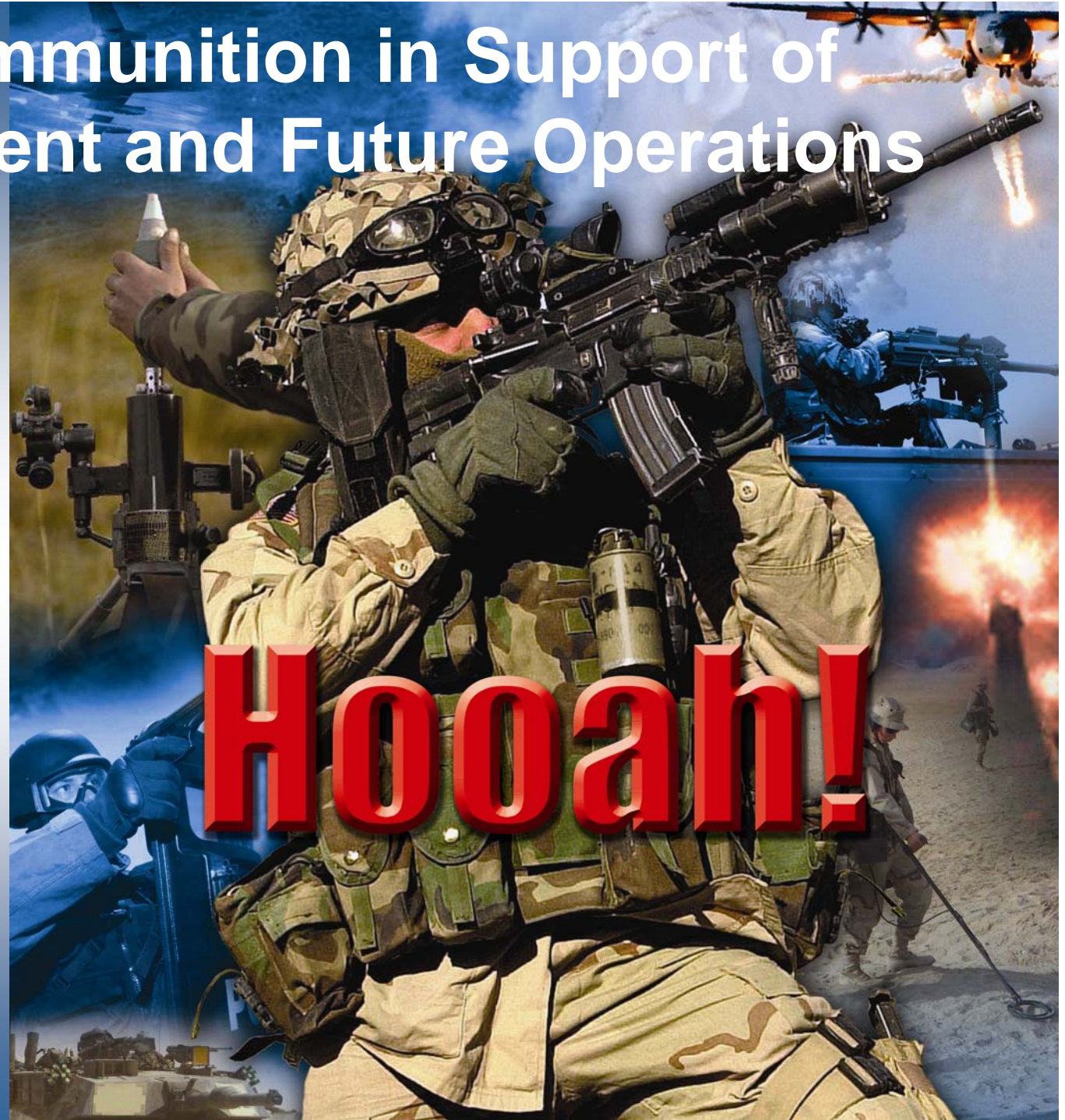




Ammunition in Support of Current and Future Operations



Presented By:
Kevin M. Fahey
Deputy Program
Executive Officer







PEO Ammo Main Objective



- **Unify & Integrate Ammunition Management Under One Single Chain of Command...by Consolidating Responsibility and Resource Management in the PEO**
- **Develop a Unified Munitions Acquisition Strategy**
 - ✓ Integrate Requirements...Training, War Reserve, & Modernization
 - ✓ Include SMCA Mission
 - ✓ By Munition Family
- **Identify and Optimize Key Business Processes**
- **Develop an Industrial Base Strategy (Organic and Commercial)**

**Authority and Accountability...
For Meeting Full Military Requirement For all Ammo Families**



PEO Ammo Organization



PEO Ammunition

BG Paul Izzo PEO
Mr. Kevin Fahey DPEO



**Washington, D.C.
Liaison Team**



Industrial Base
Mr. Matt Zimmerman
APEO Industrial Base



Close Combat Systems

Mr. Jim Sutton PM



Combat Ammo Systems - Indirect Fire

COL Nate Sledge PM



Maneuver Ammo System - Direct Fire

Mr. Bill Sanville PM



Joint Services

COL Jeff Gwilliam PM

Networked Munitions/
Munitions /
Countermine

Demolitions /
Non-Lethal

Mortars

Excalibur

Large Caliber

Medium &
Small Caliber

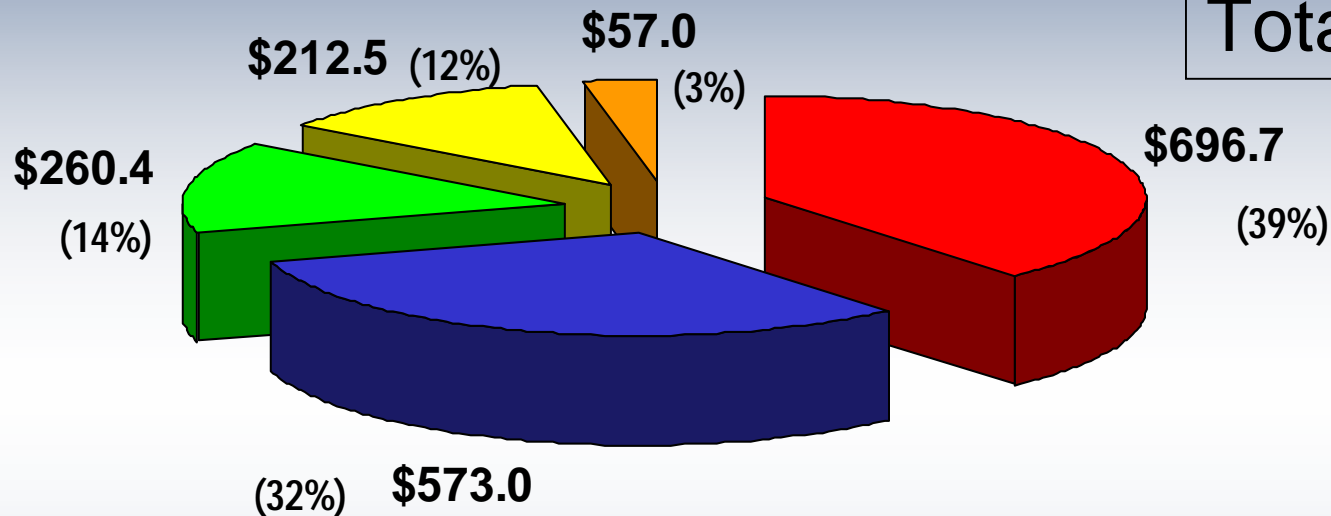
DEMIL



RDA FY 04 PEO Ammo Budget Total



Total: \$1,799.6M



Source: FY05 PB

PM Combat Ammunition Systems

- Artillery Ammunition RDTE \$184,067
- Artillery Fuze WTCV \$10,027
- Mortar OPA \$39,224
- Ammunition Ammo \$339,633

PM Joint Services

- Industrial Base/Facilities RDTE \$30,937
- Demil Ammo \$181,626
- ARMS

PM Maneuver Ammunition Systems

- Large Caliber RDTE \$26,521
- Medium Caliber Ammo \$670,148
- Small Caliber

PM Close Combat Systems

- Mines, Countermine & Demolition RDTE \$133,615
- Ammunition OPA \$17,884
- Ammunition Ammo \$108,881

PEO Ammo

- RDTE \$31,595
- Ammunition Ammo \$25,446



Single Manager for Conventional Ammunition (SMCA)



- **SMCA Mission:** Manage DoD conventional ammunition, and personnel and training functions



SMCA Total:
\$1.3B for FY04,
166 items
All Services



- **Objectives:** Achieve the highest possible degree of efficiency and effectiveness in the DoD operations required to acquire top quality conventional ammunition for U.S. Forces





PEO Ammo Management Philosophy



- **Promote Best Value Acquisitions**
- **Reinforce Success**
- **Utilize Disciplined Processes**
- **Promote Six Sigma and Lean Design/Production**
- **Promote Continuous Process Improvement and Technology Insertion**
- **Promote Commonality and Interoperability**
- **Spiral or Evolutionary System Development**

Put Eyeballs On – “Trust, but Verify”

Support to Current Operations



Joint Lethality

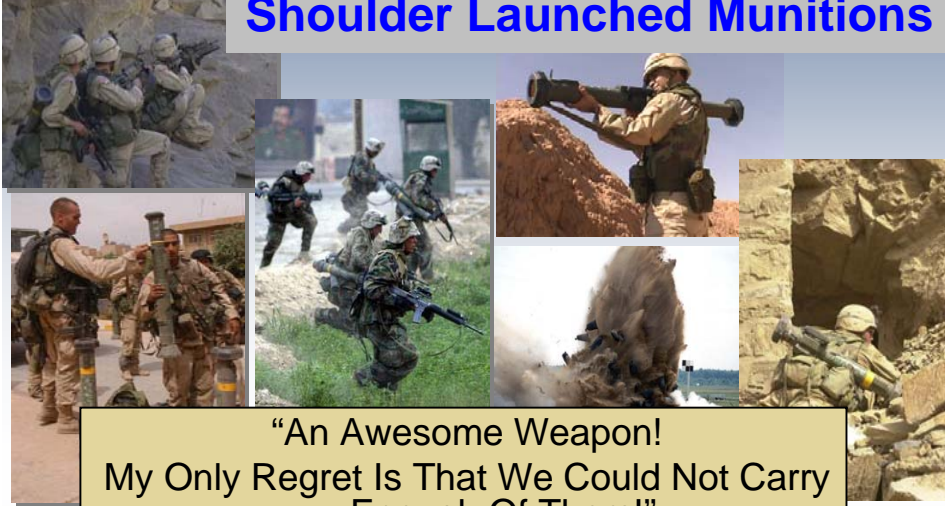




Close Battle Feedback



Shoulder Launched Munitions



**"An Awesome Weapon!
My Only Regret Is That We Could Not Carry
Enough Of Them!"**
- NCO 10th Mountain Division, Oct 03

**"Using the NL
claymores at a
rate of 1 every two
days at the POW
camps to prevent
escapes and riots."**
*-800th MP Bde, 13
Feb 04*

Non Lethal Capabilities Sets



**"Bottom Line is that our
new equipment works
well and the NLM kept us
from having to kill
someone as well."**
*LTC Brown, Battalion
Commander, Bn 709th (Task
Force Falcon Provost Marshall)*



Countermeasure Flares



**"The M211/M212 flares saved
my life while deployed.
Thank you and everyone
on your team."**
*BG Clay L Newman,
Commanding Officer, ARDEC
19 Dec 03*



Hand Grenades

**"Used to clear bunkers
and rooms, and to
destroy equipment and
ammunition. Performed
as expected"**





Countermine Feedback



HSTAMIDS



Last night B/41 was asked to extract a 3 people from a mine lane. B/41 used the new Buffalo to extract the personnel from the hazard area. No one was hurt during the incident or during the extraction.

Richard Radar, ManTech



BERM SIFTER



MEDIUM MPV



BUFFALO (MPV)



MEDIUM FLAIL



IVMMD

“A squad got stuck in a minefield just over a month ago. We got the call to go out and do an extraction for them. I took Two of my best guys. **They swept their way out to the vehicle.** We just marked and bypassed our way through. Clayton found at least 4 mines with the HSTAMIDS, marked them and continued his way around them towards the vehicle. Once **we got everyone safely out of the truck,** we brought in an MCAP dozer to clear around the truck. **Every mark on the ground was a mine.**

Everyone was extremely impressed
” – SFC Bantin, B/41E, Bagram, Afghanistan, 3 Dec 03



Mortars in Battle



60mm: Illum, Smoke, WP Smoke, HE
81mm: Illum, RP, HE
120mm: Smoke, Illum, IR Illum, HE



"120mm Mortar – A good system for pounding targets up in the mountains. Had to push out 120mm Mortar due to combat patrols moving out side the 7200m range"

"On several occasions my mortar platoon was called upon to shoot missions two to three thousand meters beyond our max range. Most of these mission were in support of dismounts in a MOUT fight"

SSG Charles Weaver Jr. 4th BN, 64th Armored
Regiment, 3ID
Operation Iraqi Freedom, 2003

SFC McLaughlin, 75th Ranger Regiment in support
Operations In Afghanistan, 2002

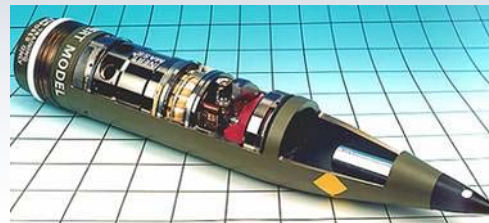




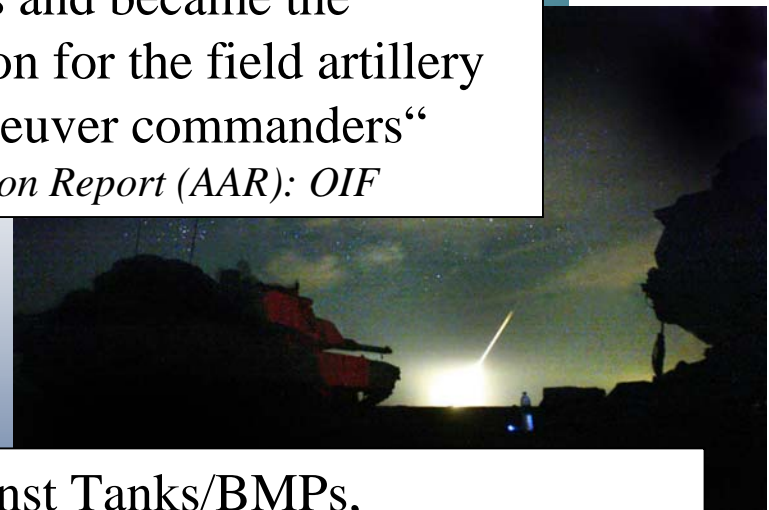
Sense and Destroy Armor (SADARM) in Operation Iraqi Freedom (OIF)



M898, 155mm SADARM
121 SADARMs fired
48 pieces of enemy equipment destroyed



"SADARM exceeded expectations and became the preferred [smart] precision munition for the field artillery battalions and their supported maneuver commanders"
3rd Infantry Division (ID)(Mech) After Action Report (AAR): OIF

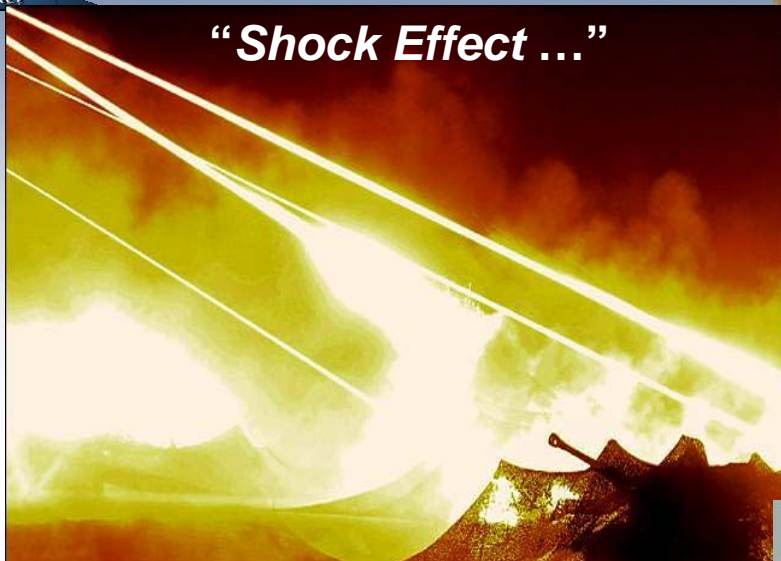


"...Very effective against Tanks/BMPs,
3 rounds will kill at least one tank...never missed..."
LTC Doug Harding- Former 3BCT FSCOORD/1-10 FA CDR



HE Artillery in Battle

3rd Infantry Div AAR



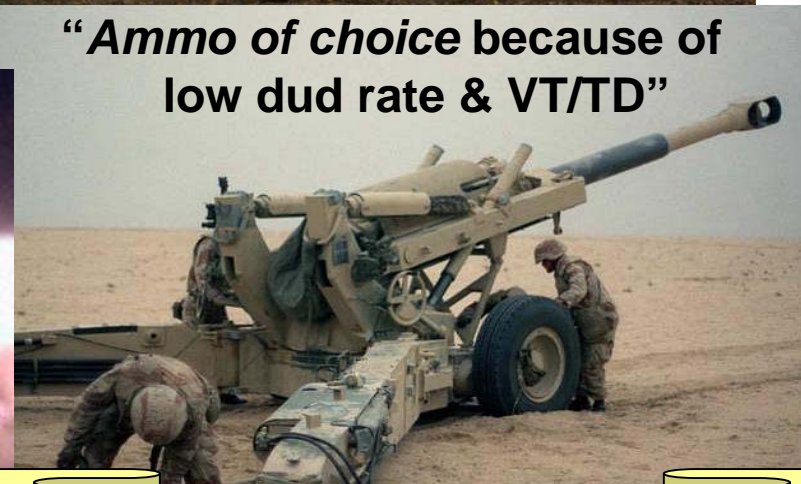
“Shock Effect ...”



“Much more effective against armor than effects tables say...”



“HE very effective against the Enemy we encountered”



“Ammo of choice because of low dud rate & VT/TD”

105mm: Smoke, WP Smoke, HE, HERA
155mm: SADARM, Copperhead, Illum, Smoke, HE, HERA
Fuzes, Prop Charges, Primers ...

Source: 3ID Briefing, “ Fires in Close Fight: OIF Lessons Learned”
LTC Doug Harding- Former 3BCT FSCoord/1-10 FA CDR



120mm Tank Ammunition



- **BLUF: Performed as advertised or better in the eyes of the armor community**
 - ✓ **“Pretty much anything we fired killed whatever target we shot.” SFC Cornell 4-64 AR Master Gunner**

- **M830A1 (MPAT) was tank round of choice in OIF and was used against T-72 MBT, buildings, light vehicles and troops**
 - ✓ **“I’d be happy with a full load of MPAT.” LTC Sanderson, 2-69 AR BN CDR**

- **M830 (HEAT) was second choice and performed well against same variety of targets. Some tankers fired HEAT into pavement or into a concrete wall to create spall and shrapnel to engage dismounts**
 - ✓ **TWOFER: One story of an M1 engaging a T-72 stopped on the road at about 2000m broadside and popping the turret on it and an adjacent tank. SGT Coultrey 3-69 AR**





Medium Caliber Ammunition



- 25mm: **M919** provides **excellent** penetration **capability** versus APCs and trucks. **25MM** chain link cannon provides accurate and rapid fire
- **25MM HE** rounds and **7.62 coax** machine gun rounds were **munitions of choice** for most Bradley IFV many engagements
- 40mm: Soldiers felt that the **M203 Grenade Launcher** is a lightweight, compact and simple to use system that provides the squad with **excellent firepower**
 - ✓ Soldiers that were experienced in using the M203GL had no difficulty **engaging targets** out to and **beyond 400m**





Small Caliber Ammunition



- **.50 Cal:** A large number of soldiers commented that the M2 machine gun is “...the best weapon in the Army”
 - ✓ Engaged and destroyed targets (light armor, buildings and personnel) between 50-2000 meters without experiencing any major malfunctions or breakages on the weapon system
- **7.62mm:** Coax machine gun and loader machine gun were most widely used weapons for tanks
 - ✓ Ammunition and weapon systems **performed very well**
- **5.56mm:** Most soldiers considered M16 weapon series to be **very accurate** regardless of the version or sighting system





Future of Ammunition



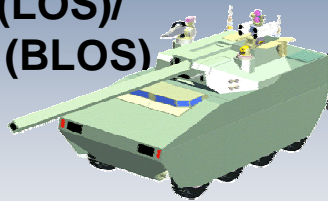
Joint Lethality



Ammunition in support Family of Combat Systems

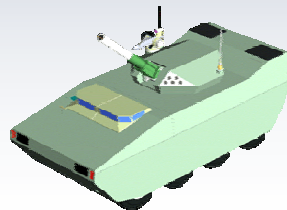


120mm Line of Sight (LOS)/
Beyond Line of Sight (BLOS)
Mounted Combat
System (MCS)



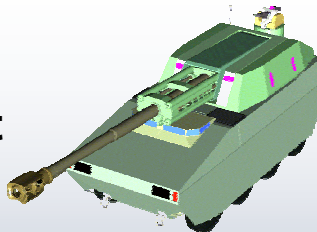
- Mid-Range Munition (MRM)
- Advanced Kinetic Energy (KE)
- Advanced Multi-Purpose Anti-Tank (MPAT)
- Lt Wt 120mm Cannon

120mm
Non Line of Sight
(NLOS) - Mortar



- Precision Guided Mortar Munition (PGMM)
- Mortar Fire Control

155mm
Non Line of Sight
(NLOS) - Cannon



- XM982 Excalibur
- Low Cost Course Correction
- Next Generation Scatterable Mines (NGSM)

Infantry Carrier
Vehicle (ICV)



- Bursting Munitions
- Medium Caliber Program
- Ground Standoff Mine Detection System

Other

- Intelligent Munitions System (IMS)
- Air Standoff Mine Detection System (ASTAMIDS)
- Objective Crew Served Weapon (OCSW)



Integrated Concept Team (ICT) & Trade Studies results



- **MGV Weight and Lethality Decisions made on weapon systems for ICV (30mm) and NLOS-M (120 turreted)**
- **Decisions made on secondary armaments (OCSW – XM307) – train in 50 cal and fight in 25mm**
- **NLOS-C Decision is 155mm**
- **MCS caliber decisions deferred**
- **Utilize ongoing SDD-24 (SoS optimization of MGV alternatives) to confirm or modify MGV concept decisions**
- **Complete key trade studies to support concept decisions by SFR. . .Sep 04**



Army's Direction for Precision



- SECDEF Lessons Learned from OIF: **“Key lessons so far include the importance of precision & the ability to deliver devastating damage to enemy positions, while sparing civilian lives & the civilian infrastructure.”**
- Army Report on Indirect Fires (25 July 2002): **“The Army fully supports OSD proposals to accelerate Army precision fire initiatives... by FY07.”**
- Unit of Action O&O: **Precision fires... “allow small units in the UA to selectively destroy key enemy systems and forces.”**
- FCS KPP #3: **“...the UA must have the ability to create lethal and non-lethal overmatch at the time and place of its choosing. ... to suppress and destroy enemy forces and systems with greater precision, at extended ranges and in close combat.”**





MRM GTH





Commonality



CURRENT MUNITIONS

COMMONALITY PLAN

ENDSTATE

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

Near Term

Mid Term

Far Term

Munitions with Common Sub-Components

Common Propellants

Common Fuzes

Common Sub-munitions

Common Guidance

Common Warheads

Munitions with Common Sub-Components

Common Short-Range Munitions

Common Mid-Range Munitions

Common Deep Range Munitions



Ammunition Enterprise Strategic Planning



- ***Vision:* Battlefield Dominance For The Warfighter Through Superior Munitions**
- ***Mission:* Execute Integrated Life Cycle Management Through A Team Of Dedicated Professionals Who Provide Effective, Available, And Affordable Munitions For The Joint Warfighter.**



We Transformed Strategic Issues Into an Initial Set of GOALS



Strawman Ammunition Enterprise Goals

- ✓ Grow World-Class People, Teams and Partnerships
- ✓ Leverage and integrate joint service activities
- ✓ Improve Integrated Life-Cycle Management
 - **Technology Development**
 - **Industrial Base**
 - **Logistics**
 - **Best Value Enterprise Acquisition**
- ✓ Communicate effectively with Stakeholders



On-going Initiatives



- **Disciplined systems Engineering, Lean Six-Sigma focus**
- **Operating in a Joint Services environment**
- **Industrial Base, Demilitarization and Insensitive Munitions Strategic Planning**
- **Collaborative Systems Environment**
- **Establishment of an Ammunition Investment Strategy**

Many Opportunities for More Collaboration



Summary – The Ammunition Enterprise is ...



- Supporting Current Operations/Planning Future
- Improving Ammunition Life-Cycle Practices
- Focused, Well-Trained Workforce
- Leveraging World Class Capabilities & Technologies
- Vital to the development of products for the Future Joint Force



Transformation - Mines, Countermine and Demolitions



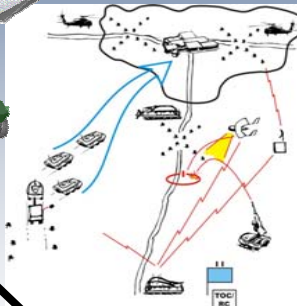
Interim Vehicle Mounted Mine Detector

HSTAMIDS

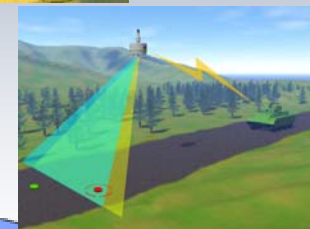


Mongoose

IMS



GSTMIDS



Wide Area Munition (Basic Hornet)

Non-Lethal Capability Set



Current Force

Interim Force

Objective Force



Grenade, Smoke M18



Grenade, Frag M221



Fighting Position Excavator



Selectable Lightweight Attack Munition



Volcano



Shoulder Fired Rocket



Signal Kit, Personnel



Modular Crowd Control Munition



Signal Illum WS Cluster



AC Ctr-measure Flare (M206)



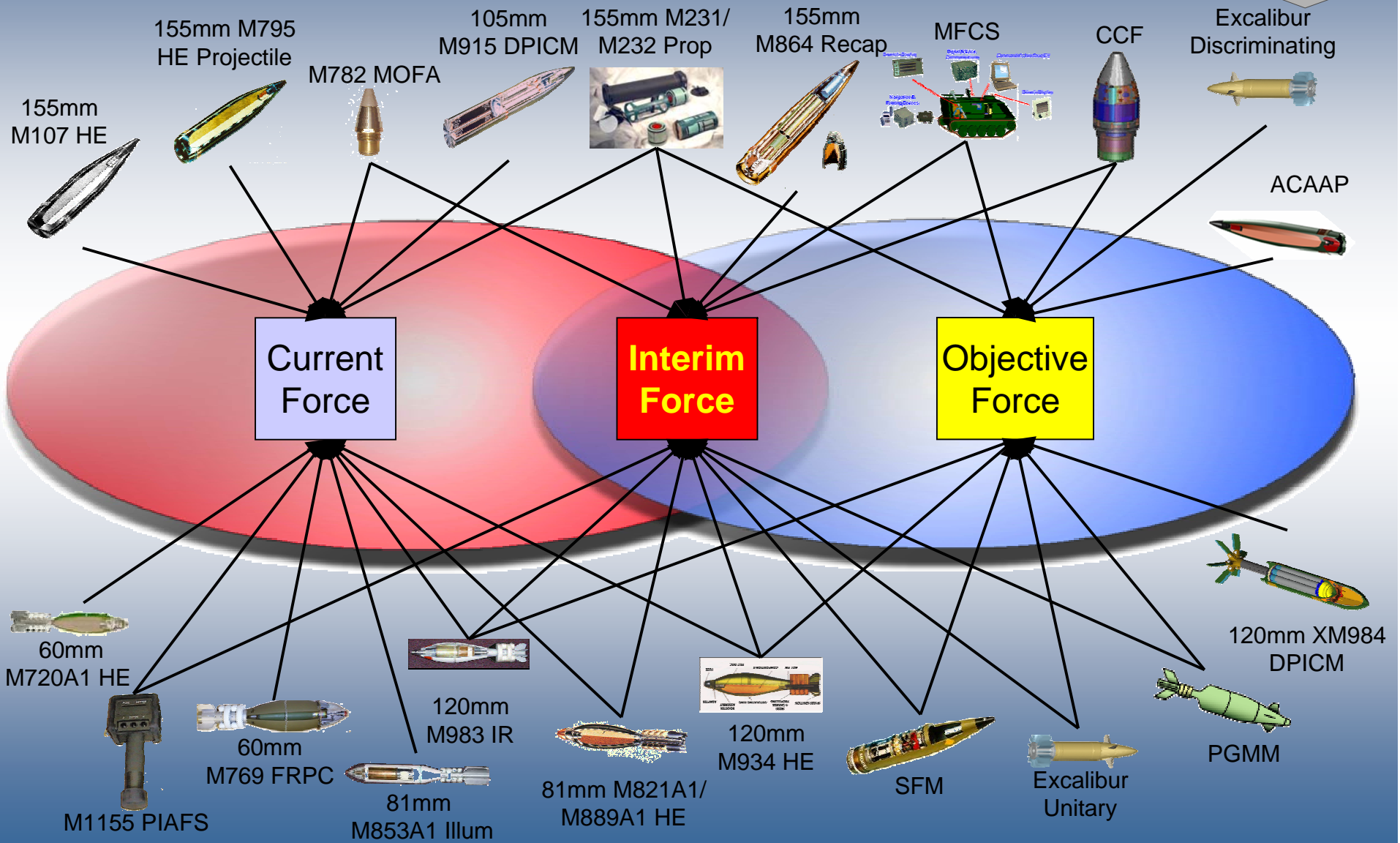
IR Ctr-measure Flare XM211



Sympathetic Detonator



Transformation – Artillery and Mortars





Transformation - Small, Medium and Large Caliber



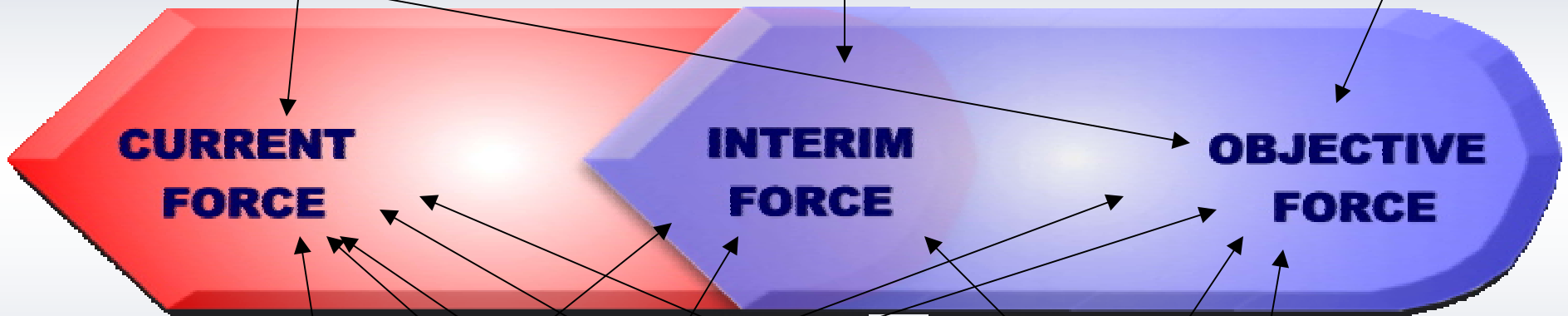
120 mm LARGE CALIBER



105 mm LARGE CALIBER



120 mm LARGE CALIBER



SMALL CALIBER

5.56mm



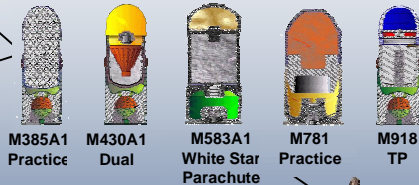
7.62mm



Caliber 50



40mm GRENADES



MEDIUM CALIBER



20mm

