

PROJECT MANAGER MANEUVER AMMUNITION SYSTEMS

**Direct Fire Ammunition Lessons Learned:
“More Than Just Impacts on Bullets”**



COL Mark Rider

28 APR 05

Reliable, Precise, Lethal



Take Aways



- **Strategic Ammunition Environment:
Dramatic Increase In Demand for Direct Fire
Ammunition**
- **Lessons Learned / Impacts Include More
Than Just Bullets.....**
 - **Production Facilities**
 - **Products**
 - **Life Cycle Management**

Reliable, Precise, Lethal



Agenda



- **Mission**
- **Scope**
- **Strategic Ammunition Environment**
- **Ammunition Areas and Lessons Learned**
- **Summary**



PM-MAS Mission

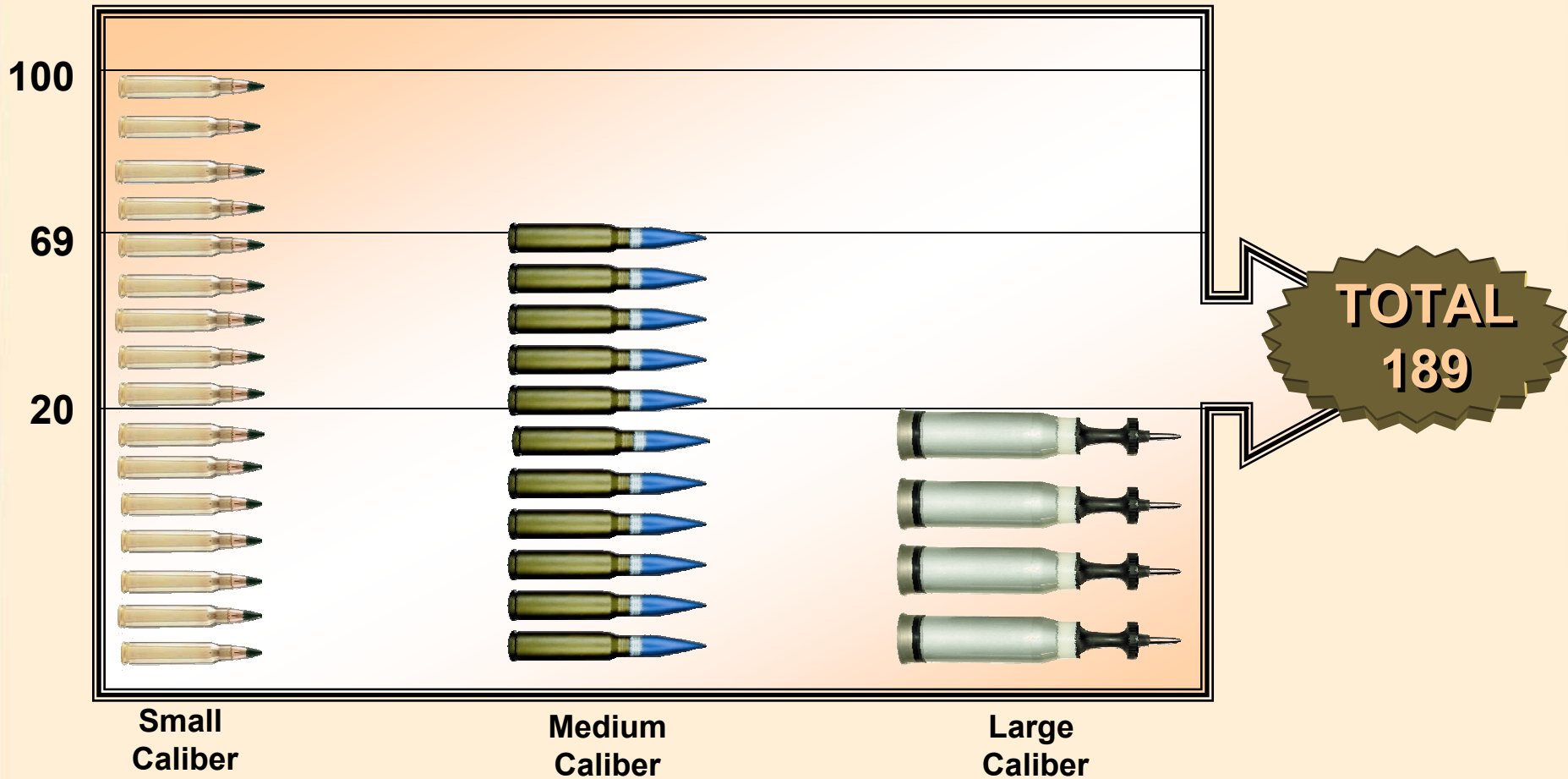


PM MAS Provides Direct Fire Combat And Training Ammunition Capabilities To Warfighters (Army, Navy, Air Force, Marines) And Government Agencies To Support Dismounted Soldiers, Combat Vehicles, Helicopters, Naval Vessels, And High Performance Aircraft. The PM Does This Through Life Cycle Program Management Of Ammunition In The Following Categories:

**Small Caliber
Medium Caliber
Large Caliber
Smart Munitions**



Ammunition Products





PM MAS

FY05 Production Quantities Projection



Small Caliber (1710M)	5.56MM	1,271M
	7.62MM	273M
	.50 Cal	80M
	9MM	75M
	MISCELLANEOUS	11M
Medium Caliber (21.5M)	20MM	4M
	25MM	1M
	30MM	5.5M
	40MM	11M
Large Caliber (233K)	105MM	.02M
	120MM TRAINING	.2M
	120MM TACTICAL	.013M



Strategic Ammunition Environment



- **Pre-FY2001:**

- Relatively Low Production of Ammunition
- Ammunition Stocks Drawn Down



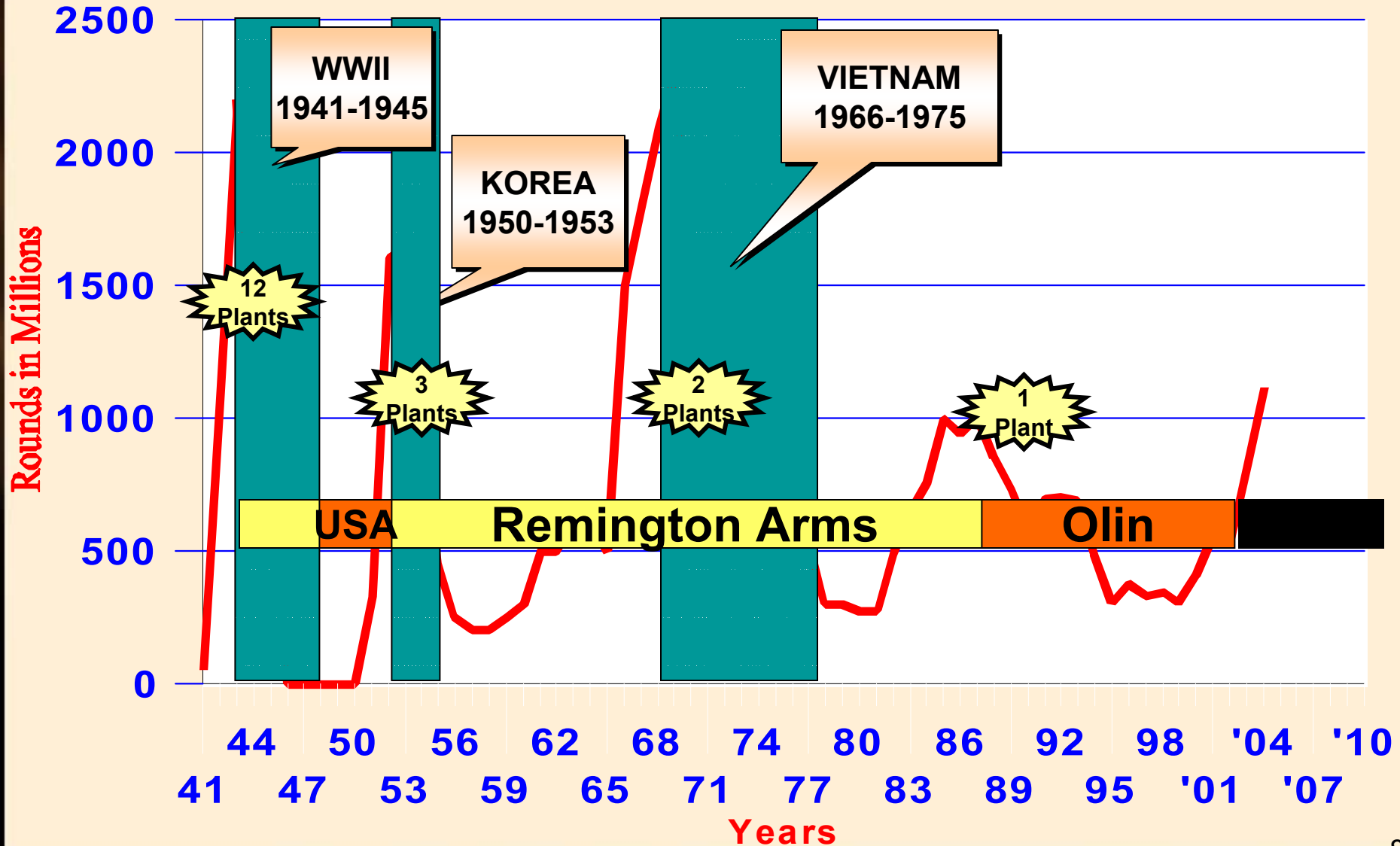
- **FY2001 To Now:**

- Dramatic Increase in Demand/Requirements for Direct Fire Ammunition
- Requirements Drivers:
 - Training
 - Greater Emphasis on Live Fire Training
 - Mobilization Impacts
 - More Personnel Being Trained to Higher Standards
 - Operations
 - Support and Forward Positioning of Ammunition
 - Changes in Tactics Causing Changes in Requirements





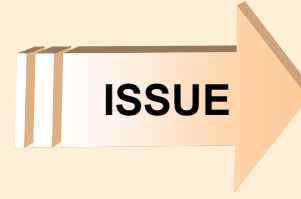
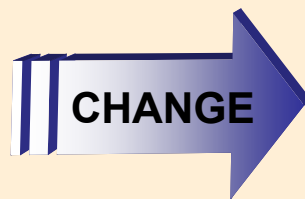
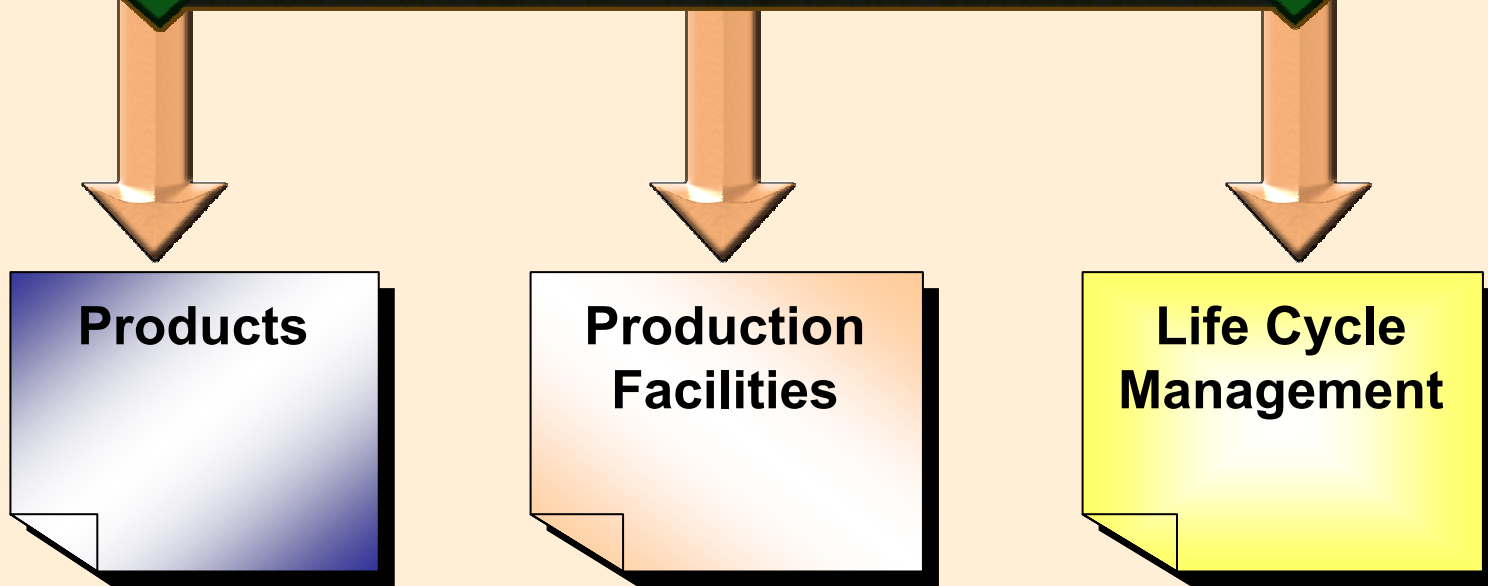
Strategic Ammunition Environment Lake City Production History





Ammunition Areas

Strategic Ammunition Environment



**Lessons Learned in All Three Areas:
"Impacts to More Than Just Bullets"**



Production Facilities

Strategic Ammunition Environment

CHANGE

Dramatic Production Ramp Up / Start Up

IMPACT

**Designs (TDP), Process, Personnel, Equipment
(Anything But Steady State!)**

ISSUE

Initial Quality/Delivery Issues

**LESSONS
LEARNED?**

- **Must Focus on Process/Personnel as Much as Machinery!**
 - Review/Rehearse the Process Repeatedly
 - Stabilize Critical Machine Operators Early
 - Over Plan and Over Execute Training and Process Analyses!
 - Increased Surveillance, Checks of Operations

Must Have a Robust Change Management Strategy!



Production Facilities

Strategic Ammunition Environment

CHANGE

Dramatic Production Ramp Up / Start Up (Small Caliber Specific)

IMPACT

Primarily Only the Organic Plant (Lake City) was Supplying Rounds

ISSUE

Not Enough Rounds from Organic Plant When Needed

LESSONS LEARNED?

- **Outsourcing to Commercial Sector in Large Quantities To Augment the Organic Base is Viable and Works**
 - Used Urgent Buys to Provide Needed Rounds
 - Commercial Base is Capable
 - Mitigates Risk Through Geographic Separation and Use of Other Vendors



Production Facilities

Strategic Ammunition Environment

CHANGE

Dramatic Production Ramp Up / Start Up (Small Caliber Specific)

IMPACT

Continuous Production at Organic Facility (Lake City)

ISSUE

Equipment is Very Old; Being Used Around the Clock

LESSONS LEARNED?

- **Modernization Funding is Critical to Production Readiness**
 - Equipment Failure is a Real Risk; Can Not Afford Production Stoppages
 - Must Fund Needed Modernization of Facility
 - Working Issue Aggressively With Pentagon Now



Products

Strategic Ammunition Environment

CHANGE

Lower Demand for KE Tank Rounds/Higher Demand for Multi-Purpose

IMPACT

KE Rounds Being Sent to the Rear, Multi-Purpose Rounds Forward

ISSUE

FY2000 - Last Time the Army Produced Multi-Purpose, Other Capabilities?

LESSONS LEARNED?

- Operators Must Have Flexibility to Quickly Mission Organize Ammunition
- Need for Capabilities Other Than KE – M1028 Anti-Personnel Round
- Highlights Need for Common, Multi-Purpose Round
 - Less Specialty Rounds
 - Easier to Manage Operations and Logistics



Products

Strategic Ammunition Environment

CHANGE

Increased Armed Convoy Operations

IMPACT

Increase in .50 Caliber (Armor Piercing and Armor Piercing Incendiary) and 7.62MM Requirements

ISSUE

Low Stocks, Low Production Rates, Oldest Manufacturing Equipment

LESSONS LEARNED?

- Must Stockpile Ammunition (“Iron Mountain”), Especially With These Rounds
- Need More Vendors With Capability to Produce .50 Caliber Armor Piercing/Incendiary
- Must Modernize Equipment at Organic Facility (Oldest in Plant)
- Limited Trace and Explosive War Head Capability in Commercial Sector



Life Cycle Management

Strategic Ammunition Environment

CHANGE

War Time Operations

IMPACT

Large Demand and Inventory in Theater

ISSUE

Asset Visibility; No Totally Integrated Receipt, Accounting, and Tracking System for Ammunition

**LESSONS
LEARNED?**

- **Must Develop Integrated Accounting and Visibility System for Ammunition**
 - Need to Minimize Paper Records and Exploit Advances in Supply Tracking Technology
 - Must be Designed for Both War Time and Peace Time Use
- **Requirements – Must Have Prognostics Capability**
- **War Reserve Stockpile Commitment**

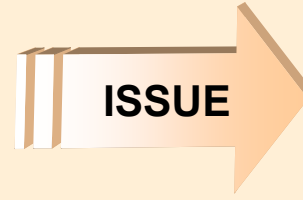
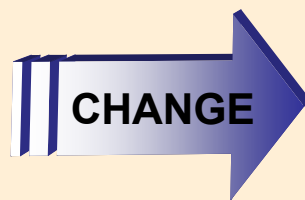
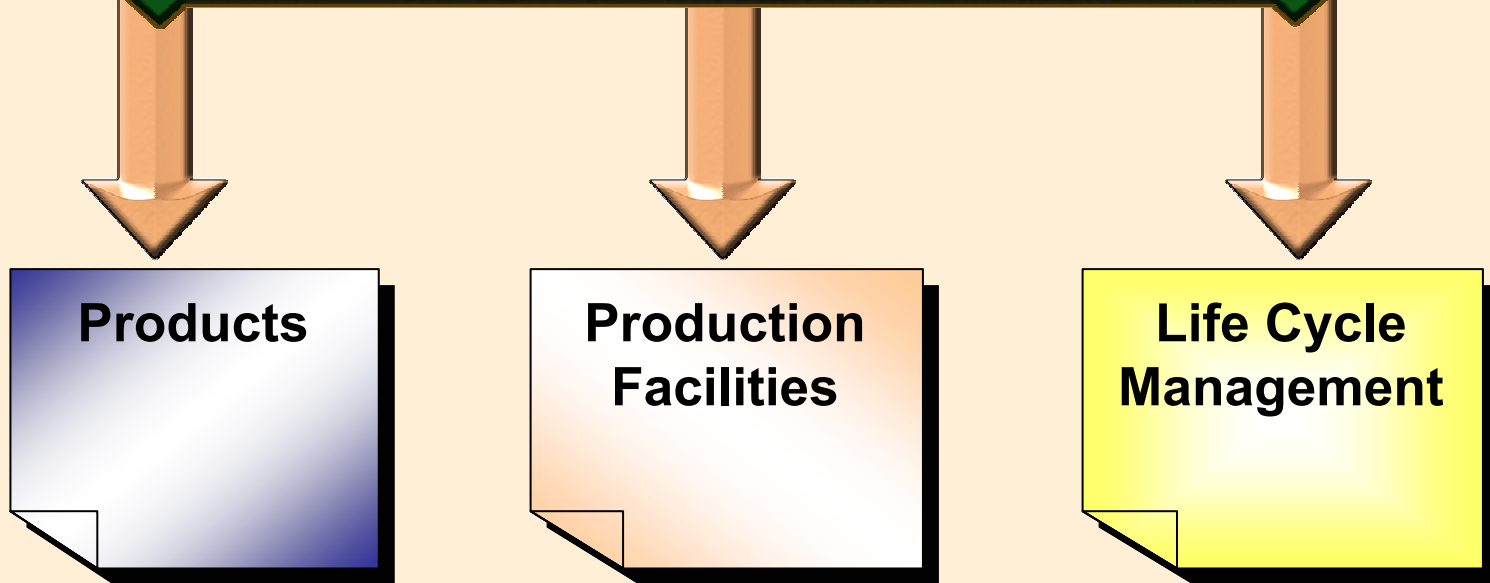


Ammunition Areas

“Lessons Learned / Impacts to More Than Just Bullets”



Strategic Ammunition Environment



What Happens Next? Will Lessons be Learned?



Summary



- **Strategic Ammunition Environment:
Dramatic Increase In Demand for Direct Fire
Ammunition**
- **Lessons Learned / Impacts Include More
Than Just Bullets.....**
 - Production Facilities
 - Products
 - Life Cycle Management

Reliable, Precise, Lethal