

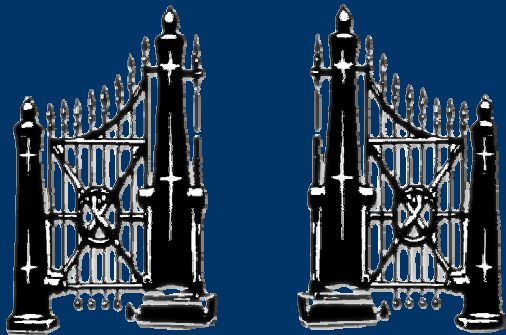


PEO
Ammunition

Joint Lethality

14 June 2005

Presented by:
Matthew Zimmerman
Associate PEO Ammo
Industrial Base
Matthew.zimmerman1@us.army.mil





PEO Ammo Organization



PEO Ammunition
BG Paul Izzo PEO
Mr. James Sutton DPEO



PEO Staff

Washington DC Staff

Industrial Base
Matt Zimmerman
APEO Ammo, Ind Base



Close Combat Systems
COL Jack Koster PM

Combat Ammo Systems - Indirect Fire
COL Nate Sledge PM

Maneuver Ammo System - Direct Fire
COL Mark Rider PM

Joint Services
COL Jeff Gwilliam PM

Networked Munitions/
Munitions /
Countermine

Demolitions /
Non-Lethal

Mortars

Excalibur

Large Caliber

Medium &
Small Caliber

DEMIL



PEO Ammo

Industrial Base Management

➤ General Responsibilities:

- ✓ Develop and Maintain an Overarching Ammunition Industrial Base Strategic Plan.
- ✓ Plan, Program, Budget and Manage the Production Base Support Program to Sustain GOCO Army Ammunition Plants:
 - **Industrial Facilities**
 - **Maintenance of Laid-away Industrial Facilities**
 - **Layaway of Industrial Facilities**
 - **Armament Retooling and Manufacturing Support (ARMS)**
- ✓ Plan, Program, Budget and Manage RDTE PE605806, Munitions Standardization, Effectiveness and Safety-Project 859: Life Cycle Pilot Process.
- ✓ Perform Industrial Base Preparedness Planning: 200+ End Items
- ✓ Environmental Management & HQDA Heavy Metals Charter Execution
- ✓ Execute Public Law 105 -261, Section 806, Procurement of Conventional Ammunition.

DOD 5160.65 & 5160.68; AR700-90

Manage and Invest in a Production Base to Ensure an Adequate Production Base is Available to Meet the Military Services' SMCA requirements.



Ammunition Industrial Base

Current State

- ~90-95% of SMCA PAA Resources to Commercial Sector
- Gov Owned AAPs Oversized and Underutilized
 - ✓ 5 of 11 GOCO AAPs Less Than 15% Utilization
- Sec Army Mar 2003 Direction:
 - ✓ No AAP Consolidation or Divestiture Outside BRAC Process
- Production Base Support Investment Down 84% Since 1990
 - ✓ GOCO Equipment At or Approaching Useful Life
- Supply Chain State:
 - ✓ 300+ Single Point Failures
 - 27 Foreign
 - 175 DODICs w/ Critical SPFs
 - ✓ Financial Viability of Several Commercial Suppliers Under Pressure

Transformation

- Implementing an Overarching Strategic Plan
- Integrating Ammo Production & Logistics Industrial Bases
 - Goals:
 - ✓ Balance Industrial Base & Acquisition Risk
 - ✓ Transform to Meet Current and Future Requirements
 - ✓ Incentivize Industry to Reinvest
 - ✓ Modernize Capacity
 - ✓ Operate Effectively and Efficiently





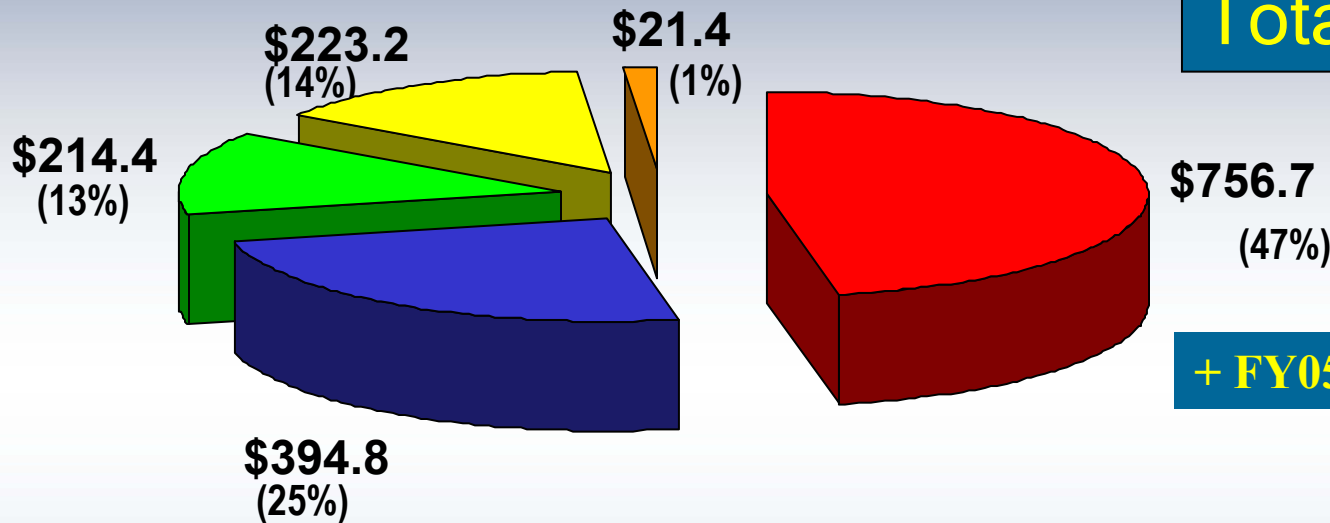
Ammunition Organic Industrial Base



Note: (1) GOCOs
(2) GOGOs



FY 05 PEO Ammo PAA, OPA, WTCV Total



Total: \$1,610.6M

+ FY05 Supplemental: \$533M

Source: FY05 PB

PM Combat Ammunition Systems

- Artillery Ammunition
- Artillery Fuze
- Mortar

PM Joint Services

- Industrial Base/Facilities
- Demil
- ARMS

PM Maneuver Ammunition Systems

- Large Caliber
- Medium Caliber
- Small Caliber

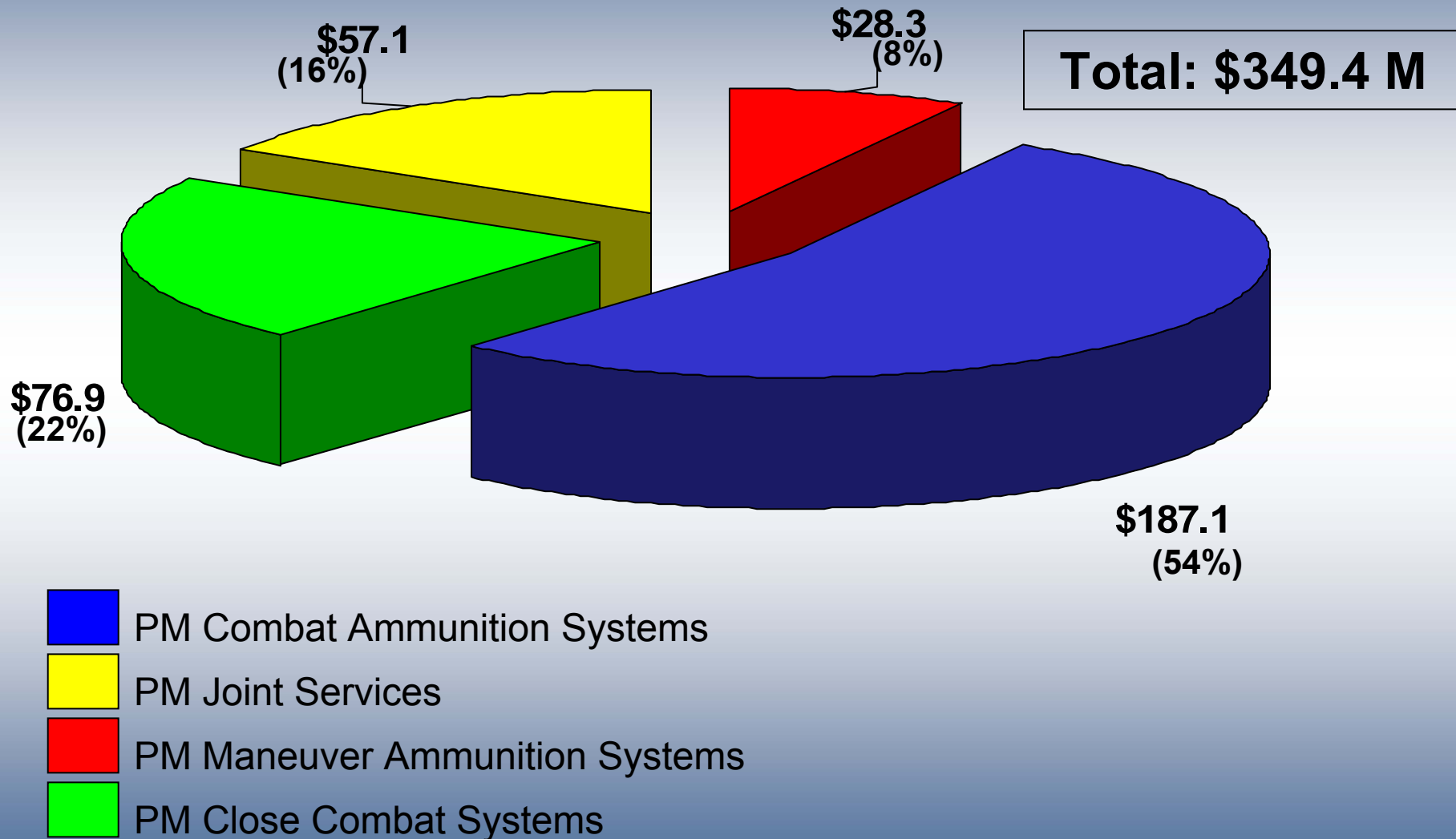
PM Close Combat Systems

- Mines, Countermine & Demolition

PEO Ammo

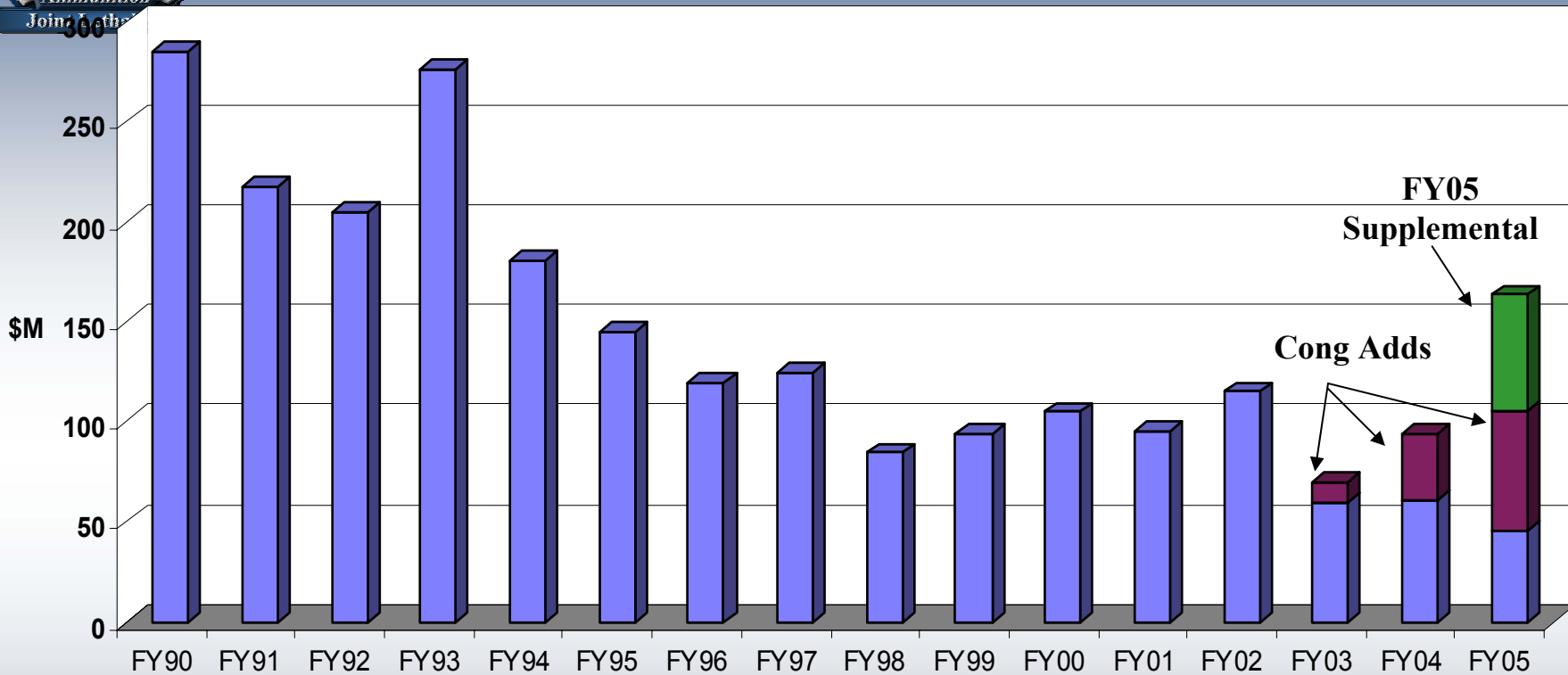


FY 05 PEO-Ammo RDTE





Procurement of Ammunition, Army- Activity 2, Production Base Support Funding

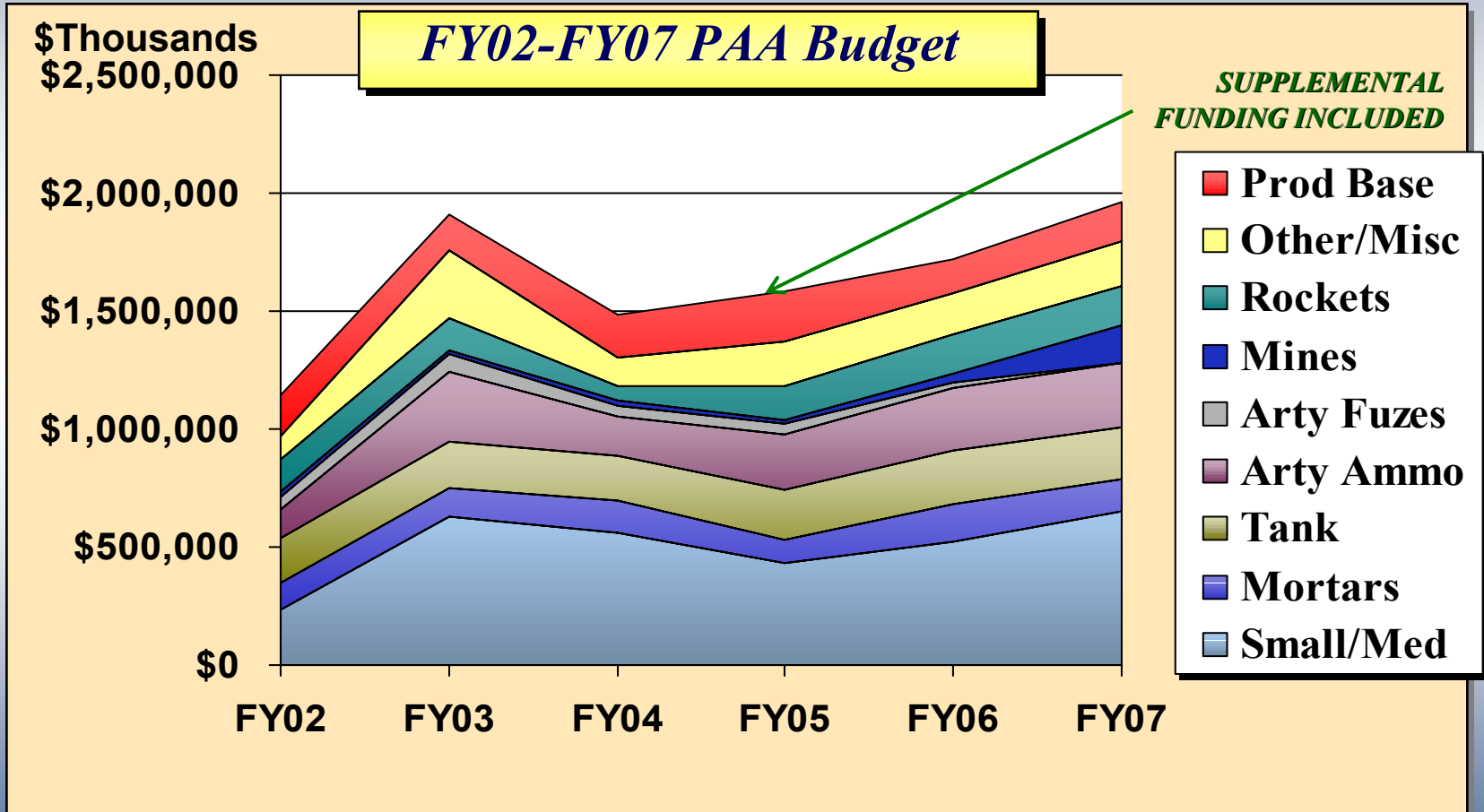


APE		FY05	FY06	FY07	FY08	FY09	FY10	FY11
1200	Industrial Facilities	\$ 34.270	32.56	33.02	36.34	37.26	34.11	35.08
	Congress Add	\$ 59.670						
	FY05 Supplemental	\$ 57.800						
	Subtotal	\$ 151.740						
1500	Maintenance of Inactive Facilities	\$ 4.730	5.00	4.93	4.35	4.55	4.48	4.49
2000	Layaway of Industrial Facilities	\$ 2.310	0.35	3.27	3.59	5.46	9.96	10.12
2500	Armament Retooling & Manuf Supp	\$ 4.743	2.75	2.77	2.94	3.01	3.14	3.18
	Total IF, MIF, LIF and ARMS	\$ 163.523	40.66	43.99	47.22	50.28	51.69	52.87

Source: BESPOM0611, Jan 05

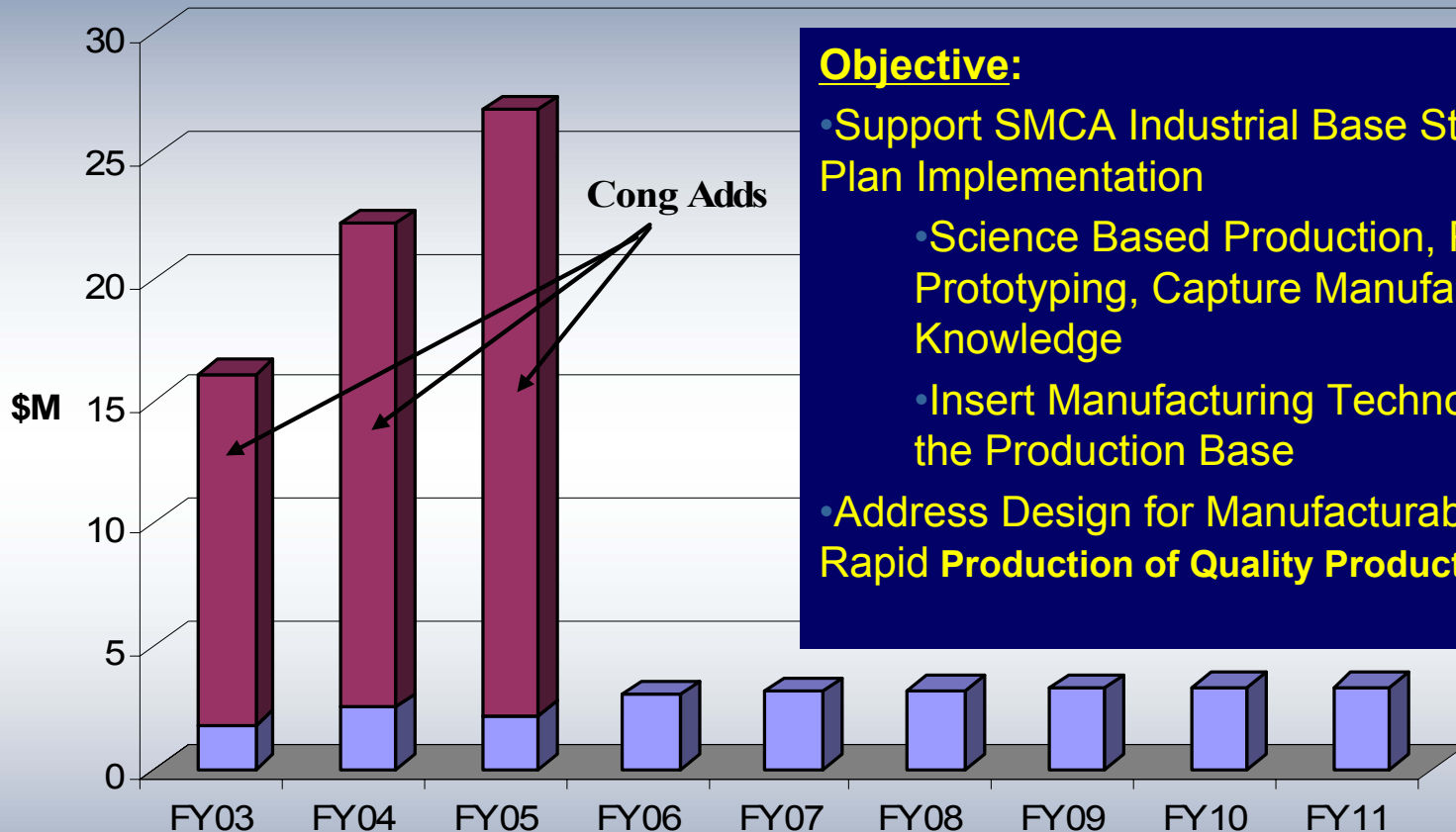


Ammunition Procurement Projection by Categories





RDTE PE605805, Munitions Standardization, Effectiveness and Safety: Project 859 –Life Cycle Pilot Process





- Objective:**
- Support SMCA Industrial Base Strategic Plan Implementation
 - Science Based Production, Pilot Prototyping, Capture Manufacturing Knowledge
 - Insert Manufacturing Technology into the Production Base
 - Address Design for Manufacturability & **Rapid Production of Quality Products**

PE605805	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
Proj 859, LCPP	1.764	2.474	2.164	3.028	3.139	3.195	3.252	3.304	3.359
Congressional Plus-Up	14.3	19.75	24.7						
Total	16.0	22.2	26.9	3.0	3.1	3.2	3.3	3.3	3.4



BRAC 05 AAP Recommendations

Implementation: Initiate Within 2 Yrs; Complete by 6 Yrs

  Relocate To: Close	Rock Island Arsenal	Iowa	Milan	McAlester	Crane
Riverbank	<ul style="list-style-type: none"> ➤ Artillery Cartridge ➤ Case Metal ➤ Parts 				
Kansas		<ul style="list-style-type: none"> ➤ 105MM/155MM HE ➤ Missile Warhead 	<ul style="list-style-type: none"> ➤ 155MM ICM Artillery ➤ Mortar 60/81/120MM 	<ul style="list-style-type: none"> ➤ SFW ➤ Cluster Bomb ➤ Missile Warhead 	<ul style="list-style-type: none"> ➤ Detonators/ Relays/ Delays
Mississippi	<ul style="list-style-type: none"> ➤ 155MM ICM Artillery Metal Parts 				
Lone Star		<ul style="list-style-type: none"> ➤ Mines ➤ Detonators/ Relays/ Delays 	<ul style="list-style-type: none"> ➤ 105MM/155MM Artillery ICM ➤ MLRS Artillery ➤ Hand Grenades ➤ 60MM/81MM Mortar 	<ul style="list-style-type: none"> ➤ Storage and Demilitarization Functions 	<ul style="list-style-type: none"> ➤ Demolition Charges

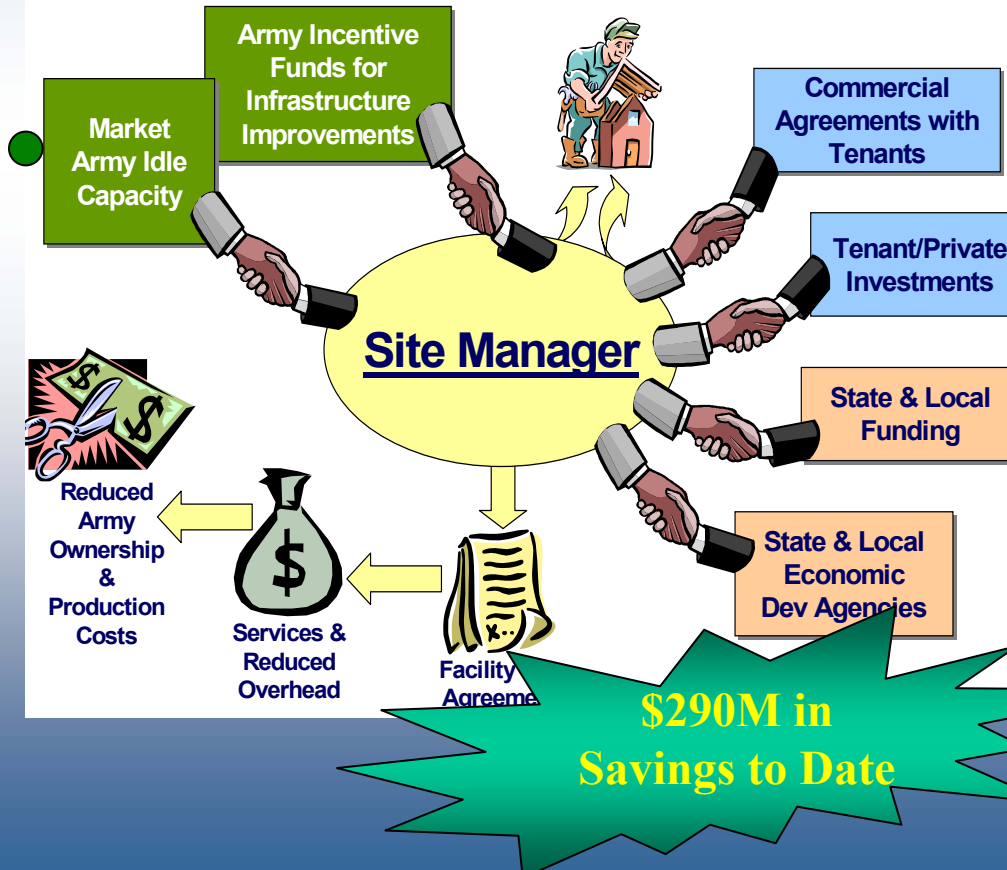


Armament Retooling & Manufacturing Support (ARMS)

\$30M Annual Revenue

Thrust: Offset Army Cost of Ammo Plant Operations

How Does It Work?



- Reduce Ownership Costs
- Make Facility Self-Sustaining
- Recognize Facilities as Assets
- Reduce Product / Operating Costs
- Allow Marketplace to Work
- Reduce Environmental Costs
- Reduce Future Liabilities
- Increase Readiness: Retain Skills; Gain Facility & Infrastructure Upgrades



Industrial Base Strategic Plan

Strategic Goal #3: Incentivize Industry to Reinvest in Capital Equipment and Processes

3.1 Objectives	3.2 Outcomes	3.3 Strategies	3.4 Performance Measures
a. Increase industry investment in equipment and facilities.	a. Increased supply chain readiness. b. Improved quality. c. Increased competitiveness and innovation. d. Increased operating efficiencies.	a. Award incentive production contracts that match government funds for contractor investment in capital equipment and processes. b. Facilitate use of Science Based Production modeling and process controls. c. Offer Government owned equipment (currently in layaway status) for supplier use. d. Initiate a Manufacturing Modernization Loan Program to provide low interest rates to the ammo supply chain. e. Promote long term relationships/partnerships with Industry to include GOCOs and GOGOs.	(1) Industry investment applied to modernizing manufacturing processes, equipment and facilities.
b. Maintain a financially viable industrial base.	e. Increased supply chain readiness. f. Improved quality at reduced cost. g. Increased innovation. h. Reduced acquisition risk.	f. Establish multi-year contracting strategies by ammo family. g. Explore and implement indemnification on a selected basis. h. Selectively promote ARMS initiatives and identify projects for production modernization and transformation.	(2) Number of suppliers in high risk financial condition. (3) Financial viability of Suppliers of our Critical Core Capabilities.

34 Strategic Initiatives

20 Production-specific

5 Logistics-specific

Single Manager for Conventional Ammunition (SMCA)
 Industrial Base Strategic Plan: 2015 Volume A
 3 November 2003 (Updated May 2004)
 Program Executive Office Ammunition SFAE-AMO
 Picatinny Arsenal, NJ 07806-5000



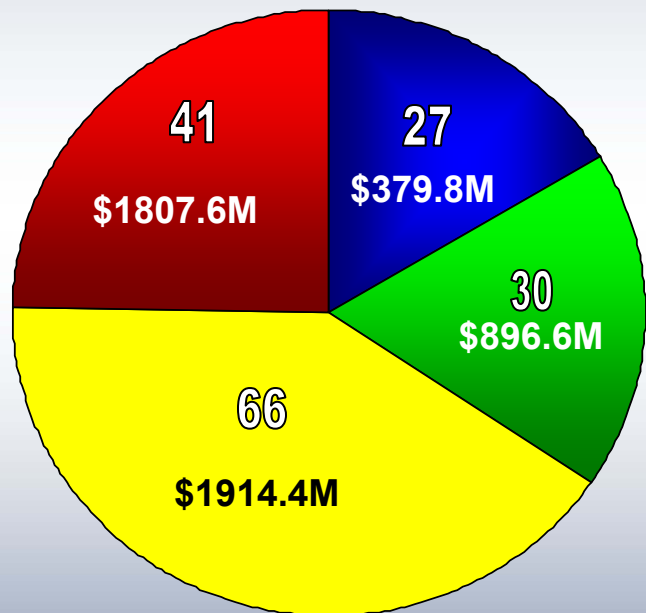
Section 806 Summary

Section 806; DFAR 207.1:

- Public Law 105-261, Procurement of Conventional Ammunition
- SMCA Required to Review & Concur on All Ammo Acquisition Plans
- Permits SMCA to Restrict Procurements to Sources within NTIB

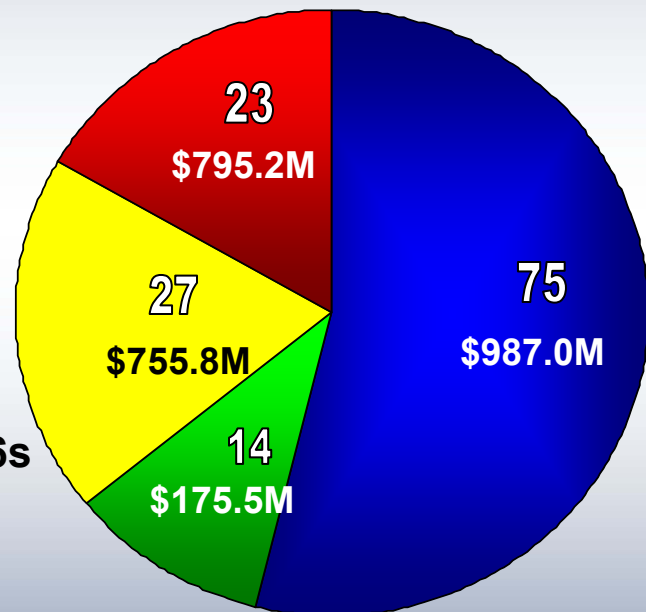
FY04 Actual Procurements

FY05 Planned Procurements



Actual FY04 Section 806s

USA	69	\$3329.3M
USN	25	\$351.2M
USMC	20	\$117.9M
USAF	1	\$1200.0M
TOTAL	115	\$4,998.4M



Planned FY05 Section 806s

USA	62	\$1377.5M
USN	12	\$469.9M
USMC	7	\$35.2M
USAF	57	\$831.0M
TOTAL	138	\$2,713.5M

PEO Ammo Delegated Section 806 Authority Nov 02

- Competition Limited to the NTIB
- Full and Open
- Sole Source
- Small Business Set Aside



SMCA Conventional Ammo End Item & Component Risk List (June 05) (Section 806 Watch List)

Critical Risk	At-Risk
Batteries, Liquid Reserve	Bomb Bodies
Batteries, Thermal	Cartridge Cases, Metal-Medium Caliber
Black Powder	Dyes, Specialty
Cartridge Cases, Combustible	Explosively Loaded Components (E.g., Detonators, Primers, Bursters)
Fuzing	Metal Parts, Medium Caliber
Explosives	Sabot, Composite
Illuminating Candles	White Phosphorous
Infrared Flares	
Load, Assemble and Pack (LAP) for Explosively Filled Ammunition	
Magnesium, Atomized/Ground	
Metal Parts, Large Caliber	
Nitrocellulose	
Penetrators, DU & Tungsten	
Propellants	



Critical Single Point Failures Snapshot: ~50 % of SPFs Mitigation Strategies Defined

PEO

PM-MAS

PM-CAS

PM-CCS

<ul style="list-style-type: none"> ✓ Atomized Mag (AM) ✓ Black Powder (BP) ✓ VAAR ✓ Polysulfide ✓ TNT ✓ Lead Azide ✓ C4 Tag Agent ✓ RDX ✓ NC ✓ Cotton Linters 	<ul style="list-style-type: none"> ✓ Small & Med Cal Propellants ✓ Small Cal Ammo ✓ Links ✓ Cotton Linters 	<ul style="list-style-type: none"> ✓ Laminac Adhesive ✓ Batteries ✓ Mortar Smoke ✓ TFE Lubricant ✓ Electronics & LCDs ✓ Fuzing ✓ Chemicals ✓ Projectile Bodies ✓ Grenade Bodies ✓ Combustible Mortar Cases -3- ✓ TNC ✓ Propellants M110 / M9 -3- ✓ Cotton Linters ✓ Propellant M30 ✓ Burster Tubes 	<ul style="list-style-type: none"> ✓ CM Flare ✓ C70 Det ✓ Laminac Adhesive ✓ HHS Seals ✓ M18 Smoke Dyes ✓ Grenade Fuzing
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•300+ Single Point Failures
• 80 Critical SPFs








Mitigation Status

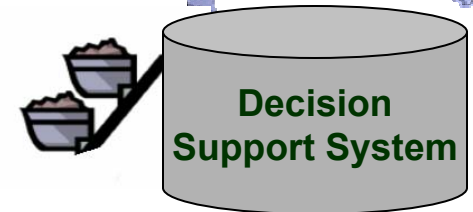
- In Planning
- Funded & In Mitigation
- Risk Mitigated



SMCA IBAT *Phase II*

<u>Data Source</u>	<u>Data Type</u>	<u>Frequency</u>
--------------------	------------------	------------------

APMRS (Acquisition Post Award Management Reporting System) 	Contract Schedules	Monthly
ICAPP (Integrated Conv Ammo Procurement Plan) 	POM Qtys, Costs	Real-Time
PRODSTAT (Production Status System) 	Planned Production	Real-Time
WARS (World Wide Report System) 	Inventory Information	Daily
QWARRM (Quantitative War Reserve Reqmts for Munitions) 	War Reserve Requirements	Annual
Stockpile Report 	Inventory Qty And Condition	Quarterly
Substitutability Report 	Substitute Items	Periodic



IBAT
INDUSTRIAL BASE ASSESSMENT TOOL



SMCA IBAT *Phase II*

Bill of Material

AMMO FAMILIES

- MORTARS
 - CTG MORTAR 120MM VISUAL LIGHT ILLUM M
 - FZ
 - BODY FRONT
 - BODY REAR
 - CHG PROP 120MM M234
 - INCREMENT CONT F/CHG 120MM M234
 - DIPHENYLAMINE (DPA)
 - NITROCELLULOSE (NC) BULK
 - PROP WC 863
 - DIPHENYLAMINE (DPA)
 - NITROCELLULOSE (NC) BULK
 - NITROGLYCERINE (NG)
 - FIN MORTAR CTG M31 F/120MM MRTR
 - FUZE M776**
 - IGNITION CTG M1020 F/120MM
 - BLACK POWDER CLASS 7
 - PROP WC 816
 - DIPHENYLAMINE (DPA)
 - NITROCELLULOSE (NC) BU
 - NITROGLYCERINE (NG)
 - ILLUM CANDLE F/120MM XM930
 - 50/50 MIX COMP
 - CSTR ILLUM MPTS ASSY M930
 - FIRST FIRE COMP
 - VL ILLUM COMP
 - PARACHUTE F/120MM ILLUM MO

1. CTG 60MM ILLUM IR M767 W/FZ MTS
2. CTG MORTAR 60MM ILLUM M721
3. CTG 81MM M816 INFRARED
4. CTG MORTAR 81MM SMOKE RP M819
5. CTG MORTAR 81MM VISUAL LIGHT (VL) ILLUM M853A1
6. CTG MORTAR 120MM INFRARED (IR) ILLUM M983
7. CTG MORTAR 120MM VISUAL LIGHT ILLUM M930 W/MTSQ FZ

End Items

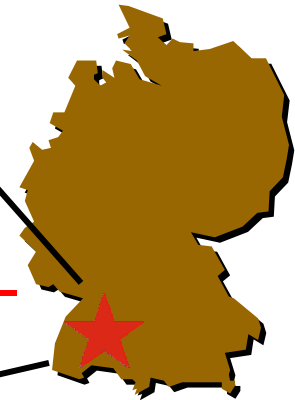
Facility View

Lines/Items Items/Lines
[Expand All](#) | [Collapse All](#)

JUNGHANS GERMANY

- Line: LINE A
 - FUZE M772**
 - FUZE M776**
- Line: LINE B
 - FUZE M772
 - FUZE M776

JUNGHANS



What Other Items Share Production Capacity ?



CTG 120MM MRTR ILLUM M930 (C625)



Junghans Feinwerktechnik
(Shramberg, Germany)

Fuze MTSQ,M776



Pine Bluff Arsenal
(Pine Bluff, AR)
LAP



North American Aerodynamics
(Roxboro, NC)
Parachute Assy



GD-OTS
(St. Marks, FL)
Prop WC 863 [Prop M47]

GD-OTS
(Marion, IL)
Prop Charge M234



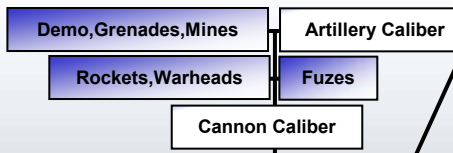
Crane AAA
(Crane, IN)
Illum Candle



SCAAP
(Scranton, PA)
Shell Body

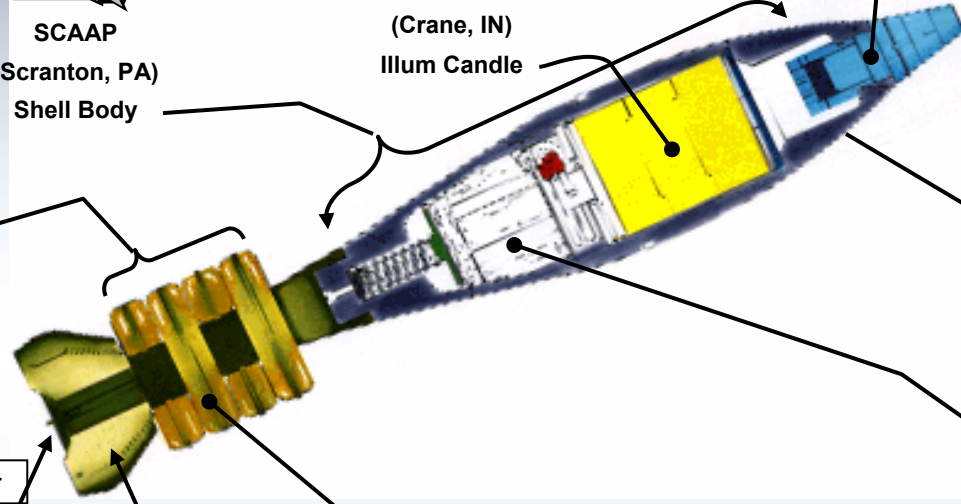


Armtec Def Products Inc
(Coachella, CA)
Increment Cntr f/M234



Pocal Industries Inc.
(Moscow, PA)
Ignition Ctg M1020

Lockheed Martin
(Archibald, PA)
Fin Mortar Ctg M31



- Commercial
- Government Owned
- Other Families by Producer
- Component In Other Families

Summary: Item has 8 main components, 8 producers operating in 6 states and 1 foreign country.

Family: Mortars

Base Capability Constraints:

- Current fuze producer is a foreign source.

Summary

Cost Effective & Executable

- **Ammo:**
 - **Reliable**
 - **Accurate**
 - **Lethal**
- **Industrial Base**
 - **Responsive**
 - **Adaptable**
- **Ind Base Management:**
 - **Ind Base Office**
 - **Section 806**
 - **Strategic Plans**
 - **Integrated Supply Chain Management**
 - **Integrated Data Environments**
 - **Manufacturing Tech Insertion**
 - **Single Pt Failures**

