



PEO AMMUNITION

Presented to:
Munitions Executive Summit
Cross Service Panel

Presented by:
Mr. James Shields, SES
PEO Ammunition



28 March 2017



Ammunition Enterprise

LEADERSHIP

Director, Armament Research, Development & Engineering Center



Picatinny (Army Materiel Command)

Mr. John Hedderich

Program Executive Officer



Picatinny (Assistant Secretary of the Army for Acquisition, Logistics & Technology)

Mr. James Shields

Joint Munitions Commander



Rock Island (Army Materiel Command)

BG Richard Dix

MISSION

Lead Research, Development and Engineering of Systems Solutions to arm those who defend the Nation against all current and future threats, at home and abroad

Develop, equip, and sustain lethal armament and protective systems enabling joint warfighter dominance.

Provide America's Joint Forces with ready, reliable and lethal munitions at the right place and time in a cost effective manner to enable successful military operations.

ROLES

RESEARCH & DEVELOPMENT:

- Life-cycle engineering support lead
- Manage/execute Tech Base (BA6.1-6.3)
- Rapid Prototyping & Manufacturing Process Development
- System Engineering & Integration
- R&D Evaluation & Experimentation
- Ammunition Packaging, Handling, Storage, and Transportation R&D
- Quality Engineering/System Safety (Products)
- Matrix Support to PMs

ACQUISITION:

- Single Manager for Conventional Ammo
- Systems Development
- Acquisition Strategy
- Hardware Production
- Components for Renovation
- Ammunition Peculiar Equipment (Maintenance Support)
- Research Development Test & Evaluation
- Industrial Base
- Demilitarization/Disposal

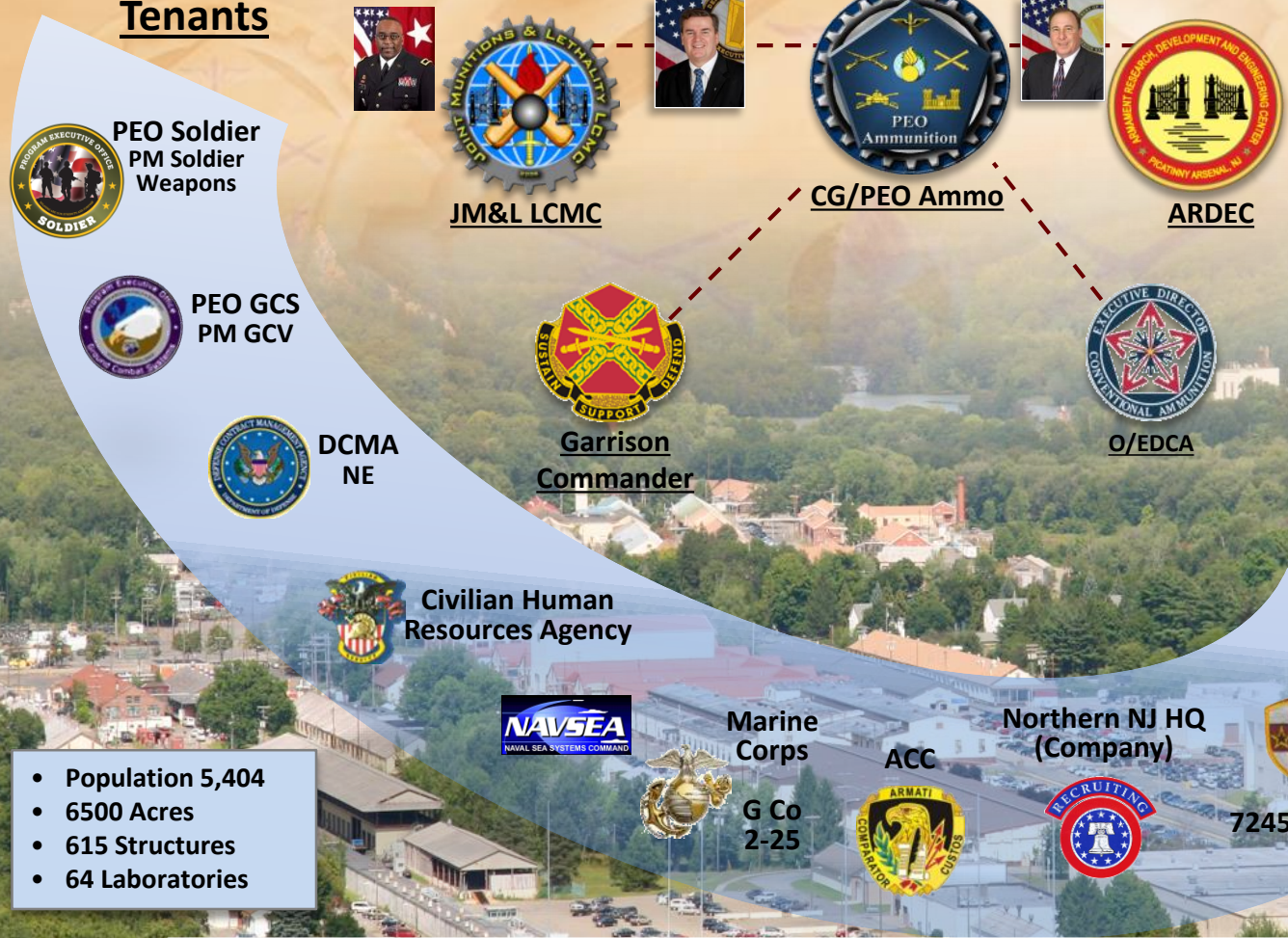
LOGISTICS/SUSTAINMENT

- Receipt / Issue
- Storage / Distribution Mgmt.
- Inventory / Accountability
- Safety / Security
- Quality Assurance (Ammunition Stockpile Reliability Program/Surveillance)
- Maintenance
- Transportation
- Operations & Maintenance Army Program / Budget / Receive
- Funding



Joint Center Team Picatinny

Other Tenants



- Transition of technologies to the field:
 - 70 Full Materiel Release (FMR) since 2009
 - 91 Urgent Materiel Release (UMR) since 2008
 - Enabled fielding of 246 New Munitions, Weapons and Equipment since 11 Sep 2001
- Partnered with Industry, Academia, and other Govt agencies - 130 Cooperative Research & Development Agreements (CRADA)
- Steward of Govt Data Rights & Intellectual Property, FY09+:
 - 253 Patents Issued
 - 25% of all Army patents since 2010
 - Design Authority

- Population 5,404
- 6500 Acres
- 615 Structures
- 64 Laboratories

DoD Joint Specialty Site for Guns and Ammunition



Program Executive Office Ammunition Organization



**Project Manager
Combat Ammunition Systems**

**Indirect Fire Munitions and
Mortar Weapon Systems**

- Excalibur
- Guided Precision Munitions & Mortar Systems

Mr. Pete Burke
(acting)



PEO Ammunition
Mr. James Shields



DPEO Ammunition
BG Alfred F. Abramson III



Mr. Chris
Grassano

Chief of Staff

- Systems Acquisition
- Business Management
- Human Resources
- International
- Chief Information Officer
- Science & Technology



**Project Manager
Close Combat Systems**

**Networked Munitions, Force
Application Systems, Explosive
Hazard, and Countermine**

- Counter Explosive Hazard
- Area Denial
- Combat Munitions
- Support Systems

COL Jonathan
Slater



APEO International
Doreen Chaplin



Command Chief
Warrant Officer
CW5 Bill Lewis



Mr. Keith
Gooding
USMC

**Project Manager
Towed Artillery Systems**

Support Fires for Maneuver forces

- M777A2 Lightweight 155mm Howitzer
- M119A3 105mm Howitzer Digitization
- Target Acquisition



**Project Manager
Maneuver Ammunition Systems**

Direct Fire Munitions

- Small, Medium and Large Caliber
- Non-Standard Ammunition

COL Moises
Gutierrez



**Project Director
Joint Services**

- SMCA Integration
- Demilitarization
- Ammunition Industrial Base
- Ammunition Logistics R&D
- Technology and Prototyping

COL Joseph
Chan

**Develop, equip, and
sustain lethal
armament and
protective systems
enabling joint
warfighter dominance**

- US ARMY
- US AIR FORCE
- US NAVY
- USMC



Col Anthony
Puente USAF

**Project Director
Joint Products**

- Air Force and Navy Bombs
- Navy Deck Gun Ammo
- Energetics
- Cartridge Actuated Device / Propellant Actuated Device



CAPT Brian
Schorn USN

O/EDCA

**Executive Director
Conventional Ammunition**

SMCA Assessment

Single Manager for Conventional Ammunition



PEO Ammunition

Provides all Services with the Highest Quality & Cost Effective Ammunition



Artillery Systems

- 155mm M777A2
- 105mm M119A3
- Precision Survey
- 122mm D30 for Allies
- Digital Fire Control



Mortar Systems

- 60mm
- 81mm
- 120mm
- Optical Fire Control
- Digital Fire Control
- Mortar Stowage Kit



Indirect Fire Munitions

- Precision
 - Excalibur
 - PGK
 - Mortars
- Conventional Ammo & Fuzes
 - 105/155mm Artillery
 - 60/81/120mm Mortar



Counter Explosive Hazard

- Detectors
 - SREHD
 - Robotic
 - Handheld
- Jackal Pre-Detonation
- EOD



Close Combat Systems

- Area Denial/ Networked Munitions
- Grenades
- Shoulder Launched Munitions



Combat Support

- Pyrotechnics
- Smoke Grenades
- Demolition
- Working Dogs
- Non Lethal



Direct Fire Munitions

- 5.56/7.62mm/50 cal.
- 20/25/30/40mm
- 105&120mm Tank Rounds
- Non-Standard Ammo for Allies



Joint Service Munitions

- Navy/Air Force Bombs
- Navy Deck Gun Ammunition
- Energetics



Industrial Base and Demil

- Ammunition Industrial Base
- DoD Lead for Demilitarization
- Ind. Base Technology and Prototyping
- Ammunition Logistics

SMCA Mission:

Manage DoD conventional ammunition, personnel and training functions to achieve the highest possible degree of efficiency and effectiveness in the DoD operations required to acquire top quality conventional ammunition for U.S. Forces.



Army Senior Leadership Changes Since 2016 Munitions Executive Summit

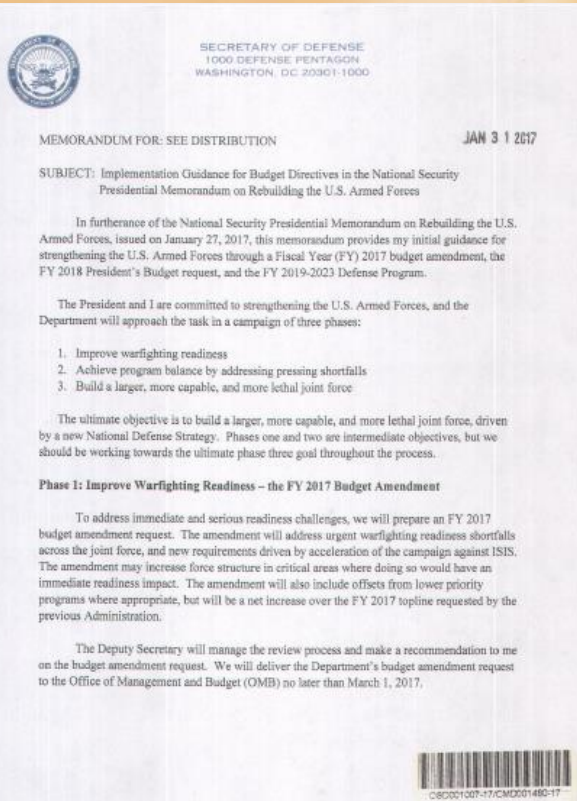
- HQDA - approximately 36% turnover in senior staff
 - HON Robert M. Speer – 20 Jan 17 Acting Secretary of the Army
 - Mr. Karl F. Schneider – 20 Jan 17 Acting Undersecretary of the Army
- ASAALT – More than 50% turnover in senior staff
 - Ms. Steffanie Easter New Acting ASA(ALT) and AAE – Nov 2016
 - Mr. Chris Lowman – New Acting Principal Deputy – Nov 2016
 - LTG Michael Williamson, Principal MILDEP – Retired 2 Mar 2017
- AMC – Some change at the senior leader level (~15%)
 - GEN Gustav Perna – AMC Commanding General - 30 Sep 2016
- JMC
 - BG Richard Dix – New Commanding General - 20 June 2016
 - Ms. Melanie Johnson - New “Deputy to the Commander”. Ms Johnson came from the Army Contracting Command at Rock Island;
 - Ms. Rhonda VanDeCastele - Executive Director for Ammo
- ARDEC
 - Mr. Castellano – New METC Director
- ACC Rock Island – Mr. Jeff Carr replaced Ms. Melanie Johnson as the Executive Director and PARC
- ACC Picatinny Senior Contracting staff – No Change



POTUS and SECDEF are committed to Strengthening our U.S. Armed Forces*



- The *“ultimate objective is to build a larger, more capable, and more lethal joint force”*
- Strengthen the Armed Forces by:
 1. Improve warfighting readiness with FY17 Budget Amendment
 - ✓ *“Address urgent warfighting readiness shortfalls”*
 - ✓ *“Increase force structure in critical areas”* to have an *“immediate readiness impact”*
 2. Achieve program balance by addressing pressing shortfalls in the FY18 Pres Budget Request
 - ✓ *“Focus on balancing the program, addressing programmatic shortfall, ... continuing to rebuild readiness”*
 - ✓ Examples include *“building more critical munitions”*
 3. Build a larger, more capable, and more lethal joint force in the FY19-23 Defense Program
 - ✓ Determine the approach to *“enhancing the lethality of the joint force against high-end competitors and the effectiveness of our military against a broad spectrum of potential threats”*
 - ✓ *“Improve how the Department does business”* ... and include *“horizontal integration across DoD components to improve efficiency and take advantage of economies of scale”*



- Excerpts from SECDEF Memo dated 31Jan17
- This memo is Distribution A, available and download-able off of the Internet

Improved Efficiency and More Lethal Joint Force



DOD – Army Strategic Linkage



Mission: Develop, equip and sustain lethal armament and protective systems enabling Joint Warfighter dominance.

Vision: Innovative and empowered teams efficiently and rapidly delivering dominant capabilities.

ASA(AL&T) 2017 Proposed Objectives

Identify & Correct Process Gaps

Commit Resources – Stability to Execute

Robust Relationship with Industry

Trained and Agile Acquisition Workforce

Ensure Over-match & Dominance

Agility of Acquisition and Sustainment

Procure/Field Solutions to Address Threats

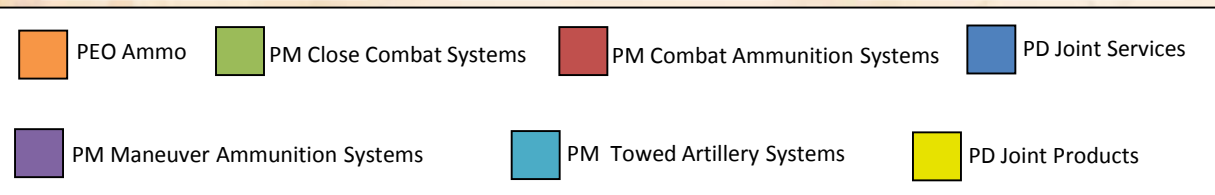
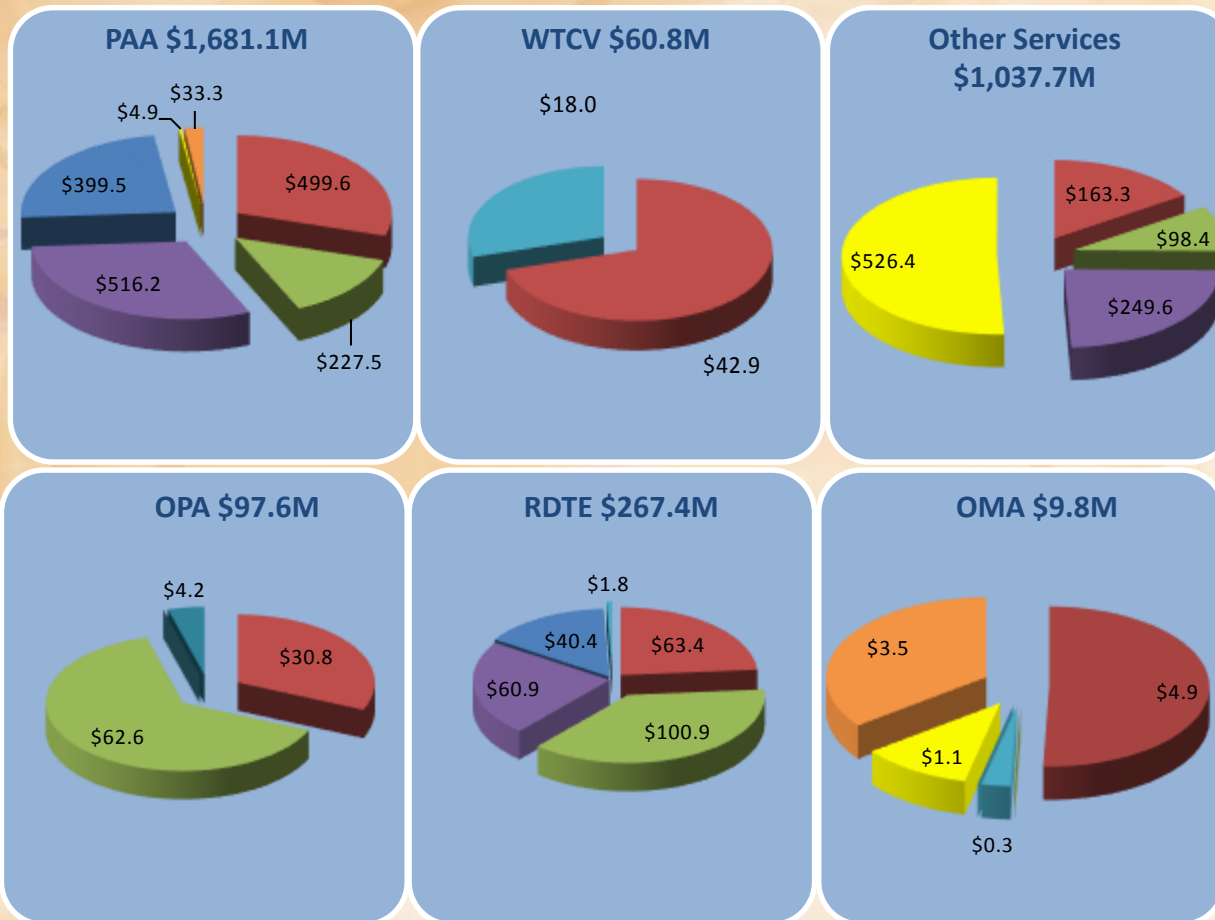
Deny Unauthorized Transfer of US Technology

Defense Exports & Cooperation Activities

Significant Focus on Equipping the Warfighter



PEO Ammunition FY17 Budget

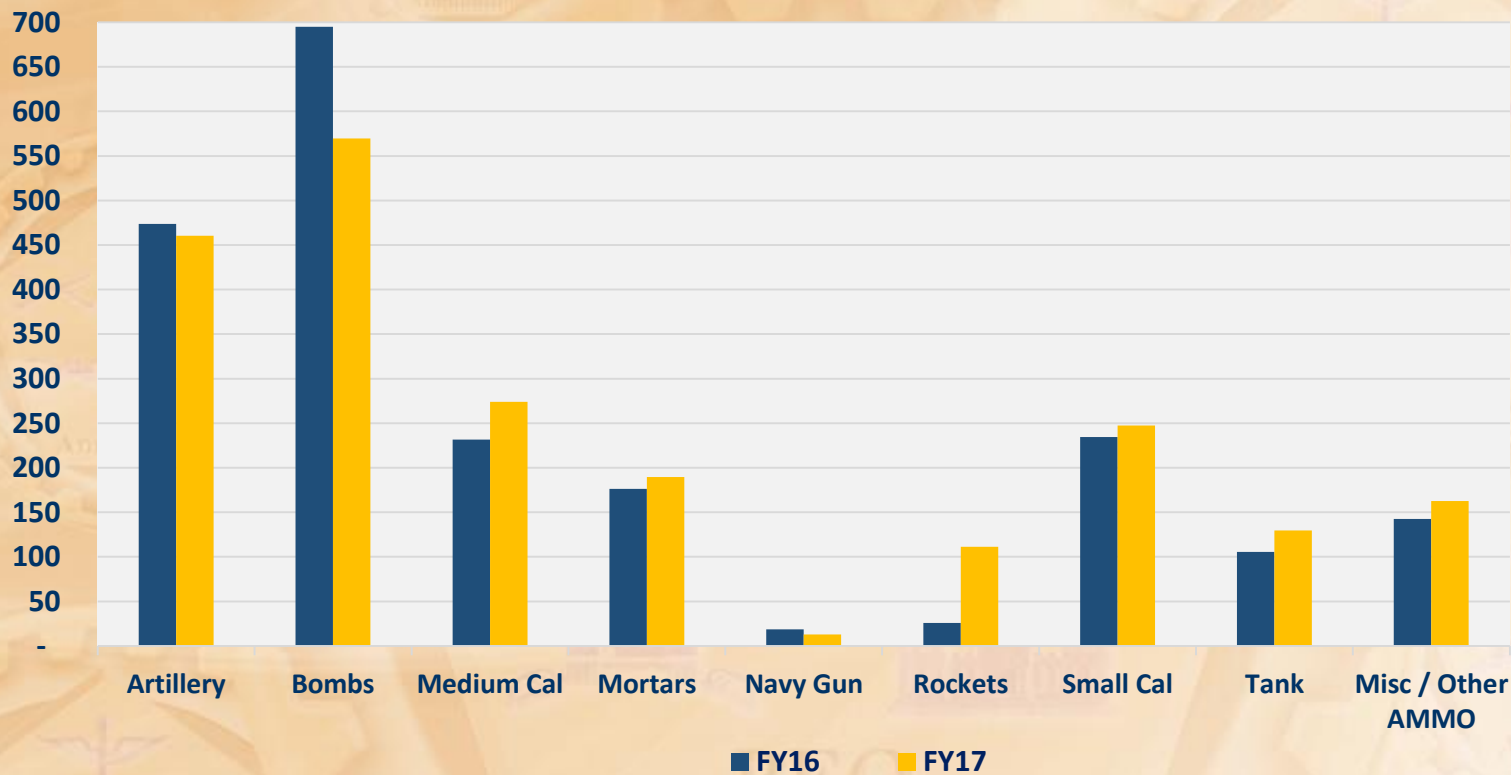


Source: FY17PB-R



SMCA Hardware FY16 vs. FY17

17 PresBud Comparison by Ammunition Families (in \$M)



	Artillery	Bombs	Medium Cal	Mortars	Navy Gun	Rockets	Small Cal	Tank	Misc. / Other AMMO	Total
FY16 (M)	474	695	232	176	19	26	234	106	143	2103
FY17 (M)	460	570	274	190	13	111	248	130	163	2158
% Change	-3%	-18%	18%	8%	-31%	330%	6%	23%	14%	3%

Source: 17 Pres Bud dated Feb 2016

*This data excludes FMS, Production Base and DEMIL



PEO Ammo FY18 Projected New Competitive Contract Awards (\$ in Millions)



FY18 76.2%



Government Owned, Contractor Operated (GOCO) Army Ammunition Plant (AAP) Contracts



GOCO AAP	Contractor Investment	Calendar Year													
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
Holston (BAE Systems) FY98 –Facility Contract FY12 – Requirements/Supply Contract awarded	- ~\$50M to date various major maintenance & equipment (Competed w/ long term Product)														<ul style="list-style-type: none"> 25 yr Facility Use Contract thru Dec 2023 5 year Supply (requirements) Contract thru Sep 2017; New 5-year sole source contract – Estimated award in Sep 2017
Iowa (American Ordnance) FY09- Facility contract, supply contract and BOA	- \$20M+ to establish 40mm LAP and C-4 production (Competed w/ short term product)														<ul style="list-style-type: none"> 10-year Facility Use Contract thru Dec 2018 with three, 5-year options to 2033. 5 year supply contract expired Dec 2013; Jan 2015 Statement of Intent implementation-modernization /workload
Lake City (Orbital ATK) FY12 –Facility, and Production/Supply Contracts awarded	- ~\$80M over 10 yrs. based on level of Gov requirements - ~\$30M over 10 yrs for commercial use (Competed w/ mid term Product)														<ul style="list-style-type: none"> 7-year (5year base+2year exercised option) Facility Use Contract thru Sep 2020 with one 3-year option remaining. 7-year (5year base+2yr exercised option) Supply Contract thru Sep 2019 with one 3-year option.
Milan (American Ordnance) FY09- Facility, Supply and BOA contracts awarded	- \$20M+ to establish 40mm LAP and C-4 production at Iowa (Competed w/ short term product)														<ul style="list-style-type: none"> 10-year Facility Use Contract thru Dec 2018 with three 5-yr options; Developing alternative facility management strategy. 5-year Supply Contract expired Dec 2013.
Quad Cities Cartridge Case Facility FY11 - Facility Contract awarded	- No investment														<ul style="list-style-type: none"> Laid away Jun 2014. MOA with USN to operate and maintain the QCCC facility in-process
Radford (BAE Systems) FY12 – Facility, Supply and BOA Contracts awarded	- BAE claims ~\$25M self investment since 2012 (Competed w/ minimal Product; 3 rd party prime revenue)														<ul style="list-style-type: none"> 10-year Facility Use Contract thru May 2022 w/ three 5-year options.
Scranton (GD-OTS) FY13 – Facility Contract awarded	- \$2M/yr FY02-Fy13 - \$1M/yr FY14-16 (Sole Source w/ no Product); Future comp includes product)														<ul style="list-style-type: none"> Facility Use Contract thru Jun 2016, extended through Mar 2018 Facility Competition: Property Management (15-year) and Supply (10-year) Contract- Estimated award in May 2018

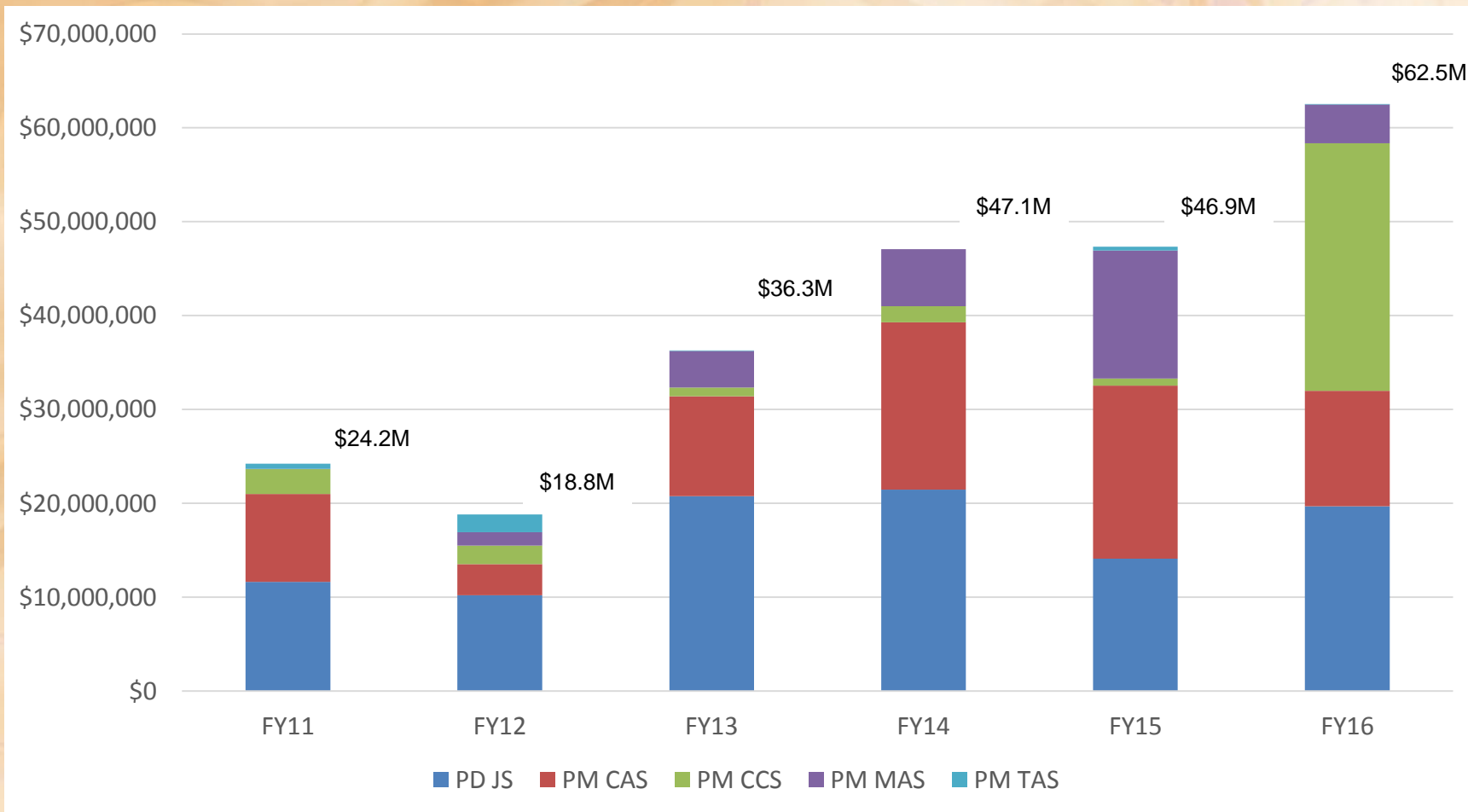
Facility Use Contract

Supply Contract



DOTC Financials

PEO Ammo's Use of DOTC (FY11-FY16) – Total Funding



(Through
30 SEP 2016)



FY19-23 Army Requirements

The munitions trend is an increase in both war reserve and training requirements

- Emerging factor that could further affect future requirements:
 - Potential increase in force structure
 - War reserve requirements increased due to changes to the war fight scenarios, number and type of BCTs in the campaigns, and changes to BCT structure
 - » Aviation Restructure Initiative
 - » 30mm on Stryker
 - » Mobilization training
 - Training requirements increased due to use of the current 1,015K personnel in force structure vice the 980K used in previous training requirements analysis
 - » Priority is maintaining funding to replenish training expenditures to support the DA G3 ability to authorize 100% of the annual Training Requirements
 - » The Army is expending more ammunition in training than it is acquiring
 - » ARSTAFF is assessing the funding needs to mitigate projected funding shortfalls as part of the POM 19-23 process

Assess the impact of increased requirements on the Organic and Key Commercial Ammo Production Capabilities



Trends in Army Ammunition Requirements (FY18-22 vs FY19-23)

- Increases in requirements are anticipated given the current world-wide political environment
 - Requirements for some ammunition items may see minimal increases (<15%) while others may see significant increases (50%+)
- Army is evaluating all requirements and establishing priorities for resourcing
- Likely scenario: Not all increases in ammunition requirements will be fully funded



2017 Change to the NTIB



Pub. Law 114-328 (FY17 National Defense Authorization Act) changed the NTIB

Defined in 10 USC 2500

Original NTIB

(1) The term "national technology and industrial base" means the persons and organizations that are engaged in research, development, production, integration, services, or information technology activities conducted within the United States and Canada.

New NTIB

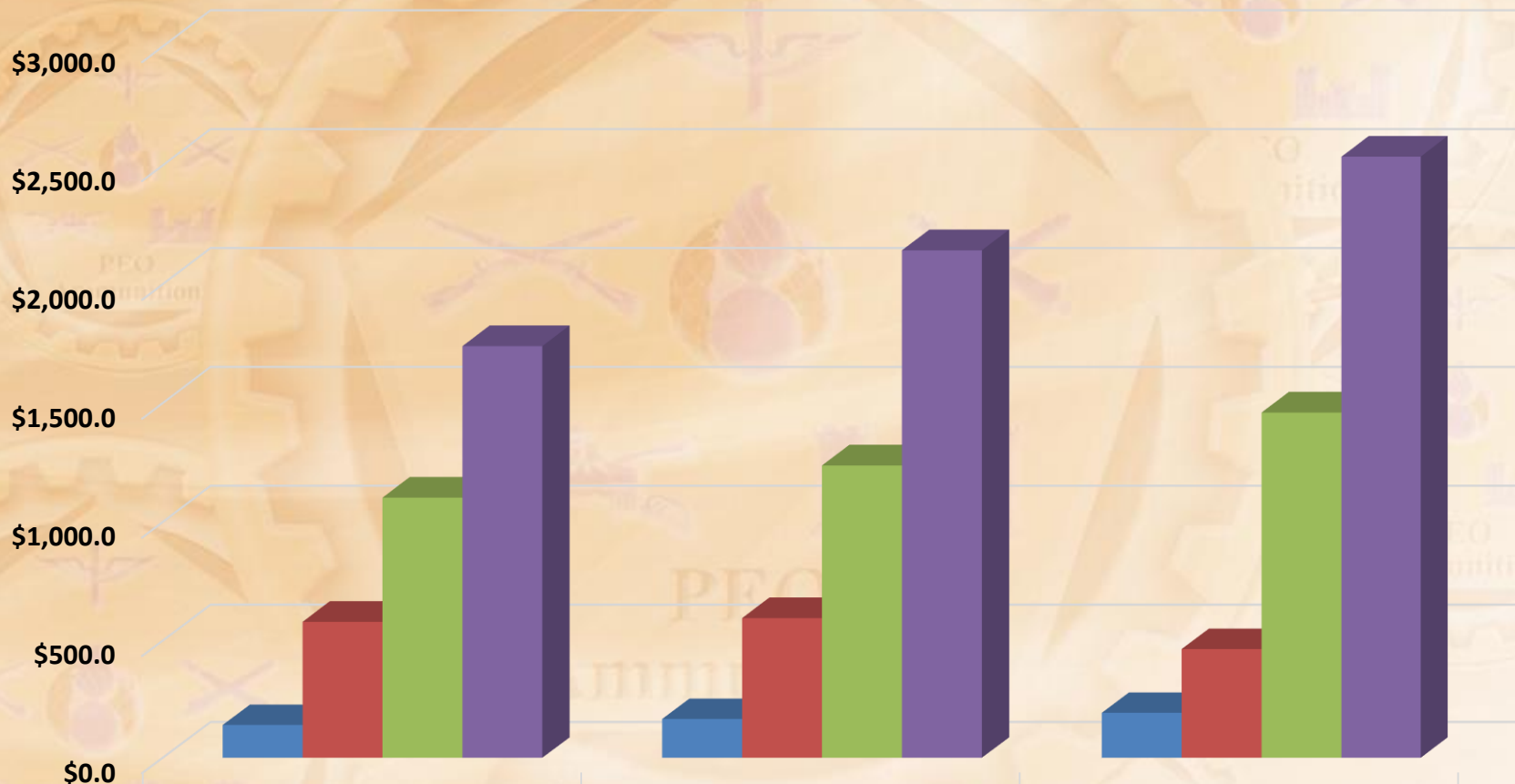
(1) The term "national technology and industrial base" means the persons and organizations that are engaged in research, development, production, integration, services, or information technology activities conducted within the United States, **United Kingdom of Britain and Northern Ireland, Australia,** and Canada.

Positive Impact for US Government: Provides more sources of materiel & services; increased competition, less single points of failure

No Negative Impact for Industry: SMCA retains the authority to restrict as applicable



All Munitions FMS Buys: Reimbursable and Direct FY14 TO FY16



	FY14	FY15	FY16
1st Qtr	\$139.9	\$165.6	\$191.7
2nd Qtr	\$580.0	\$595.7	\$464.2
3rd Qtr	\$1,102.4	\$1,237.8	\$1,460.4
4th Qtr	\$1,739.6	\$2,142.7	\$2,536.6



International Engagements 2017

COCOM	Air/Trade Show	Location	Dates
SOUTHCOM	Latin American Aerospace Defense	Rio de Janeiro, Brazil	4-7 April 2017
EUCOM	International Defense Industry Fair	Istanbul, Turkey	9-12 May 2017
PACOM	AUSA LANPAC Symposium & Exposition	Hawaii	23-25 May 2017
EUCOM	Paris Air Show	Paris, France	19-25 Jun 2017
EUCOM	Defense Security Equipment International	London, England	12-14 Sep 2017
EUCOM	MSPO International Defense Industry Exhibition	Kielce, Poland	Sep 2017



Single Manager for Conventional Ammunition (SMCA)

Est. 1977



Customer Satisfaction Survey

FY15 SMCA Customer Survey Results

Category	Individual Metric	Service Ratings						FY15 Average Score
		USAF	USMC	IWS3C	PMA 201	PMA 242	USSOCOM	
Transition	1. Participation in the transition of SMCA-assigned conventional ammunition	Satisfactory ↑	Excellent	Good	Good	Good	Excellent	↑ 1.25
	2. Management of the transition process	Needs Improvement ↓	Good ↑	Satisfactory	Needs Improvement ↓	Good	Excellent	↑ 0.50
Production Base	3. Identification & incorporation of new manufacturing technologies	Needs Improvement ↓	Good	Good	Satisfactory ↑	Satisfactory	Good	↑ 0.38
	4. Industrial Preparedness Planning	Needs Improvement ↓	Good	Good	Satisfactory	Satisfactory	Excellent	↑ 0.63
	5. Coordination on significant production base issues	Needs Improvement ↓	Excellent	Good	Good	Satisfactory ↑	Excellent	↑ 0.94
	6. Management & investment in the conventional ammo production base	Satisfactory	Excellent	Good	Satisfactory ↑	Satisfactory	Excellent	↑ 1.13
	7. Section 806 processing	Good	Good	Good	Satisfactory	Satisfactory	Excellent	↑ 1.13
Acquisition	8. Participation and influence in the IPT process	Good	Excellent	Satisfactory ↓	Satisfactory ↑	Good	Excellent	↑ 1.31
	9. Procurement Planning	Needs Improvement ↓	Excellent ↑	Needs Improvement ↓	Needs Improvement ↓	Satisfactory	Excellent	↑ 0.56
	10. Procurement Administrative Lead Times (PALT) (NEW)	Needs Improvement ↓	Good ↑	Satisfactory	Satisfactory ↑	Satisfactory	Excellent	↑ 0.50
	11. Source Selection Process	Good	Excellent ↑	Good	Satisfactory	Satisfactory	Good	↑ 1.13
	12. Accurate and timely program status	Satisfactory ↑	Good	Needs Improvement ↓	Satisfactory ↑	Good	Excellent	↑ 0.69
	13. Cost (all cost factors)	Satisfactory	Good	Good	Satisfactory	Satisfactory	Excellent	↑ 0.88
	14. Configuration management	Good	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Excellent	↓ 0.75
	15. Product quality	Satisfactory	Excellent	Good	Good	Satisfactory	Excellent	↑ 1.19
	16. On-time delivery	Needs Improvement ↓	Good	Satisfactory	Needs Improvement ↓	Satisfactory ↑	Excellent	↑ 0.44
	17. Management of customer funds	Good ↑	Good	Satisfactory	Good	Satisfactory	Satisfactory ↓	↓ 0.56
Logistics	18. Requisition processing for items in inventory	Good	Good	Good	Satisfactory	Satisfactory	Excellent	1.13
	19. Inventory management	Satisfactory	Satisfactory ↓	Good	Needs Improvement ↓	Satisfactory	Excellent	↑ 0.56
	20. Ammunition surveillance (NEW)	Satisfactory	Good	Good	Satisfactory	Satisfactory	Excellent	↑ 0.88
	21. Wholesale storage (NEW)	Satisfactory	Good	Satisfactory	Satisfactory	Satisfactory	Excellent	↑ 0.75
	22. Transportation and handling (NEW)	Satisfactory	Good	Good	Satisfactory	Satisfactory	Excellent	↑ 0.88
Customer Service	23. Accommodate specific requirements/requests	Good	Excellent	Good	Satisfactory	Satisfactory	Excellent	↑ 1.38

FY16 SMCA Customer Survey Results

Category	Individual Metric	Service Ratings						FY16 Average Score	FY16 Average Category Score
		USAF	USMC	IWS3C	PMA 201	PMA 242	USSOCOM		
Transition	1. Participation in the transition of SMCA-assigned conventional ammunition	Satisfactory	Excellent	Satisfactory ↓	Satisfactory ↓	Satisfactory ↓	Good	↓ 0.75	0.75
	2. Management of the transition process	Satisfactory ↑	Excellent	Satisfactory	Satisfactory ↑	Satisfactory ↓	Good	↑ 0.75	
Production Base	3. Identification & incorporation of new manufacturing technologies	Good	Good	Satisfactory ↓	Satisfactory	Satisfactory	Good	↑ 0.75	1.11
	4. Industrial Preparedness Planning	Satisfactory ↑	Good	Good	Satisfactory	Satisfactory	Excellent	↑ 0.88	
	5. Coordination on significant production base issues	Good	Good	Good	Satisfactory ↓	Satisfactory	Excellent	↑ 1.13	
	6. Management & investment in the conventional ammo production base	Good	Good	Excellent ↑	Good	Satisfactory	Excellent	↑ 1.31	
	7. Section 806 processing	Good	Excellent ↑	Excellent	Satisfactory	Satisfactory	Excellent	↑ 1.50	
Acquisition	8. Participation and influence in the IPT process	Good	Excellent	Satisfactory	Satisfactory	Good	Good	↓ 0.75	0.79
	9. Procurement Planning	Satisfactory ↑	Excellent	Satisfactory ↑	Needs Improvement ↓	Good	Good	↑ 1.06	
	10. Procurement Administrative Lead Times (PALT) (NEW)	Satisfactory ↑	Good	Satisfactory	Satisfactory	Satisfactory	Satisfactory ↓	↓ -0.06	
	11. Source Selection Process	Good	Excellent	Good	Satisfactory	Satisfactory	Good	1.13	
	12. Accurate and timely program status	Satisfactory	Good	Satisfactory ↑	Needs Improvement ↓	Good	Excellent	↑ 0.75	
	13. Cost (all cost factors)	Satisfactory	Good	Good	Satisfactory	Satisfactory	Excellent	0.88	
	14. Configuration management	Good	Satisfactory	Excellent ↑	Satisfactory	Satisfactory	Excellent	↑ 1.00	
	15. Product quality	Satisfactory	Good	Good	Satisfactory ↓	Good	Good	↓ 0.69	
	16. On-time delivery	Satisfactory ↑	Good	Good	Needs Improvement ↓	Satisfactory	Excellent	↑ 0.81	
	17. Management of customer funds	Good	Satisfactory ↓	Good	Satisfactory ↓	Good	Excellent	↑ 0.94	
Logistics	18. Requisition processing for items in inventory	Good	Good	Excellent ↑	Satisfactory	Satisfactory	Excellent	↑ 1.25	1.00
	19. Inventory management	Satisfactory	Excellent ↑	Good	Satisfactory	Satisfactory	Excellent	↑ 1.13	
	20. Ammunition surveillance (NEW)	Satisfactory	Good	Good	Satisfactory	Satisfactory	Excellent	0.88	
	21. Wholesale storage (NEW)	Satisfactory	Good	Good	Satisfactory	Satisfactory	Excellent	↑ 0.88	
	22. Transportation and handling (NEW)	Satisfactory	Excellent ↑	Good	Satisfactory	Satisfactory	Good	0.88	
Customer Service	23. Accommodate specific requirements/requests	Excellent	Excellent	Good	Satisfactory	Satisfactory	Excellent	↑ 1.63	1.63

ns: = Area of Concern = Positive Indicator
 Amber = Needs Improvement (performance does not meet most expectations)
 Dark Green = Good (performance meets most expectations)
 Increase in Rating/Decrease in Rating compared to FY15 results (no symbol means no change in rating)
 Increase in Rating/Decrease in Rating with > or < 0.5 delta from FY15 results



Industrial Base Challenges

- Explosives -- Increased Requirements Driving Need for Expansion at HSAAP
 - Target capacity expansion is 15-16M lbs/yr RDX production.
 - Expected Online by FY19
- NC Rebaseline at RFAAP
 - Replacing the current aging facility, which is the only source of Nitro Cellulose within the US and Canada
 - Expected Online in early FY19
- Package Boilers Maximum Achievable Control Technology (MACT) Compliance at RFAAP
 - EPA is driving the switch from coal-fired boilers for environmental benefits



PEO Ammo Focus Areas



Flares & Signals

Near-term:

- Defeating increased threats to aircraft
- Lighter and more tunable countermeasures (multi-purpose)

Mid-term:

- Defeating advanced aircraft threats

Long term:

- Fully tunable effects (user selectable)



Tank Ammo

Near-term:

- Advanced KE and AMP

Mid-term:

- DU alternates

Long-term:

- Guided extended range for advanced targets

Multi-Purpose



Small Cal

Near-term:

- OWL; Training Flexibility
- RRA; Mobility
- Lightweight Sm. Cal Ammo (LSCA)

Mid-term:

- Precision

Long-term:

- Extended range guided with user tunable effects
- "Trace" capability in smart sight on the weapon vs. on the round
- "Ammo on demand" - user has the capability to "produce" the ammo as needed.

Family of Ammo CDD



Artillery & Mortars

Near Term:

- Fielding light-weight wpns / Precision ammo
- Producing High Explosive rounds with insensitive munition fills
- C-DAEM Bridging Strategy
- Compatibility with M-Code GPS
- High Explosive Guided Mortar (HEGM)
- Lightweight digital fire control
- Improved HOB (iMOFA/iMOFM)

Affordable Precision

Increased Range

Assured PNT



Mid-term:

- Longer range through ammo improvements
- Increased lethality for 155mm (cluster munition replacement)

Long-term:

- Longer range through weapon upgrades
- Extended Range Autonomous Weapons



Demolitions:

Near-term

- Improving producibility of Modernized Demolition Initiators components (i.e., blasting cap)

Mid-term

- Reducing collateral damage
- Developing more IMX compliant items

Long-term

- Non-kinetic neutralization of explosives from standoff

Increased Lethality



Bomb Production:

Near-term:

- Address increases in Bomb requirements

Improved Safety





PEO Ammo Focus Areas (cont.)



Medium Caliber

Near-term:

- Increased lethality through warhead and round design
- Door Breach

Mid-term:

- Extended range and guidance

Long-term:

- Collaborative/swarming effects
- "Ammo on Demand"

Airburst Capability



Increased Range



Non-Lethal

Near-term:

- Improvements to the 40mm and 12 ga ammunition

Mid-term:

- More covert and passive marking of targets

Long-term:

- Integrated lethal and non-lethal effects and non-kinetic engagement



Shoulder Launched

Near-term:

- FMR of Multi-role Anti-armor Anti-personnel Weapon System (MAAWS)

Mid-term:

- Development of IAM

Long-term:

- Fielding of IAM
- Longer range defeat of advanced targets

Multi-Purpose



Area Denial

Near-term:

- Spider (all increments)
- Remote/autonomous emplacement and scalable effects - Gator Landmine Replacement Program (GLRP)

Mid-term:

Close-Terrain Shaping

Long-term:

Mid-Terrain Shaping Obstacles

Scalable Effects



Counter Explosive Hazard (CEH)

Near-term:

- Development of autonomous operations

Mid-term:

- Greater speed and standoff for detection marking and lower cost technologies

Long-term:

- Detection and non-kinetic neutralization of explosives from standoff

Standoff Neutralization



Grenades

Near-term:

- Benign smoke & fuze/primer upgrades

Mid to long term:

- Dual use grenades

Long-term:

- Non-kinetic effects and lighter weight

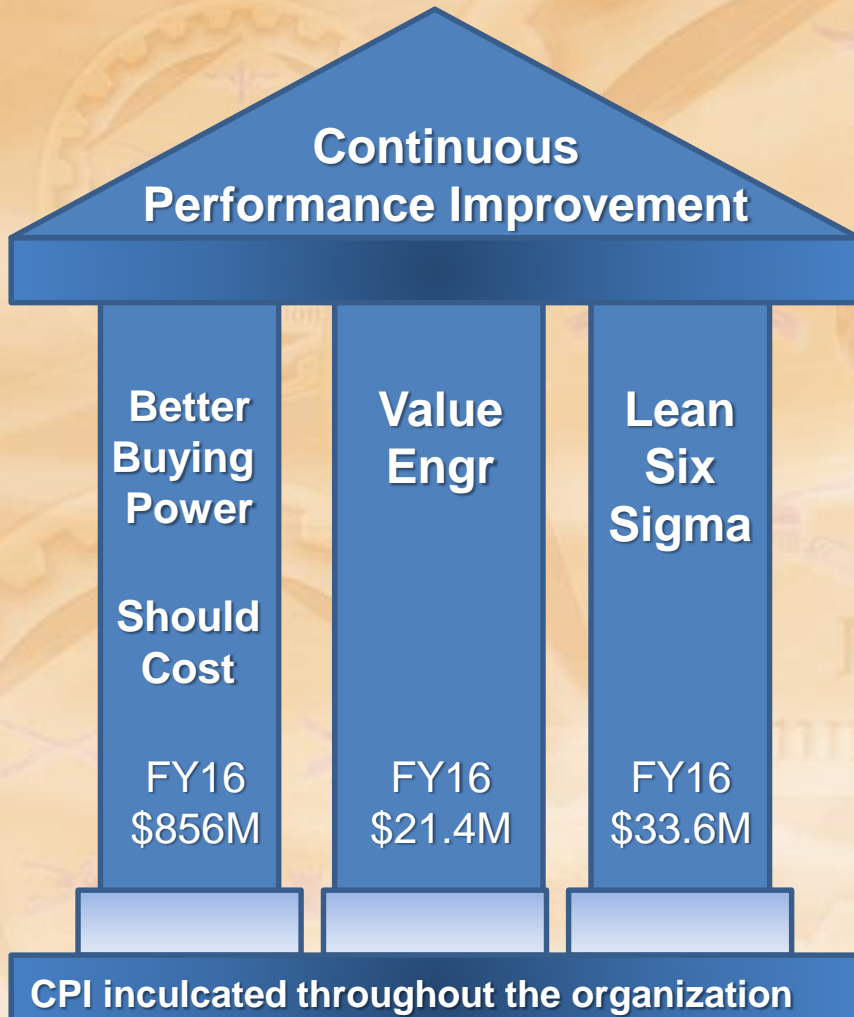
Lightening the Load



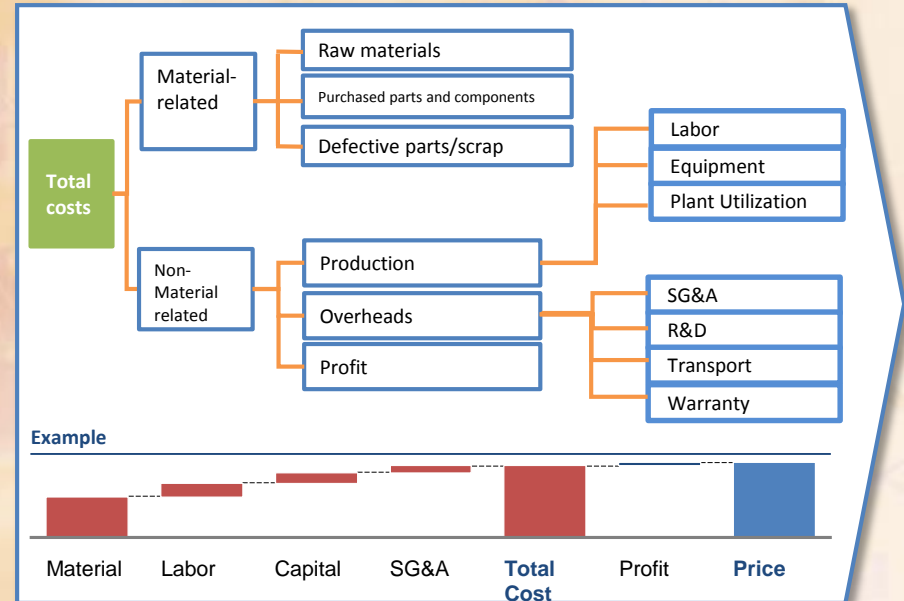


Tools to Gain Efficiencies

Do More with Fewer Dollars



Cleansheeting

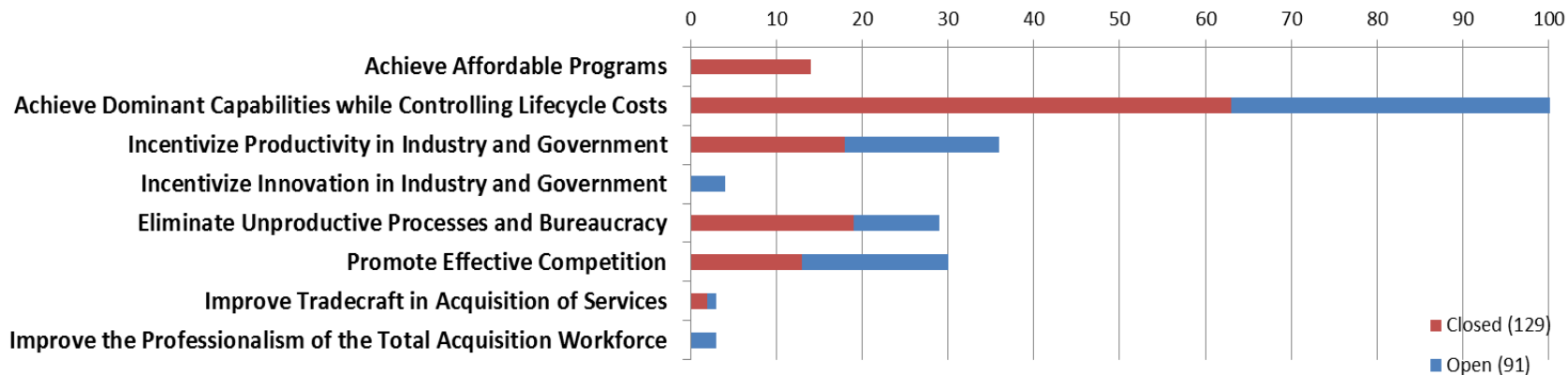


- Better Understanding Cost from Components to Final Assembly
- Identify Cost Savings Opportunities
- Similar to Engineering Cost Estimation Method – “Bottoms Up”
- Model Material and Non-Material Costs in an Optimized Manufacturing Scenario

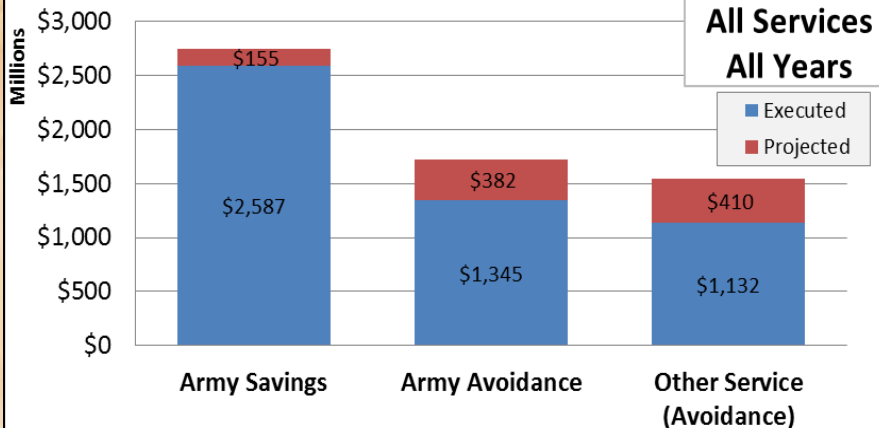


PEO Ammunition Better Buying Power

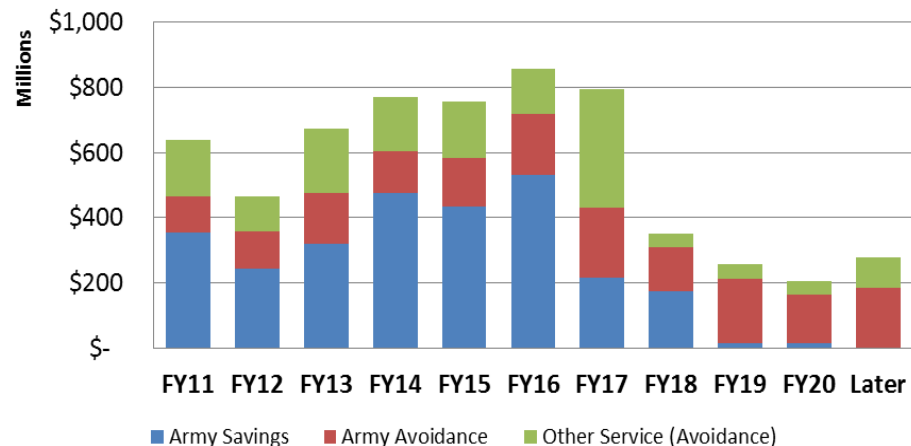
220 Initiatives Across All BBP Focus Areas



\$6.01B Savings & Avoidance



Savings & Avoidance By Year





Message to Industry

- Industry/ Government partnership is key
- Affordability remains critical
 - Will/Should Cost (Cleansheet Analysis)
 - Better Buying Power
- More thorough/quality proposals will accelerate capability of delivery
- Non NATO munitions to allies continues to increase
- Foreign Military Sales increasing
- Increased emphasis on Assured PNT, M-Code/Pseudolites/ Anti-Jam for precision munitions
- Continued push for Insensitive Munitions



Meeting Joint Warfighter's Needs!



Over 20B
Rounds
Delivered
FY02-16

