

Project Manager Maneuver Ammunition Systems

“Enhancing Small Arms Effectiveness in
Current and Future Operations”



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Other requests shall be referred to the:

Office of the Project Manager for Maneuver

Ammunition Systems

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Project Manager

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Top 10 Military Instructions



- 10 - **"AIM TOWARDS THE ENEMY."** -Instruction printed on US Rocket Launcher
- 9 - **"WHEN THE PIN IS PULLED, MR. GRENADE IS NOT OUR FRIEND."** -US Marine Corps
- 8 - **"CLUSTER BOMBING FROM B-52s IS VERY, VERY ACCURATE. THE BOMBS ARE GUARANTEED TO ALWAYS HIT THE GROUND."** -U.S.A.F. Ammo Troop.
- 7 - **"IF THE ENEMY IS IN RANGE, SO ARE YOU."** -Infantry Journal
- 6 - **"A SLIPPING GEAR COULD LET YOUR M203 GRENADE LAUNCHER FIRE WHEN YOU LEAST EXPECT IT. THAT WOULD MAKE YOU QUITE UNPOPULAR IN WHAT'S LEFT OF YOUR UNIT."** -Army's magazine of prevention maintenance
- 5 - **"TRY TO LOOK UNIMPORTANT; THE ENEMY MAY BE LOW ON AMMO."** -Infantry Journal
- 4 - **"TRACERS WORK BOTH WAYS."** -U.S. Army Ordnance
- 3 - **"ANY SHIP CAN BE A MINESWEEPER....ONCE."** -Anonymous
- 2 - **"DON'T DRAW FIRE; IT IRRITATES THE PEOPLE AROUND YOU."** -Infantry Journal
- 1 - **"IF YOU SEE A BOMB TECHNICIAN RUNNING, TRY TO KEEP UP WITH HIM."**
-U.S.A.F. Ammo Troop



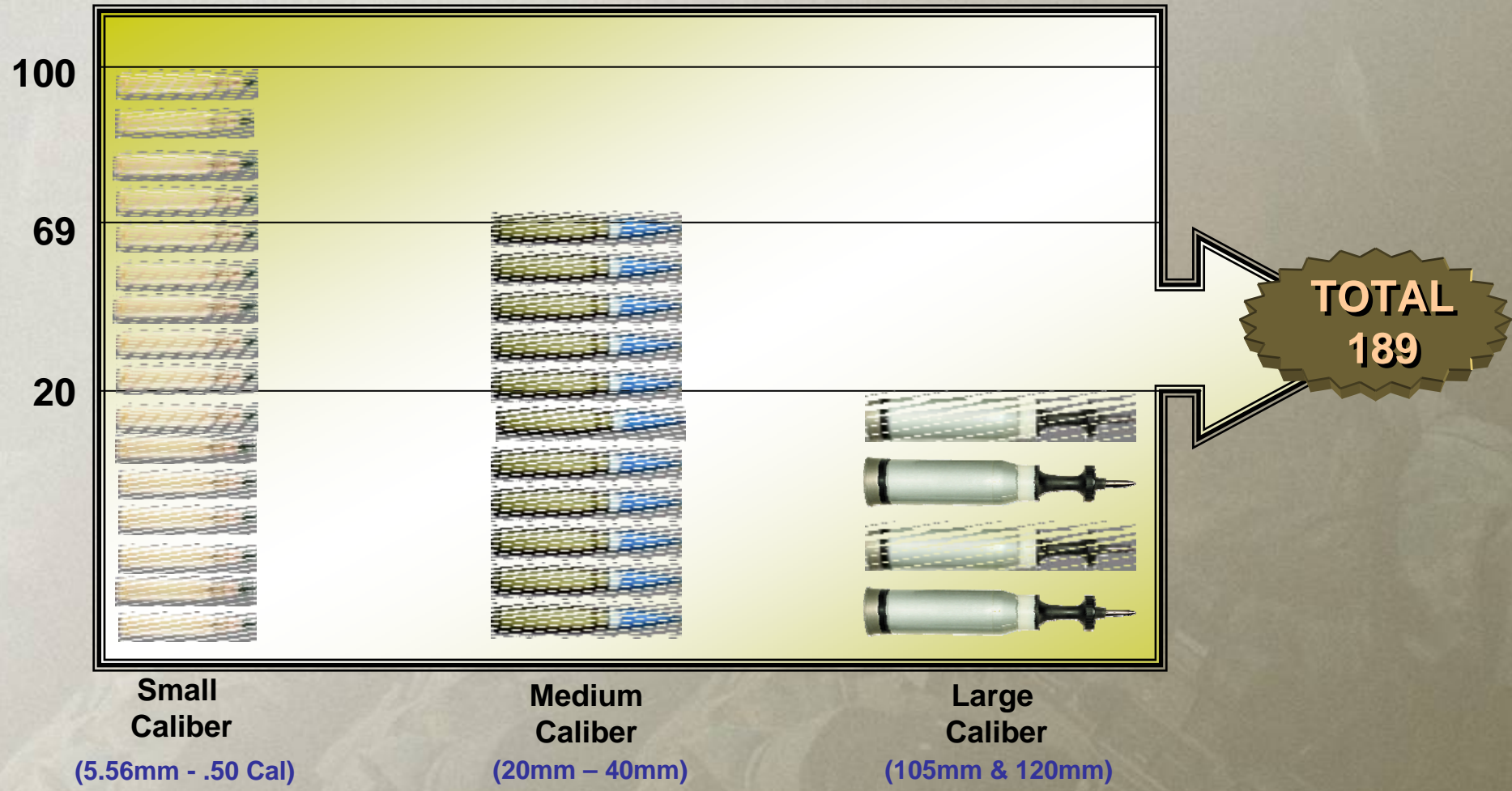
Project Manager Maneuver Ammunition Systems (MAS)-Direct Fire



MISSION: PM MAS Provides Direct Fire Combat And Training Ammunition Capabilities To All Warfighters (Army, Navy, Air Force, Marines)



Ammunition Products








PM MAS

FY08 Procurement Quantities

(What we are Ordering)



Small Caliber (1,708M) 		2008
	5.56MM	1294.5M
	7.62MM	240.3M
	.50 Cal	94.7M
	9MM	62.6M
	Shot Shells, Calibers .45, .22, 30	16.2M
Medium and Medium Cannon Caliber (27.5M) 	20MM	4.6M
	25MM	2.2M
	30MM	5.9M
	40MM	14.8M
Large Caliber (207K) 	105MM	.012M
	120MM TRAINING	.178M
	120MM TACTICAL	.017M

NOTE: All Services FY08 and Projected Supplemental

**1.736B ctgs / \$1.436B
for FY08**



PM-MAS 08 GOALS



- **Support Warfighters (GWOT)**
 - Production / Fielding
 - Logistics
 - Training

- **High Performing, Agile & Ethical Workforce**
 - **Grow People & Teams**
 - Training
 - Skills
 - Effective Management
 - System & Family Approach
 - Integrated Acquisition Lifecycle
 - War Reserve Management

- **Enhance Organic/Commercial Strategic Capabilities**
 - Shape Industrial Base Capacities to Meet Requirements
 - Modernize & Maintain Future Viability
 - Identify/Establish Alternate Sources

- **Develop & Field Capability Improvements**
 - Large Cal Strategy
 - Airburst fuzing
 - Small Cal RDT&E
 - FCS Support
 - Lethality

Small and Medium Caliber

- **Support Warfighter**
 - Meet Scheduled Production Goals
 - Reduce Delivery Backlogs
 - 40mm Baselining

- **High Performing Workforce**
 - Developmental Assignments
 - Training / Certifications

- **Enhance Strategic Capabilities**
 - Lake City Modernization Program
 - Develop Future Small Caliber and 40mm Strategies

- **Field Capability Improvements**
 - Green Ammunition
 - 40mm Pivoting Coupling
 - Small Caliber Case Mouth Waterproofing
 - Downselect 40mm High Velocity Non-dud-producing Training Round Configuration

- **In All Direct Fire Ammunition Families; Continuing to Deliver at Highest Levels Since Vietnam War**
- **Capacities and Sources Have Increased**
 - LCAAP - 1.2B (FY05) to 1.6B (FY07)
 - Second Source Small Caliber - 300M
 - New 40mm LAP Contractors
- **New Capabilities Have Been Fielded**
 - GREM
 - 12 Gauge Breeching
 - 7.62mm SRTA
 - 5.56m / 9mm SESAMs part of CCMCK (pending)
 - 40mm M992 IR Illum (pending)

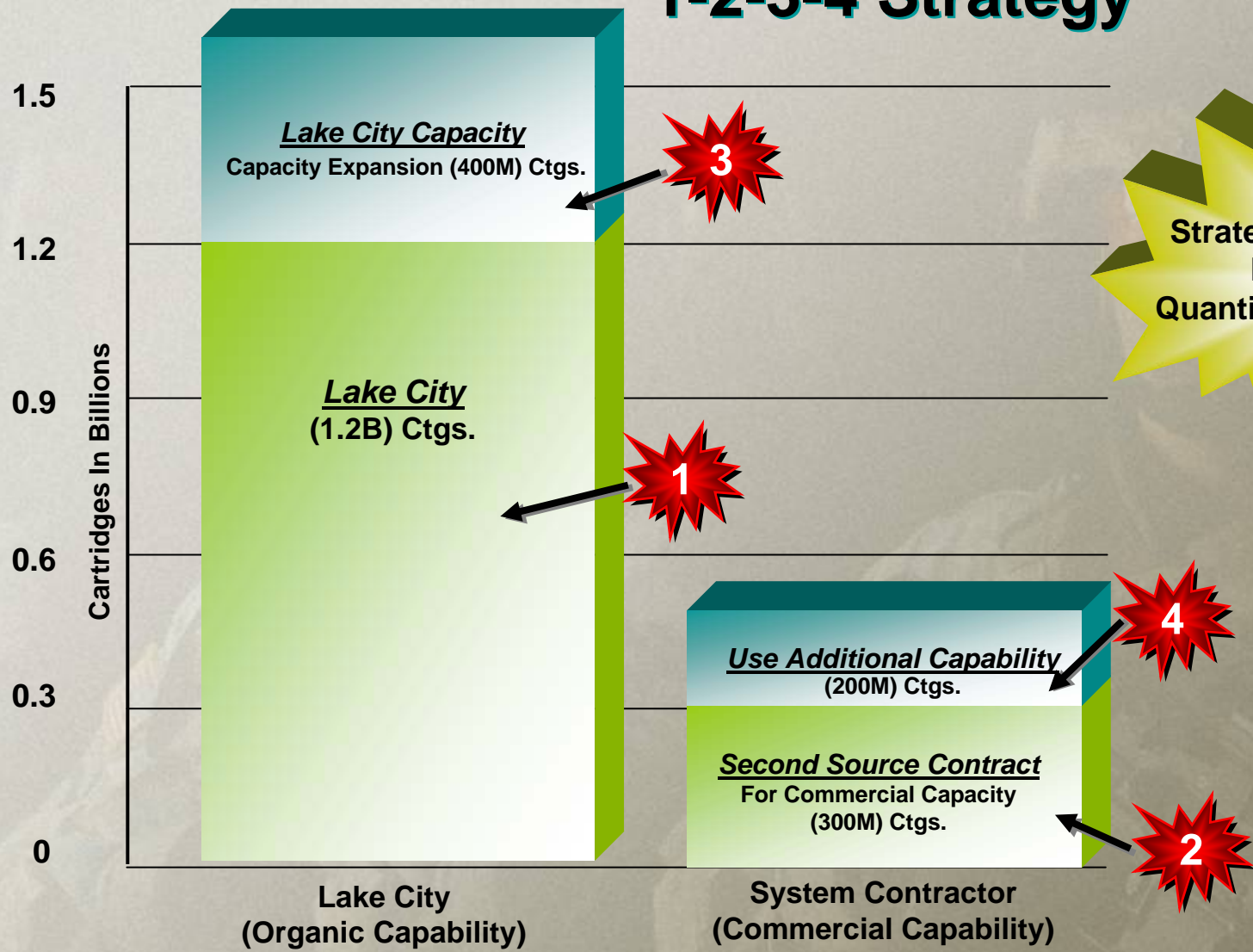


Much for Government and Industry to be Proud



Small Caliber Acquisition Strategy

1-2-3-4 Strategy

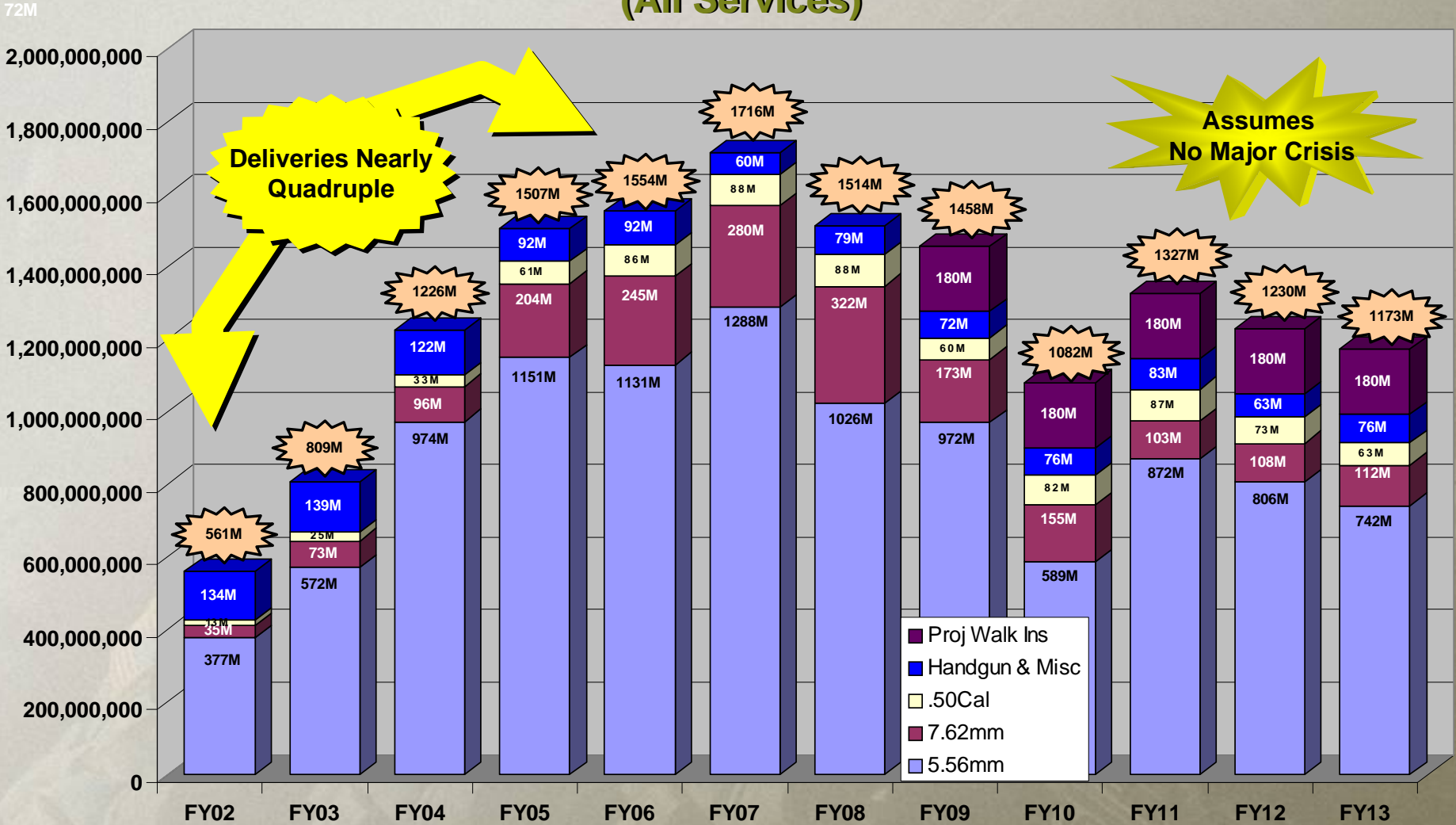


Strategy to Remain But Step Quantities to Change in FY09



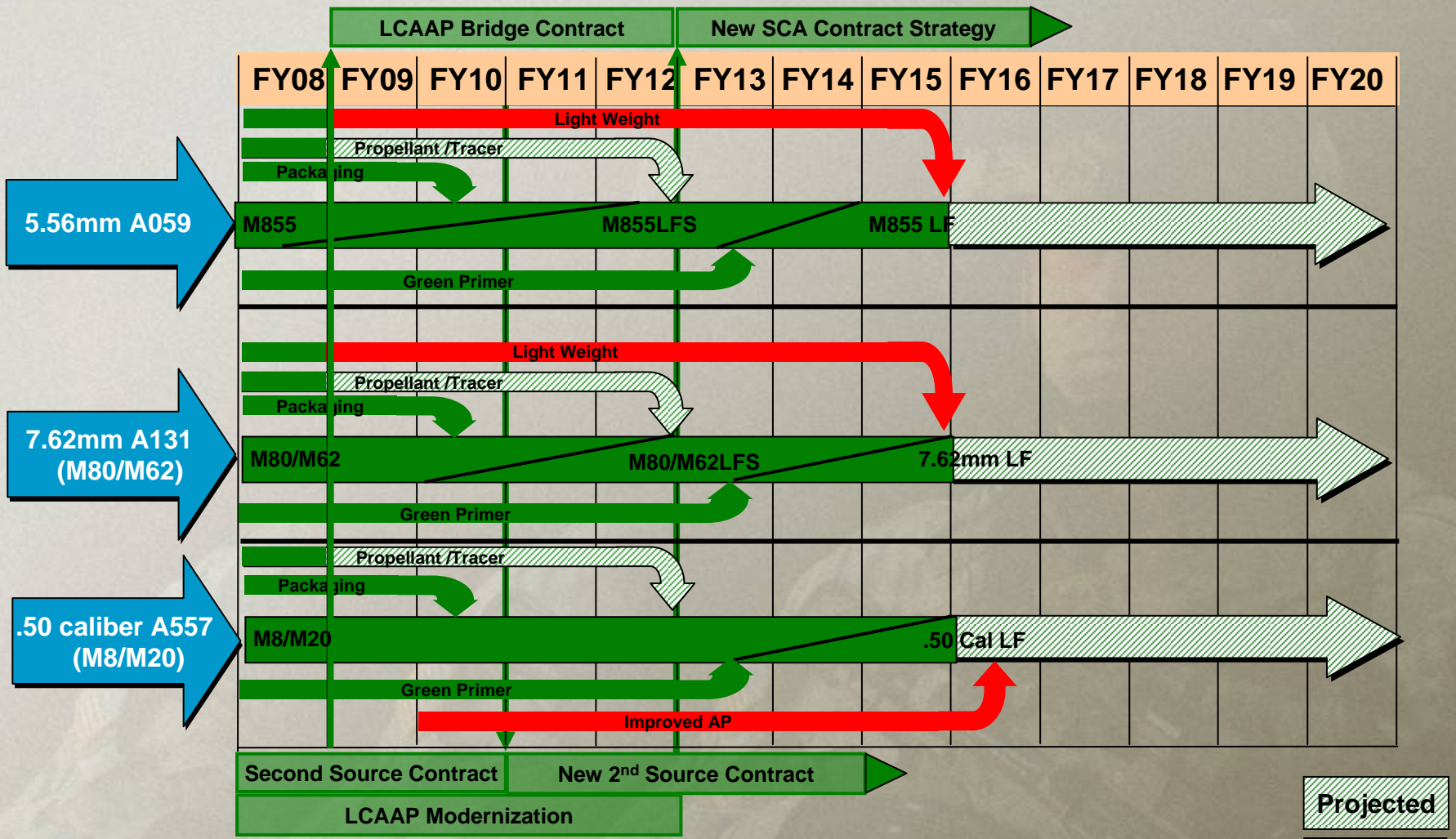
Small Caliber Ammunition Deliveries

(All Services)





Small Caliber Roadmap



- Sustains Training Ammo Support
- Meets Existing Tactical Requirements and Builds Tactical Stockpile
- Implements Green Program

Projected

Funded

Unfunded

Small Caliber NRE Efforts

- **Lake City AAP Modernization – Positions This National Asset for Future Use**
 - 7.62mm BAM Upgrade Depicted

Before



After



- **Case Mouth Waterproofing - Qualify Alternative Case Mouth Waterproofing Sealant Materials/Process to Increase Throughput by Reduction in “Leakers”**
 - Reduce Failure Rate From 7% to 2 %

Sealant Applied

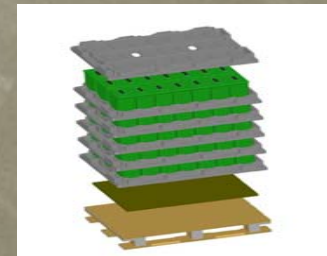


- **Packaging - Develop More Cost-Effective, High-performance Commercial Package for 5.56mm CONUS Range-fired Ammunition**
 - Wirebound Elimination - \$ 6M / yr savings
 - Simplified Bandoleer - \$ 5M / yr Savings

Commercial Pack

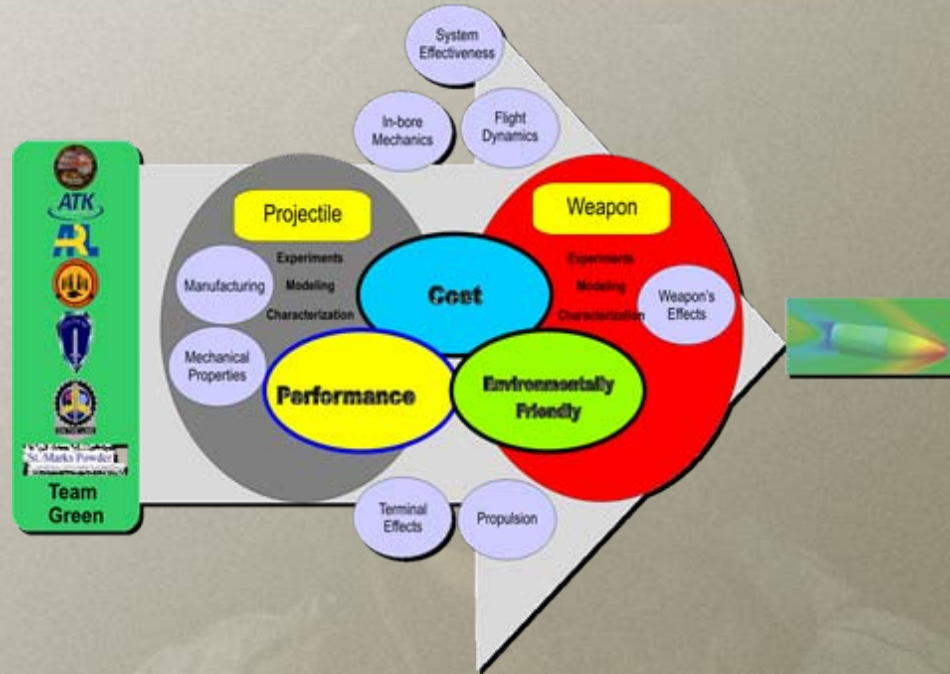


Wirebound Elimination



M855 LFS Green Ammunition

- **Field an Environmentally Friendly 5.56mm Cartridge That Will Exhibit Comparable Performance to Current Leaded M855**
 - Operational in M4, M16 and M249 Weapon Systems
 - Round Utilizes Latest Science and Technology to Improve Upon all Aspects of Round (Environmental Compliance, Accuracy)
 - Ballistically Matched to Army's Current Ball Round so There will be Minimal Training Impact
 - M855LFS will Begin Production Late FY08





40MM Grenade Family of Munitions

Current Acquisition Strategy

- Systems Contract Strategy
 - 2 Joint Venture Small Business Teams
- Government Focusing on Products/Industrial Base, Not Parts

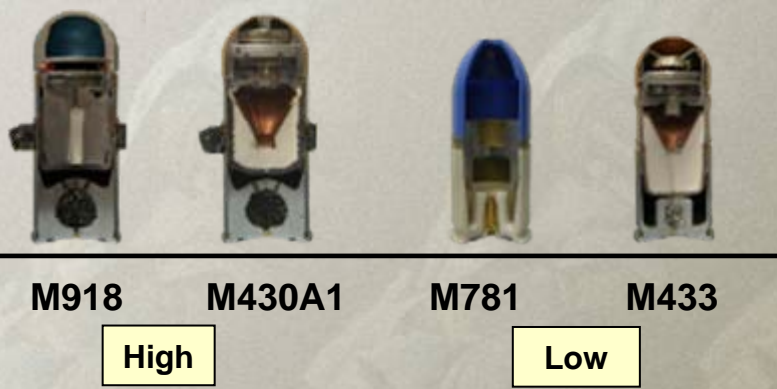
Mk 19
Grenade Launcher
(High Velocity 40MM)



M203
Grenade Launcher
(Low Velocity 40MM)



Examples of High and Low Velocity 40MM Grenades



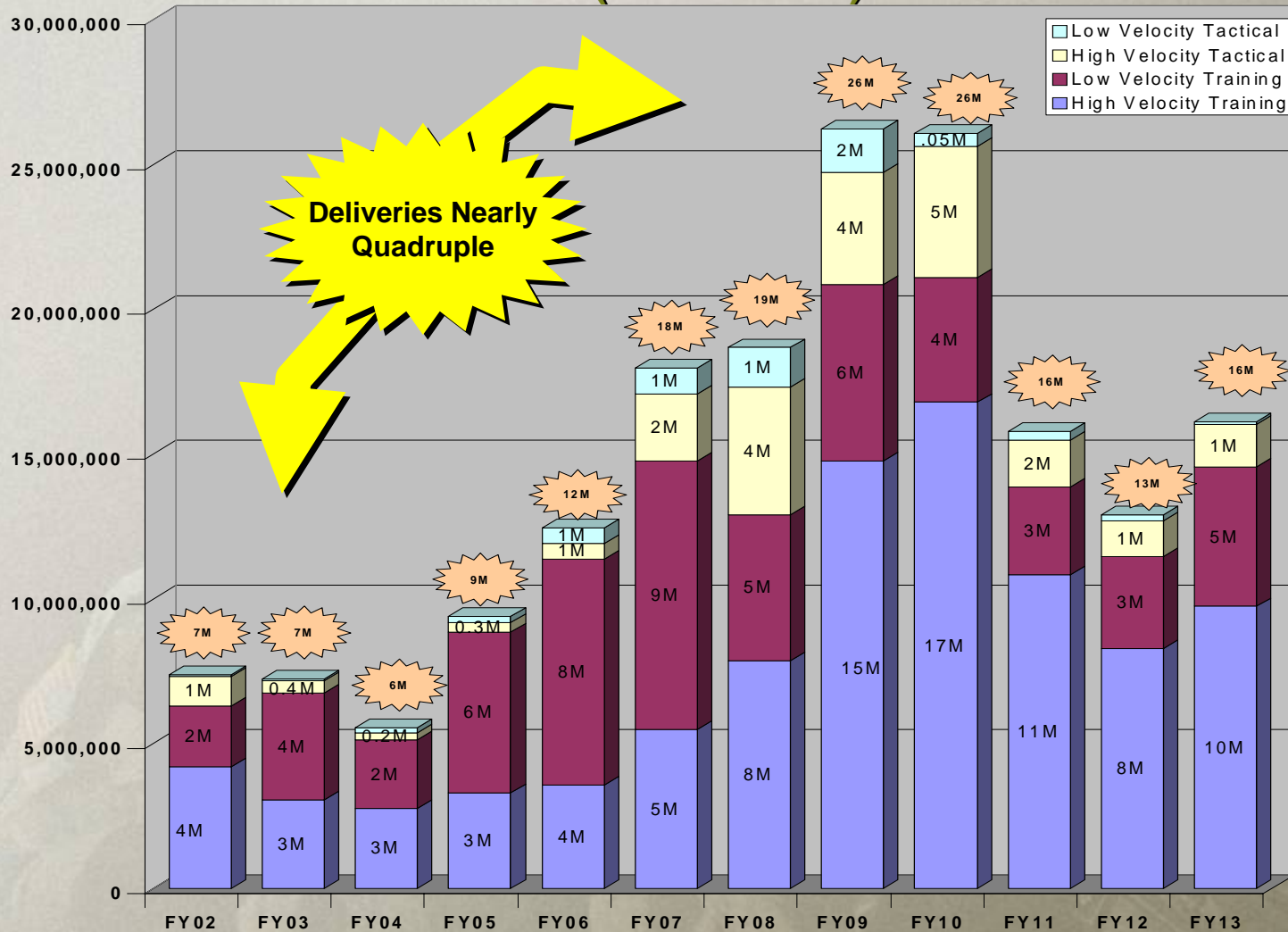
Future Challenges

- Iowa / Milan Competition (FY09)
- Follow-on Systems Contract (FY10)



40mm Deliveries

(All Services)



Deliveries Nearly Quadruple

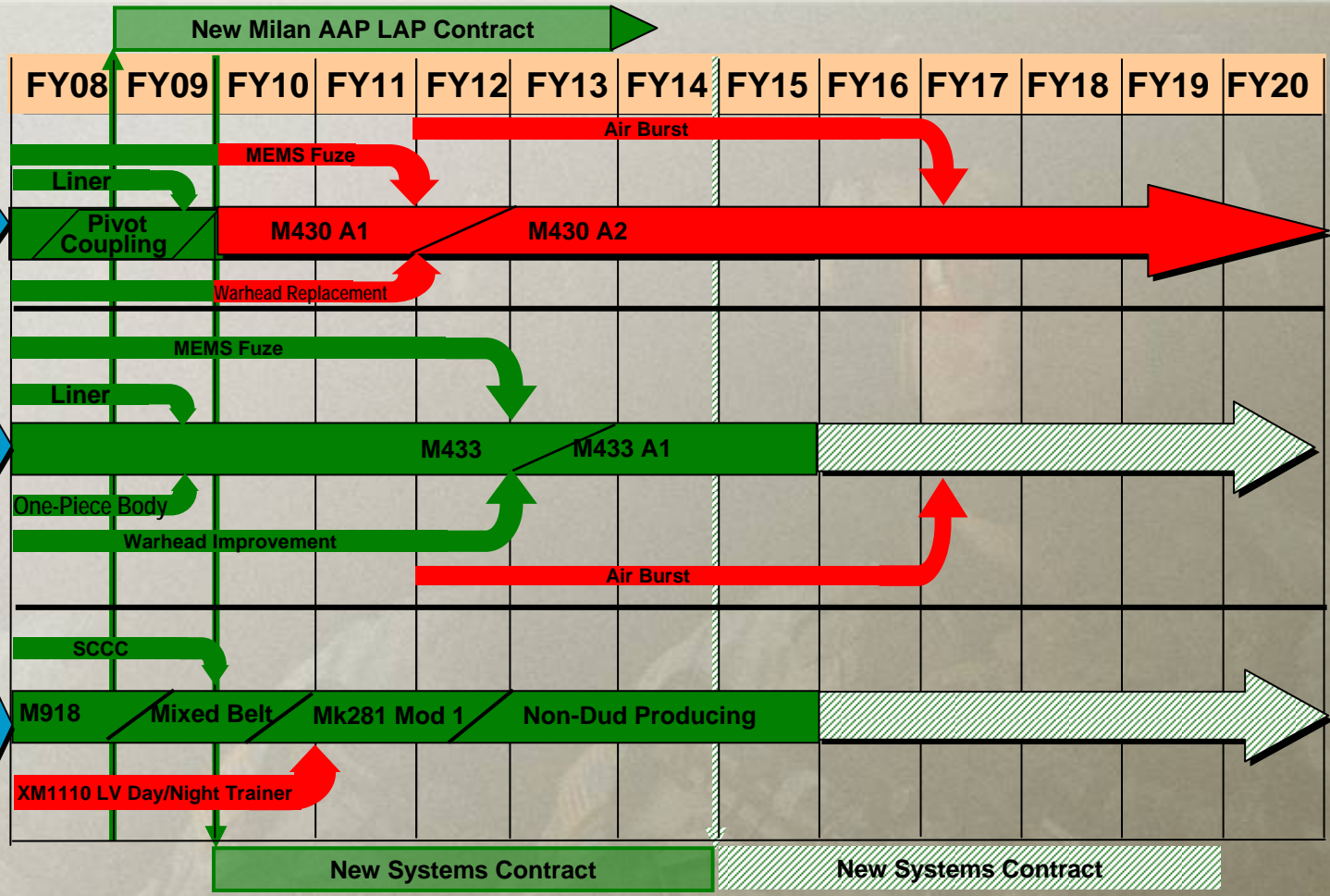


40mm Roadmap

High Velocity (HV) HEDP (M430A1/B542)

Low Velocity (LV) HEDP (M433/B546)

NDP Trainers Mixed Belt M385/M918 NDP HV NDP Day Night LV



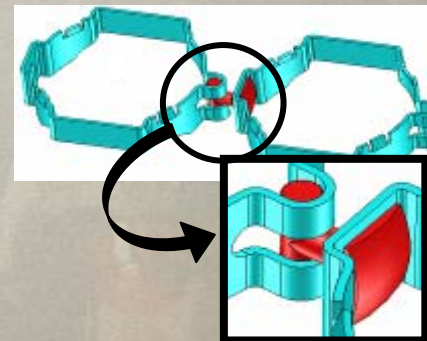
- Ammo Suite Satisfies ALL EXISTING 40mm Tactical Requirements
- HV and LV Trainers Will be Full NDP by FY12

Projected
 Funded
 Unfunded

40MM NRE Efforts

■ Pivoting Couplings

- Combat Advantage: Link Next Belt of Ammo to One Currently Loaded in Mk19; No Need to Stop and Re-Load
- Cost Savings: Add Single Round or Partial Belts to Existing Belt, so That Ammo is Not Wasted (\$ 1M / yr)
- Scheduled for Implementation in 4QFY08

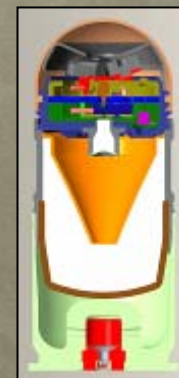


■ Single Chamber Cartridge Case

- Eliminate Gun Stoppage Due to Excessive Base Plug Movement
- Eliminate Bolt Face Erosion Due to the Leaking of Hot Propellant Gases Past Base Plug
- Reduce Cost by Eliminating Base Plug and Closing Cup (\$.30 / ctg), Easing Manufacturing Processes (\$.30 / ctg), and Reducing Critical/Major Defect Inspections

■ M433 Improvement

- Improve Robustness of Design and Create More Consistent Function by Reducing Number of Components and Defect Inspections
- Potential for Cost Savings Resulting from Less Complicated Design, Use of Production Methods Common with M430A1 HEDP, and Reduction of Touch Labor (Savings estimates not yet established)





Future for Direct Fire Ammunition







Strategic Situation

- **Production: At Capacity in Many Cases**
- **Requirements: Downturn on Horizon**
 - Training - Replace Expenditures Only
 - Operational - Replace Expenditures & Build Stockpile
- **Expenditures:**
 - Training – recently at 40% requirement, historical at 70%
 - Operational – steady since FY06
- **Stockpile: Increasing Daily...At or Nearing Objectives**
Requirements for Many Items
- **FMS: On the Rise (223M Rounds So Far in FY08)**

Challenges Ahead, But Opportunities Exist

Future Years Outlook

		Beyond 2008
Small Caliber 	5.56MM	Lower but Large FMS Orders Are Mitigating – Also Green Ammo
	7.62MM	Lower – New Green Ammo Reqts
	.50 Cal	Continued Sustained +100M/yr
	9MM	Steady Reqts
	Shot Shells, Calibers .45, .22, .30	Steady Reqts
	Medium and Medium Cannon Caliber   	20MM
25MM		Minimum Sustaining Buys
30MM		30mm x 113mm: Higher Reqts for M789 & M788 Steady 30mm x 173mm: Slow Growth
40MM		Min HEDP Buys – Training Ammo Switch to Non Dud Producing – Overall Lower Buys

Industry Opportunities

Technologies the Army is Looking to Obtain

- **Improved Lethality**
 - 5.56mm thru 40mm
- **Cost Avoidance**
 - Packaging, Materials, Reduced Weight
- **Advanced Fuzing**
 - Self Destruct, Increased Reliability, Cheaper
- **Reduced Signature**
 - Reduced Flash, Smoke, Non-pyrotechnic Tracer
- **Improved Accuracy**
- **High Energy Propellants**
 - Higher Velocity, IM Attributes, Temperature Insensitive



Respond thru System Contractors, NASTC, Unsolicited Proposal, Web Page, NVEC



EOM



Questions?