



NDIA Joint Armaments Conference PM Panel

COL Paul Hill Project Manager

May 2012

Equipping US and Allied Warfighters with World Class Direct Fire Combat and Training Ammunition Through Strategic Life Cycle Management

Project Manager Maneuver Ammunition Systems



Project Manager
COL Paul Hill

Deputy Project Manager
Mr. William Sanville



Product Manager
Small Caliber
LTC Philip Clark

Product Director
Medium Caliber
Mr. Chris Seacord

Business
Management
Mr. Bob Kowalski

Systems Engineering &
Technology Integration
Mr. Tom Coradeschi

Product Manager
Large Caliber
LTC Brian Gruchacz

Product Director
NSA
LTC Chris Lehner



Support to Warfighter



- **New Rounds Fielded in FY11**
 - 5.56mm Enhanced Performance Round (EPR)
 - Performance Improvement - Army Top 10 - Packard Award

- **New Rounds/Technologies in FY12/13**
 - 5.56mm EPR Tracer
 - 5.56mm M1037 SRTA
 - 7.62mm M80A1 “EPR”
 - Performance improvement
 - 30mm M789 Improved Propellant
 - Safety/Performance improvement
 - 105mm M724A2 TPFSDS-T
 - 120mm Advanced Case System & Improved Propellant
 - Safety improvements

Deliveries: FY11	
Small Caliber	1,448,008,348
Medium Caliber	14,017,163
40mm	13,605,404
Large Caliber	130,362
NSA	225,376,781
Total	1,691,138,051



FY13 PRES BUD (Army)



Type	FY13	FY14	FY15	FY16	FY17
	\$K	\$K	\$K	\$K	\$K
5.56mm	158,313	164,309	176,158	199,873	202,842
7.62mm	91,438	87,108	90,138	93,154	95,261
9mm	10,454	8,216	8,377	8,465	8,456
.50 Cal	119,604	103,479	104,352	106,983	111,471
20mm	4,041	5,053	5,056	5,056	5,142
25mm	12,654	18,352	24,524	41,404	50,958
30mm	152,154	77,134	79,294	81,667	87,816
40mm	60,138	65,304	61,208	63,807	65,964
105mm and 120mm	112,380	145,332	154,271	140,062	151,242
Total Production	721,176	674,287	703,378	740,471	779,152
Direct Fire Technology and NATO Ammo Evaluation	9,782	18,256	12,647	9,306	9,462
M829E4 120mm Ctg.	30,560	19,812	7,083		
Total RDTE	40,342	38,068	19,730	9,306	9,462



Expect Army Funding to remain relatively strong in future budgets

S&T Priorities



Small Caliber
(Enable Dismount Fight)

- **Lightweight Cases / Ammo**
- **Day / Night Low-Observable Trace**

Medium Caliber
(More Effectiveness -
Increase Training Realism)

- **30/40mm Air Burst Capability**
- **40mm Non-Dud Producing Technology**

Large Caliber
(Maintain Overmatch)

- **DU Replacement Technology**
- **Advanced Multi-Purpose Capability**



PM-MAS Business Opportunities



FY12/FY13 Major Competitions

LCAAP-\$8.4B (FY13-22)
Requirements/IDIQ/Facilities

Non Standard Ammo \$250M (FY12-17)
BOA/IDIQ orders

40mm Non-Dud Producing - \$49M (FY13-14)
Multiple FFP Contracts w/option

.300 WinMag - \$26M (FY14-18)
Requirements

40mm Non Recurring Engineering - \$25M
(FY13-18) Multiple Award IDIQs

Other Competitions

- PA 125 cans-\$11.5M
- .38 Cal & .45 Cal - \$7M



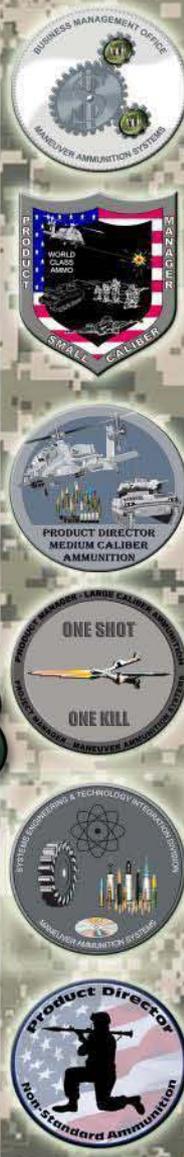
Industrial Base Challenges



	Small Caliber	Medium Caliber	Large Caliber
	- RIFLE -	- CANNON CALIBER -	- 105/120mm -
Challenges:	Maintain LCAAP & Second Source	Maintaining a minimum of two Sources in cost effective manner	Maintaining two sources in cost effective manner
	Support EPR & Leaded Production		Can we keep Depleted Uranium (DU) Base?
	- PISTOL -	- 40mm GRENADE -	
Challenges:	Be ready to accommodate new calibers	Switch focus to Training Ammo & NDP	INDUSTRIAL BASE PRESERVATION
		Maintain Pyrotechnic Base	

Outlook:

1. Base will have to shrink
2. Looking for innovative way to keep & address 40mm Pyro and DU Base



Facts of Life

- Higher priority on Obligations
- Less funds in out years
- Return to full spectrum training
 - Greater proportion of training vs. tactical ammunition in future budgets
- Sequestration: Potential major impact but not known to what extent





NDIA Joint Armaments Heading into the Future

LTC Philip R. Clark
Product Manager,
Small Caliber Ammunition

May 2012

Small Caliber Ammunition



5.56MM, 7.62MM, 9MM, .50 CAL



5.56mm



M962 SRTA M200 M193 M855 Ball M856 M995 M855A1



9mm



M974 M993 M82A1 M80 Ball M82 M80 Ball Linkd M276 M118 Ball M80A1 M1A1 Blank M33 Ball M17 Tracer M20 M8 M211 M962 M903 M860 Tracer M858 Ball

7.62mm

.50 Cal.



DISTRIBUTION STATEMENT A: Approved for Public Release; distribution unlimited.

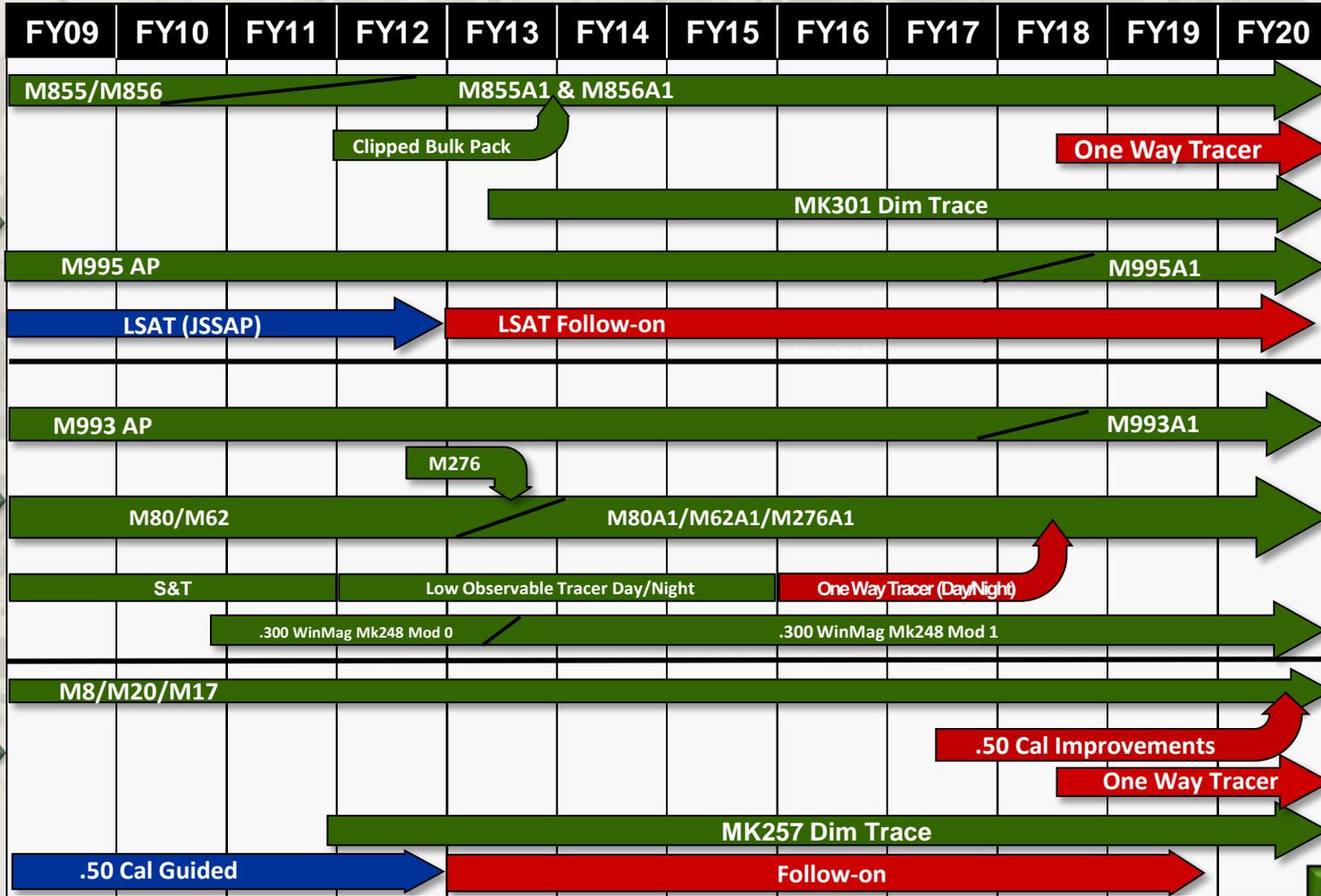
Accomplishments



- **M855A1 SCAMP transition to production**
- **M856A1 Trace release/production**
- **Completed UMR of Mk248 Mod 0 cartridge**
- **M2AP Parts Kits**
- **M82A1 Bottleneck Blank Contract Award and Initial Delivery**
- **Second Source Small Cal Ammo Contract**



Small Caliber Ammunition Roadmap



Efforts Ongoing in Every Caliber
 (Propellant Optimization, Velocity Improvements, Temperature Sensitivity,
 Lightweight Cases, Wirebound Elimination)

Funded
Unfunded
No Requirement

DISTRIBUTION STATEMENT A:
 Approved for Public Release;
 distribution unlimited.

Future Focus



- 7.62mm Green Ammo (M80A1 Ball & M62A1 Trace)
- .38/.45 Cal Pistol Contract
- .300 WinMag
 - Support expanded fielding of XM2010 with Mk248 Mod 0
 - Full materiel release Mk248 Mod 1 cartridge with XM2010
- Increased competition on low density items
- Lightweight cartridge case strategy – Pending release of market survey
- One-Way, non-pyrotechnic tracer





NDIA Joint Armaments



Mr. Christopher Seacord
Product Director
Medium Caliber Ammunition
15 May 2012

Agenda

- **Medium Caliber Ammunition**
- **Medium Caliber Priorities**
- **Future Opportunities**
- **40mm Non-Dud Producing(NDP) Requirements**
- **GCV Ammunition**
 - Requirements
 - Potential Candidate Rounds



Medium Caliber Ammunition



20mm



25mm



30mm x 113



30mm x 173



40mm L60



High Velocity



Low Velocity



40mm Grenades

Medium Caliber Priorities



- **Maintain Industrial Base (IB)**
 - Maintain Two Sources for End Items and Key Components
 - Continue to Reduce Single Points of Failure
 - Encourage Contractor and Supplier Growth
- **Develop Acquisition Strategies**
 - Promote Competition while Sustaining IB Investment
 - Price Balanced with IB Concerns
- **Oversee Production**
 - Quality vs. Quantity
 - Meet Contract Requirements
 - Right-Size Production Lines and Workforce
- **Promote Continuous Improvement**
 - Improve Quality
 - Reduce Cost
- **Product Improvements/New Requirements**
 - Push the Design to its Maximum Potential
 - Match Warfighter Requirements to New Technology



Future Opportunities



- **Validated Requirements**
 - Low and High Velocity 40mm Non-Dud Producing Cartridges
 - LW30mm Training Practice Spotter
 - LW30mm HEDP Increased Lethality
- **Emerging Requirements**
 - Ground Combat Vehicle Program Cannon Family of Munitions
- **Warfighter Interests**
 - Air Burst (all calibers)
 - Door Breaching (40mm LV)
 - Programmable Munitions (all calibers)
 - Increased Lethality



40mm NDP Requirements



- (KPP1) Non Dud Producing / Unexploded Ordnance
- (KPP2) Weapon Compatibility
- (KPP3) Impact Signature
- (KSA1) Impact Signature Visibility
- (KSA2) Reliability
- (KSA3) Accuracy/ Dispersion



GCV Ammunition Requirements



- Solution could be 25mm up to 50mm, but most likely solution is 30 x 173mm
- Draft Capability Development Document has specific threshold requirements that can only be met with 30 x 173mm or larger armament solution
 - There is a desire for Airburst capability to defeat various dismounted infantry targets (HEI is recognized, less effective alternative)
 - There is a need for an armor-piercing (AP) round to defeat material threats
 - There is associated need for a training round for each tactical round
- Potential Candidate Rounds:



- MK239 – NTIB
- MK317 – NTIB
- MK320 – Foreign
- MK238 – NTIB



- MK266 – NTIB
- MK310 – NTIB
- MK258 – Foreign
- MK268 – Foreign



Points Of Contact



Mr. Christopher Seacord
Product Director
Medium Caliber Ammunition
christopher.seacord@us.army.mil
(973) 724-2090

Mr. Kenneth Insco
Deputy Product Director
Medium Caliber Ammunition
kenneth.m.insco@us.army.mil
(973) 724-5256





NDIA Joint Armaments

LTC Brian Gruchacz
PM Large Caliber Ammunition
15 May 2012



Large Caliber Ammunition



120mm, 105mm Training & Tactical Ammunition



CONCEPT

DEVEL.

PRODUCTION

SUSTAINMENT



105mm
FMS Only



DISTRIBUTION STATEMENT A:
Approved for Public Release;
distribution unlimited.

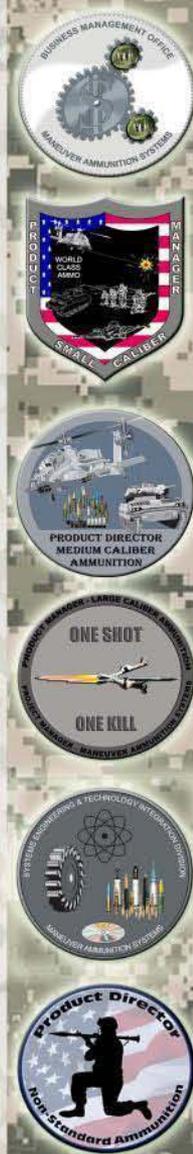
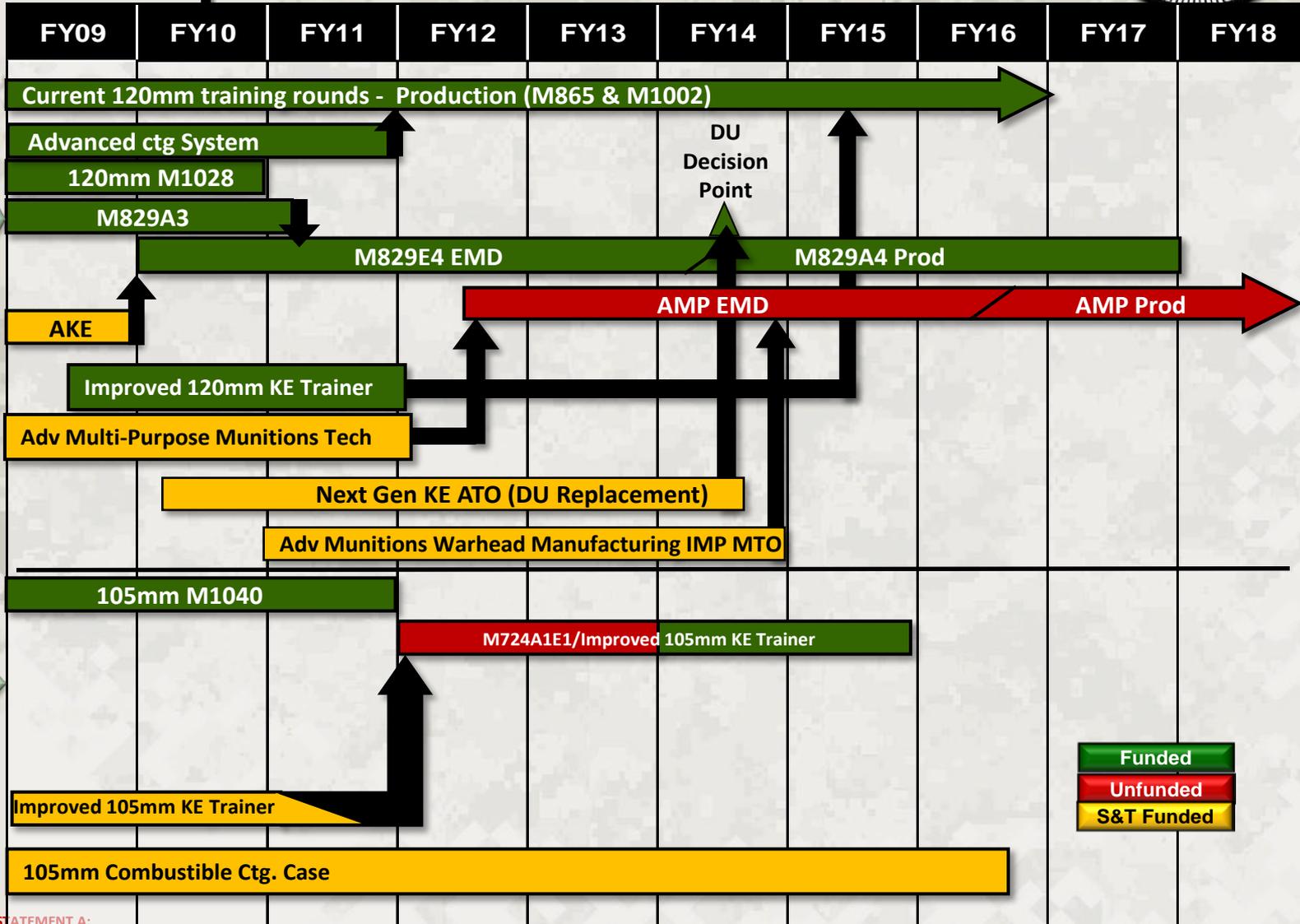
Large Caliber Focus and Outlook



- Continue Tank Training Cartridge Production
- Implement Safety Enhancements
- 5th Generation 120mm Kinetic Energy Development
- Set Conditions for Advanced Multi-Purpose Development
- Foreign Military Sales
- Maintain Inventory Readiness



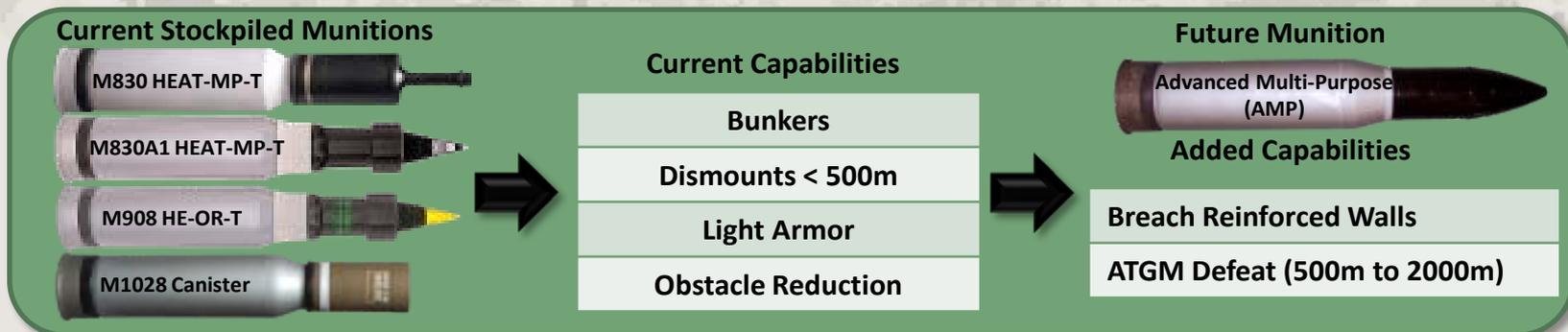
Large Caliber Ammunition Roadmap



Advanced Multi Purpose (AMP) Overview and Status



- 120mm Multi Purpose Munition with Three Modes of Operation (Point Detonate, Delay, & Airburst)
- Provides User with New Capabilities
 - Defeat ATGM Teams Beyond 500m
 - Breach Reinforced Concrete Walls
- Consolidates Capabilities of Four Current 120mm Munitions
 - Reduced Logistical Burden
 - Addresses Aging Stockpile Issues
 - Battlecarry Single Munition for Multiple Targets
- ADL Required to Program Mode and Range - Leverage Ongoing Abrams and M829E4 ADL Integration Efforts
- CDD Approved JUN 08
- Funding Line for FY13 EMD Program Start Was Zeroed – Future Funding and Schedule are TBD



120mm Safety Enhancements M14 Propellant Replacement



- **Eliminate or Significantly Reduce Residual Solvents (Contributing Factor to Tank Fires)**
- **Three Phases**
 - Phase I (Complete) – Develop Formulation, Demonstrate Feasibility, and Downselect
 - Phase II (Ongoing) – Replicate Results in Expanded Charge Establishment and Charge Verification (CE/CV) Test
 - Phase III – M1002 and M865 Qualification Testing
- **ATK Contracted to Complete Phases II and III**
- **GD-OTS and BAE Qualification Included During Phase III**
- **ECP New Propellant in FY13 Training Round Contracts**



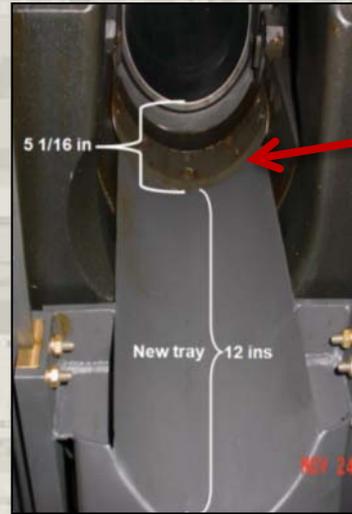
120mm Safety Enhancements Advance Case System (ACS)



Moves Bond Joint from Forward to Rear of the Cartridge



ACS Configuration



2nd Generation
Loaders Tray



Current Case Configuration

- Current Bond Joint Can Catch on Transition Area of 2nd Gen Loader's Tray
- Case Damage Results
- Residual Solvent (Ether) Escapes
- Ether is Susceptible to Ignition from Static Discharge



HERO Primer



- **Background**
 - HERO (Hazards of Electromagnetic Radiation to Ordnance)
 - Current Primer Does Not Meet HERO Cartridge Requirement (MIL-STD-464A)
 - Restricts Ammo Handling Outside Container in Certain RF Conditions
- **Objective**
 - HERO Compliance, Fewer Parts, Reduced Labor, Lower Cost, Less Critical Defects
 - Meet Electrostatic Discharge (ESD) Standards
 - Compatible with Current Tank Fire Control
- **Schedule**
 - Contract Award – Pending
 - M829E4 E3 Testing – NOV 12
 - Cartridge Qualification – APR 13
 - ECP HERO Primer – JUN 13



Conclusion

- Continue Tank Training Cartridge Production
- Implement Safety Enhancements
- 5th Generation 120mm Kinetic Energy Development
- Set Conditions for Advanced Multi-Purpose Development
- Foreign Military Sales
- Maintain Inventory Readiness

Questions?

