

Product Manager Small Caliber Ammunition

M855A1 Enhanced Performance Round (EPR)



Distribution Statement A:
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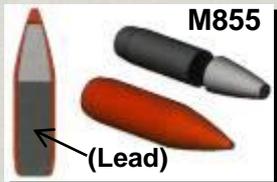


M855A1



Requirement

- Deliver an Environmentally Friendly Cartridge with the same or better performance
 - Optimized for M4 Weapon System
 - Army's Replacement for M855



From This



To This

M855A1

(Copper)



Status:

- Completed Low Rate Initial Production (LRIP)
- Completed Production Qualification Testing (PQT)
- Shipping to Theater

Most Tested Small Caliber Round Ever, Over 1M Rounds!



Summary of Benefits

- Environmental impact – lead free projectile
 - Eliminates ~ 2,000 tons of lead from production
 - Allows use of training ranges with restrictions
 - Removes lead hazard from mfg environment
- Performance Benefits
 - Consistent performance: not yaw dependant
 - Significantly improved performance at extended ranges
 - Improved propellant – reduced flash
 - Trajectory Match - No Soldier training difference
 - Improved accuracy

Key Future Events:

- Moving rounds from Kuwait into Afghanistan (1.1M)
- Additional rounds arriving in Kuwait late July
- STRATCOM implementation
 - Getting info to Soldiers
 - Correcting misperceptions
 - Sharing info with Allies



History of the Lead Free Program



■ Why Green?

- Montreal Protocols, Executive Order (1993), EPA 17 List, AEC Study
- Some training ranges becoming lead restricted
- Army's policy on environmental stewardship
- Expected tightening of future environmental restrictions
- Public awareness of environmental concerns
- Cost of removing hazardous materials from installations

■ Greening Efforts

- 5.56mm ball and tracer
- 7.72mm ball and tracer
- Green Primer across calibers

Resulted in the M855A1 Enhance Performance Round



M855A1 EPR Benefits



■ Performance Benefits

- Dramatically improves hard target performance
- Provides consistent effects against soft targets, CQB performance
- “Match” like accuracy – VERY ACCURATE
- No weight increase, improved propellant, reduced flash
- Trajectory Match—no Soldier training transfer difference
- Significant performance improvements in a 5.56mm
 - Soft target performance similar to 7.62mm ball
 - Hard target performance far better than 7.62mm ball
- Extremely effective against ALL target sets (a true, general purpose round)

■ Environmental Impact

- Lead free projectile
- Eliminates ~ 2,000 tons of lead from production
- Allows use of training ranges with restrictions
- Removes lead hazard from mfg environment



M855A1



Comparison of M855A1 and M855



		M855A1	M855
Soft Target	Consistent Effects	G	R
Barriers	Car Window	G	G
	Car Door	G	G
	3/8" Steel	G	Y
	Concrete Masonry Unit	Y	R
	Soft Body Armor (24 layer Kevlar)	G	G
Accuracy	Wind Drift	G	G
	Ranging Error	G	G
	MOA	G	Y
	Dispersion	G	G
	Trajectory Match with M856 (Trace)	G	G
Propellant	Velocity	G	Y
	Temperature Coefficient	Y	Y
	Flash Suppression	G	R

M855 remains a VERY capable, all purpose round!



M855A1 Enhanced Performance Round

Chart colors are for comparison only, both rounds meet their respective requirements.

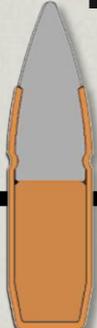
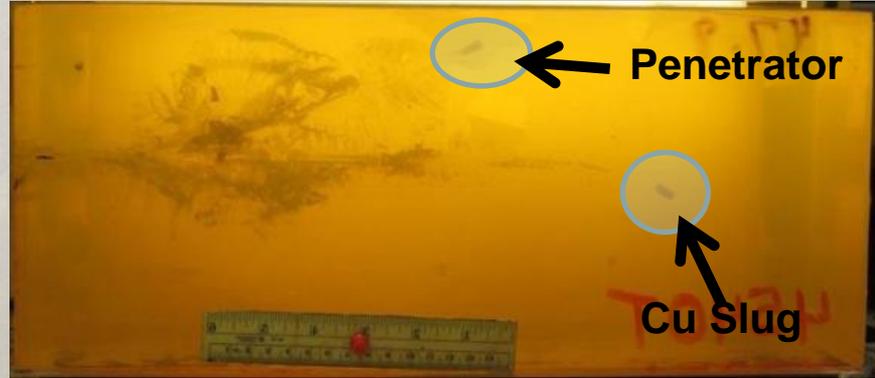
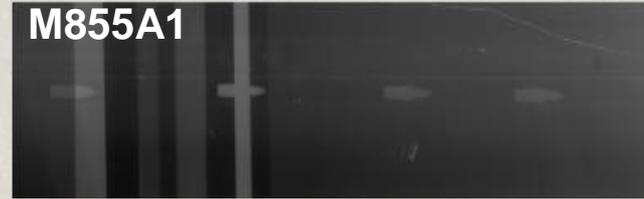


M855A1 Intermediate Barrier Performance



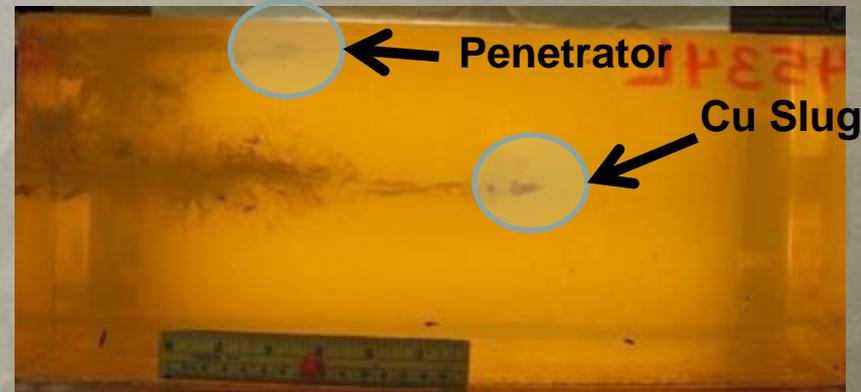
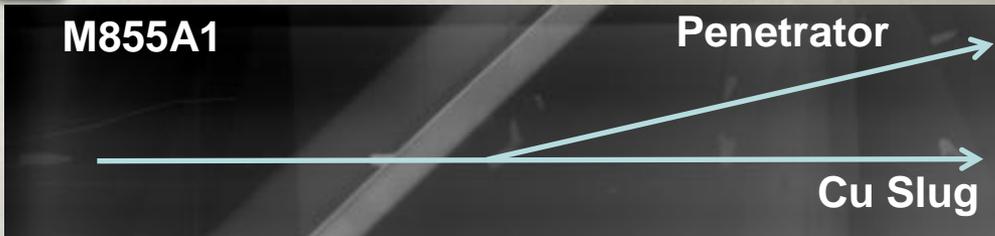
Car Door

M855A1



Windshield

M855A1

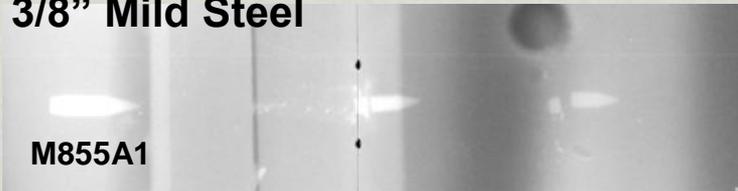


M855A1 Hits the Target Behind Barriers With the Penetrator and/or Slug



M855A1 Penetration

3/8" Mild Steel



M855A1

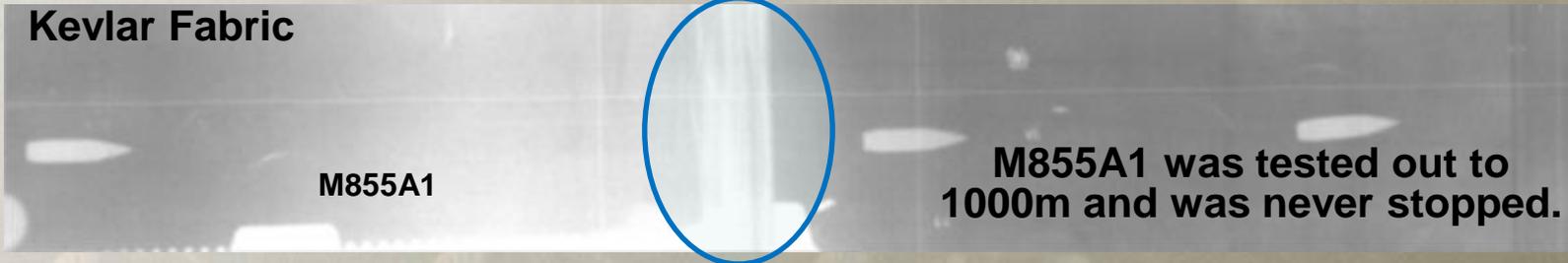


Shot with the M4



M80, 7.62mm
can't penetrate
at these ranges

Kevlar Fabric



M855A1

M855A1 was tested out to
1000m and was never stopped.

M855A1 WILL Penetrate Some Body Armor Designed to Stop 7.62mm Ball



M855A1 Hard Target Performance



Results are for M4

Battle Barrier Surrogate (3/8" steel)



Concrete Masonry Unit



(meters) 0 150 300 450 600

Results are for M16

Battle Barrier Surrogate (3/8" steel)



Concrete Masonry Unit



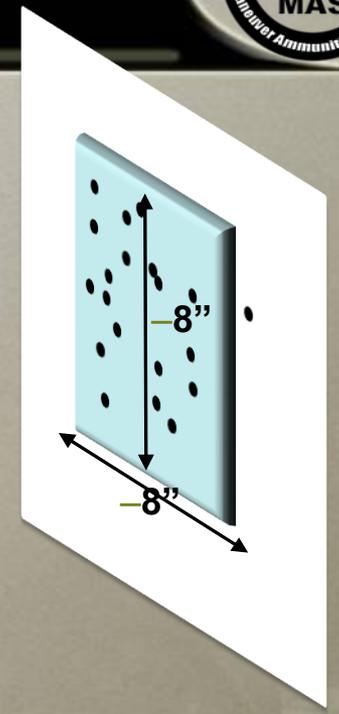
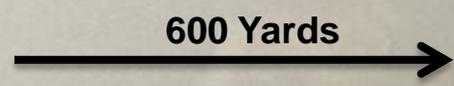
(meters) 0 150 300 450 600

M855A1 has Significantly Improved Hard Target Performance



EPR Accuracy

Accuracy testing shows that on average, 95% of rounds will hit within a eight by eight inch target at a range of 600 yards



While ammunition accuracy is important, nothing replaces good marksmanship training.

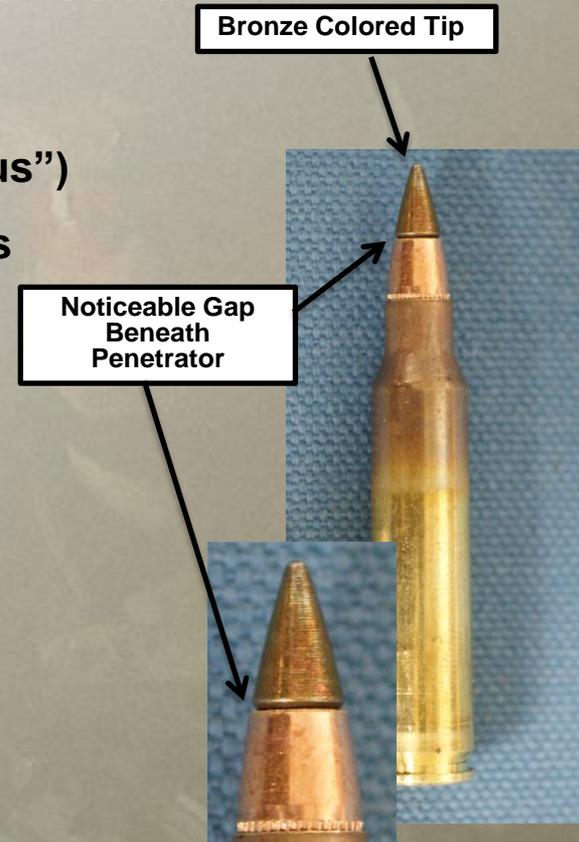
Shot Placement is still the most important factor!



M855A1 Enhanced Performance Round STRATCOM



- **What all Soldiers need to know when using this round**
 - Dramatically improves hard target performance
 - Provides dependable, consistent effects against soft targets and CQB performance (no more “Thru and Thrus”)
 - Significantly improves performance at extended ranges
 - “Match” like accuracy – VERY ACCURATE
 - No weight increase, flash reduced, increased velocity
 - Extremely effective against a wide variety of targets (a true all purpose small caliber round)
 - Not yet approved for use with the GREM
 - Not yet approved for the M249 (Emergency use only with magazine)
 - A noticeable gap below the penetrator or “spinning” tips are normal and do not impede performance in any way



– M855A1 EPR



Take-a-ways



- **M855A1 Enhanced Performance Round (EPR)**
 - Environmentally friendly cartridge that performs significantly better than any other military 5.56mm cartridge
 - Represents a significant performance improvement in a 5.56mm bullet
 - Hard target performance (steel) far better than 7.62mm ball
 - Soft target performance similar to 7.62mm ball
 - A true general purpose round optimized to a wide array of targets
 - Significantly improved hard target performance at longer distances
 - Provides consistent performance against soft targets (Yaw sensitivity)
 - Uses a lead free projectile (unlike M855)
 - Eliminates ~ 2,000 Tons of Lead from Production/Environment Yearly
 - Allows Use of Training Ranges with Lead Restrictions
 - Planned to replace M855 for the Army
 - Fielding in summer 2010

Continuing to Provide Improved Capabilities for our Warfighters!