

Product Manager Small Caliber Ammunition

M855A1 Enhanced Performance Round (EPR)



Distribution Statement A:
Approved for Public Release; Distribution is unlimited. Other requests shall be referred to the Office of the Project Manager for Maneuver Ammunition Systems, ATTN: SFAE-AMO-MAS-SETI, Picatinny, NJ 07806-5000

LTC Jeffrey K. Woods
Product Manager
Small Caliber Ammunition





M855A1 EPR Benefits



Performance Benefits

- Dramatically improves hard target performance
- Provides improved, consistent effects against soft targets and CQB performance
- Significantly increases range of consistent effects against soft targets
- “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
 - Surpassed 7.62mm ball against soft targets
 - Hard target performance (steel) far better than 7.62mm ball
- Extremely effective against ALL target sets (a true, general purpose round)
- Lead free projectile



M855A1 EPR

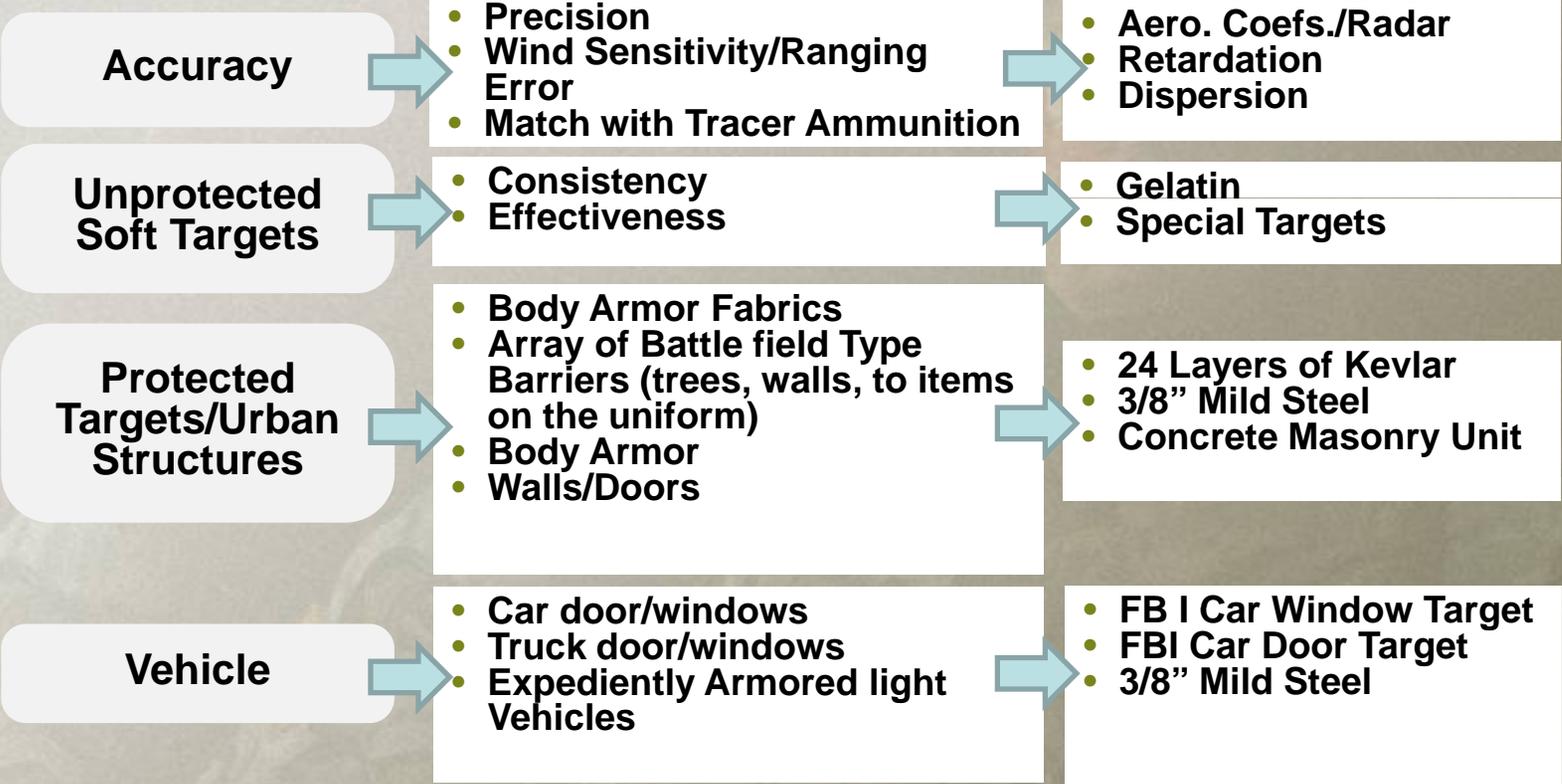




Army Requirements for General Purpose Ammunition



Performance Measures



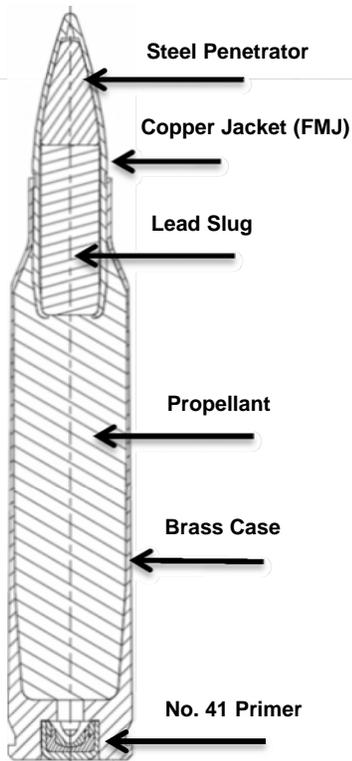
Must be able to engage a wide array of targets



Comparison of Changes

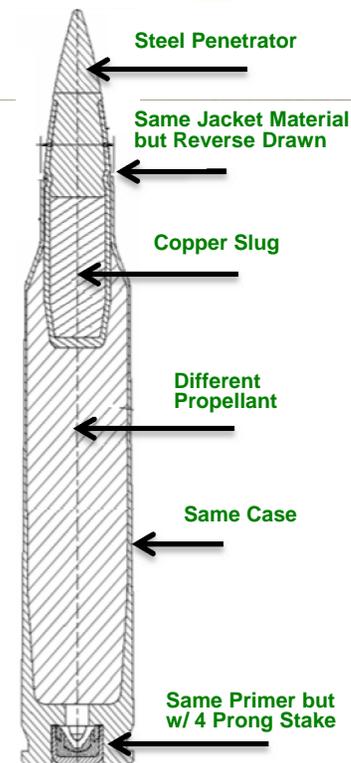


M855



Characteristic	M855	EPR
Cartridge Length	2.248 in	No Change
Bullet Weight	62gr	No Change
Tip ID	Green	Bronze from Corrosion Protection
Slug	Lead	Copper
Cup/Jacket	Copper	No Change
Penetrator	Steel	Steel Arrow Head
Corrosion Resistance	None	Yes
Propellant	WC-844	SMP-842
Flash Suppressant	No	Yes
De-Coppering Agent	No	Yes
Velocity	3113 ft/s	Increased
Chamber Pressure	M855 Spec	Increased
Penetration	3/8" Mild Steel @ 160m	3/8" Mild Steel @ 350m
Soft Target	Not Specified	Improved Consistency and Range

M855A1

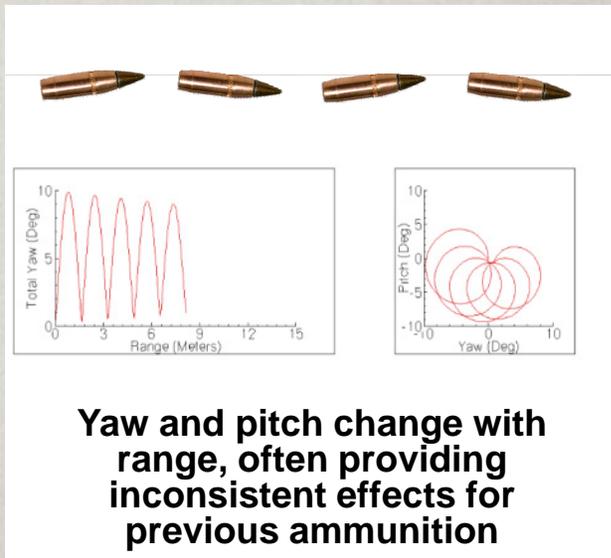




Improved Consistent Effects



The M855A1 does NOT rely on yaw for its effects



- The M855A1 is NOT yaw dependant
- Regardless of angle of yaw or pitch, the M855A1 provides the same consistent performance against soft targets
- This performance remains consistent for the Soldier, whether firing in close quarters or long range engagements
- The M855A1 greatly increases the maximum range at which a Soldier armed with the M4 or M16 can generate these consistent effects
- Army Research Lab live fire test results against soft targets showed that on average, the EPR surpassed the 7.62mm ball round

M855A1 Provides Consistent Performance, Every Time!

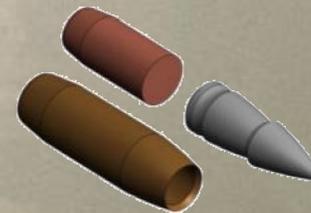


Comparison of M855A1 and M855



		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!

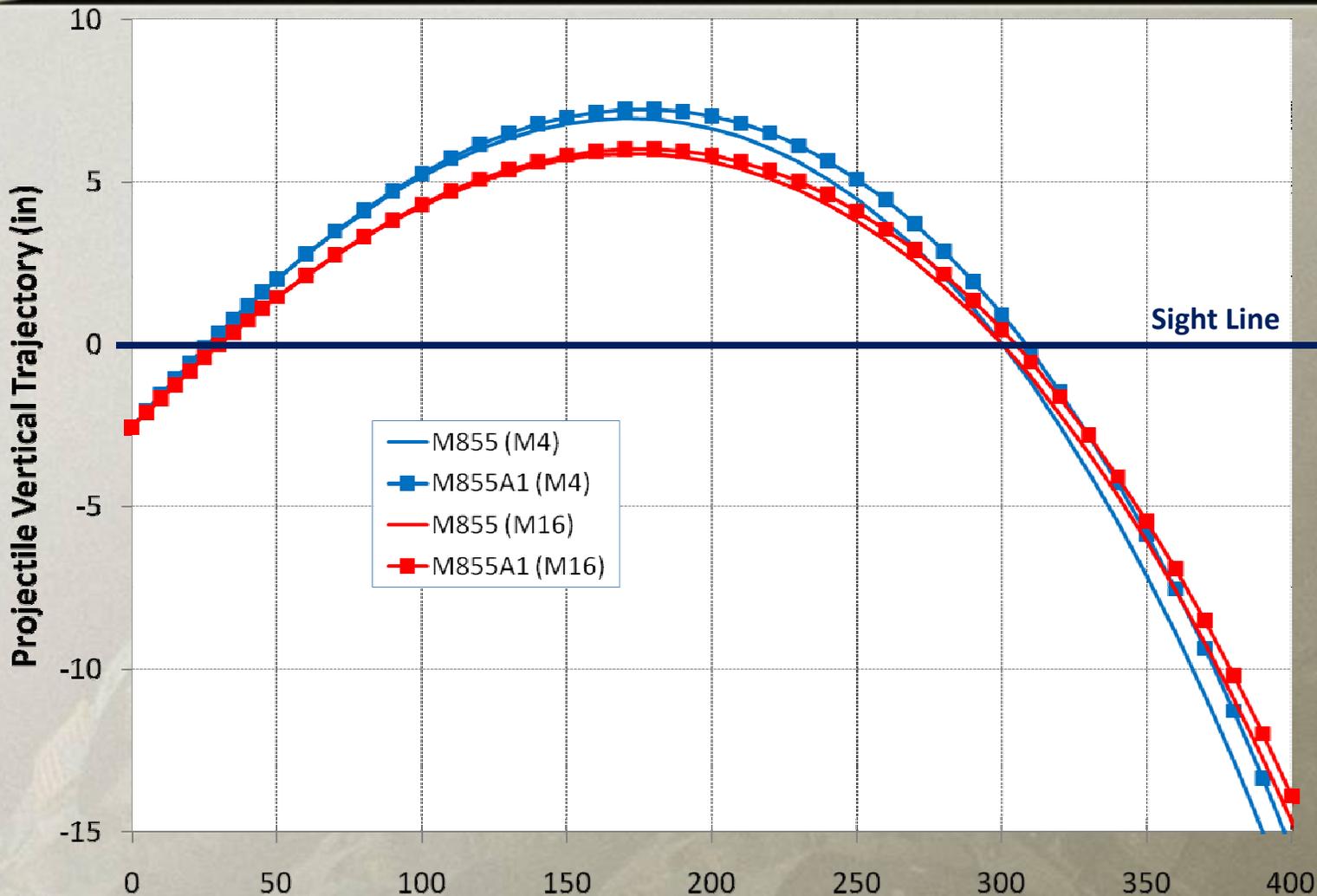


M855A1 Enhanced Performance Round

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



M855 and M855A1 Trajectories



Trajectory Match to the M855

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M855A1 Intermediate Barrier Performance



Car Door

M855A1



Provides Desired Effects Against Targets Behind Intermediate Barriers

Windshield

M855A1

Penetrator



Cu Slug



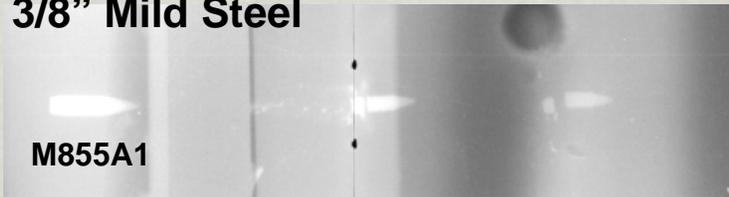
M855A1 Hits the Target Behind Windshields with the Steel Penetrator and/or Copper Slug, Increasing Probability of a Hit



M855A1 Penetration



3/8" Mild Steel



M855A1

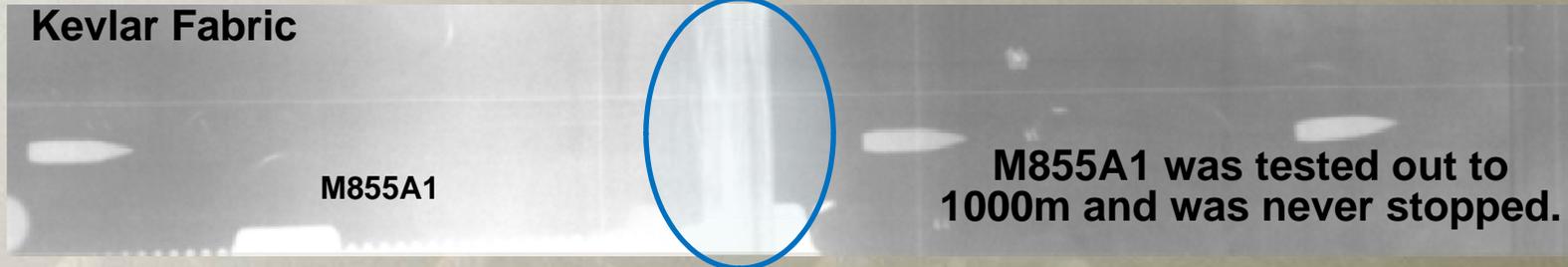


Shot with the M4



M80, 7.62mm
can't penetrate
at these ranges

Kevlar Fabric



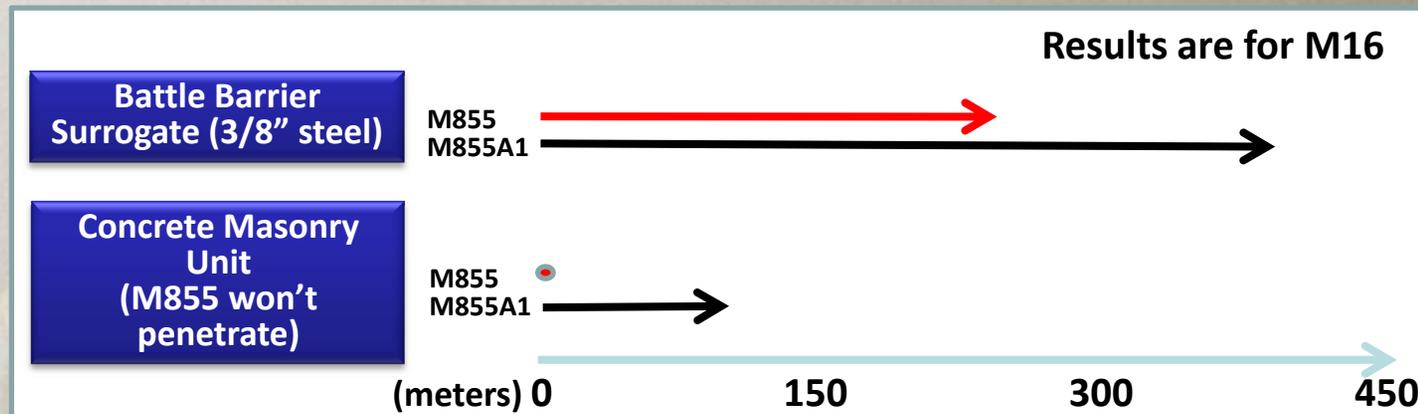
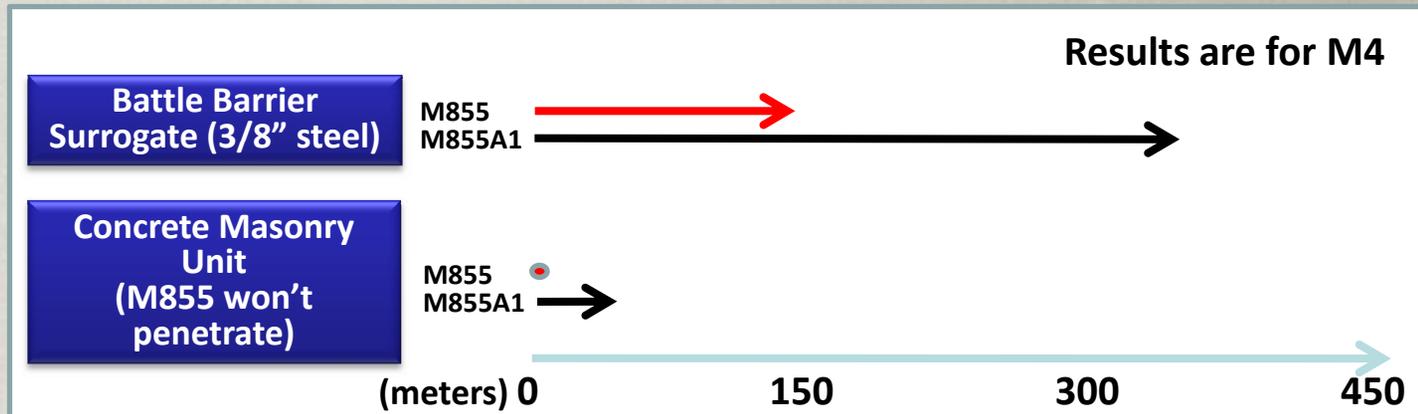
M855A1

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

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



M855A1 Hard Target Performance



M855A1 has Significantly Improved Hard Target Performance

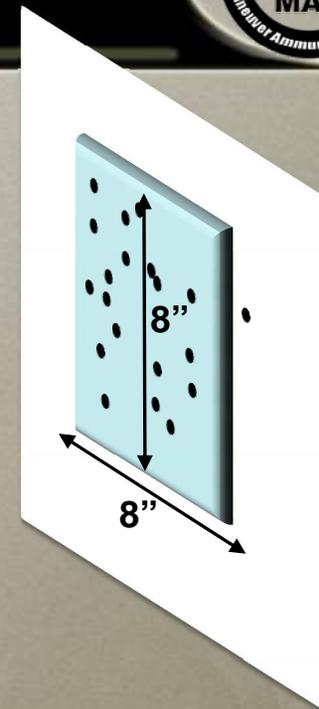


EPR Accuracy



- 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.

600 Yards →



Shot Placement is still the most important factor!



M855A1 Enhanced Performance Round



■ What all Soldiers need to know when using this round

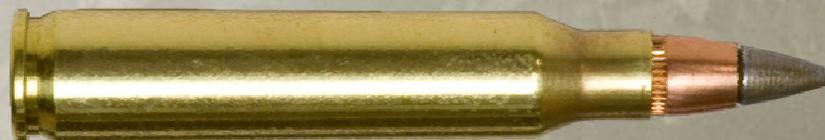
- Dramatically improves hard target performance
- Provides dependable, consistent effects against soft targets and CQB performance
- Significantly improves performance at extended ranges
- “Match” like accuracy – VERY ACCURATE
- No weight increase, flash reduced, increased velocity
- Extremely effective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

Bronze Colored Tip

Noticeable Gap
Beneath
Penetrator



–M855A1 EPR





Take-a-ways



- **M855A1 Enhanced Performance Round (EPR)**
 - Represents a significant performance improvement in a 5.56mm bullet
 - Hard target performance (steel) far better than 7.62mm ball
 - Surpassed 7.62mm ball against soft targets
 - 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)
 - Significantly increases range of consistent effects against soft targets
 - Lead free projectile
 - Planned to replace M855 for the Army
 - Fielding in summer 2010

Continuing to Provide Improved Capabilities for our Warfighters!