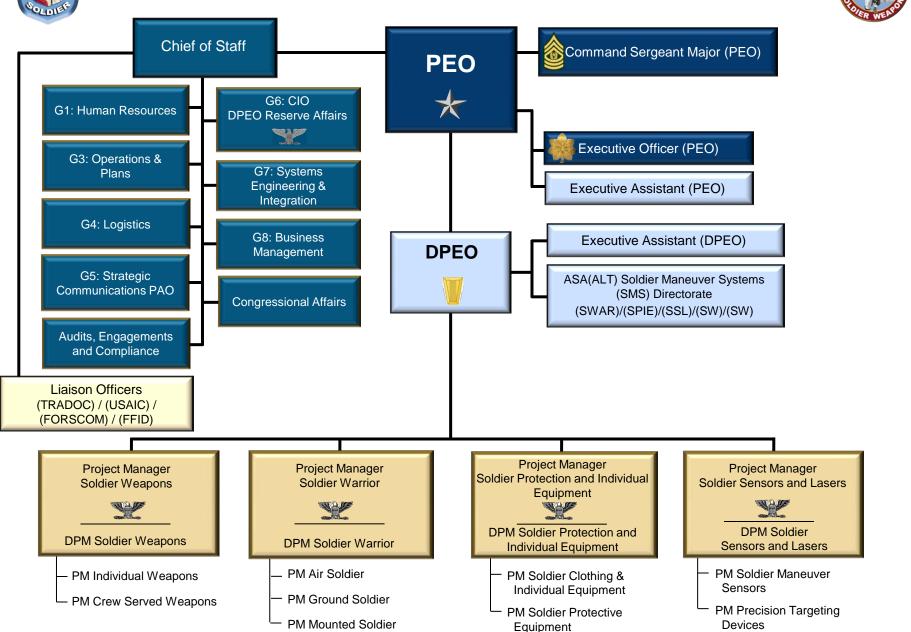


Project Manager Soldier Weapons Briefing NDIA

May 2011

Program Executive Office Soldier

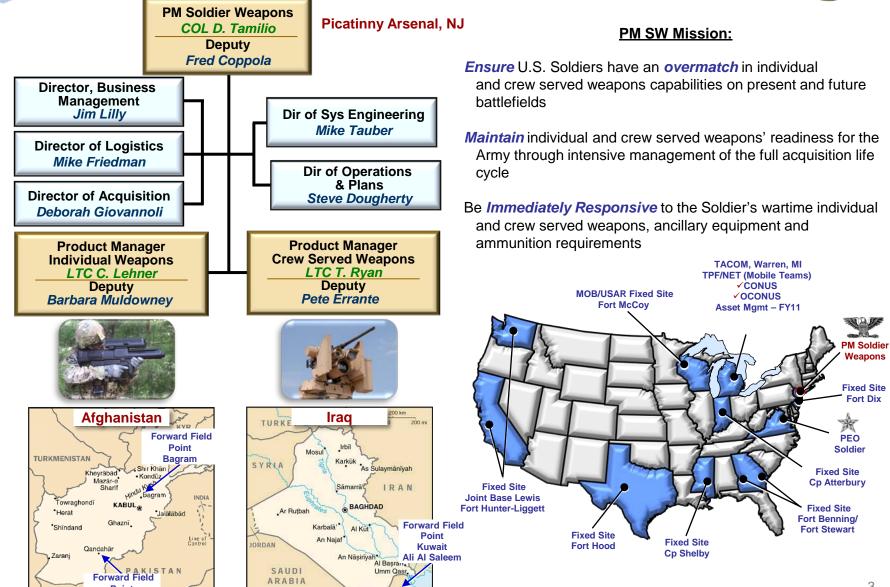






Project Manager Soldier Weapons Mission and Organization





ARABIA

Point Khandahar



PM Soldier Weapons Mission





Development



Counter Defilade Target Engagement System















Lighten Soldier's Load

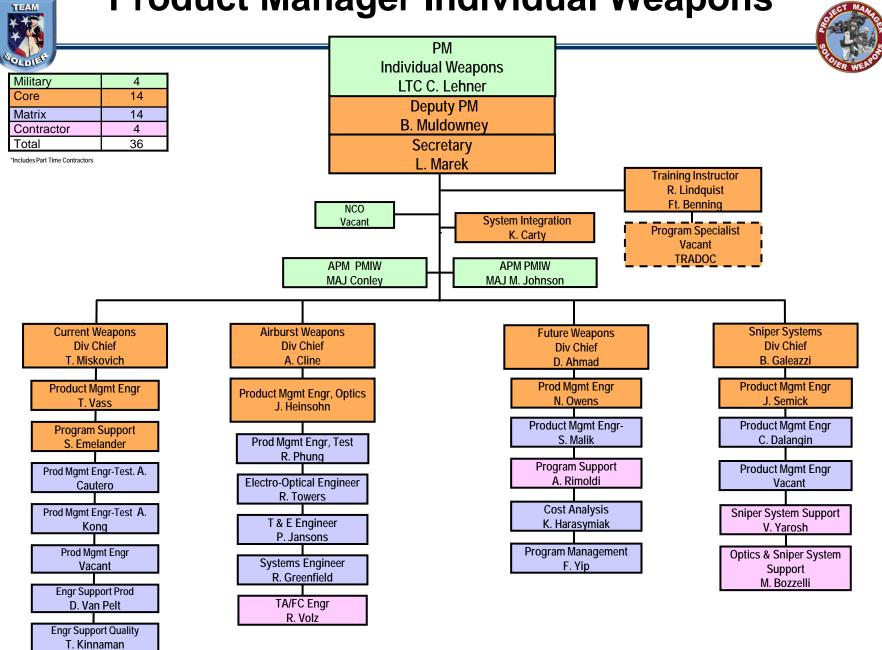


Rifles/ Carbines *	Shotguns	Machine Gun Tripods	Medium Machine Guns	Heavy Machine Guns	Heavy Machine Gun Tripods
Before M16A4, 8.13 lbs	M500, 7.7 lbs	M122A1, 18 lbs	M240B , 27.3 lbs	M2 , 128 lbs	M3, 44lbs (Including T&E)
% L i g h t e r 17% (-1.38 lbs)	29% (-2.2 lbs)	36% (-6.5 lbs)	32% 18% (-5 lbs) (-5 lbs)		30% (-13 lbs)
After M4, 6.75 lbs	M26 MASS, 5.5 lbs M26 MASS Mounted on M4	M192, 11.5 lbs	MK48, 18.6 lbs 22.3 lb		XM205, 31 lbs (Including T&E)
	Systems C	Systems Curr	ently in Testing		

^{*} Weapon weight with empty magazine, no sling, no optic



Product Manager Individual Weapons



Carbine Path Forward





Mar 2011 **Dual Path** Carbine competition **Strategy** Secretary of the army directed carbine competition Aug 2010 Army requirements approval Release of draft RFP Jan 31 Industry Day Mar 30 Release of RFP June Full and open competition Selection of new carbine

M4 improvements

Collect Soldier feedback

Upgrade current M4 carbines

Phase I: M4A1 program expansion – heavy barrel, full automatic trigger assembly, and ambidextrous fire control assembly

Phase II: M4A1 Improvements – rail adapter system, bolt & bolt carrier

Phase III:

M4A1 operating system evaluation

Outcomes

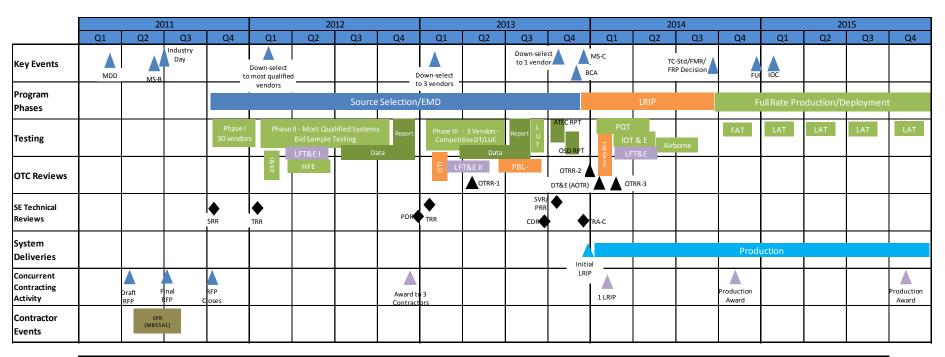


Increases effectiveness, reliability, and accuracy



Integrated Program Summary





BCA	Business Case Analysis	FRP	Full Rate Production	LFT&E	Live Fire Test & Evaluation	MDD	Materiel Development Decision
CDR	Critical Design Review	FUE	Initial Operational Capability	LFT&E I	LFT&E Limited Ballistic T&E	PBL	Performance Based Logisitics
EMD	Eng'g Mfg & Development	HFE Even	t	LFT&E II	LFT&E: Inclusive Ballistic T&E	PRR	Production Readiness Review
EPR	Enhanced Projectile Round	I&KPT	Instructor and Key Personnel Training	LLD	Limited Logistics Demonstration	PQT	Production Qualification Testing
FAT	First Article Test	IOC	Initial Operational Capability	LRIP	Limited Rate Initial Production	RFP	Request for Proposal
FMR	Full Materiel Release	IOT&E	Initial Operational Test & Evaluation	LUE	Limited User Evaluation	SRR	Systems Requirements Review
		LAT	Lot Acceptance Test			TRR	Test Readiness Review

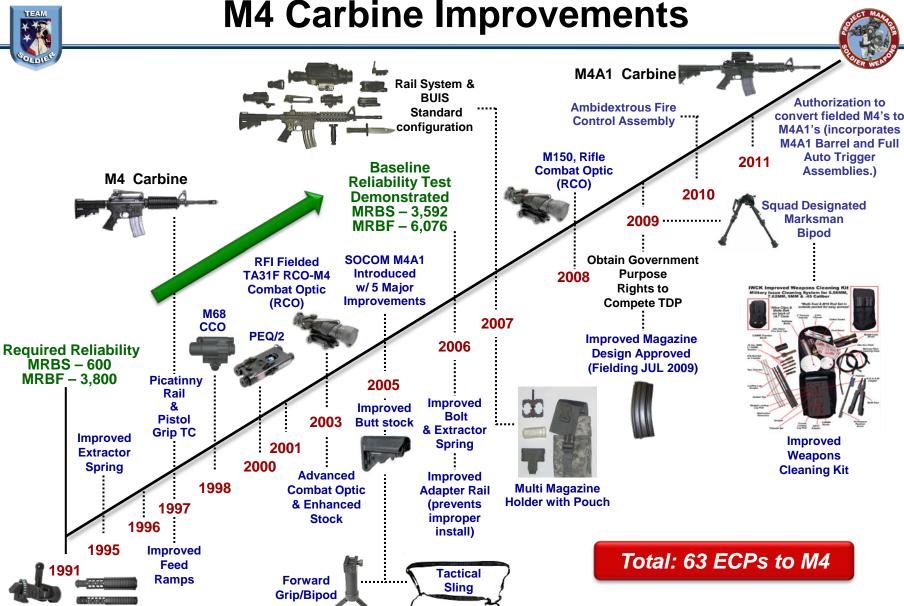


Back up

Iron Sight

Forward

Rails



PM Soldier Weapons' Continuous Improvement Process

As of: 27-Jan-2011



M4 Carbine PIP Phase Description



PHASE I

- Converts M4 Carbines to M4A1 Carbines via new production and Modification Work Order's (MWOs) to fielded M4's.
 - ➤ Incorporates the M4A1 Barrel Assembly and Full Auto Trigger Mechanism Assembly
 - Incorporates latest engineering change proposal (Ambidextrous Fire Control Assembly)
 - Phase I Increment A contract modification with Colt LLC to deliver 9,582 M4A1
 Carbines in lieu of M4 Carbines
 - Phase I Increment B compete the M4/M4A1 TDP
 - Phase I Increment C compete component parts for MWO to convert fielded M4's to M4A1's

PHASE II

- Solicit industry for improvements to specific weapon components
 - Phase II Increment A Bolt and Bolt Carrier Assembly
 - Phase II Increment B Forward Rail Assembly



M4 Carbine PIP Significant Activities

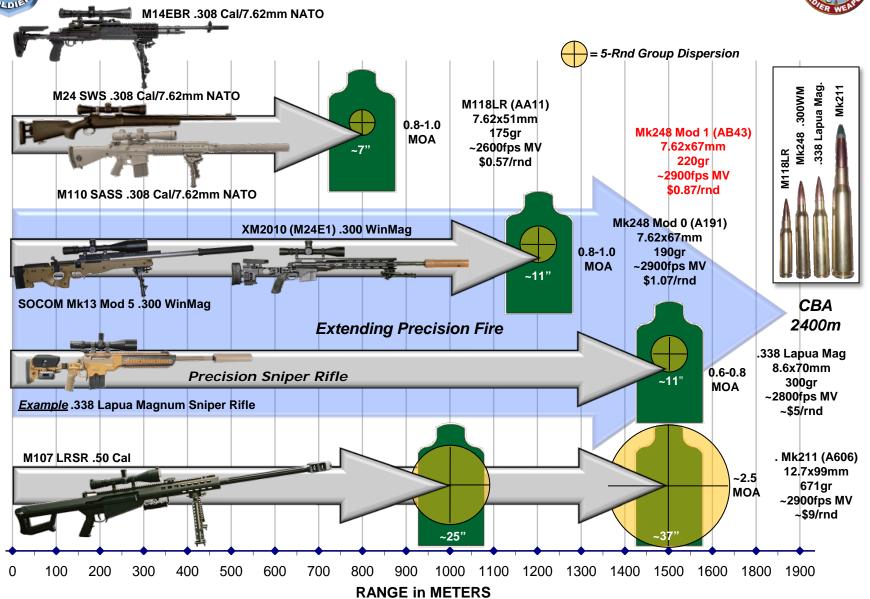


- HQDA G3/5/7 Authorization to Initiate Phase I Increment C (convert fielded M4's to M4A1's) –
 September 2010.
- New Start Authority received

 January 2011
- Phase I Increment A:
 - M4A1 with ambidextrous fire control deliveries begin February 2011
- Phase I Increment B:
 - M4/M4A1 Acquisition Center transition to TACOM Warren
 - Solicitation issued June 2011
- Phase I Increment C:
 - Three of five solicitations issued February 2011
 - One of five awarded March 2011
 (miscellaneous commercial hardware, i.e. pins, springs)
 - Two of five planned award June 2011
 - Miscellaneous Barrel Components
 - Ambidextrous Fire Control Selector Assembly
 - Two of five solicitations to be issued June 2011
 - M4A1 Barrel Assy and M4A1 Full Auto Trigger Assy
- Acq Plans approved by PMSW March/April 2011
 - Staffing through PARC and PEO Soldier May 2011
- Phase II Increment A:
 - Solicitation issued April 2011 (closes August 2011)
- Phase II Increment B:
 - Synopsis issued May 2011

Precision Weapon Portfolio Engagement Ranges & Dispersion





M14 Enhanced Battle Rifle



Description:

• M14 Enhanced Battle Rifle is a rack stock M14 rifle mated to an enhanced aluminum billet stock, tactical scope and cantilever mount. This weapon was built by Rock Island Arsenal in response to numerous Operational Need Statements requesting long range capability.

Capabilities:

Accurate 7.62mm capability out to and beyond 600m

- M14 fully funded for 6,200.
- 5,441 built to date





M110, 7.62mm Semi-Automatic Sniper System (SASS)



Description:

Effective against personnel targets and light materiel targets

Supplements sniper's role in combat operations

 Greater firepower & possible standoff ranges to improve sniper survivability

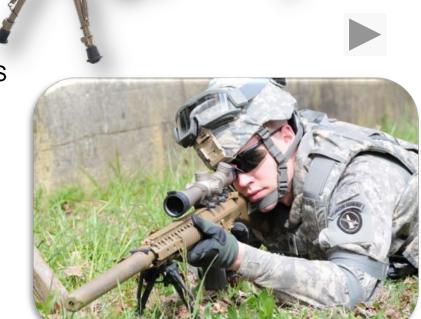
800 meter range

10 and 20 rd magazine

Capabilities:

- Rapid fire/rapid reload
- Suppressed sniper rifle
- Exceeds rate of fire and lethality of M24 SWS
- Primarily anti-personnel ranges ≥ M24 SWS
- Enhanced sniper spotting scope (M151)
 And tripod

- Fielded 2727 of 2943
- FY11 last production year





XM2010 Enhanced Sniper Rifle (ESR)



Description:

- The ESR's .300 Winchester Magnum chambering extends the weapon's maximum effective range by 50 percent over the 7.62mm chambered M24 Weapon system features include:
 - 5-round box magazine makes the system easier to load and reload
 - Rail endowed chassis and free floating barrel allow for easier mounting of weapon accessories and greater accuracy
 - Folding and adjustable stock includes comb and length-of-pull adjustments
 - 6.5-20x50mm extended range /tactical riflescope with an enhanced reticle within the first focal plane; fielded with the AN/PVS-29 clip-on sniper night sight
 - Quick attach/detach suppressor to reduce audible and visible signature with an available thermal sleeve that reduces mirage effect on heated suppressors

Specifications

- Caliber: .300 Winchester Magnum
- Operation: Bolt action
- Weight: 18.7 pounds (with suppressor)
- Length: 52.2 inches (with suppressor)
- Magazine: 5 round box
- Muzzle velocity: 2,985 feet per second
- Optics: Day 6.5-20x50mm with Advanced scalable ranging and targeting reticle; Night - AN/PVS-29 clip-on sniper night sight

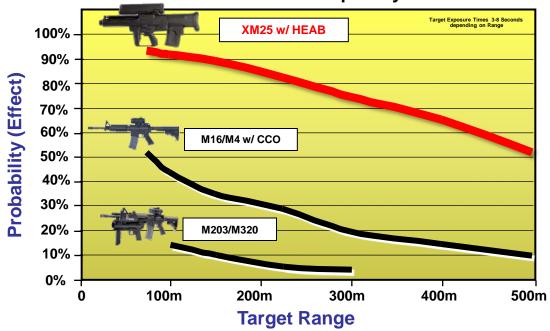


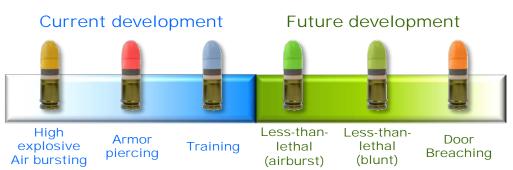


Counter Defilade Target Engagement Weapon System



XM25 100-300% More Effective than Current Weapon Systems





25mm ammo

System description:

- 3 Components that are highly integrated & optimized to produce noted P(effect):
 - Semi-auto, magazine fed, 25mm weapon
 - Programmable, low velocity, high explosive air burst (HEAB) ammo
 - Fully integrated day & thermal night sight w/ full solution target acquisition/fire control
- System weight: 12.0-12.5 lbs

System capabilities:

- Defeats defilade targets and exposed targets
- Point target range: 500 meters
- Area target range: 700 meters

- Government testing at APG: Sep 08 present
- Limited safety release: 4QFY09
- MS B: 2QFY11
- 5 Gun FOA
- 36 Gun Build to Support ONS
- MS C: ~3QFY13





M26, 12 Gauge Modular Accessory Shotgun System (MASS)



Description:

 A lightweight shotgun system that attaches to the M4

Capabilities:

- Provides the capability to fire lethal, non-lethal and door breach 12 ga. rounds
- Shotgun can be zeroed to the sighting system of the host weapon
- Provides the lethality equivalent of a Stand-alone 12 ga. shotgun
- Capable of being fired as A *stand-alone weapon
- Five round magazine / three round optional

- MS C/LRIP approved
- LRIP ongoing



*Stand-alone





M320 Grenade Launcher



Description:

 Grenade launcher (mounts to M16/M4 series of weapons)

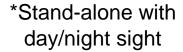
Capabilities:

- Improves squad level indirect/direct grenade launching capability out to 400 meters
- Greater reliability and safety than M203
- Greater target acquisition (day and night)
- Capable of being fired as a *stand-alone weapon
- Able to fire wider array of munitions

- In Production
- Fielded 14,000
- Planned future full and open competition based on TDP











M68 Close Combat Optic



Description:

The M68 CCO is a unity powered red dot sight allowing the Infantry Soldier to engage targets with both eyes open and eliminating the difficulty associated with aligning iron sights

Capabilities:

 This unity powered, red dot sight allows the Soldier to engage targets with both eyes open while maintaining situational awareness out to 300m



- In production
- Fielded 837,000





M150, Rifle Combat Optic (RCO)



Description:

The RCO provides an improved capability to recognize and engage targets from 300 to 600m with the M4, M16A2 and M16A4 and M249. This optic will not degrade the Soldier's ability to conduct reflexive fire techniques and will allow for the Soldier to transition rapidly between longrange and close quarters engagements

Capabilities:

The scope can be used to scan an area. When a target is acquired, the ranging reticle can be used to get an accurate range to the target. The range aiming point on the bullet drop compensator can then be used to engage target.

Past Event:

- BOIP waiver approved
- Full Materiel Release
- FUE

Current Event:

Fielded 44,167







Crew Served Weapons





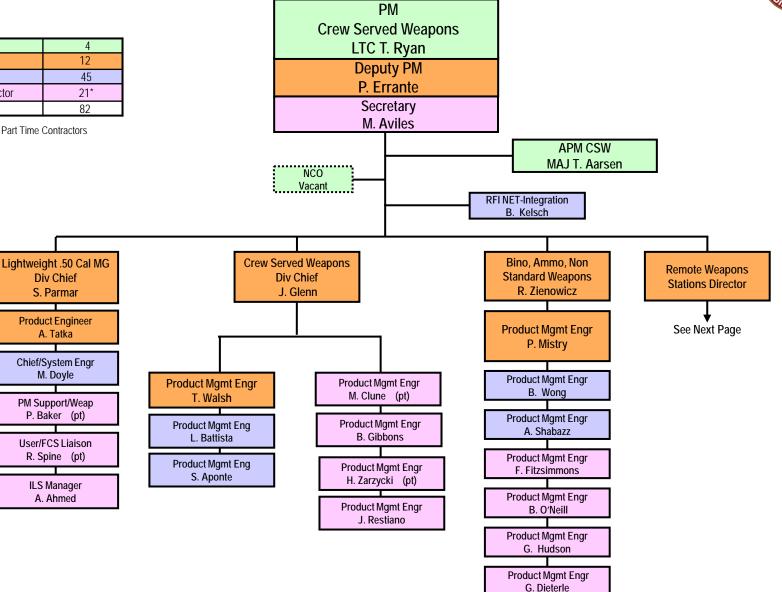


Total

Product Manager Crew Served Weapons

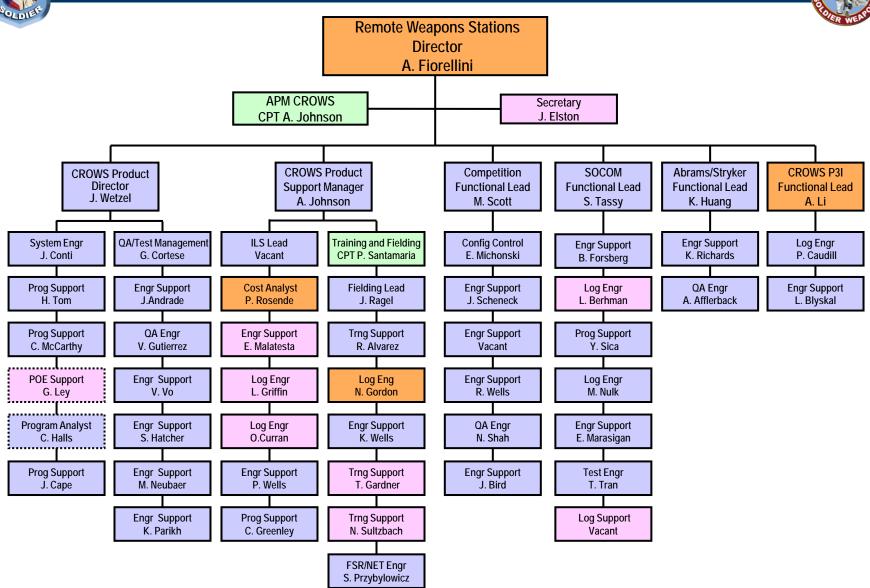


^{*}Includes Part Time Contractors





Product Manager Crew Served Weapons





M249 Improvements



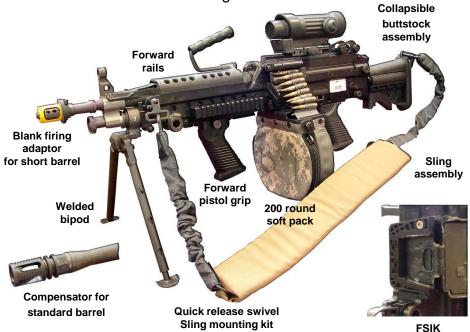
Past



- Weight 17 lbs.
- Bbl length 20.50"

Present

- Weight 16.48 lbs.
- Bbl length 14.75"



- Short barrel
- Light weight charging handle
- light weight top cover w/ light weight feed lever
- Feed tray w/ pawls
- New barrel bag
- Take down pin

Future



- Fires caseless ammo
- Lighter weight
- Increased reliability/durability
- Improved signature reduction
- Self lubricating surfaces
- Integrated sighting system
 - Optic

dovetail support

tool

- Laser range finder
- IR designator



MK48 Lightweight Machine Gun



Description:

The MK48 was developed to meet a US Special Operations requirement for a lightweight medium caliber machine gun that would retain the intrinsic functionality and reliability of the standard M249

Capabilities:

Caliber: 7.62 mm NATO

Barrel: 5.39 lbs.

Overall weight: 18.37 lbs.

Barrel length: 19.75 in.

Rate of fire: 730 ± 50 rds/min (cyclic)

Range: 3600 m (max.)

800 m (max. effective)

Status:

500 Fielded To Afghanistan







M240L, Medium Machine Gun Weight Reduction Program



Description:

 This program will evaluate high performance, lightweight material alternatives and alternate manufacturing methods in fabricating major M240B components

Capabilities:

- Reduces the Soldier's combat load
- Allows easier handling and movement of weapon
- Reduces M240B weight: (27.6 lbs) by approx. 5 lbs
 - M240L total weight: approx. 22.3 lbs

Status:

1459 fielded





XM806 Lightweight .50 Caliber Machine Gun



Description:

 Lightweight, 2-man portable, vehicle and ground mounted .50 caliber crew served weapon system

Capabilities:

- 41-60% lower weight and 60-75% lower recoil
- Improved accuracy
- Quick change barrel with fixed headspace and timing
- Fires all .50 caliber service ammunition with M9 links
- Can be dismounted from vehicle platform and remounted on ground mount <30 seconds



Status:

In Developmental Testing



M2E2 Quick Change Barrel Kit



System Description:

- Quick change barrel
- Barrel support
- Barrel extension
- Solid breech lock
- Flash suppressor*

Capabilities:

- Enhancement will increase readiness by providing a faster & simpler barrel change without the need to set headspace and timing
- Reduces training
- Includes flash suppressor

- 550 Kits delivered
- 464 guns delivered
- FUE Aug 2011









M153 Common Remotely Operated Weapon Station (CROWS) System Description





- Four-axis targeting system
- Three-axis vector stabilization
- Day camera: 27X w/47 degree FOV
- Thermal: dual FOV (3° & 11°) w/ 2x e-zoom
- Auto focus (day and thermal)
- Laser range finder
- Auto tracker / auto lead / auto scan
- Target reference points scan
- Elevation: -20 to +60 degrees
- Traverse: 360 degrees continuous



Control Grip (CG)

- Weight (w/o weapon and ammunition)
 - Above the roof: 325 lbs (w/o armor kit)
 - Total weight: 430 lbs
- Supported weapons:
 - M2 (400 rds) M240 (1000 rds)
 - MK19 (96 rds) M249 (1600 rds)
- Reliability: minimum of 1600 hrs MTBMA



8511 - delivered 5946 - fielded

Potential Future Improvements:

- Sniper detection capability
- Far target designation with handoff
- Additional weapons (LW50, MK47, M134, integrated javelin launcher)
- IR and visible pointers
- Enhanced image capability



CROWS Platform Integration Efforts



- RG31A1/A2/A3
- Buffalo A1/-1/A2
- M1151 FRAG 5/7





- M1A2 Abrams Tank
- MATV





- Caiman
- MaxPro/Plus





- RG33L/Panther
- M1116





- M1200 Armored Knight
- Joint Light Tactical Vehicle
- Specialized Reconnaissance Assault Transport System (SRATS)





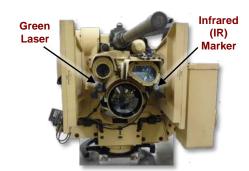
Future CROWS Enhancements



Secondary Screen



Driver's Vision Enhancement Screen





Capability:

Provides a second set of eyes on the target to assist in verifying enemy combatants prior to engaging with lethal force.

Fixed Site Application



Capability:

Provides ability to monitor an area and target a threat remotely from inside a protected structure.

Capability:

Green laser, provides Soldiers the capability to warn and hail as an alternative to deadly force while protected inside the armored vehicle. Includes an infrared marker (IR) for directing operations.

> 360 Degree Camera

Escalation Of Force

Other Enhancements:

- **Integrated Javelin Capability**
- **Enhancement Sensor Capability**
- Integrated Slew to Cue
- Additional Weapon Integrations
- Integrated 360 Degree Situational Awareness





M25 Day/Night Binocular



M25 Asimos Asimo

Stabilized for on the move observations

Magnification	14X
 Objective lens diameter (mm) 	41
Field of view	4.3°
Resolution	< 4.3 sec arc
Exit pupil diameter (mm)	3.0
Eye relief (mm)	18
Interpupilary distance (mm)	59-76
Eyepiece focus	± 5 diopters
Weight – lbs. (Kg)	4.5 (2.04)
Height – in. (mm)	3.5 (89)
Width – in. (mm)	7.5 (190)
Length – in. (mm)	8.25 (210)
2911941 (11111)	0.23 (210)

Performance Characteristics

Fielded Over 13,500

ParallaxFloatable

< 2 mils

M24 Mini Binoculars





M24 mini binocular vs. Army's standard M22 binocular

- 100% Equivalent
- Performance in daylight
- 80% smaller in size
- 50% less in weight
- 0% difference in cost



Laser protected!
Fits in pocket of Army
Combat Uniform
(ACU)!

Fielded Over 165,500

Performance Characteristics

Magnification	7X
Objective lens diameter (mm)	28
Field of view	7 °
Resolution	< 9 sec arc
Exit pupil diameter (mm)	4.0
Eye relief (mm)	16
Interpupilary distance (mm)	58-72
Eyepiece focus	<u>+</u> 4 diopters
Weight – lbs. (Kg)	1.26 (0.57)
Height – in. (mm)	5.31 (135)
Width – in. (mm)	4.92 (125)
Length – in. (mm)	2.68 (68)
Parallax	< 1.0 mil
 Operation temperature 	-40° F to 158° F
Submersible	60 min @ 1meter depth

^{*} Anti-Reflection Device (ARD) available as an accessory









XM25

Counter Defilade Target Engagement Weapon System PM Soldier Weapons / ATK -

26 MAY 2011



XM25 Overview



- Overview
 - System Overview
 - Operational Update
 - Next Steps
 - Program Status



- Forward Operational Assessment
 - FOA Highlights
 - NET
- FOA User Feedback
 - Proposed Employment
 - Capabilities Assessment
- Summary
- Questions/Comments





System Overview



- The XM25, Individual Semi-Automatic Airburst System (ISAAS), is a Counter Defilade Target Engagement (CDTE) weapon.
- Delivers a 25mm programmable high explosive airburst (HEAB) round to explode above or adjacent to a target significantly increasing Soldier survivability to defeat defilade targets out to approximately 600 meters.



 The XM25 includes an integrated, multifunctional, all environment, full-solution, day/night, target acquisition/fire control system.



System Overview



- •The technology provides the Soldier a leap-ahead capability to defeat defilade targets while significantly reducing collateral damage without the use of indirect fire or close air support.
- The XM25 has been identified by the U.S. Army Maneuver Center of Excellence (MCOE) Joint Capabilities Integration and Development System (JCIDS) analysis as the number one materiel approach to mitigate the Counter Defilade Target Engagement (CDTE) gap (accurate and lethal engagement of defilade targets at the squad level).



XM25 Operation





A. Target behind 2 foot thick concrete wall

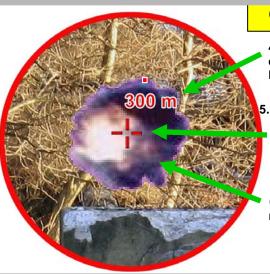
1. Place LRF Aimpoint on wall in front of Target and Lase



B. Target seeks cover behind wall

2. TA/FC determines range to wall is 299 meters

3. TA/FC displays the adjusted Aimpoint to the correct location on DVO



C. Target Destroyed

4. User increments 1 meter to compensate for wall thickness. Round will now explode at 300 m

5. User raises XM25's barrel, which moves Adjusted Aimpoint up.

Explosion will occur where the Adjusted Aimpoint is pointing.

User squeezes trigger.

 Explosion of 25mm Air Burst round is past the 2' thick wall & over the enemy's head

That's All it Takes!



Operational Update



- Army is currently conducting a Forward Operational Assessment (FOA) of the XM25 System in Afghanistan.
- Test units arrived in theater Nov '10. PM Soldier Weapons personnel conducted New Equipment Training (NET) with select units and monitored use / performance during the assessment period.
- The weapons were carried on patrols, and at various combat outposts in areas that experienced high levels of enemy activity.
- The weapons were assessed in both mountainous and flat terrain.
- Soldier feedback is allowing the Army to make engineering refinements to the system and will assist in making future decisions regarding tactics, basis of issue, and other improvements in the weapon system.



Program Status



- Began 30 month EMD effort on 28 Apr 2011
 - Design will be finalized by month 9 and select facilitization and manufacture will begin
- 36 FOA systems delivered beginning in month 24
- ATK will begin testing 10 systems approx month 8
 - Will conduct 6 months of testing on systems
- Systems will go through a variety of Tests
 - Environmental, life cycling, human factors, safety, etc.
 Similar to DT testing the Gov't plans to perform





FOA Highlights



- Trained 18 total XM25 Gunners
- Had 9 total combat engagements, 55 HEAB rounds
 - All engagements resulted in expedited enemy disengagement
- Expended 620 TP rounds during NET
- Expended 120 HEAB rounds in NET and Demos
- Assessed in 3 different types of PLTs: Infantry, Infantry Heavy Weapons, and CAV Scout





New Equipment Training



Day 1

- Capability Class
- Disassembly and Reassembly Class
- Day Familiarization Fire
- 4 TP, 4 HEAB
- Night Familiarization
 Fire 4 HEAB

Day 2

- Qualification Fire 40TP
- Fire command execution
- 1 mag unsupported
- SPOR(T)S
- CoC Validation

CoC observed the NET and determine if the gunner was ready to take the XM 25 on a combat mission



XM 25 Proposed Employment



Weapon Quantity Initial Feedback

- 1 per Squad or 2-3 per PLT, based on the type of PLT
- Squad level SDM carried

Basic Load Feedback

- The optimal basic load became
 36 rounds; 9 mags one in the weapon, 8 carried
- Currently using 28 rounds; 7 mags – one in the weapon, 6 carried



Having the extra firepower of a semiautomatic "grenade launcher" – yeah, I would go with that for every section if possible. – 1LT Featherman



XM 25 Capability Assessment



 "I believe any time you are in an engagement on level terrain or anywhere where you have defilade for the enemy to [hide], it is 100% effective." – 1LT Farazdaghi



- I think this weapon system is amazing. The scope, the optic itself is completely groundbreaking." SFC Shriver
- "The XM 25 is the whole package weapon system. It definitely provides a lot of capabilities that we have to pull out multiple pieces of equipment to do." CPT Gold
- •"It is a lot harder for a 203 gunner to put a round in a specific grape row. So the airburst capability is definitely of use here." CPT Gold
- "We have taken it on all patrols since contact. We have taken it on every single one and will continue to do so." 1LT Featherman



Summary



- XM25 has performed well in both mountainous and flat terrain
 at both long and short ranges.
- There is a definite need for this capability in theater right now.
- The NET effectively prepared soldiers and leaders to successfully employ the weapon system in combat.
- The PM FOA was able to gather data on ergonomic changes, proposed doctrine and an overall assessment of the capability, which will be used to make the system better and more user friendly for soldiers on today's battlefield.

"Our XM 25 gunners understood the capabilities employment – how to employ the weapon system. The leadership knew exactly how it was employed and what its capabilities were." – SFC Shriver



Questions?





"There have been multiple, multiple engagements where the enemy knows, 'Hey, I'll hide behind this giant boulder. No matter what you hit me with you can't get through this boulder.' With the XM25 you can hit anybody within range, behind anything." – SFC Shriver



XM806 .50 Caliber Machine Gun





XM806 Weapon

- Weight 49 lbs requirement (current 45.0 lbs)
- Quick change barrel
- No head space or timing adjustment
- Dispersion < M2
- Low recoil
- Ability to mount optics on Picatinny Rail
- Additional MIL-STD-1913 rails for accessories
- Fires all M9 linked service ammunition
- 50K round receiver life (min)

Cradle

- Weight estimate 5.0 lbs
- Ability to mount XM806 to:
 - XM205 Tripod
 - M3 Tripod
 - Mk93 Cradle
- Government Design effort

Blank Firing Adapter

- Ability to fire M1 blanks for Force on Force training
- Government Design effort



XM205 Tripod

- Separate Non-Development Item Program
- Weight 31.0 lbs