Project Manager Soldier Weapons Briefing For NDIA

18 MAY 2010

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Program Executive Officer Soldier

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Project Manager Soldier Weapons
PM Soldier Weapons Mission

Current
- M16A4 Rifle
- M4 Carbine
- M4 M203
- M9 Pistol
- M320 40mm Grenade Launcher
- M110 Semi-Automatic Sniper System (SASS)
- M107 Long Range Sniper Rifle
- M249 Squad Automatic Weapon (SAW)
- M2 Cal.50 Machine Gun
- MK19 Grenade Machine Gun

Development
- M25 Stabilized Binocular
- M24 Mini Binocular
- M68 Close Combat Optic (CCO)
- M145 Machine Gun Optic
- Rifle Combat Optic (RCO)
- XM25 Counter Defilade Target Engagement System
- M26 Modular Accessory Shotgun System (MASS)
- XM806 Lightweight .50 Caliber Machine Gun
- XM153 Common Remotely Operated Weapon Station (CROWS)

Future
- Future Handgun
- Family of Weapons
- Compact
- Carbine
- Light Machine Gun
- Future Sniper Rifle

“Provide the best weapons to our Soldiers”
2009 Successes

- M320 Grenade Launcher
  - Fielded 10,000 to date (AAO 71,600 GLs)
  - Recently contracted Additional 12,000 GLs & $3.8M spare parts
  - Soldiers praise its accuracy, ease of use, & modularity

- M4
  - AAO increase from 473,769 to 501,286
  - Acq Strat Apprv’d. for Heavy Barrel, Auto, Ambi - FY10 Production Contr (12k M4 converted to M4A1), FY11-12 Prod. Contr will be competed (full & open) for 24k M4A1.

- Individual Carbine CDD - In JROC Staffing!

- M26 - Approval to produce 1,800 LRIP shotguns, 3QFY11 initial Fielding

- M24E1 - .300 WinMag, 1200m range, Down Select Ongoing, Initial Fielding 1QFY11

- M14 EBR-RI - 5,000 Weapons Produced & Fielded, New funding provided for 1,200 more

- XM25 - Fully Funded RDT&E, Finishing AROC staffing

- CROWS
  - UMRs Fielded systems on the Buffalo A1/A2/-1, RG31A1/A2/A3, RG-33, M1151, and M1A2
  - Integrating it on the MATV, JERRV, CAIMAN, and MAXPROPLUS

- M240L

- MK48 Urgent Materiel Release

- Lighten the Soldier Load
# Lighten Soldier’s Load

<table>
<thead>
<tr>
<th>Rifles/Carbines *</th>
<th>Shotguns</th>
<th>Machine Gun Tripods</th>
<th>Medium Machine Guns</th>
<th>Heavy Machine Guns</th>
<th>Heavy Machine Gun Tripods</th>
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<tr>
<td>Before</td>
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<tr>
<td>M16A4, 8.13 lbs</td>
<td>M500, 7.7 lbs</td>
<td>M122A1, 18 lbs</td>
<td>M240B, 27.3 lbs</td>
<td>M2, 128 lbs</td>
<td>M3, 44 lbs (Including T&amp;E)</td>
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<tr>
<td>17%</td>
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<td>32%</td>
<td>49%</td>
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<td>(-1.38 lbs)</td>
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<td>(-8.7 lbs)</td>
<td>(-63 lbs)</td>
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<th>After</th>
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<tbody>
<tr>
<td>M4, 6.75 lbs</td>
<td>M26 MASS, 5.5 lbs</td>
<td>M192, 11.5 lbs</td>
<td>M240L, 22.3 lbs</td>
<td>XM806 Lightweight .50 Caliber MG, 65 lbs</td>
<td>XM205, 31 lbs (Including T&amp;E)</td>
</tr>
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</table>

*Weapon Weight With Empty Magazine, No Sling, No Optic*
Ongoing Programs
XM153 Common Remotely Operated Weapon Station (CROWS) System Description

- **Weight (w/o Weapon And Ammunition)**
  - Above The roof: 325 lbs (w/o Armor Kit)
  - Total weight: 430 lbs
- **Supported Weapons:**
  - M2 (400 rds)
  - MK19 (96 rds)
  - M240 (1000 rds)
  - M249 (1600 rds)
- **Reliability:** Minimum Of 1600 hrs MTBMA

- **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

- **Fire Control Unit (FCU)**
- **Control Grip (CG)**

- 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
XM806 Lightweight .50 Caliber Machine Gun

- Lightweight
  - Two Man Portable (62.0 Vice 128 lbs M2HB)
  - Can Be Dismounted From Vehicle Platform And Remounted On Ground Mount <30 Seconds
- System Dispersion-1.1 Mils (Ground Mount No Ballast)
- No Headspace Or Timing Adjustment
- Minimized Logistic Impact: 133 Parts LW50 vs. 244 Parts M2HB

Low Recoil = More Hits/Less Dispersion
Counter Defilade Target Engagement Weapon System

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

Status:
- Contractor Integration Testing: Aug 08
- Government Testing at APG: Sep 08 – Present
- Limited Safety Release: 4QFY09
- MS B: 3QFY10
- MS C: ~3QFY12

Performance

![Performance Chart](chart.png)

25mm Ammo

Current Development
- High Explosive Air Bursting
- Armor Piercing
- Training

Future Development
- Non-lethal (Airburst)
- Non-lethal (Blunt)
- Door Breaching

![Ammo Images](ammo_images.png)
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

**Status:**
- Production Verification Test at Aberdeen Test Center – May thru Oct 09

* Flash suppressor to be fielded at a later date
Future Business Opportunities
Carbine Path Forward

Dual Path Strategy

Army Validation of Requirements

Joint Validation of Requirements

Release of Draft/Final RFP

Full and Open Competition

Selection of New Carbine

Address Field Issues

Upgrade Current Carbine Fleet

**PH I** – Heavy barrel/ambidextrous selector/full auto mode

**PH II** -  Enhanced rail adapter system/improved bolt & carrier

**PH III** – Operating system

Example – PH I - Increased Sustained Rate Of Fire
**Description:**
- The Individual Carbine (IC) will provide the US Soldier with the most accurate, reliable, durable, maintainable, and modular individual weapon with improved features such as ambidextrous controls and at a best value to the US Government.

**Capabilities:**
- Carbine will provide accurate and reliable firepower
- Semi-auto and full auto fire
- Integrated rails will accept Mil-Std-1913 rail mounted accessories
- Fully ambidextrous

**Status:**
- CDD in Joint Staffing – 10 May 2010
- Congress provided RDT&E for FY10
- Release draft RFP 1QFY11
- Industry Day 1QFY11
- Final RFP 2QFY11
Precision Weapon Portfolio
Engagement Ranges & Dispersion

**RANGE in METERS**

- **M14 EBR .308 Cal/7.62mm NATO**
- **M107 LRSR .50 Cal**
- **M110 SASS .308 Cal/7.62mm NATO**
- **Upgraded M24 .300 WinMag**
- **SOCOM Mk13 Mod 5 .300 WinMag**
- **Example .338 Lapua Magnum Sniper Rifle**
- **M24 SWS .308 Cal/7.62mm NATO**
- **Example .338 Lapua Magnum**
- **CAPABILITY GAP**
- **CERSR/PSR**
- **CBA 2400m**
- **.338 Lapua Mag .338x67mm 300gr ~2800fps MV ~$5/rnd**
- **. Mk211 (A606) 671gr ~2.5 MOA ~2900fps MV ~$9/rnd**
- **M118LR (AA11) 7.62x51mm 175gr ~2600fps MV ~$0.57/rnd**
- **Mk248 Mod 0 (A191) 7.62x67mm 190gr ~2900fps MV ~$1.07/rnd**
- **Mk248 Mod 1 (AB43) 7.62x67mm 220gr 2900fps MV ~$0.87/rnd**
Sniper Weapons Suite

- **M107 Long Range Sniper Rifle** – Cal .50 Anti-Materiel System (1000-2000m)
  - Production complete
  - Fielding complete
  - Defining Product Improvements

- **M110 Semi-Automatic Sniper System** - 7.62mm (800m)
  - 2307 delivered (2943 AAO)
  - USMC adopted for REPR program

- **M24 Sniper Weapon System** – 7.62mm (800m)
  - M24E1, .300 WinMag (1200m) to be produced
  - Downselect for M24E1 Ongoing, Fielding 1QFY11

- **Precision Sniper Rifle** – Cal ?, 1500m
  - CDD released for World Wide Staffing 18 May 10
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 800m

**Status:**
- 5000 Wpns produced & Fielded; Funding provided to produce additional 1200 Wpns
- Potential for Night Vision
## FY 10 Technology Shortfalls

<table>
<thead>
<tr>
<th>Lethality</th>
<th>Mobility</th>
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<tbody>
<tr>
<td>✓ Accurate Range Determination</td>
<td>✓ Lightweight, High Strength Materials for Small and Medium</td>
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<tr>
<td>✓ Nano Explosives/Nano Propellants</td>
<td>Caliber Weapons</td>
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<tr>
<td>✓ Miniature Non-Magnetic Direction Finding System</td>
<td>✓ Multi-Function Laser</td>
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<tr>
<td>✓ Lightweight, Direct View Optics</td>
<td>✓ Reduced Weight and Power Consumption Electronic Components</td>
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<tr>
<td>✓ Course Correcting Small Arms Projectiles</td>
<td>✓ Wireless Weapon Interface</td>
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<tr>
<td>✓ Inexpensive, High Brightness, High Resolution, Low Power, Color, Wide Temperature Range, Long Life, Ruggedized, Lightweight, Micro Video Display</td>
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<tr>
<td>✓ Improved Incapacitation for 5.56mm, 7.62mm, 9mm Ammunition</td>
<td>✓ Luminescent Materials</td>
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<tr>
<td>✓ Adjusted Ballistic Reticle for 5.56mm and 7.62mm Rifles</td>
<td>✓ Reduced Weapons Signature</td>
</tr>
<tr>
<td>✓ Covert Marking Ammunition for Small and Medium Caliber Weapons</td>
<td>✓ Wear Resistant Coatings for Weapon Mechanisms</td>
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<tr>
<td>C4I / Battle Command</td>
<td>✓ Higher Energy Density Mini-Battery</td>
</tr>
<tr>
<td>✓ Reconnaissance Munition</td>
<td>✓ Central Power Source</td>
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Summary

• Thank you for your responsiveness
• Understand the change in fiscal environment
• Incremental vs. Revolutionary
Questions
PM SOLDIER WEAPONS ASSESSMENT TEAM
18 May 2010

MAJ Shawn Murray
MAJ Elliott Caggins
Agenda

- Afghanistan and the Interview Area
- Findings
- Individual Weapons
- Crew Served Weapons
- Acquisition Issues
- Questions
The Context

- Each ridgeline brings a different set of wants versus needs...everything is relevant!
- Leader and Soldier feedback varies, but most comments support some general themes.
  ▪ OIF v. OEF are markedly different...extended ranges refer to OEF for the most part.
- The PM SW Assessment Team walked into this assessment with an open mind, willing to travel throughout the CJOA and focused on giving our deployed units a voice.
- The Assessment Team was to deploy to OEF for no more than 17 days.
- Team Members: MAJ Elliott Caggins, MAJ Shawn Murray, MAJ Tom Aarsen and MSG Paul Wilcock
1. Menu of approved Carbine accessories.
2. Simple camouflage applications for Carbines and Optics.
3. Suppression (noise/flash) technology.
5. Increased firepower (caliber) at extended ranges.
6. Organic Designated Marksman Rifle at the Platoon/Squad level.
7. Increased modularity.
8. ASAK per Sniper weapon.
M4/M16 SERIES RIFLE

M4/M16:

- Menu of approved Carbine accessories.
  - COTS Butt Stocks, Magazines, Slings, Bi pods, Handgrips
  - COTS Scopes / Optics
  - COTS Suppressors
  - In extreme cases, Soldiers have purchased upper receivers and high-costs rifle scopes.

- Simple camouflage applications for Carbines and Optics.
- Suppression (noise/flash) technology for Carbines.
- Need for variable powered Optics for Carbines.
- Increased firepower (caliber) at extended ranges.
NET remains critical to shooter/maintainer proficiency / Many types of units use this weapon.

STRAC allocation affects availability of M118LR.

Soldiers are removing/replacing Mk4 Leupold scope with other scopes.
  - MILDOT reticle training delta
  - Simple point and shoot reticle pattern

Stock is adequate, but there is room for improvement.
  - Reduce bulkiness
  - Remove unnecessary parts

General theme = DMR is REQUIRED organically in Infantry formations.
Mk 48 LIGHTWEIGHT MACHINE GUN

Mk 48 LMG:

- Original intent was to replace the M240B until the M240L was to be fielded.
- Possessing increased firepower and controlling extended ranges has forced:
  - Replacement of the M249 SAW by the Mk48 LMG
  - Lethality trumps Weight Reduction when extended fires are required
- Leaders want to adopt the Mk48 LMG
Typical Observation Post (OP) field of fire along IED avenue of approach

M16A2 with M68 CCO and bipod mounted…no M1913 Rails.

M320GL mated to M4 Carbine…weapon painted, no sights for M320GL
Acquisition Issues with Small Arms

- Vendors sent items in theater/home station
  - Lubricant:
    - Company was sending free samples to soldiers in theater with the claim that the lubricant was superior to the Army approved lubricant (CLP)
    - Testing done over several months (-46°C to +71°C) proved that the superior lubricant was CLP

- Unit purchased items that modify weapons
  - Suppressors
    - BCT bought suppressors for Team Leader and above.
    - Provides difficulty in determining:
      - Suitability
      - Long Term Reliability
Acquisition Issues with Small Arms

- **M4 Bolts**
  - There is no need for lubricating the weapon
  - Less cleaning is required for maintenance
  - There is considerably less fouling and debris build up inside the weapon
  - The coating on the bolt will never rub off or flake off
  - The weapon operates cooler than one with a regular bolt.

- Testing was done by 5 soldiers who fired 1,000 each of M200 Blank and M855 ball under range conditions

- Soldier purchased items that modify M4 Carbine
  - Magazines
  - Buttstocks
By choosing to purchase equipment that has not been provided from the Army, individuals and unit commanders:

- Violate established Army Policy
  - AR 750-10 Army Modification Program
- Increase risk to Soldiers
QUESTIONS?