OPMSA
Overview
For the
Armaments for the
Army Transformation
Conference
20 June 2001

LTC Gil Brown
PM Small Arms
# OPMSA Overview For the Armaments for the Army Transformation Conference

**Report Date**: 20JUN2001  
**Report Type**: N/A  
**Dates Covered (from... to)**: -  

**Title and Subtitle**: OPMSA Overview For the Armaments for the Army Transformation Conference  

**Author(s)**: Brown, Gil  

**Performing Organization Name(s) and Address(es)**: TACOM  

**Sponsoring/Monitoring Agency Name(s) and Address(es)**: NDIA (National Defense Industrial Association 2111 Wilson Blvd., Ste. 400 Arlington, VA 22201-3061)  

**Distribution/Availability Statement**: Approved for public release, distribution unlimited  

**Supplementary Notes**: Proceedings from Armaments for the Army Transformation Conference, 18-20 June 2001 sponsored by NDIA  

**Abstract**  

**Subject Terms**  

**Report Classification**: unclassified  
**Classification of this page**: unclassified  
**Classification of Abstract**: unclassified  
**Limitation of Abstract**: UU  

**Number of Pages**: 30
OUTLINE

• **TACOM Organization**
  – DSA Structure
    – Warren Organizational Changes
  – Transformation Support

• **OPMSA Overview**
  – Organizational changes
  – APO Fill
  – PM Scorecard
  – Support for the Transformation
  – Legacy System Improvements
    – Individual Weapons
    – Crew Served Weapons
    – Ammunition
  – Future Programs
    – OICW
    – OCSW

Committed to Excellence
**TACOM Organization**

**VISION**
The U.S. Army Tank-automotive Armaments Command

Provides Ground Combat, Automotive, Marine, and Armaments Technologies, and Systems

- Generates, Provides and Sustains, Mobility, Lethality, and Survivability for Soldiers, Other Services and Our Allies

**MISSION**
Providing our Soldiers With Overwhelming Lethality, Mobility and Survivability for Battlefield Dominance.
Vision
Leading Acquisition
Continuously Improving
Warfighter Focused

Mission
Develop, Acquire, Produce, Field and Sustain
Safe, Reliable, Effective and Supportable Warfighting Systems
TACOM Operates at the Heart of Army Transformation
TACOM Support to Army Transformation

**LEGACY FORCE**
- TARDEC
- Nat’l Automotive Center (NAC)

**INTERIM FORCE**
- FCS System Integration

**OBJECTIVE FORCE**
- ANAD
- ARDEC

**CURRENT FORCE**
- Program Management for 211 Acquisition Programs
- Support to Eight PEO Managed Acquisitions
- Integrated Logistics for 3,269 Fielded End Item NSNs
- RRAD
- Initial Program Manager for IBCT

**FUTURE FORCE**
- Program Management for Future Scout

**PARTNERING**
- TRADOC and FIELDED FORCE
  - Other Agencies and Services
    - DARPA
    - Other Army
    - USMC
    - Many Others
  - Industry
  - Allies
    - Future Scout
    - Munitions
  - Academia

**Sustain & Recapitalize**
- First Interim BCT
- First Unit Equipped Objective
Office of the Product Manager Small Arms

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>C. Pavlick</td>
<td>DCD, Ft.Benning, GA</td>
<td>835-5039</td>
</tr>
<tr>
<td>G. Hulse</td>
<td>DCSOPS</td>
<td></td>
</tr>
<tr>
<td>S. Whitfield</td>
<td>DOT, Ft.Benning, GA</td>
<td></td>
</tr>
<tr>
<td>Carol Ann Boyle</td>
<td>Contracting</td>
<td>2243</td>
</tr>
<tr>
<td>B. Gregg</td>
<td>Contracting</td>
<td>6013</td>
</tr>
<tr>
<td>W. GADOMSKI**</td>
<td>Special Projects</td>
<td>6984</td>
</tr>
<tr>
<td>June Miller</td>
<td>Secretary</td>
<td>4805</td>
</tr>
<tr>
<td>Cheryl Cristi</td>
<td>Admin</td>
<td>3947</td>
</tr>
<tr>
<td>Tina Dunlop</td>
<td>Admin</td>
<td>6885</td>
</tr>
<tr>
<td>R. AUDETTE</td>
<td>DEPUTY</td>
<td>2062</td>
</tr>
<tr>
<td>Vacant (Mil)</td>
<td>APM Soldier System</td>
<td></td>
</tr>
<tr>
<td>Joe Colarusso</td>
<td>Log/Sustain Mgr. AA/SA CBU</td>
<td></td>
</tr>
<tr>
<td>B. Russel</td>
<td>Production Mgr. OSC</td>
<td></td>
</tr>
<tr>
<td>LTC G. BROWN</td>
<td>PM SMALL ARMS</td>
<td>6560</td>
</tr>
<tr>
<td>Mike Venos</td>
<td>Business Management</td>
<td>2167</td>
</tr>
<tr>
<td>Barbara Muldowney</td>
<td>OICW</td>
<td>2386</td>
</tr>
<tr>
<td>Pete Errante</td>
<td>Ammo</td>
<td>4798</td>
</tr>
<tr>
<td>R. Zienowicz</td>
<td>Crew Served Weapons</td>
<td>4011</td>
</tr>
<tr>
<td>M. Friedman</td>
<td>Individual Weapons</td>
<td>4368</td>
</tr>
<tr>
<td>Mike Venos</td>
<td>Program Management</td>
<td></td>
</tr>
<tr>
<td>Barbara Muldowney</td>
<td>Program Management</td>
<td></td>
</tr>
<tr>
<td>Pete Errante</td>
<td>OCSW</td>
<td></td>
</tr>
<tr>
<td>R. Zienowicz</td>
<td>Ammo</td>
<td></td>
</tr>
<tr>
<td>M. Friedman</td>
<td>OCSW</td>
<td></td>
</tr>
</tbody>
</table>

Core Personnel: 22
Matrix Personnel: 13
Contractor: 8
Matrix Not Co-located: 3
Contractor Not Co-located: 3
## Army Procurement Objective (APO) Fill

<table>
<thead>
<tr>
<th></th>
<th>FY 98</th>
<th>FY 99</th>
<th>FY 00</th>
<th>FY 01</th>
<th>FY 02</th>
<th>FY 03</th>
<th>FY 04</th>
<th>FY 05</th>
<th>FY 06</th>
<th>FY 07</th>
<th>FY 08</th>
<th>FY 09</th>
<th>FY 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>M4 Carbine</td>
<td>55</td>
<td>59</td>
<td>64</td>
<td>70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M16A2/A4 Rifle</td>
<td>86</td>
<td>88</td>
<td>90</td>
<td>91</td>
<td>91</td>
<td>92</td>
<td>95</td>
<td>97</td>
<td>97</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M249 SAW</td>
<td>78</td>
<td>80</td>
<td>82</td>
<td>84</td>
<td>87</td>
<td>89</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M240B MMG</td>
<td>44</td>
<td>55</td>
<td>40</td>
<td>50</td>
<td>63</td>
<td>76</td>
<td>91</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mk19-3 GMG</td>
<td>81</td>
<td>70</td>
<td>76</td>
<td>81</td>
<td>86</td>
<td>89</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M2 MG</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>154</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Notes:*
- M16 A4 Rifle, 5.56mm
- M4 Carbine, 5.56mm
- M249, 5.56mm Squad Automatic Weapon
- Mk 19, 40mm Grenade Machine Gun

*Images:*
- M16 A4 Rifle, 5.56mm
- M4 Carbine, 5.56mm
- M249, 5.56mm Squad Automatic Weapon
- Mk 19, 40mm Grenade Machine Gun
## MILESTONE ACTIONS COMPLETED

<table>
<thead>
<tr>
<th>TITLE</th>
<th>QUARTER COMPLETED</th>
</tr>
</thead>
<tbody>
<tr>
<td>M145 Machinegun Optics</td>
<td>1Q00 (TC-STD)</td>
</tr>
<tr>
<td>XM1012/XM1013, 12 Gauge NL Point &amp; Crowd Control</td>
<td>4Q00 (TC-STD)</td>
</tr>
<tr>
<td>Lightweight Ground Mount for MGs</td>
<td>4Q00 (MS I/II)</td>
</tr>
<tr>
<td>XM973/XM974, 7.62 Short Range Training Ammo</td>
<td>4Q00 (TC-STD)</td>
</tr>
<tr>
<td>XM 1001 40mm Canister</td>
<td>3Q01 (TC-STD)</td>
</tr>
<tr>
<td>XM 1029 40mm NL Crowd Dispersal Cartridge</td>
<td>3Q01 (TC-STD)</td>
</tr>
<tr>
<td>XM116 Small Arms Fire Control (SAFCS)</td>
<td>3Q01 (MS B)</td>
</tr>
<tr>
<td>5.56mm Short Range Training Ammo (SRTA)</td>
<td>3Q01 (MS B)</td>
</tr>
</tbody>
</table>

## MATERIEL RELEASE ACTIONS COMPLETED

<table>
<thead>
<tr>
<th>TITLE</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>M145 Machinegun Optics</td>
<td>2Q00</td>
</tr>
<tr>
<td>M1006 Non Lethal 40MM Round</td>
<td>3Q00</td>
</tr>
<tr>
<td>M25 Stabilized Binoculars</td>
<td>4Q00</td>
</tr>
</tbody>
</table>
Small Arms for the Transformation

Crew Served Weapons

Objective Weapons

Individual Weapons
M16/M4/M203 INITIATIVES

- M4/M203A1
- M4/M4A1
- M4/M203A1

**CLOSE COMBAT MISSION CAPABILITY KIT**

**M203 RAIL SYSTEM**

**IMPROVED BUTTSTOCK FOR M4**

**MODULAR WEAPON SYSTEM**

**5.56 ARMOR PIERCING**

**CLOSE COMBAT OPTICS**

**BACK-UP IRON SIGHT**

**WEAPON FLASHLIGHT MOUNT**

**SLING, CLOSE QUARTERS BATTLE FOR M4**
XM107 SEMI AUTOMATIC LONG RANGE SNIPER RIFLE

CAPABILITIES OF ITEM
• Versatile, Manportable, Multiple Round, Rapid Fire Rifle
• Primarily Anti-Materiel System w/ Mk211 API Ammo
• Ranges: Anti-Materiel (1000-1200m) / Personnel (600-1000m)

OBJECTIVE: To Field COTS Anti-Materiel and Counter-Sniper Semi-Automatic Rifles Based On USMC M82A3.

BENEFIT:
• Effective Against Light Materiel & Personnel Targets
• Supplements Sniper’s Role To Support Combat Operations
  - Discriminately & Precisely Engage High-Value Targets
  - Counter Sniper Capability (MOUT)
• Firepower & Standoff Ranges Improve Sniper Survivability

CONTRACTOR: Barrett Firearms MFG, Inc.
PROPONENT: US Army Infantry Center
US Special Operations Command

POCs: R. Galeazzi / AMSTA-DSA-SA/ITri (GC) / DSN: 880-6656
W. Boyle / AMSTA-AR-CCL-A / DSN: 880-7873
JOINT SERVICE COMBAT SHOTGUN, XM1014

CAPABILITIES OF ITEM
- 12 Ga. Semi-Automatic
- Effective Range of 40 Meters
- Compatible with Standard 2 3/4 “00” and 3 inch ammo
- Will manually cycle current Non-Lethal Munitions
- Telescoping/collapsible Buttstock with Pistol Grip
- Magazine Capacity of 5 rounds (Threshold)
- Reliably Function when Exposed to Adverse Environmental Conditions

OBJECTIVE: To adopt the Joint Service Combat Shotgun, XM1014 for use Within the Army

BENEFIT: Will Standardize Army Shotguns with Those in Use by the Joint Services
- 12 Ga. Semi-automatic Function
- Mounting Rail for Sighting Accessories
- Will Provide a Higher Volume of Fire than Existing Pump Action Shotguns
- Will Reduce the Existing Logistics Burden of Supporting the Existing Three Types of Pump Actions Shotguns in Use Throughout DOD

CONTRACTOR: H&K/Benelli

PROPOONENT: Joint Service Lead - Marine Corps Systems
Command; US Army - USA Infantry Center

POC: T. Vass/AMSTA-DSA-SA/DSN: 880-7901
S. Sudol/AMSTA-AR-CCL-A/DSN: 880-7931
M249 SAW INITIATIVES

- Short Barrel
- HMMWV Mount
- Alternate Mounting Surfaces
- Collapsible Buttstock
- Close Combat Mission Capability Kit
- M249 Light Weight Tripod
- Machinegun Optics
- Feed Tray Cover
- 5.56 Armor Piercing
M240B MACHINEGUN

INITIATIVES

Forward Accessory Mounting Surface

Improved Buttstock

Improved Buffer

Improved Bipod

M240B Combat Ammo Pack

M240B Light Weight Tripod

M240B Improved Barrel Bag

MACHINEGUN OPTICS

XM6 Pedestal w M197 Mount

HMMWV MOUNT

M197 MOUNT

M240B Weight Reduction Program

7.62 ARMOR PIERCING

M240B Combat Ammo Pack

Light Weight Tripod

Improved Buffer

Improved Buttstock

Improved Bipod

M240B Improved Barrel Bag

MACHINEGUN OPTICS
MK 19 GRENADE MACHINEGUN INITIATIVES

- 40mm, Low Cost Training Ammo
- MK19, Adj Sight Bracket
- Sight, Computerized, Small Arms Fire Control, XM116
- MK19 Upgrade Material Change Kit
- 40mm Canister Ctg.
- REMOTE MG PLATFORM/CROWS
AMMUNITION PROGRAMS

- NL 40mm Round, M1006
- NL 40mm Round, M1029
- Rifle Launched Entry Munition
- Stun Grenade
- Hand Thrown Stingball Grenade
- 12 Ga NL Point & Crowd, XM1012/XM1013
- Rifle Launched NL Munition, XM95
Objective Individual Combat Weapon
User’s Vision

- Soldier’s Individual Combat Weapon – well into 21st century!
  - Bursting Munition Concept
    - Provides revolutionary capability
    - Offsets aim error associated with iron sights
    - Provides more efficient lethal mechanism

- Dual Munition System
  - 20mm High Explosive
  - 5.56mm Bullets

- Increases range/lethality

- Target Acquisition/Fire Control System
  - Laser Range Finder
  - Ballistic Computer
  - Fuze Setter
  - Electronic Aim Point

Committed to Excellence
OICW Program Schedule

MILESTONES
- FY00: MS I
- FY01: MS Ia
- FY02: MS II
- FY03: LRIP IPR
- FY04: MS III Weapon & Ammo
- FY05: Materiel Release
- FY06: System FUE Block 1

PROCUREMENT ACTIVITIES
- Contract Award
- PD&RR: Assess alternatives & CAIV, SAG
- EMD: Operational effectiveness
- Production: Deployment

DEVELOPMENT Technology
- Support
- Manufacturing

TEST & ASSESSMENTS
- Assess Supportability, Producibility, Affordability, Manufacturability
- Design fixes from PDRR
- Simulations & LUTs
- ID Block 2

PRODUCTION & FIELDING
- Committed to Excellence
OICW PD&RR Acquisition Strategy

• Acquisition Strategy Approved 29 March 2000
• Cost Plus Award Fee – Utilized Alpha Contracting
• Single Prime Contractor
  • Develops Synthetic Environment to govern simulation & modeling
    • Baseline Infrastructure based on IDE - Windchill
    • Maximizes technology development through use of simulation
    • Leverages simulator to build training solution (unaffordable without it)
• Incorporates an In Process Review at 18 months after contract award
  • Technology/Requirements Trades
  • TRADOC study addressing requirements
  • Hardware build and test of PDRR configuration
  • Near final design ready for EMD

• Contract is for PD&RR only
• EMD will include production options

Committed to Excellence
## Compliance with ORD

### OICW Exit Criteria

<table>
<thead>
<tr>
<th></th>
<th>MS 1a</th>
<th>PDRR</th>
<th>EMD/ORD</th>
</tr>
</thead>
<tbody>
<tr>
<td>P(i) Exposed stationary</td>
<td>.45@350-400m</td>
<td>.45@450-500m</td>
<td>.50@450-500m</td>
</tr>
<tr>
<td>P(i) Defilade</td>
<td>.30@300-350m</td>
<td>.30@450-500m</td>
<td>.35@450-500m</td>
</tr>
<tr>
<td>Fuze redesign/safety tests and demo, FSB review</td>
<td>confirm no change</td>
<td>AFSB certification</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>≤ 15 lbs</td>
<td>≤ 15 lbs</td>
<td>≤ 14 lbs(T)/10 lbs (O)</td>
</tr>
<tr>
<td>Firing Positions:</td>
<td>-</td>
<td>Demonstrate</td>
<td>Demonstrate</td>
</tr>
<tr>
<td>Ruggedness/Reliability:</td>
<td>-</td>
<td>Initial Data Set</td>
<td>Demonstrate</td>
</tr>
</tbody>
</table>

- Operational Requirement Document Approved 11 February 2000
- Currently Funded to MS II
Key Challenges

Weight

Training
Constructive Simulation: Modeling

- Force-on-Force
  - Conducted by TRAC-WSMR using CASTFOREM
- Initial parametric assessment of $P(I)$, maximum effective range, and BOI showed increased effectiveness and a significant reduction in number of casualties
- OICW AoA conducted by USAIC by TRAC found:
  - OICW improves Blue force effectiveness through both lethality and survivability
  - Extends incapacitation range well beyond legacy individual combat weapon
  - Increases OPTEMPO – virtually eliminating firefights to destroy a threat even in protected positions
  - BOI of 4 per squad performs statistically the same as BOI with more OICWs providing the lethality and survivability required to win and fight the next fight

(OICW AoA Jan 2000)
Virtual Simulation

- Systems Under Consideration
  - Engagement Skills Trainer
  - Small Arms Simulator
    - Computer Controlled Man-in-the-Loop Simulator
    - Validated with M16 & M203 Performance Data
    - Replicates the function and performance of the OICW
    - Used as a design tool

- Either Can be Utilized as Primary Training Device

Computer Generated Graphics & Imagery

Committed to Excellence
# Live Fire & Simulation

<table>
<thead>
<tr>
<th><strong>Live Fire</strong></th>
<th><strong>Simulation</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Pure Marksmanship versus stationary and moving exposed targets</td>
<td>• Trains Marksmanship, Squad Tactical Gunnery, Shoot-- Don’t Shoot</td>
</tr>
<tr>
<td>• Trains Soldier to Achieve P(I)</td>
<td>• Trains engagement of troop targets gone to ground, in fox holes, and trench lines</td>
</tr>
<tr>
<td></td>
<td>• Trains Urban Operations (REDFOR troops around buildings, street corners, snipers) provide stand-off</td>
</tr>
</tbody>
</table>
Downselect Process Status

• “Three” Down-Selected Architectures

- "Integrated System w/ Separable TA/FCS"
- "Fully Integrated System"
- "HE Only w/ Attachable KE"

HE Only

Committed to Excellence
Down Select Criteria

Operational Capability
- Detect
- Recognize
- Identify
- Engage
- Combat objectives

Day/night

TA/FCS
- FOV
- Weight
- Sensor capability

Ammunition
- QE
- Ballistics
- Weight
- Impulse
- P(I)

System
- Error budget management
- P(I)
- Ergonomics
- Weight
- Supportability
- Training
- Cost – UPC/LCC
- Effectiveness

Weapon
- Impulse
- Weight
- Ergonomics

Conceptual Design

ATD Technology Demonstrator

Committed to Excellence
OICW
Summary

• OICW Provides Leap Ahead Lethality Capability
• User and PM Are Working Technology Challenges to Meet Exit Criteria

Soldier’s Individual Combat Weapon – well into 21st century!
OBJECTIVE CREW SERVED WEAPON (OCSW)

- The future crew served weapon lethality component for Land Warrior
- Incorporates the latest advancements in electronics, materials, and small arms
- Employs revolutionary 25mm high explosive, air bursting and armor piercing munitions as its primary defeat mechanism against defilade individuals, personnel protected with body armor, and light armored vehicles.
- Provides a unique capability in MOUT and urban warfare.
  - Capable of defeating individual targets in defilade without consuming significant amounts of ammunition or causing collateral damage.
  - Cost savings associated with less ammunition
  - Reduces the soldiers load
  - Increases survivability.
- Currently in the Advanced Technology Demonstration phase
  - Milestone I/II decision scheduled in late FY02
  - First Unit Equipped is scheduled for FY11.
Questions?

http://w4.pica.army.mil/opmsa/
gbrown@pica.army.mil