Precision Strike Association

MG Jeff Sorenson
Deputy for Acquisition and Systems Management
Office of the Assistant Secretary of the Army
(Acquisition, Logistics and Technology)
April 19, 2006
Agenda

• Current Strategic Environment
• What is Precision?
• Jerry McGuire – “Show Me The Money!”
• Future Investment Strategy
• Industrial Base – Viable or Declining?
A Complex Strategic Environment

- Role of NATO/UN/NGOs
- DoD Transformation
- Recruiting and Retention
- Progress of GWOT
- Public Will
- Int’l Coalitions
- Progress of GWOT
- Uncertainty

WARTIME FOCUS + WARTIME RESOURCES = WINDOW OF OPPORTUNITY

- Threatening Ideologies
- Hostile Regimes
- Weapons Proliferation
- Irregular Warfare

Current 01-05  06  08  xx  Future

Adversity

U.S. ARMY
Munitions Terminology

Precision Munitions
Capable of self locating and maneuvering to a specific location with an accuracy sufficient to yield a high probability of destruction within its inherent capabilities.

Smart Munitions
Self-contained capability to search, detect, acquire, and engage individual targets by detecting the general target characteristics in order to provide terminal guidance for the munition or submunitions.

Discriminating Munitions
Self-contained capability to search, detect, acquire, and engage individual targets by distinguishing specific characteristics of the target to selectively identify and engage only the desired target types.
Precision Munitions -- Why?

• All-weather, terrain, and operational environment engagement capability that reduces operational risk by providing immediate responsive fires and scalable effects

• Minimize collateral damage, especially in urban settings; allows for discriminating use of force

• Reduce number of rounds needed to defeat targets at all ranges (same CEP at any range)

• Reduce logistics footprint and force burden

• Essential to fulfill objectives of Transformation and Joint opns

• Compliment -- not replace -- unguided or ‘dumb’ munitions
Precision Munitions – Why Not?

• Not every target needs to be destroyed – suppression, masking, or harassing fire is often needed to shape the battle

• Unaffordable – if chasing too many programs with limited resources

• Insufficient numbers – if they become the weapon of choice

• Dependent on sensor system data, rapidly passed networked information, especially when addressing fleeting targets

• PGM technology is developing ahead of doctrine and infrastructure – modernizing weapons without modernizing doctrine may lead to ineffective use of PGMs
Misconceptions

• A replacement for unguided munitions – but “dumb” is still good

• A leap-ahead advantage – but temporary since eventually precision will proliferate and put our own forces at risk

• Leads to quick victory – but the enemy does not always behave the way we think we would

• Technology Will Save Us…
  -- PGMs are not a replacement for sound tactics or strategy (do not confuse the ways and means of war with its end)

  -- PGMs as the ‘silver bullet’ – but weapons break; human error; enemy countermeasures; not a replacement for doctrine, tactics, or the human element (leadership; will to win; luck)
President’s Budget (FY01-FY11)

U.S. Army Total (FY01 to FY11) = $1.3 Trillion
Army Research, Development And Acquisition Summary (FY01-FY11)

RDA Total (FY01 to FY11) = $304.4 Billion

[Graph showing line charts for different categories over years FY01 to FY11 with labels for CHEM, ACFT, AMMO, MSLS, OPA, WTCV, and RDTE.]
## Top Ten Army Programs (2000 vs. 2006)

<table>
<thead>
<tr>
<th>FY 2000 Top MDEPs</th>
<th>FY 2006 Top MDEPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>• TRAINING AMMUNITION</td>
<td>• FUTURE COMBAT SYSTEM (FCS)</td>
</tr>
<tr>
<td>• LONGBOW APACHE</td>
<td>• TRAINING AMMUNITION</td>
</tr>
<tr>
<td>• TECHNOLOGY BASE</td>
<td>• TECHNOLOGY BASE</td>
</tr>
<tr>
<td>• ABRAMS</td>
<td>• STRYKER</td>
</tr>
<tr>
<td>• FIRE SUPPORT MISSILES</td>
<td>• Medium Extended Air Defense System (MEADS)</td>
</tr>
<tr>
<td>• MEDIUM TACTICAL VEHICLE (MTV) SYSTEMS</td>
<td>• TACTICAL RADIOS</td>
</tr>
<tr>
<td>• JAVELIN</td>
<td>• CH-47F Upgrade Recap</td>
</tr>
<tr>
<td>• HORIZONTAL BATTLEFIELD DIGITIZATION</td>
<td>• ARMY TEST INFRASTRUCTURE</td>
</tr>
<tr>
<td>• COMANCHE</td>
<td>• Apache AH-64D Upgrade Recap</td>
</tr>
<tr>
<td>• BRADLEY FIGHTING VEHICLE SYSTEM (BFVS)</td>
<td>• BLACKHAWK</td>
</tr>
</tbody>
</table>
Tactical Missile Procurement
Dollars In Thousands

$52M TOW add
$93M Javelin Supp (Modularity)
$69M ITAS Reprog/Supp (Modularity)
$92.9M ATACMS Supp
Missiles/Ammo Initial Unit Cost

- HELLFIRE
- JAVELIN
- TOW
- GMLRS
- ATACMS BLK I
- ATACMS BLK IA
- ATACMS Unitary
- EXCALIBUR
- PGMM
- JCM
Precision Munitions
(Fielded & Developmental)

FIELDDED PRODUCTION SYSTEMS:

TOW 2B
JAVELIN
HELLFIRE variants -- SAL (K, M, or N) and LONGBOW (L)
ATACMS Block IV – Quick Reaction Unitary (QU)

SYSTEMS IN DEVELOPMENT OR S&T:

**PEO AMMO:**
- Excalibur
- PGMM
- MRM
- PGK

**PEO MISSILES and SPACE:**
- CKEM
- APKWS II
- JCM – Technical
- NLOS LS -- PAM
- NLOS LS -- LAM
- GMLRS

Maturation
Joint Fires Capabilities

Range

- >300km
- 300km
- 150-180km
- 100km (LAM)
- 70km
- 40-50km (PAM)
- 30-40km
- 7-12km

Responsiveness for Close Fight

- Long Range Precision Strike
- Shaping Fires
- Destructive Fires at Depth
- Fires to Isolate
- Fires to Protect
- Close Support Fires

Variety of:
- Targets
- Dwell Times
- Effects

- FCS
- Mortar
- Cannon W/Excalibur
- PAM/LAM
- GMLRS
- AVN
- UCAV
- Close Air Support
- Naval Gunfire
- ATACMS
- TLAM
- Air Interdiction

- FCS Cannon W/Excalibur
- PAM/LAM
- GMLRS
- AVN
- UCAV
- Close Air Support
- Naval Gunfire
- ATACMS
- TLAM
- Air Interdiction
<table>
<thead>
<tr>
<th>Missiles Expenditures</th>
<th>GULF WAR 1</th>
<th>GWOT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Air</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hellfire/Longbow</td>
<td>1770</td>
<td>3441</td>
</tr>
<tr>
<td><strong>Anti-Tank Infantry</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Javelin</td>
<td>N/A</td>
<td>682</td>
</tr>
<tr>
<td>TOW</td>
<td>2202</td>
<td>5430</td>
</tr>
<tr>
<td><strong>Artillery</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MLRS</td>
<td>10,572</td>
<td>840</td>
</tr>
<tr>
<td>GMLRS</td>
<td>N/A</td>
<td>54</td>
</tr>
<tr>
<td>Unitary</td>
<td>N/A</td>
<td>16</td>
</tr>
<tr>
<td>ATACMS (Blk 1)</td>
<td>32</td>
<td>371</td>
</tr>
<tr>
<td>ATACMS (Blk 2)</td>
<td>N/A</td>
<td>69</td>
</tr>
</tbody>
</table>
Capabilities for a Joint and Expeditionary Army

**Current Force**
- ~100 lb. load
- 70+ tons
- < 10 mph

**Future Force**
- < 40 lb. load
- < 30 tons
- > 40 mph

**Enabling the Future Force**
Science and Technology—develop and mature technology to enable transformational capabilities for the Future Modular Force while seeking opportunities to accelerate technology directly into the Current Modular Force

**Enhancing the Current Force**
**Today's Science & Technology Investments for Future Precision Strike Capabilities**

### Missiles
- Smaller, Lighter, Cheaper Munition Components (SLMC)
  - Miniaturize electronic assemblies
  - Chip-scale packaging
  - Advanced sensors and gimbals
- Next Gen NLOS-LS
  - Loitering Attack
  - Increased Loiter time (> 30 min)
  - Precision Attack
  - Increased Range (> 40 km)

### Lasers
- Counter-rocket, artillery & mortars
- Disrupt/defeat EO/IR sensors
- Scaleable effects
  - Ultra-short Pulsed Lasers for Laser Guided Energy

### Munitions
- Common Smart Submunition
  - Discriminating I2R & LADAR Sensors
  - Long, Aerostable EFP
  - 155mm, 105mm, PGMM & GMLRS Applications
- 120mm Mid Range Munition
  - Range 2-12km (BLOS)
  - Autonomous or Laser Designated Seeker Modes
  - Hit to Kill
- Multi-purpose Warheads
  - Single warhead defeats bunkers, heavy/light armor & personnel
  - Enhanced Shaped Charge blast/fragmentation warhead
  - Hardened for bash-through capability against reinforced structures
S&T Investments Enabling Precision Strike Capabilities
FY97-11, $3B*

$M

Applied Research & Advanced Technology Development

Compact Solid State Laser

Guns & Munitions $1.1B

High Energy Lasers $475M

Missiles $1.4B

*Then year dollars
Missile Sector
Industrial Base Consolidations

- Martin Marietta
- Loral
- LTV
- Rockwell
- McDonnell Douglas
- GD Missiles
- Hughes
- Texas Instruments
- Boeing
- Raytheon
- Lockheed Martin

Years: 90 91 92 93 94 95 96 97 98 99 00 01 02 03 04 05
Active Army Ammunition Plants (AAPs) - Government Owned

- Army’s shrinking and aging organic ammo production base supports all Services
- Modernization is essential
- Must meet tough environmental standards
- Must implement BRAC, preserve critical core capabilities, right-size, and reduce costs.

Numbers shown do not include plants in layaway and “semi-active” status.
Success Story

Program of Record (2001)
- Did not Include Unitary
- Focused on DPICM “Only” Solution

Program of Record (2003)
- Included Unitary
- Envisioned Urgent Need Variant
- Considered Warhead Improvements

World Events Change & New Requirements Evolve

Urgent Need Variant (Dual Mode Fuze & Basic Motor)
Fielded and 41 Operationally Employed 2005
Way Ahead

• Investment Strategy for Precision Weapons Portfolio Needs Review
• Precision Lethality – System of Systems Evaluation
• Enormous Stockpile – Demil or Refit?
• S&T Strategy: Sub-Components Improvements or New Technology?
• Industrial Base Declining; Cost of Weapons Increasing