Army Modernization Approach:
Building Versatility for Full Spectrum Operations
5 October 2009
To provide an update on the Army’s Brigade Combat Team (BCT) Modernization Strategy Approach
Building an adaptive modernization approach
   LTG Steve Speakes
Developing resource informed operational requirements
   LTG Mike Vane
Adapting the Army Acquisition Strategic Direction
   LTG Ross Thompson
Implementing Integrated Brigade Modernization
   MG John Bartley
Recapitalizing selected systems
   Mr. Jim Dwyer
Setting conditions for the future
   MG Bob Lennox
Meeting the challenge
   LTG Steve Speakes
Secretary of Defense Guidance

- **Network**
  - "Retain software/Network development program for spin-outs and deliver Network/battle command in increments"
  - "Determine further software development needs to support the new manned ground vehicle (MGV) program"

- **MRAP**
  - "Incorporate MRAPs into our motorized force and into the overall MGV plan"

- **Spin-outs**
  - "Accelerate the fielding of spin-outs to all Brigade Combat Teams (BCTs) starting in FY11, completing in FY25"

- **Ground Vehicle**
  - "Halt development and procurement of FCS manned ground vehicles (MGV)"
  - "Cancel the development and procurement of the Non-Line-of-Sight-Cannon"
  - "Initiate analysis of MGV in FY2009; re-evaluate MGV requirements, technology, and acquisition approach"
  - "Develop new, renamed, MGV program based on revised requirements"

Army Focus

- **Acquiring a Single Network Solution**
- **Integrating Mine-Resistant Ambush-Protected Vehicles into our Formations**
- **Accelerating Delivery of Warfighting Capabilities (e.g., Capability Packages)**
- **Developing a new Ground Combat Vehicle**
### Army Modernization Approach

<table>
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<tr>
<th>Ways</th>
<th>Objective</th>
<th>Means</th>
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<tbody>
<tr>
<td><strong>Reset</strong></td>
<td>Sustain capabilities through Reset</td>
<td><em>Army Reset will continue as long as we have forces deployed plus 2-3 years.</em> Re-set completions to date: 5k Tracked Vehicles; 3k Aircraft; 38k HMMWV; 7k Trucks</td>
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<tr>
<td><strong>Upgrade</strong></td>
<td>Improve capabilities with Recapitalization</td>
<td><em>Ongoing recapitalizations:</em> pure fleet Patriot PAC-3; Paladin PIM; AH-64 A to AH-64D conversion; two variant M1 tank fleet</td>
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<td><strong>Integrate</strong></td>
<td>Incorporate MRAP capabilities into formations</td>
<td><em>MRAP will be fully integrated into the force.</em> 9,229 MRAP in 20 BCT Sets; 3,721 organic to Sustainment Brigades; 975 Pre-Deployment Training; 1,043 in War Reserve</td>
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</table>
|            | Adjust BCT mix                                                            | *Achieve a versatile mix of forces through sustained force generation that meets current and anticipated demand*  
Potential procurement of two additional SBCT’s; consolidation for 12 Combat Aviation Brigade |
| **Divest** | Divest selected capabilities                                               | *Planned and future:* Vietnam Era UH-1 Aircraft; M35 truck; future divestiture of M113 and long-term replacement of Bradley’s           |
| **New**    | Accelerate Capability Packages                                            | *Incremental improvements delivered in two-year cycles; Enables ARFORGEN; Capabilities requested by Commanders in the fight.* ISR, Precision Strike, Unmanned Systems |
|            | Improve Ground Tactical Network Capability                                 | *Incremental Network Improvement.* WIN-T Inc 2-3; JTRS; Ground Soldier System; Network Integration Kits enable Full Battle Command on the Move, Situational Awareness to Squad level; Intel Fusion |
|            | Address remaining capability gaps with new Ground Combat Vehicle (GCV)     | *MRAP like survivability with Bradley like tactical mobility and Stryker like operational mobility; Design with growth potential to adapt as technologies mature and enemies learn* |
Developing Resource Informed Requirements

LTG Michael Vane
Director, Army Capabilities Integration Center
## Revised Assumptions About the Future

<table>
<thead>
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<th>Certainty</th>
<th>Uncertainty</th>
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<tr>
<td><strong>Defense Transformation Theory</strong></td>
<td><strong>Recent and Ongoing Conflicts</strong></td>
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<tr>
<td>Knowledge Centric</td>
<td>Fighting, Politics Centric</td>
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<td>Planning Process</td>
<td>Design, Execution</td>
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<td>Centralization</td>
<td>Decentralization</td>
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<td>Risk Avoidance</td>
<td>Risk Mitigation</td>
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<td>Efficiency</td>
<td>Effectiveness</td>
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<td>Fires</td>
<td>Combined Arms Fire/Maneuver</td>
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<td>See / &quot;Quality of Firsts&quot;</td>
<td>Find and Understand</td>
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<td>Rapid Decisive Operations</td>
<td>Sustained Campaigns</td>
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<td>Systems Approach (EBO)</td>
<td>Complexity (Design)</td>
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<tr>
<td>Dominance</td>
<td>Strategy, Continuous Interaction</td>
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<tr>
<td>MCO Focus</td>
<td>Spectrum of Conflict</td>
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<tr>
<td>Linear Progress—Leap Ahead</td>
<td>Interaction with Adversaries—Continuous Innovation</td>
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Key Lessons Learned

• Provide Soldiers protected mobility: #1 priority
• Develop fighting vehicle for complex environments including urban operations
• Reduce predictable travel on established routes: better off-road mobility required
• Design platforms with sufficient growth potential for future capabilities
• Increase platform capacity to meet evolving threat
• Obtain better C2 on-the-move capability
• Push real time situational awareness to and from Company level and below
• Connect the Soldier to the network

Greater demand on small unit operations dictates that tactical vehicles must be protected, mobile, and networked
Capability Packages

Spin-outs + Warfighter Urgent Requirements = Capability Packages

- Provides incremental improvements delivered in two-year cycles
- Enables ARFORGEN beginning FY11
- Incorporates capabilities requested by Commanders in the fight

Capability Package 11-12

Spin-outs
- NLOS - LS
- SUGV
- Network Integration Kit
- UGS
- Class I UAV

Warfighter Urgent Requirements
- Persistent Surveillance
- Advanced Precision Mortar Initiative
- Ground Soldier System
- Human Terrain Teams

Future Capability Packages will include:
- More capable Unmanned Air Vehicles (greater range, loiter and payload capability)
- Larger Unmanned Ground Vehicles
- Improvements to the Network (more information and imagery at lower levels)

Provides increased near-term capabilities to the Warfighter
Network Modernization

- **Battle Command Essential Capabilities**
- **Two-year increments**
- **Field to ARFORGEN specified forces**
- **Affordable**

**Match Pace of Change with Technology and Operating Environment**

*Interoperable functional applications; communications transport; and network services*
Combat Vehicles Methodology

- Capability Gaps
- Attribute Balancing
- Technology Feasibility
- Costs
- Other Analysis

Key Attributes
- Versatility
  - Roles
  - Functions
  - Scalability
- Force Protection
- Survivability
- Mobility
- Lethality
- RAM (Reliability, Availability, Maintainability)

- Align to force mix
- Incorporate MRAP
- Combat Vehicle Roadmap
  - Reset
  - Upgrade
  - Divest
  - New
Ground Combat Vehicle
Operational Design Principles

- Versatility
- Force Protection
- Network Integration & Interoperability
- Mobility
- Sustainability
- Lethality
- Transportability
Resource Informed, Incremental Approach

• Use strategy and risk assessment to drive procurement, rather than the other way around
• Move timelines for concepts and assessments in closer
• Trade across warfighting functions, formations, & Services
• Develop integrated DOTMLPF solutions
• Strengthen synchronization with Training and Leader Development
• Prioritize capabilities and align with ARFORGEN
• Synchronize decision points for budget, POM, and force structure
• Design to technology readiness and costs
• Interface operational requirements work earlier with S&T
• Conduct earlier and better cost benefit analysis
• Buy less, more often

Build a versatile mix of tailorable and networked organizations, operating on a rotational cycle, to provide a sustained flow of trained and ready forces for full spectrum operations and to hedge against unexpected contingencies at a sustainable tempo for our all-volunteer force.
Army Acquisition Strategic Direction

LTG N. Ross Thompson III
Military Deputy to the
Assistant Secretary of the Army
(Acquisition, Logistics and Technology)
and Director, Acquisition Career Management
5 October 2009
2010 Army Acquisition Strategic Direction

• Deliver materiel and services needed to *Provide Warfighters with the Decisive Edge*

• Rebuild and rebalance the capability of the Acquisition Workforce

• Continually improve and achieve excellence in Acquisition processes

• Leverage lessons learned to support the full range of Army modernization and equipping initiatives

• Continually improve our capacity to *design, develop, deliver, dominate – and sustain*

• Leverage the full potential of technology to empower Soldiers

• Improve our capability and capacity to articulate our strategic initiatives and compelling needs
Recapitalization

5 October 2009

Mr. Dwyer
**Reset:** Represents a series of actions to restore equipment to a desired level of combat capability commensurate with mission requirements and availability of resources.

- **Replace** - battle losses and washouts from the repair process (procure new)
- **Recapitalize** - to zero miles/zero hours to account for damage/stress
- **Reset Repair (Sustainment Level)** - work performed to Technical Manual (TM) 10/20 standards by Sources of Repair (SOR) such as Depots, Original Equipment Manufacturers (OEM), and other contractors
- **Reset Work (Field Level)** - work performed to TM 10/20 standards by SORs such as Field Logistics Readiness Centers (FLRCs), DOLs, unit level by soldiers augmented by contractors
- **Automatic Reset Induction (ARI) List** - Automatically Inducted into Sustainment Level Reset
- **Reorganize** - Reset units to a modular design in support of Army Campaign Plan
- **Automated Reset Management Tool (ARMT)** - Provides automated capability for commanders to plan and execute Field and Sustainment level Reset plans
Army Depots Partner with Industry

As of: Sept 2009

**Letterkenny Army Depot**
- Tactical Missile
- Ground Support
- Equipment

**Partners With:**
- BAE - MRAP Assy.

**Corpus Christi Army Depot**
- Helicopters

**Partners With:**
- Sikorsky - Airframes
- Boeing - Airframes
- GE - Powertrans

**Red River Army Depot**
- Bradley and MLRS
- Tactical/Combat Wheeled Vehicles
- Missile Recertification

**Partners With:**
- BAE - BFVS - FMTV
- AMG - HMMWV

**Tobyhanna Army Depot**
- Communications & Electronics
- Avionics
- Missile Guidance & Control

**Partners With:**
- Raytheon - Firefinder
- Lockheed Martin - Comm Equip

**Anniston Army Depot**
- Combat Vehicles
- Small Arms
- Artillery

**Partners With:**
- GDLS - Abrams / Stryker
- BAE - M113, M88, Paladin

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AMC Across the United States
**Setting the Force**

**What We've Done . . . What We're Doing**

**ARMY PLAN**

The Army will undertake a disciplined, orderly reconstitution to restore combat power. The Army will implement lessons from Desert Storm, OEF, OIF and operations in the Balkans to refine and improve our efforts.

**Thru FY09 Workload**

(Cumulative Data Since FY03)
As of 9/28/09

<table>
<thead>
<tr>
<th>Depot Spt to Other Svcs</th>
<th>~ $193M (Examples)</th>
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**140,000+ Small Arms FY10**

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<td>(227,021 Overhauled/ 593,759 SARET)</td>
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<tr>
<td>Overhaul Totals</td>
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<tr>
<td>27,483 M2</td>
</tr>
<tr>
<td>28,672 M249</td>
</tr>
<tr>
<td>12,703 M240</td>
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<tr>
<td>32,313 M9</td>
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</tbody>
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**10,000+ Missiles FY10**

| 14, 927 Missile Systems |
| 66,773 Missile Rounds Reset |
| 13.3K Short Tons Ammunition Processed for Reissue in SWA |
| Examples: |
| 59.3M small cal rounds |
| 2.1M medium cal rounds |
| 50.5K rounds tank ammo |
| 29.1K mortar rounds |

**3,778* Aircraft Scheduled**

2,879* Completed

| 712/541 AH-64 |
| 451/349 CH-47 |
| 2044/1566 UH-60 |
| 517/383 OH-58 |
| 54/39 Fixed Wing |

**3,300+ Generators FY10**

| CEERT |
| NVDs 110,651; SINCgars 85,413 |
| Overhaul Totals |
| 22,091 Generators |
| 33,142 Commo/Electric |
| 129,521 COMSEC |

**2,000+ Tracked* FY10**

| 5,128 Tracked vehicles |
| 37,784 HMMWV* |
| 6,634 Trucks |
| 3,932 Trailers |

(* Includes Reset & Recap)

**11,000+ Wheeled FY10**

| 9 Patriot Battalions |
| 152 MLRS |
| Multiple Launch Rocket System |

**110,651 NVDs; 85,413 SINCgars**

**Overhaul Totals**

| 22,091 Generators |
| 33,142 Commo/Electric |
| 129,521 COMSEC |

Examples: AN/ALQ-144 ASE – 3536
AN/TPQ-36 Firefinder – 103
AN/TPQ-37 Firefinder – 61
ECU’s – 2390
AFATDS – 873

**3,300+ Generators FY10**

**400+ Aircraft FY10**

**Setting the Force**

What We've Done . . . What We're Doing
Some examples of weapon systems the Army is currently recapitalizing:

- **M1 Abrams:**
  - Partnership between Anniston Army Depot (ANAD) and General Dynamics Land Systems (GDLS)
    - **ANAD does disassembly**
    - **GDLS does tech insertion, reassembly**

- **Bradley (BFVS):**
  - Partnership between Red River Army Depot (RRAD) and BAE
    - **RRAD does disassembly**
    - **BAE does tech insertion, reassembly**

- **UH-60**
  - Partnership between CCAD and Sikorsky
    - **CCAD does disassembly, tech insertion, major component recap, and reassembly**
    - **Sikorsky provides technical and engineering support, and provides remaining required parts**

- **HMMWV**
  - RRAD, LEAD, and Maine Military Authority perform entire Recapitalization with parts support provided by DLA and AM General
**M1A1 Abrams Recap**

- **Scope:** M1A1 Abrams tanks completely disassembled & overhauled to a like-new, zero mile condition.
  - Reduces operation and support costs.
  - Increases readiness
  - Improves situational awareness

- **Specific improvements include:**
  - Driver’s Vision Enhancer
  - 2nd Generation Forward Looking Infra Red
  - Blue Force Tracking
  - Improved Power Distribution Box
  - Extended Bustle Rack
  - Tiger Engine
  - Absorbed Class Mat (AGM) Batteries
  - Armor Enhancements
  - Talon Far Target Locator
  - Tank Infantry Phone
  - Rear NATO slave receptacle
  - Remote Thermal Sight
  - 3rd Generation Loaders Tray
  - Version 2 loader’s Armor Gun Shield
  - Rear View Sensor System
  - Stabilized Commander’s Weapon Station
Bradley Recap

• **Scope:** Converts Bradley Model A2 to A3.
  **Provides:**
  - Enhanced command and control
  - Improved situational awareness and enemy/friendly force location
  - Improved sustainability
  - Increased lethality

• **Significant improvements include:**
  - Commanders Independent Viewer (CIV)
  - 2nd Generation Forward Looking Infra Red (FLIR)
  - GPS Navigation
  - Digital Command and Control
  - Improved Power Train Components
  - Embedded Diagnostics
**Airframe**
- Structural Improvements
- Corrosion Control
- Reduce Maintenance Burden
- Improve Safety

**Drive Train**
- 701D Engine
- Improved Durability Gearbox

**Components**
- Latest Configuration
- Improve Readiness
- Reduce Maintenance Burden
- Improve Safety

**Modification Work Orders (APA Funded):**
- Night Vision Goggle Lighting
- Heads Up Display
- ARC - 220 High Frequency Radio
- Improved Battery
- Aux Fuel Panel

**CECOM Upgrades**
- Advanced Flight Control Computer
- ARN - 147

*Incorporate Rescue Hoist Provisions (Plus Cable Guard) During Upgrade*

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**Black = A/A Recap**
- Operation and Maintenance, Army (OMA)

**Red = A to L Upgrade**
- Army Procurement Appropriation (APA)
HMMWV Recap

• **Scope:** Converts all thin-skinned HMMWVs (M966, M998, M1025/26, M1037/38, and M1097) into M1025R1 or M1097R1 by:
  - Replacing major components: Engine, transmission, transfer case, differentials
  - Upgrading with new alternator, new wheels and radial tires, new shocks, springs, and lower control arms, 3-point seatbelts.
  - All other components inspected and repaired/replaced as necessary.
  - Monthly production:
    - **Red River Army Depot** 430
    - **Letterkenny Army Depot** 342
    - **Maine Military Authority** 25

• **Up-Armored HMMWV (UAH) Recap Program** (only for vehicles below serial number 300,000).
  - To begin Dec 09. Pilots at RRAD and LEAD only. Brings trucks to latest configuration, reduces logistics burden in the field, and addresses safety, survivability, reliability, and armor protection enhancements by:
    - Replacing shocks, tire/wheel assemblies, suspension, and steering gear.
    - Replacing frame rails, cool pack, brake system, starting system, and other components
    - Installing Improved Vehicle Emergency Egress (IVEE) windshield
Army QDR Office
“Setting Conditions for the Future”
AUSA Conference 2009

Briefing For: AUSA Conference 2009
Presented By: MG Robert Lennox
Overall Classification: UNCLASSIFIED
**Implications of Future Trends**

- **National Trends Affecting Defense Spending:**
  - Costs of Health Care?
  - Impact of growth of U.S. National Debt?

- **Department of Defense:**
  - Budget Trend is **Flat**
  - Overseas Contingency Funds Increasingly **Inflexible**
  - OCO Trends are **Down**
  - Global Requirements from Combatant Commanders are **Up**
  - Defense Health Care Costs Growing Greater than Rate of Inflation

- **Army:**
  - Military Pay Costs Growing as Army Grows
  - Costs of Sustaining Non-Standard Equipment from Combat Potentially **Large**

*Are we approaching a “Decade of Austerity?”*
Future Challenges of the Army

• **Growing Concerns:**
  - Need to Buy and Field Ground Combat Vehicle
  - Tactical Wheeled Vehicle Strategy must be Affordable
    - Cost of JLTV?
    - Role of MRAP ATV?
    - Concerns about HMMWV Long-term
  - Radio Strategy must be Affordable
    - Cost of JTRS? Network Software?
  - What has to be Modernized, When, and How Much?
    - New Carbine? NVGs?
  - Implications for the Industrial Base

*How do we get the most from our investment dollars?*
1. TRADOC identifies a resource-informed Capability Package for FY 14
2. G3 Prioritizes
   • Which Programs
   • Thick Fielding vs. Thin Fielding
3. Weapons Systems Review
   • Feasibility?
   • Technology Readiness Level?
   • Industrial Base Implications?
4. Senior Leader approval
5. Equipping PEG process
6. Review/determine tradeoffs
Challenges to Synchronize Capability Packages

Capability Packages are the right approach, but there are synchronization challenges:

• Must align 2-Year Capability Package with ARFORGEN as we Increase Dwell.
  ➢ For Example: When in the process do you field? During Reset or right before units deploy?

• Must Prioritize Capability Packages Early
  ➢ i.e., Capability Package “14” for POM 12-17

• Must synchronize Requirements → Prioritization → Affordability and Acquisition Flexibility

• How do we balance industrial base concerns with Capability Package requirements?
• Declining Resources mean we may have to deal with a decade of austerity in procurement ... Or find “smarter” ways to do our business

• Army must prioritize ... Capability Packages help us do just that

• Initial signs are positive, but we have more work to do to make the Capability Package approach a reality
Implementing a modernization strategy that is:

- Resourced
- Informed
- Affordable

Requires continuous adjustment for Army to become:

- Versatile
- Adaptable
- Agile

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Army Goal

To build a **versatile mix** of *tailorable and networked organizations*, operating on a **rotational cycle**, to provide a **sustained flow** of trained and ready forces for **full spectrum operations** and to hedge against **unexpected contingencies** at a **sustainable tempo** for our all-volunteer force.

- General George W. Casey, Chief of Staff, Army
Questions?