

**RECORD VERSION**

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**BEFORE THE**

**SUBCOMMITTEE ON AIR AND LAND FORCES  
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UNITED STATES HOUSE OF REPRESENTATIVES**

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## **Introduction**

Chairman Smith, Congressman Bartlett, and distinguished Members of the Subcommittee on Air and Land Forces, we thank you for this opportunity to discuss Army Acquisition and Modernization Programs in the Fiscal Year 2011 (FY11) budget request. We are pleased to represent Army leadership, members of the Army acquisition workforce, and the more than one million courageous men and women in uniform who have deployed to combat over the last eight years and who have relied on us to provide them with world-class weapon systems and equipment for mission success. We thank Members of this Committee for your steadfast support and shared commitment to this goal.

We will open today's statement by providing an overview of the Army modernization strategy, using current program initiatives to illustrate our plan. We will then elaborate on specific systems on which you have asked us to focus, and our testimony will conclude with a discussion of the requirements process.

## **Why the Army Needs to Modernize**

The 2010 Army Modernization Strategy is consistent with DoD's High Priority Performance Goals in the President's FY11 Budget's Analytic Perspectives volume, and follows the guidance of the Secretary of the Army and Chief of Staff, who have provided us with imperatives and goals to address the two major challenges facing the Army: **Restoring Balance** to our Force and **Setting Conditions for the Future**.

Two of the imperatives for restoring balance confer upon us the obligation to modernize our equipment base to ensure victory on today's and tomorrow's battlefields.

- **Preparing our Soldiers for success in the current conflict** directs us to identify rapidly and fill those capability gaps identified as critical to the warfighters currently engaged in operations. In this sense, modernization is mandated in support of winning the current fight and directing new capabilities be brought to

the current battlefield to close specific capability gaps. Examples of modernization in this sense include:

- Increasing the quantity and capabilities of our aviation fleet in response to the increasing reliance on those assets in Iraq and Afghanistan. In FY11, we plan to begin the investment that will lead to the stand up of the 13th Combat Aviation Brigade (CAB). And;
  - Accelerating Intelligence, Surveillance and Reconnaissance (ISR) programs due to the significant contributions they are making to counterinsurgency fights. We intend to accelerate the Extended-Range Multi-Purpose Unmanned Aerial Vehicle (UAV) to capitalize on the power of combining full motion video and signals intelligence, as well as manned-unmanned teaming.
- ***Transforming to meet the demands of the 21st Century*** requires us to resist focusing completely on the type of warfare we face today – counterinsurgency – and hedge against other potential types of missions awaiting our Soldiers in the future. In this sense, modernization is critical in preparing our Army for ***any mission*** we might be called upon to do, investing in and developing the required capabilities, and fielding these capabilities to our Soldiers through a comprehensive, feasible, and affordable plan. Some examples of modernization in this regard include:
    - The development of the Army Integrated Air and Missile Defense system. This program will enhance the capability of our ground-based Air and Missile Defense units. Enabling us to conduct beyond line-of-sight engagements, allowing us to protect a greater number of defended assets, changing our employment techniques/doctrine by enabling point versus area defense, while improving capability against a wide range of threats. And this will be developed as an integral part of the Joint air and missile defense architecture. And;

- The upgrade of the Army's self-propelled artillery fleet, the Paladin, through the Paladin Integrated Management program. This program will increase the capability of the system by incorporating an automated loading system and will decrease the sustainment burden by replacing the chassis with a Bradley model, which is in common with many of the other combat vehicles in the Heavy Brigade Combat Team (HBCT) formation.

In parallel with these ***Restoring Balance*** imperatives, ***Setting Conditions for the Future*** provides reinforcing guidance in answering the two fundamental questions of why and how the Army needs to modernize.

***Setting Conditions for the Future*** requires all elements of the Army to be synchronized – organizing, manning, training, and equipping. However, there are some specific elements of that goal that influences Army Modernization. Specifically, we want an Army that is, "...a versatile mix...of networked organizations...equipped and ready [for] full spectrum operations to hedge against unexpected contingencies."

To achieve this goal, our Modernization strategy **must** provide a balanced set of capabilities, ensuring that the most important capability gaps are closed as fast as possible, so an adversary cannot circumvent our relative strengths to exploit a relative weakness.

### **How the Army will Modernize**

The Army will accomplish our modernization goals by focusing on three major lines of effort:

The **first** major line of effort is developing and fielding new capabilities to meet identified capability gaps through traditional and rapid acquisition processes. To maintain our advantage over current, emerging, and future threats, the Army must provide our Soldiers with the equipment they need. The Army must accurately identify capability gaps and consequently develop viable solutions for the Soldier and incrementally field enduring capabilities across the force.

The primary element of this line of effort is the implementation of the Brigade Combat Team (BCT) Modernization Plan, which was approved by the Secretary of Defense in November of 2009. This plan enables incremental improvements to the network, integrates Mine Resistant Ambush Protected Vehicles (MRAPs) into formations, incrementally fields capability packages to the Infantry Brigade Combat Team, and develops a new manned Ground Combat Vehicle (GCV). We will discuss this plan in greater detail later in this statement.

Other elements of this first line of effort include leveraging breakthroughs from the Army's Science and Technology Program and shortening the time between identification of a requirement and delivery of the solution, by optimizing and supporting the Capabilities Development Rapid Transition (CDRT) process.

The **second** major line of effort in the Army's Modernization Strategy is the continuous modernization of equipment to meet current and future capability needs through upgrade, replacement, recapitalization, refurbishment, and technology insertions. This effort focuses on how we intend to keep Army equipment relevant and capable for the foreseeable future.

The most important element of this line of effort is the development and continuous refinement of a comprehensive investment strategy that integrates affordable portfolio strategies for selected fleets of equipment. These portfolios include Fighting Vehicles; Aircraft; Tactical Wheeled Vehicles (TWV); Battle Command (BC) and Networks; and ISR. Integrated Portfolio Strategies will provide a long-term plan for the management of fleets and resources to achieve Army goals and objectives over time.

Important elements of this second line of effort also include developing processes to make fleet sustainment decisions routinely based on cost benefit analysis and capitalizing on technology base initiatives.

The **third** major line of effort in our Modernization Strategy is meeting the needs of our force through Army priorities and Army Force Generation, or ARFORGEN, the

Army's rotational readiness model. This effort allows us to determine the objective levels of modernization within our fleets of equipment, revealing the optimal amount of modernization needed, when it will be needed and by whom.

Supporting elements to this line of effort also include updating the 2009 Army Equipping Strategy, incorporating lessons learned from combat, including, inputs from the field, and taking into account the change to the strategic and fiscal landscapes. Finally, establishing Theater Provided Equipment in Afghanistan will allow us to provide the forces deployed there with the best available equipment, while at the same time reducing the cost and risk involved in the repetitive transportation of unit equipment to and from Afghanistan.

### **The Cornerstone of Army Modernization – The Brigade Combat Team Modernization Strategy**

In April 2009, Secretary of Defense Robert M. Gates provided guidance and directed the Army to “accelerate the initial increment of the program to spin out technology enhancements to all combat brigades” and noted the lack of a clear role for MRAP in the current vehicle programs. The Army was further directed to “cancel the vehicle component of the current Future Combat System (FCS) program, reevaluate the requirements, technology, and approach – and then re-launch the Army's vehicle modernization program....” The Army saw this as an opportunity and has shaped the Army's new approach to BCT Modernization.

Following the Secretary of Defense's April 2009 decisions, the Army directed the U.S. Army Training and Doctrine Command (TRADOC) to develop recommendations to modernize our BCTs incrementally and to determine the operational requirements for a new GCV. In response, TRADOC established Task Force 120 (TF 120) which evaluated the Army's short- and long-term modernization requirements to ensure proposed solutions mitigated the Army's highest risk capability gaps. TF 120 delivered its recommendations to senior Army leaders in early September 2009, which focused on capability packages, GCV operational requirements, and BCT network integrated

architecture. These recommendations form the basis for the incremental modernization of all the Army's BCTs.

Subsequently, in November 2009, the Secretary of Defense approved the Army's BCT Modernization Plan which:

- Enables incremental improvements to the Army BC Network;
- Incorporates MRAP vehicles into the force;
- Accelerates the fielding of Capability Packages to all BCTs by 2025;
- Develops a new manned GCV within seven years.

#### Battle Command Network Improvements

The Army BC Network will improve our situational awareness and collaborative planning capabilities by sharing essential information from an integrated platform or a disconnected Soldier to their Command Post. Network modernization utilizes two primary transport programs which will incrementally move the Army to a single and expanding Army BC Network: Warfighter Information Network-Tactical (WIN-T) and Joint Tactical Radio System (JTRS). WIN-T is the backbone for the Army's transport modernization strategy and will be fielded in three increments. Increment one provides reach-back capabilities to Battalion Command Posts and fielding is almost completed. Increment two provides an initial on-the-move transport capability including real-time high definition imagery to BCT and Battalion Commanders and Beyond Line-of-Sight services to the BCT Company level and is scheduled for initial fielding in FY12. Increment three expands on-the-move capabilities and adds an aerial tier vastly improving network reach, redundancy, and management.

### Incorporating Mine Resistant Ambush Protected Vehicles

The success of the MRAP family of vehicles in Iraq and Afghanistan demonstrates the critical need for integration of these types of capabilities in all of the Army formations and as a part of the overall manned ground vehicle strategy for the future. The Army will establish 20 sets of MRAPs tailored to BCTs and available for their employment while in the available phase of the ARFORGEN cycle, and ensure MRAPs are available for home station training and in the institutional training base. In select enabler units (sustainment brigades, medical, route clearance, and explosive ordnance units) MRAPs will take the place of some organic vehicles. The Army will also maintain MRAPs, including the newest variant the MRAP – All Terrain Vehicle (M-ATV), in operational float and war reserve stocks.

### Accelerating the Fielding of Capability Packages to All BCTs

Capability Packages are specifically designed to fill gaps and mitigate risk, align with the Program Objective Memorandum, and deliver new capabilities in two-year increments in support of ARFORGEN. The Capability Package concept recommends BCT modernization priorities, addresses current and expected BCT high-risk capability gaps, and is fielded and funded over specific two-year timeframes as complete packages or sub-packages based on Soldier needs, technological advances, and available resources. The Army's BCT Modernization plan accelerates the fielding of Capability Packages to 29 BCTs through FY16 and to all BCTs by FY25.

The capabilities scheduled for delivery to the first BCT in FY11-12 are in the final test and evaluation phases, and while they have been more than satisfactory, they have identified several shortfalls and some reliability issues. We are cognizant of the risks going forward, but also aware of the importance of fielding integrated networked systems to the current warfighter. The program managers along with industry partners are working to correct these issues and integrate fixes for the second round of testing in 2010 and the final round of testing, called the Initial Operational Test and Evaluation, in

2011. The Army, along with OSD, will closely monitor progress toward correcting these problems and continue to assess the program at reviews later this year in April and in December to ensure these systems meet warfighter needs.

These capabilities will provide commanders with improved precision fires capabilities found in the Non Line-of-Sight Launch System (NLOS-LS), increased ISR capability in the Class I UAV, Unmanned Ground Sensors, and Small Unmanned Ground Vehicles, and integrated network capabilities that link the Soldier to headquarters in Network Integration Kits.

Future Capability Packages will address identified capability gaps across the force, leveraging mature technologies and resources to the Soldier. TRADOC's Capability Package development process, beginning with the annual capability needs analysis, ensures the timely identification, analysis, selection, and prioritization of viable solutions for inclusion in incremental capability packages. Future Capability Packages may include upgrades to capabilities scheduled for fielding in FY13 and FY14, such as a common controller for all unmanned vehicles, both air and ground, as well as a new variant of an unmanned ground vehicle, which will provide additional force protection capabilities. A continuous review of capability needs and an incremental delivery approach of solutions will ensure our units and Soldiers are equipped with the most advanced technologies our Nation's resources can provide to meet current operational requirements.

#### Developing a New Manned GCV

To inform the GCV operational requirements development effort, the Army sponsored a GCV Blue Ribbon Panel which received input from Joint-Service partners, retired general officers, think tank analysts, representatives from the Office of the Secretary of Defense, Army Soldiers, and leaders with a wide range of operational experience. Additional input from commanders and Soldiers with recent combat

experience in Iraq and Afghanistan was critical in identifying characteristics and features needed in the new GCV.

The new platform will provide a versatile range of capabilities, including the under-belly protection offered by MRAP, the off-road mobility and side protection of the Bradley Fighting Vehicle, and the urban and operational mobility of the Stryker. It will include precision lethality to enable decisive results while maintaining overmatch against like systems, and integrate the network to maintain situational awareness in urban and other operations. While the new vehicle will provide sufficient space and electrical power to accept the network, it will also have growth potential to ensure the ability to integrate upgrades and new technologies. The GCV's development approach enables production of the first vehicle by FY17, while establishing a basis from which to adapt. Capabilities incorporated in subsequent increments will be based on changes in the operational environment and enabled by maturation of emerging technologies.

### **Program Updates**

As requested by the committee, we are providing specific updates on several programs. Each of these programs contribute to the intent of Army Modernization – to develop and field an affordable mix of the best equipment available to allow Soldiers and units to succeed in both today's and tomorrow's full spectrum military operations. Materiel modernization provides new and improved capabilities to Soldiers that enable them to accomplish their missions and maintain overmatch against the enemy.

With regard to existing vehicle upgrades, the Army's combat platform modernization program is focused on standardizing 31 HBCT sets with two variants of the **Abrams** tank and **Bradley Infantry Fighting Vehicle**, two of the Army's highest priority combat vehicle recapitalization programs. This modernization will provide 26 operational HBCT equivalents and five strategic HBCT equivalents. At present, the Army has nearly completed fielding modularized HBCTs, which gives every brigade a

common structure. The short-term modernization goal is to populate these brigades with only two variants of the Abrams and the Bradley – the Abrams M1A2SEP v2 is being paired with its partner the Bradley M2A3 and the Abrams M1A1AIM SA is being teamed with the Bradley M2A2ODS SA. The modular HBCT force structure will be equipped with the two variant Abrams and Bradley fleet by the end of 2013. This modernization plan aligns compatible combat platforms with common modular formations.

**Stryker** has planned procurement of 3,953 vehicles with 3,149 having been accepted to date. These vehicles support eight Stryker Brigade Combat Teams, with the eighth SBCT begin fielded in FY11 at Ft. Bliss, Texas; a Stryker Theater Provided Equipment set supporting the Afghanistan theater; a strategic pool of ready-to-fight systems; Institutional Training Base; Test Articles; a Depot Repair Cycle Float Pool managed by the U.S. Army Materiel Command; and other operational requirements. The Stryker program received a Full Rate Production decision on eight of 10 configuration variants, including the Infantry Carrier Vehicle, Reconnaissance Vehicle, Commander Vehicle, Mortar Carrier Vehicle, Fire Support Vehicle, Anti-tank Guided Missile Vehicle, Engineer Squad Vehicle, and Medical Evacuation Vehicle. The remaining variants – the Nuclear, Biological and Chemical Reconnaissance Vehicle and the Mobile Gun System – are in Limited Rate Production.

The **Paladin Integrated Management** (PIM) program is the Army's fire support modernization effort for the M109A6 Howitzer (Paladin) and the Field Artillery Ammunition Supply Vehicle (FAASV) platforms that support our HBCTs. The Paladin PIM addresses obsolescence and sustainment through the integration of Bradley components and Non-Line of Sight-Cannon (NLOS-C) technologies resulting in an upgraded firing platform. Commonality of key components, including the engine, transmission, final drives, and suspension will reduce Operations and Support costs as well as the logistics footprint of the HBCT.

The **Increment 1 Early-Infantry Brigade Combat Team (E-IBCT)** completed the FY09 Limited User Test (LUT) in September, 2009. The Increment 1 E-IBCT completed a successful Milestone C Low Rate Initial Production (LRIP) decision at the December 2009 Defense Acquisition Board (DAB). The Defense Acquisition Executive approved the initial LRIP procurement of one BCT set of Increment 1 systems. Follow-on DAB In-Progress Reviews are planned for March and December 2010 to assess continued development progress, supporting the procurement of 2nd and 3rd BCT sets. Additional technical and operational testing is planned for 2010 to support the December 2010 DAB decision. Technical Testing begins in April 2010 and culminates in a September 2010 LUT. The Army awarded the LRIP contract for the initial Brigade on February 24, 2010. Increment 1 systems included in the LRIP contract are: The Network Integration Kit, Class I Unmanned Aerial System, Small Unmanned Ground Vehicle, Urban-Unattended Ground Sensors, and Tactical-Unattended Ground Sensors. The NLOS-LS completed the flight LUT in February 2010. The results of this LUT are expected in April 2010. The NLOS-LS will request a Path Forward decision at the DAB In-Progress Review in March 2010.

The GCV, the **Ground Combat Vehicle**, is the Army's next-generation Infantry Fighting Vehicle, combining lessons learned from the survivability of the MRAP vehicle, the tactical mobility of the Bradley Fighting Vehicle, and the operational mobility of the Stryker. The Army released a Request for Proposals (RFP) on February 25, 2010, for the Technology Development phase of the GCV effort. The first combat vehicle designed from the ground up to operate in an Improvised Explosive Device (IED) environment, the GCV will have enhanced mobility that will allow it to operate effectively in both urban and off-road environments. It will be designed to host the Army's network. And, it will have the capacity available to accept future upgrades incrementally as technologies mature and threats change. Because of the pace of change and the operational environment, the Army is pursuing a GCV program timeline that provides the first production vehicles in seven years.

Modernization of the Army's TWVs, or **Tactical Wheeled Vehicles**, continues to be a critical step in providing the Soldier with the best possible protection, payload, and performance in each vehicle of the fleet. The overarching goal of our tactical wheeled vehicle strategy is to balance (planning, analyzing, coordinating, and executing) the quantity, quality, and sustainment of Army equipment throughout its life cycle to meet combat, training, generating force, and homeland defense requirements with the appropriate capabilities. Finding the right balance and mix of TWVs requires the Army to assess and adjust investments continually. We will continue to use a combination of new procurement, recapitalization, and reset to achieve our strategic objective by addressing the readiness issues associated with shortages, proper mix, and age/usage in a cost effective manner. The Army will continue to take maximum advantage of existing platforms, making necessary improvements in both capability and reliability. All new vehicles will have scalable armor in form of A-B Kits executed in accordance with our Long Term Protection Strategy.

At the heart of our modernization plans is the **Joint Light Tactical Vehicle** (JLTV). A Joint program with the Marine Corps, JLTV is a family of vehicles with companion trailers capable of performing multiple mission roles that will replace the **High Mobility Multipurpose Wheeled Vehicle** starting in 2015. We will continue to procure and field the **Family of Medium Tactical Vehicles** to replace vehicles in the medium fleet that are over 30 years old. Recapitalization of our **Family of Heavy Tactical Vehicles** fleet will focus on variants of the aging Heavy Expanded Mobility Tactical Truck as well as the incorporation of MRAPs vehicles into our future force, as they are released from theater. As part of this effort, this investment strategy will also recognize the fiscal and operational realities inherent to the current operational environment. To do this the Army will find ways to manage its TWV fleet readiness in ways that are both creative as well as efficient. Additionally, the Army will move away from the pure-fleet unit-set-fielding prerogatives of the 1990s and consider more appropriate and efficient ARFORGEN-based operational models.

The Army is committed to improving our **small arms** capabilities continuously. The Army is well into the fielding of a new semi-automatic sniper rifle, the M110; a new 40mm grenade launcher to replace the Vietnam era M203; and we are developing a lighter .50 cal machine gun and will replace our old M2 .50 cal barrels with quick change barrels that do away with head space and timing issues that have been a training and safety issue for years. The lightweight medium machinegun, the M240L, will begin fielding later this year to our light forces.

The Army has fielded over 400,000 **M4 carbines**, replacing M16s in all the Combat Brigades and Division headquarters. The smaller, more maneuverable weapon has been the overwhelming individual weapon of choice for our Soldiers in combat. Regardless of the successes we have seen in our small arms, we continue to pursue improvements in our individual weapons' capability. We are currently taking a dual approach to improve the current weapon, the M4, as we move forward with a new carbine requirement. The Project Manager (PM) released a market survey in January 2010, seeking the best industry has to offer for improvements to the current M4. The PM expects to release an RFP soon to compete the upgrade program. Additionally, the Army will conduct a full and open competition to address a new requirement for an individual carbine. Once the Joint Requirements Oversight Council approves the new requirement, the PM will initiate the competition with the release of an RFP for comments from industry. This is the first step in conducting the competition. The Army is working with the other Services in these programs to ensure their requirements are included in our process and they are always invited to participate in the programs' development and production.

The Army is working to deliver the best ammunition possible to our Soldiers while, at the same time, fostering environmental stewardship. The **M855A1** cartridge, designed for use with the M16/M4 family of weapons and the M249 Squad Automatic Weapon, meets both of these goals while providing consistent, shot to shot performance against all targets. This "green" program resolves the environmental

issues associated with leaded ammunition and directly addresses the field reports associated with occasional poor close quarters battle performance. Testing to date has verified that the M855A1 performs significantly better than the M855 or any other 5.56mm cartridge available for military use. The LRIP began in January 2010 for production qualification test and live fire test and evaluation through April 2010. By the end of the production qualification test, there will be more than one million live-fire shots, making it the most tested round ever to be used by Soldiers. The M855A1 will be available for fielding in June 2010.

The **Joint Tactical Radio System** (JTRS) is a Department of Defense (DoD) initiative to develop a family of software-programmable tactical radios that provide mobile, interoperable, and networked voice, data, and video communications at the tactical edge of the battlefield. JTRS development is 85 percent complete. For the Army, JTRS will provide a tactical radio communications network for Infantry, Heavy, and Stryker Brigade Combat Teams by providing the tactical networking transport capability through scalable and modular networked communications. It will also provide the current force a mobile, ad hoc networking capability using new advanced waveforms – Soldier Radio Waveform and Wideband Networking Waveform. The majority of the radios in the **Ground Mobile Radio** (GMR) Program and the **Handheld, Man-pack and Small Form Fit** (HMS) Program will be procured for the Army.

The GMR will provide the Army a multi-channel (up to four channels) operation, allowing full functionality of each legacy radio it replaces. In addition, GMR will include an integrated global positioning system (GPS) capability based on the Selective Availability Anti-Spoofing Module-based GPS receiver with a Precise Time and Time Interval output. Today, GMR is manufacturing production representative systems which will participate in E-IBCT LUT. The GMR will enter LRIP in the 2nd quarter of FY11.

The HMS will provide a scalable and modular Software Communications Architecture compliant networked radio frequency communication capability to meet

Army Handheld, Man-pack (Mounted & Dismounted) and Embedded Radio requirements. The program will deliver a Handheld (2 Channel) radio, a Man-pack (2 Channel) radio, and various Small Form Fit radios for various ground sensors/unattended vehicles/unmanned air vehicles. The HMS will enter LRIP this year and begin delivering to our Soldiers in FY11.

With regard to Army Aviation, the **Light Utility Helicopter (LUH)** program is executing the Army transformation strategy successfully and meeting all cost, schedule, and performance targets as specified in the acquisition strategy. The aircraft has been fielded to the National Training Center at Fort Irwin, California; the Joint Readiness Training Center at Fort Polk, Louisiana; and the U.S. Army Transportation Corps at Fort Eustis, Virginia. Additionally, the LUH has been fielded to Army National Guard (ARNG) units in thirteen states.

The Army is procuring 345 aircraft with a firm fixed price contract. To date, the Army has purchased 182 UH-72 Lakota LUH aircraft – 100 aircraft have been delivered and more than 92 fielded. The UH-72A continues to demonstrate exceptional readiness rates that exceed 90 percent. The Lakota is currently conducting Medical Evacuation, VIP, and general support missions. It has also been fielded to ARNG units to conduct disaster relief, counter drug operations, and institutional training missions.

Production of the LUH is transitioning successfully from Germany to Columbus, Mississippi. Forty aircraft were produced in Germany and the remaining 305 are being produced in the United States as part of a three phase production duplication plan. The first phase of the transition, with the majority of production done in Germany, was completed in May 2009. The second phase of the transition, which with split production between Columbus and Germany, produced about a third of the LUH aircraft delivered. The third phase, full production line operations in Columbus, has been operational since October 2009 with over 30 aircraft on the line. Deliveries will be exclusively from

Columbus beginning in October 2010. Increasing domestic content is also part of the production duplication plan and is expected to exceed the 65 percent goal.

The ARNG is funded to procure, apply, and sustain 100 Mission Equipment Packages consisting of searchlight, Forward Looking Infrared, situational awareness/command and control moving map displays, hoists, and Medical Evacuation kits for the Security and Support battalions in their support of the homeland security/homeland defense/counter-drug mission. A Critical Design Review process has been completed with prototype integration underway since January. This prototype aircraft will be available for evaluation in June 2010. The ARNG will receive their first retrofit aircraft in February 2011 and their first production aircraft in January 2012.

The **CH-47 Chinook** is a proven heavy-lift helicopter, supporting our Soldiers every day in Iraq and Afghanistan and conducting missions that no other helicopter on the battlefield can accomplish. It is the Army's only helicopter capable of intra-theater cargo movement of payloads up to 16,000 pounds. The Army is committed fully to the procurement of 533 Army CH-47F and U.S. Special Operations Command MH-47G aircraft. To date, the Army has taken delivery of 84 CH-47F and 54 MH-47G aircraft, has an additional 209 CH-47F and seven MH-47G aircraft on contract, has trained and fielded five operational CH-47F Chinook units – four of which have deployed to the theater of operations, with one unit currently deployed.

The U.S. Army signed a five-year firm-fixed price contract for 181 CH-47F Chinook aircraft that will achieve a minimum savings of \$450 million or 11 percent. The multi-year contract provided for 34 option aircraft, 10 of which were executed with the basic contract, and 10 more have been executed since. The CH-47F Chinook program is on-cost, on-schedule, and has met or exceeded all performance requirements.

The **UH-60 Black Hawk** is the work horse of Army Aviation. The current UH-60 fleet is comprised of 1,826 aircraft, including 918 UH-60As (produced between 1978

and 1989), 660 UH-60Ls (produced since 1989), and 137 new UH-60Ms. The Black Hawk helicopter is in its 33rd year of production. To date, the Army has employed seven multi-year, multi-service production contracts. The current contract extends from FY07 to FY11 and includes Navy H-60 aircraft, as well as Foreign Military Sales aircraft. The Army is negotiating a follow on multiservice contract this year.

The ongoing UH-60A to UH-60L recapitalization program extends the service life of the Black Hawk program, while providing the improved capability and safety margin of the UH-60L. The Army plans to induct 48 aircraft in FY10 and 240 aircraft between FY11 and FY16. The UH-60M program incorporates a digitized cockpit for improved combat situational awareness, lift, range, and handling characteristics for enhanced maneuverability and safety. These improvements also extend the service life of the aircraft. The Army plans to improve the safety of the UH-60M platform with a Preplanned Product Improvement technology. Additionally, the Army intends to pursue an Improved Turbine Engine Program shared with the AH-64 Apache fleet.

To support the potential procurement of a manned-armed aerial scout helicopter, the Army conducted a comprehensive review of the armed reconnaissance capability requirements and initiated a formal '**Analysis of Alternatives**' (**AoA**). The AoA is ongoing and scheduled to be completed in April 2011. The AoA is taking a holistic look at the armed aerial scout requirements and including in its analysis manned and unmanned systems, as well as the probable use of a manned-unmanned team of systems to address the capabilities needed. Due to the time required to complete these assessments, the Army is currently pursuing an Acquisition Category II level, Cockpit and Sensor Upgrade Program, as well as several fielded fleet upgrades to sustain the **Kiowa Warrior** fleet safely until 2025.

The **AH-64D Apache** continues to meet the tremendous challenges of today's combat environment and remains an important capability for our deployed forces. The Apache fleet today consists of 717 aircraft – 126 AH-64A models and 591 AH-64D

Longbow Apaches. At any given time in the recent years, we have had five to six battalions deployed, five units returning, and five units preparing to go to war. We have also delivered 41 of 66 War Replacement Aircraft, which are the first new-build Apaches since the A-models were built during the 1980s.

The ARNG Apache Modernization effort is on track. The last four AH-64A ARNG battalions will be equipped with AH-64D Longbow Apaches by 2013 and all AH-64As will be out of the operational fleet. The first three of these battalions will be modernized with remanufactured Longbows and the fourth battalion will receive Longbows via a cascade plan.

Continued modernization, including the ongoing fielding of the Modernized Target Acquisition Designation Sight/Pilot Night Vision Sensor, is enabling our aircrews to engage and defeat the enemy at longer ranges with a resultant increase in overall lethality and significantly improved survivability and safety. The addition of new capabilities requested by our field commanders, such as Manned Unmanned Teaming Level 2 (MUMT-2) which brings interoperability among UAVs, ground stations, and the Apache, demonstrates our dedication to providing the tools to the commander in the field needs for mission success.

Block III is the sustainment effort for Apache that delivers the required operational capabilities to ensure the aircraft remains a viable combat multiplier beyond 2030. The cornerstone to the Block III program is the insertion of mature technologies into a proven weapon system platform. Longbow evolution maintains Army interoperability with Joint, MUM, and future Army requirements. The high operational tempo in Iraq and Afghanistan, coupled with repeated deployments of Longbow units, has depleted a high percentage of the Apache airframes' useful life. The majority of aircraft will enter Block III remanufacture with less than 50 percent of the airframe's design life (10,000 hours) remaining. With Block III, we will reset the Apache life

expectancy by introducing new airframe structures into the remanufacturing line, restoring 100 percent of the design life back to the fielded unit at minimal cost.

Apache is the Army's only manned aviation platform able to meet the network centric requirements of the future force, as well as Joint Force requirements. It is also the first aircraft designed for and fully capable of complete control of UAVs, known as Level 4 control. This characteristic fully enables the synergistic manned-unmanned teaming between attack aircraft and UAVs that is showing great promise on the battlefield.

The Apache Block III System Development and Demonstration remains on schedule and within budget. The upcoming Milestone C decision will enable Block III to enter LRIP with first delivers expected in October of 2011 and First Unit Equipped being November 2012.

The Army is endorsing fully the **Joint Future Theater Lift** effort. Here, the Army is partnering with the Air Force to examine the alternative designs to provide the Joint Commander with the ability to emplace medium weight combat vehicles at or near the objective without the reliance on fixed airfields or improve surfaces. In the next few months, the Army will participate in the AoA that will look at the concepts of the Joint Future Theater Lift, develop the alternatives, and move us further along to determine the feasibility of a materiel solution.

The **Unmanned Aircraft Systems** (UAS) are a rapidly growing capability that Army Aviation has helped to develop. As an example of how quickly this capability has grown within the Army, when Operation Iraqi Freedom (OIF) began in March 2003, there were only 3 systems (13 aircraft) deployed in support of that operation. Today, we have 337 systems (1,013 aircraft) in OIF and Operation Enduring Freedom (OEF). This capability continues its fast growth. For example, it took the Army 13 years to fly the first 100,000 hours of UAS. It took us less than a year to fly the next 100,000 hours,

and now we fly more than 220,000 hours each year. By May 2010, Army UAS will have flown one million flight hours, almost 90 percent of which were flown in support of combat operations.

The **Extended Range/Multipurpose** (ER/MP) UAS will be deployed and integrated with the CAB, with immediate responsive **Reconnaissance, Surveillance, and Target Acquisition** (RSTA) to the Division Commander. The ER/MP can carry multiple simultaneous payloads to include: (1) Electro-optical/Infrared/Laser Designator; (2) Synthetic Aperture Radar; (3) Communications Relay; and (4) Weapons. The ER/MP UAS will use both Tactical Common Data Link and Satellite Communications data links. The program deployed a Quick Reaction Capability to OIF in July 2009 and will deploy another to OEF in summer 2010 in support of the surge. The Program of Record will field its First Unit Equipped in FY11.

The hand-launched and rucksack portable **Raven** Small Unmanned Aircraft System provides the small unit with enhanced situational awareness and increased force protection through expanded reconnaissance and surveillance coverage of marginal maneuver areas. Commanders at the company level have greater ability to shape over-the-hill operations with their own dedicated UAS. In addition to the Army, the Raven is fielded to the U.S. Special Operations Command, the Marine Corps, the Air Force, and ARNG, providing support for Overseas Contingency Operations while also providing increased capabilities for domestic mission responsibilities as required. We have fielded 1,318 systems (3,954 aircraft), and there are 291 Raven Systems (873 aircraft) currently supporting Soldiers in Iraq and Afghanistan, with over 201,900 flight hours in OIF and 39,800 flight hours in OEF. The program is meeting all cost, schedule, and performance targets.

The **Shadow** Tactical Unmanned Aircraft System provides DoD and coalition partners with a high quality, reliable, and interoperable UAS. Currently, units are flying at an OPTEMPO of up to eight times what was originally envisioned for the system.

While the OPTEMPO remains high, the accident rate has been reduced each year. The Marine Corps is partnered with the Army for purchase of Shadow systems, support equipment, and performance based logistics services. Through this approach, economies of scale provide efficiencies for cost, commonality, and Joint operations. Currently, 75 systems (300 aircraft) have been delivered and fielded to the Army and nine systems (36 aircraft) to the Marine Corps. The readiness rate of the Shadow system averages above 98 percent. As of February 2010, the total hours flown by Shadow in support of theater operations were 436,885 hours, out of a total program history of 479,806 hours flown. More than 91 percent of all Shadow hours flown since 2,000 have been in support of theater operations.

The Program Executive Office (PEO) Integration **Class I UAS** will provide significantly enhanced networked capabilities to the force. Class I systems are ducted fan air vehicles with a single integrated gimbal consisting of an electro optical camera, infrared camera, laser range finder, and laser designator. The Class I mission is to provide RSTA to the platoon and company. The system's hover and stare capability allows it to stay in one place for an extended period of time while its maneuverability allows it to operate in complex environments that would be impractical for current force fixed wing UAS.

The Class I leverages technologies developed by the Defense Advanced Research Projects Agency as part of the gas Micro Air Vehicle (gMAV) program. The gMAV has interchangeable electro optical and infrared camera. Currently, 15 systems (29 aircraft) are in use in OIF by the 2nd Infantry Division, with over 199 flight hours in 407 sorties. The Class I block 0, a gMAV variant, is in development and testing by PEO Integration as part of the Spin Out effort.

The **Persistent Threat Detection System** is a Quick Reaction Capability program with a tethered aerostat equipped with a high resolution electro-optic/infra-red camera system. It is integrated with existing radar, infra-red, and acoustic systems that

cue the aerostat payload to provide near real-time eyes on target for continuous surveillance and detection in support of missions in theater. Currently, a total of five systems have been deployed in OEF and three in OIF.

**Constant Hawk** is another successful Quick Reaction Capability program supporting counter improvised explosive device (C-IED) efforts in OIF. It provides airborne persistent surveillance capability that allows analysts to backtrack a sequence of events, detect the event, and identify its origin. We currently have four systems deployed in OIF as part of Task Force Observe, Detect, Identify, Neutralize (ODIN). Due to its demonstrated capability and successes in Iraq, we have three Constant Hawk systems programmed for Task Force ODIN-Afghanistan.

The **Enhanced Medium Altitude Reconnaissance and Surveillance System** (MARSS) evolved from the Aerial Common Sensor (ACS) requirement set. The EMARSS is a manned multi-intelligence airborne ISR system that provides a persistent capability to detect, locate, classify/identify, and track surface targets in day/night, near-all-weather conditions with a high degree of timeliness and accuracy.

The EMARSS will consist of an Electro-optic/Infrared (EO/IR) FMV sensor, a Communications Intelligence collection system, an Aerial Precision Guidance system, line-of-sight tactical and beyond line-of-sight communications suites, and a self-protection suite. This combination of attributes provides the ground tactical commander an assured near-real-time operational view of the battlespace enabling tactical ground forces to operate at their highest potential.

### **The Requirements Process**

Finally, the Army has developed and refined a dynamic, flexible process to review, validate, resource, and acquire critical warfighting capabilities rapidly to meet operational needs while minimizing risk through due diligence. This accelerated

process complements the standard, more deliberate Joint Capabilities Integration and Development System that is generally used for requirements determination. It capitalizes on “real time” feedback from commanders in the field and, through its improved responsiveness, has significantly enhanced operations in Iraq and Afghanistan.

The Army prides itself as a learning organization and continues to make a concerted effort to codify the positive refinements in its processes that we have made during the prolonged conflicts in Iraq and Afghanistan. In keeping with this trend, this accelerated process for validation of operational needs has been documented in the latest update of Army Regulation 71-9, Warfighting Capabilities Determination, published on December 28, 2009.

#### Operational Needs Statement and Joint Urgent Needs Statements

The Chief of Staff of the Army’s vision 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” is supported by an accelerated requirements review and decision process used for evaluating and fulfilling operational needs statements (ONS) and joint urgent operational need statements (JUONS). This accelerated process provides a high degree of tailorability and increased versatility to our efforts to provide materiel capabilities for deployed and deploying commanders and units.

Following mission analysis based on battlefield experiences, operational commanders use the ONS and JUONS process to identify materiel shortfalls in their current organizations that, if remedied, could correct a deficiency or improve a capability that enhances mission accomplishment. The ONS is particularly useful to support Army units that are assigned “nonstandard” missions for which they are not normally equipped.

The ONS and JUONS requests can be made for either nonstandard capabilities that can be procured from commercially available items or for quantities of standard Army equipment that exceed the organization's authorization. Additionally, the ONS provides a mechanism for commanders to request new capabilities that do not currently exist within the Army.

Army commanders submit ONS through the chain of command to the Army Staff for review and approval, while JUONS are submitted through the chain of command to the Joint Staff for approval. Since the beginning of the current conflicts, 98 percent of urgent operational needs identified by Army commanders have been submitted using ONS, while 2 percent have been submitted using the JUONS. The majority of ONS received from Army commanders are for increases in standard Army capabilities or equipment while the majority of JUONS are for new capabilities or equipment that do not exist in current Army materiel inventories. In 2009, commanders requested more than 6,000 separate types of equipment through approximately 2,500 ONS. The rapid fielding of MRAPS to Iraq and Afghanistan is an example of capabilities provided rapidly through a JUONS. The increase in basis of issue for night vision goggles and the provision of hand held radios to deployed units are examples of capabilities fielded rapidly through ONS.

### Accelerated Requirements

In addition to streamlining the process for identifying operational needs rapidly, the Army has established procedures to deliver capabilities rapidly to units deployed to Afghanistan and Iraq by modifying the requirements validation, funding, and acquisition processes associated with these urgent needs. As you may suspect, the Army is forced to accept a slightly higher degree of risk regarding system integration when performing these activities in parallel. To mitigate and manage the risk, we have developed and use a senior leader decision making forum known as the Army Requirements and Resourcing Board (AR2B) to inform our actions through this process. The AR2B

synchronizes the assessment, validation, resourcing, and sourcing of urgent capabilities within the Department. The AR2B coordinates weekly with theater to prioritize efforts and to insure capabilities being developed meet evolving theater operational needs. The flexibility granted from Congress concerning reprogramming of funds has been instrumental to the success of this forum.

The Army is tackling unique integration challenges responding to urgent needs identified by commanders in Afghanistan. The relatively primitive infrastructure of Afghanistan and the restricted lines of communication through which materiel must flow into the theater is causing us to pay greater attention in synchronizing the delivery of capabilities, logistics, training, and manning considerations of accelerated acquisition programs than we had in the past when dealing with requests originating out of Iraq. For example, in Iraq where we had the advantage of an established infrastructure, the Army was able to rapidly field and integrate into the force more than thirty variants of the MRAPs. A priority of Afghanistan is reducing the number of logistics requirements by having as few variants as possible. For this reason, the staff is being more deliberate in its decision making to ensure that fielded capabilities are supportable.

#### Transition of Rapidly Acquired Capability

To capitalize fully on the accelerated process, the Army developed institutional processes designed to integrate proven wartime capabilities into the Army's standard materiel management system. This work is accomplished through the Army Centers for Lesson Learned and through the CDRT process. The Army uses unit commander feedback and TRADOC assessments to develop recommendations on whether a wartime capability should be transitioned to an enduring Army capability. Examples of capabilities recommended as enduring capabilities through the CDRT process include the Tactical Ground Reporting (TIGR) System and the Green Laser Dazzler. The TIGR system improves situational awareness and facilitates collaboration at the company level by enabling the collection and dissemination of fine-grained intelligence on people,

places, and insurgent activity. The Green Laser Dazzler is a non-lethal weapon used to create temporary vision impairment to stop someone from advancing.

### Reform Initiatives for the Deliberate Process

From a requirements point of view, and consistent with DoD's High Priority Performance Goals in the President's FY11 Budget's Analytic Perspectives volume, the Army is implementing the Weapon Systems Reform Act of 2009 through the management of more comprehensive AoAs, Configuration Steering Boards (CSBs), and Capability Portfolio Reviews (CPRs). The Army is working closely with OSD – Cost Assessment and Program Evaluation to develop AoA guidance, with special emphasis on costs and benefits, and to review AoA products. The Army is conducting CSBs regularly to review requirements and to determine the status of programs. The Army senior leadership is conducting Army-wide, all-component, CPRs to review requirements and priorities holistically and make recommendations to revalidate, modify or drop requirements. The objective is to ensure that funds are programmed, budgeted, and executed against validated requirements that are cost and risk-informed.

The Army has demonstrated great flexibility in adjusting its requirements review and development processes to be more effective in the contemporary operating environment. After several years of refinement, the Army has a process that reviews, validates, resources, and acquires critical warfighting capabilities rapidly to meet commanders operational needs while maintaining the good stewardship expected of our institution. We have been able to find the balance in making institutional processes more responsive while minimizing operational risk through due diligence. Lastly, the Army is also ensuring that the investment in materiel for the current conflicts is leveraged and incorporated into its long-term equipping strategy.

### **In Closing**

In support of Army Modernization, the Army has submitted a Research, Development and Acquisition budget request of \$31.7B for FY11. We believe that this budget allocates resources appropriately between bringing advanced technologies to our Soldiers currently in the fight and developing new technologies to bring the required capabilities to our Soldiers in the future. As such, we meet our leadership's intent of concurrently preparing our Soldiers for success in the current conflict and transforming to meet the demands of the 21st century.

And although the Army does not have any unfunded requirements, as with any budget request, there are areas where additional resources could enhance existing programs. A letter to that effect, detailing eight areas where additional funding would provide value to the Army, was transmitted by the Chief of Staff of the Army to the Chairman of the House Armed Services Committee, Representative McKeon, on February 19, 2010.

Mr. Chairman, Mr. Bartlett, and Members of the Committee, on behalf of our Soldiers, we greatly appreciate the tremendous support we receive from this Congress and the American people. We urge you to provide full, timely, and predictable funding to implement the plans we have shared with you today successfully. The Army is modernizing, seeking to restore balance while setting conditions for the future. Our goal is to balance current and future requirements and risks to make certain that we can defend the Nation – today and tomorrow.