

Torchbearer National Security Report



A New Equipping Strategy: Modernizing the U.S. Army of 2020



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Properly equipping the Army in a balanced way is a delicate process. Few in American history have had a more panoramic view of the subject than George C. Marshall, who served during World War II as Army Chief of Staff and later as Secretary of State and Secretary of Defense. Accepting the Nobel Peace Prize in Oslo, Norway, in 1953, he summarized his observations:

In my country my military associates frequently tell me that we Americans have learned our lesson. I completely disagree with this contention and point to the rapid disintegration between 1945 and 1950 of our once vast power for maintaining the peace. As a direct consequence, in my opinion, there resulted the brutal invasion of South Korea, which for a time threatened the complete defeat of our hastily arranged forces in that field. . . . [T]he maintenance of peace in the present hazardous world situation does depend in very large measure on military power, together with Allied cohesion.¹

The rapid disintegration of American combat power described by General Marshall meant that Task Force Smith (the first American troops deployed in 1950 to slow the North Korean assault) took the field with too little food, insufficient ammunition and weapons incapable of penetrating modern armor. The task force was almost immediately overrun. Today’s Army finds itself at a crossroads not unlike that recognized by General Marshall as conflict in Korea drew to a close nearly 60 years ago, but the modernization and equipping strategy detailed in these pages is informed by the lessons learned from extensive recent combat experience. The Army’s balanced, gradual, affordable approach now requires support so that the nation can be confident in its promise—no more Task Force Smiths.

In this latest installment of AUSA’s signature Torchbearer series, we explore how the Army has engineered an acquisition and modernization transformation. We discuss several steps that it has taken to improve its responsiveness to 21st century battlefield demands even as it prepares to overmatch potential adversaries in the distant future. We also detail several of the specific acquisition programs most needed by the Army of 2020 and explain how they fit the requirements of the future force described in the latest defense strategic guidance. We hope this report is a useful and informative resource and that you will continue to look to AUSA for insightful and credible analysis of contemporary national security issues.

GORDON R. SULLIVAN
General, USA Retired
President, AUSA

¹ George C. Marshall, “Nobel Lecture,” 11 December 1953, http://www.nobelprize.org/nobel_prizes/peace/laureates/1953/marshall-lecture.html.

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Executive Summary

Although geopolitical trends are ushering in greater levels of peace and stability worldwide, destructive technologies are available to a wider and more disparate pool of adversaries. . . . As a result, more people have the ability to harm us or deny us the ability to act than at any point in my life. And that's the security paradox.

General Martin E. Dempsey
Chairman, Joint Chiefs of Staff
12 April 2012²

The Army has global responsibilities requiring large technological advantages to prevail decisively in combat. Just as Airmen and Sailors seek supremacy in the air and on the seas, Soldiers must dominate their enemies on land. Modernizing, especially as endstrength is reduced, is the key to ensuring that the Army's dominance continues.

Technological overmatch clearly proved to be a critical component of the operational and tactical supremacy demonstrated by the Army in Operations Desert Shield/Desert Storm. But then, during the 1990s, the Army endured a "procurement holiday" during which the nation underfunded military investment accounts by approximately \$100 billion. Equipment aged to—and sometimes beyond—its life expectancy; few replacements were available. When major wars in Afghanistan and Iraq emerged unexpectedly in the 2000s, immediate wartime needs dominated the Army's modernization and acquisition priorities, leaving few resources available for the development of 21st century technologies necessary to maintain overmatch in the future. The Army learned that it needed to preserve balance among its three pillars of endstrength/force structure, readiness and modernization.

Therefore, the Army has transformed its modernization and acquisition strategy to ensure that it continues to meet the short-term needs of combatant commanders in the current fight even as it anticipates probable needs for the rest of this decade and restores investment in the development of long-term overmatch. The Army has taken three major steps to redefine its acquisition paradigm and provide new tools to more appropriately keep pace with rapid technological advances:

- It significantly improved communication with its partners in industry and academia by clearly identifying a list of enduring modernization challenges in need of long-term development. By articulating specific goals in seven areas—force protection, maneuverability, human cognition, surprise and tactical intelligence, sustainability and logistics, overburden and tactical overmatch—the Army has restructured the way it drives scientific research, increasing efficiency and driving down costs.
- It implemented the Capability Portfolio Review process, a senior leader evaluation mechanism that constantly reviews the performance of all existing equipment of similar purpose. By fusing and aligning the requirements, acquisition, sustainment and resourcing communities, the Army has been much better able to assess existing and proposed capabilities and prioritize its modernization programs.
- It institutionalized the Army Agile Capabilities Life Cycle process (or Agile Process), a methodology that maximizes industry partners' input early in the development cycle for rapidly evolving technologies. Together with the Network Integration Evaluation process that emerged from this model, the Army is using the Agile Process to field technically mature systems rapidly and incrementally.

The Army's acquisition paradigm has shifted in a way that embraces the guiding principles driven by overall defense strategy, restores balance and will help the Army maintain its decisive edge. These revised decisionmaking

² General Martin Dempsey, "Chairman's Remarks," Harvard University, Boston, MA, 12 April 2012, <http://www.jcs.mil/speech.aspx?ID=1690>.



tools are already informing the budget process. In particular, the Army has validated some of its modernization programs as high priorities that the force of 2020 simply must procure:

- **Warfighter Information Network–Tactical (WIN-T).** WIN-T, the Army’s top modernization priority, is the Soldier’s Internet and communications backbone to which all other networked systems must connect.
- **Ground Combat Vehicle (GCV).** The GCV is the Army’s top combat vehicle priority and will replace the Bradley infantry fighting vehicle in heavy brigade combat teams.
- **Joint Light Tactical Vehicle (JLTV).** The centerpiece of the Army’s tactical wheeled vehicle modernization strategy, the JLTV will replace the High-Mobility Multipurpose Wheeled Vehicle (Humvee).
- **Armored Multi-Purpose Vehicle (AMPV).** The AMPV will fill general-purpose roles and replace the M113 armored personnel carriers (of Vietnam War vintage) that remain in service.
- **Paladin Integrated Management (PIM).** PIM provides necessary upgrades to the existing Paladin self-propelled 155mm artillery vehicles and ammunition supply vehicles currently in service.
- **Kiowa Warrior.** The Army is making upgrades to the light helicopter fleet—in continuous service since the 1960s—to keep these aircraft serviceable and continue meeting high demand.
- **Joint Tactical Radio System (JTRS).** JTRS is the Army’s future deployable mobile communications family of radio systems that permits digital exchange of voice, data and video with multiple channels.
- **Nett Warrior.** Nett Warrior includes a smartphone-like electronic display device that graphically displays Soldiers’ locations on a digital map that can be shared on the Army network.
- **Distributed Common Ground System–Army (DCGS-A).** DCGS-A is the Army’s premier intelligence, surveillance and reconnaissance tool that gives intelligence analysts rapid exploitation capabilities.
- **Joint Battle Command–Platforms (JBC-P).** JBC-P friendly force tracking devices expand upon existing technology to increase joint interoperability and decrease the potential for fratricide.

In addition, demand for Army aviation is at an all-time high, and the Army has three major modernization goals for its aviation fleet. The first is to replace and upgrade its existing manned platforms to keep them viable and relevant (including procurement of the Block III version of the AH-64 Apache attack helicopter and new production CH-47F Chinook cargo helicopters). The second is to sustain its aviation support system by upgrading infrastructure. The third is to keep meeting demand for unmanned capability and capitalize on the versatile hybrid acquisition approach that has successfully developed revolutionary technology even as it delivered urgently needed capability to Soldiers at war.

The Army has a clear, flexible plan to modernize and acquire the equipment needed to continue in its role as the nation’s force of decisive action. The modernization and acquisition strategy in place today encompasses the concept of “readiness at best value” to help the Army manage itself as a responsible steward of national resources even as it evolves into the Army of 2020. It is balanced, capable, agile and affordable. What is needed now is better predictability of future resources, timely provision of expected funding and institutional support for the mechanisms that have streamlined the modernization and acquisition process so successfully.

Landpower is the most tangible and durable measure of America’s commitment to defend its interests, protect its friends and defeat its enemies. Investments in the Army’s modernization strategy and its top acquisition programs improve Soldiers’ ability to move, fight and survive on any battlefield. Unwavering support for a balanced equipping approach is key to maintaining a force of decisive action that stands ready to prevent, shape and win when the nation calls.



A New Equipping Strategy: Modernizing the U.S. Army of 2020

We must continue to build on the key characteristics of the future force—adaptability, innovation, flexibility, agility, versatility and lethality. We have to prioritize our efforts as we integrate and synchronize our activities as part of a longer joint interagency, intergovernmental and multinational force effort.

General Raymond T. Odierno
Chief of Staff, Army
8 March 2012³

Introduction

The U.S. Army is the best-trained, best-equipped and best-led combat-tested force in the world. Today's Soldiers have achieved a level of professionalism, combat experience and civil and military expertise that is an invaluable national asset. However, powerful global trends—such as increasing demand for dwindling resources, persistent regional conflict empowered by nonstate actors, proliferation of weapons of mass destruction and the emergence of failed states—are shaping the current and future strategic environments. Myriad hybrid threats that incorporate regular and irregular warfare, terrorism and criminality continue to evolve. Joint forces face the destabilizing effects of global economic downturns and new threats in cyberspace to an increasingly critical and vulnerable information technology infrastructure. These trends create a complex and unpredictable environment in all of the Army's operational domains: land, sea, air, space and cyberspace.

To continue to provide U.S. combatant commanders with land forces that have the capability, capacity and diversity to succeed in this environment, the Army must continuously assess and adjudicate three foundational imperatives: endstrength/force structure, readiness and modernization. As it looks to the third decade of the 21st century, the Army must balance these three elements to prevent conflict, shape the environment and win decisively. To develop the right force design and mix to execute these imperatives, an equipping strategy for the Army of 2020 must acquire and modernize equipment in ways that provide the best force



for the nation within the resources available. To do so, the Army is scrutinizing its major equipping programs against core competencies and required capabilities.

What is needed, therefore, is support for the Army's acquisition and modernization approach that acknowledges the healthy tension of balancing short-term (zero to two years), mid-term (two to eight years) and long-term (more than eight years) equipping challenges to support a strategic ground force that is superior, credible and rapidly deployable. This approach has already resulted in the restructuring of 89 planned modernization programs and the outright cancelation of eight others. It has also resulted in the identification of some programs of particular short- and long-term value that are of high priority and which must be protected. The approach is based on the principle of employing frequent, incremental, evolutionary adjustments to programs and priorities to keep pace with rapid

³ Testimony before the Senate Armed Services Committee, 8 March 2012, <http://www.armed-services.senate.gov/Transcripts/2012/03%20March/12-09%20-%20203-8-12.pdf>.



technological advances. It includes traditional, rapid and hybrid acquisition process models that complement one another and can be tailored to specific equipping challenges. A leaner, much more agile Army must have within its generating force a leaner, much more agile yet affordable approach to equipping the force. Failure to do so is not an option.

Background

Many agree that the 1980s were a successful period in the recent history of Army modernization. At that time, the Army constructed what are now known as its “Big Five” equipment systems—the Abrams tank, the Bradley infantry combat vehicle, the Apache attack helicopter, the Black Hawk utility helicopter and the Patriot air defense system—all of which are still in service in various forms today. Fundamentally, the acquisition strategy that drove the creation of these weapons was to invest heavily in meeting both short-term and long-term equipping needs (while accepting some risk in the mid-term) with the goal of achieving technological overmatch vis-à-vis potential American adversaries. Technological overmatch clearly proved to be a critical component of the operational and tactical overmatch demonstrated by the Army in Operations Desert Shield/Desert Storm.

But then, throughout most of the 1990s, the Army endured a “procurement holiday.” The nation underfunded military investment accounts during that decade by approximately \$100 billion. Units shared equipment.

Units that were not expected to be needed for immediate deployment did not receive their full allotment of equipment until shortly before deployment (which severely hamstrung training and readiness). Equipment aged and few replacements were available. The average age of an Abrams tank increased from 2.5 years in Fiscal Year (FY) 1990 to 10.5 years in FY 2000; for a Bradley infantry vehicle, from 2.0 years to 9.3 years; and for an Apache helicopter, from 2.1 years to 11.6 years.

By 2001, the challenge had reached crisis proportions. The Army had difficulty redistributing resources to meet the unanticipated tempo of the global war on terror. In September 2001, the Army faced “holes in the yard”—unfunded equipment requirements of almost \$42 billion and new operational needs amounting to more than \$14 billion—that totaled \$56.2 billion. Recapitalization of non-ready equipment and upgrade of outdated gear that the Army already owned comprised more than a third of this sum. Soldiers entered fights at unnecessary risk because they had insufficient quantities of equipment on which to train before entering the fight. In short, the modernization and acquisition strategy that emphasized development of long-term, revolutionary capabilities needed to be rebalanced when short-term, unforeseen security problems emerged suddenly.

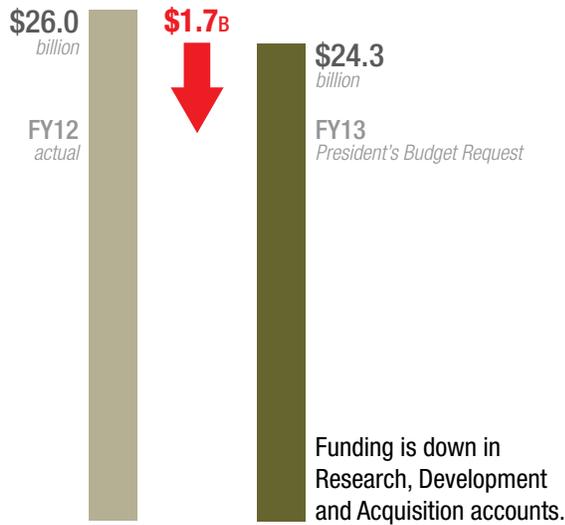
The strategy had to be reformulated because of the heavy demands of two major wars during the 2000s. Immediate, short-term needs dominated Army modernization priorities. As only one example, in response to tactical needs the Army spent nearly \$50 billion to field a range of mine-resistant, ambush-protected (MRAP) vehicles that provided an invaluable capability in Iraq and Afghanistan but whose capability is not as clearly useful in potential future contingencies. The Army simultaneously invested in properly equipping reserve component formations as they transformed from a strategic reserve to a fully operational force.⁴ Such short-term and mid-term emphasis necessarily reduced the Army’s focus on modernizing for long-term technological overmatch.

Wartime necessity presented the Army with some new challenges at home as well. Myths about Army

⁴ See AUSA Defense Report “Equipping the Reserve Component for Mission Success at Home and Abroad,” June 2011, http://www.ausa.org/publications/ilw/Documents/DR%2011-2_PRESS.pdf.



The State of Army Modernization



The FY13 President's Budget Request will:

- cancel eight programs;
- delay or restructure 89 programs;
- protect the Army's high-priority programs.

Source: Headquarters, Department of the Army/G-8

modernization abound. Some erroneously believe that the Army enjoyed too large a budget during the 2000s and that it can now afford to be cut back; some also believe that the Army has generally failed during this period in its acquisitions approach. However, these views ignore the difficulty that the Army faced early in the decade to fill in the holes in its yard; they ignore the fact that overseas operations have consumed the vast majority of Army modernization dollars since 2001, doing little to help preserve overmatch in the long term; and they ignore the Army's myriad procurement successes during this period. These include the decisive MRAP vehicles, a series of body armor improvements, the Stryker Double-V Hull vehicle, precision munitions, three new sniper rifles, an improved M4 carbine, lightweight crew-served weapons, a whole fleet of unmanned aerial vehicles and many other crucial systems that the Army required immediately.

As conflict in Iraq and Afghanistan winds down, Army modernization is again at a major crossroads.

Because of recent wartime demand and the previous procurement holiday, it has been a long time since the Army had the opportunity to modernize in a balanced way. **Current Army modernization and acquisition strategy has transformed to adopt a balanced approach that meets the short-term requirements of combatant commanders while anticipating probable needs for the rest of this decade and restoring investment in the development of long-term overmatch.** It is imperative for the Army to receive support for its efforts to preserve equilibrium among its three pillars—personnel, equipment and readiness.

Acquisition Transformation

The Army is changing its paradigm for acquisition—building on its successes, harnessing lessons learned and codifying adjustments to its procedures. The thrust of this effort hinges on a new methodology for acquiring and developing technologies. Essentially, this methodology reflects the Army's parallel transformation from the "tiered readiness" construct of the 1990s to a more "progressive readiness" construct centered on the Army Force Generation (ARFORGEN) process that has supported combatant commanders throughout the current fight and which will focus Army readiness (of both active and reserve components) into the future.

The acquisition paradigm—based on the requirements for land forces identified in the January 2012 defense strategic guidance—begins with three overarching Army modernization priorities for the future:

- empower, protect and unburden Soldiers;
- network the force; and
- deter and defeat hybrid threats by improving the aviation, combat vehicle and tactical wheeled vehicle fleets.⁵

The real challenge for the Army's modernization and science and technology communities, then, has been to convert these broad aims into specific acquisition programs and to identify which programs constitute the highest priorities for development. **The goal of the strategy to equip the Army of 2020 is to develop and field a versatile and affordable mix**

⁵ "Equipment Modernization: Linking Resource Decisions to Army Strategy," Addendum Q, 2012 Army Posture Statement, https://secureweb2.hqda.pentagon.mil/VDAS_ArmyPostureStatement/2012/addenda/addenda_q.aspx.



of equipment that will enable Soldiers to succeed across the range of missions today and tomorrow, ensuring that the Army maintains its decisive advantage over any adversary.

To coordinate this complex process, senior Army leaders began by collecting the lessons that emerged from the past 10 years of war. Their thinking yielded the development of seven enduring “big Army problem” areas that they viewed as the real drivers of technological innovation for years to come:

- **Force Protection.** There is insufficient force protection to ensure the highest degree of Soldier survivability across the spectrum of operations.
- **Maneuverability.** Operational maneuverability (mounted and dismounted) is difficult to achieve in complex, austere and harsh terrains and at a high operational tempo.
- **Human Cognition.** The Army is only beginning to understand what makes the human tick in a way that can lead to assuring Soldiers’ ability to perform operational, high-tempo missions effectively and without negative secondary effects.
- **Surprise and Tactical Intelligence.** Army squads are too often surprised in tactical situations. Soldiers in small units lack sufficient timely mission command and tactical intelligence to understand where their assets are, who and where the enemy is and who and where noncombatants are. Soldiers need better capability to document and communicate such information to one another and higher echelons.

- **Sustainability and Logistics.** The Army spends too much time and money storing, transporting, distributing and handling consumables (such as water, fuel, power, ammunition and food) to field elements. This creates exposure risks and opportunities for operational disruption.
- **Overburden.** Soldiers in small units (such as squads, fire team and crews) are overburdened physically and cognitively. This degrades their performance and may result in immediate or long-term negative consequences.
- **Tactical Overmatch.** Soldiers in small units have limited capability to integrate maneuver and fires in all environments to create the tactical overmatch necessary to achieve their mission objectives.

The corresponding set of more specific challenges that accompany these seven broad areas span a wide range of combat-relevant areas such as creating common software, lightening the load Soldiers carry, improving intelligence, surveillance and reconnaissance, making advances in Soldier protection and many others. By articulating a host of relevant challenges in need of specific solutions, the Army community vastly improved collaboration and dialogue with its laboratory, academic and industry partners. Thus the first major step that the Army took to restore balance to its acquisition and modernization paradigm was to communicate to all involved that a transition was underway and that future developments would clearly align with the lessons learned during a decade of war. This alone constituted a major transformation in the acquisition process and promises to increase efficiencies and drive down costs of development (in dollars and time).

However, identifying and clearly communicating a concise set of modernization challenges was only the beginning. The Army already owns a vast array of gear, from the lightest body armor to the heaviest main battle tank, which must be constantly evaluated in terms of capability and cost. Both metrics must be constantly compared to current and projected operational requirements—and budget realities—so that the Army can assess which needs are of the greatest urgency.

A second major transformation in the Army modernization system has been the creation and implementation of the Capability Portfolio Review (CPR)



process.⁶ The CPR process is a recurring senior leader review mechanism that is holistically examining equipping requirements and solutions. Its overall concept is simple—its aim is to evaluate all existing equipment of similar purpose. Representatives from the Army equipment requirements community (the “buyers”), from industry (the “vendors”) and from the budget community (the “accountants”) meet to identify any capability gaps or capability overlap among existing technologies. This group’s consensus then informs the revision of the Army’s modernization priorities. If the group identifies an urgent need that is not sufficiently met by existing Army capabilities, then the need is communicated to the acquisition community. If the group identifies a capabilities overlap, then it might recommend that a system or acquisition program be reduced in priority or canceled outright.

The value of the CPR process is in its fusing and alignment of the requirements, acquisition, sustainment and resourcing communities. By examining evolving strategic and fiscal environment challenges, it enables better assessments of existing and proposed capabilities. It ensures that funds are programmed, budgeted and executed against validated requirements and that potential alternatives are thoroughly evaluated according to their cost and risk schedules. It also helps inculcate awareness of costs at every level of the modernization process and ensures that affordability is considered when the Army writes requirements for new programs.

A third major transformation in the way the Army modernizes and acquires new technologies is the institutionalization of a formal Army Agile Capabilities Life Cycle process (or Agile Process). This methodology exists as a mechanism to work with industry partners to synchronize requirements, resources and acquisition practices at the front end of the process to minimize developmental risk, reduce cost and schedule overruns and harness the most promising emerging technologies as rapidly as possible for the benefit of forces in combat. The Network Integration Evaluation (NIE) process that grew out of this methodology is a series of semi-annual evaluations designed to integrate and mature the



Army’s tactical network by placing a large number of emerging systems with Soldiers in operational test scenarios. It gets new capabilities in Soldiers’ hands early in the development process, allowing them to evaluate the capabilities’ usefulness and interoperability before they are fielded.⁷

The advantages of using the NIE process are many. The numerous sets of technologies that comprise the Army network (usually an NIE tests dozens of new platforms simultaneously) grow and change more rapidly than anything the Army has acquired before; the traditional acquisition model that spends years thoroughly testing a multimillion-dollar vehicle such as a tank is not nearly agile enough by itself to validate network technologies with lifespans measured in months. The operational evaluations conducted by Soldiers in a realistic test environment allow the Army and its industry partners to rapidly identify capability gaps, refine requirements, synchronize (and prioritize) industry’s best solutions and integrate and test equipment holistically. The process ensures fielded systems’ technical maturity and integration to a degree that was not always possible over the past decade.

Another innovation in the NIE process is the concept of incremental modernization through capability set management. As the first few NIEs establish an integrated network baseline and implement a common operating environment, the Army will procure network

⁶ See AUSA Defense Report “Capability Portfolio Reviews,” September 2010, <http://www.ausa.org/publications/ilw/Documents/DR%2010-3%20CPR%20v2%20web.pdf>.

⁷ See AUSA Defense Report “Network Integration Evaluations: Developing Technologies with the Army’s Industry Partners,” October 2011, [http://www.ausa.org/publications/ilw/Documents/DR%2011-3_web%20\(2\).pdf](http://www.ausa.org/publications/ilw/Documents/DR%2011-3_web%20(2).pdf).



capability in a new way. Instead of developing a requirement for a single capability and then buying as many as are needed up front, the Army will build and procure capability sets. With capability set management, the Army will regularly evaluate the operational environment and then select a suite of systems and capabilities to answer projected requirements. In keeping with the broad acquisition strategy to modernize incrementally, this management construct will permit the Army to buy fewer systems but more often, better leveraging industry advancements and better aligning with ARFORGEN requirements in the short- to mid-term.

Thus the Army's acquisition paradigm has shifted to embrace the guiding principles driven by overall defense strategy. The integrated portfolio review process and the Agile Process provide mechanisms for combatant commanders to communicate urgent short-term needs for the current fight and for the modernization community to mobilize rapidly in response to those needs. Such institutional mobility and improved communication are agile enough to keep up with the pace of technological advancement and innovative adversaries yet provide a much better way to evaluate procurement and development options, prioritize goals and make sound fiscal decisions. The paradigm's emphasis on incremental, rather than revolutionary, modernization and its alignment to the progressive ARFORGEN readiness model ensure that new capability is developed or acquired as necessity dictates and technology matures in the mid-term. Further, its clear guidance about long-term, enduring modernization challenges promotes research and innovation that may prove revolutionary in the long term. The acquisition paradigm restores balance and will help the Army maintain its decisive edge.

The Army's High-Priority Modernization Programs

Although the refined research and development challenge matrix and the CPR and NIE processes are all relatively new, they have already significantly informed the long-range and budgetary planning processes. The FY 2013 Army budget request incorporates early results of these methods; in particular, the CPR process helped the Army refine its procurement priorities as it determined how to comply with the requirements of the 2011 Budget Control Act at minimal risk. Specifically, recent CPR results led the Army to cancel

The Army's High-Priority Modernization Programs

Warfighter Information Network–Tactical (WIN-T)

Ground Combat Vehicle (GCV)

Joint Light Tactical Vehicle (JLTV)

Armored Multi-Purpose Vehicle (AMPV)

Paladin Integrated Management (PIM)

Kiowa Warrior (KW)

Joint Tactical Radio System (JTRS)

Nett Warrior

Distributed Common Ground System–Army (DCGS-A)

Joint Battle Command–Platforms (JBC-P)

eight of its existing modernization programs and delay or restructure 89 more. All of these decisions were based on assessments that planned programs would overlap existing capabilities or could be modified in scope or timing at minimal strategic risk. Absent the CPR process, it would have been much more difficult to arrive at sound conclusions.

However, the FY 2013 budget protects several critical programs that have been validated as high-priority necessities in assessments such as the CPR under the new modernization paradigm. In some cases, the programs fulfill urgent wartime needs; in all cases, they exhibit the versatility and value that define the Army's cornerstone modernization programs that will enable Soldiers to succeed in decisive action in the future.

Warfighter Information Network–Tactical (WIN-T)

Network modernization is the Army's top modernization priority. WIN-T provides the broadband backbone communications necessary for the tactical Army. Essentially, WIN-T is the Soldier's Internet, providing the tactical communications network to which all other Army communication systems must connect. WIN-T Increment 1 is currently fielded to more than 90 percent of the total force, providing satellite-based beyond-line-of-sight voice, video and data connectivity down to the battalion level. However, existing equipment requires Soldiers to set up in a stationary position to access WIN-T.



WIN-T Increment 2 is a major upgrade that will introduce mission command on the move, allowing Soldiers to communicate continuously from inside tactical vehicles without needing to stop to set up equipment. It will also extend satellite communications to the company level—meaning that the Soldiers closest to the fight will have greater connectivity than ever before. Increased network connectivity offers Soldiers a tremendous leap forward in coordinating tactical intelligence and employing joint capability. Improved communications capability is arguably the most

efficient way to improve small-unit tactical overmatch on the battlefield.⁸

In late spring 2012, WIN-T Increment 2 will undergo its initial operational test and evaluation; this is the Army’s first opportunity to fully assess the suitability, survivability and effectiveness of Increment 2 equipment with an operational unit. The analysis and test results will be used in a full-rate production decision scheduled for the fourth quarter of 2012, which will then allow the fielding of WIN-T Increment 2 to maneuver units across the force.

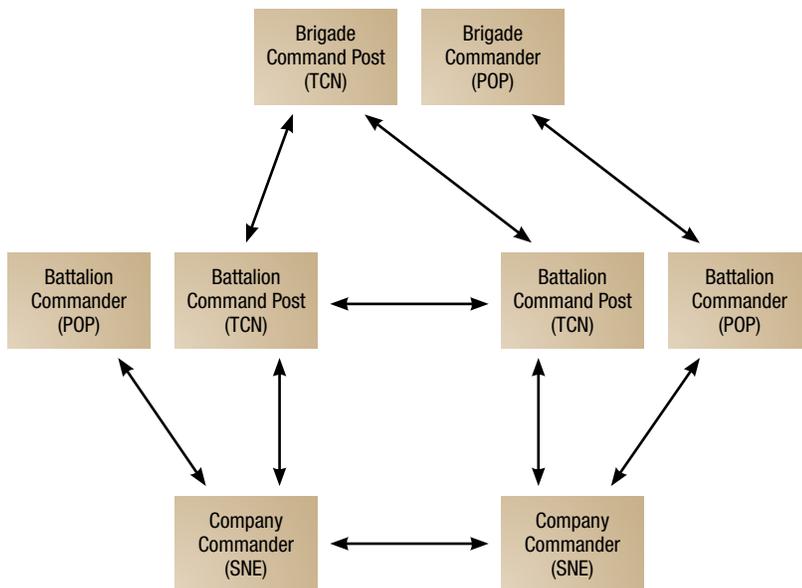
Ground Combat Vehicle (GCV)

The GCV is the Army’s top combat vehicle priority. It is the replacement program for the Bradley infantry fighting vehicle (one of the Army’s cornerstone “Big Five” systems) in heavy brigade combat teams (HBCTs).

The GCV will provide vital new capabilities for the Army in the near future. In particular, it addresses urgent requirements to improve force protection, mobility and tactical overmatch compared to existing

Warfighter Information Network – Tactical (WIN-T)

Increment 2 Network



Goals

- Increased throughput at the tactical level
- Communications on the move
- Robust path to the tactical level

Initial Operational Test and Evaluation – Network Integration Evaluation 12.2 (April/May 2012)

- 3 Heavy Brigade Combat Teams
- 2 Infantry Brigade Combat Teams
- 2 Stryker Brigade Combat Teams

POP – Point of Presence
 SNE – Soldier Network Extension
 TCN – Tactical Communications Node

Source: Headquarters, Department of the Army

⁸ See AUSA Torchbearer National Security Report “The U.S. Army Squad: Foundation of the Decisive Force,” October 2011, http://www.ausa.org/publications/ilw/Documents/TB_The_Squad_web.pdf.



Support Tomorrow's Fight – Combat Vehicles

The Army's #1 combat vehicle priority is the Ground Combat Vehicle.



M2A3 Bradley IFV

Transform
Bradley IFV to GCV IFV



Ground Combat Vehicle IFV

- Ground Combat Vehicle Analysis Update
- Non-developmental Vehicle Assessment
- Technology Development

Goal: Inform requirements and identify alternatives to acquire the Ground Combat Vehicle.

President's Budget FY13
Funds engineering and manufacturing development phase for two contractors.

GCV – Ground Combat Vehicle IFV – Infantry Fighting Vehicle

Source: Headquarters, Department of the Army

capability provided by the aging Bradley design. The GCV will accommodate an entire nine-man infantry squad, a key feature that aligns ideally with tactical doctrine, and will provide unmatched lethality on the battlefield. It will integrate the latest network technology and permit evolutionary upgrades to be installed incrementally in the future as new capability becomes available. It will be much better armored and more survivable against hybrid threats than the Bradley—which has proved to be particularly vulnerable to improvised explosive devices (IEDs)—but its system of modular armor will permit commanders to tailor a custom balance between survivability and mobility depending on mission requirements. Its design also allows incremental incorporation of future size, weight, power and cooling (SWAP-C) technologies as they mature.

At present, the Army is conducting a GCV analysis update to ensure that its many design requirements continue to be appropriately conceived and to assess potential non-developmental vehicle alternatives according to cost and risk schedules. Though GCV remains in the technology development phase today, the FY 2013 budget request funds the engineering and manufacturing development phase for two contractors. The Army expects to award engineering and material development contracts in FY 2014.

Joint Light Tactical Vehicle (JLTV)

The JLTV is the centerpiece of the Army's tactical wheeled vehicle modernization strategy. A joint design of the Army and Marine Corps, the JLTV will replace the High-Mobility Multipurpose Wheeled Vehicle (Humvee) and will constitute approximately a third of the light wheeled vehicle fleet by 2035.

The Humvee was never designed to be an armored combat vehicle or armored scout vehicle, but it was pressed extensively into such roles in Iraq and Afghanistan. Its capabilities are extremely limited in those theaters because, without major modification, it is vulnerable to enemy attack, but when modified with heavy armor, it becomes much less mobile and agile than required. The JLTV is designed from the ground





up to provide protected, sustained, networked mobility for personnel and payloads across the full range of future missions (traditional to irregular), thereby fulfilling mission requirements that the Humvee is unable to meet effectively today.

The Army released a request for proposals for potential JLTV vendors in January 2012 and expects a Milestone B acquisition decision (to move from the technology development phase into the engineering and manufacturing development phase) in the third quarter of FY 2012. The Army then anticipates a Milestone C decision (to move from the engineering and manufacturing development phase to the production and deployment phase) in the second quarter of FY 2015.

Armored Multi-Purpose Vehicle (AMPV)

The AMPV is intended to finish replacing the M113 armored personnel carrier in the Army's HBCTs. The M113 (of Vietnam War vintage) has long since been replaced in front-line formations by the Bradley infantry fighting vehicle, but thousands remain in service in support roles. They tend to be underpowered and insufficiently armored for use against hybrid threats and are therefore effectively unable to perform their missions anymore; the Army stopped producing new M113 vehicles in 2007. The AMPV, with improved force protection, mobility and network connectivity, will be a low-cost replacement in the HBCTs for mission command vehicles, mortar carriers, medical evacuation and treatment and general-purpose use.

The Army is presently finalizing the requirements that will inform the design of the AMPV. In April 2012, the Pentagon provisionally endorsed the Army's plan to accelerate completion of its ongoing analysis of alternatives; a key question is whether the design eventually selected will be based on a vehicle already in the Army's inventory (such as Bradley or Stryker) or designed from scratch. The Army expects to resolve remaining design questions soon and solicit proposals from industry during FY 2013, with a goal of entering full-rate production as early as FY 2015.

Paladin Integrated Management (PIM)

PIM is another crucial part of the Army's ground combat vehicle modernization strategy. It replaces M109A6 Paladin self-propelled 155mm artillery



vehicles and M992A2 field artillery ammunition supply vehicles currently in service.

PIM provides readily available, low-risk upgrades that enhance the responsiveness, force protection, survivability and mobility of the self-propelled howitzer fleet (improvements similar to those sought throughout the entire ground vehicle fleet). It incorporates a more robust platform, utilizing Bradley common drive train and suspension components in a newly designed hull. It also employs an electric rammer and improved gun drives and fire direction.

The Army expects to receive a Milestone C procurement decision for PIM (which would move the program into the early stages of production and deployment) in June 2013. Anticipating this, the Army has requested FY 2013 funds for procurement and fielding of 17 low-rate initial production PIMs and for integration of the testing prototypes into the force.

Kiowa Warrior

The Kiowa Warrior helicopter in service today addresses the Army's enduring requirement for a light aircraft for manned armed aerial reconnaissance, surveillance and light attack operation missions.

The Kiowa Warrior has been in continuous Army service since the late 1960s. Ongoing upgrades to the fleet aim to keep these aircraft serviceable to continue meeting high demand and include enhanced cockpit and sensor capabilities such as the Cockpit Display Subsystem 5; a nose mounted sensor; a Dual-Channel Full Authority Digital Electronic Control engine; and integrated manned/unmanned teaming capability to address obsolescence in the fleet.

The operational requirements fulfilled today by the Kiowa Warrior fleet are certain to continue well into



the future. Later in 2012, the Army intends to host technology demonstrations in which potential vendors will exhibit prototype aircraft that they hope the Army will choose to become the basis of a possible new Armed Aerial Scout (AAS) program. Then, during FY 2013, the Army will decide whether to further develop and procure AAS as a replacement for the Kiowa Warrior or to extend the usefulness of existing airframes with a formal service life extension program.

Joint Tactical Radio System (JTRS)

JTRS is the Army's future deployable mobile communications family of radio systems. It utilizes Internet Protocol-based technologies and provides network routing, embedded information assurance and simultaneous exchange of voice, data and video with multiple channels.

Today, complex communications environments require Soldiers in the field to be equipped with a wide variety of different radios for various purposes. JTRS aims to simplify tactical voice and data communications, especially among mounted, dismounted and airborne units, and to standardize communications equipment. Among the variants in development are the Mid-Tier Networking Vehicular Radio (MNVR, a new two-channel radio intended for use in combat vehicles) and the Handheld Manpack Small Form Fit (HMS) family that includes man-portable devices. These will improve mobile digital communications capability among brigade, battalion, company, platoon and squad levels—all the way down to the individual rifleman.

Development of the JTRS family of systems is ongoing. The Army will formally request proposals for the MNVR from industry for a full and open competition during 2012 and hopes to be ready to equip eight to 10 brigade combat teams during FY 2014. The

Manpack variant is presently undergoing evaluation in the NIE process at Fort Bliss, Texas, and White Sands Missile Range, New Mexico. Another member of the HMS family, the handheld Rifleman radio, has already entered low-rate initial production.

Nett Warrior

Nett Warrior is a Soldier-worn mission command system that provides unprecedented command and control and situational awareness capabilities in support of the dismounted combat leader.



Nett Warrior includes a smartphone-like electronic display device that can be worn on a Soldier's chest and connects to his Rifleman JTRS radio. It graphically displays Soldiers' and leaders' locations on a digital map that can be shared on the network. It can also connect Soldiers to higher-echelon data and information products that can assist in small-unit decisionmaking. This permits Soldiers to see, understand and interact within their environments more efficiently and more accurately, permitting leaders to more effectively execute combat missions and reduce the chance of fratricide.

The Nett Warrior system has recently undergone a series of three limited user tests. The Army expects to award a low-rate initial production contract during FY 2012 and anticipates entering the initial production phase in FY 2013.

Distributed Common Ground System—Army (DCGS-A)

DCGS-A is the Army's premier intelligence, surveillance and reconnaissance (ISR) tool. The Army component of the larger Defense Intelligence Information Enterprise, it is replacing the multiple intelligence processing ground systems currently in service.



promises Soldiers a leap forward in situational awareness by integrating the battlefield data collection and analysis processes in near-real time. The Army has also requested FY 2013 funding to continue development and support a forward operational assessment in Afghanistan that will guide the program's future.

Joint Battle Command–Platforms (JBC-P)

JBC-P is the next iteration of the battle-tested Force XXI Battle Command Brigade and Below (FBCB2) system—the Army's friendly force (or "blue force") tracking system.

The Army presently has about 100,000 FBCB2 systems deployed in the field; mounted in military vehicles, they display red and blue icons over a digital map. JBC-P offers numerous improvements to existing capabilities, including increased joint interoperability, more network bandwidth, better encryption, more detailed and accurate maps and more precise location information for vehicles, aircraft and dismounted Soldiers. Another major part of the JBC-P upgrade will be the Army's deployment of the Blue Force Tracker 2 satellite communications network that offers 10 times the speed of the existing system.

The Army has recently employed the NIE process to begin incorporating commercial developments in the smartphone industry into the creation of handheld JBC-P devices. Operational testing continues, and the Army expects to begin fielding JBC-P devices and electronic upgrades to other existing equipment during FY 2013.

Modernization in the Skies

With only one exception (the capability provided today by the Kiowa Warrior helicopter), the Army's highest-priority procurement plans fulfill requirements on the ground. Indeed, current acquisition plans anticipate the development of few, if any, new manned aviation platforms before 2030; review mechanisms such as the CPR process have led the Army to conclude that it needs new ground vehicles and network capabilities more urgently than it needs new aircraft designs.

However, the demand for Army aviation is at an all-time high. Since 2003, Army pilots have logged more than 5.1 million flight hours in Iraq and Afghanistan.



Most were flown by Black Hawk and Apache helicopters, which comprise 75 percent of the total fleet. The aircraft with the highest operational tempo, however, are the light Kiowa Warriors, which average 100 flying hours per month; in January 2012, a few Kiowas logged more than 200 hours and one logged 250 hours in Afghanistan. The high tempo and the severe terrain and flying conditions in that theater combine to wear out aircraft very quickly; helicopters usually remain in theater for only two to three deployment cycles before needing to return to a depot in the United States for reset or total remanufacture. (As a cost-cutting measure, the Army is resorting to making more use of its depots to remanufacture aircraft instead of buying new ones, which introduces increased risk.)

The Army has three main aviation modernization priorities to cope with record demand. The first is to replace and upgrade its existing manned platforms to keep them viable and relevant. The Army intends to:

- sustain capability similar to that currently provided by the Kiowa Warrior;
- address obsolescence in software and hardware in the Apache fleet by procuring the new Block III version;
- upgrade digital capability throughout the Black Hawk fleet; and
- continue to replace 1960s-vintage CH-47D Chinook cargo helicopters with new production CH-47Fs.⁹

⁹ See AUSA Torchbearer National Security Report "U.S. Army Aviation and Full-Spectrum Operations," December 2010, http://www.ausa.org/publications/torchbearercampaign/tnsr/Documents/TB_Aviation_web.pdf.



Support Tomorrow's Fight – Aviation

Aviation demand is at an all-time high.

Manned Aircraft

Modernize: Keep manned platforms viable and relevant.



AH-64D II/III Longbow (Attack)

President's Budget FY13 – 48 x AH-64 III

- Complete fielding of Block III
- AH-64D II – Address obsolescence through Block III fielding



UH/HH-60L/M Blackhawk (Utility)

President's Budget FY13 – 59 x UH-60M

- Complete fielding of UH-60M
- UH-60L – Upgrade to a digitized network capability



UH-72A Lakota (Utility)

President's Budget FY13 – 34 x UH-72A LUH

- Complete fielding of UH-72A



CH-47F Chinook (Cargo)

President's Budget FY13 – 38 x CH-47F

- Complete fielding of CH-47F



OH-58D Kiowa Warrior (Reconnaissance)

President's Budget FY13 – OH-58 CASUP

- Kiowa Warrior SLEP – Sustain Kiowa-like capability consistent with the MUMT strategy or procure Armed Aerial Scout
- Kiowa Warrior CASUP (OH-58F) – Address obsolescence



RC-12X Huron (Fixed Wing)

President's Budget FY13 – 2 x RC-12X

Unmanned Aerial Systems

Improve UAS: Increase Raven, Shadow and Gray Eagle capabilities to meet growing demand.



RQ-11 Raven

President's Budget FY13 – 79 x RQ-11

- Develop and install a gimbaled payload



RQ-7B Shadow

President's Budget FY13 – Retrofit kits, launchers and enhanced mission computers

- Modernize to meet warfighter demands and address obsolescence



MQ-C1 Gray Eagle

President's Budget FY13 – 19 x MQ-C1, 8 x universal ground control stations and 8 x ground data terminals

- Develop and deliver a Ground-based Sense and Avoid system to support training in the National Airspace

CASUP – Cockpit and Sensor Upgrade Program
LUH – Light Utility Helicopter

MUMT – Manned-Unmanned Teaming
SLEP – Service Life Extension Program

Source: Headquarters, Department of the Army



The Army has harvested some technologies originally developed for other platforms and reapplied them to these systems. For example, the Black Hawk UH-60M model includes fly-by-wire technology, the Common Aviation Architecture System, full-authority digital engine control and a composite tail cone. The Army has also already delivered more than 100 CH-47F Chinooks that feature “symbology” in their digitized cockpits to aid navigation in brownout conditions; at least 440 F-model Chinooks will be fielded by 2018. The new Apache Block III model, to be fielded in late 2012, will employ a stronger engine, improved avionics, better computer networking, increased maneuverability and a capability allowing pilots to view and control unmanned aerial systems (UAS) sensor feeds in real time. The Army plans to acquire 690 Block III Apaches through 2026 at the rate of approximately two battalions per year.

A second Army aviation priority is to sustain its aviation support system by upgrading its air traffic control infrastructure, upgrading ground support equipment tool kits, improving aircraft safety equipment and procuring digitized avionics.

A third Army priority is to augment its UAS fleet of Raven, Gray Eagle and Shadow aircraft to meet growing demand for unmanned capability as well. Since the early days of Operation Enduring Freedom, the Army has raced to keep pace with insatiable demand for UAS capability in theater. The Army’s inventory of unmanned aircraft jumped from a mere handful in 2001 to approximately 1,000 systems by 2010—when the Army surpassed its one million unmanned-hour mark—and is now logging as many as 25,000 UAS flight hours per month. The Army has requested FY 2013 funds to procure 78 more Raven reconnaissance systems, 19 Gray Eagle air vehicles, eight universal ground control stations and data terminals and assorted retrofit and upgrade packages for older Shadow platforms.

At times, UAS procurement has employed versatile hybrid acquisition approaches that blended traditional and rapid modernization procedures as a way to develop revolutionary technology even as the Army rapidly delivered an urgently needed capability to Soldiers at war. For example, the Army deployed two Gray Eagle quick-reaction capabilities to Iraq and Afghanistan



while it simultaneously pursued a traditional Gray Eagle program of record. The system was fielded to forces within 18 months.

Hybrid approaches such as this one can afford the Army the opportunity to fast-track a necessary technology while also preserving the process of checks, balances and certifications associated with the traditional acquisition model. An agile modernization process requires the ability to adapt each method—traditional, rapid or hybrid—as needed to meet specific demands of an evolving situation. The Army has worked to achieve a balanced approach capable of selectively calling upon a range of acquisition techniques suitable to emerging circumstances and to procure systems that are versatile enough to meet short-term wartime needs as well as probable enduring operational needs.

Other Priorities

Even as the Army moves forward with its high-priority acquisition programs and upgrades its aviation fleet, the Army has recently leveraged other current technologies to provide Soldiers with real-time capability improvements in lethality, protection, mobility and mission command.

Mine-Resistant, Ambush-Protected (MRAP) and MRAP All-Terrain Vehicles (M-ATVs) continue to save lives as multimission platforms. They excel at mitigating the effects of IEDs, rocket-propelled grenades, explosively-formed penetrators, underbody mines and small-arms fire. The program provides a capability to augment other armored vehicles, including up-armored Humvees, with greater protection to crew and passengers and increased vehicle survivability.



Body armor improvements since 2002 provide better protection while decreasing the Soldier's load. The Army has made a number of recent improvements to Soldier ballistic protection, including the Soldier Plate Carrier System, which was rapidly developed and fielded, and the Improved Outer Tactical Vest, which provides commanders an ability to tailor their mission loads. The future effort to improve body armor is under the aegis of the Soldier Protection System program, which is pursuing a modular approach to develop individual components. Its main objectives are to lighten body armor, improve ballistic protection and create a flexible, modular design that permits body armor to be tailored to specific tactical situations.

The **Individual Semi-Automatic Airburst System (ISAAS)** is the first "smart" weapon to be developed for the infantry Soldier. It provides precision defilade target engagement with a high degree of accuracy and minimum collateral damage. ISAAS gives the Soldier the ability to determine the exact range to an enemy target and "dial" a fire control solution into a "smart" warhead. Prototypes have been successfully employed in combat operations in Afghanistan.

Precision munitions provide responsive long-range fires against targets in the open or in urban terrain with effects that match the target and rules of engagement. Examples include Excalibur (a GPS/precision-guided 155mm artillery round); the Accelerated Precision Mortar Initiative (precision mortar rounds); and Guided Multiple Launch Rocket Systems (GPS/precision-guided rockets).

CREW (Counter Radio-controlled Improvised Device Electronic Warfare) and its associated defensive electronic attack capabilities are a portion of a future multifunctional electronic attack requirement of the Integrated Electronic Warfare System. CREW adopts joint architecture, common interfaces and new technology as it becomes available to keep systems relevant against evolving threats. CREW technology is mounted on every vehicle platform that protects ground forces to help counter radio-controlled IEDs.

Crew-served weapons (including the 7.62mm machine gun and .50 caliber machine gun) are being improved through the use of lighter-weight materials. The Army has engaged in four key initiatives to modernize machine guns and their mounts. The first is the M240L



Support Today's War Fight

Soldier Protection

- Stryker Double V Hull
- Mine-Resistant Ambush-Protected
- Military All-Terrain Vehicle with Underbody Improvement Kit
- Body Armor Improvements
- New Camouflage Uniforms
- Counter-Improvised Explosive Device Equipment
- Up-armored Tactical Wheeled Vehicles

Lightening the Soldier Load

- Plate Carrier
- Lightweight Crew-served Weapons

Lethality

- M4 Improvements (M4A1)
- Precision Munitions (Accelerated Precision Mortar Initiative, Precision Guidance Kit)
- XM-25
- 3 Sniper Rifle Variations

Intelligence, Surveillance and Reconnaissance

- Unmanned Aerial Vehicles
- Distributed Common Ground System—Army – Cloud Computing

Lightweight Medium Machine Gun, which reduces weight for Soldiers who serve in a dismounted role. The second is an improvement to the M2 .50 Caliber Machine Gun; the M2A1 version now has a quick-change barrel feature that resolves a long-standing training and safety issue. The third is a program of record for an entirely new, lightweight .50 caliber machine gun design—the XM806—that is extremely accurate and



of such light weight that a single Soldier can carry it a reasonable distance. The fourth is the development of a new lightweight tripod—the XM205—which will see use with all heavy machine guns.

What Is Needed

The Army has expended a great deal of effort to remodel its acquisition and modernization strategy appropriately and to restore balance among short-term, mid-term and long-term equipping priorities. Both the strategy's broad aims and its specific research and development challenges derive plainly from the 2012 defense strategic guidance that has informed national security priorities. It has a holistic capabilities review mechanism in place in the CPR process that is responsive to the rapid technological advances that now shape the global security environment. There is a formal, complementary system in place in the NIE process to convert short-term requirements into rapid-acquisition programs when the CPR process and combatant commanders identify urgent battlefield needs.

The paradigm review by the Army leadership and the establishment of the CPR and NIE processes have enabled the Army to better adhere to six major guidelines as it modernizes in the face of declining resources:

- **The Army is setting and enforcing better priorities.** It is not easy to quantify or compare objectively the relative importance of every modernization or acquisition program that the Army needs. It is neither realistic to propose that the nation fund every desired Army program nor wise to make procurement decisions based primarily

on fiscal constraints instead of readiness requirements. However, the Army's transformed modernization processes provide mechanisms to make these tough decisions based on sound input from all participants in the acquisition process.

- **The Army is more appropriately revalidating and refining modernization requirements.** The NIE process has revolutionized how the Army develops, tests and fine-tunes network capability requirements for the most rapidly evolving types of technologies. This nearly constant reevaluation has proved ideal for those systems that must be fielded in the shortest possible time for immediate deployment. However, similar dialogue is occurring among industry and Army representatives through the CPR process and other vehicles to ensure that neither buyers nor sellers are bogged down unnecessarily.
- **The Army is better leveraging its portfolio reviews.** The CPR process has been vital in recent months as the Army chose how to prioritize its modernization goals. The process eliminates redundancies, identifies emerging capability gaps and leverages efficiencies. This holistic cost-benefit approach that considers short-term and long-term requirements in context and in balance has already resulted in huge savings even as it more appropriately aligns plans with reality.
- **The Army is focusing more successfully on incremental modernization.** In both the rapid and traditional modernization processes in place today, the Army has moved toward building capability as it becomes available. The NIE process adapts the latest communications and data technologies almost as quickly as private industry can produce them, but even the Army's biggest combat vehicle platforms (such as the GCV and JLTV) have been designed to readily accept incremental network, engine, armor, armament and other upgrades as they continue to be developed in the future.
- **The Army is better leveraging industry and mature technologies.** Both the Agile Process and the CPR process are incorporating industry's input at every possible level—from the writing of a new program's capability requirements to completing



the final touches before a program’s imminent deployment. The new paradigm’s emphasis on incremental change rewards industry for proposing mature ideas that meet foreseeable needs.

- **The Army is focusing more on lessons learned.** More than 10 years of war have taught the Army that it needs an agile blend of complementary rapid and traditional modernization mechanisms. The past decade has also taught the nation that modernizing only for long-term overmatch or only for short-term, current requirements creates unnecessary risk that ultimately poses grave strategic problems. Army leaders’ effort to refine and communicate seven enduring “big Army problems” and the problems’ correlated specific challenges encourages incremental research and development not only toward immediate requirements but also toward requirements in the distant future.

The Army has a clear, flexible plan to modernize and acquire the equipment needed to continue in its role as the nation’s force of decisive action. The plan restores balance that has long been missing due to factors outside the Army’s control and, most important, it is derived directly from the strategic defense guidance that has informed America’s national security priorities for the foreseeable future. In short, the modernization strategy encompasses the concept of “readiness at best value” to help the Army function as a responsible steward of national resources even as it evolves into the Army of 2020.

What is needed is better predictability of future resources and timely provision of expected funding. The Army has worked diligently and devoted a great deal of effort restructuring its programs, prioritizing and communicating which modernization programs are absolutely necessary and fundamental to the Army of 2020. It has taken serious steps to minimize the likelihood that modernization budgets will be squandered on risky programs that are ultimately canceled. The Army’s modernization plan is balanced, capable, agile and affordable. It is critical that its high-priority modernization programs be fully funded and protected in current and future budgets and that leaders in Congress and the Department of Defense heed the lessons developed by the mechanisms now in place.



What Must Be Done

Landpower endures as the decisive form of warfare, and the Army—the nation’s force of decisive action—is essential to America’s national security strategy. The Army must receive support for its modernization and acquisition transformation as it evolves as the nation’s force of decisive action and anchors Joint Force 2020.

Congress must:

- act as soon as possible to remove the lingering threat of defense budget sequestration that is hindering investment in modernization programs;
- maintain base defense spending at a level of 4 percent of gross domestic product (AUSA Resolution 12-07);
- increase the Army’s share of the base defense budget to at least 28 percent (AUSA Resolution 12-07);
- fully fund the development and fielding of the Army’s high-priority modernization programs to keep the force in balance (AUSA Resolution 12-16):
 - Warfighter Information Network–Tactical;
 - Ground Combat Vehicle;
 - Joint Light Tactical Vehicle;
 - Armored Multi-Purpose Vehicle;
 - Paladin Integrated Management;
 - Kiowa Warrior;
 - Joint Tactical Radio System;
 - Nett Warrior;



- Distributed Common Ground System–Army; and
- Joint Battle Command–Platforms;
- continue to provide Overseas Contingency Operations funding for equipment reset for several years after the current conflict ends (AUSA Resolution 12-09);
- provide equitable funding to enable increased modernization of reserve component equipment (AUSA Resolution 12-07);
- maintain current funding levels for high-payoff weapon systems that support the Army’s modernization requirements in lower-priority areas, especially including command and control critical information systems, wheeled and tracked vehicles, Army aviation, firepower and combat engineer systems (AUSA Resolution 12-16);
- provide stable and sufficient research, development, test and evaluation and operation and maintenance funding for Army Soldier and Soldier support modernization and enhancement programs (AUSA Resolution 12-15);

- fully fund the Rapid Fielding Initiative and Soldier equipment requirements as the Army modernizes and resets the force in accordance with the progressive ARFORGEN readiness model (AUSA Resolution 12-15);
- fully fund Army laboratory facilities (AUSA Resolution 12-14); and
- relieve the Army of legislative and administrative requirements that hinder sound resource management (AUSA Resolution 12-18).

The Department of Defense must:

- support the Army’s institutionalization of the Agile Process and Network Integration Evaluation process that complement the traditional modernization and acquisition models during wartime (AUSA Resolution 12-16);
- identify and eliminate redundancies in the acquisition process (AUSA Resolution 12-18);
- “reset equipment forward” by combining scheduled equipment reset with modernization and upgrade opportunities when possible (AUSA Resolution 12-09);
- fully support advanced technology development with a focus on long-term future force enablers such as unmanned ground and air systems, counter-IED systems, solid-state lasers, directed-energy applications and lightweight armor (AUSA Resolution 12-14);
- develop prototypes of future vertical-lift platforms that will guide future aircraft modernization priorities (AUSA Resolution 12-14); and
- expand opportunities for public/private partnership initiatives (AUSA Resolution 12-18).



Torchbearer Message

In the uncertain and unstable environment ahead, the Army remains central to the nation's defense as part of the joint force. Its role is to prevent conflict by maintaining decisive advantages across the domains of land, sea, air, space and cyberspace; shape the international environment and invest in positive relationships with partner militaries to reassure friends and contain potential adversaries; and win decisively and dominantly on the battlefield when necessary.

The Army is developing and fielding a versatile and affordable mix of equipment to support its Soldiers and help guarantee that they hold decisive advantages over any adversary. It has two broad goals for its modernization and acquisition approach: to help win today's fight and to prepare to win in an uncertain future. The Army has budgeted in recent years to fund high-priority warfighter equipment requirements that supported successful conclusions of its missions in Afghanistan and Iraq, but this new approach acknowledges the tension between short-term and long-term modernization needs and restores balance between them in a fiscally sustainable way.

To preserve its current level of competitive advantage and position itself to equip the force of 2020, the Army has implemented vigorous new procedures to deliver the right capabilities into Soldiers' hands—changing the acquisition paradigm to emphasize affordability and agility. It has embraced incremental modernization, commercial innovation and Soldier–industry feedback to provide improved capabilities as technology matures and new resources become available. It has actively supported and incorporated a sense of increased competition within industry, focusing on technological advancement and adaptation that enhances product development throughout the procurement cycle, to supply more efficient and timely capability upgrades.

Key to the Army's rebalanced modernization strategy is the Capability Portfolio Review (CPR) process that helps it recognize and challenge costly or unrealistic requirements early in new systems' development. The process implements systems engineering approaches and clearer cost estimates early in the acquisition cycle, better aligning the entire modernization community and better integrating program requirements with acquisition, resourcing and sustainment. In conjunction with the timely developmental testing and operational assessments permitted by the Agile Capabilities Life Cycle Process (Agile Process) and its associated network integration evaluations, the CPR process has become an invaluable mechanism for assessing existing and proposed capabilities, keeping up with the rapid rate of technological advancement and keeping costs manageable.

Although fiscal reality has caused the Army to restructure 89 programs and cancel several others, its rebalanced modernization plan clearly identifies high priorities that the Army of 2020 simply must procure: the Warfighter Information Network–Tactical, the Ground Combat Vehicle, the Joint Light Tactical Vehicle, the Armored Multi-Purpose Vehicle, Paladin Integrated Management, the Kiowa Warrior, the Joint Tactical Radio System, Nett Warrior, the Distributed Common Ground System–Army and Joint Battle Command–Platforms. Even as development of these systems continues, the Army is also procuring necessary upgrades throughout its aviation fleet as well as other incremental upgrades to systems such as body armor, precision munitions and crew-served weapons.

In this time of diminishing resources, the Army has developed an appropriately balanced, affordable modernization strategy to equip the force of 2020 that is also agile enough to respond to the unforeseen. It is setting and enforcing better priorities, constantly revalidating and refining requirements, leveraging its portfolio reviews, emphasizing incremental modernization, employing mature technologies and learning from combat. What is needed now is the full partnership of Congress to achieve timely and predictable funding and the full partnership of the Department of Defense and industry to execute the Army's priorities. The Army remains committed to adjusting to the changes demanded by 21st century geopolitics and standing ready to prevent, shape and win as the nation requires. It has a comprehensive, affordable modernization plan; now it must be supported as it executes the plan.

Today's security paradox doesn't call for a larger or a smaller military. It calls for a different military. It calls for a military that can deter and defeat threats at every point along the spectrum of conflict, from lone individuals or terrorist groups to middleweight militaries packing a new punch and all the way up to near-peer competitors.

General Martin E. Dempsey
Chairman, Joint Chiefs of Staff
12 April 2012



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