

ADAPTING THE GENERATING FORCE

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PHOTO: A nighttime view of the Pentagon showing smoke rising from the building after the September 11, 2001 attacks. The dome of the Capital Building is visible in the background. (U.S. Navy, PH2 Robert Houlihan)

HOW DOES AN ARMY AT WAR, in direct daily contact with an adaptive enemy, maintain its own adaptability? How fast can an army set the conditions to force the adversary to do its bidding? More specifically, how does a large organization like the United States Army learn and adapt? The pace of change is one component of this dilemma, and he who outpaces the other side will drive the conditions of action and reaction on the battlefield. However, the theoretical underpinnings of this reality sometimes clash with the traditional resistance, or even occasionally the aversion, by large institutions or organizations to change. The U.S. Army is no exception. Nonetheless, the simple realities of war have induced the Army to become more adaptable as it endeavors to outwit and outperform its adversaries.

Fact- and knowledge-based adaptability, resulting in fact-based solutions for current and future fights, is the accelerated process by which the Army develops systems or responses to maximize the efficiency of change. The Army should not only “learn from the edge” and implement fact- and knowledge-based adaptability, but also take action to streamline or improve current organizational structure. Using our knowledge advantage to make timely decisions represents the overarching concept of “leading from the edge.” This concept will be explored throughout this article.

During this era of persistent conflict, several competing demands are being placed on the Army’s generating force. These challenges are varied in nature and present different problem sets over both the short-term and long-term. To overcome these challenges, the generating force must—

- Move quickly to fuse theater information into a coherent picture to provide direction.
- Identify and implement needed changes to the Army Force Generation (ARFORGEN) cycle fast enough to have the right organizational designs, the right equipment, and the right people with the right skill sets available for deploying units.
- Modify existing individual training and leader development programs of instruction quickly enough for use by deploying cohorts.
- Reform the acquisition process to reduce costs.
- Design and implement an organizational structure that anticipates and adapts to real-world changes.

From this will come an Army generating force better postured to support ARFORGEN for an Army at war.

Defining “Adapt the Army’s Generating Force”

The Merriam-Webster online dictionary defines “adapt” as “to make fit (as for a specific or new use or situation) often by modification.”¹ Adapt implies a modification of a particular institution or thing to adjust to changing circumstances. It also implies the need or desire to bring one thing into correspondence with another. In this article, the subject of adaptation is the Army’s generating force. The Army is divided into two functionally discrete but organizationally integrated entities.² The operational Army consists of numbered armies, corps, divisions, brigades, and battalions that execute full spectrum operations around the world. The generating force is that part of the Army whose primary purpose is to generate and sustain operational Army units. It provides various functions, to include providing the necessary infrastructure to raise, train, equip, deploy, and ensure the readiness of all Army forces. The generating force training base provides military skills and professional education to every Soldier, as well as members of sister services and allied forces. It is dynamic, innovative, and constantly adapting to the changing nature of war by incorporating lessons learned into doctrine and training. It also provides the Army with the capacity to expand rapidly in time of war. The industrial base provides world-class equipment and logistics for the Army. Army installations provide the power projection platforms required to deploy land forces promptly to support combatant commanders. Once those forces are deployed, the generating force provides the logistics needed to support them. In all of this, without the generating force, the operational force cannot function. Without the operational force, the generating force has no purpose.

Understanding the Strategic Context

The events of 11 September 2001 shocked the citizenry of the United States and made apparent

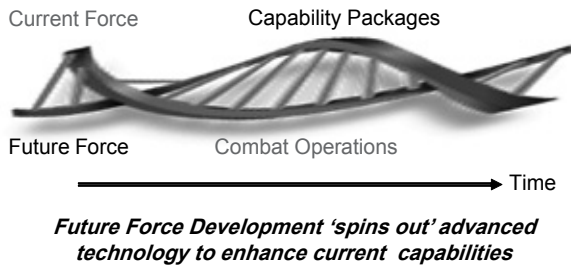
the very real domestic vulnerabilities of the U.S. population to the actions of global extremists. Few can describe the psychological impact this defining event has had upon U.S. policymakers and the population at large. Since 2001, the U.S. defense establishment has been engaged in a long-term struggle to cope with the challenges of a global extremist network. Today, hundreds of thousands of service members are serving abroad in locations such as Afghanistan and Iraq to keep the country safe from further attacks. To date, over 4,800 service members have sacrificed their lives defending the interests of the United States.

While the U.S. military has experienced significant success in the fight against a global extremist network, the adversary has also experienced some gains. During this struggle, adversaries from organizations such as Al-Qaeda have improved their fighting tactics. As U.S. service members have made adjustments to the tactics of roadside improvised explosive devices (IEDs), Al Qaeda members have responded by employing IEDs of greater throw weight, penetrating capability, and manner of concealment. For each U.S. measure taken, the adversary has parried with a countermeasure. Even today, dynamic changes in tactics, techniques, and procedures (TTPs) are occurring throughout Iraq and Afghanistan.

A starting point for understanding the strategic context of adaptation is to review U.S. Army combat experiences over the past eight years. Combat in Iraq and Afghanistan continues to provide a wealth of lessons that can be incorporated in the institutional Army knowledge base: the training base, educational institutions, doctrine, and TTPs. Current combat experience informs Army force development and the institutional Army. This process is akin to the depiction of two parallel time lines that interweave (Figure 1). As the current force engages in combat operations, the force development process adapts by creating innovative new tactics, techniques, procedures, and advanced

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Combat experience informs Future Force Development



'Leading from the Edge' is taking advantage of the current operational environment to inform and adjust our force development model

Figure 1. Current and future force development— Learning from the force in contact.

technologies. These adaptations and innovations are incorporated in the current force through rapid fielding or modernization efforts. The force development process “spins out” advanced technology to enhance current capabilities. However, there is another interesting aspect to this notion which exemplifies the term “spin out.” This is the accelerated developments environment.

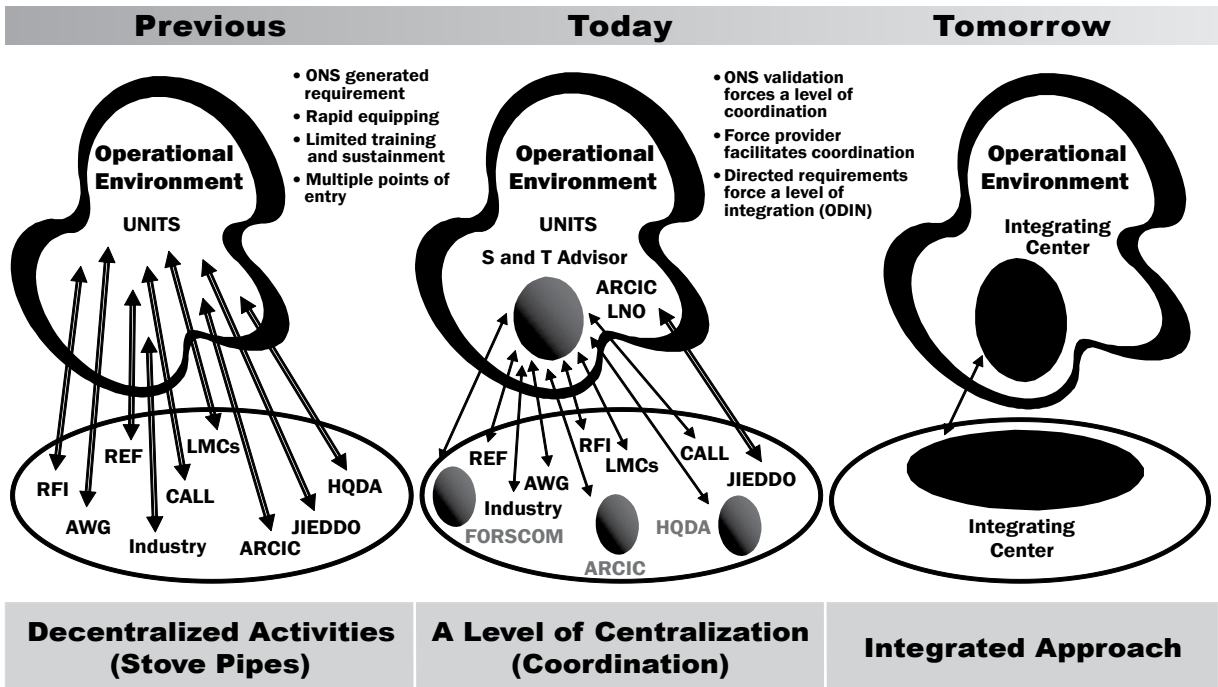
In the past, the process by which operational needs statements were generated from units in the field

was highly decentralized (Figure 2). This process relied on multiple entry points that were connected to and from multiple organizations, all with vested interests in the urgent need. Units in theater would directly input to the organization which correlated to the operational needs statements. These multiple entry points were at best “stove pipes” that limited the process of cross fertilization and information sharing among competing organizations. Operational needs generated requirements generally allowed for rapid equipping of the force, but at the expense of limited training and sustainment. Among the organizations involved in the process

were the Headquarters, Department of the Army; Asymmetric Warfare Group; Joint Improvised Explosives Device Defeat Organization; and the Army Capabilities Integration Center.

Fostering Adaptability during War

Adaptation during a time of war is complex. While field forces place an extremely high demand on timeliness and providing rapid change in the form of an effective capability solution, there is



LEGEND: ARCIC, Army Capabilities Integration Center; AWG, Asymmetric Warfare Group; CALL, Center for Army Lessons Learned; HQDA, Headquarters, Department of the Army; JIEDDO, Joint Improvised Explosives Device Defeat Organization; LMC, Lifecycle Management Centers; ONS, Operational Needs Statement; REF, Rapid Equipping Force

Figure 2. Accelerated developments environment.

an equally compelling and competing demand to ensure that the fielded solution fills the gap, is safe, doesn't complicate the execution of other tasks, and has the complete DOTMLPF package—doctrine, organization, training, materiel, leadership and education, personnel, and facilities. This will ensure proper training, documentation, facilities, maintenance, and supply support to provide prolonged effectiveness in the field. Fielding less than the complete package can easily lead to an unnecessary burden being placed on field units and commanders.

The case of armor-plated vehicles is an example of how adversaries compete in an adaptive fashion and how a multiple-entry-points approach did not quickly address the problem. As HMMWV's became the soft vehicle target of choice by roadside bombers, U.S. Army units attempted to improve survivability by strapping armor plating to vehicles, commonly referred to in the media as "hillbilly armor." In turn, the adaptable adversary made the roadside bombs deadlier by adding more explosives. Eventually, no more conventional armor could be added, so the U.S. Army developed new armor plating. Unfortunately, the enemy simply continued to make even deadlier bombs. With the additional weight of armor, the chassis, suspension, and engine could no longer sustain the inherent challenges of

Fielding less than the complete package can easily lead to an unnecessary burden being placed on field units and commanders.

being both mobile and force protected. Clearly, a better solution was needed. With innovative ideas and new technology, the Mine Resistant Ambush Protected (MRAP) vehicle was designed and fielded, but the DOTMLPF package was not complete.

For example, the materiel and training packages for the mine-resistant vehicle lagged behind its rapid fielding. As a result, the combat arms institutional training pools did not possess the MRAP vehicles, so Soldiers were not schooled on how to operate them. Because the vehicle was top heavy and weighed between 7 to 22 tons, depending on the series, mine resistant vehicle roll-overs were common in the field. Between November 2007 and March 2009, there were 121 nonhostile-related mine resistant vehicle rollover incidents.³ In addition, units were not budgeted to maintain and operate the new equipment. It was evident that a more efficient integrating process was needed to sustain the mine resistant vehicles. The vehicles were fielded, but they needed to be managed. The need for holistic solutions to rapid fielding problems continues to be an institutional Army challenge.

Similarly, institutional doctrine, training, and leader development adapted and improved based on the lessons from the current wars. The writing and distribution of Army Field Manual 3-24, *Counterinsurgency*, the development and deployment of human terrain teams to Iraq and Afghanistan, the capturing of critical lessons by the Center for Army Lessons Learned, the collaborative dynamics of warfighter forums, and the establishment of predeployment cultural village leadership development scenarios were all part of continuing programs and initiatives reflecting Army institutional adaptability and innovation. While these were important initiatives, the news media continued to report that the institutional Army delivered "too little, too late" to field units. More needs to be done to



U.S. Navy, MCS 1st Class Cairnichael Yepez

A Department of State Contractor climbs out of a rolled MRAP vehicle simulator during an MRAP egress class on Forward Operating Base Marez near Mosul, Iraq, 7 November 2009. During the class, the contractors experienced 180-degree rollovers and practiced how to safely exit a rolled vehicle.

improve the timely delivery of doctrine, training, and leader development products to support the Army's generating force cycle.

Today, the process has moved to an improved level of centralization and coordination (Figure 2). A more versatile operational needs statement process requires a higher level of coordination among organizations, while the force provider facilitates the overall coordination. Additionally, the directed requirements process forces a certain level of integration. The current developments environment simplifies the process for units in theater with the presence of a coordination cell manned by a science and technology advisor and the Army Capabilities Integration Center liaison officer. This cell sends the unit-generated operational needs statement directly to clearing houses consisting of Department of the Army, U.S. Forces Command, and the Army Capabilities Integration Office. They in turn can further send data to more specialized entities such as Center for Army Lessons Learned, Joint Improvised Explosives Device Defeat Organization, or Asymmetric Warfare Group. This current process eliminates much of the previously existing redundancy and facilitates better overall management and coordination.

The current integrating effort must move beyond today's processes to incorporate change and adaptability into the training base. Ideally, leaders and Soldiers should be trained prior to entering the theater and during the reset period. Leader development and Soldier training must also be incorporated into the generating force. All Army schools, including the Captain's Career Course, Command and General Staff College, the Sergeants Major Academy, and the Army War College, are part of this effort. The Centers of Excellence and the Capability Development and Integration Directorates should also be at the forefront. The operational environment has changed and with it new and evolving technologies have emerged. Curricula should cover subjects like counter IED, battle command networks, power and energy, robotics, joint enablers, and the human dimension. Although not ideal, rapid change and development in an Army at war may compel units and organizations to train in theater, just to keep up with innovations that change or supersede existing tactics, techniques, and procedures.

Capabilities development for rapid transition is still yet another way that the Army moves forward to maximize the process of adaptability. It is the Army's way to identify and expand use of the proven organization or materiel solutions from responses to operational needs statements. It determines which new initiatives should become formal acquisition programs for the entire force, which should be maintained as nonstandard equipment in theater, and which should be terminated. This process harvests success from rapid acquisition efforts and brings them into the enduring life-cycle management process.

Task Force Odin, whose name is an acronym for Observe, Detect, Identify, and Neutralize, is an example of successful fact- and knowledge-based adaptability producing TTP solutions using existing technology to counter a new threat. Task Force Odin is an Army aviation battalion-size unit established in August 2006 at Fort Hood, Texas, as one of a number of initiatives to fight the increased threat and menace from convoy attacks in Iraq.⁴ The task force provides reconnaissance, surveillance, and target acquisition to protect convoy routes. The initial 300 man task force consisted of C-12 aircraft equipped with multi-sensors and Warrior or Shadow Unmanned Aerial Systems loaded with advanced imagery and rangefinders/designators.⁵ Since its creation, the unit has been credited with contributing to the killing of thousands of insurgents in Iraq, as well as countering and deterring insurgent attacks. Again, existing technologies, as well as reconnaissance, surveillance, target acquisition systems, were adapted and modified to take on an emerging deadly threat.

On a less complimentary note, and in later rotations of Task Force Odin, the training of new unit leaders did not keep pace with the new technologies or the changing threat. As a result, successive units have been arriving in theater with insufficient understanding of how to employ the advanced systems. In many cases, poor training has hampered the effectiveness and efficiencies of advanced weaponry. Challenges associated with the lack of training continuity continue to plague deploying units. The training base has simply not kept pace with the advent of new weapon systems for the current wars in Iraq and Afghanistan. More must be done to bridge this training gap to ensure

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continuing and future successes in the tactical environment.

The development and fielding of the Counter Rocket, Artillery, and Mortar (C-RAM) system is an example of successful adaptation. The Army used existing counter weapons systems to create an immediate solution for an existing problem—the defense of U.S. bases from insurgent rocket, artillery, and mortar attacks. In June 2004, the commander, Multi-National Force-Iraq, submitted an operational needs statement requesting support to counter the RAM threat. By February 2005, a sense and warn capability was fielded in Iraq. In March 2006, a C-RAM intercept battery—using the Phalanx 1B, the U.S. Navy’s 20mm anti-ship mis-

sile defense system—combined with the existing U.S. Army’s AN/TPQ-36 Firefinder target acquisition radar and Lightweight Counter Mortar Radar, achieved its first combat intercept of an incoming mortar round. By May 2009, this system had intercepted its 100th incoming insurgent mortar round and provided 1,500 localized warnings, affording troops time to take cover.⁶ As an ongoing adaptive process, C-RAM is being expanded and will transition to an advanced system: the Indirect Fire Protection Capability.⁷

The C-RAM’s success is shared with other adaptations and solutions, such as the on-going Accelerated Precision Mortar Initiative and the Command Post of the Future. The mortar initiative solicited advanced industry prototype munitions, which were demonstrated at Yuma Proving Ground from March through May 2009. One candidate munitions type consists of GPS guidance kits with steerable canards that screw into the existing 120mm mortar round. A second candidate type is a round which integrates the GPS guidance and steering into the body of the mortar round. Information from this demonstration will help to inform key Army decisions for a potential accelerated development and fielding.⁸

The Command Post of the Future took existing computer software and applied it to command and control functions to improve interaction, networking, situational awareness, and 3-D battlefield visualization.

Despite the numerous successes articulated above, another step can be added to the existing process to build upon the string of timely adaptations by the institutional Army (Figure 2). Adaptation can benefit from integration. In this next step, unit field commanders can provide an improved theater integrating center with their field data input. This integrating center can consolidate and classify field input and then submit its data to an “information integration management center” outside of theater or in CONUS. As a consolidated entity, the CONUS integration center can enhance the capability development by distributing or taking action on each field issue. Timely information is powerful and can improve integration, coordination, and overall efficiency. The fact-driven perspective of accelerated capabilities developments represents yet another important aspect of the term “leading from the edge.” The linkage of facts, knowledge,



U.S. Army, SSG Brian Vorhees

U.S. Army PFC Alysha Gleason and SGT Chad Ervin conduct maintenance on a radar station at Forward Operating Base Delta, Iraq, 22 August 2009. Both Soldiers are members of a counter rocket, artillery and mortar team.

and corresponding measures of effectiveness can lead to better visualization and understanding of the operating environment and help commanders create solutions based on a common view of the operating environment. Most importantly, this step does not add to bureaucracy, nor does it create additional force structure. Rather, it leverages existing organizations and processes to build upon and maximize the timely delivery of capability to the field.

Acquisition Reform

Fostering change and adaptation must move beyond internal Army processes. Institutional adaptation needs to broaden into the realm of weapons acquisition reform. There is increasing interest on Capitol Hill to introduce legislation to reform weapons acquisition. On 23 February 2009, Senator John McCain (R-Ariz.) and Senator Carl Levin (D-Mich.) introduced legislation that requires the Department of Defense to reestablish systems engineering organizations and developmental testing capabilities to address unreasonable performance requirements. Senator Levin stated:

“Ninety-five of DOD’s largest acquisition programs are, on average, two years behind schedule and have exceeded their original budgets by a combined total of almost \$300 billion... When the federal budget is under immense strain as a result of the economic crisis, we simply cannot afford this kind of continued waste and inefficiency.”⁹

The new measure requires service acquisition chiefs to submit a report to DOD detailing planning organizations, processes, and trained personnel on hand to support rigorous systems analysis and engineering. Moreover, the measure requires a robust program to improve reliability, availability, and maintainability as an integral part of design and development. Other requirements include the director of Defense Research and Engineering to periodically review and assess the maturity of critical technologies and for DOD to make greater use of weapon system prototypes to prove new technologies work before they are procured.¹⁰

On 23 April 2009, Representative Ike Skelton (D-Mo.), chairman of the House Armed Services Committee, stated—

“I am very pleased to introduce this legislation that will inject greater efficiency into the weapons acquisition system and truly ensure that we get the

most bang for our taxpayer buck...Our bipartisan proposal contributes many good ideas to the defense acquisition reform effort. I look forward to working with our Senate colleagues to work through our differences and generate a final product that enacts the best ideas in both bills.”¹¹

With the interest of both houses of Congress, the subject of near-term acquisition reform certainly has the potential to become a DOD success story. In this light, the Army can view this debate as a window of opportunity to recommend appropriate changes to the acquisition process that can accelerate the delivery of proven capabilities to Soldiers in accordance with the ARFORGEN cycle.

Acquisition Reform Defined

The Merriam-Webster’s dictionary defines acquisition as “something or someone acquired or gained.”¹² Reform can be defined as “to put or change into an improved form or condition.”¹³ In its combined form, acquisition reform can be viewed as a series of actions undertaken to improve the process by which defense-related items are procured.

Acquisition Reform Needed

In its current form, the DOD acquisition process is time-consuming. Department of Defense Instructions 5000.02, the Operation of the Defense Acquisition System, is voluminous and has grown from 37 pages in 2004 to 79 pages in 2009. Overall, the purpose of the DOD acquisition process has been to provide effective, sustainable weapon systems to meet warfighter operational needs quickly. Acquisition professionals have worked diligently within statutory and regulatory constraints, but under the current acquisition system, they were having difficulty achieving this goal. Why is acquisition reform difficult?

A predominant challenge in the acquisition community is time. Time is needed for effective development and fielding. Interestingly, the time needed to develop and field major weapon systems has been growing steadily. Over the past two decades, it has doubled to a current average of 10 years. The complexity of our systems and use of emerging technologies have driven longer development and testing cycles. Also, the warfighter is coping with a rapidly changing threat environment, which drives changes to system requirements throughout the

development cycle, thus delaying delivery. Since a new system must provide a capability that will still be essential 10 years into the future, requirements are complex, reflecting an uncertain mission and threat. Finally, to make matters more difficult, our DOD acquisition workforce has been dramatically downsized, causing the loss of many experienced professionals and decreasing workload capacity.

All the while, technology life cycles are decreasing, with a new generation of microelectronics being produced by the commercial sector every 18 months or less. This creates a significant disparity. With state-of-the-art technology turning over every year and a half, weapon systems in development for 10 years can be 5 or more generations behind. Not only is performance less than it could be, but many components are obsolete, and the original designs may not be reproducible. Once a weapon system is fielded, it can be difficult and expensive to support. Furthermore, because it takes so long to deliver the new weapon system, existing “legacy systems” remain in use for longer periods. Maintenance of these “legacy systems” is very expensive and manpower intensive. Increasing operations and maintenance costs of older systems, coupled with normal budget constraints, have resulted in fewer dollars for new system development. A cyclical effect, or “death spiral,” is thus being created and experienced, which will eventually deprive the U.S. Army of the weapon systems needed to counter future threats.

Another significant challenge to acquisition has been cost. Senator Levin recently stated: “We’ve seen the huge problem of cost overruns. Ninety-five of our largest acquisition systems have a \$300 billion cost overrun.”¹⁴ Moreover, he added, “extra costs continue to pile up despite the fact that we have reduced the quantities and reduced the performance requirements.”¹⁵ As a result of spiraling costs, Senator Levin and McCain require specific measures to

reduce costs, such as creating an independent office to provide separate weapon cost estimates, requiring an independent review of the maturity of critical technologies, and rebuilding the acquisition work force. Another measure includes the need to simplify and reduce the number of weapons requirements, since additional requirements lead to an overall increase in time delays and costs. While not all inclusive, the congressional measures specified above attest to the degree of attention being placed on the need for acquisition reform.

To reverse this trend, we must consider Army recommendations to the Department of Defense on how to change our way of doing business. Change could involve revisions to the current acquisition model. A revised model could help transform a sluggish, time-consuming process to one more agile and responsive. Requirements need to be simplified and the requirements determination process needs to become more streamlined. The use of commercial-off-the-shelf technologies needs to be encouraged. Rapid iterative prototyping and fielding of holistic solutions need to be fostered and championed early in the design process. Flexibility should allow for the purchase of fewer numbers of equipment end items to meet immediate and specific ARFORGEN needs. The Army should maintain the option to buy when necessary and to upgrade and keep pace with change two to three years later. Flexibility should also allow for specific purchases for selected units, without having to buy for the entire Army. Soldiers should be placed on new prototype systems during the earliest phases of the acquisition process. Do all operational needs requests become programs of record? Is it not possible to procure new equipment for rapid deployment, and then later, if required, conduct the analysis of alternatives and conduct more complete testing later? Greater flexibility is needed within DOD acquisition policies to reduce cost and time. Partnering with the U.S. Army Research, Development, and Engineering Command at Aberdeen Proving Ground, Maryland, for faster prototyping is essential to meet operational force challenges. We also need to consider the option to terminate legacy programs of record which no longer serve a purpose for the current operational force. For many, a desired outcome is for acquisition to become more flexible and to foster innovation. We need a process that gets current

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technology into the field rapidly, then sustains and modernizes systems to reflect changing technologies, missions, and threats.

Organizational Change to Support Adaptation

What organization is best manned, equipped, and resourced to take on these responsibilities on behalf of the Army? Should the Army G3, U.S. Forces Command, or perhaps the Army Capabilities Integration Center take on a more expanded role by assuming the capabilities integration mission? Certainly the Capabilities Integration Center is somewhat suited to handle this mission and could potentially assume greater responsibility on behalf of the Army and TRADOC in this role. It already mans the forward integrating cells in theater through its liaison effort and is a significant player in CONUS in the accelerated developments environment. The Capabilities Integration Center is already in partnership with the Joint Training Counter IED Operations Integration Center, another organization that adds to a more systematic approach to accelerated developments. Through its liaison element, the Army Capabilities Integration Center maintains a direct liaison with the IED center, thereby ensuring a comprehensive and synergistic approach to accelerated developments.

The Joint Training Counter IED Operations Integration Center establishes and maintains operational, intelligence, and training databases. Among its core functions are the development of capabilities and processes that provide support to combat training centers and educational institutions by maintaining a relevant and definitive operating environment to provide a context for training in live, virtual, and constructive environments. It continuously links all of our efforts to a common framework, ensures a consistent view of the current fighting environment, and exploits from a fact-based and knowledge derived set of data. The Army Capabilities Integration Center and Joint Training Counter IED Operations Integration Center partnership, working with Army Materiel Command and Research, Development, and Engineering Command, maximizes or accelerates those lessons coming from the operational theaters back into the institutional training base and, most importantly, allows for thorough integration into the



This cell phone was rigged as a detonator for an improvised explosive device. The detonator was recovered undamaged after having been successfully jammed by electronic warfare personnel using Counter Radio-Controlled IED Electronic Warfare equipment funded by the Joint IED Defeat Organization.

DOTMLPF. It also supports modeling, simulations, and gaming through the infusion and integration of data. A similar relationship already exists among the Army Capabilities Integration Center, the Army Evaluation Task Force at Fort Bliss, Texas, and the Experimentation Force of the Army Expeditionary Warrior Experiment at Fort Benning, Georgia. Acting as conduits, these organizations receive insights and observations obtained from the field to be passed directly into the development of innovative and advanced technologies.

The Army force generation cycle receives a wide variety of inputs to field the appropriate enablers to deploying units. Capability packages are necessary to ensure that brigade combat teams receive the latest equipment and enablers that were requested during previous rotations. The Mission Essential Equipment List items, nonstandard equipment, capability developments for rapid transition equipment, operational needs statements, and rapid equipping force items are a few of the other inputs that are provided to units during the reset phase. FORSCOM and TRADOC warfighters forums also contribute to the Army force generation cycle by providing timely requests for needed capabilities, doctrine, and training. If further research and experimentation is needed, the battle labs and Research, Development, and Engineering Command can be included in requests for assistance. In all of this, the CONUS Capabilities Integration Center has a role to help shape, coordinate, and synchronize the various inputs to ensure that the training and leader development components are incorporated into the rotations. The Army generating force has

a significant role to play in improving the adaptability of the fielded force through the Army force generation cycle process.

Beyond adaptation, the CONUS integration center can also serve as an Army hub for innovation. Innovation is not synonymous with adaptability. While adaptability is focused on adjusting and modifying existing capabilities to fit current circumstances, innovation is about creating a completely new concept, a new approach, or a new way of getting things done. Innovating by inventing a new weapon or capability that has never been fielded or that is revolutionary in nature may take a slightly longer process. Fact-based field data can drive innovation. By providing connectivity through the large information pipes of the Joint Training Counter-IED Operations Integration Center, the Army has the ability to drive long term innovation through its integration center while prosecuting the current fight.

Specific Recommendations

Leading from the edge is needed to further improve the adaptability of the Army's generating force. As of result of this study, the following recommendations are noteworthy.

- Request that the Joint Counter-IED Integration Center continue to synthesize and provide theater information and training products to all TRADOC schools, centers, and war colleges in a timely fashion.
- Designate a CONUS-based Capabilities Integration Center to synchronize and integrate DOT-MLPF inputs into the unit reset phase to ensure that the right equipment and the right people, with the right skills and right training, are available on-time for the Army force generation cycle.
- Establish an organizational structure to analyze, consolidate, and qualitatively refine the "lessons learned" process to precisely remove less valuable recommendations. More is not necessarily better. Quality should drive this process, not quantity.

- Designate a review board or process that not only receives lessons from the field, but also captures threads and enduring themes that have withstood the test of time. Thus, innovative lessons can more effectively develop new, dynamic, and adaptive tactics, techniques, procedures, and doctrine.

- Request the Joint Training Counter-IED Integration Center provide support to the U.S. Army Combined Arms Center to help institute near real-time changes to branch proponents, centers, and war college programs of instruction to incorporate timely lessons learned from Operation Enduring Freedom/Operation Iraqi Freedom.

- Shift Army acquisition focus from expensive, long-term, time-consuming research and developmental efforts to commercial-off-the-shelf technologies and rapid prototyping of existing technologies to support an Army at war.

- Provide links among research and development labs, equipment suppliers, and the manufacturing base to those that write Army requirements.

- Designate an appropriate Army review board to serve as the forum to recommend terminations to selected acquisition category programs to reduce duplicative programs and to eliminate programs no longer needed to support the Army's operational force.

- Recommend the Army develop a strategic plan with execution policy as to how the Army will continue the agile developments and acquisition process during peace and war to field urgent or high-pay-off capabilities. Ensure that development and equipping authorities and processes are approved as an enduring Army program in this era of persistent conflict.

- The Army lacks an organization with technical oversight of cost-benefit estimation. At DA level, increase DASA(CE) responsibility to provide this technical oversight and ensure the competencies of the cells established in TRADOC and the professional standards they follow in performing benefit cost analysis.

- Establish a dedicated cost-analysis cell at each TRADOC Capabilities Development Integration

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Directorate. These analysts would conduct independent cost-benefits of each alternative addressed during the DOTLMPF analysis.

- Given the importance of network architecture in future acquisition, recommend the Army designate a single acquisition authority with resource control to be held responsible for the network.

Conclusion and Way Ahead

In summary, “leading from the edge” is a powerful idea. It keeps pace with the current operational environment, drives adaptability, and serves as a foundation for Army innovation. It maximizes the efficiency and coordination of integrating centers in the accelerated developments environment through centralized ownership of the process and through smart and efficient partnerships. It is also about driving fact-based adaptability with fact-based solutions for the current and future fights. Thus, as the current force engages in combat operations, this approach feeds future development, creating future adaptive systems through more advanced technologies or techniques. These adaptations can also be incorporated in the current force through full spectrum spin outs. In a symbiotic fashion, the future force development process spins out advanced technology to enhance current force capabilities. Without doubt, this integrated approach will help ensure that our Soldiers are equipped, trained, and

supported with the very best the Army can provide. Leading from the edge will support and enhance two of the Army Chief of Staff’s imperatives: preparing Soldiers for success in the current conflict and transforming them into the force we will need well into the 21st Century. **MR**

NOTES

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