



THE LAND WARFARE PAPERS

No. 79 OCTOBER 2010

A Shot in the Dark: The Futility of Long-Range Modernization Planning

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A National Security Affairs Paper
published on occasion by

**THE INSTITUTE OF
LAND WARFARE**

ASSOCIATION OF THE
UNITED STATES ARMY
Arlington, Virginia

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The Futility of Long-Range
Modernization Planning**

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The Institute of Land Warfare
ASSOCIATION OF THE UNITED STATES ARMY

AN INSTITUTE OF LAND WARFARE PAPER

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A Shot in the Dark: The Futility of Long-Range Modernization Planning

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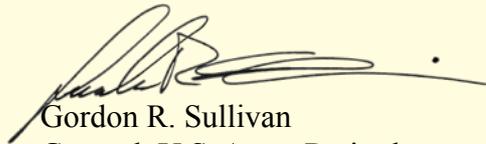
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Foreword

This paper addresses the utility of long-range future modernization planning and why it should be revisited in this era of persistent conflict. According to the author, the complexity of the environment for which the Army is required to plan makes predicting the future—and being prepared for the next war—impossible. The rising costs of technological advances associated with weapon development and modernization, coupled with political, economic, environmental and other variables, make long-range planning based on best-guess requirements both expensive and dangerous.

The author examines these problems through a study of the changes that occurred during the post-Vietnam era, a review of past Army future studies and a discussion of the Army's most recent attempt at modernization, the Future Combat Systems program. The paper recommends a policy of incremental modernization, based on the operational environment and near-term future trends. It uses the *National Security Strategy*, the *Quadrennial Defense Review* and the *Army Modernization Strategy* to suggest a framework for future modernization and recommends a less risky method for long-range futures studies.



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October 2010

A Shot in the Dark: The Futility of Long-Range Modernization Planning

Introduction

The U.S. Army, indeed the military in general, has a history of being unprepared for the next war. There is good reason for this—the complexity of the environment for which the Army is required to plan makes predicting the future impossible. Add to this the increasing cost of technological advances associated with weapon development and the funds required for modernization based on future, best-guess requirements become prohibitive. A better policy is to modernize incrementally, based on the operational environment and near-term future trends. In an era of persistent conflict, the Army's future force development must be based on current needs, grounded in economic and technological reality, and able to operate in and adapt to the expected operating environment (OE).

The OE is far too complex to be predictable, as past efforts have clearly shown. There are simply too many variables—e.g., politics, economics, natural disasters and nonstate actors—to make any kind of far-reaching plans with any degree of certainty. President Dwight D. Eisenhower's "Project Solarium" and subsequent "New Look" are often held up, and with considerable justification, as shining examples of a far-reaching strategy that subsequently directed force structures and future planning. But the plans' large reduction in Army forces and focus on strategic nuclear deterrence did nothing to prepare the Army for what would be an extended conflict in Vietnam. Additionally, the specter of a nuclear conflict with the Soviet Union provided a ready-made focal point for a national defense strategy. Compared to the complexity of identifying threats today, this was low-hanging fruit.

This single focal point is clearly missing today, as a reading of the 2010 *Quadrennial Defense Review (QDR) Report* demonstrates:

Past defense reviews have called for the nation's armed forces to be able to fight and win two major regional conflicts in overlapping time frames. These have been characterized as conflicts against state adversaries, typically employing conventional military forces. This QDR likewise assumes the need for a robust force capable of protecting U.S. interests against a multiplicity of threats, including two capable nation-state aggressors. It breaks from the past, however, in its insistence that the U.S. armed forces must be capable of conducting a wide range of operations, from homeland defense and defense support to civil authorities, to deterrence and preparedness missions, to the conflicts we are in and the wars we may someday face. In short, U.S. forces today and in the years to come can be plausibly challenged by a range of threats that extend far beyond the familiar "major regional conflicts" that have dominated U.S. planning since the end of the Cold War.¹

From a document that is supposed to look 20 years into the future, this lack of specificity is not helpful.

Post-Vietnam Predictions

Sometimes even specificity does not produce results; the early 1970s provide a good example of this. Following the Vietnam War, several factors led to (or justified) the Army's move to turn its back on unconventional warfare. The 1968 invasion of Czechoslovakia by the Soviet Union led to National Security Decision Memorandum 95 of November 1970, which concluded that a credible defense posture in NATO was vital and that conventional forces required an increased emphasis.² This led to a one-and-a-half-war strategy, focusing on a war in Europe (the "one") with an eye on the Middle East (the "half"). This "strategy of realistic deterrence" did not see the United States fighting two wars simultaneously.³

The Arab-Israeli War of October 1973, seen as a portent of a U.S.-Soviet conflict, resulted in massive, rapid losses of highly lethal conventional forces and equipment. Lessons from that war led to a substantial revision, in 1976, of Army Field Manual (FM) 100-5, *Operations*—doctrine that became known as "Active Defense." The manual stated that the "first battle of the next war may be the last," making it imperative that the Army be trained and equipped to "win the first battle of the next war."⁴ Active Defense led to the 1982 revision known as "AirLand Battle," which drove the Army's modernization program for years to come, producing what came to be known as the "Big Five": the M1 Abrams tank, the M2 Bradley infantry fighting vehicle, the AH-64 Apache attack helicopter, the UH-60 Black Hawk utility helicopter and the Patriot high- to medium-altitude air defense system.

Notable in the 1982 FM 100-5 revision was the absence of the topics of unconventional warfare, military operations against irregular forces, situations short of war, Cold War operations and stability operations—issues that had been addressed in the 1968 version.⁵ Clearly the Army was returning to its comfort zone, wholeheartedly embracing the new conventional emphasis. There were few voices to the contrary; most notable among these, however, was President Richard M. Nixon's Secretary of Defense, Melvin Laird. In his "Strategy for Peace: A National Security Strategy of Realistic Deterrence," provided to Nixon in November 1970, Laird had laid out a plan for separate forces to cover the full range of possible operations:

Modifications to our forces to provide a portion of them with an enhanced capability for brigade or task force-type operations, but not necessarily organized for the sophisticated level of division and corps-type combat required for NATO-committed forces is also required to preserve flexibility for possible operations elsewhere . . . a restructuring of some ground forces and supporting elements of air to tailor them for potential use in trouble spots, offers significant improvements in flexibility.⁶

Laird divided the force, focusing on four categories: deterrence of strategic nuclear warfare, deterrence of theater conventional warfare, deterrence of sub-theater warfare, and lower-level (insurgency/guerrilla) warfare. It is in the third category, sub-theater warfare, that Laird made some highly prescient recommendations. Aside from allocating four active and four reserve component Army divisions and a tailored force of tactical air support to this mission, Laird felt that this program should be fully integrated,

incorporating our own forces (specially designed and equipped with this type of operation in mind), the forces of our allies, the military and economic assistance that we would visualize to provide them, and those other initiatives—diplomatic, political and economic—which would enhance country and regional security.⁷

That the Secretary of Defense could not gain any traction for this plan speaks volumes to how decisions were made and money was spent by the services prior to the Goldwater-Nichols

Department of Defense Reorganization Act of 1986. Even a highly specific and detailed plan for the future proffered by the Secretary of Defense was ignored or overlooked in Army doctrine and modernization programs because of a laser-like focus on a perceived threat—in this case one that fell within the Army’s comfort zone. Laird had laid out almost an ideal force construct for the next 30 years, but the trends of the day prevented its adoption.

Incredibly, even the specificity regarding conventional operations found in the AirLand Battle doctrine did not prepare the Army to fight the war it was certain would happen. Army Chief of Staff General Eric K. Shinseki spoke, in 2000 testimony to a Senate subcommittee on Defense, of narrowly diverted disaster

in Desert Storm 10 years ago, as Saddam began to move south and overran Kuwait City and moved toward the Kuwaiti border, and this Army deployed what it had . . . a brigade out of the 82d Airborne Division. We flew them in there and put them astride a high-speed avenue of approach that moved south into Saudi Arabia.

We got them in there and, frankly, all of us held our breath. Because if the movement south by Saddam’s forces continued, we knew that the arrangement of warfighting was not one we would have chosen, heavy formations fighting light infantry. For reasons we do not know, Saddam stopped. He stopped at the border and he stayed there for six months. And that gave us time to reposition our heavy forces out of the continental United States and out of Europe.⁸

Apparently not all of the lessons of the October 1973 Arab-Israeli War had been learned or applied. “Win the first battle of the next war”—the mantra of General William E. DePuy, first commanding general of U.S. Army Training and Doctrine Command—certainly meant *being* there with the right force for the job. Surely members of the 82d Airborne Division, during a worldwide alert called by President Nixon a month after the October war, realized they were not prepared to fight tanks in the desert. Army planners should have realized that as well.⁹

Predicting the Future

Aided by hindsight, it is interesting to revisit the Army’s attempts to predict the future, especially during the post-Cold War period. *Army Vision 2010 (AV2010)*, published in 1998, provides a glimpse of an Army drunk on the promises of technology on future battlefields. Aside from the Army’s standard mission to fight and win the nation’s wars, this document also highlights the Army’s major role (“active and dominant players”) in “preventive defense activities ranging from nation building to military-to-military contacts.” The Army is also the force “that protects and controls populations, restores order and facilitates the transition from hostilities to peace.”¹⁰ Additionally, *AV2010* highlights the fact that between 1990 and 1996 the Army was deployed 25 times, with only one of those deployments falling under conventional operations across the spectrum of combat. It even goes so far as to state that “most future operations will occur on the lower and middle portions of the continuum of military operations,” calling for “soldiers on the ground, directly interfacing with the civilians and/or military involved in the crisis.”¹¹

That said, a reading of the remainder of *AV2010* makes what came before seem close to lip service. Knowing what we know now, the patterns of future conflict outlined in *AV2010*—Project the Force, Protect the Force, Shape the Battlespace, Decisive Operations, Sustain the Force and Gain Information Dominance—seem somewhat naïve. The report envisions a lighter, durable, multipurpose force requiring less lift and a minimized logistics tail, made possible by advanced technologies. “Decisive Operations” is defined as winning campaigns, battles and

engagements, or accomplishing military objectives (i.e., free elections).¹² This future Army would rely on common situational awareness (“a technically advanced, operationally simple network of multicomponent intelligence sources”), speed, agility and long-range weapons to protect the force. Technology would significantly reduce the logistics footprint and simplify sustainment, generating “reductions in demands on the sustainment infrastructure.”¹³

The concepts, enablers and technologies outlined in each section of *AV2010* are targeted at conventional operations and do not address the human aspect of the future of conflict as described in its opening pages. It in no way addresses how the Soldiers and leaders who are on the ground in nation-building or post-conflict periods will be trained and educated. In fact, *AV2010* does not even remotely address Phase IV operations or insurgencies.¹⁴ This is all the more interesting since it was written as if Vietnam had never happened—and while peacekeeping operations in Bosnia were ongoing.

The Objective Force, 2015 (OF2015), published in December 2002, does not fare much better. Although the last sentence in the concept summary reads: “It will be the Soldiers, not technology, that realize the campaign qualities of America’s Army, the Objective Force,” it too overreaches the promises of technology and focuses on a conventional future battlefield.¹⁵ According to *OF2015*, technological advances will allow seamless communications and the sharing of a complete common operating picture with the nation’s allied, interagency and joint partners. Soldier and leader training, education and operations will be enhanced by virtual reality, artificial intelligence and reachback capabilities. Leaders will exercise battle command faster and more confidently because of the Global Information Grid, Army Networks and unprecedented information access.¹⁶ Additionally, the Objective Force

strengthens the ability of the [United States] to deter, preclude, and limit conflict escalation by providing a multidimensional campaign quality threat to any potential adversary; provides the JFC [Joint Force Commander] the precision maneuver tool complementing precision engagement capabilities and creating the synergistic effect of precision strike throughout the Joint Operations Area; enables Joint fires by empowering the maneuver commander to accurately focus all available destructive fires; [and] contributes through the Objective Force Joint C4ISR [command, control, communications, computers, intelligence, surveillance and reconnaissance] architecture to the common operating picture (COP), transforming data into knowledge thereby by massing Joint capabilities.¹⁷

Like *AV2010*, *OF2015* makes no mention of insurgencies, post-conflict operations or contractors on the battlefield. Incredibly, it does not address counter-IED (improvised explosive device) operations or how IED strikes would be mitigated. Three months after its publication, the U.S. Central Command (CENTCOM) commander, General John P. Abizaid, stated that IEDs in Iraq were the number one threat to the force.¹⁸

The IED issue is an important point. The Department of Defense was caught off guard by the rapid onset and increased lethality in the use of IEDs early in Operation Iraqi Freedom. There is some question as to whether they should have been surprised. Mine warfare was no stranger to U.S. forces, and mine-related casualty percentages in Vietnam and Somalia were significantly higher than those of World War II. Additionally, the up-armored high-mobility multipurpose wheeled vehicle (HMMWV or humvee) program was initiated in response to IED use against U.S. troops in Somalia and was restarted during operations in Bosnia. That this program could not gain a foothold and this type of warfare was ignored in future Army programs and studies can be viewed as either a conscious decision, or worse, a complete oversight.¹⁹

The Cost of Getting It Wrong

It is easy to denigrate these predictions of the future, especially when the eventual outcomes are known. But this is precisely the point. If the predictions are continually revealed to be shots in the dark, yet used as justification for organizational change and acquisition programs, perhaps their utility should be reviewed.

One justification for and one outcome of these attempts to predict the future is to enable the acquisition of “leap-ahead” technology, or that which will revolutionize the conduct of war. The advanced technology associated with next-generation materiel development is extremely expensive and normally unproven and untested, which increases risk during development. This risk leads to delays as all of the kinks of a highly complex system are worked out. All of these things together add up to a higher price per item with a lower total quantity purchased. This is supposedly countered by increased capability, but as Secretary of Defense Robert M. Gates said, “A given ship or aircraft, no matter how capable or well-equipped, can be in only one place at one time.”²⁰

Because production and development take so long, by the time they are finished these new, exquisite builds are old or obsolete, unable to adapt or face a world completely different from the one for which they were designed. For example, the F-22 fifth-generation jet fighter, often referred to as a “Cold War relic” by Secretary Gates, had been in development for decades and suffered from skyrocketing production costs that led to ever-smaller acquisition numbers (from 750 to 187). Although operational, this aircraft has not been used in the current wars in Iraq and Afghanistan.

The ability to acquire leap-ahead technologies based on future capability needs is highly dependent on a receptive Congress, who ultimately must approve the necessary funding. In a time when the Army is conducting operations on two fronts and the U.S. economy is in tatters, such approval is unlikely. During war, requirements generally come from the bottom up; that is, capability requirements come from the combat zone, not the think-tanks, and Congress is eager to fund programs that provide immediate benefits to the troops. The bad economy will play a major role following the nation’s operations in Iraq and Afghanistan, as “peace” is always seen as an opportunity to save money by reducing the size and funding of the military. The end of the Cold War was no different, as the “peace dividend” led to a \$757 billion underfunding of the military between 1989 and 1998 (when compared to a flat budget adjusted for inflation).²¹

Additionally, the Army as a whole will have to be unified in its belief that the future envisioned and the capability desired are accurate and worth the extensive funding and time required—resources that will no longer be available for other programs in the procurement budget. This unified viewpoint (or lack thereof) was one of the many issues associated with the Army’s last attempt at leap-ahead technology—the Future Combat Systems (FCS).

FCS was the Army’s modernization plan at the turn of the century. The plan was to develop the next generation of combat vehicles that were lighter than but as lethal and survivable as current systems, built on common chassis and linked by an advanced network that would provide top-to-bottom synergistic effects. These vehicles would be C-130 deployable, save fuel using hybrid engine technology and have a dramatically reduced logistics footprint because of platform commonality. Aggressive system development and fielding was envisioned when the program was laid out in 2002, with all 65 brigade combat teams (BCTs) to be FCS-equipped by 2032. As the program progressed the plan was revised again and again, until finally only 15

BCTs—less than one-fourth of the total—would become FCS BCTs. Although the scope of the program was reduced, the total budget required went from \$87 billion for the first 15 BCTs in 2003 to over \$130 billion in December 2007.²²

The Army and the program were under relentless attack, as multiple Government Accountability Office (GAO) reports detailed numerous problems with FCS. Among these issues: system technology maturity levels did not match the schedule; the amount of money already expended relative to what had been accomplished did not bode well for the future of the program; and the contract management of the program did not lend itself to proper oversight.

The Army vigorously defended the program. They had to, because FCS was *the* Army modernization program; all the eggs were in that one basket. This led to a myopic viewpoint and a resistance to change indicators. The post-conflict stages of Iraq and Afghanistan did not represent the fight for which FCS was envisioned, even though it was repeatedly billed as being full-spectrum operations (FSO)-capable. The Army, at least at senior levels, exhibited a common behavior when dealing with a complex problem, allowing “over-involvement in ‘projects’ [to] blind them to emerging needs and changes in the situation.”²³ This resistance was demonstrated in March 2008 by the Army Deputy Chief of Staff/G-8 when he said FCS was “nonnegotiable . . . the issue of affordability should be taken off the table.”²⁴ The Army Capabilities Integration Center’s (ARCIC’s) FCS Capabilities Manager took a similar stance in the fall of 2008, telling an audience of students at the Army’s Command and General Staff College:

I’d ask you to look down [on your uniform] and see if you’ve got the U.S. Army there, and if you do, to realize that FCS, per the leadership of the U.S. Army, is the principal modernization program for the Army. It is our program. It’s ours. It’s the Army program. So you may not agree with it, and you may not think that it’s going to deliver all that it will—in fact, it probably won’t deliver all that it advertises. But it’s our program. We spent a ton of money on it already, and a ton of energy and time. And we are now, every year now, fighting budget fights for FCS. So it’s important to understand that this is our program. It’s not the Chief of Staff’s program . . . it’s the Army’s program. So if you are in the Army, you ought to understand what it is, you ought to be constructively criticizing it. So if you have issues with it, we’d be happy to take those. But we would ask that you remember, this is the Army program and you’re in the Army.²⁵

Secretary Gates saved the Army from itself in April 2009 when he cancelled the vehicle portion of FCS, effectively ending the program. Gates was concerned that the FCS program did not “adequately reflect the lessons of counterinsurgency and close quarters combat in Iraq and Afghanistan.”²⁶ Many years had passed, \$23 billion had been spent and the Army was in search of a new modernization program. Some nonvehicle portions of FCS were continued into the BCT modernization program, but even those have been problematic during testing.²⁷ The Army also immediately began work on a new ground vehicle program intended to fill the gap left by the cancellation of FCS. Task Force 120 was stood up to determine what lessons should be learned from the current conflicts and what capabilities should be included in this effort, known as the Ground Combat Vehicle (GCV). TF 120 also took the unusual step of holding two meetings with industry to get their input on what was possible within the desired cost, performance and schedule parameters. Congress is already concerned that the outlined GCV requirements are too complex and that the program will not be able to meet the cost and aggressive schedule requirements.²⁸

Recommendations

If we are truly in an era of persistent conflict, it makes little sense to spend time determining what capabilities will be needed for an unseen and unknowable future, predictions that almost certainly would not be acted upon by either a wartime Congress looking at immediate needs or a peacetime body looking to trim the budget. What is needed, then, is to incrementally develop the current Army based on the operating environment, near-term future trends and realistic expectations. The nation's strategic documents, which are supposed to guide our force development, can tell us what we should do.

The *2010 National Security Strategy (NSS)* does not help solve the *QDR*'s lack of mission specificity, but it does hammer home several points. First, the nation needs to strengthen its economy and reduce the deficit. This translates into smaller military budgets, necessitating fiscally responsible modernization programs. Second, the *NSS* repeatedly states that we must reduce our dependence on foreign oil and fossil fuels, of which the Department of Defense is the biggest U.S. consumer.

The first area, funding, forces the Army to seriously consider economics when developing modernization plans. The *2010 Army Modernization Strategy* speaks to this aspect when stating the plan's attributes: "versatility, tailorability, the ability to be networked, and the fielding of capability on a rotational cycle."²⁹ The Army needs to focus on current trends and available, proven technology to field adaptable, expandable systems. Current systems need to be maintained and upgraded as long as it is cheaper than a new build to do so. New builds must be multimission capable (versatile), adaptable to the local operating environment (tailorable) and able to communicate with old, new and joint platforms (networked). Fielding on a rotational cycle allows the Army to spread the cost of modernization over time. The *2010 Army Campaign Plan* theorizes taking this a step further by aligning modernization with the output of the Army Force Generation (ARFORGEN) model. This concept would have the Army procure only the amount of new equipment needed to field the deployed force, which in a steady-state environment would be roughly 30 percent of the Army's combat power. This would allow the Army to limit "procurements to technologies that demonstrate maturity and make more frequent follow-on 'buy decisions,'" providing the "opportunity to insert technology and . . . more readily adapt to threats." This would potentially lead to integration and training issues but is worth further study.³⁰

Changes are taking place not so much in weapons platforms' capabilities (i.e., the "Big Five" mentioned above) but in their networks, sensors and defense systems. In fact, Army Chief of Staff General George W. Casey, Jr., in remarks at the Command and General Staff College in May 2009, called the network the new "Big Five."³¹ This seems to indicate that development of the network and its integration into current systems are the center of the Army's modernization program and should consume a majority of its focus and resources.

Maintaining and upgrading current systems, while perhaps more cost effective, runs head-on into the second *NSS* goal mentioned: reducing reliance on fossil fuels and foreign oil. Hopefully the \$23 billion spent on FCS technologies was not a total waste, and some of the hybrid engine technology development can be continued and retrofitted into current platforms. This seems to be the case, as evident in ARCIC's recently outlined plans for energy-producing vehicle power plants; advanced power-management and production systems are already in use aboard the next-generation M109 Paladin howitzer and can be retrofitted to the rest of the fleet.³²

The 2010 *QDR* calls for ground forces to have a “continued focus on capabilities to conduct effective and sustained counterinsurgency, stability, and counterterrorist operations alone and in concert with partners.”³³ These types of missions, as we have discovered, are less technology- and equipment-focused and more Soldier- and leader-centric. In fact, the Army’s edge over its opponents in any conflict has never been about equipment and has always been about the training and education of its Soldiers and leaders. Major General Barry McCaffrey, a division commander during Operation Desert Storm, stated: “Equipment didn’t win this thing. If we had used the Iraqi equipment we still would have prevailed. It was the training of our officers and men that made it happen.” Marine Corps units fighting in Desert Storm with old M60 tanks had the same decisive success as Army units using M1s. And an Army captain, asked how his unit was able to perform so well in Desert Storm, their first time in combat, answered that it was not their first time—they had been in combat before, at the National Training Center.³⁴

The point is that while technology is important, it should never overshadow the fact that wars are fought by people, and the quality of these people gives the U.S. Army its perennial advantage over adversaries. As much thought needs to be put into personnel systems of the future as into the technologies these future warriors will use. Personnel costs, particularly health care, are “eating the Defense Department alive,” according to Secretary Gates. Health care cost projections out to 2011 show a 167 percent increase since 2001.³⁵ The Army’s current pay and benefits system threatens future operations, procurement, and research and development budgets; it must be considered as part of any long-range future modernization plan.

The preceding recommendations do not suggest that the Army should stop looking far into the future for promising technologies and new capability requirements. After all, the OE is shaped, sometimes dramatically, by what becomes technologically possible. The Army should focus its long-range planning on developing operational plans (OPLANS) to deal with potential technological (and other) “game changers.” Examples of these include achievement of kinetic energy weaponry that negates the advantages of armor, development of a laser weapon, future anti-access, area-denial systems, or a reduction in force (the inevitable result of peace). Future planners could identify the impacts of such systems or events, postulate capabilities that counter or negate the advantages, and alert military laboratories to be on the lookout for (or to begin to develop) technologies that could fulfill these requirements. The plans would be updated as technology advances, and designated decision points would enable the Army leadership to execute programs given a set of circumstances that confirm the planner’s vision of the future. Once decision-point criteria are met, the OPLAN is taken off the shelf, quickly refined and executed. In this way, the Army would stay far enough ahead of changes to avoid being caught off guard but not so far ahead that precious resources are wasted in a wrong-headed modernization effort.

Conclusion

The poor track record of previous studies and their ability to predict the next war, the complexity of the environment in which war takes place and the staggering expense of next-generation technology combine to warn against acting on long-range predictions. Instead, modernization should be done incrementally, based on near-term future trends of the operating environment. An era of persistent conflict mandates that our future programs must be based on current needs, grounded in the realities of what is financially feasible and technologically possible, and adaptable to the operating environment in which they will function, now and in the near term. The Army and the nation cannot afford the risks associated with modernization based on a future that may never be.

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