

RECORD VERSION

STATEMENT BY

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BEFORE THE

AIRLAND SERVICES SUBCOMMITTEE

ARMED SERVICES COMMITTEE

UNITED STATES SENATE

FIRST SESSION, 106TH CONGRESS

MODERNIZATION

MARCH 3, 1999

INTRODUCTION

Mr. Chairman and members of the Committee.

I would like to thank you for the opportunity to discuss our modernization strategies on behalf of the men and women of the United States Army – Active, Reserve, Guard, Soldiers, and Civilians. The US Army is the finest in the world, we are ready to win America's wars.

Today's army is a Total Force comprised of soldiers and civilians that believe in each other. We are a values-based organization. We can look back over our 223 years of service with pride in knowing that we have always provided the very best to our countrymen. Our strength is in our people – those who willingly take on the awesome challenges presented them with a can-do spirit that goes unmatched throughout the world. Breakthroughs in technology are changing the way we fight - we are becoming a capabilities-based institution with the aim of maximizing technology. Our world will never be the way it was just a few short years ago. We are navigating through the early stages of the information age. However, we must never forget that it will always be our great men and women that will carry the day.

OUR MISSION AND VISION OF THE FUTURE

The US Army's mission is to preserve the peace and security of our nation and provide for the defense of our country. We implement national objectives and overcome nations responsible for aggressive acts that imperil our countrymen and threaten our national interests. Throughout the nation's history and into the next millennium, we stand ready to contribute land forces and capabilities for the strategic purposes of reassuring allies and friends, deterring potential adversaries, compelling enemies, and supporting domestic communities.

America's Army will always focus upon preserving the lives of America's sons and daughters as we maintain our freedom and way of life. Our National Security Strategy (NSS) and National Military Strategy (NMS) require us to shape the international environment, respond to the full spectrum of potential crises, and prepare for an uncertain future. Meeting those

demands requires a capabilities-based force that enables our national leaders to call upon us for a full spectrum of military and humanitarian missions. Accordingly, we focus our efforts on seven mission areas:

- Deploy, fight, and win major theater wars (MTW)
- Promote regional stability
- Reduce potential conflicts and threats
- Deter aggression and coercion
- Conduct small-scale contingency (SSC) operations
- Support homeland defense
- Provide domestic support to civil authorities

Today's Army is three times as busy as it was during the Cold War, even though it has two-thirds the manpower of the same period. On a typical day the U.S. Army has forces stationed around the world and 23,000 soldiers deployed in over 66 countries worldwide. Information technology and advanced weapon systems play a large part in maintaining our ability to accomplish these missions. In the future, we must provide a force that is adaptable to a full-spectrum of contingency missions. Additionally we must rapidly deploy fewer soldiers on platforms that enable us to fight with acceptable combat power upon arrival. Quantum improvements in lethality, survivability, and mobility are the objective of our future Army.

Strategic responsiveness is the Army's long-term transformation objective. The Army and joint community must be able to solve the challenge of rapidly projecting sufficient capabilities to minimize the risk associated with the early stages of contingency operations. Simultaneously, we must also be prepared to commit follow-on forces for full-scale ground combat operations. Accomplishing these objectives requires deployment of the proper mix of mission tailored, lethal, survivable, and highly mobile forces to fight and win decisively as a part of the joint/multi-national team.

HISTORICAL PERSPECTIVE

Even before the end of the Cold War, Army leaders knew that the service could not tolerate "business as usual." The most forward-thinking among the leadership realized that the overwhelming victory in the deserts of Iraq and Kuwait in 1991 validated warfighting concepts, and training doctrine. It also highlighted logistical challenges of a projection-based force. However, it did not necessarily herald the future of warfare or force structure. In that respect, Desert Storm served as both a welcome validation and a distraction from already ongoing efforts to reshape the Army and rethink its future.

In late 1991, Chief of Staff of the Army Gordon R. Sullivan developed concepts for how the Army should go about changing itself. Accordingly, he initiated efforts emphasizing experimentation as a central method to validate force design. Discussions with then-TRADOC Commander General Frederick M. Franks, Jr. led to a concept called "Louisiana Maneuvers" (LAM). Sullivan drew the name from large-scale field training exercises conducted by the Army in 1940 and 1941 under Chief of Staff George C. Marshall. Sullivan, like Marshall, envisioned an intellectual process to guide the Army through the internal and external changes it would have to make. However, unlike the Army of 1941, the Army of the 1990s and beyond was not expanding, but shrinking. Also, unlike the 1941 force, the post-Desert Storm Army was superbly trained with modern equipment. Sullivan maintained the challenges faced by Marshall were similar to those he confronted; issues that would remain past the year 2000. How should the Army handle unseen challenges ahead? How could the Army identify what was successful, even though it had been built for the Cold War? What new initiatives should be undertaken to carry the Army into the twenty-first century? General Sullivan posed the central question: "Can we change, maintain our effectiveness, and grow into the 21st Century?"

General Franks established battle laboratories to facilitate the LAM objectives. His goal was to streamline development of capabilities for the force projection Army in specific areas where the dynamic of battle was in sharp change. Battle labs employed small-scale experimentation, simulations, exercises, analyses, and prototypical work harnessing virtual reality and technology as their tools. Essentially they were strategic scouts responsible for

keeping an eye on emerging technology while maintaining touch with current developments. The battle labs focused on the six army imperatives of doctrine, training, leader development, organizations, materiel, and soldiers. Organization of the effort was segmented into six battle dynamics:

- Early Entry, Lethality and Survivability,
- Depth and Simultaneous Attack,
- Mounted Battlespace,
- Dismounted Battlespace,
- Battle Command, and
- Combat Service Support

The modern Louisiana Maneuvers Task Force evolved into Force XXI, the process designed to create Army XXI. Force XXI became the Army's method to advance into the 21st century. The effort represents a significant change in the manner in which we conduct division operations. These changes were brought on by information age technologies; increased integration of service components into an effective battle team; more lethal, survivable, and agile systems; and more capable soldiers and leaders.

While Force XXI was providing us mid-term improvements in our force, we still needed to gain a better vision of the future. General Dennis Reimer initiated a futures process that became known as the Army After Next (AAN) to accomplish this objective. AAN conducts investigations into the nature of future warfare with a primary focus on military art and technology. Over the past two years, AAN has provided insights and discoveries of tremendous benefit to the Army and the Defense Department in a variety of areas including: Army XXI, the Army's Experimentation Campaign Plan, and the evolution of Strike Force-the concept that leads us from Force XXI to AAN. Concluding, it is Army After Next that highlights our enduring needs for a hybrid Army with broadly balanced capabilities to enable full-spectrum dominance in a dynamic and challenging operational and threat environment.

THE ENVIRONMENT OF THE FUTURE

Forces of Change

The operational concepts and forces described by the Army After Next reflect the capabilities of the Total Army of the future (2025). A wide variety of global trends ranging from demographics, international politics, economics, energy and technical evolution, and the Information Age form the strategic pretext for the next conflict. The threats we face as a result of these factors include the traditional (i.e., transnational disputes, failing nation states, regional and state-centered threats) and non-traditional (i.e., information warfare, economic manipulation, and international terrorism).

The Army will have to change the way it trains and organizes its forces and conducts its operations. The challenge lies in maintaining the optimal balance between external forces of an increasingly demanding geostrategic environment, constrained resources, increased media scrutiny, and the enduring requirement to remain the world's dominant land force. Emerging technology offers revolutionary potential for greater operational efficiency and effectiveness on the future battlefield. Maintaining a disciplined approach is key to our success.

Technology by itself will not achieve victory for the Army. It must be directed and employed by capable, competent soldiers and leaders who understand the nature of war, focus on mission accomplishment, and execute with speed, precision, and violence of action. To produce such a force, the Army must continue to emphasize and investigate the human side of warfare as well as the effects of emerging technology on the soldiers and leaders who must use it.

The future also requires both an unprecedented competence in the core function of combat, as well as unmatched flexibility in other operations. Future battle will require far-reaching communications, velocity, and precision, while at the same time demanding sustained, concentrated lethality. The future demands a robust institutional Army to administer and train soldiers; it also requires a powerful, responsive operational Army for execution of missions of war and peace.

These conflicting needs, along with many others, cannot be solved with anticipated resources of time, money, and equipment alone. As the nation's history has consistently demonstrated, it is the American soldier who ultimately finds the balance and creates success. As the Army contemplates the most audacious visions of the future, its most powerful guarantor of that future is its oldest tradition: the combat-ready soldier.

THE REQUIREMENTS PROCESS

The Army continually upgrades and modernizes the way it fights so it can maintain battlefield superiority over all potential adversaries and can achieve complementary capabilities with other military services and nations. The way we change is determined holistically, based on desired joint and Army capabilities versus simply countering specific threats and known deficiencies. Requirements are driven by warfighting concepts focused on the future and on experimentation in our battle labs providing insights to discern viable requirements.

This process begins when TRADOC, in association with the warfighting commanders-in-chief (CINC), develops a future warfighting vision. It is a basic description of a desired capability as seen by a commander looking into the future. The CINC vision is influenced by the National Security and National Military Strategies with science and technology providing a frame of reference. The requirement is then promulgated through a series of white papers designed to provoke thought and dissertation by the military, academia, industry, and other futurists. When developed sufficiently, the vision is translated into a capstone warfighting concept that is still an abstract description of the desired goal with sufficient granularity to begin experimentation.

Teams are formed to develop capstone concepts. Members from TRADOC, U.S. Army Materiel Command (AMC), other Army commands, HQDA, other military services, academia, industry, and others as necessary. These teams take advantage of the synergy of the group to translate the commander's vision into the next level of detail. Capstone concepts reflect direct linkage to the National Military Strategy, Defense Planning Guidance (DPG), the Joint Vision,

the Army Plan, and other documents. In this context, the capstone warfighting concept becomes the primary guide for all other concept development activities in the Army.

The capstone concept provides a macro level description of the future Army that requires augmentation by detailed warfighting concepts of operational, functional, and branch warfighting concepts. This approach is also used by school commandants and other Army leaders to develop the more detailed concepts that describe the full range of future capabilities needed by the Army to execute the capstone warfighting concept.

Further supporting warfighting concepts are Future Operational Capabilities (FOC). FOC are structured statements of operational capability required by the Army to achieve its goals as stated in approved warfighting concepts. They are identified in each operational concept and consolidated in TRADOC Pam 525-66. This document is the control mechanism for requirements determination activities and provides a cross-reference for all capabilities to ensure they support approved warfighting concepts. It also helps guide Army science and technology activities, as well as industry research and development initiatives. This strategy forms the basis for experiments, analyses, and other requirements determination activities.

Warfighting experimentation and analysis are key to the requirements determination process and give the Army an unsurpassed means to understand future warfighting requirements. Progressive and iterative mixes of constructive, virtual, and live experiments combined with operational experience and appropriate analyses, yield insights to better define warfighting concepts and requirements.

Requirements determination balances the domains of doctrine, training, leader development, organization, materiel, and soldier issues. Required capabilities are addressed in detail as Mission Needs Statements (MNS) and Operational Requirements Documents (ORD) are developed. The entire process provides structure and discipline to the unstructured environment of determining future capabilities and requirements.

TRADOC continues to explore new management techniques and ways of handling the requirements business and directing change. Army processes such as the Warfighter Rapid Acquisition Program (WRAP), Information Technology (IT) management, and Horizontal Technology Integration (HTI) assist in this effort. Our developmental model is anchored in a process we call Spiral Development - a progressive, iterative experimentation and prototype fielding procedure. As we continue to become better at determining our requirements, the test-fix-test methodology central to spiral development, has come to be a key element of the reengineering of Army requirements determination.

GOALS AND OBJECTIVES FOR EXPERIMENTATION

Advanced Warfighting Experiments (AWE) are at the heart of today's Army's requirements determination process. The experiments focus on major increases in warfighting capability across entire combined arms teams. They are progressive and iterative mixes of high fidelity constructive, virtual, and live simulations using real soldiers and units in relevant, tactically competitive scenarios. Throughout the experimentation process we focus upon our imperatives of Doctrine, Training, Leader Development, Organizations, Materiel, and Soldiers (DTLOMS) to maintain balance in the development of Army XXI organizations.

AWEs also provide Army leaders with insights regarding FOC for tomorrow's Army. These FOC provide way points to plot the Army's future course. We gain understanding about specific aspects of future warfighting. The results of each experiment provide insights regarding how strongly we'll pursue the investment strategy for each initiative. Options include: invest further and field the product, experiment further, or divest/cancel the program. All of these decisions are afforded operationally generated analytical rigor as a result of the AWE process.

The experimentation process also has impact at a higher level. It provides logic and analytics for determining warfighting capability requirements for our organizational designs. We can determine what capabilities must be embedded in our divisions as well as identify refinements in tactics, techniques, and procedures.

All nine exercises conducted since 1994 primarily focused upon a single echelon per experiment, sequenced in order to deliberately build the force one building block at a time. The 4th Infantry Division AWE in November 1997 was the largest event to date. Insights gained from these exercises have shaped the Army for the future. The most significant among these observations are:

- **Information dominance** through situational awareness empowers leaders throughout the battlefield to take decisive action. The ability to share an accurate and relevant common picture was the single most effective combat multiplier. This change in our operational paradigm, coupled with enhancements in precision fires, lethality, and survivability, will enable our maneuver forces to operate at ever increasing speeds.
- **Collaborative and parallel planning** refined the orders process. Digitization technologies provided commanders and staffs better situational awareness. Video Teleconference and white boarding provided real-time collaboration capability in the development of courses of action and operational plans. This reduced traditional timelines in the deliberate military decision making process. Evolving technologies are enabling us to spend less time on planning and become more execution-based.
- **Embedded training simulations** enable units to train and experiment with the equipment and software on their own system while remaining at home station. This concept is becoming ever more important in conserving our training resources and reducing operational tempo.
- **Digital training and automated decision support** requires adaptive thinking processes. Decision-making skills with information age technology will be implemented in our leader development courses. Traditional order drills were not be able to keep up with tempo. The use of digital white board technology for information sharing was a great success. Units will have to learn to exploit information dominance throughout the battlefield.
- **Understanding system architectures** ensures leaders understand how information is altered from source-to-source and also ensures they know how

the horizontal and vertical integration of information is accomplished across digitized systems.

- **Digital backbones** are essential for execution of future Command, Control, Communications, and Intelligence (C4I) operations. While not robustly integrated, the present Army Battle Command System (ABCS) provides an unprecedented level of situational awareness and a comprehensive battlespace picture. Software functionality development will enhance the necessary horizontal integration of ABCS.
- **High capacity communications architectures** - Requirements for larger capacity communication lines and ever-evolving digital technologies continue to grow. Increases in tempo require our command posts to continuously command and control on the move.
- **Powerful synergy** develops as the speed of information passing from the sensor to the shooter increases - decisive, noncontiguous, distributed combat operations follow. Systems such as Unmanned Aerial Vehicle, Joint Surveillance Target Acquisition Radar System, Apache Longbow and Commanche are critical to this effort.
- **Quality soldiers** are required for our technology-based Military Occupational Specialties. Our significant investment in their training and digital proficiency provides skills that make them very competitive in the civilian sector. Retaining them is critical to our continued success.
- **The Force XXI process is not an end state**, but another venue for us to continuously improve our operational forces for the 21st Century.

THE FUTURE – MEETING TOMORROW’S CHALLENGES

Today's Army remains trained and ready. We are optimized for the conduct of high intensity ground combat while adapting to meet the diverse needs discussed in our National Security Strategy and National Military Strategy for a post Cold War world. The challenge lies in maintaining readiness today while simultaneously exploiting the lessons learned in our experimentation processes. Ultimately we will transition into a state-of-the-art, information age,

multi-function force for the future. We cannot compromise the standards that have made us the world's premier fighting force during this process. We must maintain balance.

The spiral development model is a critical element of this process. It weaves together the complex worlds of experimentation, acquisition, and force development into a coherent, well-disciplined effort. It is a collaborative process that integrates the user, developer, contractor, and testing element at critical points in time. All players learn from one another and determine the best way to maximize the product. The team works together to quickly solve system problems and place the product back into experiments in rapid order. The end goal is a product that meets the user's needs, is analytically tested, and reduces the standard acquisition cycle. This model will also help in the process of organizational change because virtually all of the organization is involved throughout the process.

The Army Experimentation Campaign Plan (AECPP) incorporates spiral development into an overarching plan that provides synergy and discipline to our future efforts. The AECPP has three axes: light, mechanized, and strike. All three are oriented toward enhancing the full-spectrum capability of the Army as we strive to meet requirements of today's and tomorrow's Army. The AECPP provides a holistic, unified direction for experimentation across all Army missions and echelons and operates within the framework of joint experimentation.

The mechanized axis focuses on fielding and training modern, mechanized forces with enhanced deployability, survivability, lethality, mobility, and sustainability that can dominate an extended battlespace. We have been developing the mechanized axis since 1994 with the Force XXI Division AWE occurring in November 1997. The culminating event will be the 4th Infantry Division Capstone Exercise (DCX) in April 2001. The exercise will demonstrate the capabilities of the Army XXI mechanized division design and showcase the First Digital Division. The DCX will occur in two phases. Phase I will be in conjunction with a brigade rotation at the National Training Center in spring 2001. Phase II will be a division command post exercise at Fort Hood during winter 2001.

The light force axis focuses on exploring enhanced lethality, survivability and interoperability of our light and special (Airborne/Air Assault) division forces. This axis intends to enhance light force capabilities by providing Army XXI type situational awareness and other capabilities improvements to light forces comparable to the enhancements made to heavy forces through the Force XXI process. The key event of this axis is the Joint Contingency Force Army Warfighting Experiment (JCF AWE) which occurs in September 2000. The JCF AWE is a culminating experiment, focusing on light contingency forces conducting operations in urban and restrictive terrain. The JCF AWE is U.S. Atlantic Command's (USACOM) first major experimentation event of the Joint Experimentation Campaign Plan.

Today we can deploy mission tailored units from light and heavy forces with great adeptness. We can expect tomorrow's challenges to mandate a more strategically responsive force that can deter/contain and resolve crises in the early stages. We must be able to rapidly integrate, deploy, fight, and gain information dominance as part of a joint team upon arrival. Strike Force, the third axis of the AECP provides our path to realizing this capability.

This operational and experimental headquarters provides the Army an avenue to meet the three pillars of the National Military Strategy: shape, respond, and prepare. It is the Army's concept to meet a recognized need for adaptable capabilities to the Commanders-in-Chief and the National Command Authority in support of national security.

Operationally, Strike Force supplies an adaptive, tailorable force capability package that bridges the gap between mechanized deployability and light force lethality and mobility challenges. The Strike Force will also provide a unique capability to the National Command Authority as it integrates key capabilities from across the force. The Strike Force headquarters element then integrates these units into a synergistic rapidly deployable force, capable of executing operations immediately upon arrival. This unique ability to expand or contract -- to absorb specialized capabilities as the mission requires - provides lethality, survivability, and tactical mobility capable of withstanding the rigors of a broad range of threats and operational environments. Strike Force will be optimized for early entry, peace enforcement, and deterring/controlling crisis type operations. Command nodes will be smaller with the capability

to reach-back to safe areas for information, fires, situational understanding, and logistical needs. Another major distinguishing feature is the

The Strike Force effort will also serve as an experimental test-bed for Army-wide advances in training and leader development with initial threshold capability planned for 2003. Lessons learned in the challenges of developing multi-disciplined leaders with exceptional information and technical skills will help transition lessons to the other axes. Training, leader development, and soldier issues associated with rapid team building, en route mission planning and rehearsal, and a host of other challenges will also be studied.

The Strike Force concept allows us to take the vast arsenal of capabilities of America's Army and tailor them to meet the more diverse threats in today's world. The concept envisions a world-class command and control headquarters that will initially have very little permanently embedded combat force, but will be able to command and control the vast array of capabilities inherent across the Total Army. It will be able to operate as part of a joint or combined force.

The concept is also cost-effective. The Army will form the initial Strike Force headquarters in 1999 from within existing force structure. The 2nd Armored Cavalry Regiment (ACR) at Fort Polk, Louisiana, has been selected to serve as the proof-of-principle organization for testing the Strike Force concept. The main source of operational units will be existing light and mechanized forces modernized with Army XXI technology enhancements.

Looking into the next century, we will see the existing combat fleet nearing wearout; the need to modernize and counter emerging threats will become ever more important. We should not relinquish our technological edge. Additionally, the Army will be evolving to embody future needs and operational concepts based on the insights from near-term experimentation and the resulting operational capabilities definitions.

By 2010, we will have two distinct elements of our force. The first element is modernized with advanced technology (M1A2 SEP, M2A3, Crusader, Comanche). This force will ensure we retain overmatch via the advanced technology insertion happening today. The

second element is product-improved versions of our current systems. This force will retain overmatch, but with some risk.

Based on fleet wear out and developmental lead times, there is a key decision point in 2003-2005 time frame. At that time, based upon the maturity of needed technologies, the decision must be made to produce either a system with real leap-ahead technologies (revolutionary) or one that is limited by technology breakthrough and by necessity is more evolutionary. Regardless, meeting a fielding date of about 2020 requires a production decision at about the 2012 point.

As time continues and technology becomes available either through experimentation or science and technology initiatives, it will flow into a Future Combat Vehicle (FCV) effort. As the FCV and AAN effort mature and the force structure is adjusted, systems will cascade down through the force. AAN forces will be equipped with evolutionary/revolutionary systems. The remaining force will be equipped with a mix of modernized systems and product improved systems.

The Army will continue to invest in leap ahead technologies that show promise and incorporate the new technology into existing systems through product improvement programs. This, in combination with service life extensions, will maintain relevance for the current force until technology provides windows of opportunity for true leap ahead technologies to emerge into the Future Combat Vehicle.

RESOURCE IMPLICATIONS

TRADOC's futures initiatives will enable the Army to win in the 21st century. Despite significant resource challenges, we must continue to invest for the future. We must build on our momentum as we finalize division redesign and initiate efforts enabling the Army to field modernized light contingency and mechanized forces with modernized doctrine, organizations, materiel, and more flexible and adaptable soldiers and leaders. We must ensure the capability to

explore future operational force enhancements such as the development of the Strike Force. Simultaneously, we must continue to ensure sustainment of our near-term operational overmatch in conventional forces using technical insertions, advanced organizational designs, and relevant doctrine and training methods of our current light and mechanized contingency forces.

We must train soldiers and leaders of the digitized Army not only to use our new equipment, but also to assimilate the vast quantities of information drawn from digitized systems. These programs are the heart of the Army modernization effort and key to training leaders and soldiers for the future. The Training, Leader Development and Soldier (TLS) Program is being developed and resourced. TLS will develop flexible and adaptive soldiers and leaders who can confront the complexities of their operational domain in the 21st century.

With the recent plus-up in the President's Budget, TRADOC can capitalize on the successes of Task Force XXI and Division AWE to develop future warfighting capabilities to meet new challenges and requirements. However, we must continue to pursue the full definition of the first digitized division and better address the future mechanized force capability.

The combat developments (CD) community plays a major role in moving the Army towards the 21st century as a strategically relevant, affordable force capable of meeting its national strategic requirements across the full spectrum of military operations in all operational environments, now and into the future. The Force XXI process has increased TRADOC's impact on future Army readiness. CD plays a major role in defining warfighter needs by employing the redefined requirements determination process. They also manage the delicate balance between near and long term readiness in an environment of constrained resources.

CONCLUSION

America's Army and our developmental programs are poised and ready for the new millennium. We are well-equipped today, but our systems are aging. The science and technology pipeline is developing new solutions capable of creating breakthrough effects in

warfighting. We must be able to incorporate their advances before the next war comes to pass. We must move forward.

The dawn of a new era is upon us. Our Army Experimentation Campaign Plan provides us a disciplined approach for fielding new systems capable of meeting the country's national security demands well into the 21st century. We're sure to face challenges; we do so every day, but we feel confident in our ability to navigate the path with acuity and vision focused on a single objective – ensuring our ability to win the next war with our soldiers surviving the battle to fight another day.