

**STRATEGY
RESEARCH
PROJECT**

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TRAINING AMERICA'S ARMY FOR THE NEXT MILLENNIUM

BY

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CARLISLE BARRACKS, PENNSYLVANIA 17013

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ABSTRACT

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The current U.S. Army training doctrine, contained in FM 25-100, Training the Force, and FM 25-101, Training the Force - Battle Focused Training, was developed in the late 1970s and early 1980s. The Army and its environment have changed since this doctrine was published. The purpose of this study is to examine the extent to which the environment has changed since the doctrine was written, and to determine those aspects of doctrine that are still valid, while exploring those elements in which change may be required and desirable. Additionally, non-doctrinal practices that are widely used in the field are considered for inclusion in doctrine. The study concludes that, although a large portion of the current Army training doctrine is valid for today and for the next decade, the recommended clarifications, changes and additions must be made to ensure a trained and ready Army for the next millennium.

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PREFACE

This strategic research project is an examination of the U.S. Army training doctrine contained in FM 25-100, Training the Force, and FM 25-101, Training the Force - Battle Focused Training. The purpose of this study is to examine the extent to which the environment has changed since the doctrine was written and to determine those aspects of FM 25-100 and FM 25-101 that are still valid, while exploring those elements in which change may be required and desirable.

The project, assigned by the Office of the Deputy Chief of Staff for Operations, U.S. Army, is an academic effort executed by three Army War College students. Although considerable field research was conducted through interviews with senior officers and non-commissioned officers, it is not a coordinated Army action. In this light, the authors acknowledge that others are doing significant work on training doctrine and training issues, particularly in Training and Doctrine Command (TRADOC), that is not addressed in this study. Additionally, the field interviews supporting this study were conducted with an agreement of non-attribution. Therefore, the individuals that were interviewed are not cited by name.

STUDY METHODOLOGY

The team began the study by researching the environment in which the current training doctrine was written. We then contrasted that environment with today's in order to determine

what substantive changes have occurred.

We also analyzed all the major concepts contained in the training doctrine to determine how today's environment had effected them. Initially, we tried to identify which concepts were enduring despite the changed circumstances and which concepts were questionable or not working. There were also several non-doctrinal concepts and practices widely used in the field that we determined to study for possible inclusion in a future revision.

The team then conducted a more detailed analysis through a combination of library research, field research, and considerable dialogue among the team members. The field research was conducted through interviews with Army leaders at many installations in the United States and abroad. These interviews included a number of senior officers who experienced the first training revolution, and current and recent unit commanders and command sergeants major. Additionally, senior leaders in the Army National Guard and Army Reserve were interviewed.

During this research we identified four categories of concepts. First, there were *enduring concepts* that we determined to be valid and that should remain in our training doctrine. There were also doctrinal concepts that seemed not to be working in today's environment. We concluded that there were several potential reasons for this dysfunction. One reason was that the concepts were not being executed properly. These were systemic

discipline issues, not training doctrine issues, and therefore not within the scope of this study. Another reason was that some doctrinal concepts lacked clarity and therefore were executed with varying degrees of success. Our discussion and recommendations in this category are titled *doctrinal clarifications*.

There were other issues that seemed no longer appropriate for today's doctrine. For these concepts, titled *doctrinal changes*, we developed alternative solutions. We also identified *doctrinal additions* - the current, non-doctrinal field practices that were appropriate for inclusion in training doctrine.

This research paper parallels the methodology highlighted above. A discussion of the changed environment and the second training revolution precedes and lays the foundation for the analysis of the training doctrine. Our findings and recommendations concerning the training doctrine are categorized as follows: doctrinal clarifications, doctrinal changes, and doctrinal additions. We hope that this strategic research paper will be profitable for igniting the professional thought and dialogue required to change the Army's training doctrine - the foundation for training America's Army for the next millennium.

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INTRODUCTION

The present U.S. Army training doctrine, contained in FM 25-100, Training the Force, and FM 25-101, Training the Force - Battle Focused Training, was developed in the late 1970s and early 1980s. This doctrine, a product of the Army's first training revolution, has served our Army magnificently. Indeed, it is a key element in the building of the Army that defeated Iraq in Desert Storm and of the trained and ready Army our Nation enjoys today.

Yet, much has changed in the world and in our Army since the doctrine was published. Is it time to change the Army's training doctrine? Far from seeking change for the sake of change, the purpose of this study is to examine the extent to which the environment has changed since the doctrine was written, and to determine those aspects of Training the Force¹ that are still valid, while exploring those elements in which change may be required and desirable. Our findings and recommendations concerning the training doctrine are categorized as doctrinal clarifications, doctrinal changes, and doctrinal additions.

In the process of this study, several gold threads became clear. First, the environment has changed significantly since the Army training doctrine was published. In fact, we believe the Army's second training revolution, although in its infancy, is underway. Second, leaders in the field are adjusting the way they train to cope with this changing environment. Some of these

adjustments reinforce the enduring concepts that have been and will continue to be the foundation of a trained and ready Army. However, some of the adjustments being made in the field today degrade the enduring concepts and, because they are not aligned with doctrine, create distrust and indiscipline in the use of the entire doctrine.

Third, we must align what we practice in the field and what we profess in the doctrine. General William E. Depuy stated that when "51% of the commanders in the Army - generals through captains - operate instinctively in accordance with the principles.....at that time it will be genuine doctrine."² Consider these threads as you read the study. We believe that you will conclude, as we did, that it is time to revise the Army's training doctrine.

THE CHANGING ENVIRONMENT

"A successful military is one that can constantly overthrow old weapons and doctrine and integrate new ideas and personnel without social upheaval. All successful military forces have been able to do this for a while. None has been able to do this permanently."³

- The Future of War, by George & Meredith Friedman

"As an institution, the Army was beginning to appreciate that its missions were changing. We were being asked to do things that were largely unfamiliar to the generation of soldiers accustomed to facing the Soviet Union and the Warsaw Pact."⁴

- Hope is Not a Method, by Gordon Sullivan and Michael Harper

Doctrine represents an army's collective thinking about how it intends to fight, train, equip, and modernize. When the first edition of FM 25-100, Training the Force was published in 1988 it represented a revolution in the way America's Army trains and thinks about warfare. The doctrine that this manual, and the accompanying FM 25-101, Training the Force - Battle Focused Training articulated has served the Army and the nation well for over ten years. A large part of these manuals remain valid today and will continue to be valid well into the future. However, the solid foundation that Training the Force built for the Army will endure only if the institution and her leaders are willing to change and improve - to carry the first Army training revolution to the next level. History is replete with examples of armies that attained unprecedented success and efficiency on the field of battle, only to be swept aside by the inexorable press of

change - change which they refused to acknowledge, adapt to, or address in professional discourse.

In the years that have passed since publication of Training the Force, much has changed here at home and throughout the world. The Soviet Union, the primary focus of our national defense efforts since the end of World War II, has ceased to exist. No longer primarily forward deployed, our Army today is smaller, primarily CONUS-based, and organized to project power rapidly around the globe. Unlike the experience in Vietnam, our Reserve Components - the Army Reserve and the Army National Guard - deploy frequently and are absolutely essential to the Army's ability to meet its mission.

Training the Force reflected a focus on major theater war against a Soviet enemy in Europe. Correctly, this focus provided the Army with the direction needed to revolutionize our institution following the Vietnam years. In contrast, our battlefields have been varied over the last ten years since the doctrine was published - from the jungle and urban environment in Panama, to the trackless deserts of Iraq. Our enemies have been sophisticated, industrial-age armies like the Iraqis, and they have been brutal, feudal clans like those faced in Somalia. Although not unprecedented in the Army's history, much more of our time, effort, and resources have recently been directed at "operations other than war" in places like Haiti, Bosnia, and the fire-ravaged forests of the northwestern United States. The

Quadrennial Defense Review, Joint Vision 2010, and a wide variety of independent studies all point to a future environment where demographics, energy, the environment, and clashes along cultural fault lines will combine to make the world a potentially more dangerous place in the coming years. Further, these studies suggest that America's Army will continue to be the "force of choice" in meeting these challenges in the future, just as it has been for the last twenty years.

Given the changes that have occurred in the world, the Army is well served to review the assumptions upon which the original training doctrine was formed. This will not be an easy task, for nothing is more difficult to change than a successful idea. For an organization like the U.S. Army, which brought itself back from the brink of failure and built the best army in the world through the application of this doctrine, any suggestion of change will be met with skepticism and resistance. It is imperative to remember that change is extremely disruptive to organizations. It is equally important to remember that organizations will either continue to change to meet the needs of the new environment, or cease to be effective.

THE SECOND TRAINING REVOLUTION

"The U.S. Army is in the midst of some of the most dramatic changes in its history. Never before has the Army undergone such a profound transition and yet remained trained and ready."⁵

- General Dennis J. Reimer, Chief of Staff, U.S. Army

Most discussions about the need to change our training doctrine eventually turn to the topic of the second training revolution. Some leaders believe that the change occurring in training is not a revolution. Rather, they claim that the way we train is being reformed and refined. A study of revolutionary theory leads us to a different conclusion. The second training revolution is underway.⁶

A revolution is a momentous change in one or more of the traditional elements of a system: technology, organizational structure, people, resources and doctrine. Also, common characteristics of revolution are scope, intensity, permanence, and paradigm shift.⁷ The changes underway in the training system suit both the definition and characteristics of a revolution.

INFORMATION AGE TECHNOLOGY

There has been and will continue to be an exponential change in technology in the United States. The rate of change, although hard to quantify, is said to be doubling every 18 months.⁸ The Army is experiencing this rapid rate of change too. Information

age technology is increasing the pace of operations. The flow, the quantity and the rapid analysis of information combined with the range and lethality of weapons have significantly extended each unit's battlespace.

Information age technology will drive greater change as emerging systems enter the force. The Experimental Force (EXFOR), a brigade-sized unit from 4th Infantry Division (Mechanized), provides a window to the future. The EXFOR installed almost 5,000 pieces of equipment, including 1200 appliqué computers, onto their vehicles.⁹ Their use during the Army Warfighting Experiments demonstrated the potential changes due to information age technology. Enhanced situation awareness; significantly increased effectiveness in many of the systems such as air defense and anti-armor; development of numerous tactics, techniques and procedures; changes to organizational designs; and the identification of advanced leader skills are only a few of the harbingers of change.¹⁰

The increasing complexity of the tools of our profession requires soldiers to train much more frequently to sustain proficiency. For example, frequent, routinely scheduled training programs are common to sustain operator proficiency with the Advanced Field Artillery Tactical Data System (AFATDS) and the All Source Analysis System (ASAS). Additionally, most of the new digital information systems have annual software upgrades that will require additional training.

Also, information age technology provides new tools specifically for training. The effective use of constructive simulations plays a significant role in the Army's vast improvement in battlestaff and leader proficiency at division and corps level. The Battle Command Training Program (BCTP), the hallmark of constructive training, is the premier training program for division and corps commands.

Today, the use of constructive simulations for brigade, battalion and company level leaders and battlestaffs is increasing significantly. The vast improvement in and utilization of our installation simulation centers is indicative of this trend. Improved simulations, such as JANUS, are being used down to junior leader levels to enhance leader proficiency and to rehearse contingency missions. For example, all the Initial Force (IFOR) battalion level leaders and battlestaff executed constructive training exercises prior to deployment to Bosnia. Also, the Army Special Operations Forces are using a suite of constructive simulations called MPARE (Mission, Planning, Analysis, Rehearsal, and Execution) to enhance the efficiency and experience of leaders in training and to assist leaders in preparation for military operations.

Virtual simulations play a key role in the training of mechanized, armor and aviation units today. Virtual simulations are being used to train individuals and crews to perform to standard in realistic and stressful situations, including

hazardous situations that would be too dangerous to execute in the live training domain. Additionally, units at different installations using simulation network and the close combat tactical trainers (CCTT) can train simultaneously in a common virtual environment, such as Bosnia, prior to live training at a common training area.

A significant effort is underway today to link the live, constructive and virtual domains together in one training event. Several units have successfully executed training events in which elements conducting live training in the field operated in concert with their battlestaffs training in the constructive domain and with other leaders/crews training in the virtual domain - all with a common picture of the fight. Although these training events did not provide as realistic a virtual picture as desired and required great overhead, these detractors will be resolved over time. In the near future, multi-echelon training in multiple domains will be common. Individual, leader and collective training will be conducted in constructive and virtual domains to exponentially increase experience and proficiency prior to live training events.

ORGANIZATION

The Army's force structure changed dramatically during this decade. Since 1989 the U.S. Army downsized from 18 active divisions to 10 active divisions and experienced a 36% decrease in active duty strength, a 20% reduction in Army National Guard

and a 33% reduction in Army Reserve personnel.¹¹ Simultaneously, we deployed our Army 27 times over the same period, a 16-fold increase in comparison to the previous forty years.¹²

A smaller Army and the demanding operations tempo also required changes within the organization. A significant change is the increased integration of the Army National Guard and the Army Reserve in support of contingency missions as well as the daily operations of the active force. For example, almost 8,000 National Guard and Army Reserve soldiers were mobilized for Operation Joint Endeavor in Bosnia. Of these, 2,345 Guard and Reserve soldiers served in Bosnia.¹³ Simply stated, "Total Army" operations are the norm today.

Changes in the organization for contingency operations go beyond the integration of Guard and Reserve forces. We frequently deploy today with "mix and match" forces, breaking the habitual relationships within brigades. For example, the SFOR for Bosnia was formed from units throughout the Army. Individual infantry companies from the 10th Mountain Division and the Virginia Army National Guard were deployed and attached to a Reserve battalion and a mechanized battalion. The military intelligence battalion was filled out by elements from several divisions in XVIII Airborne Corps. In essence, to accomplish missions today, the Army builds task forces based on capability and availability, ensures force proficiency and then deploys the force to execute a mission. This is a significant change from the

previous norm of deploying habitual task forces that are stationed together, and train, deploy and fight as a team.

The organizational structure of the Army will continue to change in fundamental ways as we transition from the Army of Excellence to Army XXI. Although the new division design is yet to be determined, the organization of the digitized force will be significantly different. With the fielding of the first digitized division in 2000 and the first digitized Corps in 2004, the Army's organization will be changed dramatically.

PEOPLE

What the Army requires of soldiers and leaders is also changing. Today's soldiers must be intelligent, highly skilled, and confident to perform in this uncertain, volatile environment while using complex systems. They must maintain greater skill proficiency for multiple missions despite the increased operational tempo and confidently adapt their skills in new ways with the continuing technological change.

Army leaders are especially challenged by the changes taking place. Unlike the Cold War GDP focus, today's NCOs and officers are frequently confronted with multiple missions under conditions that are ambiguous and strategically sensitive and that require flexibility, initiative and creative thinking. Yet, they must also continue to focus on the basics. Leaders must know how to operate their soldiers' sophisticated systems, as well as understand the integration and synchronization of these systems

with other battlefield operating systems while building a cohesive team that can operate across the full spectrum of conflict.

Finally, leaders are responsible for planning and executing the training programs that develop and sustain individual, leader and unit proficiency on an increasing number of tasks in a variety of challenging conditions without an increase in the most precious training resource - time.

RESOURCES

The way we resource training has changed too. The Army experienced a 39% decrease in buying power over the past nine years.¹⁴ Such a change drives hard decisions concerning the overall allocation of funds and effects the availability of other training resources such as ammunition, fuel and flying hours.

Our training areas have been reduced in number and in sufficiency. Since 1989 the U.S. Army closed 89 installations in the United States and 662 installations abroad.¹⁵ Some of these installations included training land and facilities, primarily those abroad. This reduction in available training area is particularly significant for forward-deployed forces and the Army National Guard and Reserve components.

Additionally, the existing training areas are less sufficient as our units' battlespace expand and as the public presses against the boundaries of existing training areas. For example, the EXFOR brigade's battlespace is approximately 70 km.

by 200 km. Few of our present training areas are large enough to accommodate training units with such a vast battlespace.

In summary, great changes are underway in each of these elements - technology, organization, people, and resources - and will continue as we transition to Force XXI. Such dramatic change is revolution.

CHARACTERISTICS OF THE REVOLUTION

Another means to distinguish revolution from evolution is by the characteristics of a revolution. Scope, intensity, permanence, and a paradigm shift characterize a revolution. Each of these characteristics is present in the Second Training Revolution.

The scope of a revolution is all encompassing; it involves the entire organization. Every part of the Army is impacted by the changing ways we train the force.

A revolution is intense. Intensity is reflected in the field by leaders' innovative training methods during this time of change. It is reflected in the training articles and debates in the professional journals, and in the creation of Force XXI, the Army Warfighting Experiments and the battle labs.

Revolutionary changes are permanent. Our environment, the tools of our trade and the way we train are changing irreversibly.

Finally, and most significantly, a revolution is distinguished by a paradigm shift - a change in the world-view.

Thomas Kuhn, author of The Structure of Scientific Revolutions, states that "revolutions are initiated by a growing sense that an existing paradigm has ceased to function adequately."¹⁶

During our field interviews most leaders acknowledged the sense that the old paradigm doesn't quite fit. Adjustments to training doctrine that are prevalent in the field today are the direct result of our leaders adapting our doctrine to cope with the changing environment. Our world-view is definitely shifting. The members of Army XXI will look back in 2007 and clearly see the Second Training Revolution.

Let us turn to the enduring doctrinal concepts that enabled the First Training Revolution and will lead us through the Second Training Revolution.

ENDURING CONCEPTS

"The power of doctrine for us is that it forces us to constantly reevaluate how the Army operates, which in turn opens doors to questions about how we should build and sustain the Army."¹⁷

- Hope is Not a Method by Gordon Sullivan and Michael Harper

"The partner of continuity is change... The cardinal sin of any military organization is planning to fight the next war like the last."¹⁸

- Certain Victory: The U.S. Army in the Gulf War

FIRM FOUNDATIONS AND A PROVEN RECORD

Interviews with a number of the Army's senior leaders confirmed that a large portion of Training the Force is as valid today as it was at publication. A consistent theme was the need to balance continuity and change - to "not throw the baby out with the bath water" - in an effort to force change on the Army. In some instances, the view was more pronounced: do not change something if it is not broken. Throughout, the dedication of the Army's senior leadership to retain the quality of the force into the future came across loud and clear.

The Army's record of success on the battlefield since the publication of the 1988 edition of Training the Force provides vivid testament to the validity of the doctrine in the past. Success is a powerful impediment to required change. While remembering the dangers of training to fight the last war and failing to properly prepare for the future, enduring principles

from Training the Force are listed below.

BATTLE FOCUS

*Battle Focus is a concept used to derive peacetime training requirements from wartime missions. Battle focus guides the planning, execution, and assessment of each organization's training program to ensure its members train as they are going to fight. Battle focus is a recognition that a unit cannot attain proficiency to standard on every task whether due to time or other resource constraints.*¹⁹

- FM 25-100, Training the Force

Battle focus is perhaps the single most important concept contained in Training the Force. These two words articulate clearly the essence of the first training revolution: because there is not enough time to train on every conceivable individual and collective task, leaders must analyze, select, and resource only those specified and implied tasks that are essential to their wartime mission. Everything that a commander does with his unit, given the limited resources available, must have a direct correlation to the wartime mission of the unit. Further, the conduct of all training must reflect the conditions expected on the battlefield.

When implemented correctly, *Battle Focus* allows the commander to "bring order" to the seemingly infinite array of tasks required of his or her unit in combat. It guides the planning, execution, and assessment of training. *Battle Focus* is the key ingredient in the *training management cycle*. It serves to integrate the myriad individual and collective tasks required

of a unit in combat, and allows the commander to distill a *Mission Essential Task List (METL)* that can be resourced and trained to standard.

A caveat is warranted here. While universally acknowledged as an enduring concept in *Training the Force*, most senior leaders interviewed acknowledged a growing tendency for units to allow the METL to grow to unmanageable proportions. Given the wide array of wartime and other than war tasks that confront the Army today, many unit commanders have been reluctant to take anything off of the METL plate. Fearing that unit readiness would be irreparably damaged by removing a task from the METL that is not essential to the conduct of a peacekeeping mission, commanders have struggled to resource a METL that contains both wartime and other than wartime tasks. A recommended solution to this problem is provided under *Doctrinal Clarifications: METL Concept*.

SYSTEMS APPROACH TO TRAINING

*The single most important ingredient to improved training was the institutionalization of the systems approach to training (SAT) combined with a focus on learning by doing: train and evaluate, while performing tasks against a live enemy whenever possible.*²⁰

- The U.S. Army in Transition II

If *Battle Focus* is the single most important concept contained in *Training the Force*, the systems approach to training (SAT) was the key ingredient to improving that training. Through an exhaustive analysis of unit conduct in battle, tasks and

functions were broken down into discreet individual and collective tasks. These tasks were then documented in training manuals that enabled the commander to tailor the unit training plan based on the METL and provided a *doctrinal* method to train that task to a common standard.

A common theme found in discussions with Army senior leaders was how completely the SAT has been incorporated into our institutional culture. In addition to serving as a training enabler, the *systems approach* is used to analyze all aspects of complex tasks. What is the mission? What are the discreet collective and individual tasks required to accomplish the mission? What are the standards for performance in each task? It is difficult for those who have grown up with this system to appreciate the fundamental change in thinking that SAT has engendered.

PERFORMANCE ORIENTED - CRITERION REFERENCED TRAINING

A second profound effect was that the Systems Approach to Training (SAT) moved the Army from normative to criterion-referenced evaluation. No longer would grading be "on the curve." Soldiers were expected to train and demonstrate proficiency in task, condition, and standard - "go, or no go."²¹
- The U.S. Army in Transition II

Key to the concept of the systems approach to training was the "competence-basing" of the Army. No longer would the training of the Army be dependent upon subjective assessments by individuals with various levels of experience and proficiency. Indeed, individual leaders and soldiers were now assessed on a

continuous basis according to *objective criteria*. Further, units were no longer able to "go through the motions" of a training task and declare the event completed. With the incorporation of the systems approach to training, commanders now had a tool to train each task in conditions that mirrored those expected in combat, according to common standards established in advance.

Senior leaders interviewed for this study uniformly reflected on the second order consequence of the "competence-basing" of the Army: the increased quality of the force. Soldiers and leaders at all levels are better today than they were prior to the first training revolution. The institutional honesty of the Army was enabled by criterion-referenced training doctrine. Not only did the concepts contained in Training the Force allow commanders to identify and declare poor training for what it was, but individual soldiers and leaders could no longer hide behind "time in service." The U.S. Army's culture became one of honest self-reflection unprecedented in military history.

This last point also acknowledges the impact that FM 25-100, Training the Force had on the Army's approach to doctrine as the engine of change. If FM 100-5, Operations served as the intellectual basis for changing an army, then Training the Force represented a practical "how to" guide. The quality force that exists today is a direct result of that change.

COMMANDERS ARE THE KEY

Most important, [the Training Revolution] reengaged senior Army leaders in the details of war fighting. Preoccupied with

survival during the early seventies, ...there simply had not been sufficient command attention paid to the basic rationale for the Army: to fight and win.²²

- The U.S. Army in Transition II

Effective training is the number one priority of senior leaders in peacetime. In wartime, training continues with a priority second only to combat or to the support of combat operations.²³

- FM 25-100, Training the Force

The placement of training as the Army's number one priority sent a significant message to the field. In addition to identifying the importance of training to the core function of the force - to fight and win - placing training at the top of the hierarchy of things that the commander was responsible for indicated that the Army had "turned the corner" from the dark days following Vietnam. When this message was sent in the context of the systems approach to training and criterion-based assessment, the commander was clearly charged with planning, preparing, executing and assessing his unit's training plan. The senior Army leaders interviewed for this study each confirmed the validity of this concept for the force of the future.

TRAIN AS YOU FIGHT AND COMBAT TRAINING CENTERS

The goal of combat-level training is to achieve combat-level standards. Every effort must be made to attain this difficult goal. Within the confines of safety and common sense, leaders must be willing to accept less than perfect results initially and demand realism in training. ...They must seize every opportunity to move soldiers out of the classroom into the field, fire weapons, [and] maneuver as a combined arms team...²⁴

- FM 25-100, Training the Force

The battle context [of the training revolution] is provided in the Combat Training Centers (CTCs). The CTC combination is

extraordinarily powerful: doctrinally correct battlefield missions; a demanding opposition force, fighting to win; and credible instrumentation, and mentors (observer-controllers), in a tough, fair training and evaluation war-fighting environment. ..No other army in the world approaches this demand in rigor of training, size of physical plant, or willingness to expose the chain of command to such uncontrolled risk in front of subordinates.²⁵

- The U.S. Army in Transition II

There was widespread support for the "train as you fight" philosophy articulated in Training the Force. The benefits gained from battle focus in planning and execution, with emphasis on conducting tough, realistic training to standard, were universally identified as essential to the effectiveness of the future force.

The Combat Training Centers (CTCs) were identified as crucial to the "train as you fight" concept. Although there are areas in which the CTCs can be improved and made more relevant to the future environment, the senior leaders interviewed for this study were universal in their praise for the CTC concept and the benefits they provide for the Army. The CTCs should continue to be resourced fully and scheduled bi-annually for every battalion-level unit. The focus of the CTCs should remain on the battalion as part of a brigade combat team.

TRAIN AS A COMBINED ARMS AND SERVICES TEAM

When committed to battle, each unit must be prepared to execute combined arms and services operations without additional training or lengthy adjustment periods. Combined arms proficiency develops when teams train together. ..The full integration of the combined arms team is attained through the "slice" approach to training management.²⁶

- FM 25-100, Training the Force

The combined arms approach to training was widely viewed as valid and enduring by the senior leaders interviewed. Under the command and control of the brigade headquarters, the whole of the brigade combat team is greater than the sum of its parts. While viewed as a concept that is valid and enduring, there appears to be wide disparity as to understanding of the capabilities of various formations, particularly between heavy and light units. In addition, the tendency for aviation and artillery units to train independently from the infantry and armor formations that they must support will likely aggravate this situation in the future.

A significant addition to the combined arms approach is warranted in the future. As the Reserve Component, which comprises the majority of the Army's Combat Support and Combat Service Support structure, deploys as a part of operational requirements, our training programs must better integrate Active and Reserve units.

TRAIN TO CHALLENGE

Tough, realistic, and intellectually and physically challenging training both excites and motivates soldiers and leaders. It builds competence and confidence by developing and honing skills.²⁷

- FM 25-100, Training the Force

The requirement for solid, cohesive teams in the future force will likely be even greater than in the past due to the

changed nature of the battlefield. Widely dispersed, often isolated units that are smaller if more lethal will demand higher levels of cohesion. History has repeatedly shown that groups coalesce around challenges that are jointly shared. Tough, realistic training serves to provide that challenge. For this reason, the demand for challenging training will persist in the future.

TRAIN TO MAINTAIN

Maintenance is a vital part of every training program. Maintenance training designed to keep equipment in the fight is of equal importance to soldiers being expert in its use.²⁸

- FM 25-100, Training the Force

The importance of maintenance is clear, but it took the first training revolution to institutionalize the concept into the way the Army trains. Implied in the "train to maintain" concept is the need for units to be able to fight for sustained periods of time with the equipment that they are issued. The combination of "train to maintain" with "train to sustain" takes this concept to the proper level. As units are increasingly challenged to find lengthy periods of live domain training, and as they are more often deployed for operations throughout the spectrum of conflict, enhancement of the "maintenance" concept with the "sustainment" mindset is crucial.

MULTI-ECHELON APPROACH

To use available time and resources most effectively, commanders must simultaneously train individuals, leaders, and units at each echelon in the organization during training

events.²⁹

- FM 25-100, Training the Force

While viewed by all senior leaders as an enduring principle contained in Training the Force, there is an acknowledged disparity in the understanding and execution of this concept in the field. If applied properly, training at each level - individual through collective - and in all type-units in the combat team, is integrated to achieve quality training for all. Further, the process is designed to make the most efficient use of the resources available. This requires extensive preparatory work by the commander and the staff. Further, multi-echelon training in the future must include provisions for pre-mission training with the Reserve Component, non-governmental and private organizations, and with allies and coalition partners.

AFTER ACTION REVIEW PROCESS

*For America's Army, the AAR was the key to turning the corner and institutionalizing organizational learning. ..the AAR has ingrained a respect for organizational learning, fostering an expectation that decisions and consequent actions will be reviewed in a way that will benefit both the participants and the organization, no matter how painful it may be at the time.*³⁰

- Hope is Not a Method

No other army does it. No other organization, of any type, has institutionalized the After Action Review (AAR) to such a degree. If the systems approach to training and a criterion referenced assessment system are the touchstones of the first training revolution, then the AAR is the catalyst for success.

The support for the AAR process is unequivocal and the concept must continue to play a key role in the intellectual growth of the Army. If there are improvements to be made, they are largely a matter of style and of quality control.

DOCTRINAL CLARIFICATIONS

There were a number of doctrinal concepts which we concluded were still valid concepts despite the changed environment, but which were not clear in the current doctrine. This lack of clarity seemed to degrade the effectiveness of the concept's execution in the field.

EVALUATION, ASSESSMENT AND CERTIFICATION

We identified two major issues with the doctrinal concepts of evaluation, assessment and certification. The first concerns a lack of definition of evaluation and assessment in the glossary of FM 25-100, Training the Force. Assessment is defined in FM 25-101, Training the Force - Battle Focused Training as "an analysis of the effectiveness of a unit, activity or force", however, evaluation is not defined in this manual. In both manuals the terms seem to be used interchangeably, leading to considerable confusion. In field practice, there are local policies in places that dictate that all collective training must be externally evaluated, although doctrine clearly defines internal evaluation as a valid evaluation option. This dissonance between doctrine and the policy in a number of units has resulted in some unintended consequences. Among a number of junior leaders, we found a perception that the "all training must be externally evaluated policy" was based on a lack of trust and confidence in their integrity by their more senior leaders.

Additionally, the field practice of "certification" has helped to muddy the waters. Certification letters required by deploying units and in other circumstances were perceived by many junior leaders as indicative of a zero defects organization. Further, the letters were perceived as a letter for senior officers to use against junior leaders if things went wrong. Certification is not a concept outlined in either FM 25-100, Training the Force or FM 25-101, Training the Force - Battle Focused Training.

This difference between doctrine and field practice is disruptive and undermines the credibility of the training doctrine. Upon close examination and research, we determined the issue was not trust and confidence, but understanding.

The lack of definition of doctrinal terms (such as we have for tactical terms in FM 101-5-1) leads to considerable confusion, both for the doctrine writers and practitioners in the field. In discussing the issue with senior leaders, we found that scarcity of training resources, not trust, was the driving factor leading to "external evaluation only" policies. With reduced training resources, each training event must be of as high a quality as possible. Externally evaluated (and resourced) evaluations are of higher quality; therefore it may be a logical policy. However, this concept is not discussed in doctrine, and the imprecise and interchangeable use of terms only further confuses the issue.

Certification was not viewed by senior officers as a demonstration of a lack of trust, despite what was perceived by many junior officers. In fact, certification is actually a common practice throughout the Army. Commanders certify, in one way or another, all the time. Tank and Bradley Crew Gunnery Skills Tests, demolition certifications, drivers licenses, weapons qualifications, hazardous material qualifications, range safety officers, pilot ARL status and numerous other items are certified every day throughout the Army. However, they cause none of the angst that pre-deployment certification did. The major difference between all the other certifications and the pre-deployment certification appeared to be that all the others were documented in regulations or field manuals. Certification for deployment was not documented, and therefore was perceived as a threat.

The logical solution is to clearly define the terms in training doctrine and explain the requirement for all three. The following are proposed definitions that might help clarify the terms:

-Assessment: *An analysis of current status of training or skill using multiple sources and records; usually defined as Trained (T), Practiced (P), or Untrained (U); an essential part of all training planning by leaders.*

-Evaluation: *The observation of a particular training event to determine training proficiency, strengths and*

weaknesses to provide feedback (normally in an after action review) to the training unit. Evaluation is normally performed by an observer not participating in the task, ideally the next senior commander or leader. However it may be by another proficient leader designated by the chain of command.

-Certification: The formal by name recording of proficiency of individuals who have met specific training requirements. Normally certification of training or licensing is required for particularly dangerous tasks before soldiers are allowed to perform them.

Clarification and consistent use of all three terms would substantially decrease the confusion and perceived dissonance between training doctrine and practice. Additionally, a significantly enhanced glossary for all training terms that is consistent between the two manuals would enhance understanding of many concepts.

ROLE OF THE COMMANDER

The role of commanders is outlined in FM 25-101, Training the Force - Battle Focused Training, and the role of senior leaders is defined in FM 25-100, Training the Force. However, neither manual describes to whom the terms "commanders" and "senior leaders" apply. There is no indication if there is a cut-off between a senior leader and commander at Brigade,

Division or any other level, or if some senior leaders are also commanders. Senior is of course a relative term, so some confusion is understandable. FM 25-101, Training the Force - Battle Focused Training has numerous examples of division level documents, so it may be the intent that the commander's role applies to Division Commanders. The bottom line is the reader just doesn't know.

Several fundamental questions need to be answered to clarify the role of the commander. First, is there a difference between the role of the commander at different levels? Secondly, at what level of command is one no longer a commander but a senior leader? Finally, do MACOM and Corps Commanders have a role in training? If so, is it the same as other commanders and should their levels of command be addressed in the doctrine?

Our recommendation is to more clearly define the roles of commanders. It is evident that there are fundamental roles all commanders play. All train their subordinates, all should visit training, and there are many other things all commanders at all levels should do. However, there are also some differences in roles. Certainly the level of involvement in the development of training plans and exercises is distinctly different between the battalion commander and corps commander. The acquisition of resources is distinctly different between the MACOM commander and the company commander. It would be helpful and improve training doctrine if the term "senior leaders" was either eliminated or

defined, and the roles of leaders at various levels were outlined with common items and then level-specific items.

MISSION ESSENTIAL TASK LIST (METL) CONCEPT

The Mission Essential task List is a tool whereby commanders "selectively identify the tasks that are essential to accomplishing the organization's wartime mission,"³¹ according to FM 25-100, Training the Force. It further states "the most critical inputs to METL development are the organization's wartime operations and contingency plans".³²

In the environment in which our training doctrine was written, this was a practical method for narrowing the number of training tasks to a practical number in order to achieve proficiency. We all acknowledge that it would be impossible, with time and resources available, to achieve proficiency on all doctrinal tasks. Therefore, it is important to have a way to pare down the number of doctrinal tasks to a manageable number that can be trained.

During the Cold War, most units had a specific war plan down to at least battalion or company level- their part was of defending either Europe or Korea. The war plans were very specific, and one could narrow the number of tasks to only those required for their part of the General Defense Plan. The result was a relatively low number of tasks that could be trained to proficiency to "win the first battle of the next war", with the multitude of other doctrinal tasks remaining untrained.

In today's environment, things have changed significantly. In some cases, there are still units with very specific war plans for whom the METL development process is still the optimum solution. However, there are units (especially above the line and Reserve Component units), which are not assigned to specific war plans. Still others have so many contingencies that their METL could resemble the table of contents for their applicable warfighting doctrinal manual. Although there were always some units who adjusted the METL concept (for instance, prioritizing METL tasks) because of these conditions, many more units are faced with no mechanism to filter the number of doctrinal tasks down to a manageable number. The adjustment of training doctrine to fit this new environment misaligns practice with doctrine, attacking the credibility of the doctrine as a whole.

An adjustment to the METL concept would solve this problem. It would also put the concept of METL into perspective in today's environment where forces are more likely to be deployed, and often on missions requiring proficiency on new or non-warfighting tasks.

Figure 1 illustrates a possible solution. First, all units analyze their wartime missions to identify their METL. Units with no war plans develop a Core Proficiency Task List (CPTL); that is, those tasks fundamental to the unit accomplishing any mission it might be assigned. Units who have a wartime or contingency mission do not essentially change their process.

Regardless of whether a unit has a METL or CPTL, when an execution order is received, all units analyze the situation to determine if there are other tasks they will have to do that is not on their current task list. They then develop their revised METL that includes the tasks they will execute for this mission.

Finally the model includes a redeployment phase and another analysis phase to determine what the new METL or CPTL will be.

PROPOSED METL CONCEPT

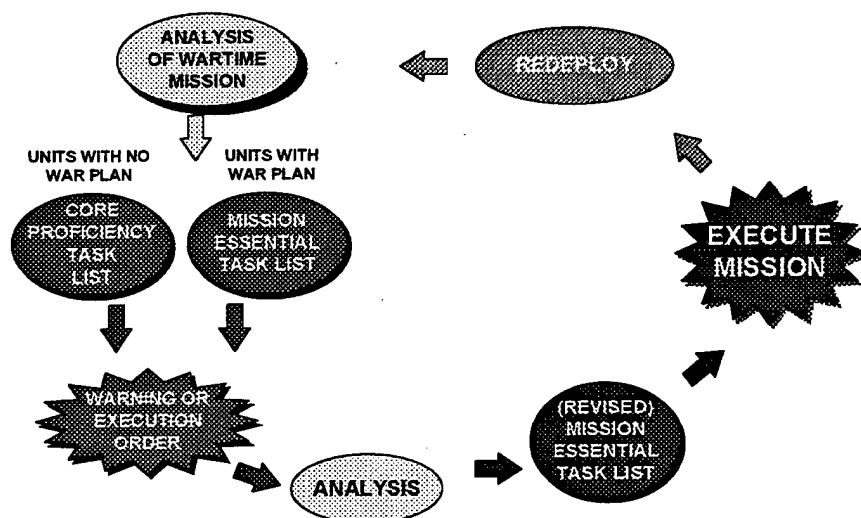


Figure 1. Proposed METL Concept

Adaptation of this or a similar model would provide a doctrinal alternative to those units for whom the current METL concept does not work.

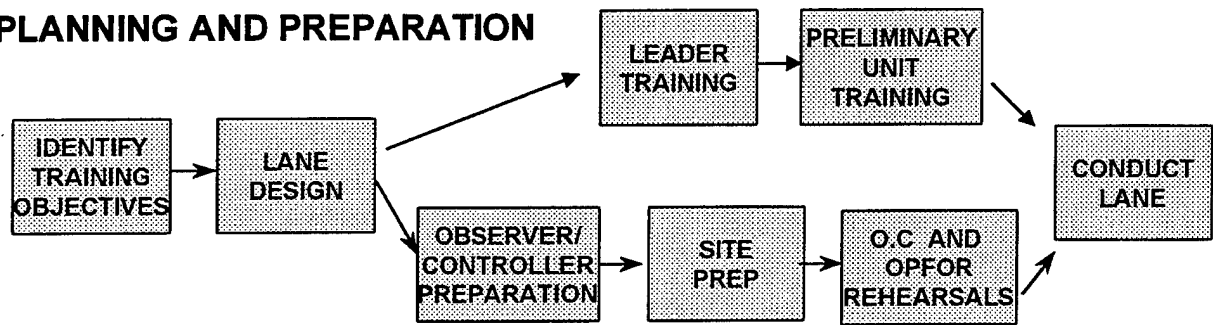
LANE TRAINING

Lane training is identified in FM 25-101 as "an excellent way to execute multi-echelon training using external support and evaluation". However, the publication does not give a good description of how to prepare for a lane or how lanes are executed. One can extract a general concept by reading the numerous examples, but the prepare and execute methods are never clearly explained.

Most units have a lane training model that they use which are very similar. The lane training concepts involve some method of observer/controller (OC) preparation as well as OC and opposing force (OPFOR) rehearsals. Lanes normally include unit preparation in an assembly area and leader preparation at a separate leader training site, as well as rehearsals prior to actual execution of the lane against the OPFOR. They include after action reviews for all lanes and retraining opportunities when training objectives are not accomplished satisfactorily.

Figure 2 illustrates possible lane planning and preparation and execution models that, if included in doctrine, would bring the field to a more common understanding of this valuable training tool.

PLANNING AND PREPARATION



LANE EXECUTION

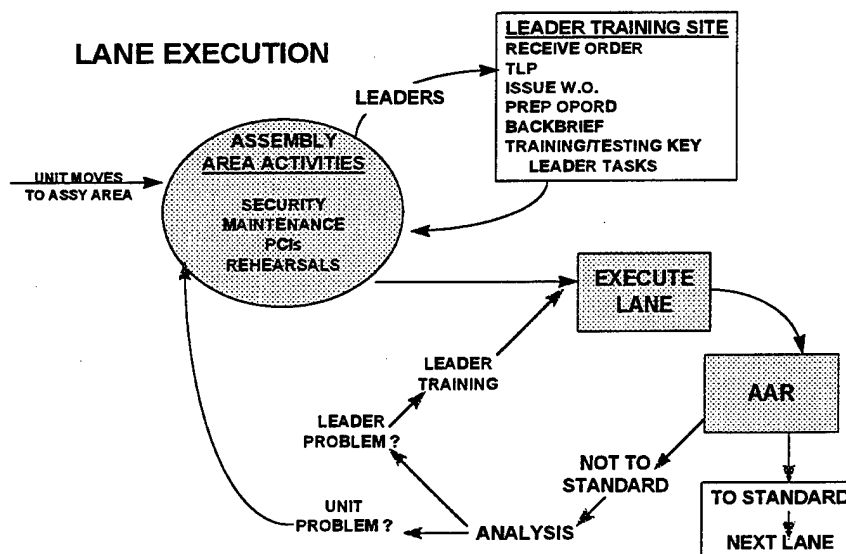


Figure 2. Lane Training

SERGEANT'S TIME TRAINING (STT)

Sergeant's Time Training is common throughout the Army, but how it is conducted varies greatly. It is allotted only a short, general paragraph in Army training doctrine. FM 25-101, Training

the Force - Battle Focused Training states that "some training time should be devoted to the small-unit leader to train his unit." The stated objectives of STT are "to enhance readiness and cohesion, and to allow the junior NCO to learn and exercise the Army's training management system."³³

In most commands, STT is a command-designated, weekly training period of approximately five hours duration. The first line supervisor selects the METL-related tasks for training, plans and executes the training. Officers and senior NCOs resource and supervise the training. Usually, commanders restrict appointments and close all support agencies during sergeant's time training to ensure every soldier attends training.

Sergeant's Time Training was created primarily to provide the junior NCO dedicated time to train their squad/crew. Many leaders state that STT is particularly beneficial for soldiers and small units that support training and garrison activities daily. NCOs in Personnel Action Centers (PACs), maintenance, finance and other combat service support units cannot conduct small-unit collective training with all their soldiers unless their shops are closed. STT ensures this training opportunity.

However, Sergeant's Time Training is not universally applauded by leaders. Many leaders believe that the training doctrine, when followed, ensures NCO involvement in the planning and execution of training on a daily basis. In short, we don't need STT; every day is sergeant's time when training is planned

and conducted properly. Some combat arms leaders point out that STT, usually conducted each Wednesday or Thursday, disrupts the week's flow of training. Finally, many leaders admitted that STT is difficult to resource and that it is often poorly executed.

These problems represent a lack of discipline or the rigid execution of STT that defeats other training objectives. We believe that Sergeant's Time Training is valuable and should remain a part of our training. However, it should have the proper prominence and definition in our training doctrine, especially in FM 25-100, Training the Force. Division commanders should be allowed to establish the specific guidance for STT based upon their units' training requirements, the type of unit (combat, combat support or combat service support) and their training environment. A recommended entry in FM 25-100, Training the Force follows:

Sergeant's Time Training is a weekly training period of approximately five hours duration that is devoted to squad, crew and individual training. Sergeant's Time Training enhances readiness and cohesion, and develops junior NCOs.

STT exercises the Army Training Management System at the lowest level. STT requires the NCO to identify essential soldier and small-unit and team tasks (drills) that support unit METL and then-

- *To assess strengths and weaknesses.*

- To formulate a plan to correct deficiencies and sustain strengths.
- To execute the training to standard.

The first line supervisor selects the METL-related tasks for training. Officers and senior NCOs train the trainers, supervise and resource the training. Division commanders provide specific guidance on the execution of STT and schedule STT to maximize training effect.³⁴

TRAINING EXECUTION

FM 25-101, Training the Force - Battle Focused Training has a segment on training execution. Pre-combat checks (or pre-execution checks) are discussed under execution considerations. It lays out training execution as a two step method of presenting training and then executing training. Three methods of presentation are detailed: lecture, conference and demonstration. Three methods of performance, preferably hands on, are outlined: initial, refresher and sustainment.

The example used is of squad level training. Although most of the elements in training execution models being used in the field today are in the chapter, the reader must draw them out. The discussion of training execution seems to be clearly oriented toward individual training.

We recommend the training execution chapter in FM 25-101, Training the Force - Battle Focused Training recognize two types

of training: individual and collective. The basic tenets described now are suitable in a description of individual training. However, the differences between individual and collective training do not appear.

When units conduct collective training, a different process is normally executed. Collective training is normally done in the form of exercises. Typically, an order is issued to begin an exercise. Then there is a period of troop leading procedures, followed by execution of a mission. This is followed by an after action review. If the training objectives were not achieved, the unit conducts retraining to accomplish them. Figure 3 is an illustration of a proposed training execution for both individual and collective training.

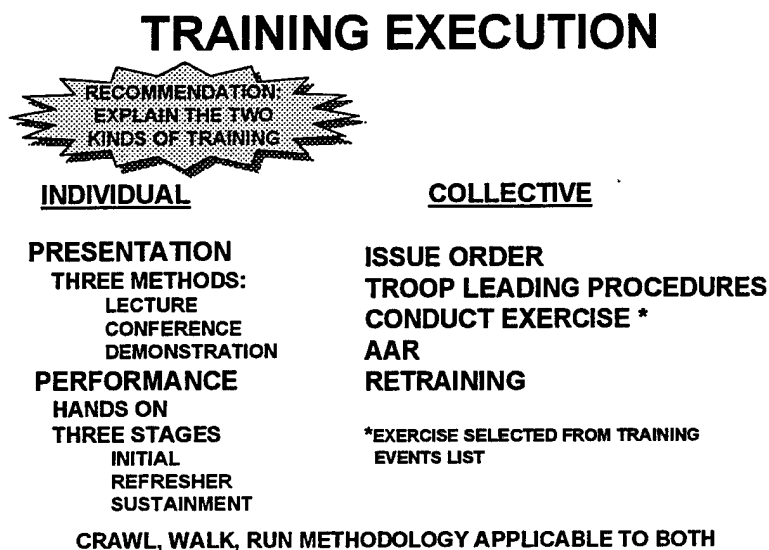


Figure 3. Proposed Training Execution Concept

These changes to the portion of FM 25-101, Training the Force - Battle Focused Training on training execution would make the concepts more understandable and would align the doctrine and field practice more closely.

DOCTRINAL CHANGES

COMMAND TRAINING GUIDANCE: CONTENT AND TIMING

FM 25-100, Training the Force and FM 25-101, Training the Force - Battle Focused Training outline the timing of the training guidance by level and give examples of several training guidance documents. However there are some deficiencies that we feel demand modification. For instance, according to the doctrine, divisions should issue their command training Guidance (CTG) in January for the period covering the following October through the two following years. Brigades are to issue their guidance in April for the year beginning the following October with their calendar through the following 18 months. Battalions issue their guidance in June for the following year beginning in October with a 12-month calendar. Corps and MACOMs, which often issue training guidance, are not addressed. Experience has shown these levels often issue guidance after the time windows for the division level units.

More importantly, this training cycle is at odds with some key elements of other systems on which training plans depend. For instance, the ammunition cycle in FORSCOM requires submission of annual requirements for the following fiscal year (FY) in June. However, the unit traditionally does not find out what its actual allocations are until August. This means the training plan has been distributed for seven months before the unit knows

the allocation for this major resource. The budget cycle is another example of a cycle that is out of alignment with the training cycle. A look at the Planning, Programming, Budgeting and Execution System in the Army makes it clear that training planning is far ahead of budget planning. Since it is budget that drives training plans in today's environment, not the other way around, it seems out of balance. Other cycles such as CTC cycles, not to mention the decision cycle for unit rotations on real mission commitments, also make planning this far out for these time frames impractical. That is, long range planning is impractical unless the plans have a useful level of resolution and are not continually modified.

We recognize that precise knowledge of the future is not realistic and that we cannot wait until we have perfect knowledge in order to plan training. However, it would be prudent to modify the time lines for those things where there is no reason not to, and to modify supporting systems under our control. For instance, the timing of issuing the guidance could be modified to ensure a more realistic long range plan is developed. MACOM and Corps should be included in the time line. Certain MACOM requirements, such as CTC rotation dates, could be included in the doctrinal guidance of what is in their training guidance. Given information technology available today, timelines could be shortened and different levels of command could parallel plan to a much greater extent than is indicated in the doctrine.

Additionally, the examples of the training guidance contained in FM 25-101, Training the Force - Battle Focused Training could be improved by examining what is currently being issued by units and developing much more complete and realistic examples. It is essential to include virtual and constructive simulation training in the examples to align the doctrinal examples with today's training methods. While we want commanders to have maximum flexibility to tailor their guidance to their own situation and style, a more complete, realistic example would benefit all units and staffs who develop these training products.

TRAINING MANAGEMENT CYCLE

The Training Management Cycle is outlined in both FM 25 -100 and FM 25-101, Training the Force - Battle Focused Training as shown in Figure 4. The cycle begins with METL development followed by preparation of a training assessment, then preparation of long range plans, then short range plans, then near term plans, then execution of training, evaluation of training and finally unit assessment. On the inside of the cycle it shows feedback and outside shows METL development, planning, execution and assessment. This cycle is not really indicative of how the training management cycle works. The model does not take into account training preparation and other essential components to training management.

TRAINING MANAGEMENT CYCLE

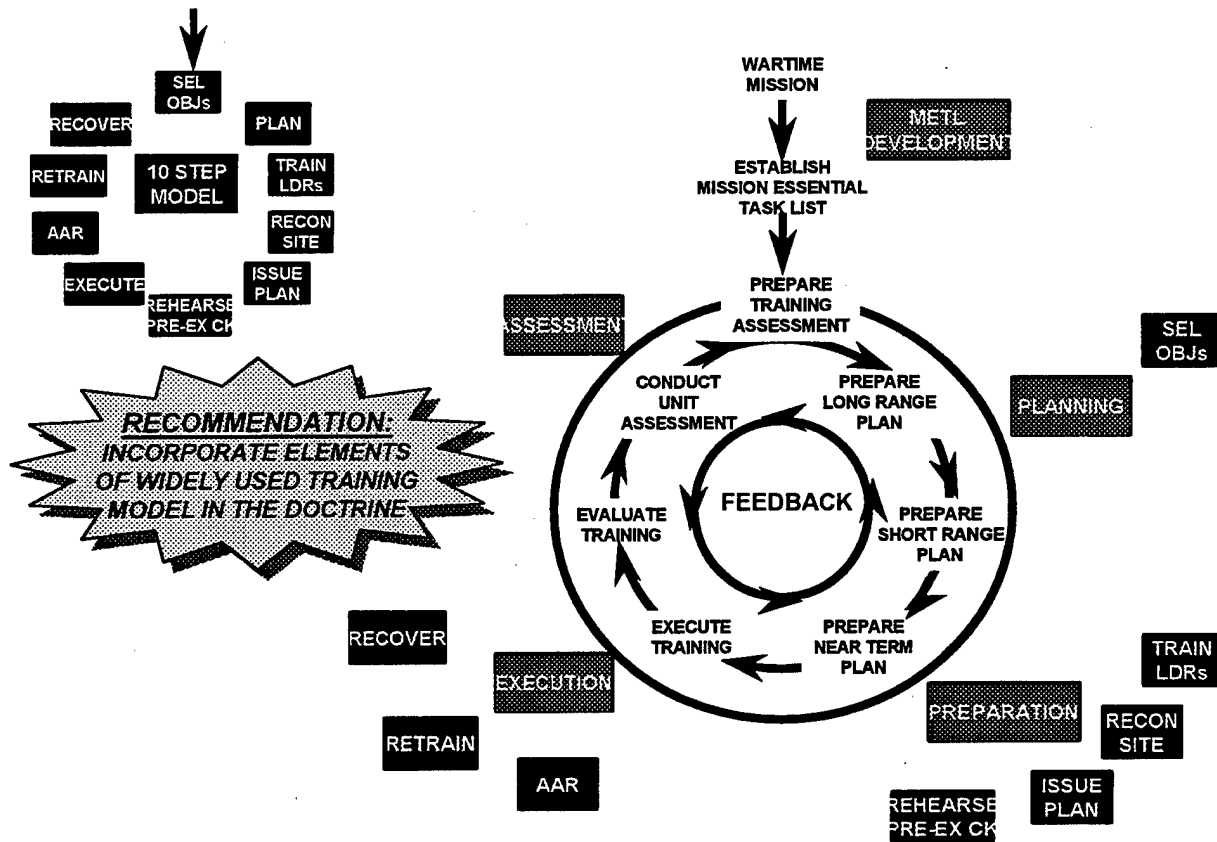


Figure 5 Updated Training Management Cycle

TRAINING EVENTS LISTS

The training events listed in FM 25-101 were the events available to units at the time the doctrine was written. At that time, the constructive simulation capability in the Army was at its embryonic stage, and the virtual training world was limited to a few simulators. Since that time, the constructive and virtual domains have rapidly developed and simulators and simulations have been fielded in larger numbers.

The innovations in the constructive and virtual domains require an update of the training events list. Some types of exercise are conducted only in one domain, such as command post exercises only in the constructive domain, or live fire exercises only in the live domain. Others, such as situational training exercises, can be conducted in both the live and the virtual domain. Each domain has its own advantages and disadvantages and a comprehensive training program utilizes all three.

The table below, Figure 6, shows a proposed new training events matrix.

TRAINING EVENTS LISTS TYPES OF TRAINING EVENTS		
<u>LIVE</u>	<u>VIRTUAL</u>	<u>CONSTRUCTIVE</u>
JTX	JTX	CPX
CTX	CTX	MCX
FTX	FTX	LOGEX
LFX	FCX	
CALFEX	CFX	
FCX	STX	
CFX		
STX*		
TEWT		
DEPEX		

* A TYPE OF FTX

Figure 6. Proposed Training Events Matrix

The current definitions in FM 25-101, Training the Force - Battle Focused Training for the various training exercises require only minor update to account for the new domains.

DOCTRINAL ADDITIONS

UNIT, INSTITUTIONAL AND INDIVIDUAL TRAINING PARTNERSHIP.

Except for a brief remark in the leader development section, institutional partnership in unit training is not recognized in FM 25-100, Training the Force or FM 25-101, Training the Force - Battle Focused Training. However, the partnership, always important, has developed significantly since the current doctrine was written. Innovations enabled by technology such as distance learning, video-teleconferencing, the Synthetic Theater of War (STOW) and others have made training the force a task requiring the close integration and cooperation of units, institutions and individuals.

Unit training programs are increasingly supported by institutions and in the future this trend will continue. Combat Training Centers are the most visible institutional support of unit training programs, however there are other less visible programs as well. For instance, there are unit rotations to the Virtual Training Program at Fort Knox to conduct collective training with OC packages provided by the institution. New Equipment Training Teams and Mobile Training Teams from the institutions deploy to unit locations world wide to assist units with training programs. Training doctrine, fighting doctrine and Mission Training Plans (MTPs) are developed and published by the institutions and require a constant exchange of ideas and

information. Off the shelf training support packages are being developed to decrease the overhead for units in their training preparation. The Battle Command Training Program is another institutional outreach program and is a critical component of Division and Corps training programs. In general, institutional support, enabled by technology, will improve the quality of unit training and decrease unit training preparation time.

Leader and soldier development are intimately tied with institutional and unit programs as well. While institutions provide considerable resident training to unit members as well as individuals enroute to new assignments, the advent of distance learning and its potential will increase the intensity of this relationship with personnel in units. Special skills, especially low density skills, will be trained more frequently in units through institutional distance learning. Non-resident courses and portions of resident courses will increasingly be received by personnel while in units. This will effect unit training plans both because of the potential it offers and because the unit will have to allocate time, a precious training resource, to individual training conducted using the institution.

The impact of institutions on training the force has increased and should be acknowledged in training doctrine. Institutional actions impact significantly on unit training programs. For instance, an institutional decision to stop training a task in resident courses increases the training burden

on units who must now pick up the requirement to train that task. Support from the Army's training institutions significantly enhances unit training programs. FM 25-101, Training the Force - Battle Focused Training should address this partnership, the role of institutions, units and individuals in unit training and explain the kinds of institutional help available to unit and individual training programs. We should include the integration of institutional roles and capabilities throughout the doctrine.

DURING MISSION TRAINING

There has been a requirement for units to conduct training after deployment on an operation since there has been an Army. The drilling of forces at Valley Forge is not unique. More recently, training programs prior to Desert Storm and during Operation Joint Endeavor illustrate the need to conduct during mission training.

During mission training is conducted for several reasons. First, it is used to enable units to apply new techniques that have been developed in theater or to share and teach lessons that have been learned during an operation. It is also used to field and train on newly developed or fielded equipment. The integration of new personnel, either as replacements for casualties or replacements for normal personnel rotations during extended operations, requires training and integration. Finally, on extended operations, it may be necessary to develop a training program to sustain critical combat skills, such as operations in

Bosnia Herzegovina.

There are two major techniques that can be used to execute during mission training programs. These are what we call the unit rotation method and the during operation method.

The unit rotation method involves rotating units out of the operation to conduct training. This may be a rotation to a rear assembly area or as far away as out of theater to conduct training. The unit conducts training using the available training devices, simulators and simulations, which can be centralized for rotating units to increase efficiency. Often, this method may be used in conjunction with other programs that require rotation, such as major new equipment fielding or a rest and recreation (R&R) program.

The during operations method is used when it is not feasible to do unit rotations. An example this method includes new soldier integration programs where new personnel spend time at a headquarters before assuming their duty in order to get an understanding of the operation. Right seat ride programs are another example. This is where the replacements pair up with the people they are replacing and accompany them on their duties for a period to learn procedures, routines, personnel, and environmental considerations before assuming their new duties. Another technique is to rotate individuals, while the unit is still performing its mission, to train away from the unit and out of mission. Sending a few pilots at a time for training on

flight simulators out of theater to maintain currency is an example of this technique. Finally, during operations training may be as simple as detailed rehearsals to review techniques and procedures for tasks required for the mission.

During operations training is an important consideration in training programs. Although most techniques of doctrinal training management apply, the development and execution of training programs while deployed deserves to be addressed in our training doctrine. It is a unique training environment and requires special techniques of training management. Today's environment dictates that we be prepared for increasing deployments across the spectrum of conflict. In a learning organization, training does not end with the receipt of a deployment order.

DOCTRINAL LINKAGE OF THE DOMAINS - GETTING THE MIX RIGHT

Since the current training doctrine was written, significant changes have occurred in training techniques. The amazing speed at which the constructive and virtual domains have developed have changed the way we train in ways not anticipated in FM 25-100, Training the Force or FM 25-101, Training the Force - Battle Focused Training. These domains will continue to rapidly develop in the foreseeable future.

There is controversy around the Army about the proper mix of the domains. There are questions as to whether there is a progressive order in which to use the domains. It is very

appealing to emphasize the less expensive domains by some resource conscious constituencies while others discard the non-live domains out of cultural bias. This is a very emotional issue because of the expense involved in live training and current resource levels. Adding to the controversy is the absence of discussion in current training doctrine.

A basic understanding of the domains is important to coming to grips with the issues of proportion and progression. First, it should be recognized that all domains are partial task trainers to some degree. The constructive domain does not have the human element woven into the simulated units at a high level of resolution and some variables cannot be accurately replicated. The virtual domain does not include the elements of nature and the visual representation of a two dimensional world does not train all tasks that are trained in the live domain. Even the live domain is a partial task training system. The most realistic live training still simulates items such as force on force engagement and casualties.

It is clear each domain also has significant advantages over the others as well. The advantages of realism and friction while operating in the live domain in the field, under adverse conditions and with one's own equipment, are obvious. However, the virtual domain also has distinct advantages. Situations too dangerous for soldiers in the live domain may be simulated in the virtual world. For instance, system failures can be induced

during training in a flight simulator that could never be induced during a live training exercise. One can even train a unit in the virtual domain on equipment that has not been fielded, so that the unit will have a high degree of proficiency before they are fielded their actual equipment. The constructive domain allows much larger units to train than current training areas or fiscal constraints would allow. Both the constructive and virtual domains, through remote networking, allow geographically dispersed units to conduct training using distributed joint or combined exercises.

Understanding both the capabilities and limitations of the three domains is important to determining the right mix. Understanding the domains makes it apparent that a quality training program needs a mix of all three domains. While each commander will determine the correct mix for his unit based on a detailed assessment and circumstance, some general principles are obvious.

Figure 7 illustrates a conceptual mix of the three domains in a training program based on the level of the unit involved. Generally, lower level units require a significant amount of live training, as well as substantial virtual training, while constructive training does not offer significant advantages and may not be very beneficial. Higher level units, such as battalions can gain more significant advantages from all domains so their training programs will be more balanced between all

three. Live training is still an essential component, but virtual and constructive domains are important parts of the program as well. At higher levels, such as Divisions and Corps, the constructive domain is most applicable, while virtual and live domains are of less importance. In fact, through the use of the Synthetic Theater of War (STOW) concept, the live and virtual aspects may even be woven to the primarily constructive training events of these units.

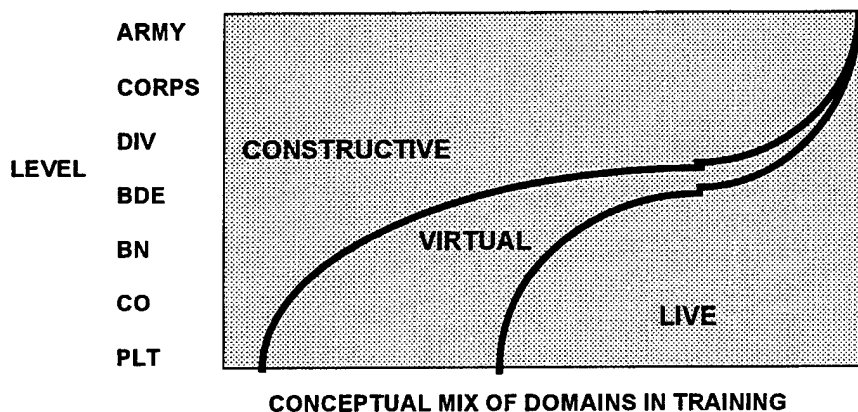


Figure 7. Training Mix

The virtual and constructive training domains are essential elements of any Army training program. The description of the domains, discussion of the strengths and weaknesses of each and guidelines on how commanders determine the proper mix for their unit should be in the Army's capstone training doctrine.

CONCLUSION

Significant environmental changes have taken place since the Army's training doctrine was written. These environmental changes coupled with the great advance in information age technology launched the second training revolution. Intuitively, one might believe as we did initially, that the doctrine required major revision to cope with such substantial change. However, this study concludes that many of the principles and concepts in FM 25-100, Training the Force and FM 25-101, Training the Force - Battle Focused Training are relevant today and in the future. These enduring concepts, the core of Training the Force, are:

- Battle Focus
- Systems Approach to Training
- Performance Oriented - Criterion Referenced Training
- The Principles of Training
- The Combat Training Centers
- The After Action Review Process

However, some doctrinal concepts require clarification to ensure common understanding and application throughout the force. These concepts include:

- Evaluation, Assessment and Certification
- The Role of the Commander
- The METL Concept

- Lane Training
- Sergeant's Time Training
- Training Execution

We identified a few concepts that are not working and require change. In short, the recommended changes are:

- Align command training guidance and training resource timelines.
- Change the command training guidance content to ensure brevity and the inclusion of the constructive and virtual training domains.
- Change the Training Management Cycle to reflect the continuous nature of the plan-prepare-execute-assess cycle and to include emphasis on training preparation.
- Change the Training Event Lists to include exercises executed in the constructive and virtual domains.

There are some innovations that are common concepts and practices in the field which, if incorporated into training doctrine, would align doctrine and practice, and promote trust in the Army's training system.

- The institutional, unit and individual partnership.
- During mission training.
- The doctrinal linkage of live, constructive and virtual domains.

It is a credit to the authors of FM 25-100, Training the

Force and FM 25-101, Training the Force - Battle Focused Training that their work needs so little revision to remain current in our changing environment. However, the authors of Training the Force wrote with a different world-view and for an Army with a different capability.

We are in the midst of great change. Today's leaders are already adjusting our doctrine to cope with this change. In order to ensure these practices reinforce the enduring doctrinal concepts and to ensure that America's Army is trained and ready in the next millennium, we must revise the Army's training doctrine now.

"We must refine our training ... If we retain this focus, we will be prepared for the 21st century. If we lose our focus, we will not only deny future soldiers the world's finest training, but we stand to achieve only a small fraction of the enormous potential that exists within Army XXI and Army After Next."³⁵

- LTG Thomas N. Burnette, Jr.
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ENDNOTES

¹ For simplicity, the use of Training the Force in the remainder of the study will refer to both FM 25-100 and FM 25-101. When a specific FM is referenced, the entire FM and title will be stated.

² Richard M. Swain, Donald L. Gilmore and Carolyn D. Conway, eds., Selected Papers of General William E. Depuy, (Fort Leavenworth, Kansas: Combat Studies Institute, 1994).

³ George and Meredith Friedman, The Future of War: Power, Technology & American World Dominance in the 21st Century, (New York: Crown Publishers, 1996), 25.

⁴ Gordon R. Sullivan and Michael V. Harper, Hope is Not a Method, (New York: Random House, 1996), 7.

⁵ General Reimer, "On Leadership," Army, October 1997, 24.

⁶ For a complete discussion of the second training revolution, see "The Second Training Revolution," by LTG Thomas N. Burnette Jr. in the October, 1977 edition of Army magazine, and "The Second Training Revolution, Simulations and Simulators Will Take the US Army's Combat Proficiency to a New Level," by BG James M. Dubik in the December, 1997 edition of the Armed Forces Journal.

⁷ The definition and characteristics of a revolution are derived from several readings on revolutionary theory. The elements of a revolution are covered by Mark N. Hagopian in his book The Phenomenon of Revolution. The concept of a revolution as a *paradigm shift* is that of Thomas S. Kuhn, the author of The Structure of Scientific Revolutions. Other readings instrumental in the development of our discussion of the revolution were Alvin and Heidi Toffler's War and Anti-War, and The Owl of Minerva Flies at Twilight: Doctrinal Change and Continuity and the Revolution in Military Affairs, by David Jablonsky.

⁸ John, L. Petersen, The Road to 2015: Profiles of the Future, (Corte Madera, California: Waite Group Press, 1994), 28.

⁹ William W. Hartzog and Susan Canedy, "TRADOC: Moving the Army Into the Future," Army, October 1997, 50.

¹⁰ Ibid., 52-54.

¹¹ The Department of the Army, The United States Army Posture Statement FY 98, (Washington, D.C.: U.S. Department of the Army, 1997), 16.

¹² The Department of the Army, Army Experiment 4 (AE4): A Preview of Army XXI Situational Awareness, "Today's Challenge" Text, (Washington, D.C.: U.S. Department of the Army, 1997), CD-ROM, 2.

¹³ The U.S. Army Posture Statement FY 98, 18.

¹⁴ The U.S. Army Posture Statement FY 98, 23.

¹⁵ Ibid., 19.

¹⁶ Thomas, S. Kuhn, The Structure of Scientific Revolutions, (Chicago: University of Chicago Press, 1970), 92.

¹⁷ Sullivan and Harper, 11.

¹⁸ Robert H. Scales, Jr. Certain Victory: The U.S. Army in the Gulf War, (Washington, D.C.: U.S. Department of the Army, 1993), 360.

¹⁹ Department of the Army, FM 25-100, Training the Force, (Washington, D.C.: U.S. Department of the Army, 1988), 1-7.

²⁰ Frederic, J. Brown, The U.S. Army in Transition II: Landpower in the Information Age, (Washington, D.C.: Brassey's, 1993), 99-100.

²¹ Ibid., 100.

²² Brown, 100.

²³ FM 25-100, Training the Force, 1-5.

²⁴ Ibid, 1-3.

²⁵ Brown, 102.

²⁶ FM 25-100, Training the Force, 1-3.

²⁷ Ibid, 1-4.

²⁸ Ibid.

²⁹ Ibid.

³⁰ Sullivan and Harper, 193.

³¹ FM 25-100, 2-1.

³² Ibid.

³³ Department of the Army, FM 25-101, Training the Force - Battle Focused Training, (Washington, D.C.: U.S. Department of the Army, 1990), 3-5.

³⁴ This recommended guidance for Sergeant's Time Training incorporates the wording present in FM 25-101, pages 3-5 and 3-6.

³⁵ LTG Thomas N. Burnette Jr., "The Second Training Revolution," Army, October 1997, 116.

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