U.S. ARMY TRAINING AND DOCTRINE COMMAND, 1973-1982: A CASE STUDY IN SUCCESSFUL PEACETIME MILITARY REFORM

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In the 1970s, the newly formed Training and Doctrine Command (TRADOC) played a key role in instituting and integrating peacetime military reforms. TRADOC updated doctrine, revised training practices, and ensured that these and other aspects of the combat developments process were mutually supportive. TRADOC changed the manner in which the U.S. Army prepared for war. That TRADOC played such a central role is important because a common expectation is that military organizations will be unable to reform themselves. This perspective is deficient in that it fails to predict the changes that Generals William DePuy, Donn Starry, and Paul Gorman spearheaded in the 1970s and early 1980s. The Army faced external pressures--changing national security policy, budget stringency, and the political decision to move to an all-volunteer force--but these challenges and constraints did not provide Army leaders with a detailed plan of action. The shape and extent of reforms within the U.S. Army in the 1970s were primarily determined by leaders from within the organization. This thesis explains the role of TRADOC in the Army?s reforms in the 1970s and draws implications relevant to today?s Army Transformation.

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ABSTRACT

U.S. ARMY TRAINING AND DOCTRINE COMMAND, 1973-1982: A CASE STUDY IN SUCCESSFUL PEACETIME MILITARY REFORM, by MAJ Suzanne C. Nielsen, 135 pages.

In the 1970s, the newly formed Training and Doctrine Command (TRADOC) played a key role in instituting and integrating peacetime military reforms. TRADOC updated doctrine, revised training practices, and ensured that these and other aspects of the combat developments process were mutually supportive. TRADOC changed the manner in which the U.S. Army prepared for war.

That TRADOC played such a central role is important because a common expectation is that military organizations will be unable to reform themselves. This perspective is deficient in that it fails to predict the changes that Generals William DePuy, Donn Starry, and Paul Gorman spearheaded in the 1970s and early 1980s. The Army faced external pressures--changing national security policy, budget stringency, and the political decision to move to an all-volunteer force--but these challenges and constraints did not provide Army leaders with a detailed plan of action. The shape and extent of reforms within the U.S. Army in the 1970s were primarily determined by leaders from within the organization.

This thesis explains the role of TRADOC in the Army's reforms in the 1970s and draws implications relevant to today's Army Transformation.

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ACRONYMS

ARTEP	Army Training and Evaluation Program
ATP	Army Training Program
ATT	Army Training Test
BCTP	Battle Command Training Program
BFDT	Board for Dynamic Training
CAC	Combined Arms Center
CATB	Combat Arms Training Board
CATTS	Combined Arms Tactical Training Simulator
CDC	Combat Developments Command
CONARC	Continental Army Command
FM	Field Manual
FORSCOM	Forces Command
FY	Fiscal Year
MILES	Multiple Integrated Laser Engagement System
NCOES	Noncommissioned Officer Education System
NTC	National Training Center
OPMS	Officer Personnel Management System
PPBS	Planning, Programming, and Budgeting System
RMA	Revolution in Military Affairs
SAMS	School for Advanced Military Studies
TAC	Tactical Air Command
TEC	Training Extension Course
TRADOC	Training and Doctrine Command

TABLE

CHAPTER 1

INTRODUCTION

In the late 1960s and early 1970s, the Army's senior leaders were beset by numerous challenges and problems. Some of these were the following: articulating a role for the Army under the Nixon doctrine; sustaining operations in Vietnam while withdrawing forces and drawing down the Army; managing a declining budget; responding to allegations of war crimes by U.S. soldiers in Vietnam and other ethical scandals; counteracting an increase in social problems in the Army in the areas of dissent, racial friction, and substance abuse; and transitioning to an all-volunteer Army at a time when popular support for the Army was at a low point. The perception that the U.S. Army was in serious trouble was reflected in several books published about the Army during this period: *Army in Anguish*; *America's Army in Crisis*; *Crisis in Command*; *Defeated*; and even *The Death of the Army: A Pre-Mortem*.[1]

After the Persian Gulf War in the early 1990s, popular writing reflected a sea change in perceptions about the effectiveness of the U.S. Armed Forces. Books published during this time period included: *Getting it Right: American Military Reforms After Vietnam to the Gulf War and Beyond*, and *Prodigal Soldiers: How the Generation of Officers Born of Vietnam Revolutionized the American Style of War*.[2] Instead of focusing on the Army's problems, authors in the 1990s seek to explain the strength of this "formidable professional organization."[3] This sea change in writing about the Army reflects the fact that between the early 1970s and early 1990s the Army was engaged in a process of rebuilding. Part of the credit in the early part of this period goes to Army Chiefs of Staff who embarked on a series of reforms. One of these individuals was

General William Westmoreland, Chief of Staff from 1968 to 1972, who focused his efforts on increasing the Army's professionalism through improvements in training, personnel management, and officer and noncommissioned officer professional education.[4] The creation of the Noncommissioned Officer Education System (NCOES), which still exists in similar form today, is probably Westmoreland's greatest contribution.[5] An additional reform, which took its final shape while General Creighton Abrams was the Chief of Staff, reorganized the Army within the United States.[6] This study focuses on one of the products of Abrams' reorganization--the Training and Doctrine Command (TRADOC)--which was activated on 1 July 1973.

This thesis argues that TRADOC played a key role in instituting and integrating peacetime military reforms in the U.S. Army in the 1970s. The terms "instituting" and "integrating" are both important. The first aspect of TRADOC's contributions to be examined relates to the command's role in instituting doctrinal and training reforms in this period. The reorganization which produced TRADOC created an organization with a four-star commander whose authority encompassed doctrine, training, and combat developments. This was a marked contrast to TRADOC's two predecessors, whose organizational boundaries divided these functions. The commander of one of these two entities, the Continental Army Command, was responsible for individual training in the Army's schools, the readiness of all the units in the United States, and command of all of their garrisons. The second organization, Combat Developments Command, was commanded by a three-star general who was responsible for combat developments but not for training. TRADOC's focus and authority allowed the organization to be a vital source of new doctrine and improved training methods, and the early commanders of

TRADOC fulfilled this potential. Secondly, TRADOC's role as an integrator of developments in these areas will be examined, as well as other important Army programs such as professional education. The U.S. Army is a large and complex institution, and ensuring its multiple activities and programs are coherently related is a significant challenge. This thesis will argue that TRADOC played a key role in furthering this integration in the 1970s. In its early years TRADOC was both the initiator of key reforms and the integrator of these reforms with other changes already underway.

This topic is important because a very common perspective on organizational change sees leaders from within an organization as lacking either the capacity or the will to embark on reform on their own. This view is too simple. In the 1970s, it was a combination of external and internal factors that led to the U.S. Army's reforms. Specifically with regard to the reforms in which TRADOC played a key role, the story of organizational change is primarily internal. Senior uniformed leaders identified deficiencies, developed programs and policies to address these deficiencies, and implemented them. In many cases, civilian leaders either helped to motivate or approved of these developments, but it would be misleading to argue that civilians were the primary architects of change.

Before proceeding further, it is important to define key terms and to lay out limitations. The most important key term is "reform," which will be used here to refer to an improvement in or the creation of a significant new program or policy that is intended to correct an identified deficiency. Though reforms are not necessarily revolutionary in nature, over time and in combination they can have a major impact. The most significant limitation relates to the assessment of motivation for reform. Determining the motivation

of key decision makers as they embarked upon reform is a difficult task. Since these individuals themselves may not always have a clear picture of exactly why they took certain actions, it is not possible to come to conclusions about their motivations with 100 percent confidence. Nevertheless, this difficulty will be minimized through an examination of decision makers' own accounts of their reasoning whenever possible and by supplementing these with explanations from contemporaries when available.

Because this topic is potentially very broad, it will be narrowed in four important ways. First, the focus will be primarily on TRADOC's role in doctrine and unit training. TRADOC's role in individual training, leader development, organizational design, and the articulation of materiel requirements will receive lesser emphasis. Second, only the period from 1973 to 1982 will be examined. This focus enables an examination in greater detail of the two most important doctrinal statements of the period, the 1976 and 1982 versions of Field Manual (FM) 100-5, *Operations*, as well as TRADOC's early contributions to unit training. The period from 1973 to 1982 includes the conceptualization, if not the full realization, of key TRADOC initiatives designed to enhance the value of unit training in the 1970s and 1980s. Third, only peacetime military reform will be examined. The assumption that the same dynamics would be at work in time of war is not made. Fourth and finally, this thesis examines military reform as a particular type of military change. An underlying premise is that there is a longer causal chain between the military's environment and its effectiveness that looks something like the following:

Dynamic Environment ? Decision-Making ? Military Change ? Effectiveness

In this thesis, the focus will be on the second and third links in the causal chain above. More specifically, the decisions examined will be those that led to reforms in doctrine and unit training. Although it is reasonable to argue that the reforms of this period produced a more effective Army, this issue will not be directly addressed. In other words, this thesis will not provide independent evidence as to the relative effectiveness of the Army as a whole before and after this period of change.

The rest of this study is organized into four chapters. Chapter 2 will present existing schools of thought and argue that understanding the role of TRADOC in the 1970s and early 1980s requires a new approach. Chapter 3 will then explain the research methods used in this study, set forth the analytical framework, and review the sources used. Chapter 4 will then use the analytical framework developed in chapter 3 to gain a better understanding of TRADOC's role in the Army's reforms of the 1970s. Finally, the concluding chapter summarizes the findings of this work and draws implications for those who would seek to either understand or to implement change in military organizations.

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[1]Haynes Johnson and George C. Wilson, *Army in Anguish* (New York, NY: Pocket Books, 1972) (this book is a reprint of a *Washington Post* series published in September and October of 1971); William L. Hauser, *America's Army in Crisis* (Baltimore, MD: The Johns Hopkins University Press, 1973); Richard A. Gabriel and Paul L. Savage, *Crisis in Command: Mismanagement in the Army* (New York, NY: Hill and Wang, 1978); Stuart H. Loory, *Defeated* (New York, NY: Random House, 1973); and Edward L. King, *The Death of an Army: A Pre-Mortem* (New York, NY: Saturday Review Press, 1972).

[2]James F. Dunnigan and Raymond M. Macedonia, *Getting it Right: American Military Reforms After Vietnam to the Gulf War and Beyond* (New York, NY: William, Morrow and Company, 1993); and James Kitfield, *Prodigal Soldiers* (Washington, DC: Brassey's, 1995).

[3]Dunnigan and Macedonia, *Getting it Right*, 24.

[4]U.S. Department of the Army (William C. Westmoreland), *Report of the Chief of Staff of the United States Army, 1 July 1968 to 30 June 1972* (Washington, DC, 1977), 108-121.

[5]Ibid., 106.

[6]Two useful summaries of this reorganization are James A. Bowden, "Operation STEADFAST: the United States Army Reorganizes Itself" (Student Research and Writing Project, Marine Corps Command and Staff College, 1 April 1985); and U.S. Army Forces Command, Historical Office (Jean R. Moenk), *Operation STEADFAST Historical Summary: A History of the Reorganization of the U.S. Continental Army Command (1972-1973)* (Fort McPherson, GA: U.S. Army Forces Command, 1974).

CHAPTER 2

THINKING ABOUT MILITARY CHANGE

Instituting change in military organizations is both difficult and potentially very important. It is important because, given the nature of war itself, military organizations must adapt to remain effective in a dynamic environment. This environment contains at least four important sources of change. The first of these is political. Carl von Clausewitz is famous for writing, "War is merely the continuation of policy by other means."[1] He goes on to say that, "Policy, then, will permeate all military operations, and, in so far as their violent nature will admit, it will have a continuous influence on them."[2] One implication is that the nature of war will be altered as relations between states evolve and changes in policy occur. Second, Clausewitz observes that social changes can also significantly affect the character of war. Clausewitz's recognition of this factor can perhaps best be seen in his discussions of the changes that the French Revolution brought to warfare by involving the popular masses.[3] Finally, two additional dynamics that affect the nature of war are economic development and technological change--two issues Clausewitz has been criticized for not adequately addressing.[4] In sum, the nature of warfare can be altered by political, social, economic, and technological developments; and military organizations must adapt to remain relevant. Of course, this does not mean that all changes are good, but it does imply that stagnation can easily become problematic.

Given that change is important, why is it difficult to institute in military organizations? It is possible to gain a better understanding of the issues at stake by looking at three aspects of military institutions: their status as large organizations, their

status as bureaucracies, and finally their unique characteristics due to the fact that their central task is to manage organized violence for the purposes of the state.[5] First, because militaries are large organizations that must coordinate the actions of many people, they find it necessary to adopt standard ways of doing business in order to fulfill their functions. Change is not only difficult, but it is also problematic because it cuts against the mechanisms designed to keep the organization functioning smoothly.[6] Second, because military leaders are also executives of bureaucracies in the United States, they operate in a realm of unique constraints that affect their ability to implement change. In contrast to the executives of private firms, government executives can neither allocate the factors of production, nor can they entirely set their own goals. As scholar of bureaucracy James Q. Wilson has explained:

> Control over revenues, productive factors, and agency goals is all vested to an important degree in entities external to the organization--legislatures, courts, politicians and interest groups . . . whereas business management focuses on the "bottom line" (that is, profits), government management focuses on the "top line" (that is, constraints).[7]

To implement change, government executives must be able to manage these constraints in order to obtain resources and political support.[8] Finally, military leaders face unique challenges due to uncertainty and high stakes. One source of uncertainty is that military organizations do not fulfill their essential task of fighting wars on a daily basis. Until military organizations face the test of battle, it is difficult to judge the quality of existing organizational structures and practices--let alone the value of alternatives.[9] In addition, the stakes involved are uniquely high given that militaries perform their essential tasks in an environment of at least potential violence.[10] Military leaders may hesitate to abandon

"tried-and-true" weapon systems, organizations, or tactics in favor of new approaches that may--in their view--unnecessarily put soldiers' lives at risk.

The Need for a New Approach

Despite all that has been said in the previous section, military organizations do change and manage to change even in peacetime. In the introduction to an anthology that reviews significant changes that took place in the military organizations of major industrialized countries during the interwar period, editors Williamson Murray and Allan R. Millett challenge the picture of military stagnation altogether. Their study assumes, on the contrary, that:

> Innovation is natural and the result of a dynamic environment in which organizations must accept change if they are to survive. While the period of 1918 to 1939 was technically one of peace, the future combatants engaged, especially as war approached, in intellectual and technological jockeying and sought advantages in materiel and doctrine.[11]

Although the contributing authors, as historians, hesitate to draw explicit "lessons learned" about innovation, their cases paint a rich picture of change across the military organizations of different countries in this peacetime period.[12] So, despite all the obstacles, military institutions do change and change in significant ways. This section will review existing approaches to understanding military change, and group these studies into four categories based on their central focus: military innovation, military doctrine, civil-military relations, and technological change. This review will acknowledge contributions made by each of these perspectives, while also arguing that understanding the role that TRADOC played in changes in the U.S. Army that began in the 1970s requires a new approach.

Innovation

A first way of examining military change is to focus on innovation, with innovation defined as consisting of an alteration of core tasks. This is the manner in which Rosen looks at peacetime military change in *Winning the Next War* and also adequately describes the focus of most of the chapters in the anthology edited by Williamson and Millett.[13] This approach significantly contributes to understanding peacetime military change through its explanation of the conditions under which military institutions successfully develop the capability to conduct new ways of warfare. However, this approach has its limitations when applied to the U.S. Army of the 1970s and early 1980s. In this period, the Army's core task--defined as high intensity, conventional conflict--remained constant. The significant change in the Army in this period was a qualitative jump in the Army's ability to perform an existing core task.

As discussed in chapter 1, the term reform is used in this thesis to refer to an improvement in or the creation of a significant new program or policy that is intended to correct an identified deficiency. There are two additional points that should be made about the terms reform and innovation. First, it is not necessarily the case that innovation is something that has a rapid impact, and reform only bears fruit after a long period of time. The cases of successful peacetime innovation in the United States Rosen examines include: amphibious warfare (1905-1940); carrier aviation (1918-1943); and helicopter mobility (1944-1965).[14] Although the transformation in the Army's use of helicopters occurred most quickly, each of these innovations took decades to be institutionalized and to have a marked impact on the Army's operating methods. Similarly, there may be a lengthy lag time between the decision to implement reforms and their impact.

Organizations, such as the U.S. Army, do not turn on a dime; significant change takes time. The second point is that it is not necessarily the case that innovation will prove more beneficial or consequential than reform. Both types of change have the potential to noticeably change organizational capabilities, and this is especially true of reforms in various Army programs when they are integrated and mutually reinforcing as they were in the 1970s.

Military Doctrine

A second approach is to look at a single facet of military organizations and attempt to explain changes in this facet using comparative cases drawn from different military institutions or from the same military institution over time. The aspect of military organizations most commonly studied in this way is military doctrine. Three scholars who have contributed in this area are Barry Posen, Elizabeth Kier, and Kimberly Zisk.[15] In *The Sources of Military Doctrine*, Posen uses comparative case studies and propositions from organization theory and balance of power theory to explain doctrinal innovation in the armed services of Britain, France, and Germany in the interwar period. In *Imagining War*, Kier investigates the power of cultural factors in explaining change in the British and French armed services in the same period. A third example is Zisk's book *Engaging the Enemy: Organization Theory and Soviet Military Innovation, 1955-1991.* Rather than investigating cases drawn from different countries, Zisk examines cases drawn from the same military institution across time.

Without a clear definition of what is meant by military doctrine, it is possible to either overstate or understate its importance. According to the U.S. Department of Defense, doctrine consists of "fundamental principles by which the military forces or

elements thereof guide their actions in support of national objectives. It is authoritative but requires judgment in application."[16] Doctrine's potential importance is based on the fact that it constitutes an organization's formal articulation of its understanding as to how it will fight the next war. For this reason, attempts to understand military doctrine and the dynamics that shape it make a valuable contribution. However, again in the case of the Army in the period under consideration here, it is clear that an examination of doctrine alone cannot tell the whole story. This point can be made more clearly through an examination of existing work on this topic.

In his doctoral dissertation, Kevin Sheehan looks at post-World War II changes in U.S. Army doctrine. He examines three cases of peacetime doctrinal change: the Pentomic Division Concept in the 1950s, the development of active defense in the 1970s, and the creation of Airland Battle doctrine in the early 1980s.[17] In his study, Sheehan seeks to determine what role doctrine played in the U.S. Army, to understand why it changed so frequently in a time of peace, and to draw some conclusions about what role doctrine ought to play to maximize the effectiveness of the Army.[18] What is most relevant to the discussion here is that it is possible to read these and other accounts of doctrinal change in the U.S. Army in the 1970s and early 1980s and not fully appreciate the extent to which the organization was undergoing a process of reform. Doctrine is part of the story, but it is not the whole story. Sheehan himself makes this clear in his explanation of the potential significance of military doctrine:

> In theory, doctrine constitutes the framework through which army leaders convert inputs (soldiers, officers, ammunition, plans, equipment, etc.) into outputs (success in battle and, ultimately, in war); it tells armies how to prepare for and win its battles, campaigns, and wars. . . . Armies come to believe that having the

> "right" doctrine is a prerequisite for military success--but, as we have suggested, the history books and conventional wisdom suggest that they rarely do.[19]

Though in theory doctrine serves as a guide for the broader development of armies, in practice this is not always the case. The argument that will be developed here is that it was the integration of different reforms, in doctrine as well as in other areas, which allowed the Army to rebuild in the period of the 1970s. Doctrine was one key area of change, but certainly not the only one.

Civil-Military Relations and Military Change

A third approach seeks to explain the propensity for military organizations to change as either a product of different political structures, or as a result of civilian choices as to delegation of authority and monitoring mechanisms. These approaches have their roots in the discipline of economics and principal-agent theory, where political leaders are the principals and their task is to get their military agents to perform in a desired way. The principal-agent approach usefully calls attention to the fact that military leaders at the highest level operate in a realm of constraints, serving some purposes established by others while also trying to meet organizational needs. It also provokes an examination of the potential importance of civilian leaders in motivating or directing change in military institutions.[20] At a minimum, it is important to consider the potential motivation for change that stems from different political leaders' interpretations of the international environment and the country's national interests and security needs. As these change over time, they may provide impetus for military organizations to change. Some analysts see civilian involvement in this process as not only contributory, but also necessary to the prevention of military stagnation.[21]

Two scholars who have done work in this area are Deborah Avant and Peter Feaver. They have applied adaptations of the principal-agent framework to derive predictions about both military responsiveness and civilian control. In *Political Institutions and Military Change*, Avant looks at the experiences of the British and American armies in counterinsurgency warfare and finds that domestic institutions hold the key to explaining differences in the effectiveness of these two organizations. The structure of domestic institutions (united or divided) affects the bias of military organizations and also indicates the type of civilian intervention that will be likely to prompt military change. In Avant's cases, these two factors determine how readily military organizations adapt doctrine to meet new circumstances.[22] Feaver also uses the principal-agent framework, but he focuses less on the issue of a divided or united principal and more on the forms of delegation and monitoring civilian leaders adopt. In one application of this approach, Feaver develops a game theoretic model and uses it to explain the 1990s "crisis" in U.S. civil-military relations through its predictions about friction in the civil-military relationship.[23] That same model also makes predictions about military compliance, which is the focus Feaver himself ascribes to the work.[24] Feaver further develops his argument about the importance of delegation and monitoring mechanisms, and the understanding they provide about the state of American civil-military relations and civilian control, in later work.[25]

As mentioned above, these contributions point to the potential importance of the nexus between uniformed officers and civilian leaders as a possible source of military change. However, these approaches also have limitations that particularly come to light when exploring the change that took place in the U.S. Army in the 1970s. The primacy

that the principal-agent approach gives to the role of the civilian principal can be a source of weakness for several reasons. First, political leaders often lack the incentive to spend a large portion of their time and energy on military issues--especially in peacetime. The internal workings of the military services and their problems may be below the noise level for political leaders managing multiple areas of concern. Second, even if military issues do grab their attention, civilian political leaders may lack the expertise, confidence, or will to direct specific solutions. If just being informed has costs, then the sustained attention needed to ensure that changes are actually implemented consumes even greater resources. As one example of this phenomenon, even when President John F. Kennedy made the development of counterinsurgency capabilities in the Army a personal priority, it is arguable that the Army did not refocus its priorities accordingly.[26] Third and finally, a focus on the civil-military relationship as the source of change underestimates the possibility that military leaders will take the initiative in identifying the need for change and acting upon that need.

In the case of the Army in the 1970s and early 1980s, civilian political leaders played a variety of roles in the process of change. At times they provided constraints that gave further impetus for change, at times they served as partners in change, and at times they made change more difficult. The argument here, though, is that the changes which were implemented in the Army during this period were primarily developed by leaders within the organization.

Technological Change

Fourth and finally, military change can be seen as a product of technological advances. In search of combat advantage, military organizations embrace new

technologies and develop new ways of warfare. The idea that developments in technology can be a key motivator for military change seems to be particularly compelling to some in the United States defense policy community, and helps to generate energy for the current debate about whether or not there is an ongoing "revolution in military affairs" (RMA). One of the leading military proponents of the RMA in the 1990s, Admiral William A. Owens, believed that advances in intelligence, command and control communications, and the ability to use precision strike capability could be combined to create a "system of systems" that would give U.S. armed forces a decisive advantage.[27] Skeptics, on the other hand, tend to see military discussions about the RMA as reflective of service parochialisms and as representing a desire to eschew undesirable forms of combat such as low intensity warfare.[28]

In a balanced examination of the debate over the existence of an RMA, Michael O'Hanlon provides a useful review of the various positions and draws some conclusions relevant to any discussion of the impact of technological developments on military change. Specifically with regard to the current RMA, O'Hanlon argues that some of the more extreme claims unjustifiably project the pace of advances in electronics and information systems onto other technologies, and therefore are of dubious value. One is the claim that "land vehicles, ships, rockets, and aircraft will become drastically lighter, more fuel efficient, faster, and more stealthy, making combat forces far more rapidly deployable and lethal once deployed." Instead, improvements in these areas are much more likely to continue to be incremental.[29] In addition to this participation in the current policy debate, O'Hanlon makes a more general observation worth citing here in full:

> Military revolutions are the purposeful creations of people. They are created by a combination of technological breakthrough, institutional adaptation, and warfighting innovation. They are not emergent properties that result accidentally or unconsciously from a cumulative process of technological invention.[30]

O'Hanlon is not alone in making this point--many of the discussions of the RMA acknowledge the importance of changes in organizations and warfighting concepts as well as technology.[31] Nevertheless, it is important to keep in mind that there is nothing inevitable about advances in technology producing advances in warfighting capability.

A great illustration of this point is the development of radar during the interwar period. Although the Germans had an early technical lead, they never fully exploited this advantage. In strategic air defense, for example, they used radar in their existing organizations to substitute for aerial observers. In other words, radar was for the German Army primarily a manpower saving device--it sparked neither operational nor organizational innovation. The British, on the other hand, were behind the Germans in some technical areas but more fully took advantage of radar by creating an effective, centrally-directed air defense network. As one historian notes, "This logic contributed a winning strategy to the Battle of Britain in 1940-1941."[32]

This observation that organizations and countries differ in their ability to exploit new technologies applies to broader spans of time as well. As Bernard Brodie concludes in his historical sweep that runs from the Napoleonic Period through World War II, "there seems not to be any direct proportionality between technological change and military-political consequences."[33] Profound changes in warfare can come in periods of technological stagnation, and technology does not inevitably have near-term effects. In

the long run, technological change may shape the nature of war, but the long run may be a very long time.

This debate is relevant when examining change in the U.S. Army in the 1970s for several reasons. First of all, Army leaders sought to interpret the significance of technological trends in this period as these trends became evident through both research activities and in actual operations. One example of the latter was General William E. Depuy's analysis of what he perceived as a new lethality on the battlefield made evident by the tremendous losses during the 1973 October War in the Middle East.[34] A second reason is the importance of the Gulf War as a key event that showed the effectiveness that U.S. armed forces had achieved over preceding decades. Some, such as former Secretary of Defense William Perry, believed that the scale and low cost of the victory were primarily due to technological advantage.[35] Undoubtedly, technological advantage played a significant role, but focusing solely on technology leaves out the attributes of the organizations that enabled them to exploit advanced technologies. Without denying that technological change impacts on military organizations, the main point here is that this does not occur in any sort of inevitable or straightforward way. Much will depend on the individual organization's ability to adapt, and to create new operational concepts and perhaps new organizations in order to adjust to the change.[36] This suggests the importance of strong integration in an army's doctrine and training, as well as other programs.

Explaining Military Reform

This chapter has established the significance of military change, explained why it is difficult to institute, and suggested the need for a new approach. This thesis argues that

the change that took place in the Army between the end of the Vietnam War and the Persian Gulf War is not readily explained through a focus on a particular innovation, doctrinal change alone, the civil-military relations nexus, or advances in technology. Instead, it was the product of interrelated reforms in several areas, to include doctrine and unit training. Changes in each of these areas are best characterized as reforms in the sense that they were not in and of themselves revolutionary. Instead, they were incremental improvements adopted to overcome identified deficiencies--some of which came to light due to changes in the Army's dynamic environment. In some cases, these reforms required the initiation of new programs, but these programs did not change the Army's core task. It was the combination of these reforms, and the formal and informal links among them, which enabled the Army to change during the 1970s and 1980s.

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[1]Carl von Clausewitz, *On War,* trans. and ed. Michael Howard and Peter Paret (Princeton: Princeton University Press, 1976), 87.

[2]Ibid., 87.

[3]Ibid., 515, 518, 591, 609. On page 515, Clausewitz makes the further point that this change had its greatest impact when leveraged by Napoleon's organizational innovations.

[4]Peter Paret, "Clausewitz," in *Makers of Modern Strategy,* ed. Peter Paret (Princeton, NJ: Princeton University Press, 1986), 208-209.

[5]This sentence is a paraphrase of Huntington's argument that the core expertise of military officers is the "management of violence" – a phrase he attributes to Harold Lasswell. See Samuel P. Huntington, *Soldier and the State* (Cambridge, MA: The Belknap Press of Harvard University Press, 1957), 11.

[6]See Graham Allison and Phillip Zelikow's discussion of organizational behavior in *Essence of Decision,* 2nd ed. (New York: Addison-Wesley Educational Publishers, 1999), especially pages 143-196. As Allison and Zelikow argue on page 175, "The best explanation of an organization's behavior at t is $t - 1$; the best prediction of what will happen at $t + 1$ is t."

[7]James Q. Wilson, *Bureaucracy: What Government Agencies Do and Why They Do It* (New York: Basic Books, Inc., 1989), 115.

[8]Ibid., 181.

[9]Stephen Peter Rosen discusses the importance of the fact that militaries spend most of their time practicing essential tasks that they will only perform in time of war in *Winning the Next War: Innovation and the Modern Military* (Ithaca, NY: Cornell University Press, 1991), 8. Williamson Murray usefully summarizes the sources of uncertainty militaries face in time of peace when preparing for a war, "1) that will occur at some indeterminate point in the future, 2) against an opponent who may not yet be identified, 3) in political conditions which one cannot accurately predict, and 4) in an arena of brutality and violence which one cannot replicate." See his chapter, "Innovation: Past and Future," in *Military Innovation in the Interwar Period*, ed. Williamson Murray and Allan Millett (Cambridge, UK: Cambridge University Press, 1996), 301.

[10]Kurt Lang, "Military Organizations," in *Handbook of Organizations*, ed. James G. March (Chicago, IL: Rand McNally & Company, 1965), 838.

[11]Williamson Murray and Allan R. Millett, eds., *Military Innovation in the Interwar Period* (Cambridge, UK: Cambridge University Press, 1996), 5.

[12]Ibid., 3.

[13]The innovations examined in the Millett and Murray volume include: armored warfare, amphibious warfare, strategic bombing, tactical bombing, submarine warfare, carrier aviation, and radar. Ibid.

[14]Rosen, *Winning the Next War*, 6.

[15]Barry R. Posen, *The Sources of Military Doctrine* (Ithaca, NY: Cornell University Press, 1984); Elizabeth Kier, *Imagining War: French and British Doctrine Between the Wars* (Princeton, NJ: Princeton University Press, 1997); and Kimberly Marten Zisk, *Engaging the Enemy: Organization Theory and Soviet Military Innovation, 1955-1991* (Princeton, NY: Princeton University Press, 1993).

[16]U.S. Department of Defense, Joint Publication 1-02, *Department of Defense Dictionary of Military Terms* (As of 19 December 2001) accessed on-line at http://www.dtic.mil/doctrine/jel/doddict/index.html on 7 March 2002.

[17]See Kevin Patrick Sheehan, "Preparing for an Imaginary War? Examining Peacetime Functions and Changes of Army Doctrine" (Ph.D. diss., Harvard University, 1988), especially chapters three, four, and five.

[18]Ibid., 3.

[19]Ibid., 2-3.

[20]Allan R. Millett argues that cooperation between civilian political leaders and military officers, as well as collaboration between the military and scientists, were important to innovation in the interwar period. See "Patterns of Military Innovation," in *Military Innovation in the Interwar Period*, ed. Williamson Murray and Allan Millett (Cambridge, UK: Cambridge University Press, 1996), especially 359-367.

[21]The strongest statement of this view is Barry Posen's in *The Sources of Military Doctrine*.

[22]Deborah D. Avant, *Political Institutions and Military Change* (Ithaca, NY: Cornell University Press, 1994), especially 9-18.

[23]Peter D. Feaver, "Crisis as Shirking: An Agency Theory Explanation of the Souring of American Civil-Military Relations," *Armed Forces and Society* 24, no. 3 (spring 1998): 421.

[24]Peter D. Feaver, "Civil-Military Relations," *Annual Review of Political Science* 2 (1999): 221.

[25]Peter D. Feaver, *Armed Servants: Agency, Oversight and Civil-Military Relations* (Cambridge, MA: Harvard University Press, 2003).

[26]See Rosen, *Winning the Next War*, 100-105, for a discussion of this case. Andrew Krepinevich argues that the Army failed to adapt to the demands of low-intensity conflict due to its adherence to the "Army Concept." In his words, "The characteristics of the Army Concept are two: a focus on mid-intensity, or conventional, war and a reliance on high volumes of firepower to minimize casualties--in effect, the substitution of material costs at every available opportunity to avoid payment in blood." See Andrew F. Krepinevich, Jr., *The Army in Vietnam* (Baltimore, MD: The Johns Hopkins University Press, 1986), 4-5.

[27]William A Owens, "The Emerging U.S. System of Systems," *Strategic Forum* 63 (February 1996): 1-2. At the time he wrote this article, Admiral Owens was the Vice Chairman of the Joint Chiefs of Staff.

[28]A. J. Bacevich, "Preserving the Well-Bred Horse," *The National Interest* (fall 1994): 49.

[29]Michael O'Hanlon, *Technological Change and the Future of Warfare* (Washington, DC: The Brookings Institution, 2000), 2, 68-105.

[30]Ibid., 24.

[31]See, for example, James R. Fitzsimonds and Jan M. Van Tol, "Revolutions in Military Affairs," *Joint Forces Quarterly*, no. 4 (spring 1994): 25-26.

[32]Alan Beyerchen, "From Radio to Radar," in *Military Innovation in the Interwar Period*, ed. Williamson Murray and Allan Millett (Cambridge, UK: Cambridge University Press, 1996), 287. The sketch of this case is drawn from this chapter, pages 265-299.

[33]Bernard Brodie, "Technological Change, Strategic Doctrine, and Political Outcomes," in *Historical Dimensions of National Security Problems*, ed. Klaus Knorr (Lawrence, KS: University Press of Kansas, 1976), 263.

[34]Paul H. Herbert, *Deciding What Has to Be Done: General William E. Depuy and the 1976 Edition of FM 100-5, Operations*, Leavenworth Papers Number 16 (Fort Leavenworth, KS: Combat Studies Institute, July 1988), 31.

[35]See William J. Perry, "Desert Storm and Deterrence," *Foreign Affairs* 70, no. 4 (fall 1991), 66-82.

[36]There are some exceptions to this. For example, it might be said that nuclear weapons introduced a profound change to the nature of warfare just by coming into existence. Integration of technologies such as this one would be less significant.

CHAPTER 3

METHODOLOGY

As argued in the conclusion of the last chapter, the changes in the U.S. Army in which TRADOC played a role were the product of the institution and integration of reforms in several important areas including doctrine and unit training. Changes in each of these areas are best characterized as reforms in the sense that they were not in and of themselves revolutionary. Instead, they were incremental improvements adopted to overcome identified deficiencies. In some cases, these reforms required the initiation of new programs, but these programs did not change the organization's core task. An explanation of organizational change in this period, therefore, requires an explanation of each of the various reforms that in combination produced it, as well an explanation of the links that were forged among them.

The method this thesis will use to examine these reforms is what Alexander George calls "structured, focused comparison."[1] This thesis will attempt to draw out the "lessons" available in its interrelated case studies by applying to them a "single comprehensive analytical framework."[2] In examining TRADOC's role in the Army's change in this period, this thesis will raise and address the following five questions:

1. What challenges and constraints did the senior leaders of TRADOC face?
2. What decisions did these leaders make with regard to strategies for addressing these challenges and constraints?
3. What reforms resulted from these decisions?
4. Why were these reforms made?
5. What impact did they have?

As mentioned in the first chapter, this study focuses on doctrine and unit training, and devotes less attention to TRADOC initiatives in leader development, organizational design, and materiel development. Although developments in these latter three areas are not unimportant, they are beyond the scope of this study.

In addition to exploring TRADOC's role in changing the Army of the 1970s with a common analytical framework, this thesis will also use "process-tracing" for within case analysis. As George and Timothy McKeown explain:

> A process-tracing approach entails abandonment of "black-boxing" the decision process; instead, this decision-making process is the center of investigation. The process-tracing approach attempts to uncover what stimuli the actors attend to; the decision process that makes use of these stimuli to arrive at decisions; the actual behavior that then occurs; the effect of various institutional arrangements on attention, processing, and behavior; and the effect of other variables of interest on attention, processing, and behavior.[3]

This suggested procedure is very helpful for the subject under study here, and will be essential in aiding the analysis of the various reforms.

Several different types of sources will be used to understand and evaluate TRADOC's role. First, for senior leaders' perspectives, oral histories, personal papers, and articles published by key figures such as General William E. DePuy (TRADOC Commander, 1973-1977) and General Donn A. Starry (TRADOC Commander, 1977-1981) will be reviewed. Second, an examination of official documents such as the various editions of Field Manual 100-5, *Operations*, and contemporary analyses of these developments will enhance understanding of these reforms. Third, internal Army studies--as well as contracted evaluations of the Army's doctrine, training, and education programs as they evolved in the 1970s and early 1980s--will provide a critical look. Finally, for overview information this thesis will look at professional journals, Army

historical products, and secondary sources. When possible, multiple accounts of each reform will be examined in order to enhance confidence in the conclusions drawn from the analysis.

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[1]Alexander L. George, "Case Studies and Theory Development: The Method of Structured, Focused Comparison," in *Diplomacy: New Approaches in History, Theory, and Policy*, ed. Paul G. Lauren (New York: Free Press, 1979), 44.

[2]Ibid., 44.

[3]Alexander L. George and Timothy J. McKeown, "Case Studies and Theories of Organizational Decision Making," in *Advances in Information Processing in Organizations*, ed. R. Coulam and R. Smith (Greenwich, CT: JAI Press Inc., 1985), 35.

CHAPTER 4

TRAINING AND DOCTRINE COMMAND (TRADOC) AND REFORM: 1973-1982

By 1971 the Vice Chief of Staff of the Army, General Bruce Palmer, was convinced of the need for a reorganization of the Army within the United States.[1] One reason was the perception that Continental Army Command (CONARC), responsible for both individual training and the readiness of Army units, had a charter that was too broad. Senior Army leaders believed that CONARC was unable to fulfill any of its functions very well, and would have even greater difficulty meeting the needs of a post-Vietnam Army.[2] A second factor was that the Combat Developments Command (CDC), which had been established in 1962, had not proven successful. Two of the key reasons for CDC's lack of success were that it focused on the development of capabilities in the too-distant future that did not seem to bring any tangible benefits, and that it was an insufficiently resourced command whose three-star commander lacked the clout of the four-star commanders of CONARC and the Army Materiel Command.[3] A third issue was that CONARC and CDC each had part of the responsibility for functions that demanded a unified approach. In the words of an official history, a key "problem was the bureaucratic separation existing between those responsible for combat developments and doctrine on the one hand--the combat developments agencies--and the centers of combat developments and doctrinal expertise on the other--the schools."[4] The combat developments agencies were at the same locations as the schools for particular branches, but these agencies belonged to CDC and the schools belonged to CONARC.

Palmer turned to his Assistant Vice Chief, Lieutenant General William DePuy, to do the early conceptual work for the development of two new commands to fix these problems.[5] Lieutenant General James Kalergis, as the Project Manager for Army Reorganization, then fleshed out these plans based on guidance from Army Chief of Staff General Creighton Abrams.[6] The creation of TRADOC and Forces Command (FORSCOM) resulted from this effort. TRADOC became responsible for combat developments, the Army's schools, and the Reserve Officers Training Corps, while FORSCOM assumed responsibility for active and reserve component unit training and operational readiness.[7] TRADOC was officially established on 1 July 1973, and DePuy received his fourth star and took command.

Constraints and Challenges

Although the story of TRADOC's early years reflects the empowerment of its four-star commanders, the environment in which TRADOC's leadership operated was characterized by challenges and constraints. These stemmed from: national security policy; resource limitations; the all-volunteer force; post-Vietnam recovery and reorientation; and the Arab-Israeli War of 1973. Although U.S. national security policy began to shift once again near the end of the 1970s, the factors listed above were important in TRADOC's reforms from 1973 to 1982. Each of these factors will be discussed; the initial approach that DePuy took towards meeting these challenges is the subject of the next section.

National Security Policy

Three aspects of U.S. national security policy in the 1970s had the greatest impact on the role that TRADOC played in Army reform. First, as President Richard Nixon

came into office in January 1969, he sought to end the Vietnam War and reduce commitments of U.S. military forces abroad. In his first annual report to Congress on foreign policy, the President described his "Nixon doctrine" in this way:

> Its central thesis is that the United States will participate in the defense and development of allies and friends, but that America cannot--and will not--conceive *all* the plans, design *all* the programs, execute *all* the decisions and undertake *all* the defense of the free nations of the world. We will help where it makes a real difference and is considered in our interest.[8]

In Nixon's view, the United States should avoid direct military participation in the internal defense of other countries, and generally limit its military commitments abroad.[9] One tangible manifestation of this policy was Nixon's decision to withdraw the 7th Infantry Division from the Korea in 1971.[10] However, the largest impact on the Army stemmed from Nixon's decision to disengage from the Vietnam War. By 28 March 1973, just three months before the activation of TRADOC, American combat forces were out of Vietnam.[11] A major theme of TRADOC's early work would be the need to redirect the Army's efforts after the end of the Vietnam War.

Second, the emphasis that Nixon's national security policy placed on balancing the budget also shaped the environment in which TRADOC worked. A key theme of the Nixon campaign in 1968 was the need to reduce inflation.[12] To Nixon, the real source of inflation was irresponsible government spending, and his desire to reduce spending put significant downward pressure on the defense budget.[13] The domestic political environment, marked by racial tensions, campus unrest, and social change also made reducing defense spending attractive.[14] In the words of a senior member of the Nixon Administration, during its early years "all pressures were in the direction of 'reordering priorities' away from defense."[15]

To respond to international developments as well as domestic concerns, the Nixon Administration crafted a national security strategy of "realistic deterrence." Under realistic deterrence, the country had to be prepared to fight one and one-half wars at a time (a major war as well as a contingency operation elsewhere), rather than the previous requirement to be prepared for two and one-half wars.[16] As Secretary of Defense Melvin R. Laird said in 1971, realistic deterrence "takes account of the strategic, fiscal, manpower and political realities while steering a prudent middle course between two policy extremes--world policeman or new isolationism."[17]

A third important aspect of Nixon's national security policy was his perspective toward the Communist states. Nixon felt that the Sino-Soviet split after Stalin's death had created possibilities for new relationships. There were also indications that some of the Soviet Union's satellite states were restless, and Soviet leaders were interested in talks on limiting strategic arms.[18] With these factors in mind, the Nixon Administration began to seek a new understanding with China, and embarked on a series of negotiating efforts and agreements with the Soviet Union that would later become known as détente.

Despite these initiatives in the early 1970s, there was an increasing concern about Soviet military strength as the decade progressed. One key indicator of Soviet military efforts was their spending. In 1978, Secretary of Defense Harold Brown summarized differences in Soviet and U.S. defense spending to Congress:

> Over the past 15 years, Soviet defense spending has been gradually increasing; we estimate the average rate of increase, in real terms, at between three and four percent a year. . . . For a substantial part of that same period (from FY [fiscal year] 1964 to FY 1975), U.S. baseline budgets (with military pay and the incremental costs of the war in Southeast Asia excluded) have been declining in real terms. [19]

The Soviets invested these increases into both strategic and conventional forces. On the conventional side, between 1965 and 1979 the Soviets went from 148 to over 170 divisions, added 31 regiments to their tactical air armies, and increased their air inventory by about 1,400 tactical aircraft. Although many of these forces went to the Soviet Far East, the Soviets made qualitative improvements across the board.[20]

While earlier in the decade only a few defense policy critics had argued that the United States was not investing enough in defense, by the end of the 1970s this view was shared broadly.[21] In September 1979, a Gallup poll found that 60 percent of the electorate supported increased spending with only 9 percent favoring less. This was quite a change from 1971, when the numbers were 11 and 49 percent respectively. Concern about Soviet power and intentions probably accounted for this difference in public attitudes.[22]

The Nixon doctrine, in combination with these rising threat perceptions, provided a permissive environment in which the commanders of TRADOC could interpret the Army's needs. By maintaining the commitment to Europe while seeking to avoid intervention elsewhere, the Nixon doctrine made a focus on the possibility of war in Europe a defendable choice. As General Donn Starry later explained:

> So, in the context of 1970-1973--times of social, political and economic upheaval in our society--what did we see for our country and our Army as we tried to look ahead? We saw the possibility of two wars: mechanized war--such as we might have to fight in NATO [North Atlantic Treaty Organization] Europe--perhaps even in the Middle East; the other war--a Korea, a Vietnam, a Lebanon crisis, a Dominican Republic. Each war obviously would require different kinds of forces--mechanized on the one hand, light infantry on the other. . . . With the Nixon doctrine beginning to reaffirm our national interest in Western Europe, our military focus narrowed to NATO. . . . So, we decided to begin with developing operational concepts to cope with our most difficult problem, the mechanized war.[23]

TRADOC's leaders decided to start with the less likely but more dangerous threat.

Resource Constraints

As mentioned above, changing national priorities meant that the entire Department of Defense operated in an environment of stringent budget constraints in the early 1970s. This was true in terms of both dollars and personnel. Turning first to dollars, the Army had to manage a 51 percent reduction in outlays from just over 28 billion dollars in 1968 to just under 14 billion dollars in 1976.[24] In comparison to the pre-Vietnam War budget of 1962-1965, and excluding inflation, the Army's budget in 1976 was approximately 12 percent smaller.[25] Reductions in the Army's budget were made even more challenging to manage by modernization delays due to Vietnam-related expenditures, increasing personnel costs, and inflation.[26] The Army did not see real increases in its budget until 1977 (see table 1).

A second manner in which Army resources were constrained was in personnel.

Table 1: Real Growth in the Army Budget, 1969-1982

Year	Percent Growth
FY 1969	-4.2
FY 1970	- 8.1
FY 1971	-11.7
FY 1972	-10.0
FY 1973	-16.1
FY 1974	-0.9
FY 1975	-7.0
FY 1976	-8.6
FY 1977	4.6
FY 1978	1.5
FY 1979	3.3
FY 1980	3.4
FY 1981	3.1
FY 1982	8.9

Source: U.S. Department of Defense, *National Defense Budget Estimates for 1998* (Washington, DC: Office of the Under Secretary of Defense (Comptroller), March 1997, 148-149. Accessed on-line at http://www.fas.org/man/docs/fy98/grn_book.pdf, on 26 January 2003.

The Army went from a Vietnam War peak of 1,570,000 in FY 1968 down to 783,000 by FY 1974.[27] The scale and rapidity of the change made it difficult for the Army to manage it well, and contributed to tremendous personnel turbulence throughout the force. In order to provide the Army with stability, General Abrams struck a deal with Secretary of Defense James Schlesinger. If the Army could create additional combat power out of existing end strength through internal measures, then the Secretary of Defense would fight to keep Army personnel ceilings constant.[28] This was a success in terms of numbers; the Army's size was fairly stable from 1974 to 1987. With a low of 758,000 in 1979, and a peak of 785,000 in 1975, the average was approximately 778,000.[29] However, it meant that an initial priority for the new Commanding General of TRADOC would be finding economies to support the creation of Abrams' sixteen-division force.[30]

Although the resource-constrained environment in which TRADOC was created affected its activities in many ways, two are most important here. First, they focused General DePuy's attention on management issues. In DePuy's view, CONARC had been a "budget-managed command, not a program-oriented command," whose comptrollers would simply "ladle out the money and wait for the screams."[31] This was an inadequate approach, especially when money was tight and the Army had to be able to clearly articulate its priorities to Congress. DePuy therefore established a contract system between himself and TRADOC's 19 installation commanders to ensure visibility on the impact that resource choices had on particular programs.[32]

A second importance of tight budgets was that they caused DePuy to look at TRADOC's programs with an eye towards reducing expenses and ensuring cost effectiveness. One place where a reduction of costs was sought was in officer education.

A 1975 study which answered a requirement to develop an educational system that would support the new Officer Personnel Management System (OPMS) had as its first key finding: "The Army . . . will have to do more training with less resources."[33] One of the study's recommendations was to cut the captain-level officer advanced courses from 36 weeks to a maximum of 26 weeks (length varies by officer specialty).[34] Although this reduction was justified in terms of curriculum redesign, General Starry recalls it as having been "largely a budget decision."[35] This particular change had the added benefit of supporting the creation of sixteen divisions by releasing "over 600 captains . . . to the division forces."[36] The second issue--the need to demonstrate cost effectiveness--was difficult for some of TRADOC's activities. For example Brigadier General (later General) Paul Gorman, who became General DePuy's Deputy Chief of Staff for Training in 1973, faced the challenge of articulating the value of expenditures on training rather than in other areas such as force structure or acquisition in producing combat power.[37] DePuy's concerns about management and cost effectiveness are evident in his first contribution to *Army* magazine as the commander of TRADOC. DePuy explained that TRADOC "was designed to accomplish the Army mission more effectively and efficiently in this time of diminishing money, materiel and personnel, and to do it with sounder management of all these resources."[38]

All-Volunteer Force

On 27 January 1973, Secretary of Defense Melvin Laird announced that there would be no additional inductions of draftees before the formal expiration of call-up authority in July 1973.[39] By 22 November 1974, the U.S. Army was an all-volunteer force for the first time since 1948.[40] The Army's transition to an all-volunteer force,

which began in earnest in 1971, constituted both a constraint and a challenge for TRADOC. It was a constraint in the sense that it became clear to the Army's leadership that the Army's size would depend on its ability to recruit. General Abrams made this point in a May 1974 message to commanders:

> At this juncture it appears that achieving our FY 74 end strength of 781,600 could well be within our grasp. The impact of doing so would be clear demonstration of the Army's effectiveness and mission accomplishment. Not only would it show that the volunteer concept is working, but also it should provide convincing demonstration that our FY 1975 request for 785,000 is valid and obtainable.[41]

The commanding general of TRADOC shared responsibility for meeting that goal.

Perhaps even more importantly, the all-volunteer force challenged TRADOC to improve Army training. From the early days of the transition to the all-volunteer force, the links between recruiting, retention, and quality training were evident to senior leaders in the Army. This emphasis continued throughout the 1970s. In a 1976 address to leaders at the Field Artillery School, General Gorman cited survey data to support the importance of training to retention. The N. W. Ayer Company, the firm which then had the advertising contract for the Army, conducted a survey of the Army's soldiers each year. One of the questions they asked in October 1976 was, "What can provide a remedy for problems of motivation, morale & job satisfaction for you?" Across all ranks, from private to colonel, approximately 70 to 78 percent of those surveyed answered "meaningful training."[42] As General Shoemaker argued in 1978 while serving as the Commanding General of FORSCOM, training is "the source of job satisfaction for our soldiers" and "the cornerstone on which we build our recruiting and retention efforts."[43]

Post-Vietnam Recovery

The manner in which the Army mobilized for and fought the war in Vietnam had a tremendous impact on the organization. In addition to personnel turbulence and the dilution of experienced leadership, by 1972 the Army's social problems included: dissent, drug abuse, alcoholism, absenteeism, corrupt behavior, war crimes, race relations, and crime.[44] These problems shaped the environment in which TRADOC's first commanders operated.

As the Army reoriented from Vietnam to focus on the future, two issues were particularly relevant to TRADOC areas of responsibility. First, the Army needed to shift from producing individual replacements for operations in Vietnam to producing effective units ready for a "come-as-you-are" war in Europe. This had great implications for the training base.[45] The second issue was the perception that a lack of attention to modernization while the Army was engaged in Vietnam had put the U.S. Army at even greater disadvantage vis-à-vis numerically superior Soviet forces. Under General Abrams, the Army began to focus on the "Big Five" weapon systems--which later became the M1 Abrams Tank, M2 Bradley Infantry Fighting Vehicle, Patriot air defense system, Blackhawk utility helicopter, and Apache attack helicopter.[46] TRADOC would need to support Army arguments for these systems through its studies and analyses.[47] In addition, TRADOC would need to ensure that the entire combat developments process--encompassing doctrine, training, organizations, and leader development--was coherently related to this equipment modernization. As General DePuy wrote to Army Vice Chief of Staff Walter Kerwin in 1977, "We are playing catch-up on modernization, having missed one generation of modernization during the Vietnam War--modernization in weapons and

equipment--modernization in tactics and techniques--modernization in training methodology and effectiveness."[48]

Arab-Israeli War

By providing a window into the nature of contemporary conflict between armies with modern weapon systems, the war between Israel and Egypt and Syria in October 1973 challenged the U.S. Army's leadership. Would the Army, in its current state, be able to fight such a war and win? In addition, the fact that the Israelis were outnumbered by their Arab opponents increased the perceived relevance of the Israeli experience. Given that the U.S. Army expected to face numerically superior Soviet forces in Europe, the parallel was obvious. General Abrams tasked TRADOC to take the lead in determining what the U.S. Army should learn from the conflict.[49]

After the conclusion of the fighting, Abrams sent the commander of the Armor School, (then Major General) Donn Starry, as well as the program manager of the Army's XM-1 tank, Brigadier General Robert Baer, to Israel. As Starry remembers their January 1974 trip:

> Bob and I walked battlefields with IDF [Israeli Defense Force] Commanders who had fought on them, seeking answers to many questions about the future of the U.S. Army. The questions we posed focused on documenting requirements for the M1 tank . . . and most importantly, on critical operational lessons of the Yom Kippur War.[50]

General DePuy made his own visit to Israel in August 1976, and General Starry returned to Israel in May 1977.[51] Both were determined to seek out relevant lessons from the war, and develop and implement doctrinal, training, and other solutions responsive to those findings.

Different analysis efforts by TRADOC eventually produced "dozens of important but detailed lessons learned" ranging from "logistical problems to small technical problems within particular weapons systems." These studies also produced 162 recommendations for action. As an example of a technical problem, the Israelis discovered that the hydraulic fluid in the M60A1 tank was dangerously flammable. This finding carried with it a direct and logical requirement for a response given that the U.S. Army was using the same tank.[52] However, there were also larger implications of the war and DePuy knew that the Army needed to be able to simplify to make them clear. The provision of massive amounts of detail could have the unfortunate effect of obscuring the most important lessons.[53] When DePuy reduced the studies' findings to major themes for this reason, he emphasized three main points:

> First, that modern weapons are vastly more lethal than any weapons that we have encountered on the battlefield before. Second, in order to cope with these weapons it is essential that we have a highly trained and highly skilled combined arms team of armor, infantry, artillery and air defense backed by the support required to sustain combat operations. Third, the training of the individual as well as the team will make the difference between success and failure on the battlefield.[54]

The development of each of these points was backed by detailed analysis, and carried with it important implications for the U.S. Army.

A fourth set of lessons--not listed among the top three above but highlighted first in a letter from DePuy to Abrams in January 1974--related to Army-Air Force cooperation. DePuy believed the Arab-Israeli War of 1973 had demonstrated that the U.S. Army and Air Force would have to cooperate closely in order to be effective on the modern battlefield. The Army would have to appreciate the importance of an initial air superiority campaign, and aid the Air Force by contributing to the suppression of enemy

air defenses. In addition, both services could be more effective against enemy ground forces through cooperation in the areas of intelligence, electronic warfare, and targeting.[55] The importance DePuy attached to these implications is evident in the fact that he sent a complete copy of TRADOC's final detailed report to General Robert Dixon, the Commander of the U.S. Air Force's Tactical Air Command.[56]

The Arab-Israeli War of 1973 proved to be an important source of information that affected the shape and pace of U.S. Army reforms in the 1970s. Key individuals, such as DePuy, Starry, and Abrams, all saw its relevance. The war's lessons had a particularly great impact on General DePuy who discussed them often in both his writings and speeches, but were similarly influential for Starry as the commander of the U.S. Armor Center during the war.[57] As Chief of Staff, General Abrams sought to ensure that TRADOC's findings were disseminated throughout the Army. For example, Abrams encouraged Army commanders overseas to receive TRADOC briefing teams in order to become familiar with the lessons of the war.[58] The importance Abrams attached to TRADOC's studies is perhaps best evidenced by a letter from Abrams to DePuy less than three weeks before Abrams' death in September 1974. Abrams wrote:

> I appreciate your personal involvement in this matter and the work that many TRADOC personnel have devoted to the preliminary and final analyses of the 1973 Middle East war. . . . TRADOC's efforts have been helpful in shaping our ideas and outlining required actions for the Army, and I urge you to continue this important effort, as appropriate.[59]

Senior leaders within the U.S. Army knew that they needed to rebuild and redirect efforts after the end of the Vietnam War, and the 1973 Arab-Israeli War was an important source of information as to what needed to be done. In this sense, the war provided these leaders with both a challenge and an opportunity at the same time.

End of the Decade

Near the end of the 1970s, the Army's environment began to shift once again. As mentioned above, by 1979 budget constraints on the Army began to loosen. These changes were partially due to an increased awareness of the continued Soviet build-up of both nuclear and conventional forces. However, an additional factor was Soviet activism, to include Soviet threats of intervention in the Arab-Israeli War of 1973, as well as Soviet involvement in Portugal (1974), Angola (1975), Ethiopia (1977-1988), Vietnam and Kampuchea (1978) and especially the invasion of Afghanistan (1979). A third factor was probably the blow to American confidence caused by the Iranian Hostage Crisis that began in January 1979 and the ineffective rescue attempt by U.S. armed forces in April 1980. In the face of Soviet activism and the Iran Hostage Crisis, President Jimmy Carter explicitly changed U.S. national security policy with the enunciation of the Carter Doctrine in his State of the Union address in January 1980. Carter declared, "Let our position be absolutely clear: An attempt by any outside force to gain control of the Persian Gulf region will be regarded as an assault on the vital interests of the United States of America, and such an assault will be repelled by any means necessary, including military force."[60] The major implication for the U.S. Army would be that after spending half a decade with a relatively exclusive focus on Europe, it would need to pay more attention to other contingencies as well. As General E.C. "Shy" Meyer, the Army's Chief of Staff between 1979 and 1983, captured this idea in his 1980 White Paper: "The most demanding challenge confronting the US military in the decade of the 1980s is to develop and demonstrate the capability to successfully meet threats to vital US interests outside of Eruope, without compromising the decisive theater in Central Europe."[61]

Although new directions in national security policy ultimately led to substantial changes in the Army--such as the creation of the contingency-oriented light divisions in the latter half of the 1980s--they had only a slight impact on the developments that will be discussed here. For example, one aspect of the doctrinal changes between 1976 and 1982 was an effort to achieve worldwide applicability with the latter manual. However, the roots of that particular change go further back than 1980. Among officers whose most recent combat experience had been Vietnam, the Euro-centric nature of the 1976 manual received criticism before it was even published. The lessening of resource constraints probably had a larger impact in the Army prior to 1982. For example, the fact that the Army's budget experienced steady increases from FY 1977 through the end of the decade helped to get the Army's National Training Center off the ground at a crucial stage in its development.[62] These changes in Army doctrine and training will be further discussed in the section on reforms below.

DePuy's Approach

As the initial commander of TRADOC, General DePuy played a vital role in interpreting TRADOC's responsibilities and defining TRADOC's strategy towards meeting them. There were four key aspects of DePuy's approach: he emphasized the analytical responsibilities of TRADOC; he placed great value on liaison efforts with the U.S. Air Force and with the German Army; he developed and maintained a constructive relationship with FORSCOM; and finally, he played a strong, personal role in TRADOC's early reforms which were therefore shaped by his personal priorities. Each of these four aspects of DePuy's approach will be reviewed in this section before the discussion turns to the resulting reforms in the section that follows.

Studies

One key task of TRADOC's first commander was to decide where the organization's center of gravity would be in terms of value added. What would be TRADOC's key contribution? General DePuy's answer to that question was that it would be "an analytical approach to solving problems." As he elaborated at a 1977 TRADOC Commanders' Conference, "The only real power we have, the only weight that we can put into the balance, is based on objective test evaluation, measurement, and analysis."[63] Solid research would help TRADOC in convincing other leaders and organizations within the Army of the worth of TRADOC initiatives, as well as convince relevant players outside the Army. As DePuy wrote to General Frederick Weyand after the latter had succeeded Abrams as Chief of Staff, the Army had an especially great need for such analysis because "ground combat is, without any doubt, the most complex set of interactions in any kind of military operations by any service or any country."[64] This complexity made it difficult for the Army to articulate its needs to civilian superiors in a clear and convincing way. General DePuy felt TRADOC should produce analyses that would validate, clarify, and make understandable the Army's requirements.

General DePuy's emphasis on this aspect of TRADOC's role was at least partially rooted in his experiences in the Pentagon as the Assistant Vice Chief of Staff. That position was established in February 1967 as one of a series of management reforms implemented by Army Chief of Staff Harold K. Johnson. Johnson created the office of Assistant Vice Chief to enable the Army to adequately respond to the information demands of Defense Secretary Robert S. McNamara's systems analysts under the new Defense Planning, Programming, and Budgeting System (PPBS). In its first few years

under PPBS, the Army's credibility had suffered because it had been unable to present adequate information in support of resource-related actions.[65] General DePuy was appointed as the Army's second Assistant Vice Chief in 1969 and served in that position until 1973. DePuy took pride in the fact that when he became the Assistant Vice Chief he "worked 80 percent of the time for the Secretary and 20 percent" for his uniformed bosses, and by the time he left the ratio had been reversed. The implication was that as the military leaders of the Department of the Army gained credibility in resource management, they regained authorities and responsibilities they had lost under McNamara. After this experience, DePuy was very familiar with the cost effectiveness logic that the Army needed to use to justify its program decisions, as well as with the bureaucratic power of numbers.[66]

In DePuy's view, a scientific approach to solving Army problems was valuable across TRADOC's functions, to include both training and combat developments. One good example from the training realm was a series of field tests done by TRADOC's Combat Development Experimentation Command which tested the relative merit of different foxhole designs. These tests established that foxholes with frontal cover (parapet foxholes) "yielded significantly higher exchange ratios of attacker to defender" than the Army's current standard foxhole. As a supplemental benefit, the tests provided two other important results. First, they gave evidence of experiential learning as attackers experienced 67 percent losses during the first 18 days of attacks, and 47 percent during the last 18 days. Second, these field tests provided data about the relative value of different tactics. The attackers experienced significantly better results when they used

two-thirds of their strength to suppress the enemy with fire and one-third to maneuver as they did when they reversed these ratios.[67]

General DePuy felt that concrete data such as that provided by this experiment was essential to TRADOC's success. As he explained:

> We're forever going to be in arguments with either DA [Department of the Army] or other headquarters, because their gut feelings are just as good as ours. If they're bigger than we are, more senior, or have a more romantic job, they may win the argument. But if we've got the data, if we've done our homework, and we've done our analysis, we'll win every time. The fact of the matter is, we have prevailed in almost every issue that's come up whenever we had the data.[68]

General DePuy had similarly strong feelings about the importance of solid analytical work in fulfilling TRADOC's combat developments functions. Through its practical field experiments in this area, DePuy felt that TRADOC could help the Army to know "which systems are the most important on the battlefield" and to address the related questions of priority and affordability.[69]

Partnerships

As the first Commanding General of TRADOC, General DePuy was asked by General Abrams to develop a cooperative relationship with the Air Force's Tactical Air Command (TAC) and to serve as the focal point for consultation between the U.S. and German armies. With regard to the Air Force, Abrams' request dovetailed with efforts DePuy had already been making to involve TAC in tests of Army warfighting concepts.[70] During his tenure at TRADOC, DePuy took his relationships with both TAC and the German Army very seriously, and these ties both shaped and gave additional impetus to TRADOC's early reforms.

General DePuy, along with General Robert Dixon who was the TAC Commander, served as the primary agents for furthering Army-Air Force collaboration in the first half of the 1970s.[71] In order to make progress without running up against potentially irreconcilable differences over service roles, the early TAC-TRADOC dialogue focused on developing procedures for joint operations rather than on developing doctrine. In October 1973, when Generals DePuy and Dixon met for the first time, they "set up joint working groups for airspace management and reconnaissance/surveillance."[72] Shortly thereafter, the two services added a working group on electronic warfare. By 1975, due to the proliferation of working groups and their increasing workloads, TAC and TRADOC institutionalized their cooperation through the establishment of the joint Air-Land Forces Application Agency.[73]

The TAC and TRADOC relationship continued to evolve during the decade. Initial issues discussed included airspace management, reconnaissance and surveillance, electronic warfare, and joint suppression of enemy air defense. A notable accomplishment was the 1976 joint production of a manual, designated Air Force Manual 2-14 and Army Field Manual (FM) 100-42, entitled *Airspace Management in an Area of Operations.* Both service chiefs endorsed this manual.[74] It exemplified the dialogue of this time period "in that it integrated the then current manner in which aircraft, helicopters, and artillery would fight into a coherent scheme, rather than dictating large changes in employment to fit a preconceived combat role."[75]

After General Starry took command of TRADOC in 1977, the central issues shifted to reflect his priorities. As will be discussed further in the section on doctrinal reforms below, Starry was very concerned about the follow-on forces that would be

behind an initial assault by the Warsaw Pact. Due to this focus, the two services' discussions increasingly revolved around what came to be known as "Joint Attack on the Second Echelon." Two important biservice achievements of the Starry period were the production of an April 1981 pamphlet containing an agreed vision as to how to conduct joint suppression of enemy air defense, and a May 1981 agreement on offensive air support.[76]

The dialogue between TAC and TRADOC provided the basis for even more extensive efforts at cooperation between the two services in the 1980s. On 21 April 1983, after the publication of the Army's 1982 edition of FM 100-5 *Operations*, the Chiefs of Staff of the two services embarked on "Joint USA/USAF Efforts for the Enhancement of Joint Employment of the AirLand Battle Doctrine"--an effort that eventually produced a biservice agreement known as the "31 Initiatives."[77] While the specific results of these efforts are beyond the discussion here, in general the 31 Initiatives represented a desire on the part of senior leaders in the Army and Air Force to expand their collaboration. The 31 Initiatives attempted to coordinate Army and Air Force programs to support an increasingly common conception of how to fight and win the intimately related air and ground battles.[78]

A second important relationship that DePuy fostered was with the German Army. As General DePuy recalls:

> General Abrams and Lieutenant General Hildebrandt, the Inspektur (Chief of Staff) of the German Army, directed me and Lieutenant General von Reichert, the German Army's Vice Chief of Staff, to conduct a series of staff talks to harmonize US and German Army procedures and, if possible, weapons requirements.[79]

General DePuy admired the German Army's capstone doctrinal manual, HDv 100/100, *Command and Control in Battle,* and did not hesitate to borrow tactical concepts from the Germans.[80] Perhaps the most important of these was an approach to the employment of mechanized infantry known as *Panzergrenadier* tactics. These tactics called for infantry to support fast-moving tank formations by staying mounted as long as possible, providing suppression of enemy anti-tank weapons from fighting vehicles, and breaching obstacles. General DePuy felt that the U.S. Army, which had focused on light infantry tactics and air mobile operations due to the Vietnam War, could usefully learn from German combined arms experience.[81] DePuy even invited German Army experts to address U.S. Army schools on the topic of *Panzergrenadier* doctrine.[82]

DePuy was not willing to follow the German model on all issues. For example, the U.S. Army relied upon the U.S. Air Force more than the German Army relied upon the German Air Force.[83] In DePuy's view, however, these differences were not insurmountable because his goal was not to achieve an identical approach to tactics. An understanding of similarities as well as differences would help the two armies fight more effectively together on a future battlefield. After Starry succeeded DePuy as the TRADOC commander, he continued to encourage his doctrine writers to look at German doctrine as an important source of valuable concepts.[84]

In addition to the value that the relationships with the U.S. Air Force and German Army provided in terms of concepts and procedures, these ties also gave General DePuy a bureaucratic advantage.[85] As the initial commander of TRADOC, DePuy would play an important role in determining the relative influence of that headquarters vis-à-vis the Army's branches and other commands. Despite the fact that DePuy's TRADOC had

formal authority over the infantry, armor, artillery, and other branch centers and schools, it was not necessarily a foregone conclusion that TRADOC would be able to impose its vision of future warfare upon the Army over objections from these entities. The fact that DePuy's efforts were at least partially the product of coordination with an important NATO ally--as well as with the U.S. Air Force--gave DePuy's initiatives additional institutional weight.[86]

An "Eight-Star" Approach

As the first commanders of TRADOC and FORSCOM, General DePuy and General Walter Kerwin sought to manage the division of CONARC as cooperatively as possible. The creation of two commands from one was fairly complicated, since the reorganization meant that some TRADOC activities would be located on FORSCOM installations and vice versa. As General Kerwin recalled, the two commanders decided that "the only people who could get mad at each other were Bill DePuy and I." Otherwise, DePuy and Kerwin expected their staffs to work out any differences in an agreeable fashion. For the first few months, this meant "that everything that was put out in the form of a regulation would have the TRADOC and FORSCOM 'chop' on it."[87] One of Kerwin's staff officers labeled this "the eight-star approach."[88]

Perhaps because of the expectation of cooperation set from the top in the very beginning, or because of the value of TRADOC's work, relations between TRADOC and FORSCOM in the 1970s were marked by collaboration. As Kerwin wrote in 1973:

> For many reasons, our closest interface must be with TRADOC. We came from the same seed and have interlocking interests. We send our officers and soldiers to TRADOC schools and training centers, and receive their output. As the user, we have a major stake in TRADOC's combat developments and testing processes, both in terms of influencing the input and in benefiting from the results.[89]

Perhaps the greatest benefit of the relationship between the two commands was in the field of training. As will be further discussed below, General DePuy interpreted TRADOC's responsibilities as not only including individual training in the Army's schools, but also support to training in units. FORSCOM, as the entity responsible for the operational readiness of forces within the United States, embraced TRADOC's products.[90] FORSCOM use of TRADOC training support materials continued after General Bernard Rogers took command of FORSCOM in November 1974.[91] Perhaps the culmination of this cooperation came in the early 1980s when, despite tensions between them, the two commands succeeded in jointly creating the Army's National Training Center at Fort Irwin, California.[92]

Personal Agenda

As the first commander of TRADOC, General DePuy had a unique opportunity to put his imprint on the focus of the organization. DePuy brought to the position a deep concern about the tactical competence of the Army's leaders and small unit effectiveness. These had been his longstanding priorities, and stemmed from the terrible losses of the 90th Infantry Division in which DePuy had served in the early days of World War II. As he recalled, "In Normandy, the 90th Division was a killing machine--of our own troops!"[93] DePuy believed that the primary problem was weak leadership due to inadequate processes of selection and especially to insufficient training. Unfortunately, the quality of leader training never improved during the course of the war. Instead, what happened was "as the war went on a few survivors accumulated some seasoning through luck and natural cunning. Once the meat grinder of Normandy was broken up, the

casualty rates went down and reciprocal seasoning rates went up."[94] The price of that experiential learning was too high: "In the first six weeks of the battle in Normandy, the 90th lost 100 percent of its soldiers and 150 percent of its officers. In the rifle companies that translates to losses of between 200 and 400 percent."[95]

DePuy believed that the U.S. Army's lack of focus on tactical skill was exemplified by the fact that the Army's heroes from World War II were strategic planners, mobilization managers, and theater or army commanders. In other words, the Army credited generals such as George C. Marshall (U.S. Army Chief of Staff), Henry "Hap" Arnold (Commanding General, Army Air Force), Dwight D. Eisenhower (Supreme Allied Commander, Europe), and Omar N. Bradley (Commander of 12th Army Group) with being the architects of success. The "cradle of victory" was seen to be the Command and General Staff College at Fort Leavenworth--a school where the curriculum focused on the effectiveness of higher level staffs--rather than the Infantry School at Fort Benning.[96] The truth was that the United States had "ordinarily won its wars through the weight it could throw rather than the skill it could apply."[97]

General DePuy responded to his wartime experience by prioritizing small unit tactical competence through training and leader development during his postwar assignments. For example, as a battalion commander in Germany in the mid-1950s, he personally "tested every squad three or four times" and prided himself in knowing the relative abilities of each squad leader.[98] Nevertheless, DePuy's emphasis was not reflected in the priorities of the Army as a whole. According to General Paul Gorman, an officer highly respected by DePuy for his expertise in training, the Army's historical weaknesses in tactical training had not been overcome by 1973. Between 1943 and 1973,

in Gorman's view, "Army training for dismounted action at the point of the arrow remained formulary, complicated, and situationally vague."[99] The training base remained focused on producing individual replacements, and unit training involved the accomplishment of set piece actions "followed by a meticulous umpire critique based on a list of 50 specific procedures (checked observed or not observed) within the platoon."[100]

These personal priorities and perceived Army shortcomings shaped General DePuy's approach to his responsibilities as the commander of TRADOC. In General Gorman's words:

> DePuy had what he himself termed "a fire in the belly" over the issue of training commanders and soldiers for close combat, a deep, abiding concern that the Army's mission was in that respect unaccomplished. He took over TRADOC with zest, perhaps not knowing exactly what he wanted to do, but sensing that he was in a position at last to remedy a longstanding malady.[101]

If anything, General DePuy's belief in the importance of tactical training had probably only intensified since World War II due to his interpretation of the demands of modern combat. As he expressed in 1974, "forces can be moved so fast--modern weapons take so long to build--soldiers take so long to train--and modern weapons are so lethal that the outcome of the next war will be largely settled in weeks with the forces and weapons on hand at the outset."[102] General DePuy's focus on the tactical level of war--i.e, on winning battles and tactical competence--is a common thread running through the reforms which marked his tenure at TRADOC.

Reforms

In its first decade, TRADOC was instrumental is developing and implementing a number of important reforms. Of these, the most well known are the revisions in doctrine which included the Army's 1976 and 1982 editions of FM 100-5, *Operations*. A second

important reform, less commonly recognized, is the Army's complete overhaul of training practices. The final reform that will be discussed in this section is the role of TRADOC as an integrating agent for the U.S. Army. Not only did doctrine and training practices change, but these reforms were consciously made mutually supportive, and integrated with changes in other important areas such as professional education. Each of these reforms will be discussed below before they are assessed in the concluding section of this chapter.

Doctrine

General DePuy's initial priorities as he took command of TRADOC did not include spearheading a major rewriting of the Army's doctrine. In DePuy's words, "One of the basic premises of combining CDC with the schools was the assumption that this would take care of doctrine."[103] However, this did not prove to be the case. General DePuy soon found himself playing a strong personal role in rewriting the Army's doctrine.

Active Defense

There were several reasons for this shift in DePuy's focus, but the single most important was the impact of the Arab-Israeli War of 1973. As DePuy explained to General Weyand:

> When we looked at the state of doctrine, tactics, techniques and training in the US Army, measured against the demanding standards of the Middle East battlefield, we found them wanting. We also found an Army with its attention focused elsewhere.
>
> During the winter, spring and summer of 1974, we concentrated on a review of all US weapons systems characteristics against the lessons of the Middle East War. We also concentrated on the implication of that war on the tactics, techniques and training of our tank, mechanized infantry and armored cavalry elements and their supporting artillery and air defense. We started at the

> bottom--squad, platoon, company, battery, and troop. Circulars were published and quick-fix pamphlets were produced. . . .
>
> It became apparent, however, that the implications of the Middle East War and our review of our status involved problems at every echelon from Corps to Company.[104]

In the summer of 1974, DePuy began to address doctrinal concerns by circulating an informal letter and draft concept of operations to school commandants. DePuy wanted it to be a living document to which they would contribute their thoughts, but he also directed them to use its content as a guide in their writing of doctrine, instruction, and as "a conceptual basis for the determination of weapons systems requirements."[105] By that fall, General DePuy had decided that a major overhaul of the Army's doctrine was necessary. As he wrote to this same group of individuals (with the addition of Major General Charles Myer, the Commander of the U.S. Army Signal Center) on 10 October 1974, "I intend that we rewrite all the important field manuals in the United States Army and have them published by 30 June 1976." In order to make clear the emphasis he placed on this initiative, he told them, "If necessary, you must write them yourselves, as I hold each of you personally responsible for achieving the objective I have set."[106]

Although there is little doubt that the Arab-Israeli War had a galvanizing effect on TRADOC's doctrinal efforts, the general condition of the Army in 1973 was an important underlying factor. As General DePuy mentioned in the passage cited above, the Army had "its attention focused elsewhere." As he had elaborated earlier in the letter, "in the summer and fall of 1973 the Army was in the process of recovering from the numerous effects of the Vietnam War and deep into the challenge of the all-volunteer army. . . . It was an inward looking time."[107] In addition to these internal problems, with the end of the Army's involvement in the Vietnam War and promulgation of the Nixon doctrine

came a renewed emphasis on the large armored threat in Central Europe. The Arab-Israeli War, "between two forces equipped with modern weapons representative of those found in the hands of NATO and the Warsaw Pact," gave the Army some idea of what conflict in Europe could be like.[108] DePuy's mention of these two points indicate that one of the reasons why the Arab-Israeli conflict served as a catalyst is that it was particularly relevant to the institutional needs of the U.S. Army in 1973. It provided a focal point that could draw the Army's attention away from social and morale problems and back to warfighting, and a concrete base on which to build as the Army confronted the challenge of facing Warsaw Pact forces in Europe.[109] The war even provided possible grounds for optimism--the Israelis showed that it was possible to fight outnumbered and win.[110]

After General DePuy decided that it was necessary to rewrite the Army's doctrine, his decisions as to the assignment of responsibility generated controversy. This occurred on two levels. In combined arms tactics, there was some disagreement as to whether doctrinal proponency should belong to the Infantry School at Fort Benning, to the Armor School at Fort Knox, or to some combination of the two. General DePuy ultimately decided in favor of Fort Knox for several reasons. First, because of its recent experiences in Vietnam, the Infantry School was focused on light infantry tactics and air mobile operations. General DePuy was skeptical of its desire and ability to rapidly switch its focus to the problems of mechanized warfare. A second reason is that General DePuy had a great deal of respect for the Armor School's Commander, Major General Donn Starry. Starry was actively engaged in learning lessons from the Arab-Israeli War and, in DePuy's view, understood tactics better than most "other people of any rank in the Army."[111] A final reason is that DePuy did not believe that it would be possible to make

rapid progress if he gave equal responsibility to two schools. However, he did declare that the new mechanized infantry manuals would be designated with series identifier "71" rather than "7" for infantry or "17" for armor to indicate their relationship to both branches.[112]

A second and even more important issue of doctrinal responsibility related to the writing of the Army's capstone manual, FM 100-5. General DePuy originally intended that this centerpiece of doctrinal reform would be written at Fort Leavenworth, Kansas, under the supervision of its commander, Major General (later Lieutenant General) John Cushman. Between TRADOC Headquarters and the various branch centers and schools were three integrating agencies: an Administration and Finance Center at Fort Benjamin Harrison, Indiana; a Logistics Center at Fort Lee, Virginia; and the Combined Arms Center at Fort Leavenworth. The center at Leavenworth was responsible for overseeing training in the Army branches of Infantry, Armor, Artillery, Air Defense, Aviation, and Engineers; running the Command and General Staff College; conducting research at the Combined Arms Combat Developments Activity, and writing doctrine relevant to combined arms operations.[113] Although Leavenworth's focus at division and higher meant that it would not write the 71 series manuals, Leavenworth (and specifically the Tactics Department of the Command and General Staff College) had responsibility for the Army's capstone document.[114] Ultimately, however, General DePuy pulled the writing of 100-5 back to TRADOC Headquarters out of dissatisfaction with Leavenworth's product.

Underlying DePuy's displeasure was a difference in philosophy about the purpose of doctrine. As DePuy later recalled, the point of view of Leavenworth was that "doctrine

is driven by experience and accumulated wisdom, principles of war, and so on."[115] Cushman personally believed that doctrine should be an educational document rather than a set of rules.[116] Unfortunately, that view did not lead to a product that meshed with what DePuy wanted from the Army's capstone doctrinal manual. Rather than Cushman's search for "the latest and best thought about warfare," DePuy sought a manual that would both tell the Army "how to fight," and would help him to integrate the activities of TRADOC with the ultimate goal of changing the Army.[117] In DePuy's view, doctrine should fulfill three important functions. First, it should provide a basis for determining important tactics and techniques to those concerned with training. Second, doctrine should give combat developers concepts that would allow them to articulate requirements for materiel and organizations. Finally, doctrine should provide a common conceptual framework to leaders in the field. To do all of these things, in DePuy's view, doctrine needed to be "simple, clear, and specific" and more directive than educational.[118]

As a result of these differences, General DePuy disapproved a draft of FM 100-5 produced by Leavenworth for a general officer's meeting at Fort A. P. Hill, Virginia, in December 1974. After General Cushman and his subordinates failed to write something DePuy found satisfactory by April 1975, DePuy took matters into his own hands. At another meeting at Fort A. P. Hill at the end of that month, DePuy formed writing committees chaired by general officers to draft specific chapters of the new manual. General DePuy himself chaired the committee on intelligence, Major General Thomas Tarpley, the US Army Infantry Center commander, chaired the committee on the defense, and Brigadier General Gorman chaired the committee on the offense. After the meeting, DePuy directed Gorman to bring the drafts back to TRADOC Headquarters for

completion, at which point General Cushman was officially relieved of responsibility for the production of FM 100-5.[119]

After this transfer of authority, the drafting of FM 100-5 was done primarily by a handful of general officers supported by a small group of more junior officers working directly for DePuy at TRADOC Headquarters. The clarity and style DePuy sought in the manual was evident in the instructions he gave to this small group of officers. He wanted a manual that would clearly emphasize fire superiority, suppression, and massing to achieve favorable force ratios on the battlefield, and he would not find acceptable writing that drifted away "from the direct, simple, message."[120] The final draft was mostly written by the three general officers who had been most involved in the manual after TRADOC Headquarters assumed responsibility for it. Paul Herbert provides a succinct description of this last phase in the document's production:

> On 18 and 19 November 1975, Generals DePuy, Gorman, and Starry rewrote the final drafts of the manual's first six chapters--the heart of the new doctrine--which were titled "U.S. Army Objectives," "Modern Weapons on the Modern Battlefield," "How to Fight," "Offense," "Defense," and "Retrograde." DePuy wrote Chapter 1, Gorman chapter 2, DePuy and Gorman Chapter 3, DePuy and Starry Chapter 4, and Starry chapters 5 and 6. . . . Major General Cushman attended the meeting as an observer.[121]

In December 1975 General DePuy gave a well-received briefing on the new manual to a Department of the Army Commander's Conference, and the feedback he received did not substantively alter its contents.[122] By 18 February 1976, DePuy was able to write to Army Chief of Staff General Weyand: "The Army has now developed and articulated its doctrine for combat on the modern battlefield in FM 100-5 which with the comments and concurrence of your staff is now on its way to the printer."[123]

Three very interesting aspects of the new manual relate to its presentation, its content, and the process through which it was produced. In terms of presentation, the new manual was disseminated in a three-ring binder with a camouflage cover which provided an immediate contrast with the plain buff-covered previous versions. The manual's outward appearance, as well as its simple language and illustrative sketches, reflected DePuy's desire that it be a practical document that would be widely read and used. A second indicator of this intention was the manner in which it was disseminated; it received both a wide distribution and command emphasis upon its arrival. An initial 1,000 copies went to the Department of the Army Staff, major commands, Army units down to division level, and the Army's schools. This was rapidly followed by a special mailing of 22,000 copies to all combat arms commanders down to company level, which was then followed by a more routine distribution of 153,000 additional copies. Starry, who was promoted to Lieutenant General and assumed command of V Corps in Europe, contributed to an emphasis on its use throughout U.S. Army Europe after his arrival there in May 1976.[124] Both wide distribution and command emphasis were essential to DePuy. As he wrote to General Weyand in February 1976:

> It will be two more years before all of the hierarchy of manuals and supporting literature will be properly aligned with FM 100-5. . . . It will be several more years before 51% of the commanders in the Army--Generals through Captains--operate instinctively in accordance with the principles of FM 100-5. At that time, it will be genuine doctrine.[125]

For doctrine to be real, it had to be accepted and applied by the Army's officers.[126] DePuy's beliefs in this regard were also evident in a letter he wrote to Starry in June that same year: "I read a letter of instruction on the General Defense Plan for V Corps and of

course it was the best news I have had for three years. It is the first application in the real world of the concept which you and I and a few other people shared at the outset."[127]

The physical form and presentation of the manual both reflected and reinforced its content. The 1976 version of FM 100-5 was meant to provide practical guidance to combat leaders on the modern battlefield. The name by which the doctrine came to be known, "Active Defense," was not given to it by DePuy.[128] However, the term probably gained popular acceptance as a seemingly apt description of one of the manual's central concepts. Chapter 5, "Defense," set forth five fundamentals of defensive operations: "Understand the enemy; See the battlefield; Concentrate at the critical times and places; Fight as a combined arms team; Exploit the advantages of the defender."[129] Central to the success of the active defense was the ability of the defender to concentrate combat power at the crucial time and place in order to defeat Soviet attacks expected to come "on very narrow fronts in great depth."[130] Achieving required force ratios required timely decisions, taking risks on the flanks, a willingness to forgo the use of a reserve, secure communications, and the ability to achieve rapid lateral concentration of forces. To exploit the advantages of the defender, leaders needed to be able to maximize any advantages offered by terrain, and to "understand completely the capabilities and limitations" of friendly and enemy weapons.[131] Finally, while the defense should take place as far forward as possible, it had to be elastic in order to retain coherence in the face of large-scale attacks. FM 100-5 argued that in the face of such attacks, "The problem will be to destroy many targets in a short period of time."[132] The U.S. Army could expect to fight a more numerous enemy armed with comparable weapons. Given these factors, as well as the high lethality and rapid pace of modern battle, there would be

no time after war began for national mobilization. The Army had to be prepared to *"win the first battle of the next war."*[133]

A talking paper General DePuy provided to General Weyand on the new field manual highlighted other important aspects of its content. A few of these are worth summarizing here. First, the manual focused on war in Western Europe "because the defense of NATO Europe has been assigned to the Army by the Department of Defense as its principal mission." Second, the manual provided great detail on the characteristics of modern weapons, to include "the growth, lethality, range, and capabilities of the various Army weapon systems in comparison with Soviet counterparts." Third, the manual set forth "the tactics and techniques" which the Army would have to use to be successful on a future battlefield shaped by the interaction of these weapon systems. Finally, the manual reflected TRADOC's liaison efforts with the Israeli and German armies, as well as with the U.S. Air Force. The collaboration with the Germans appropriately recognized "that in Europe two American Corps are under operational command of an army group which also includes two German Corps."[134]

Two of these points are particularly important. First, DePuy very much wanted this capstone document to be a practical manual that was useful in itself, but that also guided the development of subordinate literature. In DePuy's words, the manual was "written in recognition of the fact that the entire United States Army, from Private to General needs to focus on a form of combat in which the Army of today has had no battlefield experience."[135] Second, DePuy's liaison efforts with organizations external to TRADOC not only gave the manual added authority, but also had an impact on its content. The Arab-Israeli War and ongoing discussions with the Israeli Army led to the

manual's emphasis on "the importance of weapons and weapons operators' proficiency and performance."[136] With regard to the Germans, DePuy borrowed from their *Panzergrenadier* tactics in his thinking about mechanized infantry, and relied upon their capstone manual HDv 100/100 to inform his thinking.[137] DePuy was also aware of the German Army's political requirement to defend as far forward as possible, and this shaped the creation of Active Defense.[138] Finally, advances made through the TAC-TRADOC dialogue in developing common techniques and procedures were reflected in Chapter 8, "Air-Land Battle," of the 1976 version of FM 100-5.

A third interesting point about this manual was the process through which it was written. Although liaison efforts external to TRADOC have already been discussed, within that organization the process was tightly controlled. The manual was written by DePuy in collaboration with a few general officers, supported by a small group of more junior officers within TRADOC Headquarters. DePuy did make efforts to reach out to other commands and communities within the Army. This is best exemplified by two conferences held in October of 1974 and 1975. The 1974 event, called "Octoberfest," was a joint TRADOC-FORSCOM conference which consisted primarily of "a joint demonstration and seminar on tactics and techniques for combat on the modern battlefield at company-battery level."[139] This was followed in 1975 by a second TRADOC-FORSCOM conference designed to address concerns that the Army was moving too far towards mechanized warfare and away from the advances in air mobility operations that it had achieved during Vietnam.[140] However, these two conferences did little to change the substantive content of the emerging capstone doctrine.[141]

After FM 100-5's publication, DePuy believed that the "manual should provide adequate guidance for the Army for an extended period of time."[142] However, this was not to be the case. Criticism from both outside and within the Army prompted the production of a totally new version by 1982. The attention that the manual received partially stemmed from the manner in which it was presented; DePuy wanted the manual to be widely read and it was. As for the content of the reaction, two possible sources of complaint were the manual's content and the process through which it was produced. Although these two are related in the sense that a more inclusive process may have aided the writers in anticipating criticisms, the manual's content was probably most important in sparking dissent.[143]

To be sure, the reception met by the 1976 manual was not entirely negative. Some early observers saw it as marking the beginning of a "doctrinal renaissance" and praised it for heralding a renewed focus on the problem of the defense of Europe.[144] However, the manual also received a great deal of negative commentary from both within and outside the Army. Although some criticism reflected selective readings of the manual, and some of it ignored real constraints on the Army, major points of contention included: a perceived emphasis on the defense; a focus on the first battle; the depiction of Soviet doctrine (i.e., the doctrine was overly reliant on the Soviets employing one particular form of operational maneuver); the focus on Europe; the lack of tactical reserves; the emphasis on firepower at the expense of maneuver; an emphasis on force ratios at the expense of the psychological aspects of warfare; and the feasibility of DePuy's "concentration tactics."[145] As Robert Doughty suggests in his survey of Army doctrine

from 1946-1976, the 1976 version of FM 100-5 "became one of the most controversial field manuals ever written."[146]

AirLand Battle

After General DePuy retired on 30 June 1977, General Starry took command of TRADOC. In addition to the ongoing doctrinal debate in military professional journals, Starry's thoughts on doctrine were informed by his recent experiences with employing it as a corps commander in Germany. As one of the document's co-authors, Starry was perhaps the ideal person to test the new doctrine in the field:

> Active Defense became the basis for staff rides--terrain walks in which division, brigade, and battalion commanders met with me on-site to determine if the doctrine based on the Yom Kippur's lessons was about right or all wrong. After more than six months of evaluating tactics, weapons, and organization using analytical models provided by BDM International, commanders at all levels had about convinced themselves that, with a little luck, the Soviet first echelon could be defeated well forward in the main battle area. It was quite clear to me at that juncture that, as I had feared earlier, the operational level had yet to be confronted, and it was the corps Commander's responsibility to do so.[147]

In other words, Starry believed that active defense was basically sound at the tactical level, but inadequate in its failure to address what do about follow-on forces in Warsaw Pact second and third echelons.[148] A second source of influence for Starry was the 1977 repeat of his 1974 visit to Israel. As Starry later recalled, his purpose on this second trip was to learn what the 1973 Arab-Israeli War could teach him about the operational level of war.[149] While the 1976 manual had reflected a tactical focus on the fighting of battles, Starry's concerns were now at the operational level where the focus was on the waging of campaigns to achieve strategic objectives within a theater of operations.[150]

Starry's interests in higher echelon military operations and Warsaw Pact follow-on forces led him to develop a concept called the "extended battlefield."[151] The term

"extended" had three implications. First, the Army needed to focus on a greater depth. Enemy units not yet in contact had to be attacked in order to slow the enemy's momentum, ensure that the enemy's strength at the line of contact between enemy and friendly forces did not become overwhelming, and deny the enemy the initiative. Second, the battle had to be extended in time "to the point that current actions such as attack of follow-on echelons, logistical preparation and maneuver plans are interrelated to maximize the likelihood of winning the close battle." Third, the extended battle suggested the need to leverage advances in Army and sister service abilities to both acquire targets and attack them at greater distances.[152] Finally, the concept of the extended battlefield subsumed earlier work by the Field Artillery School on the "integrated battlefield." On the integrated battlefield, U.S. forces had to be prepared to combine nuclear, chemical, and conventional fires, air-land operations, and maneuver in "a larger total battlefield vision extending from the U.S. rear area forward and deep into the enemy rear."[153]

After assuming command of TRADOC, Starry did not initially intend to engage in a total rewrite of the 1976 manual.[154] In a 1978 article, Starry set out to clarify the concepts of that document rather than call for a revision. In his words, "It's safe to say that no Army manual has ever been so widely commented on, debated, and, to a large extent, misunderstood."[155] However, the momentum towards revision was increased when Starry received promptings from Lieutenant General Edward C. Meyer in June 1979. Meyer, who was then the Army's Deputy Chief of Staff of Operations, was to become the Army's new Chief of Staff within the month.[156] Meyer suggested to Starry that he consider producing a new manual, and expressed two main concerns. The 1976 manual had given the perception of an overemphasis on the defense, and did not reflect

current understandings of Soviet offensive doctrine. Meyer thought a new version should be explicitly applicable to contingencies outside of Europe, and address the corps and theater levels.[157] One interesting point is that the drafter of Meyer's letter to Starry, Major General William Richardson, soon thereafter received his third star and was sent to Leavenworth to take command of the Combined Arms Center.[158]

When General Starry directed that a revision of FM 100-5 be undertaken, he deliberately avoided DePuy's centralized approach. He gave the writing task to Leavenworth's commander, Lieutenant General Richardson, who in turn gave the assignment to (in Starry's words) "some very bright Lieutenant Colonels--Huba Wass de Czege, Don Holder, Richard Hart Sinnreich, and Richmond Henriques."[159] Although Starry closely followed the writing of the new manual, he deliberately avoided dominating its production.[160] The lieutenant colonels who were the primary writers would provide their drafts to both Richardson and Starry who would respond with comments. The chapter drafts represented a blending of contributions from the writing team and these two general officers.[161]

In an additional effort to gain eventual acceptance, Starry fostered a broadly inclusive process. In October 1979 Starry officially established the post of Deputy Chief of Staff for Doctrine within TRADOC Headquarters and appointed Brigadier General Donald Morelli to the position.[162] In Starry's words:

> Morelli, assisted by a briefing team, did very little else for four years but expose the developing concept to staffs in the Congress and academia, even as the details were being written. Those who did not agree were invited to provide suggestions, with the assurance that their suggestions would, to the extent possible, be included or dealt with in the final product.[163]

In addition to these audiences, Morelli and his team briefed several Congressmen, senior Defense Department civilians, and even Vice President George Bush in March 1982.[164] Two additional efforts involved visits by a TRADOC briefing team (supplemented by an Air Force officer) to major Army installations, and the staffing of the draft manual through Army units in the field. This staffing process produced a number of constructive criticisms which were incorporated into the manual in the first half of 1981. As one example, the concept of *Auftragstaktik,* or "mission-type orders" was added at the suggestion of the FORSCOM Commander, General Robert Shoemaker. The basic idea was that on the demanding and chaotic modern battlefield, subordinate leaders would have to be able to take the initiative within the parameters of the commander's intent.[165] Starry's efforts to reach out to these various figures and communities reflected his view that "change is not possible without consensus."[166]

The manual was essentially completed while Starry was in command, but after delays due to minor editorial changes was published in August 1982 under Starry's successor at TRADOC, General Glenn Otis. The final product, a doctrine named "Airland Battle," addressed a broad range of the criticisms of the 1976 FM 100-5 while also reflecting Starry's concept of the extended battlefield.[167] A first fundamental difference between the two manuals is the level at which they are written. Where the 1976 version argued that the Army's primary mission was "winning the land battle," the 1982 edition argued that "the fundamental mission of the United States Army is to deter war." If war breaks out, the 1982 manual explained "how the Army must conduct campaigns and battles in order to win."[168] In other words, while the 1976 version focused on tactics, the 1982 version was pitched at the operational level of war.[169] As a logical

result of this difference, AirLand Battle doctrine did not embrace the tactics of Active Defense, arguing instead that *"Army doctrine does not prescribe a single technique for defense."*[170] This also makes sense given that AirLand Battle doctrine sought to be relevant to the wide range of operations in which the U.S. Army might become involved.[171] Instead of following a few straightforward imperatives, "the commander chooses a defense to fit his mission, the nature of the enemy, the terrain, and the capabilities of available units."[172]

In many other ways, the manual addressed the concerns of what DePuy described as the Leavenworth view of doctrine. A respect for history was evident in the inclusion of historical anecdotes, and the restoration of the principles of war which had appeared in Army regulations since 1921 but not in the 1976 manual.[173] These elements, as well as the periodic inclusion of quotations from military theorists, also reflected the Leavenworth view that doctrine should serve an educational function. General Richardson, in particular, believed that doctrine should help to educate the Army's officers by helping them to think through the application of military principles.[174] In its discussion of the dynamics of battle, the manual also addressed what some critics saw as an overemphasis in the earlier manual on firepower and quantifiable force ratios:

> Force ratios and the effects of fire and maneuver are significant in deciding battles; however, a number of intangible factors often predominate. Among these intangible factors are state of training, troop motivation, leader skill, firmness of purpose, and boldness--the abilities to perceive opportunities, to think rapidly, to communicate clearly, and to act decisively.[175]

The 1982 manual declared that the elements of combat power were maneuver, firepower, protection, and leadership; of these elements, leadership was crucial.[176] Finally, the doctrine attempted to redress what some saw as the overly defensive, and hence overly

reactive, doctrine of Active Defense. As the new manual declared, "this doctrine is based on securing or retaining the initiative and exercising it aggressively to defeat the enemy."[177] The four tenets of AirLand Battle were: initiative; depth in "time, distance, and resources;" agility leading to an ability to act more rapidly than the enemy; and synchronization of all efforts to achieve maximum effect.[178]

Starry's concept of the extended battlefield was also evident in the 1982 manual. In explaining the fundamentals of AirLand Battle, the manual says:

> AirLand Battle doctrine takes a nonlinear view of battle. It enlarges the battlefield area, stressing unified air and ground operations throughout the theater. . . . It acknowledges the importance of nuclear and chemical weapons and of electronic warfare, and it details their effects on operations.[179]

The new manual addressed the importance of dealing with follow-on enemy forces, a problem which had become strongly evident to Starry as V Corps commander. In its discussion of the "deep battle," the manual argues that "in either attack or defense, timely and well-executed deep actions against enemy forces not yet in contact are necessary for effective operations."[180]

After the revised FM 100-5, *Operations*, was published in 1982 it was replaced in just four years by a new definitive statement of AirLand Battle doctrine. However, this change was a minor adjustment in comparison with the shift in focus and purpose between the 1976 and 1982 manuals. As the preface to the 1986 document states:

> This edition reaffirms the Army's doctrinal thrust introduced in 1982. . . . Central aspects of the AirLand Battle doctrine--its recognition of the importance of the operational level of warfare, its focus on the seizure and retention of the initiative, and its insistence on the requirement for multi-service cooperation--remain unaltered. The basic tenets of AirLand Battle doctrine--initiative, agility, depth, and synchronization--are reemphasized.[181]

However, the 1986 manual also sought several improvements. General William Richardson, who by 1986 had received his fourth star and taken command of TRADOC, introduced the new manual by arguing that it contained the following: an improved discussion of the operational level of war; greater clarity in its discussion of the balance between offense and defense (both required an "offensive spirit" but neither was necessarily dominant); more emphasis on the importance of the close and rear area fight as well as the deep battle; and substantial agreement with the Air Force's perspective that "the theater commander must concentrate air power against objectives critical to the success of the campaign or major operation."[182] (The last point was contentious because Army doctrine gave the corps commander significant responsibility for deep operations, but that commander was not guaranteed to have control over air sorties to support his efforts.) Other issues with the 1982 manual related to its seemingly offensive nature and treatment of nuclear and chemical weapons as relatively "normal" fire support options. These aspects of AirLand Battle were not warmly received in NATO.[183] To address these concerns, the 1986 manual highlighted "the primacy of policy and strategy over operations and tactics in all cases" and made clear that nuclear weapons use or chemical weapons retaliation were strategic decisions beyond the purview of the Army's operational doctrine.[184]

TRADOC's Early Doctrinal Reforms: Process and Contributions

Looking back on the process of doctrinal reform in the U.S. Army between 1973 and 1982, two issues stand out. The first of these is that, despite their agreement on a broad range of questions, DePuy and Starry disagreed on the importance of consensus. General DePuy clearly wanted the Army's officer corps to come to accept the new "how-

to-fight" manuals and especially 100-5, but he chose to prioritize rapid results over an inclusive process. DePuy's approach was probably a result of his personal style, as well as a sense of urgency and belief that the Army's approach to war required a radical overhaul.[185] Starry, on the other hand, had been concerned that TRADOC's lack of inclusiveness and inadequate salesmanship would hinder acceptance of its initiatives since at least 1974.[186] The extensive criticism of the 1976 manual only confirmed Starry's belief that winning acceptance of doctrinal reforms was as much a matter of process as it was of content.[187] In Starry's view, "those who considered they had no voice" in the 1976 doctrine "tended to reject it out of hand."[188] These first two commanders of TRADOC both sought to produce a document that would change the thinking of the Army. DePuy's apparent error was to believe that the officer corps would uncritically and fully embrace the finished products he provided to them.

A second point worth highlighting is that, despite the flaws and short life span of Active Defense, it made significant positive contributions to the process of reform in the 1970s Army. First, in the apt phrasing of one observer, "it forced the Army to face unpleasant realities about modern warfare and to seek realistic solutions."[189] The 1976 manual was designed to lead change rather than codify past practices, and this was not the role U.S. Army doctrine had historically played.[190] This is related to a second point. As discussed above, DePuy wanted FM 100-5 to play an integrating function by serving as the point of departure for all of TRADOC's combat development activities. This view of doctrine survived the 1976 manual, and was embraced by those responsible for its successors as well.[191] As General Starry reflected, "I believe doctrine should drive everything else."[192]

A third contribution of Active Defense was that it provoked the Army's officer corps into reading and debating its basic warfighting doctrine. Even the future Chief of Staff who prodded Starry into revising Active Defense recognized this benefit. After acknowledging the contribution that Active Defense had made in shifting the Army's focus onto future battlefields, General Meyer continued:

> FM 100-5 has performed an even more valuable function. In my experience, I can't think of any other doctrinal publication that has caused such profound and widespread dialogue across the entire spectrum of basic tactical doctrine than has FM 100-5. It has caused people to think aloud for a change.[193]

When General Richardson introduced the revision of AirLand Battle in 1986, he argued that "every officer must understand that the great value of our doctrine is not the final answers it provides but, rather, the impetus it generates toward creative and innovative solutions to the problems of combat."[194] By this standard, Active Defense was a success.

Training

Although TRADOC's reforms in the area of training are being discussed after doctrinal reforms here, many of them actually preceded doctrinal change. Some had their roots in the Army's efforts to implement the all-volunteer force, and others were spurred on by the lessons that the Army took from the Arab-Israeli War in 1973. As General DePuy wrote to General Weyand in the passage cited at length above, TRADOC's first efforts in response to the Arab-Israeli War focused on its implications for the Army's small units--squad, platoon, and company level--and on the publication of training circulars and "quick-fix" pamphlets. This was one of the factors that made General Gorman's extensive participation in the writing of the 1976 FM 100-5 so important--he had already begun to generate lower level literature on tactics and techniques relevant to

the modern battlefield.[195] The training reforms that will be discussed in this section were as important to the Army as its changes in doctrine, partially because the two sets of reforms were deliberately related. This section will review reforms in unit training before highlighting their explicit linkages to doctrine in the following section.

The Army Training System in the Early 1970s: Impetus to Change

Prior to the establishment of TRADOC, training was governed by the Army Training Program (ATP) and Army Training Test (ATT). By 1973, the ATP had become inappropriate for two main reasons. First, it was a model based on the idea of a mobilization Army. In time of war, a small, professional cadre force would be fleshed out with conscripts raised by the draft. As an official history explains:

> Training began at the individual level and progressed through the company level; those units were then combined to form regiments, brigades, divisions, and corps which conducted their own cycle of training. When that process was completed, units were tested for combat readiness and deployed to combat theaters.[196]

This mobilization model was now deficient because of the time required to raise such an Army, and because it failed to address the needs of an all-volunteer force. As the Army leadership was coming to accept, the Army needed to be a force in being that could operate without immediate need of reinforcement rather than a mobilization cadre.[197]

The ATP was also flawed in that it produced a mechanical approach to training that did not emphasize the achievement of standards. As General DePuy explains:

> The so-called ATP was a time-oriented process. A unit spent so many hours or days on each subject. For example, 30 hours of field firing, 6 hours on first aid, and 2 weeks on platoon in the attack. The goal or object was to complete the training--get it done! Never mind whether the troops learned anything. The process completely obscured the product. . . . The learning function was obscured and secondary to the scheduling function. Few took training very seriously.[198]

Under the ATP, training could all too easily become rote and unchallenging.

In addition to the inadequacies of the ATP, there were at least three additional factors that provided impetus for change. The first of these was a combination of the lessons TRADOC took from the 1973 war in the Middle East and the balance of conventional forces in Europe. The 1973 war provided dramatic evidence of the proliferation of increasingly lethal and advanced Warsaw Pact weapons systems. In combination with the fact that NATO forces would be outnumbered in a possible future conflict with the Warsaw Pact, these advances in threat weapon systems meant that the Army would have to do business differently. As later articulated by General Robert Shoemaker, the Commanding General of FORSCOM in the late 1970s, quality training had become crucial:

> In FORSCOM we believe that the current clichés about the modern battlefield are really true. . . . the Army will fight outnumbered. It is clear also that we will not have an advantage in quality of materiel. . . . How then can we kill five of "them" with the loss of no more than one of "us"? The answer is obvious: we can win only by improving the capability of our troops and the skill of our leaders. In one word, training.[199]

Quality training would make victory possible.

A second impetus was the experience of other services with demanding force-on-force training. Particularly important in this regard was the Navy's Top Gun Fighter Weapons School which was opened in 1968. The school trained fighter pilots by simulating tactical engagements between friendly aircraft and aircraft flown with enemy characteristics, and then following up after each engagement with detailed after-action reviews. In the eyes of naval aviators, the value of this training was revealed in aerial combat over Vietnam. As General Gorman summarized:

> During the first four years [1965-1968], the battles proved costly for both U.S. Air Force and U.S. Navy aviators: about one U.S. fighter was lost for every two North

> Vietnamese MiGs downed. During the second four years [1970-1973], the Navy altered its outcomes dramatically, improving its kill-loss ratio by a factor of *five* to better than 12:1.[200]

The Navy had successfully substituted training for the early combat engagements in which pilot losses historically had been highest. Recognizing the value of the Navy's programs, the U.S. Air Force's TAC emulated them by forming "aggressor squadrons" in 1974. TAC then used these aggressor squadrons to provide tactical engagement simulation for TAC squadrons during rotational RED FLAG exercises.[201] Both the Navy and Air Force valued training in an environment as close to combat as could be created in time of peace. General DePuy, who was already convinced by his experiences in World War II of the value of the "seasoning" of leaders gained through combat experience, and Major General Gorman as his deputy for training, were eager to incorporate tactical engagement simulation into Army training.[202]

A third impetus was the all-volunteer force. Limits on available manpower gave Army leaders an incentive to make the most of every individual, and improve professional satisfaction through better training. To help unit commanders conduct meaningful and challenging training, General Westmoreland had established the Board for Dynamic Training (BFDT) in 1971. This entity continued work as the Combat Arms Training Board (CATB) in December of that year. TRADOC would take seriously the mission Westmoreland had earlier given to the CATB to improve "communications between schools and units for training" and to identify "other ways and means of improving training in those branches where improvements were most needed."[203]

The BFDT and later the CATB also explored two applications of technology to training which would later be expanded upon by TRADOC. The first of these, tactical

engagement simulation, had goals similar to the Navy's Top Gun and the Air Force's Red Flag programs:

> [It] consisted of instrumented ranges or maneuver areas for actual military vehicles and personnel in which engagements are singly simulated by direct fire emulators, such as focused directed-energy emitters, microwave or laser, enabling two-sided, free-play tactical exercises, or gunnery training relatively unfettered by safety regulations. The central concept was reward and punishment of tactical performances through real-time casualty assessment and portrayal of near-miss to evoke suppression.[204]

A second initiative related to the preparation of unit staffs for battle through simulation. In explaining the importance of this type of training after his retirement, Gorman quoted from a book entitled *America's First Battles*:

> More glaring than poorly trained troops as a first battle problem is the weakness of command and control. Virtually every case study emphasizes the lack of realistic large-scale operational exercises before the first battle, exercises that might have taught commanders and staffs the hard, practical side of their wartime business as even the most basic training introduces it to the soldier at the small-unit level.[205]

As General Gorman explained, "the central concept was to pit trainees against a sentient enemy, and to exact penalties for tactical missteps, or to reward tactical finesse, via casualties inflicted upon one side or the other."[206]

A final debt to the Army's transition to the all-volunteer force was the concept of performance-oriented training. By late 1970 Lieutenant General George Forsythe, as the Special Assistant for the Modern Volunteer Army, had determined that training innovations would be essential to the creation of an all-volunteer force. Under Forsythe's sponsorship the Experimental Volunteer Army Training Program was initiated at Fort Ord in January 1971; by that fall it was widely emulated throughout CONARC. Central to this initiative were the ideas of hands-on, standards-based, and self-paced training. As

TRADOC was established, it continued to emphasize performance-oriented training embodying these three ideas. In November 1973 DePuy endorsed performance-oriented training in a speech to the annual meeting of the Association of the U.S. Army. DePuy pointed that out that course content and soldier performance had become the means of evaluating school instruction, and not "such things as whether the instructor has his hands in his pockets."[207] An official statement of the Army's emphasis on performance-oriented training came in the April 1975 revision of Army Regulation 350-1, *Army Training.* It declared:

> Proficiency evaluations will be based on performance and not on the number of hours of training to which an individual or unit as been exposed. . . . The purpose of training is to prepare individuals and units to perform missions and tasks required for combat or operational readiness. . . . Normally the performance-oriented training approach best achieves the purpose of military training.[208]

Thus, with an early debt to the Modern Volunteer Army effort, performance-oriented training became the recommended method within units as well as in the Army's schools.

Under the direction of General DePuy and his point man for training, General Gorman, TRADOC built upon these early initiatives and rebuilt the U.S. Army's system for training. Important to this change was DePuy's redefinition of the role of the Army's schools. DePuy decided that the role of TRADOC was not just to train individuals in institutional settings, but also to support individual and collective training in the Army's field units. In an early expression of his future priorities as TRADOC commander, DePuy even suggested to Gorman in April 1973 that "improving squad effectiveness was the central issue before TRADOC."[209] In a 1974 article, DePuy listed the products designed to assist training in units as including: "skill qualification tests, soldiers' manuals, the TEC (training extension course) program, the Army training and evaluation program

(ARTEP) and the how-to-fight manuals."[210] The first three of these products focus on individual training, and are therefore beyond the scope of this work. The ARTEP will be the primary focus of the discussion below, before the role that the how-to-fight manuals played in integrating doctrine and training is explained in the next section.

Unit Training Reforms

The single most important reform in collective training was the creation of the Army Training and Evaluation Program (ARTEP). As General Depuy explains:

> The ARTEP replaces both the Army training program (ATP) and the Army training test (ATT). It states performance objectives and describes performance tests for all the critical tasks of every organizational echelon within a battalion. It also cites training materials and training aids which are relevant and available. If a battalion commander uses the ARTEP as his training objectives, if he designs his training program to achieve those objectives at every level, and if he focuses his training on actual deficiencies and shortcomings against the standards of the ARTEP, then he will produce a combat ready unit.[211]

As a concrete example, the ARTEP for a mechanized infantry battalion task force required that unit to be able to perform the following missions:

> movement to contact; hasty attack; deliberate attack; exploitation; night attack; defense; delay (high risk); disengagement (under pressure), and defense of built-up areas. The school developed in detail the condition and standards for each mission and then, in a top-down process, examined each subelement of the battalion--company, platoon, squad, and team--to determine which collective missions it must perform on the battlefield.[212]

Each branch school was responsible for producing ARTEPs for units of their branch.

As an early evaluation of two specific ARTEPs (those for an armor battalion and for a mechanized infantry battalion) found, this method of training was an improvement over past practices. The biggest contribution of the ARTEP was in the area of training management. It aided units in focusing training on high priority tasks, and in analyzing their strengths and weakness so that the former could be

overcome through additional effort.[213] The Army Chief of Staff at this time, General Weyand, agreed by praising the ability of the ARTEP to give "the unit commander a clear picture of his specific training shortfalls as well as his strengths."[214]

However, there were other issues that the ARTEP itself did not overcome. First, while the ARTEP provided tasks, conditions, and standards, it did not guarantee that units would adopt performance-oriented training practices as they worked towards the achievement of those standards. Second, units tended to make the ARTEP the culminating event of their training cycles. At the end of their training cycles, these units basically disbanded temporarily as they took their turns in fulfilling various support requirements. This detracted from the ARTEP's training value, since the unit did not immediately work to redress shortcomings. The key concept was supposed to be "train-evaluate-train."[215] Third and finally, the ARTEP was "not a standardized test instrument."[216] The determination of whether or not a unit had achieved standards was dependent on individual evaluators, and it was likely that the quality and experience levels of these evaluators would vary from unit to unit. While this problem should be addressed, the report argued that perfect standardization should not be the goal since the formalism such standards would introduce would likely detract from the ARTEP's value as a training tool. As will be discussed below, TRADOC would turn to technology for a partial solution to the problem of evaluation.

Before moving on, it is also worthwhile to note some of the cautionary comments made in this report. First, while the ARTEP could be helpful in evaluating training readiness, its results should not be directly translated into official operational readiness evaluations. As the report argued, "Neither the relationship of the ARTEP evaluation

results to combat readiness nor the procedures for properly accounting for other factors are well enough defined at present to permit fair and accurate use of ARTEP results for this purpose."[217] These "other factors" included the status of personnel and equipment. The concern was that using the ARTEP for official readiness reporting would compromise its value as an aid to training. This concern with the pitfalls inherent in reporting systems may also reflect a lingering concern with overuse of statistical indicators and the challenges such indicators posed to integrity as uncovered by the Army Professionalism Study of 1970.[218] Similarly, the report cautioned against using ARTEP results to evaluate personnel. The best use of the ARTEP was to aid a unit in identifying training deficiencies and overcoming them, and this "purpose can be best achieved outside of a unit evaluation system that affects the careers of the individuals being evaluated."[219] Finally, the report noted that "it is very expensive to train for combat."[220] If the Army were serious about achieving the training standards set forth in the ARTEP, it would have to devote more dollars and more time to the effort.

Training Technology

As the Army sought to improve its training, a lingering problem was in the area of evaluation. In force-on-force exercises, there was a great deal of subjectivity in the determination by umpires as to the outcomes of engagements. This also impacted on the realism of training. As a 1978 TRADOC briefing stated, "frequently on maneuvers it appears that the object is to duel with tanks at ten paces."[221] TRADOC turned to technology to provide solutions for making force-on-force training more realistic, and to provide better feedback on tactical performance. Similarly, technology became part of the

solution to better training of battle staffs. As previously mentioned, in both of these areas TRADOC had early efforts by the CATB to draw upon.

Systems to evaluate tactical engagements became increasingly advanced, and also increasingly easy to use, during the 1970s. An early system, Squad Combat Operations Exercise Simulation was optical and relied on the use of telescopes and number designations affixed to individual soldiers to determine the outcomes of engagements. To achieve a "kill," a soldier would have to be able to look through the telescope of the rifle and read the number off a member of the opposing force. A TRADOC briefing described the workings of this system:

> The name of the game is "I Got You, Number 27." Well, Number 27, who was about to win the Medal of Honor because there were no bullets, becomes a casualty. The next time through Number 27 behaves like a different guy. After about three times, he is a different kind of soldier. He is not going to get himself killed on the modern battlefield with the speed that he has always done it in American history . . . because he is going to be induced to move realistically even in training.[222]

TRADOC also developed a similar system for combined arms training called "Realtrain," and both of these systems were in the field in the mid 1970s. These two systems were cheap, increased the realism of training, and produced measurable results. For example, by 1978 TRADOC had gathered data demonstrating that unit survivability could be increased through experiential leaning with the use of Realtrain by as much as eight to one.[223] However, these early systems also had drawbacks. The most important was that they required a lot of manpower to run. Numerous observers had to follow around individual soldiers or pieces of equipment and record losses. In addition, Realtrain required a lot of time to set up and prepare.

A successor to these efforts was the Multiple Integrated Laser Engagement System (MILES). MILES involved the use of lasers which were attached to weapons systems and activated by their firing, and sensors to indicate near misses and record hits. While controllers were still required, they did not need to register individual "kills" because this happened automatically. As soldiers or pieces of equipment were hit, their alarms would be set off. The process of turning off these alarms would cause the "hit" soldiers' lasers to become inoperable, taking them out of the fight. In the 1970s, the Army used laser technology for small-scale tests but MILES was not available to most units. As General Gorman recalled, "Regrettably, despite the CATB's best efforts, MILES followed the usual twelve-year development cycle."[224] Many units in the Army did not have access to MILES equipment until the mid-1980s. However, MILES became an important enabling technology in the development of the Army's combat training centers, a point which will be returned to shortly.

An additional application of technology to the Army's training needs related to the preparation of commanders and battle staffs for combat--what Gorman called "constructive TES [tactical engagement simulation]." The need for improved training of staffs was identified as early as 1969 as a result of feedback from commanders in Vietnam. The first response was a program at the Infantry School to train battalion battle staffs called the Combined Arms Tactical Training Simulator (CATTS). Though this program only used a wooden mock-up of a helicopter posed over a terrain model, an Army Research Institute study found that it was capable of improving battle staff integration. After the establishment of TRADOC and the 1973 Arab-Israeli War, CATTS became computer-based, and incorporated weapons system effects and the impact of

terrain. It was also moved to Fort Leavenworth "to train battalion commanders and their staffs from all over the Army . . . and further, to incorporate battle simulation into the curriculum of Command and General Staff College."[225] TRADOC's efforts to support the training of staffs through simulation continued to expand in the 1970s. Gorman highlighted progress in this area during DePuy's tenure at TRADOC:

> In 1973, when DePuy assumed command of TRADOC, constructive TES was virtually unused in unit training, and only CATTS was under development. . . When he left command in 1977, TRADOC's Combined Arms Center (CAC) at Fort Leavenworth had fielded not only the computer-based CATTS, but two manual, or board-game simulations: PEGASUS for battalion and brigade staffs, and FIRST BATTLE for division and corps staffs. In addition, CAC had sponsored CAMMS (Computer Assisted Map Maneuver System) which permitted remotely located brigades and battalions to exercise together via telephone lines linked to a large, time-shared computer, and the prototype of BATTLE (Battalion Analyzer and Tactical Trainer for Local Engagements) that used a map and a minicomputer.[226]

The Army continued to make incremental improvements in its battle simulation tools over the next decade. At the higher echelons, these efforts ultimately culminated in the creation of the Battle Command Training Program (BCTP) in 1987. This program, involving a seminar as well as a battle simulation exercise at home station, trains corps and division commanders and their staffs to execute large-scale operations.[227]

The Combat Training Centers

In their early years, TRADOC and FORSCOM primarily focused on improving the training and tactical competence of the Army at the small unit level--company, platoon, squad, and even crew. This is evident in DePuy's priorities in responding to the lessons of the 1973 War, and also clear in the priorities set by FORSCOM's first two commanders--Generals Kerwin and Bernard Rogers.[228] This was a valuable focus for two main reasons. First, competence at lower levels is an important precondition to the

success of more complicated higher echelon operations. Second, given the Army's problems with experienced and capable leadership after the Vietnam War, small unit training provided a mechanism for reestablishing the authority of small unit leaders and rebuilding the chain of command.

A few years later, as TRADOC and FORSCOM began to focus on higher level battalion and brigade training, several problems became evident. Three of these problems--the lack of realism in training, the lack of objective evaluation standards, and the costs of training--have already been mentioned. There were at least three additional issues. The first of these arose due to the interaction of the capabilities of modern weapons and space limitations on many Army installations. Due to increased dispersion on the modern battlefield, the amount of land required for realistic training of battalion and brigade-sized elements had greatly increased. The result was that land that had been able to support division-level training "threatened to become inadequate for exercising brigades of 2,500 or even battalions of 600."[229] A second set of issues related to the impact of military training on communities in the vicinity of Army posts. Large-scale training posed environmental concerns, and there were additional problems of both radio frequency and airspace management.[230] A final issue was that the Army's approach to warfare in the 1970s was dependent on cooperation with the U.S. Air Force. Integrating air activity into exercises was challenging given the Army's dispersed installations.

Although Gorman had been concerned about space issues since at least 1972, and had discussed the concept of centralized unit training centers with General DePuy as early as 1974, the immediate impetus for action came from General Bernard Rogers while he was serving as FORSCOM Commander.[231] In this position, Rogers had

excellent visibility on the impact of space constraints on unit training, and involved DePuy and Gorman in the consideration of solutions. After Rogers succeeded Weyand as the Army Chief of Staff in 1976, he asked TRADOC to provide him with input on this topic for his fiscal year 1978 statement to Congress. Gorman therefore drafted a paper called "Toward a Combined Arms Training Center" which laid out the case for training center that would address many of the issues raised in the preceding paragraph. After receiving this paper, General Rogers formally introduced the idea to Congress in January 1977. The Vice Chief of Staff, General Kerwin, officially approved the concept for further development on 11 April 1977.[232]

The eventual result of this early conceptual development was the creation of the National Training Center (NTC) at Fort Irwin, California.[233] Although the NTC was officially established on 16 October 1980, it was 1984 before it was truly able to achieve Gorman's early vision of a center that provided "realistic combat exercises against a superbly trained opposing force."[234] Key aspects of the NTC experience included: three weeks of intense training in which rotating units fought eight to ten "battles" against a resident opposing force modeled after a Soviet Motorized Rifle Regiment; the use of close air support; detailed after action reviews supported by instrumentation which captured the results of engagements; the provision of take-home packages that units could use to inform their training upon their return to home station; and battalion live-fire exercises. Crucial enabling technologies included not only MILES, but also a sophisticated system that supported the collection of data from the instrumented environment, integration of this data with video and voice recordings, and the analysis and display of all of this information.[235] Perhaps one indicator of the challenging nature

of NTC rotations was that, against a well-trained opposing force with superb knowledge of the terrain, the units being trained seldom emerged as the clear victor. However, in Gorman's view, "the whole Army has been a winner, for the small defeats in the Mojave Desert have spurred officers, noncommissioned officers, and soldiers to new professional heights."[236]

The development and operation of the NTC were expensive. A 1986 Government Accounting Office report found that the Army had spent 262 million dollars to establish the NTC by the end of FY 1983--125 million dollars more than initial cost estimates--and that the operating costs in FY 1983 alone had been 149 million dollars.[237] Even Gorman, who sought during his entire time at TRADOC to establish cost effectiveness in a stringent budget environment, admitted that the cost effectiveness of NTC would be difficult to establish. However, he did ague that such an accounting would have to take into account the value of training spurred on at home station as well as at that conducted at the NTC, and the data relevant to combat developments that the Army has been able to gather and use over time.[238] It is clear, however, that the NTC has been seen as worth the price within the Army. Inspired by the model of the NTC, in the second half of the 1980s the Army began to plan for a similar center for combined arms training in Europe and a center for light forces in the United States. These two centers ultimately became the Combat Maneuver Training Center at Hohenfels, Germany, and the Joint Readiness Training Center at Fort Polk, Louisiana.

A sense that the NTC had contributed to the Army's warfighting ability was particularly evident in the wake of the war against Iraq in 1991. As the Department of Defense report to Congress on the conduct of the war reported, "many of the soldiers had

been to the armored warfare training at Fort Irwin, California, which has been described as tougher than anything the troops ran into in Iraq."[239] Just as Navy pilots credited Top Gun with their reduced losses in the final four years of the Vietnam War, the Army gave credit to the NTC experience for its low losses in Desert Storm.

The Groundwork Was Laid

Army training reforms did not come to an end when DePuy and Gorman left TRADOC; each succeeding TRADOC commander has left a mark on some aspect of Army education or training. However, the period of 1973-1977 was a period of unique activity and conceptual redesign. In the words of an official history:

> Generals DePuy and Gorman . . . left TRADOC headquarters in June 1977. Over the years their reforms to the training system would provide the basis for a continuing training revolution. Those programs would be revised, added to, and, in some cases deleted. But, on balance, the changes from 1977 to 1993 would be more in degree than in kind.[240]

The DePuy and Gorman initiatives shaped the U.S. Army's approach to training through the end of the Cold War and beyond.

TRADOC As Integrator

TRADOC's two most important reform efforts in the 1970s were those in doctrine and training that have already been discussed. However, in addition to these specific reforms, TRADOC was responsible for integrating these reforms with each other and with other important programs. Again citing from a TRADOC official history:

> What was new in the idea of a training and doctrine command was focus. The TRADOC-FORSCOM arrangement solved the span-of-control problem, put combat developments back into the schools, and focused the development of the Army's tactical organizations, weapons and equipment, doctrine, and that training of soldiers in that doctrine, in one command.[241]

The span-of-control problem was solved in the sense that TRADOC was relieved of the responsibility that CONARC had held for operational readiness of units within the United States. However, TRADOC picked up responsibility for combat developments and therefore still had a huge charter. Key to TRADOC's effectiveness would be its ability to coherently link developments in doctrine, training, leader development, materiel, and organizations.

This section will discuss TRADOC's efforts to coherently relate developments in two areas in the 1970s: doctrine and training, and doctrine and the leader development of officers. These two linkages were not the only subject of concern for TRADOC in the 1970s. TRADOC's linkage of the other component of leader development--that of NCOs--to reforms in the Army's individual training system was also important. TRADOC efforts to link doctrine and materiel, or even training and materiel, could also be reviewed. However, the two examples listed above should be sufficient for the purpose here. This section is intended to support the idea that the Army's creation of an organization to integrate important aspects of the Army's development was a reform in and of itself.

Doctrine and Training

Doctrine has not always had a strong impact on the way that U.S. Army commanders have conducted operations in the field. General Bruce C. Clarke, the Commander-in-Chief of U.S. Army Europe from 1960-1962, had this to say about the Army's doctrine:

> I never had anything to do with writing FM 100-5, nor can I ever recall reading it while in my commands. Such things are usually written by English majors with

> limited military experience. . . . I am sure that Ike [Eisenhower] and George [Patton] were not following the edition of the day.[242]

DePuy certainly did not want the doctrine produced by TRADOC to be as irrelevant to the operations of the Army as Clarke felt that the Army's doctrine had been to him.

In order to ensure that the 1976 version of FM 100-5 would have an impact DePuy gave it a distinctive look, disseminated it widely, and made sure that its language and graphics were simple and direct. However, of even greater importance was the link between FM 100-5 and the Army's training system forged by a combination of the "How to Fight" manuals and the ARTEP. In November 1974 DePuy prioritized the production of "42 field manuals that are most important--those that describe 'How to Fight.'"[243] As DePuy recalled, "Our aim was to put out 40 or more 'How to Fight' manuals, which would tell everyone in the combat and combat support arms how the Army would fight on the modern battlefield at every echelon from the weapons crew up through the division."[244] The ARTEP for a particular type of unit was then directly derived from one of these new field manuals.

In General Starry's view, the Army's desperate need for a training management tool such as the ARTEP made the Army's doctrine more influential than it otherwise might have been. Starry explained the importance of the ARTEP in this way:

> It filled a complete void. We were providing the field with something they simply didn't have and which they all recognized they needed badly. Like a dry sponge, they sopped up the liquid rapidly. And in so doing they played directly into the scheme of gaining their acceptance of the new ideas. For the ARTEPs are the action documents which implement the change. One can write FMs forever--if they aren't accepted and used, they are useless. But if people know that they are to be scored in an evaluation on the basis of what is in the FM, then they quickly go to the FM to see what to do.[245]

In retrospect, the ARTEP did not necessarily make sure that manuals were accepted, but it did make sure that they were read.

As they used these manuals in conjunction with the ARTEP, the Army's leaders also evaluated the warfighting concepts within them. As doctrine became real, its flaws were exposed. This is evident in the comments of Huba Wass De Czege, the lead writer of the 1982 manual, as he explained the basic need for that new document: "Army commanders became convinced as a result of their field training and war games that they would be unable to defeat the Soviets using the doctrine of 1976."[246] By forging such a strong link between doctrine and training, DePuy made doctrine more important to the Army. In the process, he also built in a mechanism that would provoke continued doctrinal development.

Doctrine and the Leader Development of Officers

Central to DePuy's doctrinal efforts was the search for a way to develop an Army capable of winning the first battle of the next war. As the Commander of TRADOC, DePuy was responsible for all of the Army's officer education institutions, with the exception of the United States Military Academy at West Point, New York, and the U.S. Army War College at Carlisle Barracks, Pennsylvania. Therefore, DePuy was in a position to look at the implications of the Army's new doctrine for officer education and make changes accordingly. What he found at the officer's basic, advanced, and intermediate level schools convinced him of the need for change:

> When I first visited the schools and the training centers . . . I was horrified by some of the things that I found. For example, at the Engineer School I discovered that the engineer lieutenants were never give an opportunity to learn how to drive a bulldozer, or run a road grader or a front-end loader. Yet they would eventually

> go to an engineer platoon having that type of equipment, and I couldn't understand how they would be able to supervise, or to criticize, or to train.[247]

To some extent, the problems stemmed from the Army's history as a mobilization cadre in peacetime. Under those conditions, officers were prepared for service at positions two levels above their current pay grade in anticipation of wartime expansion. However, in DePuy's view, that was no longer the correct model:

> Why should we go to war with untrained platoon leaders, untrained company commanders, and untrained battalion commanders, when they have to win the first battle? So, the first thing I tried to do was to bring the school system back closer to where the Israeli system is, which is a training system that trains tank commanders, tank platoon leaders, and tank company commanders at about the time that they are going to fulfill those duties.[248]

As he said at the first Association of the United States Army Convention he attended as the Commanding General of TRADOC in 1973, "In war, we trained lieutenants for company responsibilities and captains for battalions, but we are going to push that down and give them more training time for their present jobs."[249]

In addition to the distinction between a mobilization Army and an Army prepared for a "come-as-you-are" war, a second issue was the balance between the training and the educational responsibilities of the Army's schools. DePuy distinguished between the two terms as follows:

> I suppose that training deals with "how to perform" a task or group of tasks within a function, such as how to (1) assemble, (2) clean, (3) load, (4) aim, and (5) fire a rifle. The performance test would be whether or not the bullet hit the target, with all of the previous tasks being subsumed in the process. Education, on the other hand, would permit the soldier . . . to put the function of firing a rifle at an enemy in combat into the larger context. . . . In shorthand, training tells us "what and how;" education tells us "why" and even "whether."[250]

In DePuy's view, the schools in the officer education system had almost completely lost sight of their responsibility for training by the time he took command of TRADOC.

A 1975 TRADOC study on the officer education system, and its support to the Army's new Officer Personnel Management System, revealed the influence of DePuy's priorities. This study found that the officer education system should be characterized by the following:

> - Focus on fundamental skills to the exclusion of "nice to know" material . . .
>
> - Use of resident training to prepare officers for their next immediate assignment.
>
> - A disciplined program which insures that the officer is specialty trained before assignment.[251]

The study's elaboration on the third point reflected both DePuy's emphasis on immediate utility, and the central role that cost-effectiveness played in TRADOC's work in the mid-1970s. Recognizing that preparing officers for some of the new specialties would require advanced civil schooling, the study recommended that "civil schooling requirements should be stated in terms of graduate-level courses, rather than academic degrees. Many advanced degree programs include courses for which the Army has no need and for which resources should not be expended."[252]

DePuy also deliberately attempted to link the officer education system and the reforms that he and Gorman were implementing in the realm of training. Just as the NCO held the primary responsibility for individual training in the Army's units, the officer was the primary collective trainer. For this reason, the study recommended that the branch schools needed to do further work to provide literature on collective training practices, and "support the officer specialist in his efforts to ensure his men have mastered the tactics and techniques essential to combat effectiveness."[253]

DePuy's emphasis on immediate utility, and on training as opposed to education, did not survive intact beyond his tenure at TRADOC. Even at the time, DePuy knew that his opinions on the officer education system were controversial. For example, at one point DePuy sought to gain control over the Army War College so that it could serve as a center for examining corps and echelons above corps doctrine. As DePuy recalled, the Army Deputy Chief of Staff for Operations who was responsible for the Army War College "was horrified that TRADOC might get its hands on his 'educational' institution. I suppose he thought that Gorman and I would send drill sergeants to Carlisle."[254]

What did survive after DePuy was the idea that TRADOC's developments in doctrine should drive changes in the Army's officer education system. Perhaps the single best example was the founding of the School for Advanced Military Studies (SAMS) at Fort Leavenworth in 1982. As discussed above, one of the ways in which the 1982 FM 100-5 sought to improve over the 1976 manual was by centering itself on the operational level of war. SAMS was designed to prepare officers to serve at this level. As an official history explains:

> SAMS contained two separate programs: the Advanced Military Studies Program for majors and the Advanced Operational Studies Program for lieutenant colonels. . . . The majors, primarily preparing for positions at corps and division staffs, studied war at the tactical and operational levels. The lieutenant colonels studied war at operational and strategic levels, in preparation for assignment to a joint or combined military headquarters or an Army echelon above corps level.[255]

The link between TRADOC's development of doctrine and SAMS was cemented by the choice of its first three directors. The first director was Colonel Huba Was de Czege, the lead writer of the 1982 manual; the second director was Colonel Richard Sinnreich, the

primary author of the 1986 manual; and the third director was Colonel Donald Holder, who was involved in the writing of both statements of AirLand Battle doctrine.[256]

A final point should be made about DePuy's focus on training versus education in the Army's officer education system. While DePuy's concerns about immediate utility and the development of skills did not continue to provide the sole focus of the Army's officer schools, his perspective did not vanish entirely. Later efforts to examine the officer education system continued to focus on skills and competencies, as well as broader educational goals.[257] As DePuy himself later acknowledged, "As between the two, education and training, you need both."[258] He thought that the most he would be able to accomplish would be to shift the balance back towards training to some extent, a corrective that he was not alone in believing was necessary.[259]

The Function of Integration

Through the creation of TRADOC in 1973, the Army gained an organization focused on integrating important aspects of its development. As one study of doctrinal change in the German Army in World War I noted, *"An army that adopts tactical doctrine that it cannot apply will greatly multiply its misfortune."*[260] The creation of TRADOC, and its early aggressive leadership, made sure that doctrine became a real force in the U.S. Army. The creation of an integrating organization such as TRADOC meant that one agent was made responsible for the development of doctrine as well as factors which affect the ability of the Army to apply it. The biggest benefit of TRADOC, then, may be that it makes it less likely that the Army will develop and sustain a dysfunctional doctrine over the long run. While organizational forms absent leadership do not guarantee particular outcomes, they at least make them possible.

Why?

TRADOC's reforms during the 1970s were shaped by an external environment created by civilian decision-makers. Three of the most important policy decisions related to national security strategy, the budget, and the all-volunteer force. Turning first to national security strategy, the desire to avoid foreign military entanglements first enunciated as the Nixon doctrine set the context in which TRADOC operated in the 1970s. The one commitment that was clearly maintained that had the greatest implications for the Army was that the United States would participate in the defense of Western Europe as part of NATO. For an Army adrift after the Vietnam War, this provided a focal point. The need for the Army to be able to fight a high intensity conflict in Europe became the rallying cry for DePuy and other key reformers within TRADOC. Fortuitously, the Arab-Israeli War in 1973 provided these reformers with data that showed just how intense such a conflict could be. The ability to "fight outnumbered and win" was TRADOC's--and ultimately the Army's--interpretation of what current national security policy required through the late 1970s. In order to do this, the Army needed new doctrine, new training, new leader development practices, and more, and it needed to leverage these to exploit the wave of new equipment it expected to start fielding near the end of the decade.

The budget constraints within which the Army and therefore TRADOC operated in the 1970s also affected TRADOC's reforms. At the most basic level, the Army's resource limitations affected doctrinal and training developments by ruling out certain options. For example, DePuy did not believe that the Army could win wars through sheer weight of equipment and personnel as it had done in the past. Not only was such an

approach objectionable from the standpoint of lives lost, and inadequate in view of DePuy's interpretation of the pace of modern warfare, it was simply out of the question in the budget environment of the 1970s. It was more likely that the U.S. Army would be the smaller force in future conflicts.

A second impact of the Army's and TRADOC's budget constraints was DePuy's emphasis on systems analysis techniques, cost effectiveness, and obtaining quantifiable data that would help TRADOC and the Army to win its bureaucratic battles. Although TRADOC's analytical efforts provided the Army with useful information, and helped push through valuable reforms, they also contributed to the ultimate overturning of several of DePuy's initiatives. For example, Active Defense doctrine relied heavily on measurable weapons systems characteristics and quantifiable force ratios. The failure of a number of the Army's officers to believe that the outcome of battles could be reliably determined by such figures is one of the factors that led to the revision of that manual. A second example may have been DePuy's prioritization of training over education in officer development. Whether DePuy's philosophy was based on cost effectiveness considerations, or on his longstanding priority on tactical competence, it was not an approach that his successors determined to be adequate.

A final external policy decision that impacted on TRADOC was the all-volunteer force. This decision caused General Westmoreland to take measures between 1969 and 1972 that provided an early basis for TRADOC reforms. Perhaps the best examples in this regard are in the area of training. As seen above, both the training boards established by Westmoreland and the Modern Volunteer Army effort contributed to TRADOC's efforts to improve training.

Although these decisions made external to the Army shaped TRADOC's environment in important ways, their impact does not entirely explain the genesis of TRADOC's reforms in the 1970s, nor does it explain their content. The Army was not directed by its civilian leadership to produce a new doctrine in the mid-1970s. Active Defense was to a large extent a product of DePuy's assessment that the Army needed fundamental change if it were to be successful on the modern battlefield, and his desire that doctrine provide the coherent vision behind that change. After succeeding DePuy at TRADOC, Starry had a revised vision of the requirements of the modern battlefield, particularly with regard to the problem of follow-on echelons. The 1982 version of AirLand Battle was largely a synthesis of Starry's vision and competing views of the proper functions of doctrine generated within the Army. Both DePuy and Starry worked closely with the German Army and the Air Force, as well as aggressively learned from Israeli experiences, and these relationships also shaped the content of doctrine. Emphasis on these three relationships was also generated primarily from within the Army.

Similar observations could be made about the Army's reforms in the area of training. DePuy and Gorman shared a perception that Army training was both generally poor and inadequate in 1973. Their reforms in unit training during the 1970s stemmed from this common perspective. They believed that demanding and realistic training for close combat was essential to the Army's effectiveness, and sought to imbue in the Army's NCOs and officers what this meant for their respective responsibilities. They also believed that better training would help the Army to focus on what was important, thereby reducing the social and morale problems that afflicted the post-Vietnam Army.[261]

The third reform discussed above, the creation of an integrating institution such as TRADOC, really stems from the 1973 reorganization of the Army. Crucial to that initiative was the assessment made by senior Army leaders that the existing structure was incapable of responding to the needs of the post-Vietnam, all-volunteer Army. The fact that TRADOC was able to serve as an integrator for important developments across the Army was the deliberate product of institutional design. However, it was also a product of the skills and aggressiveness of its first two commanding officers--Generals DePuy and Starry.

Impact

Despite the fact that the 1970s were a period in which important reforms were being conceptualized and implemented, these developments were probably not obvious to many who were serving in the Army at that time. Budgets were still low, and the "Big Five" weapons systems did not begin to enter the force until the end of the decade. The Army's new Active Defense doctrine was controversial, and some of its longer term benefits were not yet recognized. In the realm of training, an internal study conducted between 1977 and 1978 found that "much of the Army isn't conducting good training--certainly to the extent that it must to win outnumbered."[262] This was followed by a 1979 survey that showed that 66 percent of company-level commanders in Europe believed the amount of time available for combat training was "inadequate to borderline."[263]

The late 1970s were also a troubled period for the all-volunteer force. As military pay declined relative to civilian pay, youth unemployment declined, and educational benefits associated with military service were trimmed, the armed services experienced recruiting shortages and a qualitative decline among those who did volunteer.[264] In

addition to recruiting shortfalls, a priority on manning and equipping overseas units created conditions in units within the United States that led the Army's Chief of Staff, General Meyer, to declare to Congress in 1980 that the country had a "Hollow Army."[265]

These factors must have created an environment in which progress was difficult to see. This is perhaps best captured in an exchange between General Weyand and a student at the Command and General Staff Officer College in 1975. The student asked:

> A question on pessimism and optimism, sir. Is the Army contradicting itself when it argues optimistically on the one hand that the Army's better than it ever has been, that the modern volunteer Army is succeeding, that officers and men are trained and better qualified than ever before, and then arguing pessimistically on the other hand that times are tough, that the budget is smaller than it has been in 25 years, or 35 years, and that the Army is smaller than it has been for a long time too. Is there a contradiction, sir?

Weyand began to answer by saying that compared to the Army a few years ago, or especially compared to the Army that went to Korea in 1950, the U.S. Army was in good shape. However, he then shifted gears in a manner that reflected the future time frame he was considering. He began to talk about modernization efforts, and then about the developments of "Bill DePuy" and his "outfit." Then General Weyand said:

> Now, two years ago if somebody had asked me, how are you gonna defeat an enemy that outnumbers you, that's got 45,000 tanks--I would not have had an answer for that. I'd have fumbled around . . . but in the back of my mind what I'd probably really have been thinking was that we . . . just incinerate everybody, and that's no solution and it's not an option that I even want to contemplate.[266]

However, with his visibility on weapons modernization, new doctrine, and collaboration with the Air Force, Weyand finally had some idea of how the U.S. Army might not lose in Europe. As early as 1975, TRADOC's efforts helped to create a sense of progress.

Over the longer term, the creation of TRADOC and its early reforms had a substantial impact on the Army. The development of Active Defense and AirLand Battle

placed doctrine at the center of the Army's efforts to improve its warfighting capability. However, that new doctrine would have meant little if the Army's ability to execute it had not also progressed. In this regard, changes in the Army's training practices, modernization efforts, leader development programs, the eventual development of new organizations, and the focusing of all these programs on a common vision of future combat were at least as important as formal doctrinal change. In these efforts, TRADOC built upon reforms initiated within the Westmoreland period, and exploited the opportunities provided by the Army's 1973 reorganization. TRADOC comprehensively overhauled the manner in which the Army prepared for future conflict.

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[1]Bowden, "Operation STEADFAST," 32.

[2]Ibid., 15; and Moenk, *Operation STEADFAST Historical Summary*, 31-33.

[3]Bowden, "Operation STEADFAST," 32; and William E. Depuy, oral history interview with Colonels Romie L. Brownlee and William J. Mullen III, 1979. Conducted under the auspices of the U.S. Army Military History Institute and published by the U.S. Army Center for Military History as *Changing an Army* (Washington, DC: Government Printing Office, 1988), 181. Hereafter this work will be referred to as "DePuy, oral history."

[4]John L. Romjue, Susan Canedy, and Anne W. Chapman, *Prepare the Army for War: A Historical Overview of the Training and Doctrine Command, 1973-1993* (Fort Monroe, VA: Office of the Command Historian, U.S. Army Training and Doctrine Command, 1993), 7.

[5]Bowden, "Operation STEADFAST," 32-43.

[6]James G. Kalergis, General Creighton Abrams Story, oral history interview with Lieutenant Colonel Tom Lightner, 1976, Military History Institute (MHI), Carlisle Barracks, PA, 15-32.

[7]For a complete overview of the Army's 1973 reorganization, which involved more than just the creation of TRADOC and FORSCOM, see "Army Organization Plan Announced," *Commanders' Digest* (Washington, DC: Department of Defense, 25 January 1973): 2-11.

[8]Richard M. Nixon, "First Annual Report to the Congress on United States Foreign Policy for the 1970's, February 18, 1970," *Public Papers of the Presidents, Richard Nixon, 1970* (Washington, DC: Government Printing Office: 1971), 116. The emphasis is in the original.

[9]Richard M. Nixon, "Informal Remarks in Guam with Newsmen, July 25, 1969," *Public Papers, 1969* (Washington, DC: Government Printing Office: 1971), 553-554.

[10]John H. Michaelis, "Korea: The Nixon Doctrine at Work," *Army* 21, no. 10 (October 1971): 64.

[11]William Gardner Bell and Karl E. Cocke, *Department of the Army Historical Summary, Fiscal Year 1973* (Washington, DC: U.S. Army Center for Military History, 1977), 8.

[12]Stephen E. Ambrose, *Nixon*, vol. 2, *The Triumph of a Politician, 1962-1972* (New York: Simon & Schuster, 1989), 180.

[13]Nixon, "Annual Message to the Congress on the State of the Union, January 22, 1970," *Public Papers, 1970,* 11.

[14]Melvin Small, *The Presidency of Richard Nixon* (Lawrence, KS: University Press of Kansas, 1999), 31-33.

[15]Henry Kissinger, *White House Years* (Boston: Little, Brown and Company, 1979), 161.

[16]Ibid., 220-221.

[17]Melvin R. Laird, *Defense Program and Budget, Fiscal Year 1972-76* (Washington, DC: Government Printing Office, 15 March 1971), 1.

[18]Richard M. Nixon, *RN: The Memoirs of Richard Nixon* (New York: Grosset & Dunlap, 1978), 343-346.

[19]Harold Brown, *Department of Defense Annual Report, Fiscal Year 1979* (Washington, DC: Government Printing Office, 1978), 3.

[20]*Strategic Survey 1979* (London: The International Institute for Strategic Studies, 1980), 39.

[21]For a 1976 argument that inadequate U.S. defense spending was putting the country at risk, see William Schneider, Jr., and Francis P. Hoeber, ed., *Arms, Men, and Military Budgets: Issues for Fiscal Year 1977* (New York, NY: Crane, Russak & Company, Inc., 1976).

[22]*Strategic Survey 1979*, 33.

[23]Donn A. Starry, "A Tactical Evolution--FM 100-5," *Military Review* 58, no. 8 (August 1978): 4.

[24]Michael James Meese, "Defense Decision Making Under Budget Stringency: Explaining Downsizing in the United States Army" (Ph.D. diss., Princeton University, 2000), 201. The figures are in constant 1970 dollars.

[25]Ibid., 198-199.

[26]Ibid., 202-204. For a discussion of the impact of inflation, see Eric V. Ludvigsen, "Army Tightens Belt Against Inflation: From Munitions to Maple Syrup," *Army* 24, no. 11 (November 1974): 12-13.

[27]Roger R. Trask and Alfred Goldberg, *The Department of Defense: 1947-1997* (Washington, DC: Historical Office, Office of the Secretary of Defense, 1997), 171.

[28]Lewis Sorley, *Thunderbolt: From the Battle of the Bulge to Vietnam and Beyond* (New York, NY: Simon and Schuster, 1992), 360-361, 363.

[29]Trask, *The Department of Defense 1947-1997*, 171-172.

[30]Creighton W. Abrams, Letter to General William E. DePuy, 13 August 1974, in DePuy Papers, MHI, Carlisle Barracks, PA.

[31]DePuy, oral history, 177.

[32]Ibid., 180-181.

[33]TRADOC OPMS Task Group, *Education of Army Officers Under the Officer Personnel Management System: Report of the TRADOC OPMS Task Group* (Fort Monroe, VA: Headquarters, U.S. Training and Doctrine Command, 14 March 1975), 3.

[34]Ibid., 7-8.

[35]Donn A. Starry, "Reflections," in *Camp Colt to Desert Storm: The History of U.S. Armored Forces*, edited by George F. Hofmann and Donn A. Starry (Lexington, KY: The University Press of Kentucky, 1999): 556.

[36]William E. DePuy, "TRADOC: Young, But Growing Fast," *Army* 25, no. 10 (October 1975): 33.

[37]See Paul F. Gorman, *The Military Value of Training*, IDA Paper P-2515 (Alexandria, VA: Institute for Defense Analyses, 1990), especially Chapter III for a discussion of these issues.

[38]William E. DePuy, "TRADOC: A New Command for an Old Mission," *Army* 23, no. 10 (October 1973): 32.

[39]Robert K. Griffith, *The U.S. Army's Transition to the All-Volunteer Force 1968-1974* (Washington, DC: U.S. Army Center of Military History, 1997), 198-199.

[40]Karl E. Cocke, *Department of the Army Historical Summary, Fiscal Year 1975* (Washington, DC: Center for Military History, 1978), 3.

[41]Creighton W. Abrams, Message dated 24 May 1974, Subject: FY 74 End Strength, in DePuy Papers, MHI, 2.

[42]Paul F. Gorman, "The Exercise of Command is Training Management," Speech at Officers' Leadership Symposium, Field Artillery School, Fort Sill, OK, 30 November 1976, U.S. Army War College Library, Carlisle Barracks, PA, 3-7. The numbers are based on a chart found on page 7.

[43]Robert M. Shoemaker, "Managing Training to Close the Gaps," *Army* 28, no. 10 (October 1978): 48.

[44]William C. Westmoreland, *Report of the Chief of Staff of the United States Army* (Washington, DC: U.S. Department of the Army, 1977), 48-74.

[45]The Army's institutional training system was actually focused on individual replacements from 1944-1974. Unit training was the responsibility of commanders, who were to be guided by the procedural and relatively unchanging Army Training Plan (ATP). Paul F. Gorman, *The Secret of Future Victories*, IDA Paper P-2653 (Alexandria, VA: Institute for Defense Analyses, 1992), III-7 - III-8.

[46]See Jack Goldstein, "The Army's Big Five: Irons in the Fire," *Army* 23, no. 5 (May 1973): 18-23.

[47]DePuy was particularly concerned about preserving the MICV (later the Bradley Infantry Fighting Vehicle) after that program became troubled in the mid-1970s. William E. DePuy, Letter to General Frederick C. Weyand, 29 April 1975, in *Selected Papers of General William E. DePuy*, ed. Richard M. Swain (Fort Leavenworth, KS: Combat Studies Institute, U.S. Army Command and General Staff College, 1994), 161-163. Hereafter this volume will be referred to as *Selected Papers*.

[48]William E. DePuy, Letter to General Walter T. Kerwin, 24 March 1977, in *Selected Papers*, 213.

[49]William E. DePuy, Letter to General Creighton W. Abrams, 14 January 1974, in *Selected Papers*, 69.

[50]Starry, "Reflections," 548.

[51]William E. DePuy, Letter to General Fred C. Weyand, 18 August 1976, in *Selected Papers*, 199-205.

[52]William E. DePuy, "Implications of the Middle East War on U.S. Army Tactics, Doctrine, and Systems," Presentation (undated), *in Selected Papers*, 104. General DePuy gave this briefing to select audiences within the Army in February 1975. See Herbert, *Deciding What Has to Be Done*, 36.

[53]As an example, General DePuy discussed a series of briefings given to a senior Defense Department civilian on the lessons of the 1973 Arab-Israeli War: "I have the impression that he has been choked with details but that no cohesive, understandable picture has emerged in his mind." William E. DePuy, Memorandum for the Chief of Staff on "How to Determine Requirements for the Army's Weapons," 8 January 1975, in *Selected Papers*, 143.

[54]DePuy, "Implications of the Middle East War," 76. A very similar is summary is given in William E. DePuy, Message for Senator Culver, dated 8 May 1975, in DePuy Papers, MHI.

[55]DePuy, Letter to General Creighton W. Abrams, 14 January 1974, in *Selected Papers*, 70-71.

[56]William E. DePuy, Letter to General Robert J. Dixon, 9 August 1974, in DePuy Papers, MHI.

[57]As an example see DePuy, Keynote Address at the TRADOC Leadership Conference, in *Selected Papers*, especially 113-116. For Starry's discussion of similar ideas, see Donn A. Starry, "Keynote Address," *Armor* 84, no. 6 (November-December 1975): 22-25.

[58]Creighton W. Abrams, Message to Generals Davison, Stilwell, Dolvin, Bennett, and DePuy, 1 April 1974, in DePuy Papers, MHI.

[59]Creighton W. Abrams, Letter to General W. E. DePuy, 15 August 1974, in DePuy Papers, MHI.

[60]Jimmy Carter, State of the Union Address, 21 January 1980. Accessed on-line at http://www.jimmycarterlibrary.org/documents/speeches/su80jec.phtml, 24 January 2003.

[61]E. C. Meyer, "White Paper 1980: A Framework for Molding the Army of the 1980s into a Disciplined, Well-Trained Fighting Force," (Washington, DC: U.S. Department of the Army, 25 February 1980): 1.

[62]Anne W. Chapman, *The Origins and Development of the National Training Center 1976-1984* (Fort Monroe, VA: Historical Office, U.S. Army Training and Doctrine Command, 1997), 10. Chapman points out that the Army's budget went from

21.6 billion dollars in FY 1975 to 34 billion dollars in FY 1980. These numbers exaggerate the Army's gain in spending power because they are not adjusted for inflation.

[63]DePuy, "The Further Work of TRADOC," in *Selected Papers*, 256-257.

[64]DePuy, Memorandum for the Chief of Staff on "How to Determine Requirements for the Army's Weapons," 8 January 1975, in *Selected Papers*, 143.

[65]John R. Martin, "The Role and Progress of the Office, Assistant Vice Chief of Staff in the Management of Army Resources" (Case Study, U.S. Army War College, 8 March 1971), especially 14-19, 22-23.

[66]DePuy, oral history, 173.

[67]This discussion is a simplified version of detailed results given in Gorman, *The Secret of Future Victories*, III-24 to III-28.

[68]DePuy, "The Further Work of TRADOC," in *Selected Papers*, 259. Emphasis is in original.

[69]William E. DePuy, Letter to General Fred C. Weyand, 18 February 1976, in DePuy Papers, MHI.

[70]Richard G. Davis, *The 31 Initiatives: A Study in Air Force-Army Cooperation* (Washington, DC: Office of Air Force History, United States Air Force, 1987), 26.

[71]Cooperation between these two entities was made easier by proximity. TRADOC's headquarters was at Fort Monroe, Virginia, and TAC Headquarters was at Langley Air Force, Virginia. As an official Air Force history points out, these locations were not accidental: "In January 1946, as part of the immediate post-World War II Army reorganization, General Eisenhower, the Army Chief of Staff, placed the Army Air Force's newly created Tactical Air Command and the Army Ground Forces in the Norfolk area where they could cooperate with each other and with the Navy's Atlantic Fleet." Ibid., 25.

[72]Ibid., 26.

[73]The personnel arrangements for this agency were designed to further progress. The agency had 10 officers including five from each service, and the leadership of the agency rotated annually between an Army and an Air Force officer who was evaluated by the other service's command. For example, when the Air-Land Forces Application Agency Director was an Army colonel, that colonel received his fitness evaluation from the TAC Commander. Ibid., 27.

[74]Robert J. Dixon, "TAC-TRADOC Dialogue," *Strategic Review* VI, no. 1 (winter 1978): 48.

[75]Davis, *The 31 Initiatives*, 29.

[76]Ibid., 30-31.

[77]Ibid., 35.

[78]For a discussion of the deepening of this cooperation in the 1980s, as well as lingering problems and new divergences between the two services as 1990 approached, see Harold R. Winton, "Partnership and Tension: the Army and Air Force Between Vietnam and Desert Shield," *Parameters* 36, no. 1 (spring 1996): 111-117.

[79]DePuy, oral history, 188.

[80]William E. DePuy, Letter to General G. L. Hildebrandt, 13 December 1974, in DePuy Papers, MHI.

[81]William E. DePuy, Message to COL Miller for General Hildebrandt, 11 March 1975, in DePuy Papers, MHI.

[82]William E. DePuy, Letter to General Fritz Birnstiel, 27 September 1974; and DePuy, Letter to General G. L. Hildebrandt, 13 December 1974, in DePuy Papers, MHI.

[83]William E. DePuy, Letter to General Fred C. Weyand, 11 November 1975, in DePuy Papers, MHI. On U.S. Army reliance on the Air Force, see also William E. DePuy, Letter to General Robert J. Dixon, 20 November 1975, in DePuy Papers, MHI. In that letter, DePuy informs Dixon that he had explained to the German Army "that beyond 50km we plan to rely entirely upon the US Air Force and national reconnaissance capabilities." DePuy continues: "My personal view is, and has been for some time, that the Army must concentrate its resources on the proximate battle area. We don't have enough money to duplicate Air Force systems--in fact, we don't have enough money to do what we need to do on the immediate battlefield."

[84]John L. Romjue, *From Active Defense to AirLand Battle: the Development of Army Doctrine 1973-1982* (Fort Monroe, VA: Historical Office, U.S. Army Training and Doctrine Command, 1984), 43, 59.

[85]Herbert points out that in addition to giving DePuy's initiatives added authority, these two liaison efforts help to explain DePuy's personal control over the writing of FM 100-5. Given the importance DePuy attached to compatibility with the Germans and his views on the Army's reliance on the Air Force, maintaining direct control over the doctrinal process helped him to produce a product compatible with these priorities. Herbert, *Deciding What Has to Be Done,* 72-73.

[86]For example, in an effort to "add" to General Weyand's "confidence" in the 1976 FM 100-5, DePuy provided him with a summary of its development which included a discussion of substantial agreement with the German Army and procedural coordination

with the U.S. Air Force. DePuy, Letter to General Fred C. Weyand, 18 February 1976, in DePuy Papers, MHI.

[87]Walter T. Kerwin, Jr., oral history interview with Colonel D. A. Doehle, 1980, MHI, 425.

[88]Ibid., 426.

[89]Walter T. Kerwin, "In Army Forces Command the Mission is Readiness," *Army* 23, no. 10 (October 1973): 30.

[90]Walter T. Kerwin, "Far-Flung Command Stays Combat Ready," *Army* 24, no. 10 (October 1974): 37.

[91]For example, General Rogers discussed the FORSCOM goal of improving small unit training in 1976 through the use of "Army training and evaluation program (ARTEP), "how-to-fight" publications and new simulation devices developed by TRADOC." Bernard W. Rogers, "FORSCOM Forges the Link for Total Force Readiness," *Army* 25, no. 10 (October 1975): 30.

[92]These tensions over questions of "authority, responsibility, and accountability for the NTC effort" are discussed in Chapman, *The Origins and Development of the National Training Center*, 33-37.

[93]DePuy, oral history, 202.

[94]Ibid., 201-202.

[95]Ibid., 16. Starry also discusses the impact that the unnecessary loss of lives in the 90th Division had on DePuy's "convictions about inadequate tactics, ineffective training and inept leadership in small units." See Starry, "Reflections," 550.

[96]William E. DePuy, "Modern Battle Tactics," 17 August 1974, in *Selected Papers*, 138.

[97]Ibid., 137.

[98]DePuy, oral history, 108. As a battalion commander training squads, DePuy was operating three echelons down.

[99]Gorman, *The Secret of Future Victories*, III-8.

[100]Ibid., III-7.

[101]Ibid., III-2.

[102]DePuy, "Modern Battle Tactics," in *Selected Papers*, 137-138.

[103]William E. DePuy, Presentation to the TRADOC Commanders' Vision '91 Conference, 5 October 1988, in *Selected Papers*, 431.

[104]DePuy, Letter to General Fred C. Weyand, 18 February 1974, in DePuy Papers, MHI.

[105]DePuy, Letter to Major Generals David E. Ott, Cdr, US Army Field Artillery Center; Thomas M. Tarpley, Cdr, US Army Infantry Center; Donn A. Starry, Cdr, US Army Armor Center; CG LeVan, Cdr, US Army Air Defense Center; William J. Maddox, Cdr, US Army Aviation Center; John H. Cushman, Cdr, US Army Combined Arms Center; and Harold R. Parfitt, Cdr, US Army Engineer Center, 23 July 1974, *in Selected Papers*, 121. (The letter addresses these individuals by their first names.)

[106]William E. DePuy, Memorandum for Major Generals Cushman, Tarpley, Ott, LeVan, Starry, Parfitt, Myer, and Maddox entitled "Field Manuals," 10 October 1974, in DePuy Papers, MHI.

[107]DePuy, Letter to General Fred C. Weyand, 18 February 1976, in DePuy Papers, MHI.

[108]Ibid.

[109]Herbert argues that had the 1973 war not happened, DePuy's attention eventually would have turned to doctrine anyway. His approach to training reforms and combat developments demanded that they be built upon a clear conception of how the Army intended to fight the next war. See Herbert, *Deciding What Has to Be Done*, 28-29.

[110]Starry, "Keynote Address," 22.

[111]DePuy as quoted by Herbert, *Deciding What Has to Be Done*, 41.

[112]Ibid., 40-41.

[113]Ibid., 28.

[114]Ibid., 51.

[115]DePuy, "Presentation to the TRADOC Commanders' Vision '91 Conference," in *Selected Papers*, 431.

[116]Cushman quoted by Richard M. Swain, "Airland Battle," in *Camp Colt to Desert Storm: The History of U.S. Armored Forces*, edited by George F. Hofmann and Donn A. Starry (Lexington, KY: The University Press of Kentucky, 1999), 371.

[117]In Sheehan's view, DePuy believed that doctrine ought to be "a guide on how to perform operations," whereas Cushman believed that doctrine ought to be a guide as to "how to think about operations." "Preparing for Imaginary War?" 4-34.

[118]Herbert, *Deciding What Has to Be Done,* 54. This paragraph summarizes Herbert's more comprehensive and nuanced discussion of differences between the intellectual perspectives of DePuy and Cushman and their divergent thoughts on doctrine. See pages 52-59.

[119]Ibid., 59.

[120]DePuy as quoted by Herbert, *Deciding What Has to Be Done,* 87.

[121]Herbert, *Deciding What Has to Be Done,* 92.

[122]Ibid., 92-93.

[123]DePuy, Letter to General Fred C. Weyand, 18 February 1976, in DePuy Papers, MHI. The staffing at Department of the Army level must not have been extensive. As the manual was being revised in 1981, then Chief of Staff of the Army General Meyer wrote to General Starry: "Since I was the DA weenie who told GEN Weyand to bless 100-5 (current) without DA staffing, I am culpable with you & Bill DePuy for some of its shortcomings." Edward C. Meyer, Handwritten note to General Starry, 21 March 1981, Starry Papers, MHI.

[124]Herbert, *Deciding What Has to Be Done,* 95.

[125]DePuy, Letter to General Fred C. Weyand, 18 February 1976, in DePuy Papers, MHI.

[126]As DePuy later wrote, "Doctrine is a somewhat circular enterprise. It must inform and instruct the Army on how to operate, but it is not really doctrine unless it also expresses the manner in which the Army actually goes about its business." William E. DePuy, "FM 100-5 Revisited," *Army* 30, no. 11 (November 1980): 12.

[127]William E. DePuy, Message to Lieutenant General Donn A. Starry, Subject: "Concepts and Plans," 15 June 1976, in *Selected Papers*, 187.

[128]As DePuy later noted, "the term 'active defense' is mentioned only once in passing in 100-5 as an adjective." DePuy, "FM 100-5 Revisited," 13. Actually, the term is mentioned several times in Chapter 5 which covered the defense. U.S. Department of the Army, *Operations,* FM 100-5 (Washington, DC, 1 July 1976), 5-7, 5-13. This manual, as well as its later editions, will hereafter be referred to as FM 100-5, (date).

[129]FM 100-5, 1976, 5-2.

[130]Ibid.

[131]Ibid., 3-11 and 5-7.

[132]Ibid., 5-13 to 5-14.

[133]Ibid., 1-1 to 1-2. Emphasis is in original.

[134]William E. DePuy, Letter to General Fred C. Weyand with attached "Talking Paper on Field Manual 100-5, Operations," 8 July 1976, *in Selected Papers*, 193-195.

[135]Ibid.

[136]DePuy, oral history, 191.

[137]DePuy, Letter to General G. L. Hildebrandt, 13 December 1974, in DePuy Papers, MHI.

[138]DePuy, oral history, 191.

[139]DePuy, Letter to General Fred C. Weyand, 18 February 1976, in DePuy Papers, MHI.

[140]Ibid.

[141]These two conferences are discussed in Herbert, *Deciding What Has to Be Done*," 47-48, 89.

[142]William E. DePuy, Letter to General Fred C. Weyand, 8 July 1976, in *Selected Papers*, 193-195.

[143]With regard to resistance to the 1976 manual, General Starry emphasized process rather than content: "In the main, criticism of Active Defense centered on the idea that it had been written by General DePuy himself, by the Armor Center, and by the Boat House Gang at Fort Monroe, working for General DePuy." Donn A. Starry, Letter to Dr. Richard M. Swain, 7 June 1995, Special Collections, Command and General Staff College, Fort Leavenworth, Kansas, 22. Richard Swain also argues that because the staff and faculty at Leavenworth were left out of the writing process, "instructors there never quite understood the concepts that it was their responsibility to infuse into the Army." Swain, "Airland Battle," 372.

[144]Romjue, *From Active Defense to AirLand Battle*, 13.

[145]Ibid., 13-21; Herbert, *Deciding What Has to Be Done*, 96; Swain, "AirLand Battle," 377-379; Romjue, Canedy, and Chapman, *Prepare the Army for War*, 54; and Sheehan, "Preparing for an Imaginary War?" 5-2 to 5-7.

[146]Robert A. Doughty, *The Evolution of US Army Tactical Doctrine, 1946-76*, Leavenworth Papers, no. 1 (Fort Leavenworth, KS: Combat Studies Institute, U.S. Army Command and General Staff College, 1979), 43.

[147]Starry, "Reflections," 551. "BDM" stands for "Braddock, Dunn, and McDonald." These are the last names of the three individuals who co-founded this information technology company in 1960.

[148]Others in the Army believed that the Active Defense was extremely difficult to implement under training conditions, and would be impossible to make work in time of war. Sheehan, "Preparing for an Imaginary War?" 5-2.

[149]Starry, "Reflections," 551.

[150]This description of the operational level of war is from Glenn Otis, "Doctrinal Perspectives of War," *Air Land Bulletin* 82-2 (25 June 1982): 14.

[151]When Starry took command, he articulated his vision for corps operations in a concept known as the "central battle." See Donn A. Starry, "Focus Is 'Central Battle'," *Army* 28, no. 10 (October 1978): 30-33. Within the Army, the "central battle" concept received many of the same criticisms as Active Defense doctrine. Its "depiction of combat power in terms of targets to be serviced suggested a mechanistic approach" that relied too heavily on the quantifiable elements of combat power. Romjue, *From Active Defense to AirLand Battle*, especially 23-24, 51, 53. However, work on the central battle concept eventually informed the development of the extended battlefield.

[152]Donn A. Starry, "Extending the Battlefield," *Military Review* 61, no. 3 (March 1981): especially 32, 42-45, and 46-47.

[153]Romjue, Canedy, and Chapman, *Prepare the Army for War*, 55.

[154]Even as the process began at Fort Leavenworth in mid-1980, the authors set out "to prepare the initial drafts for what was seen at that time as a revision of the 1976 manual, rather than the materially different doctrine that would soon eventuate." Romjue, *From Active Defense to Airland Battle*, 43.

[155]Starry, "A Tactical Evolution--FM 100-5," 3.

[156]Romjue, *From Active Defense to Airland Battle*, 30.

[157]Romjue, Canedy, and Chapman, *Prepare the Army for War*, 55; and Swain, "AirLand Battle," 380.

[158]Swain, "AirLand Battle," 381.

[159]Starry, Reflections, 552. The lead author was Huba Wass De Czege, and the primary writing team also included Lieutenant Colonels Sinnreich and Henriques. Lieutenant Colonel Holder participated in the writing on an intermittent basis. Swain, "AirLand Battle," 382.

[160]Swain, "AirLand Battle," 382. According to one analysis of the writing process, "AirLand Battle was made possible more by the low-key Starry-Wass de Czege linkage than by any other single factor." See Aaron Blumenfeld, "AirLand Battle: Evolution or Revolution?" (thesis, Princeton University, 1989), 56.

[161]Romjue, *From Active Defense to AirLand Battle*, 53-57. Sheehan discusses the uneasy compromise that resulted from this blending of perspectives: "the Fort Leavenworth school of doctrine (emphasizing the humanistic and intangible aspects of doctrine) came to dominate the Fort Monroe approach (emphasizing the analytical approach to doctrine)" and yet "the question of how to overcome the second echelon (or Deep Attack) became the heart of the new doctrine <u>despite</u> the efforts of the Fort Leavenworth authors to the contrary." Sheehan, "Preparing for an Imaginary War?" 5-46.

[162]Romjue, *From Active Defense to AirLand Battle*, 27.

[163]Starry, "Reflections," 552.

[164]Romjue, *From Active Defense to AirLand Battle*, 27.

[165]Ibid., 57-59, 67.

[166]Starry, "Reflections," 552.

[167]The extended battlefield concept, after further refinement, was published by TRADOC Headquarters as the "AirLand Battle" concept while General Starry was still in command in March 1981. Romjue, *From Active Defense to AirLand Battle*, 27. General Glenn Otis, who took command of TRADOC in 1981, made the decision to give the same name to the doctrine published in the 1982 manual. Romjue, Canedy, and Chapman, *Prepare the Army for War*, 54-55 fn 6, 56.

[168]FM 100-5, 1976, i; and FM 100-5, 1982, i.

[169]An explicit explanation of the concept of levels of war was added to the 1982 manual by General Otis, and appears on pages 2-3 and 2-4. Romjue, Canedy, and Chapman, *Prepare the Army for War*, 55.

[170]FM 100-5, 1982, 11-9. Emphasis is in original.

[171]Ibid., 1-1.

[172]Ibid., 11-1.

[173]Chapters 8 and 10, covering fundamentals of the offense and defense, include "historical perspective" sections. The Army's nine principles of war appeared in Annex B. Ibid., 8-1, 10-1, Annex B.

[174]Romjue, *From Active Defense to AirLand Battle*, 53.

[175]FM 100-5, 1982, 2-4.

[176]Ibid., 2-4 to 2-6.

[177]Ibid., 2-1.

[178]Ibid., 2-1 to 2-3.

[179]Ibid., 7-1.

[180]Ibid., 7-13.

[181] FM 100-5, 1986, ii.

[182]William R. Richardson, "FM 100-5: The AirLand Battle in 1986," *Military Review* 66, no. 3 (March 1986): 7.

[183]For an example, see Arie van der Vlis, "AirLand Battle in NATO, A European View," *Parameters* 14, no. 2 (summer 1984): 11-12.

[184]Richardson, "FM 100-5: The AirLand Battle in 1986," 9.

[185]Herbert, *Deciding What Has to Be Done*, 22. DePuy's career had been marked by the tendency to gather small groups of very talented people around him to resolve issues he considered important.

[186]Herbert, *Deciding What Needs to Be Done*, 42; and Sheehan, "Preparing for an Imaginary War?" 4-27.

[187]When beginning the revision of the 1976 manual, Starry "finally decided the best course was to persuade a lot of people that what we were proposing made good sense, further that they themselves had contributed something to it--it was their idea in the first place. Armed with these two things, it is possible to accomplish almost anything." Starry, Letter to Swain, 23.

[188]Starry, "Reflections," 552.

[189]Christopher R. Gabel, "Active Defense," in *Combined Arms in Battle Since 1939*, ed. Roger J. Spiller (Fort Leavenworth, KS: U.S. Army Command and General Staff College Press, 1992): 96.

[190]Gabel points out that "to find the Army's doctrine for World War II" for example, "you should look to the 1944 edition of FM 100-5, not the 1939 version." See his "Active Defense," 92. Another study found that "Army doctrine in Field Manual 100-5, *Field Service Regulations, Operations*, published in 1949, distilled what the Army had learned in worldwide combat between 1941 and 1945." Combat Studies Institute, *Sixty Years of Reorganizing for Combat: A Historical Trend Analysis*, CSI Report No. 14 (Fort Leavenworth, KS: U.S. Army Command and General Staff College, December 1999), 17.

[191]FM 100-5, 1982, i; and FM 100-5, 1986, i.

[192]Donn A. Starry, oral history interview with John L. Romjue, 19 March 1993, Special Collections, U.S. Army Command and General Staff College, Fort Leavenworth, Kansas, 20.

[193]Swain, "AirLand Battle," 380.

[194]Richardson, "FM 100-5: The AirLand Battle in 1986," 11.

[195]Herbert, *Deciding What Needs to Be Done*, 38.

[196]Anne W. Chapman, *The Army's Training Revolution 1973-1990: An Overview* (Fort Monroe, VA: Office of the Command Historian, U.S. Army Training and Doctrine Command, 1991), 3.

[197]"World Power Balance Gets Major Attention At 76 Annual Meeting," *Army* 26, no. 11 (November 1976): 36.

[198]DePuy, oral history, 8.

[199]Shoemaker, "Managing Training to Close the Gaps," 47.

[200]Gorman, *The Military Value of Training*, 4. Emphasis is in original.

[201]Ibid., 5-6.

[202]Ibid., 7-8.

[203]Gorman, *The Secret of Future Victories*, III-23.

[204]Ibid., III-22 - III-23.

[205]John Shy, "First Battles in Retrospect," in *America's First Battles 1776-1965*, ed. C. E. Heller and W. A. Stofft (Lawrence, KS: University Press of Kansas, 1986): 329, as cited by Gorman, *The Secret of Future Victories*, III-38.

[206]Gorman, *The Secret of Future Victories*, III-23.

[207]DePuy as quoted in "DePuy: TRADOC Aims for Superior Army," *Army* 23, no. 11 (November 1973): 50.

[208]Army Regulation 350-1 as cited by Gorman, *The Secret of Future Victories*, III-41 – III-42.

[209]Gorman, *The Secret of Future Victories*, III-21 – III-22. Squads are small tactical units which at the time were organized to have 11 members.

[210]DePuy, "TRADOC: Young, But Growing Fast," 34.

[211]Ibid., 35.

[212]Franklin A. Hart and Robert W. Brock, "Effective Training Requires Full School, Unit Partnership," *Army* 28, no. 10 (October 1978): 99.

[213]U.S. Army Research Institute, "Initial ARTEP Validation Results, 1974-1975," Research Note 79-22 (Alexandria, VA: American Institutes for Research, November 1979): 1-6.

[214]Fred C. Weyand (Interview), "Great Progress in Difficult Circumstances," *Army* 26, no. 10 (October 1976): 23.

[215]Chapman, *The Origins and Development of the National Training Center*, 8.

[216]U.S. Army Research Institute, "Initial ARTEP Validation Results, 1974-1975," 1-5.

[217]Ibid., 1-7.

[218]See U.S. Army War College, *Study on Military Professionalism* (Carlisle Barracks, PA: U.S. Army War College, 30 June 1970).

[219]U.S. Army Research Institute, "Initial ARTEP Validation Results, 1974-1975," 2-39.

[220]Ibid., 1-4.

[221]U.S. Army Training and Doctrine Command, "The Army Training System," January 1978, 20. Briefing available in the US Army War College Library.

[222]Ibid., 20.

[223]Ibid., 22.

[224]Gorman, *The Secret of Future Victories*, III-23.

[225]Ibid., III-30.

[226]Ibid., III-31. Capitalization and acronym explanations are in the original.

[227]Chapman, *The Army's Training Revolution*, 26.

[228]General Kerwin wrote in October 1974, "our primary focus is now on what we term 'proficiency at the cutting edge,' with emphasis on team training at the squad, tank crew, weapons crew and comparable levels." Kerwin, "Far-Flung Command Stays Combat Ready," 38. General Rogers began to shift emphasis to higher levels and to combined arms training in 1975. Rogers, "FORSCOM Forges the Link," 28.

[229]Chapman, *The Origins and Development of the National Training Center*, 6.

[230]Ibid.

[231]Ibid., 13.

[232]Ibid., 14.

[233]There were many factors which impacted on site selection, but two of the most important were its size (approximately 1,000 square miles), and its proximity to Nellis Air Force Base which would make cooperation with the Air Force easier. Ibid., 25-26.

[234]Ibid., 144.

[235]Ibid., 63.

[236]Gorman, *The Military Value of Training*, 19.

[237]As cited by Chapman, *The Origins and Development of the National Training Center*, 124.

[238]Gorman, *The Military Value of Training*, 19-20.

[239]U.S. Department of Defense, *Final Report to Congress: Conduct of the Persian Gulf War* (Washington, DC: Government Printing Office, April 1992), xxiv.

[240]Romjue, Canedy, Chapman, *Prepare the Army For War*, 27.

[241]Ibid., 9.

[242]Clarke as quoted by Sheehan, "Preparing for Imaginary War?" 1-14.

[243]William E. DePuy, Message on the Subject of "How to Fight" Manuals, 29 November 1974, in DePuy Papers, MHI. (Specific addressees are obscured since an address group was used.)

[244]DePuy, oral history, 188.

[245]Starry as quoted by Herbert, *Deciding What Has to Be Done,* 114 fn. 4.

[246]Colonel Huba Wass de Czege, "The U.S. Army's Doctrinal Reforms," in *Airland Battle Doctrine*, Art of War Colloquium (Carlisle Barracks, PA: U.S. Army War College, June 1983): 38.

[247]DePuy, oral history, 182.

[248]Ibid., 183.

[249]DePuy as quoted in "DePuy: TRADOC Aims for Superior Army," 50.

[250]DePuy, oral history, 186.

[251]TRADOC OPMS Task Group, *Education of Army Officers,* 4.

[252]Ibid., 14.

[253]Ibid., 16-17, II-2.

[254]DePuy, oral history, 185-186.

[255]Romjue, Canedy, Chapman, *Prepare the Army For War,* 37.

[256]Swain, "AirLand Battle," 387.

[257]See U.S. Department of the Army, *Review of Education and Training of Officers* (The Harrison Board), Volume I (Washington, DC: Headquarters, Department of the Army, 30 June 1978), I-3; and and U.S. Department of the Army, "The Professional Development of Officers Study," *Commanders Call,* DA Pamphlet 360-888 (Baltimore, MD: US Army AG Publications Center, May-June 1985): 4-5.

[258]DePuy, oral history, 183.

[259]For example, two Colonels argued the following in a July 1977 article: "A shift away from higher level and political-military subjects is well underway. We are becoming more narrowly professional in our approach. This is long overdue." Zeb B. Bradford and Frederic J. Brown, "Implications of the Modern Battlefield," *Military Review* 57, no. 7 (July 1977): 10.

[260]Timothy T. Lupfer, *The Dynamics of Doctrine: The Changes in German Tactical Doctrine During the First World War,* Leavenworth Papers, no. 4 (Fort Leavenworth, KS: Combat Studies Institute, U.S. Army Command and General Staff College, July 1981), 56. Emphasis is in original.

[261]See DePuy, "Keynote Address," TRADOC Leadership Conference, 22 May 1974, in *Selected Papers*, 113; and Gorman, "The Exercise of Command is Training Management," 10.

[262]U.S. Department of the Army, *The Army Training Study* (Fort Belvoir, VA, 1978), 9.

[263]U.S. Army Research Institute (Louis G. Yates and John F. Hayes), *Status of Unit Training Within USAREUR Units*, Research Report 1207 (Alexandria, VA, April 1979), v.

[264]Martin Binkin, *America's Volunteer Army: Progress and Prospects* (Washington, DC: The Brookings Institution, 1984), 10-11. Problems of quality were found to be even worse than earlier anticipated after errors in the computation of scores of standardized tests were discovered in 1980.

[265]"Interview on 'Good Morning America' with David Hartman, ABC-TV," in *E.C. Meyer, General, United States Army, Chief of Staff: June 1979-1983* (Washington, DC: U.S. Department of the Army, 1985): 146.

[266]Fred C. Weyand, "Question & Answer Session," C&GSC, Fort Leavenworth, Kansas, 10 December 1975, 23, in the Frederick C. Weyand Papers, MHI.

CHAPTER 5

CONCLUSION AND IMPLICATIONS

As General Starry wrote in 1983 after his retirement, "Reform of an institution as large as our Army is problematic under the best of circumstances."[1] Although the U.S. Army enjoyed far less than the "best of circumstances" in the 1970s, TRADOC was still able to play a key role in instituting and integrating peacetime military reforms. TRADOC introduced updated doctrine, revised training practices, and served as an integrating agent to ensure that these and other aspects of the combat developments process were mutually supportive. Each of these changes considered alone was less than revolutionary, but taken together their impact was cumulative. TRADOC changed the manner in which the U.S. Army prepared for war.

That TRADOC played such a central role is important because, for all the reasons listed in chapter 2, a common expectation is that military organizations will be unable to reform themselves. Those holding this view believe organizations will not change without intervention from external sources due to the following factors: vested interests, the costs associated with changing standard operating procedures, external political constraints, and uncertainty. However, this perspective fails to predict the reforms that Generals DePuy, Starry, and Gorman spearheaded in the 1970s and early 1980s. The Army faced external pressures--changing national security policy, budget stringency, and the political decision to move to an all-volunteer force--but these challenges and constraints did not provide Army leaders with a detailed plan of action. The shape and extent of reform efforts within the U.S. Army in the 1970s were primarily determined by leaders from within the organization.

Implications for Today

The Army is once again in the midst of change. In October 1999, Army Chief of Staff General Eric K. Shinseki published a vision statement that called for the development of a force that would be deployable, agile, versatile, lethal, survivable, and sustainable. In his words, "Our commitment to meeting these challenges compels comprehensive transformation of the Army."[2] In explaining the type of change being sought, an official Army briefing explains that past changes have been "selective, incremental, [and] sequential." In contrast, the Army's current transformation will be "holistic, comprehensive, [and] simultaneous."[3] The Army has an ambitious agenda.

An assessment of whether or not the Army's many transformation initiatives will be successful is beyond the scope of this work. However, the Army's experiences with reform in the 1970s may at least suggest some of the right questions to ask. Helpful in this regard is a 1983 article by General Starry entitled "To Change an Army." Starry argues that there are seven "generalized requirements" for successfully implementing change. This chapter will use this list to structure the discussion below.

The first requirement for change is that "There must be an institution or mechanism to identify the need for change, to draw up parameters for change and to describe clearly what is to be done."[4] In the 1970s, this institution was TRADOC. Does TRADOC still play this role today? If so, is the Army appropriately investing in TRADOC in terms of both dollars and the assignment of talented personnel? If TRADOC is not playing this role, who is? And finally, if there is more than one entity critically involved, are these organizations' efforts integrated and moving in accordance with a common vision?

Starry's second requirement relates to the educational backgrounds of principal leaders. In his view, these "must be sufficiently rigorous, demanding and relevant to bring a common cultural bias to the solution of problems."[5] In the 1970s, DePuy, Starry, and Gorman all brought a systems analysis approach to their reform efforts, and emphasized the importance of careful studies. While there were many advantages associated with the use of systems analysis techniques, there were disadvantages as well. Perhaps the relevant question to ask about prospects for change today is a broader one. Does the Army adequately invest in the education of the officer corps? Is the trade-off the personnel system currently makes between present requirements and the preparation of leaders for future responsibilities through education the correct one?

Starry's next two provisions are related. His third requirement is that "There must be a spokesman for change," and his fourth is that "the spokesman must build a consensus."[6] In the 1970s, the senior leaders of TRADOC were spokesmen for change. In addition, DePuy and Starry both valued consensus--though Starry made a greater effort to create it during the process of reform. One advantage these leaders had is that they centered their efforts around a new and demanding vision of future warfare on a mechanized battlefield. They had a rallying cry. Today's efforts also have an important spokesman--the Army Chief of Staff. However, important questions remain. Has General Shinseki succeeded in creating a consensus among senior leaders in the Army? Does his vision include a clear and compelling rallying cry capable of convincing others of the need for change?

Fifth, Starry argued that "There must be continuity among the architects of change so that consistency of effort is brought to bear on the process."[7] The idea of

continuity was evident among TRADOC's key leaders in the reforms covered in this paper. In the area of training, for example, General DePuy appointed Gorman to be his point man--the same individual who had been working to improve the Army's training since 1971 as part of Westmoreland's all-volunteer force initiatives. Even more importantly, DePuy's four-year tenure at TRADOC was followed by another four-year stint by Starry--and the two individuals shared a common perspective on a broad range of issues. Will the Army's transformation be shepherded by leaders with some stability in their offices who enjoy a similar convergence of perspectives?

The sixth requirement is that "Someone at or near the top of the institution must be willing to hear out arguments for change . . . and become at least a supporter, if not a champion, of the cause for change."[8] Generals DePuy and Starry were aided in their efforts at reform by the fact that other senior Army leaders also perceived the need for change. In fact, as General Abrams assigned Starry to command the Armor Center and School in 1973, Abrams' parting admonition to Starry was to "Go out and get the Army off its ass."[9] DePuy and Starry were able to get consecutive Army Chiefs of Staff to support their initiatives, as well as important members of the civilian political leadership.[10] As a matter of equal importance, the products of TRADOC were adopted and used by units in the field. Today, since transformation has clearly been embraced by the Chief of Staff, perhaps the more important questions are external. Has the Army convinced key leaders in Congress and the executive branch that it has the right vision for its future? Those that would spearhead change from within today's military will need civilian leaders to grant them both the resources and autonomy they require to succeed.

Seventh, "Changes must be subjected to trials. Their relevance must be convincingly demonstrated . . . and necessary modifications must be made as a result of such trial outcomes."[11] Senior leaders of TRADOC in the 1970s believed strongly in the value of tough, realistic tests. Although the evaluation process is never likely to be perfect, the key question is whether or not unlooked for results cause learning and adaptation. To some extent, this was the case with the Army's doctrine in the 1970s. There was disagreement as to whether or not Active Defense could have been successful for the U.S. Army as a guide to victory in battle; there was consensus that it would not suffice as a guide to success at the operational level of war. This finding was important in the genesis of AirLand Battle. The challenge for today is to keep integrity in the testing process. Are tests of the Army's various transformation initiatives allowed to produce failures? Do these tests produce learning and adaptation?

Perhaps a final issue--one not raised by Starry--relates to time and the realization of the potential of reforms. As discussed in the previous chapter, those serving in the mid-to-late 1970s may have perceived little cause for optimism about the Army's future. Yet, in retrospect, important groundwork had already been laid for strengthening the fighting capability of the Army. What does this mean for judging the ultimate success of today's Army transformation efforts? It probably means that it is too soon to tell.

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[1]Donn A. Starry, "To Change an Army," *Military Review* 63, no. 3 (March 1983): 21.

[2]Eric K. Shinseki, "The Army Vision: Soldiers on Point for the Nation, Persuasive in Peace, Invincible in War," (Washington, DC: U.S. Department of the Army, October 1999): 6. Accessed on-line at http://www.army.mil/vision/Documents/The%20Army%20Vision.PDF, on 5 February 2003.

[3]U.S. Department of the Army, "Realizing The Army Vision Smart Book," Washington, DC, undated, slide 12. Accessed on-line at http://www.army.mil/vision/index.html, on 5 February 2003.

[4]Starry, "To Change an Army," 23.

[5]Ibid.

[6]Ibid.

[7]Ibid.

[8]Ibid.

[9]Starry, Letter to Swain, 6.

[10]For example, Starry describes a briefing that Brigadier General Morelli gave to members of the Military Reform Caucus after their rise to prominence in 1981. Starry recalled this presentation as having been an important success: "Persuaded that we were indeed 'reforming,' had been at it for some time, knew what we were doing made sense, most of the Caucus membership became strong supporters of what became AirLand Battle." Ibid., 28.

[11]Ibid.

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