TRADOC Historical Study Series

PREPARE THE ARMY FOR WAR

A Historical Overview of the Army Training and Doctrine Command 1973-1998

with an afterword
by General William W. Hartzog

TRADOC 25th Anniversary Commemoration

Military History Office
United States Army Training and Doctrine Command
Fort Monroe, Virginia

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A Historical Overview of the Army Training and Doctrine Command, 1973-1998

by

Anne W. Chapman, Carol J. Lilly
John L. Romjue and Susan Canedy

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To
General William E. DePuy
(1919 - 1992)

and

the soldiers and Army civilians
whose devotion to duty enabled TRADOC
to change an Army and serve the nation.

U.S. ARMY TRAINING AND DOCTRINE COMMAND

General William W. Hartzog	**Commander**
Major General James J. Cravens, Jr.	**Chief of Staff**
James T. Stensvaag, Ph.D.	**Chief Historian**

TRADOC HISTORICAL STUDY SERIES

James T. Stensvaag, General Editor

TRADOC Historical Studies are research reports published by the Military History Office, U.S. Army Training and Doctrine Command. These studies present documented summary accounts of training, doctrinal, and combat developments topics to provide ready reference information to support the Command's mission of preparing the Army for war and charting its future.

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Photographs courtesy TRADOC Public Affairs Office and Greg Stewart, Laguna Beach, California

Cover Photo: Soldier wearing "Miles" gear and camouflage (DoD photo)

PREFACE TO THE REVISED EDITION

In 1993, The Office of the Command Historian (now the Military History Office) of the U.S. Army Training and Doctrine Command produced a history of the first twenty years of the command. The twenty-fifth anniversary offers the opportunity to update and supplement that work. The first edition of *Prepare the Army for War* contained a preface signed by my predecessor as chief historian, Henry O. Malone, Jr. That preface, with only minor editing to account for the passage of time and additional contributors, still serves as a thoughtful prelude to the overview which follows.

When we undertook a revision, we assumed (somewhat naively) that the passage of an additional five years would require minor tinkering with the text of the 1993 edition and some supplementation. In making that assumption, we ignored the only operative law in history, the law of unintended consequences. We also ignored the implications of the enormous changes in the processes of planning the Army's future and training both the Army of today and the Army of the future, and the complexity which grew with the processes. Consequently, this revision differs in substantial ways from the first edition, and I commend it to you as an improvement as well as an update.

The evolution of TRADOC through its first quarter century is, we believe, a success story. The tenor of this history is, in the main, celebratory. The Army is a hierarchical institution, and it should surprise no one that this history also celebrates leadership. The celebration of leadership in no way denigrates the labors of many thousands of soldiers and civilians who have served the command since 1973. Each of the leaders pictured in *Prepare the Army for War* would admit to having achieved success only because of the quality of Tradocians at every level. Although the primary dedication of the study still rightly remains with General William DePuy, this second edition hereby pays additional homage to all the unnamed individuals who labored to make his vision, and that of his successors, into reality.

Fort Monroe, Virginia
May, 1998

JAMES T. STENSVAAG
Chief Historian

PREFACE THE FIRST EDITION (With Minor Revisions)

The year 1998 marks the 25th anniversary of the Army's establishment of the Training and Doctrine Command (TRADOC), as the major innovation in its post-Vietnam War reorganization. Skeptics predicted that the new organization would not survive the test of time, but at 25, TRADOC has existed longer than any of its predecessors. The other major component of the 1973 reorganization of the Army in the United States, Forces Command, or FORSCOM, also observes its 25th anniversary in 1998. The formal observance of TRADOC's 25th anniversary provides the opportunity for the TRADOC Military History Office to produce a survey of the 1973 reorganization and the role TRADOC has played since in carrying out its assigned mission responsibilities as the instrument for change and development in the Army.

As noted on the dedicatory page, TRADOC offers this historical study in memory of General William E. DePuy, who can with ample justification be characterized as the founder of TRADOC. Born in Jamestown, North Dakota, on 1 October 1919, he graduated from South Dakota State College in 1941 and received his commission from Army ROTC as a second lieutenant of Infantry. After taking part in the 1941 Louisiana Maneuvers, he saw combat in Europe with the 90th Infantry Division, in which he commanded an infantry battalion at age 25 and ended the war as division operations officer. Later, he served almost three years in Vietnam where he commanded the 1st Infantry Division in 1966-67. In the early 1970s, as Assistant Vice Chief of Staff of the Army, he led a small planning group that developed the concept of revitalizing the Army by focusing the work of preparing the Army for war in a command dedicated solely to that task. DePuy came to Fort Monroe to establish the new command in 1973, and became its first commander. Over the next four years, he spearheaded what was perhaps the most dramatic single advance in tactics, equipment modernization, and training ever undertaken by the peacetime Army. After he retired in 1977, he continued to influence the direction of the Army and TRADOC as a military affairs writer, lecturer, and advisor. Recognized as one

of the great Army leaders of his time, he died at Arlington, Virginia in 1992. His legacy was the trained and ready Army that went to Panama in Operation Just Cause in 1989 and to the Persian Gulf in 1990 and 1991.

From its beginnings in 1973 and through its first 25 years, TRADOC and the Army faced a future conditioned by fundamental change. Within that framework, this study examines the origins of the command and takes note of the way it operated under nine different commanders. A series of thematic chapters deal with the major developments of the command's first quarter century, including the training revolution, a new generation of weapons, the focus on warfighting doctrine, design of the Army of the 1980s and the ongoing efforts of Force XXI looking to the Army of the 21st century, as well as TRADOC's involvement in joint service issues and work with Allied armies. The narrative surveys the command's organizational structure and how it evolved over the first 25 years, then describes how it responded to the strategic reorientation as the United States and its allies adjusted to a radical change in the threat, and provides a sketch of TRADOC's contributions to combat operations and peace operations since the command's establishment.

As the subtitle suggests, this is not a definitive history of TRADOC for the period 1973-1998, but rather an overview, focusing on the aspect of TRADOC's external mission and giving less attention to missions directed internally. The narrative is based primarily on periodic annual histories of the command, produced by the TRADOC Military History Office as a part of the Army Historical Program. Much information was also provided in John L. Romjue's unpublished manuscripts on doctrine and force design through 1996. Abbreviations and acronyms in both the text and in the footnotes can be identified by referring to the list in the back of the volume. An index provides assistance in locating subjects and individuals. Footnotes provide source citations for the narrative, but it may be necessary to go to the secondary source cited, e.g. an AHR (Annual Historical Review) or Annual Command History (ACH), to identify a specific document behind the narrative.

Primary editor/author Anne W. Chapman has based her work substantially on an earlier publication prepared by the Office of the Command Historian in 1993 on the occasion of TRADOC's 20th anniversary. That publication was entitled Prepare the Army for War: A Historical Overview of the Army Training and Doctrine Command, 1973-1993. Principal author and leader of the writing team for the 1993 edition was Mr. John L. Romjue, who then headed up the Historical Studies and Publication function in the Office. In the writing task, he was assisted by Dr. Susan Canedy and Dr. Chapman. Mr. Joseph H. Mason III, Archives Technician, collected and evaluated a large amount of data

to produce the key personnel appendices which helped to make the study a useful reference source for readers who wanted to know who was who, within TRADOC. Photographic illustrations, apart from those collected by Mr. Mason on key personnel, were located, selected, and captioned by Dr. Charles H. Cureton.

Dr. Chapman substantially revised the introduction, added a new chapter addressing TRADOC's role in combat and peace operations, and did updates to the remaining chapters. Mrs. Carol Lilly, Archives Technician, performed the task of editing and updating the key personnel appendices and assuming many other complex research and editing tasks. General William W. Hartzog, commander of TRADOC as it turns 25, generously agreed to allow use of the final chapter of his *American Military Heritage*, for which he served as primary author. Ms. Margaret Peoples of the TRADOC Public Affairs Office quickly and professionally transformed the manuscript into a camera ready product. All credit for this volume's worth accrues to these contributors.

Hampton, Virginia

May 1993 and May, 1998

Henry O. Malone, Jr.

Chief Historian (Retired)

CHAPTER I

INTRODUCTION

Charged with the major Army missions of individual training and combat developments, the Army Training and Doctrine Command, or TRADOC, was established as the U.S. Army's overall development command in July 1973. Coming into existence in the period of American defense policy reorientation from Vietnam to NATO Europe and the challenge of the Warsaw Pact buildup, TRADOC in the 1970s and 1980s carried through sustained programs of training reform; weapon, equipment, and force modernization; and doctrine revision. Those efforts fundamentally transformed the Army into a modernized, trained and ready force, a significant component of the successful political-military challenge against which Communist power shattered and the Cold War ended in the years 1989-1991. It was the highly trained, professional Army of Excellence whose combat units helped restore democratic government to Panama in Operation Just Cause of 1989-1990 and to expel the armies of Iraq from Kuwait in Operation Desert Storm in 1991. It was this same Army that increasingly provided peace operations and humanitarian relief in places such as Somalia, Bosnia-Herzegovina, Haiti, and Rwanda, and aid to disaster victims following natural disasters.[1]

The transformation of the American Army between the early 1970s and the early 1990s and TRADOC's role in that change was the general theme of the first edition of *Prepare the Army for War: A Historical Overview of the Army Training and Doctrine Command, 1973-1993*. The current volume brings the TRADOC story to the present as the command celebrates its twenty-fifth anniversary. During the last five years, the United States Army has continued the thoroughgoing modernization of its fighting units and the reforms in training and doctrine begun in the immediate post-Vietnam era. In mid-1998, TRADOC continued to serve, as it had since 1973, as the Army's development and requirements command that existed on an equal status and footing with the major troop commands.

1. For more information on the establishment and development of TRADOC see Paul H. Herbert, Deciding What Has To Be Done: General William E. DePuy and the 1976 Edition of FM 100-5, Operations (Leavenworth

Early in the 1970s the United States found itself in a new strategic situation in which a shift of power in favor of the political dynamic of revolutionary socialism was advancing worldwide. The United States' strategic reversal in Southeast Asia seemed to call into question the continued validity of its long and hard-contested policy of communist containment, with the bitter past and recent sacrifices of that historic effort. The gains of worldwide Communist revolution in the 1970s, funded and supplied by the Soviet Union, and, to a lesser degree, by communist China, were dramatic and alarming. Revolutionary power seizures and military coups in Africa, South and Southwest Asia, and Latin America went forward largely uncontested by American policy makers of the middle and late decade.

The stunning reversal and sudden termination of that revolutionary impulse in the world-changing events of 1989-1991 created a new strategic world. By the early 1990s, the collapse of communism and the disintegration of the Soviet Union had ushered in a new world of power. The United States remained as the single superpower in an international order in which it could newly act with greater freedom to support national independence and democratic and free-market institutions.

The imperatives of that situation seemed to dictate a smaller Army, and one whose readiness was assured by the transit of new technological thresholds. In the mid-1990s, TRADOC institutionalized these new directions as mid-future Army XXI. Army XXI included Force XXI, the TRADOC-led effort to determine future force structure based on digitally equipped forces. Even beyond the mid-future, an Army After Next project looked deeply into the Army's Future. The Army of the next century would also include revised doctrine and training programs. The advances in technology indicated an evolution to a battlefield on which time, distance, movement, and firepower existed in new relationships arising from the evidence of the extended reach and pinpoint accuracy of weapons brought to effect by near-real-time intelligence, detection, target acquisition, and communications technology.

This advent of a new strategic world and the emergence of a new higher level of technological warfare took place in the context of a U.S. military establishment sharply drawing down in the wake of the retrenchment of Soviet power.

(continued)

Paper No. 16) (Fort Leavenworth, Kan.: Combat Studies Institute, Command and General Staff College, 1988) which provides an outstanding and accessible account of the early role of TRADOC and its "founder." John L. Romjue, From Active Defense to AirLand Battle: The Development of Army Doctrine, 1973-1982 (Fort Monroe, Va.: Historical Office, HQ TRADOC, 1984) describes the debate of the Active Defense and the formulation of Army AirLand Battle doctrine. Anne W. Chapman, The Army's Training Revolution, 1973-1990: An Overview (Fort Monroe, Va.: Office of the Command Historian, HQ TRADOC, 1991) gives a summary of training innovations and programs. Romjue, *A History of Army 86*, Vol. I, *Division 86: The Development of the Heavy Division*, and Vol. II, *The Development of the Light Division, Corps, and Echelons Above Corps* Fort

power. Against this background of radically altered strategic assumptions, TRADOC reached the quarter-century mark challenged to lead the Army of the post-Cold War era through the intellectual change needed to transform it from a larger, forward-deployed force into a smaller, power projection force based primarily in the United States. The command continued to meet its twenty-five year old responsibility to the Department of the Army to prepare the Army for war and to act as the architect of the future Army. What follows is a concise historical overview of the TRADOC role and contribution to a significant era in U.S. Army institutional and developmental history.

AH-1 Cobras taking off for a mission represent the reinvigorated post Vietnam War Army created by better training, equipment, and doctrine.

(continued)

Monroe, Va.: Historical Office, HQ TRADOC, 1982) describes TRADOC's force design efforts through 1980. The same author's *The Army of Excellence: The Development of the 1980s Army* (Fort Monroe, Va.: Office of the Command Historian, HQ TRADOC, 1993) documents the force design and transition to the Army of Excellence through the close of the 1980s, together with the final phases of the Army 86 project preceding. See also TRADOC annual history volumes, continuous since FY 1974, for documented discussions of the several aspects of TRADOC's development work.

Chapter II

ORIGINS OF TRADOC

TRADOC was established by the Department of the Army on 1 July 1973 at Fort Monroe, Va. in the major STEADFAST Reorganization of the Army in the United States brought to completion that year. The reorganization functionally realigned the major Army commands in the continental United States. Headquarters U.S. Continental Army Command, or CONARC, situated at Fort Monroe, and Headquarters U.S. Army Combat Developments Command, or CDC, based at Fort Belvoir, Va., were discontinued, with TRADOC and the new U.S. Army Forces Command at Fort McPherson, Ga., assuming the realigned missions. TRADOC assumed the combat developments mission from CDC, took over the CONARC individual training mission, and assumed command from CONARC of the major Army installations in the United States housing Army training centers and Army branch schools. FORSCOM assumed CONARC's operational mission: the command and readiness of all divisions and corps in the continental United States and the installations where they were based.[1]

Predecessor Commands

Joined and focused under TRADOC, the individual training mission and the combat developments mission each had its own lineage. The individual training responsibility had descended to CONARC from Headquarters Army Ground Forces, or AGF, of World War II. The AGF had established replacement training centers (RTC) for the basic training of the great masses of trainees that that war required, prior to their assignment to divisions or other organi-

1. (1) For a documented account of Operation STEADFAST, see Jean R. Moenk, Operation STEADFAST HistoricalSummary: A History of the Reorganization of the U.S. Continental Army Command, 1972-1973 (Fort McPherson, Ga. and Fort Monroe, Va.: Historical Offices, HQ FORSCOM and HQTRADOC, 1974). (2)TRADOC Annual Report of Major Activities (ARMA), FY 1974, A History of TRADOC's First Year (Fort Monroe, Va.: Historical Office, HQ TRADOC, May 1975), pp. 140-89 presents a documented account of the reorganization of combat developments in Operations STEADFAST (CONARC) and HIGHROAD (CDC).

zations for unit training before shipment to the war theaters. In 1946 numbered Army areas were established in the United States under AGF command. Headquarters Army Ground Forces moved from Washington, D.C. to Fort Monroe the same year.

In March 1948, Army Ground Forces was replaced at Fort Monroe by a new Office, Chief of Army Field Forces, or OCAFF. To OCAFF was delegated the Army-wide general supervision, coordination, and inspection of all matters pertaining to individual and unit training, along with other AGF functions. OCAFF was not a command headquarters, however, and did not command the training establishment. That line of authority flowed from Headquarters Department of the Army directly through the numbered Armies to the corps, divisions, and Army Training Centers.

In February 1955, HQ Continental Army Command replaced OCAFF, assuming its missions along with transfer of the numbered Armies with their individual and unit training mission from Headquarters Department of the Army. Headquarters CONARC was redesignated U.S. Continental Army Command in January 1957.[2]

Combat developments had emerged as a formal Army mission in the early 1950s. It originated in the perception that, with the advent of nuclear arms and international delivery capability, a system was needed dedicated to the comprehensive and systematic peacetime development of Army weapons and equipment, war fighting doctrine, and tactical organization. OCAFF assumed this role in 1952, and an incipient network of offices and agencies was formed which CONARC took over upon its establishment in 1955. The activation of the Combat Developments Experimentation Center at Fort Ord, Calif. in 1956 led to further system development.

Following an early-1960s study of Department of the Army functions, organizations, and procedures, "Project 80," Headquarters U.S. Army Combat Developments Command was established in 1962 to bring disparate elements of the system together under one major Army command. The Fort Belvoir-based headquarters managed combat developments in the Army for the next eleven years.[3]

2. See Jean R. Moenk, A *History of Command and Control of Army Forces in the Continental United States, 1919-1972* (Fort Monroe, Va.: Historical Office, HQ CONARC, 1972), pp. 25-55, for a summary of major Army command missions from the close of World War II up to the 1973 STEADFAST Reorganization.

3. (1) Moenk, *A History of Command and Control*, pp. 32, 43-45. (2) Pamphlet, Historical Background of USCONARC Participation in Combat Developments and Materiel Development Activities (Fort Monroe, Va.: 1963).

STEADFAST Reorganization

The 1973 STEADFAST Reorganization had been directed by the Chief of Staff of the Army, General Creighton W. Abrams, in order to solve difficult command and control problems in the Army establishment evident in the early 1970s. The CONARC span of control through the headquarters of the numbered armies to the corps and divisions included most of the major Army installations in the United States. With such wide control span, together with responsibilities for both the training and education establishment and for unit readiness, many observers felt CONARC obligations were too broad for efficient focus.

At the same time, the Combat Developments Command, established along with the Army Materiel Command in 1962 to relieve CONARC of the growing combat developments mission, had not proved successful. CDC consisted of a network of three intermediate-level groups focused on developments in combat, combat support, and combat service support; combat developments agencies that were tenants at each CONARC school; several specialized institutes; and the Combat Developments Experimentation Command. In its short existence between 1962 and 1973, CDC had focused much of its effort on major, far-future plans of limited practical consequence or utility. A second problem was the institutional, bureaucratic separation of the combat developments agencies from the schools with which they were co-located. Agency priorities and school priorities were decided according to the divergent missions of the two major commands, CDC and CONARC. In addition, the Combat Developments Command may have been somewhat handicapped as a three-star command in its dealings with CONARC and the Army Materiel Command, both of which were headed by four-star commanders. But the crux of the 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.

Carried through under General Abrams' Assistant Vice Chief of Staff and chief reorganization planner Lt. Gen. William E. DePuy, the 1973 reorganization drew together under TRADOC the closely related Army development activities by which troops and leaders were trained and instructed, their fighting doctrine was formulated, their tactical units were built, and their weapon requirements were defined. The STEADFAST Reorganization put combat developments back into the branch schools. After 1973, the formulation and the teaching of tactical doctrine was an organically united effort in each TRADOC

school. Beginning that year, the Army had a major four-star command focuse specifically and exclusively on training, teaching, and developing the Army.

From its headquarters, TRADOC carried out its assigned individual trainir and combat developments missions through command of subordinate elements ar installations throughout the continental United States. In brief, they included th Army's training centers for initial entry training; intermediate-level integrating cer ters to draw together developments in combined arms, logistics, and soldier su port; the Army's branch schools, specialist schools and military schools and co leges; Army ROTC; together with mission-related test, experimentation, and ana lytical activities. The TRADOC organizations were mostly situated on the majo installations which the headquarters commanded. The remainder were tenanted c a dozen or more non-TRADOC installations.

The Tasks of TRADOC

As the architect of the STEADFAST Reorganization and the new Trainin and Doctrine Command, Lieutenant General DePuy was promoted to General an appointed its first commander, assuming authority on the establishment date, 1 Jul 1973. Two tasks faced the new major Army command: making the new institutio work; and training, reforming, and modernizing the post-Vietnam Army.

What was new in the idea of a training and doctrine command was focus. Th TRADOC-FORSCOM arrangement solved the span-of-control problem, put com bat developments back into the schools, and focused the development of the Army tactical organizations, weapons and equipment, doctrine, and the training of sol diers in that doctrine, in one command. Making the better alignment work was th first task facing TRADOC in 1973. The second task was to assist in the designing shaping, and training of a dispirited Army. Though retiring unbeaten from th field, the U.S. Army was returning in the early 1970s from a lost war. Facing it wa not only a situation of psychological and institutional uncertainty, but a dangerou and growing strategic threat to the North Atlantic Alliance. The situation was exac erbated by what military observers in the United States and Europe described as lost decade of weapon development by the U.S. Army, owing to its ten years c concentration on fighting and equipping for the Vietnam conflict.

Chapter III

HOW TRADOC OPERATED

In its first quarter century, the U.S. Army Training and Doctrine Command had nine commanders. Each led the command from a perspective based on personal and professional experience, the evolving international situation, national priorities, and the defense fiscal environment. Each impressed upon the organization his own style of management, within the framework of his commander's intent.

DePuy

In July 1973, the first commander, General DePuy, announced his conception of the headquarters mission and explained his system of management.[1] As TRADOC's mission was to get the Army ready to fight the next war, DePuy's primary concerns were improvements in individual training, better support for training in units, and new emphasis and direction for combat developments activities.

As defined by organizational charter, the TRADOC commander developed and managed training programs, developed training doctrine and provided training support for individual and collective training in units. As the Army's principal combat developer, he guided, coordinated, and integrated the total combat development effort of the Army.[2]

Many aspects of the Vietnam experience had contributed to a degradation of training within CONARC. Individual training needed to be revamped. The rush to provide replacements for the conflict had taxed training capability. With the end of the war, the numbers of troops being processed were significantly reduced, opening the opportunity to slow down the flow and consolidate training effort in the appropriate school to insure quality performance-oriented train-

1. See Preface for DePuy's background.

2. TRADOC ARMA, FY 75, p. 15. (CONFIDENTIAL – Info used is UNCLASSIFIED)

ing. A "back to basics" approach was taken: officer training courses were to prepare officers for their next assignment, the physical aspects of basic combat training were toughened, and advanced individual training was made more performance-oriented. Moreover, training literature was outdated, and training tests desperately needed improvement. Consequently, another of DePuy's major projects was the production of a "how-to-fight" series of manuals and films which set forth Army doctrine in simple, vivid language. In the area of training, new test documents were formulated. Those Army Training and Evaluation Programs were performance-oriented and differentiated between active and reserve components. That performance-oriented training was further exemplified by the skill qualification tests and the soldiers' manuals.

While seeking solutions to the problems noted during the war in Southeast Asia, DePuy and the TRADOC staff were heavily influenced by the Israeli War of 1973. Initially DePuy had defined his command's mission as training the Army to win on the modern battlefield of the next war. After the October War, the definition was refined to include winning the first battle of the next war.

Combat developments was a prime concern. It was clear that the combat developments approach needed to be harnessed to the present and near future. The October War had witnessed an increased lethality in tank warfare, antitank guided missiles, and artillery which represented a quantum leap over the weapons used in World War II. Because of the small size of the headquarters staff, the three functional centers and the schools undertook a major portion of the combat developments mission. The headquarters insured, through strict overwatch of the required operations capability document, that the developers indeed developed what they promised. Combat developments was addressed as well in the development of SCORES -- Scenario Oriented Recurring Evaluation System. Scenarios represented geographical areas, opposing forces, and events that embodied a hypothetical conflict. Moreover, the systems acquisition process was reformed with the function decentralized into the service school structure.

Management of the TRADOC structure was of special concern. The Commanding General of TRADOC commanded all installations and organizations as assigned by the Department of the Army. Through the installations, the commander provided administrative, logistical, and other support services to those agencies which were tenants of TRADOC installations. DePuy instituted the installation contract system as a major innovation for improving installation management; it was a document signed annually by the installation commander and the TRADOC commander or his representative which out-

lined the tasks to be performed by the installation and the resources and support to be provided in turn by the headquarters. There was provision for periodic renegotiation if circumstances changed. Careful coordination between the two signatories insured the success of the new system of management. Yet another important management tool was the TRADOC Programing System, designed to improve the management and distribution of resources. Documentation consisted of the program review memorandum and the TRADOC three-year program. The program review memorandum displayed the way TRADOC planned to allocate resources for its missions, while the three-year program portrayed the distribution of actual and projected resource and workload guidance furnished by the Department of the Army for the current, budget, and program years.[3]

Starry

When General Donn A. Starry assumed command of TRADOC in 1977 he began a pronounced decentralization of major command projects to the integrating centers and schools. Starry, who had been commandant of the Armor School and commander of V Corps in Germany, wanted all his subordinate commanders fully involved in TRADOC's major actions. In line with that approach was his decision to move the 3-star TRADOC deputy commander position from the headquarters to Fort Leavenworth. That move had an impact on the headquarters as well with the establishment of simpler, more direct staff relationships, resulting in freer and faster flows of communication and staff actions.[4]

Command emphasis focused on the development of a new tactical doctrine to harness the combat power of the oncoming generation of weapons and the modernization of training techniques, literature, and support. Starry's immediate goal was to "to analytically describe the 'Central Battle' -- the place where all the combat systems and combat support systems interact on the battlefield."[5] The corps battle, or "Central Battle" formed a conception of how the Army should fight, and it provided a dynamic frame to which TRADOC attuned its mission efforts.[6] Starry viewed the central battle as an indivisible air-ground concern. Concepts and procedures to coordinate the air-land battle were continued under Starry and expanded to the conceptual "integrated battlefield."[7]

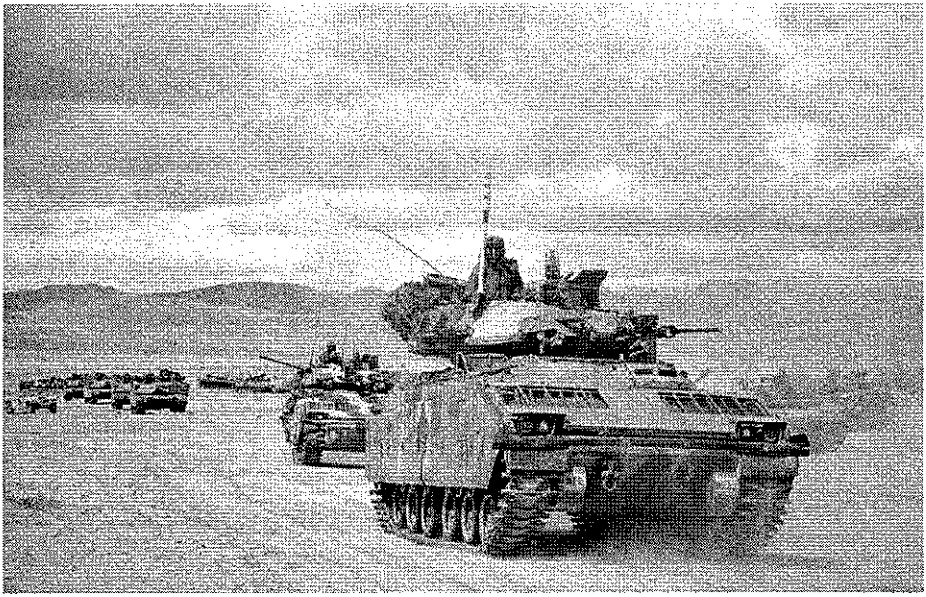
3. (1) TRADOC ARMA, FY 74, pp. 19-23. (SECRET -- Info used is UNCLASSIFIED) (2) Changing an Army: An Oral History of General William E. DePuy, USA Retired, conducted by Romie L. Brownlee and William J. Mullen III, USMHI and USACMH.

4. TRADOC AHR, FY 78, pp. 1-3. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

5. TRADOC AHR, FY 77, p. 11. (CONFIDENTIAL -- Info used in UNCLASSIFIED)

6. Ibid.

7. TRADOC AHR, FY 80, p. 74. (CONFIDENTIAL -- Info used is UNCLASSIFIED)



When General Donn Starry assumed command of TRADOC in 1977 action focused on the development of new tactical doctrine to harness the combat power of the oncoming generation of weapons such as the Bradley Fighting Vehicle and M1 Abrams shown operating in the National Training Center.

The move into the far-future planning realm had its materiel side in a similarly future-oriented concept based materiel acquisition system. The concept based acquisition system, presented in January 1981, served as the mechanism to translate broad operational concepts into the necessary equipment requirements. Concepts would determine technology, resulting in less costly research, development, test and evaluation.[8]

Starry felt that operational concepts should emanate from the headquarters of the commander of TRADOC. Those concepts in turn would be used to drive the work done by the integrating centers and schools. That was evident in the revision of FM 100-5, Operations, which he oversaw during his tenure, and of the Army 86 Studies. Division 86, with its far-ranging concepts and implications, was presented to the Army Chief of Staff in August and September 1980. The Division 86 study was extended by the Chief of Staff of the Army into a fuller Army 86 Study, encompassing not only the heavy division but the regular infantry division, corps, and echelons above corps organizations of the future Army.[9]

During Starry's tenure, TRADOC headquarters established six goals to guide program development and aid management. These were to provide inte-

8. TRADOC AHR, FY 81, pp. 121-122. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

9. (1) TRADOC AHR, FY 79, p. 370. (CONFIDENTIAL -- Info used is UNCLASSIFIED) (2) TRADOC AHR, FY 81, p. 3. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

grated operational concepts; to develop organizational and force structure, weapon and equipment requirements, and training in accord with the operational concepts; to maintain an efficient training base expandable in event of mobilization; and to provide adequate installation support and maintenance. In the leader development arena, probably nothing was more significant than the consequences of Starry's conviction that it was necessary for officers to have an appreciation for and understanding of the history of their profession, characterizing such knowledge as an essential element of their technical competence.[10]

Otis

Upon assuming command in August 1981, General Glenn K. Otis, who came to TRADOC from the post of Deputy Chief of Staff for Operations and Plans on the Army Staff, expressed management goals internal to TRADOC as his three "Ms" -- mobilization planning, maintaining the force, and modernization of the force. Mobilization planning involved development of programs of instruction, training base expansion capacity, and equipment requirements. Maintenance of the force concentrated on training and maintaining the momentum of the previous command. General Otis faced two preeminent challenges in force modernization: the first was managing the period of time when both interim and new organizations would be phased in; the second was support packages for training, spare parts, maintenance, and field manuals. At the TRADOC Commanders' Conference in November 1981, he added to the three "M"s a fourth: military history, to signal his intent to continue to fund the military history department (Combat Studies Institute) at Leavenworth, founded under his predecessor.[11]

Over the course of 1982, TRADOC headquarters, at General Otis' behest, developed a set of command goals in line with the recently promulgated seven Army Goals. The purpose was to identify clearly each of the roles TRADOC would play in support of the Army goals. The seven Army goals addressed the areas of readiness, the human element, leadership, materiel, future development, strategic deployment, and management.[12] With TRADOC's declared purpose to prepare the Army for war, its attendant missions as stated were to develop doctrine, to conduct and guide Army combat developments, to develop and maintain the Army training system, and to command installations and organizations.[13] The development of a set of specific goals for TRADOC priori-

10.(1) Ibid. (2) Msg, CG TRADOC to Commanders/Commandants, 171738Z Jul 79, subj: Military History.

11. Oral history interview, General Glenn K. Otis, Commander U.S. Army Training and Doctrine Command, 22 December 1982, by Dr. H.O. Malone.

12. TRADOC AHR, FY 82, p. 358. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

13. TRADOC ACH, FY 83, p. 540. (SECRET -- Info used is UNCLASSIFIED)

tized TRADOC's activities, served as a tool for the application of resources, became a touchstone for defining future roles of the command, served as a resource for the development of a formal document which would come out during his successor's tenure, and served as a measure for progress.

Many substantial initiatives came to the fore during Otis' year and a half term as commander of TRADOC. The recently revised FM 100-5, *Operations*, rewritten during Starry's time, was half of the Army 86 Studies. Training also captured a large part of General Otis' attention. Late in 1981, he determined that the time had come to step back and evaluate what had been accomplished in the area of training and plan for what would take place in the following decade. That initiative developed into the Army Training 1990 concept. One of TRADOC's missions was to produce a quality soldier, noncommissioned officer, and officer in its institutions and to support combat readiness in the units. Consequently, the TRADOC training policies for 1990 reflected the following principles: Reinforcement of the chain of command; efficient resource management; flexibility and simplicity of execution; centralized policy and production of support packages; accountability of product through the chain of command; emphasis on unit needs; mobilization to drive training development; and greater use of simulators and simulations. Significant also was the establishment, during this time, of the School for Advanced Military Studies, a post-graduate extension of the Command and General Staff College at Fort Leavenworth, Kansas, focusing on the operational level of war.[14]

Richardson

General William R. Richardson assumed command of TRADOC in 1983, also coming there from the post of Deputy Chief of Staff for Operations and Plans on the Army Staff. In accordance with Secretary of the Army Marsh's "Year of Excellence," he introduced the TRADOC watchword, "Excellence Starts Here." He reworked the aforementioned TRADOC Pamphlet 5-1, TRADOC Goals 1984, which formalized ten TRADOC goals: to provide concepts and doctrine that enhance the opportunity for success; to improve effectiveness on the integrated battlefield through analysis of current and projected capabilities and deficiencies; to develop and document force design and materiel requirements that ensure operational and technological superiority; to synchronize doctrinal training and organizational and materiel initiatives in tactical forces; to validate organizational and materiel system requirements and concepts; to develop an effective standardized Army training system; to pro-

14. TRADOC AHR, FY 82, pp. 194-197. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

mote effective standardized training in forces; to provide quality training support for forces and institutions; to develop and provide quality institutional training; to command, support, and manage efficiently operations of TRADOC installations and activities. Within the first days of his assumption of command, he decided to require each TRADOC center with a professional development school to establish a command history office, staffed by a professionally trained historian who would teach military history in leader development courses, preserve the corporate memory of the centers and schools, and publish military history to support planning and decision making.[15]

Richardson set the command's priorities in four areas, aligned with TRADOC's four missions. Under the overall task of "Preparing the Army for War," training, doctrine, force integration, and mobilization were identified as the mission tasks. The command strengthened the schools by decentralizing branch proponency and moving doctrinal development and writing alongside the teaching function. Schools responded by placing increased emphasis on writing and teaching tactical doctrine.

Richardson was commander at the time when much of the work of his predecessors was coming to fruition across the Army. FM 100-5 had been written and promulgated, the derivative manuals were being written in the schools; the training program was solidly emplaced; the development of the organizational designs of the Army of Excellence was undertaken; and weapons systems were coming on line. Richardson applied his own leadership philosophy to TRADOC, stressing competence and confidence. A leader must be tactically and technically proficient; in its mission areas, TRADOC had to be also tactically and technically proficient. It must set high standards and ensure that those standards were understood and met. The second maxim involved confidence. One must attain a high measure of self-confidence and gain the confidence of those around him. One of the biggest challenges Richardson noted for TRADOC was the recruitment and retention of good people within TRADOC.[16]

Richardson was responsible for the establishment of several new agencies and departments at Fort Leavenworth. Believing that the heart of the Army was TRADOC, and the heart of TRADOC was Fort Leavenworth, he continued development of the School for Advanced Military Studies, created the School for Professional Development, the Center for Army Leadership, Combined Arms

15. TRADOC Hist R, 84-86, pp. 1-2. (SECRET -- Info used is UNCLASSIFIED) Later, Richardson was the first recipient of the Franklin Delano Roosevelt Award, given every three years by the Society for History in the Federal Government to the official who has done most to promote the use and preservation of history in the federal sector.

16. Oral history interview with General William R. Richardson, 27 August 1986, by Dr. H.O. Malone, Jr.

Training Activity, the Center for Army Lessons Learned, and the Combined Arm Operational Research Activity. A final significant reorganization was his idea t transform the Deputy Chief of Staff for ROTC into the ROTC Cadet Command as major subordinate command of TRADOC.

Vuono

General Carl E. Vuono, who had commanded the Combined Arms Center an most recently served on the Army Staff as Deputy Chief of Staff for Operations an Plans, assumed command of TRADOC in June 1986. He soon announced that h mission focus would have two aspects. Taking a somewhat less restricted view o the concept of preparing the Army for war than had Richardson, Vuono stresse that TRADOC had to not only prepare the Army for war today, but it must loo farther ahead in time as the architect of the future.[17] He stressed that TRADO must consider the whole spectrum of war, and while addressing current challenge not neglect the design of the force ten to fifteen years out. He reoriented the te TRADOC goals into four major areas of responsibility: doctrine, force moderniz tion, leader development, and leading and caring. TRADOC's responsibility was t insure understanding of what the Army must be to win on the future battlefiel That understanding would provide vision and direction for the Army.

Vuono understood that doctrine had to apply to the Army and had to be oper tive in the joint and combined arena. It was imperative that doctrinal publicatio from echelons above corps, through corps, division, all the way down to the brigad manual be in harmony with the overall doctrine. Vuono instituted guidelines fo doctrinal development to assist in the evolution of the doctrine. In the trainin arena, Vuono developed the concept of the advanced collective training facilitie which led to the opening of the Joint Readiness Training Center at Fort Chaffe Arkansas, and the Combat Maneuver Training Center at Hohenfels, Germany, an the initiation of the Battle Command Training Program at Fort Leavenworth. E forts in force modernization concentrated on improved application of the Conce Based Requirements System and a new emphasis on a systems of systems approac to equipment modernization to exploit opportunities for commonality. Leader de velopment was concentrated in the development of small group instruction and th invigoration of the noncommissioned officer education system. Leading and ca ing addressed excellence in the individuals and the installations of which they we a vital part.

Toward that end, the command instituted procedures for developing a lon range plan. The long range plan was designed to facilitate construction of the var

17. TRADOC Hist R, 84-86, p. 3. (SECRET -- Info used is UNCLASSIFIED)

ous programming documents. It was to be the vehicle through which the future would not only be addressed, but, significantly linked to the present. Vuono's emphasis on the immediate fifteen year future helped concentrate all the mission areas into a manageable, and foreseeable, time period. The longer-range projection was taken up in a further plan titled Army 21.[18]

Thurman

General Maxwell R. Thurman, having served previously as Vice Chief of Staff of the Army, continued General Vuono's work when he became TRADOC commander in June 1987. He reaffirmed Vuono's four primary mission elements but broke out the combat developments mission element into two components--force design and equipment requirements--and added mission support as a new element. He stressed the role of TRADOC as the key player in shaping the azimuth for the Army of the future.[19]

Thurman's stated objective was to serve the Army in the field. That would be accomplished by writing the doctrine by which it would fight; testing that doctrine for soundness; designing well-balanced and capable forces; articulating the equipment requirements of the commanders-in-chief in the field; providing combat-ready soldiers to units around the world; and developing future leaders.

General Thurman's vision was set forth in what came to be known as Vision 91, which encompassed six mission elements--characterized by Thurman as TRADOC's "domains" -- doctrine, force design, equipment requirements, leader development, training, and mission support. By anticipating changes in the strategic environment and in available technology, new concepts were developed. Those became the basis for evolutionary change in doctrine which drove developments in force design. Thurman stressed the importance of dialogue between the Army and industry to accurately articulate requirements, capitalize on feasible and available technology, and provide soldiers with the best equipment while reducing the time span of the development, acquisition, and production cycle.[20]

Vision 91 examined the central question of how the command should position itself to meet the challenges of 1991 and beyond. That period would be a time of substantial manpower and funding constraints. Vision 91 sought to address the evolution of doctrine, especially in the joint arena; a more focused force design; a system-of-systems approach to materiel development; full service leader develop-

18. Oral history interview with General Carl E. Vuono, Commanding General, U.S. Army Training and Doctrine Command, 14 February and 11 June 1987, by Dr. H.O. Malone, Jr.

19. TRADOC AHR, CY 87, pp. 2-3. (SECRET -- Info used is UNCLASSIFIED)

20. TRADOC AHR, CY 88, pp. 4-7. (FOR OFFICIAL USE ONLY -- Info is not protected)

ment; tough, realistic training; and well-developed mission support capability. Due to the bleak funding environment, specific areas of interest included an erosion of training, an inhibited combat developments program, and a heavily indebted base operations function.

While Vision 91 addressed the immediate period, Thurman developed a TRADOC planning vision for the coming thirty years titled TRADOC Long-Range Planning Vision which solicited the thoughts of the subordinate commanders toward the further development of a new TRADOC long-range plan. Significant points of interest included the concept of competitive strategies, the emerging Army missions of nation building, security assistance, and counterinsurgency, and the need to develop a flexible responsive force.

Foss

General John W. Foss, who had earlier headed the Infantry School and most recently served as Deputy Chief of Staff for Operations and Plans on the Army Staff, assumed the leadership of TRADOC in 1989 as the Army began a period of downsizing and strategic reorientation. A variety of factors, international, national, political, and economic, had combined to compel the Army to change into a more flexible, smaller force. Foss stressed that TRADOC had to avoid the false efficiencies of bureaucratic approaches. Leadership was to be focused on integrity, openness and trust, bold risks, and a clear view about which priorities took precedence.[21]

During Foss' tenure, the concept of the three TRADOC integrating centers, which had traditionally been part of the organization, changed. In 1990 the three centers, Combined Arms, Logistics, and Soldier Support, were replaced by two major subordinate commands: the Combined Arms Command and the Combined Arms Support Command. The new Combined Arms Command changed its role through absorption of some combat developments functions from the headquarters and through consolidation with the former Combined Arms Combat Developments Activity and Combined Arms Training Activity. The second aspect of the reorganization efforts merged the Logistics Center with the Soldier Support Center resulting in the creation of the Combined Arms Support Command headquartered at Fort Lee. Similar types of activity were studied in the Future TRADOC conceptualization which envisioned the establishment of warfighting centers, groupings of branches with related battlefield functions to provide a focus for common effort in developing

21. TRADOC ACH, CY 89, p. 13. (FOR OFFICIAL USE ONLY — Info used is not protected)

products relating to doctrine and equipment.[22] Also in October 1990, TRADOC eliminated the installation contract by which the TRADOC commanding generals had managed the outlays of the installations since the mid-1970s.

As the effects of geopolitical change were felt during the course of 1990, accelerated by the deployment of American troops from Germany to the Persian Gulf, the Army's forward deployed and forward-defense focus in Europe shifted to a concept of forward-deployed forward presence.[23] The primary focus of the Army began to shift to the projection of land combat power from the continental United States, as well as from forward-deployed forces where possible. That had implications across the force, from warfighting doctrine to organizational structure to equipment to training.

With the perception of a shifting threat, reductions in budgets, force structure, personnel, and modernization were to be expected. Reorganization and regionalization of function were themes explored. While preparing the Army for the challenges of the early and late 1990s, TRADOC was guided by the six imperatives of the Chief of Staff of the Army, General Vuono: to recruit and retain a quality force, to refine warfighting doctrine, to maintain the right force composition, to train the force, to continue to modernize, and to develop leaders. Notable was the congruence between the Army Chief of Staff's imperatives and the TRADOC mission.[24]

Foss addressed doctrinal challenges and changes through AirLand Battle-Future studies, doctrinal discussions, and map exercises, focusing on the nonlinear battlefield and the doctrine, organization, and logistics it would require. AirLand Battle-Future, later termed AirLand Operations, became the driving concept for TRADOC. Further, Foss directed the beginning of a revision of FM 100-5 to expand the doctrine into the strategic realm. In August of 1990, the United States launched Operation Desert Shield, and TRADOC shifted a great percentage of its time and effort to going to war, a topic covered later in this account.[25]

Franks

General Frederick M. Franks, Jr., who had earlier been Deputy Commandant of the Command and General Staff College, became the eighth TRADOC

22. TRADOC ACH, CY 90, pp. 14,22. (FOR OFFICIAL USE ONLY — Info used is not protected)

23. See Chapter XI, "Adjusting to Radical Change in the Threat."

24. TRADOC ACH, CY 90, p. 8. (FOR OFFICIAL USE ONLY — Info used is not protected)

25. Oral history interview with General John W. Foss, Commander U.S. Army Training and Doctrine Command, 25 July 1991, by Dr. H.O. Malone, Jr.

commander in August 1991. Concurrent with Foss' command of TRADOC, Franks had commanded VII Corps during Operation Desert Storm, and hence brought with him a distinctive background and experience as a senior commander in combat which would continue to influence his outlook and actions as TRADOC commander.[26]

The new TRADOC commander began anew the doctrinal revision of FM 100-5. Convinced that doctrine was the basis of change and had to be a centerpiece of TRADOC activity, revision of FM 100-5 became a top priority to lead the Army through the intellectual readjustment from the Cold War to the post Cold War Army. Franks stressed the need for maintaining the edge of excellence in doctrine, organization, training, materiel, leader development, and in the soldier system. Toward that end, he instituted battle laboratories as means to develop the capabilities for a force projection Army. The battle laboratories focused on the areas where the battle appeared to be changing and encouraged experimentation using simulations, prototypes, real soldiers, and real units to make the best use of technology and new requirements. Along with preparing the Army for war and designing its future architecture, Franks stressed that TRADOC needed to foster organizational excellence as an institution and maintain a winning team poised to take on the challenges of the future.[27]

Franks set those ideas down in five points of main effort: Lead the Army through intellectual change, sustain excellence and relevance in training and leader development, propose modernization alternatives to maintain the technological edge for soldiers on future battlefields, foster organizational excellence, and focus on soldiers. In his long-range planning guide for TRADOC, Franks interpreted TRADOC's missions specifically. They were to set training standards and run the Army Schoolhouse, provide modernization alternatives while representing the user in order to allow the Army to retain the battlefield edge, help the Army look to the future in warfighting, and foster organizational excellence. TRADOC's mission essential task list included joint and combined warfighting concepts and doctrine designed to achieve decisive victory with minimum casualties across the operational continuum; organizations structured and tailored to fight as combined arms teams and effectively accomplish joint and combined missions; modernized equipment developed from operationally focused requirements; mission focused and motivated soldiers trained in tough, realistic, tactically-competitive programs led by adaptive, creative, competent officers and noncommissioned officers developed through sequen-

26. Office Call with General Franks by TRADOC Chief Historian, 4 September 1991.

27.(1)TRADOC ACH, CY 91, pp. 7-8.(2)Oral history interviewswith General Frederick M. Franks,Jr.,Commanding General of U.S. Army Training and Doctrine Command, 2 January 1992 and 7 January 1993, by Dr. H.O. Malone, Jr.

tial and progressive programs in Army institutions and units; and soldier and family support systems within a command climate that fosters excellence in training, sustaining, caring for, mobility, and deploying a force projection Army.[28]

Hartzog

General William W. Hartzog became the ninth commanding general of the Training and Doctrine command in October 1994. Prior to TRADOC command, he served as operations officer for the United States Southern Command during Operation JUST CAUSE in Panama and Deputy Commander of the United States Atlantic Command during Operation UPHOLD DEMOCRACY in Haiti. Thus, like his predecessor, Hartzog came to TRADOC with recent experience as a senior commander in operational settings. Also as with Franks, his efforts to meet the challenges of being TRADOC commander took place against a background of a new global reality in which the primary concern was no longer a classic European air and ground war, but rather the possibility of many small operations. Further, the dramatic downsizing of forces to levels not seen since the pre-World War II era also shaped Hartzog's and the command's thinking and policy. Another factor that he had to consider in shaping the force of the future was the Army's increasing involvement in peace operations, nation-building, and humanitarian relief.

Hartzog's thinking about the twenty-first century Army was set down in the Force XXI Operational Concept. The concept itself was the result of the integration of experimentation in the Army's new Battle Labs, experience, and open-ended conceptual thinking. The key to the developmental work on Force XXI was a digitized, experimental Task Force (EXFOR) that stood up at Fort Hood, Tex. in 1994. Central to the shape of future forces were a series of Advanced Warfighting Experiments (AWE) beginning in April 1994, prior to Hartzog's arrival at TRADOC, and continuing through March 1998. Looking even further into the future was an Army After Next project that sought to establish criteria for the Army by the year 2020.[29]

Hartzog's tenure through early 1998 also saw the publication of two versions of TRADOC Pam 525-5 based on the Force XXI concept and leading to the publication of a new FM 100-5, *Operations*, the first FM-100-5 for Army XXI. The concept also guided the development of tactics, techniques, and procedures (TTP) to be employed by the experimental force in executing the

28. TRADOC Plan FY 1994-2022, April 1993. For Franks' work in doctrine and combat developments arenas, see below, Chapter XIII.

29. General Hartzog outlined his ideas and efforts toward the future of the Army in *Force XXI: Land Combat in the21st Century* (Fort Monroe, Va.,: U.S. Army Training and Doctrine Command, 1996).

various AWEs. In turn, the TTPs supported further doctrine development for the execution of operations across the seven battlefield operating systems and at each echelon of operations. Concurrently, Hartzog provided guidance for Army Training XXI being developed simultaneously with operational capabilities.[30]

30. For a more detailed discussion of Army Training XXI see Chapter IX.

Chapter IV

FORCE DESIGN

Designing the "TOE Army," the division, corps, and theater designs and all the 1,200-odd various tables of organization and equipment for "type" units, platoon through corps and above that made up the Army in the field, was a central part of TRADOC's work. The design and adjustment of the organizations of the tactical Army was a continuous process, as new or upgraded weapons or equipment were introduced or when doctrine forced changes to tank platoons, mechanized infantry battalions, or cavalry troops. But doctrinal, weapon, and policy changes periodically created the necessity for larger division reorganizations. The Department of the Army implemented one such major reorganization of the tactical Army during the period, the first since the ROAD (Reorganization Objective, Army Divisions) changes of the early 1960s. The tables of organization and equipment of the Army of Excellence, or AOE, designed by TRADOC in 1983-1984 and implemented between 1984-1986, gave organizational structure to Air-Land Battle doctrine and to the new generation of weaponry introduced into the force in the late 1970s and the 1980s. The AOE rested in great part, however, on major reorganization studies that preceded it, the Army 86 Studies undertaken by TRADOC between 1978 and 1982.

Army 86

In September 1978, the TRADOC commander, General Starry, undertook the first of the major Army 86 reorganization studies, the Division 86 project. It focused on the Army's primary fighting unit — the heavy division, which existed in two types, armor and mechanized infantry. The major first part of what would become a four-year effort, Division 86 had been preceded two years earlier by a historically-based study of division design carried out by General Starry's predecessor, General DePuy, in 1976. This effort, known as

the Division Restructuring Study, or DRS, was conducted under the direction of Lt. Col. John Foss.[1]

The lessons of the 1973 Mideast War, noted earlier, that proved so consequential in training reform and doctrinal change, had had similar impact on thinking regarding Army tactical organization. Did the current ROAD divisions have the structural strength and the right design to meet the heavily armed modernized forces that had evolved by the early 1970s? The assumption of the 1976 study and the Army 86 inquiries that followed was that those organizations, despite strengthening over the years, could no longer efficiently harness the combat power of the weaponry they possessed. New systems in development and scheduled for production in the 1980s, such as the M1 tank, a new infantry combat vehicle, and an advanced attack helicopter, would present an even greater leap ahead in combat power.

DePuy's heavy division concept, set forth in the DRS and approved by the Chief of Staff of the Army in January 1977 for testing, advanced bold design ideas. They included smaller companies and smaller but more maneuver battalions — up to fifteen — to better manage increased firepower. Other innovations were smaller three-tank platoons, a new TOW[2] missile company in each maneuver battalion, 8-howitzer artillery batteries, and other changes. Evaluated during 1977-1978 in tests in the 1st Cavalry Division at Fort Hood, the Division Restructuring Study concept did not survive. The radical change it embodied in span of control, doubts about its test methodology, and other concerns led General Starry to undertake study of the heavy division anew in much greater analytical depth.

Starry's Division 86 Study focused on the heavy division as the element of the fighting Army critical to the prime strategic theater of central Europe. Starry approached analysis of the division problem by means of battlefield functions such as target servicing and reconstitution, grouped under his Central Battle concept and tied to the doctrinal notion of disrupting the enemy second-echelon forces. Within that framework, planners developed operational concepts to take advantage of the increased combat power of the new materiel systems coming on by 1986 and the organizations that would employ them.

The Division 86 design effort and most of the Army 86 Studies that followed were carried out by a TRADOC-wide force design network consisting of functional task forces at the centers and schools. The Combined Arms Center at Fort Leavenworth drew the effort together. Division 86 was an extensive effort, employing analyses and war gaming of alternative structures and side

1. This section is based, except where otherwise noted, on Romjue, *Army 86*, Vols I and II.

2. TOW: tube-launched, optically-tracked, wire-guided

studies. Its depth may have been unprecedented in Army tactical unit reorganization.

In brief, the Division 86 heavy division, much of the structure of which survived into the 1980s Army, numbered approximately 20,000 men. There were 6 tank battalions and 4 mechanized infantry battalions in its armor version, 5 and 5 in its mechanized infantry form. It added a significant new component in an air cavalry attack brigade, and it expanded the division artillery with batteries of 8 howitzers. It departed the World War II and ROAD triangular principle by strengthening each maneuver battalion from 3 line companies to 4 and adding TOW missile companies and other changes.

Work on other Army 86 elements began in the fall of 1979 in the Infantry Division 86, Corps 86, and Echelons Above Corps 86 Studies, completed in 1980. In August and September of that year, Army Chief of Staff General Meyer approved Division 86 for implementation, Corps 86 for planning as the base design for NATO deployment, and the echelons above corps structures for theater army force planning and design. Results of the Infantry Division 86 Study, focused on the nonmechanized or straight infantry division, were less satisfactory. The essential problem was that a strategically and numerically light design was sought while a heavy NATO reinforcement mission was imposed.

In August 1980, the Army 86 planners began further light force studies. Those efforts reflected a growing concern that, however serious was the challenge in NATO Europe, U.S. Army forces had to be equally prepared for rapid deployment to meet contingencies in the non-NATO world. Since the Vietnam withdrawal, and up to the very close of the 1970s, U.S. national and defense policies had paid little attention to the prospect of U.S. military action elsewhere in the world. For the Army, such policies meant an almost exclusive focus on the development of heavy forces. Indeed, it was only in 1979, with the Afghanistan and Iranian crises, that that tide was reversed and a search for lightness in Army force design began. During 1979-1980, national and defense leadership became increasingly alert to the need for flexible contingency forces including more rapidly deployable light divisions.

In 1980 the design dilemma of the infantry division moved the Chief of Staff of the Army to establish a "High Technology Test Bed" in the 9th Infantry Division at Fort Lewis, Wash. His idea was to test concepts toward development of a lighter "high technology light division." TRADOC and Army Materiel Command planners cooperated with the division's parent commands—I Corps and the Army Forces Command—in that effort. Though valuable ideas emerged from the test bed, such as new command post concepts and palletized

loading procedures, no high technology light division eventuated. In the midst of the major modernization and buildup of the 1980s, the significant funding requirements for the equipment needed to realize the basic concept proved unobtainable.

During 1981-1982, TRADOC pursued work in the other light portions of Army 86 — in the Contingency Corps 86 and Echelons Above Contingency Corps 86 Studies and in redesign plans for the airborne and air assault divisions. Decisions on those final Army 86 efforts, however, were deferred pending a solution to the light infantry division problem. The contingency corps and echelons above contingency corps studies ended as force design exercises only.[3]

The infantry division dilemma was part of the larger problem of the whole Army 86 design effort. The heaviness of its major structures, needed to meet the armored and mechanized infantry threat posed by the Warsaw Pact, ran aground on an inflexibly capped Active Army end strength prevailing in the early 1980s. Indeed, that end strength, at 780,000 personnel, was not subsequently raised. As the transition to Division 86 began in U.S. Army Europe and the Forces Command heavy divisions, there was not enough Active Army strength to accommodate it. That was true despite a large admixture of reserve component units at corps level and above, as well as well as reserve roundout brigades and battalions in several Forces Command divisions. Downward restructuring of the heavy division during 1982 did not materially affect the impasse.[4]

The Army of Excellence

The design dilemma which the Training and Doctrine Command faced in the straight infantry division was remedied in June 1983. That month, General John A. Wickham, Jr. became Army Chief of Staff and directed the TRADOC commander, General William R. Richardson, to design a new, strategically deployable light infantry division limited in strength to approximately 10,000 personnel, globally deployable in approximately 500 airlift sorties. In order to accommodate this essentially new division type to the rest of the Army force structure, Richardson got authority to review and redesign the entire TOE Army. The Army of Excellence effort, so styled,[5] proceeded through the late summer and fall of 1983, guided in part by the historical perspective gained through an

3. Romjue, *The Army of Excellence*, Chap. I

4. Ibid.

5. Secretary of the Army John O. Marsh had designated 1983 as the "Year of Excellence," in accordance with the practice of adopting a theme for each year.

examination of the deficiencies of the World War II experimental light divisions.[6]

Undertaken by the Combined Arms Center with support from the TRADOC branch schools, the AOE effort developed and put in place the force designs of the 1980s Army. Planners redesigned each of the five Active Army corps — the V and VII Corps in Germany, and the I, III, and XVIII Airborne Corps in the United States — against theater specific war plans. All elements of the tactical Army and all division types were reexamined. The Army of Excellence organizations resulting did not supplant, but modified the previous Army 86 designs, with the notable exception of the new light infantry division. Such Army 86 design features as 8-howitzer batteries, forward support battalions, and 4-company heavy-division maneuver battalions remained. In the effort, the participation of the major Army commanders was constantly registered. The Chief of Staff of the Army approved the basic AOE designs developed by TRADOC in decisions of October and November 1983.

The centerpiece of the reorganization, the light infantry division was a 3-brigade organization with 9 battalions of straight foot-infantry, with a strength eventually set at 10,800 men. Deployable in approximately 550 C-141 airlift sorties, it was oriented specifically to contingency actions worldwide where response in the first days of a crisis was critical. Lacking armor and heavy howitzers, the division was structured on shock tactics rather than sustained firepower. Based on the historical lessons of World War II, force designers incorporated "corps plug" augmentation forces into the scheme to make up for the lack of firepower and logistical capability. By concept, an early-arriving light division could buy time for heavier forces to follow. The light division had a secondary mission of reinforcement of heavy forces in scenarios and terrain where it could be more effective than those forces — in cities, forests, and mountain areas. Many light infantry division capabilities were austere. The division — contingency focused — was conceived and approved as a hard-hitting, highly trained, elite light force, with high esprit and cooperation essential to its success. The design went through a successful certification process in the 7th Infantry Division (Light) at Fort Ord, supported by the TRADOC test organizations, during 1984-1986.

Creation of the AOE light infantry division embodied a noteworthy turn in the history of Army tactical organization. With it, the Army fashioned a division for use primarily in the contingency world, with only a collateral mission for reinforcement of heavy forces and only then where terrain and circumstance called for it. Ordinarily it would fight in components as part of an inte-

6. See Romjue, *The Army of Excellence*, Chapters II and III for a detailed discussion of the AOE design effort.

A significant aspect of the Army of Excellence was the strengthening of Ranger and Special Forces units to meet the challenge of low intensity conflict. In April 1987, the Special Forces was established as a separate Army branch.

integrated heavy/light or light/heavy force. The light infantry division gave the Army a new and necessary flexibility. Force structure decisions followed which converted two nonmechanized infantry divisions to the new type and added two more in the Active Army and one in the reserve components for a total of five light infantry divisions. Army division totals in the AOE reorganization went from 16 Active Army and 8 Army National Guard to 18 and 10, respectively.[7]

In the newly designed Army of Excellence, TRADOC force designers reduced the heavy divisions to structures of approximately 17,000. The heavy divisions retained 10 maneuver battalions, but infantry squads and artillery crews went from 10 men to 9. Significant transfers from division to corps in field artillery, air defense artillery, and combat aviation left the divisions smaller with less organic combat power.

Though reduced in capability, the heavy divisions of the AOE were the constituents of a scaled-up heavy corps. The additions strengthened the corps, enabling it to fight the AirLand Battle with added power. The redesigned corps thus provided a more powerful fighting organization at the operational level of war. The AOE design of heavy divisions and corps moved Army tactical organization more fully into consonance with doctrine at the most significant level of organization.

7. For a documented account of the debate of the light infantry division, see ibid., Chap. VIII.

Significant for the Army of Excellence in addition was the strengthening of Army Ranger and Special Forces units to meet the challenges of low intensity conflict in the unstable third world. Those additions included a third Ranger battalion and the organization of a Ranger regiment, and the addition of a Special Forces group. In April 1987, the Special Forces was established as a separate Army branch. Strong Ranger components were channeled into the new light infantry divisions.

The force designs of the 1980 Army were not without controversy. Primary criticisms of the light infantry division were that it was too light, lacked tactical mobility, and that its likely adversaries in the increasingly heavily armed third world would out-gun, outmaneuver, and defeat it. But in the context of the more powerful corps to which it belonged, the AOE heavy division found general acceptance. There was recognition that the corps together with its divisions retained, as a unit, very strong combat power and that it constituted the right doctrinal answer.

Accompanying the debate of the light division was evolving support for the utility of heavy/light or light/heavy mixes of forces. Such mixes made good tactical sense where mission, enemy, terrain, troops, and time available — the "METT-T" considerations of doctrine — dictated the need and the wisdom of mixed forces.

Although to a degree open to criticism that it had overemphasized combat power at the expense of support units, the Army of Excellence met the twin challenges for which it was fashioned: the deterrent defense of NATO Europe in the final period and last challenge of the Cold War, and the provision of rapidly deployable light infantry forces for force packages needed to defend U.S. interests worldwide. Whatever the insufficiency in support units, the AOE that emerged was—in its training, advanced weaponry, war fighting doctrine, and organization —a professional Army of a high order attained by few armies in modern history.[8]

Force XXI

Not the current Army force but the mid-term force projected for the early 21st century was the focus of most force design activity in the mid-to-late 1990s. That design project, titled Force XXI, began on 8 March 1994 when Chief of Staff of the Army, General Gordon R. Sullivan, directed the start of the major campaign effort to lead to the future Army in the early years of the next century. Progressing toward incremental realization at the year 2000, the Force XXI

8. Ibid., Assessment.

redesign was the last of the major operational Army reorganizations of the 20th century and would supersede the Army of Excellence which had been implemented in the mid-1980s.[9]

The Force XXI project was a methodological departure from all previous such efforts in two revolutionary ways. It was the first force redesign effort in which a full panoply of newly-emergent, computer-driven constructive and virtual simulation methods, equipment, and software were joined to actual live field simulation to test and analyze new military unit designs. In addition, the multiyear Force XXI design effort was the first to invent and embody for those fighting units a linked, instantaneous, and common picture and awareness of the close and distant events of the unfolding battle of which they were part. "Digitization" was the rubric given this revolutionary emerging capability.

In 1993, TRADOC had written a new, more versatile, fundamental operational doctrine to fit the new strategic circumstances of a smaller, primarily U.S.-based force-projection Army.[10] The command had additionally developed—and in August 1994 published—a concept for the Army of the rapidly approaching 21st century. That was TRADOC Pamphlet 525-5, *Force XXI Operations*, a further conceptual evolution from the force-projection and full-dimensional operations ideas of the 1993 doctrine.[11] On the basis of the new post-Cold War doctrine, and with TRADOC's mid-future concept in formulation, Sullivan approved, on 12 April 1994, a "Joint Venture" mission which would be one of three multi-year axes of Force XXI. Led by TRADOC, Joint Venture was the project to redesign the operational Army on a new information-or-knowledge-basis. The second axis, led by Headquarters Department of the Army, was the redesign of the institutional Army. The third axis was guided by an Army Digitization Office. Guiding all three axes of the Force XXI campaign—at that time—was Sullivan's Louisiana Maneuvers Task Force established in March 1992.[12]

Army and TRADOC planners saw Force XXI—the Army to emerge between 2000 and 2010—as a distinct change from the current force. They saw it as a new departure, an Army with a flexible engagement strategy structured in 21st century technology, knowledge-based, and built on capability, not threat

9. For 1994 background on the start-up of the Force XXI project, see John L. Romjue, TRADOC ACH, CY 94, pp. 129-35. For developments of 1995 and 1996, see Romjue, "Force Design and Equipment Requirements," Draft, TRADOC Military History Office (MHO), 1997.

10. For a discussion of the revision of FM 100-5, see Chapter VI.

11. For a discussion of the conceptualization and writing of TRADOC Pam 525-5, see Chapter VI. See Romjue, *Doctrine for the Post-Cold War*, for a documented account of how and why the Army developed the new operational doctrine instituted by the FM 100-5 edition of June 1993.

12. For a documented history of the Louisiana Maneuvers effort, see James L. Yarrison, *The Modern Louisiana Maneuvers: Changing the Way We Change*, (Washington, D.C.: U.S. Army Center of Military History) forthcoming. The Louisiana Maneuvers organization was disestablished officially on 1 July 1996.

projections. Its lethality, survivability, and operational tempo all would markedly increase. Shared "situational awareness" by its leaders and soldiers and real-time battlefield information would transform its offensive and defensive power.[13]

The key development vehicle in planning was a division-sized Experimental Force, or EXFOR, for which TRADOC had prepared the concept in 1993. (The EXFOR was formally established in March 1995). Its main idea was the conversion of an existent brigade and division into a test bed to test-out and evolve into the desired future force designs. In December 1994, the Army had designated the 2d Armored Division (reflagged as the 4th Mechanized Infantry Division in January 1996)) at Fort Hood, Tex. as the EXFOR.

While the EXFOR was the experimental vehicle, digitization was the key to the whole vision of Force XXI. Digitization was literally defined as the uses and applications of computer keyboard-generated communications. It originated for the U.S. Army in the early 1990s in the testing out and early linking of digital systems on board Army vehicles and other equipment—a concept known as "horizontal technology integration." The concept of a digitized battlefield sprang from that emerging idea. In theory, the electronic linking of a real-time (or near-real-time) visual display of the ongoing battle to every unit and weapon system in a battle force permitted common situational awareness by all the soldiers and leaders engaged. The net work of awareness allowed the commander to command, control, and synchronize all elements of his combat power with a knowledge and quickness far exceeding the enemy commander's.

Much preparatory work by the TRADOC battle laboratories preceded the Army Chief of Staff's formal launching of Force XXI.[14] Between September 1992 and April 1994, TRADOC carried through a sequence of experiments and simulations to examine the emerging digitization concept. In the first of these in fall 1992, planners conducted live simulations with an M1A2 tank platoon in a field experiment at the National Training Center (NTC) at Fort Irwin, Calif. Constructive and virtual simulations followed at the National Simulation Center at Fort Leavenworth in December 1992. A March 1993 experiment posed live simulations with a mini-combined arms team, followed in July that year by live simulations with a company-team at the NTC.

These preliminary tests led to the first of the TRADOC-fielded "advanced warfighting experiments" (AWE) in April 1994. Code-named Desert Hammer

13. For a detailed discussion of the vision of Headquarters TRADOC personnel responsible for the development of Force XXI and especially Joint Venture, see U.S. Army Training and Doctrine Command, *Force XXI: Land Combat in the 21st Century*..

14. See Chapter VI for a discussion of the establishment and missions of the TRADOC battle laboratories ("battle Labs").

These vehicles, visually modified to resemble Soviet T-72 and T-80 main battle tanks, belonged to the National Training Center's "opposing force" (OPFOR) that provided opposition for elements of Task Force XXI during Advanced Warfighting Experiments.

VI, the experiment took place during Rotation 94-07 at the NTC. In simulated and instrumented battle against the NTC's superbly trained opposing force (OPFOR), a brigade-level force from the 24th Infantry Division (Mechanized) was equipped with digitized displays of position location and communications that allowed forces to receive near-real-time information during the battle. Although imperfect in this first trial, Desert Hammer in effect proved the principle of digitization.[15] Results of the experiment showed that troops failed to have ample time to train and that too much new equipment was fielded for troops to absorb so quickly. But the exercise released an avalanche of technological, organizational, doctrinal, and training implications, the addressing of which set the course for Force XXI planners over the next three and a half years. By the end of 1994, planners had outlined a series of AWEs to lead up to AWEs in 1997 to examine a digitized brigade—Task Force XXI—followed by a digitized division—Division XXI.[16] Also in early 1995, General Sullivan released a prime directive setting forth the functions and organization of the EXFOR and the future activities of Force XXI.[17]

Meanwhile, the TRADOC commander, General William W. Hartzog, who had succeeded General Franks in October 1994, advised the field of the many

15. (1) For formal and detailed results of the 1994 AWE, see Final Report, Advanced Warfighting Experiment Operation Desert Hammer VI, 3 vol., Fort Knox, Ky.; U.S. Army Armor Center, Mounted Warfighting Battlespace Lab 28 july 94. (2) For more detailed analysis of Desert Hammer VI, see John L. Romjue. "Force Design and Equipment Requirements," Draft, MHO Files, 1997.

16. TRADOC ACH, CY 94, pp. 129-35.

17. (1) Memo DACS-ZA, General Gordon R. Sullivan, CSA to distr, 14 Feb 95, subj: Force XXI Experimental Prime Directive. This document sets forth detailed agency responsibilities, including those of TRADOC, and provides formal guidance for the future Force XXI efforts. (2) Romjue, "Force Design," MHO Files, 1997.

things the EXFOR would need in the coming year in order to meet the Force XXI milestones. Needed by 1 June 1996 were the division concept; tactics, techniques, and procedures for all units brigade and below; all items and plans to field-train the EXFOR in the latter part of 1996; organizational designs; communications and digital operations architecture; all applique hardware and software; and scenario, analysis, and data collection plans.[18]

TRADOC completed and disseminated the Force XXI Division Operations Concept on 12 June 1995. The concept served as the foundation for development of division organizational design in the following months and was grounded in the new operational environment of information technology. The division operations concept also figured as the basis for a series of how-to-fight seminars sponsored by TRADOC, beginning in August 1995.

Important to the evolving definition of the future Army were the AWEs of 1995. Conducted by the battle labs, they addressed theater missile defense; the mobile strike force concept; and the digital connection of armored units and of dismounted forces.[19]

The Theater Missile Defense AWE, conducted at Fort Bliss, Tex. in the spring, was one of several related joint and Army exercises tagged Roving Sands. The TRADOC AWE examined the integration of four theater missile defense operating elements: Attack operation; active defense; passive defense; and C4I. Live, constructive, and virtual simulations were featured in a variety of tactical scenarios and in five operations phases: Early-entry operations; defensive operations; transition; decisive operations; and recovery. The Roving Sands exercise integrated national, joint, and Army capabilities into a cohesive theater missile defense force.

The annual Command and General Staff College student simulation exercise held at Fort Leavenworth, Kan., and known as Prairie Warrior, served Joint Venture experimentation aims each spring in 1995-1996. The AWE Portion of Prairie Warrior was known as Mobile Strike Force, a futuristic division using 2010 technology and operating concepts. Supported by TRADOC's study in early 1995 of a "middleweight" fighting force, Prairie Warrior 95 and 96 examined staff organization, evaluated division-level operational concepts and helped validate Force XXI design principles. Using a variety of simulations, the exercise provided insight on all Army echelons from theater to battalion.

The third of the 1995 AWEs was Focused Dispatch, conducted at Fort Knox and the Western Kentucky Training Area in August. The primary pur-

18. Memo ATCG-P, General Hartzog to distr, 22 May 95,subj: Deliverables to the EXFOR by 1 June 1996.

19. The discussion of the 1995 AWEs is based on Romjue, "Force Design," Draft, 1997 and on TRADOC *Land Combat.*

pose of the exercise was to examine how digital connections might enhance an armored formation's fire support, intelligence, logistics, and battle command, to determine whether enhancements in lethality, survivability, and tempo would result. Focus Dispatch consisted of three constructive simulations, one virtual simulation, and a final exercise linking live and virtual simulation conducted concurrently at the two sites aforementioned. The exercise was an important way-point between Desert Hammer VI and the Task Force XXI experiment to come in 1997.

Warrior Focus, for light forces, was the fourth AWE of 1995, the purpose of which was to identify the best application of digitization and of "own the night" technologies for dismounted infantry. Conducted in the fall of 1995, the AWE featured constructive and live simulations at Fort Drum, N.Y. and culminated at the Joint Readiness Training Center at Fort Polk, La. Key to the experiment was interoperability between dismounted and mounted forces. Inclusion of a digitized, mounted team from the EXFOR at Fort Hood, Tex. supported the interoperability experiments. Own the night technologies proved very effective in both low-and mid-intensity conflict and were judged to be essential in providing significant operational and force protection improvements across the force.

Radio telephone operator, Co.B, 1st Bn, 5th Inf. Regt., Fort Lewis, uses the dismounted Soldier System unit during the Advanced Warfighting Experiment at the National Training Center, Fort Irwin, Calif.; in March 1997.

The Force XXI operational concept was the result of the integration of experimentation, experience, and conceptual thought. The concept described how planners thought they would want to fight and conduct military operations. But it was not a finished product. What remained to be done was the detailed developmental work that would lead to an Army capable of executing the Force XXI concepts. Central to the continuing developmental work was a

brigade level AWE (Task Force XXI) at the NTC in March 1997 and a computer-driven division level AWE (Division XXI) in November 1997 using the computers at Fort Leavenworth.

In the early months of 1998, General Hartzog and his Joint Venture planners were finishing the analysis of what happened in the division AWE. One of their first conclusions was that the Army and TRADOC knew better how to do the AWEs than they had earlier. Another discovery was that the smaller and more mobile command posts planned for Division XXI would work so long as the information management systems performed as well as they had in the latest AWEs. Hartzog also observed that war in the future would be joint to such a degree that the Army needed to support joint experimentation to the extent that the command could. On the negative side, the TRADOC commander believed that here was a considerable amount of "human engineering" still to be done. "We continue to see that humans are different and they deal with this information in different ways."

At the command's 25th year, TRADOC Force XXI planners continued to assemble all of the data from their efforts of the past three years looking to formulate a recommendation on what the design for the 4th Infantry Division should be over the next several years. Meanwhile development of technologically advanced weapons and equipment continued. At the same time, a light force planning effort centered around Fort Benning, Ga. had begun. Working closely with the U.S. Marine Corps, the planners goal was to determine the light force of the future in terms of size, organization, and equipment. General Hartzog summed it up this way:

> . . . we have certainly experimented enough to know that that's where we want to go, and we've done it with some pretty good surrogates and ones that work. What we have to do is we have to harden them, make them more soldier friendly, more survivable, more securable and things like that. Those things take a little time to do. Our target is by the end of 2000, to have that division ready to go.[20]

20. (1) TRADOC, *Land Power*. (2) General William W. Hartzog, interview by David Silverberg, "From Experiment to Execution," *Military Training Technology*, Feb/Mar 98, pp. 20-22. (3) Kerry Yates, "A Sense of AWE," *Military Training Technology*, Oct/Nov 97, pp. 7-9. (4) "Real Warriors, Virtual Battles," *Military Training Technology*, Dec/Jan 97, pp. 20-23.

Chapter V

DEVELOPMENT OF A NEW GENERATION OF WEAPONS

Combat Developments Management

As already noted, a major mission assigned to the new U.S. Army Training and Doctrine command on 1 July 1973 was combat developments—the systematic development of new and improved organization, equipment, weapons, and doctrine. Combat developments had not devolved directly from CONARC but had come from the discontinued U.S. Army Combat Developments Command, which had acquired the combat developments mission from CONARC in 1962. The merger of combat developments with the training mission in one command had been a guiding idea of the 1973 Army reorganization to reorient combat developments to the near future, to apply new and improved materiel, organization, and doctrine to field units quickly.

In its move from Combat Developments Command to the new U.S. Army Training and Doctrine Command, the combat developments function was significantly changed. The reorganization designated TRADOC as the Army's principal combat developer. The mission was decentralized to the branch and service school and united with training. That was accomplished as a result of a study done during the reorganization planning by Task Force ATLAS which led to the institutionalization of the functional center (later called integrating center) concept. The functional centers were to provide mid-management means to synthesize the products of the combat developments agencies and service schools. Schools were to play the basic role in the combat developments process, so with the combat developments reorganization came the development of a standard school structure.[1]

1. (1) TRADOC ARMA, FY 74, pp. 151-153. (SECRET — Info used is UNCLASSIFIED) (2) For further reference, see Chapter IV, "A Training Revolution."

Four basic elements constituted the TRADOC combat developments structure — the headquarters element, the Deputy Chief of Staff for Combat Developments; the functional centers; the schools; and the test and evaluation agencies. TRADOC directed its combat developments responsibilities through the Deputy Chief of Staff for Combat Developments which was established as the focal point for assigning projects and allocating and accounting for resources. Functions charged to TRADOC included conducting studies toward developing doctrine, materiel requirements, organizations, and designated functional centers; providing guidance and assigning combat developments tasks to other Army commands and agencies; conducting field experiments and participating in other experiments, tests, and evaluations undertaken to support combat developments projects; monitoring development testing and participating in operational testing; developing required operational capability documents and reviewing and evaluating for valid need such documents developed outside TRADOC; developing the Army contribution to joint doctrine; integrating outside combat developments recommendations and products into the larger effort; and incorporating the Army's combat developments products and other developments into doctrinal and organizational literature for publication.[2]

The three functional centers directly subordinate and reporting to TRADOC headquarters—the Combined Arms Center at Fort Leavenworth, the Logistics Center at Fort Lee, and the Administration Center at Fort Benjamin Harrison—directed, coordinated, and integrated the combat developments work of the Army schools with which each was functionally associated. Each center possessed authority to assign projects to its associated schools and maintained responsibility for the consistency, accuracy, and currency of doctrine developed by the schools.[3]

The basic elements of combat developments were the Army branch and specialist schools. The school model that emerged joined the missions and functions of the former CDC agency with those of the associated former CONARC school. The school commandant had responsibility for both combat developments and the training education missions. The missions, therefore, would merge in the day-to-day contact and cooperation of developers and instructors.[4]

The fourth aspect of the combat developments system within TRADOC were agencies designed to provide data and reports from tests and experiments keyed to specific concepts and projects. Of those agencies, the Combat Devel-

2. TRADOC ARMA, FY 74, p. 159-160. (SECRET — Info used is UNCLASSIFIED)

3. In 1977 the functional centers were strengthened and renamed integrating centers. For more detail, see Chapter X, "Organizational Structure."

4. TRADOC ARMA, FY 74, p. 165. (SECRET —Info used is UNCLASSIFIED)

opments Experimentation Command (CDEC) at Fort Ord transferred from CDC with no change in mission or organization. The CDEC mission of conducting objective field experimentation remained. Working alongside was the Modern Army Selected Systems Test Evaluation and Review (MASSTER) at Fort Hood, retitled the TRADOC Combined Arms Test Activity in 1976 and reorganized and renamed once again, the TRADOC Test and Experimentation Command in 1988. MASSTER, and its successor organizations, conducted large-scale field tests that emphasized troop use and participation, fielding both operational tests of weapons and equipment and force development tests of organizations and tactics. Eight branch-oriented test boards rounded out the test and experimentation capability. Analytical organizations complemented the test activities.[5]

Of the three combat developments concerns—materiel, organization, and doctrine—materiel was a key element. In the changing art of war, materiel change often led the way. Materiel was the most difficult to develop, requiring long and expensive developmental programs. Materiel development remained a joint effort of TRADOC as the primary combat developer and the Army Materiel Command (AMC) as primary materiel developer. TRADOC played three essential parts in the effort. The first was to formulate and document needs or requirements for specific materiel. The second was to monitor the AMC development continuously, undertaking operational tests and analyses at critical points. The third role was to redraw organizations and refashion tactics as necessary to accommodate the new item. The combat developer determined a weapon's need and operational specifications, monitored its development, and determined its ultimate issue to and use by the Army in the field.

As significant to the evolving process of combat developments as the reorganization was the Mideast War of October 1973. TRADOC studied the war intensively, paying particular attention to the tremendous attrition of materiel and unparalleled lethality of modern weaponry. Those lessons greatly shaped the vision of modern war. Weaponry and equipment in development became subject to close scrutiny in a doctrinal framework, while TRADOC took steps to reform the materiel acquisition process. Reform of the tactical force was a recognition that modern armies in the 1970s were crossing a technological threshold. The lethality of fire, the tempo of battle, and the immense attrition of the Mideast War had demonstrated a quantum leap in weapons technology.

Modern weapons, with their demonstrated destructive potential, imposed new rules of fire control, maneuver and terrain use, electronic warfare, and the use of combined arms. An integrated systematic approach to development was imperative. The concept of the total weapon system was conceived. Combat

5. (1) TRADOC ARMA, FY 74, p. 166. (SECRET — Info used is UNCLASSIFIED) (2) The test and evaluation structure changed with time. See Chapter X, "Organizational Structure," for its chronology.

developers were to systematically man and support the systems. Trainers, logisticians, and personnel managers had to be brought into the weapon development process early enough to permit development and evaluation of the weapon's training, logistics, and personnel requirements.[6]

The total systems approach spawned the concept of the TRADOC System Managers, formally approved in March 1977.[7] The TSMs would represent all major weapon and materiel systems in development and would function with the power and authority comparable to the project managers of the Army Materiel Command. The TSM was charged with integrating and organizing the development process.

Introduction of a new Concept Based Requirements System (CBRS) in 1980 provided a development schematic, the goal of which was to place fighting concepts at the beginning of all TRADOC's products across the board—doctrine, materiel requirements, organizations, and training developments. The CBRS became the methodology with which TRADOC reformed its materiel acquisition strategy. The aim was to ensure that concepts determined technology, thus lessening the cost of research, development, testing and evaluation. The CBRS focused the requirements process to a new flow of concepts, analysis, identification of needs, and the simultaneous development of doctrine, organizations, training systems, and materiel.[8]

Materiel Modernization

As management techniques and strategies were being devised and emplaced, modernization of the force was occurring. Major weapons systems were under development over the course of the 1970s and 1980s. Modernization strategy called for upgrading the force by thirds with priority to forward-deployed units regardless of component. Displaced equipment from the first one-third flowed rearward. The modernization process was driven by doctrine and balanced by sets of individual modernization programs that encompassed all aspects of the battlefield. Key elements included aviation, armor-antiarmor, deep operations, fire support, air defense, and close air support

The 1970s and 1980s witnessed the launching of one of the most massive modernization programs in the history of the Army. The "Big Five"—systems of greatly increased combat power—including the M1 Abrams tank, the M2

6. TRADOC AHR, FY 77, pp. 2-4. (CONFIDENTIAL — Info used is UNCLASSIFIED)

7. TRADOC AHR, FY 77, p. 6. (CONFIDENTIAL — Info used is UNCLASSIFIED)

8. (1) TRADOC AHR, FY 81, pp. 121-126. (CONFIDENTIAL — Info used is UNCLASSIFIED) (2) TRADOC AHR, FY 82, p. 21. (CONFIDENTIAL — Info used is UNCLASSIFIED)

and M3 Bradley fighting vehicles, the Black Hawk and Apache helicopters, and Patriot air defense missile and the Multiple Launch Rocket System were developed and fielded. Those weapons systems all had their genesis in the Vietnam drawdown of the late 1960s and early 1970s. Anticipating a smaller force, the ability to catch and keep the technological edge in weapons and equipment was deemed imperative. At that point in time, the "Big Five" were the "big eight"—the weapons and equipment portrayed as most critical to the combat forces in the 1975-1980 period. At the top of the list was the advanced heavy attack helicopter, followed by a new utility helicopter, a heavy infantry antitank weapon, a service-wide digital tactical communications system, improved conventional munitions, a new heavy tank, a new surface-to-air missile system, and an integrated command and control and intelligence-gathering system. Other new initiatives of the early 1970s, which followed on through in some form into the 1980s, were individual soldier improvements, electronic warfare protection equipment, a battlefield control system, and an aerial scout.[9]

Over the course of time, the appearance and characteristics of some of the major systems changed, but not the impetus or drive to institutionalize the changes.[10] By 1974 the "big eight" had been reduced to five key developmental programs which included, in contemporary terminology, an advanced attack helicopter, a new main battle tank (the XM1), a mechanized infantry combat vehicle, a modern utility and transport helicopter, and a versatile sophisticated air defense system. Those were all major systems, but there were a host of literally smaller, and less expensive items simultaneously under development. Significantly, the Middle East War had influenced weapons development in more aspects than just providing a technological push. The conflict had generated two lines of thought in weapons planning, both significant to weapons development. The first was a renewed interest in effective yet inexpensive weapons available in the face of heavy equipment losses. The second was a greater emphasis on defense and defensive weapons, such as low level antiaircraft systems and other measures to protect tanks and helicopters.

Major and minor systems alike were addressed over the decade. To illustrate, in 1975 the squad automatic weapon first appeared in conceptual development along with planned improvements to the M16 rifle. The Franco-German Roland II missile system was selected to fill the Army's short-range all-

9. Assistant Secretary of the Army Robert L. Johnson asserted that, "Our smaller army simply cannot afford technological surprises on the battlefield." As quoted in Eric C. Ludvigsen, "Army Weapons, Equipment: Looking for a Break through," *Army, 1971 Green Book: A Status Report on the U.S. Army*, p. 122.

10. For instance, the Abrams was not the main battle tank envisioned in the late 1960s or developed into the early 1970s as the MBT-70/XM803. Similarly, the attack helicopter that became the AH-64 Apache was not the same attack helicopter that began as the AH-56 Cheyenne. Both of those major systems were terminated in 1972, but the initiative, and the demand, remained.

One of the significant weapons develpoed was the air defense system conceived to replace the Hawk and Nike-Hercules. Designated the Patriot, the system achieved dramatic results against Iraqi Scud missiles during Operation Desert Storm.

man Roland II missile system was selected to fill the Army's short-range all-weather air defense system requirement. Testing of the first long-range artillery-locating radar was carried out. Remotely piloted vehicle technology was focused into the Aquila program. In 1976, the Dragon, an antitank missile, entered its third year of full-scale production. The versatile sophisticated air defense system conceived to replace the Hawk and Nike-Hercules, which was one of the earlier-mentioned five key development programs, was designated the Patriot and entered full-scale development.[11]

In 1977, the Pershing II, an intermediate range theater strike missile, began advanced development. Development began of a general-support rocket system (GSRS), a rapid-fire unguided rocket weapon. That precursor to the modern day multiple launch rocket system was a twelve tube launcher on a mechanized infantry combat vehicle chassis. The Army began initial buy of the UH-60A Black Hawk transport helicopter, the Army's first true aerial in-

11. (1) *Army Green Book 1975*, pp. 117-131; 1976, pp. 145-168. (2) TRADOC AHR, FY 76, pp. 189-240. (CONFIDENTIAL — Info used is UNCLASSIFIED)

fantry squad carrier. Additionally, design ideas were formulated for an advanced scout helicopter to accompany the developing attack helicopter, the Hughes YAH-64.

Over 1978 and 1979, the Copperhead laser-guided artillery shell and Tacfire artillery fire-direction system moved from development to production. Low-cost night vision aids were explored and began development. The Division Air Defense (DIVAD) Gun System went into advanced development. That mobile, radar-controlled, all weather gun system was to replace the Vulcan and provide close-range, low-altitude air defense for armored and mechanized units. The first eight prototype infantry fighting vehicles, the XM2, began their testing phase. The advanced scout helicopter concept was terminated at Congressional behest.[12]

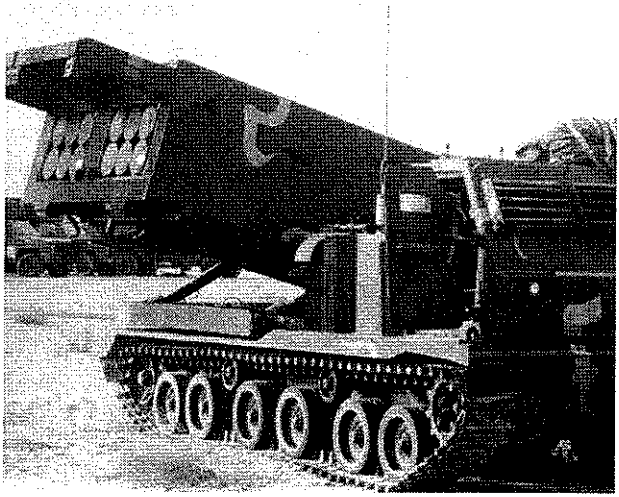
The opening years of the 1980s were witness to the standardization of the ground-emplaced mine-scattering system, one of two systems in the family of scatterable mines; conceptual development of an enhanced self-propelled artillery weapon system and also of a corps support weapon system to succeed the Lance; and development of the multiple launch rocket system, a free-flight rocket system which pioneered as the general-support rocket system. Additionally, a contract was let for full-scale engineering development of a remotely piloted vehicle system, the infantry fighting vehicle was approved for full production, and work began on the Army helicopter improvement program (AHIP), which entailed modification and modernization of the OH-58 Kiowa to fill the advanced scout helicopter role.

During the same years, a production contract was let for the XM9 9-mm pistol, the XM836 sense-and-destroy armor (SADARM) projectile began development and testing. The DIVAD, named the Sergeant York in 1982, moved from the engineering development phase into full production. The Rattler medium guided antitank missile, designed as a replacement for the Dragon, moved into full-scale development. Ballistic missile defense was funded, the Roland II missile effort was canceled, and conceptual development began for a multimission (to include the scout, light attack, and light utility roles) light helicopter, the LHX.[13]

The modernization wave that had begun in the immediate post-Vietnam era crested in 1983. The multiple launch rocket system began low rate production and fielding, and the howitzer improvement program (HIP) was launched

12. (1) *Army Green Book 1977*, pp. 146-186; 1978, pp. 119-184; 1979, pp. 119-220. (2) TRADOC AHR, FY 78, pp. 222-270. (CONFIDENTIAL — Info used is UNCLASSIFIED) (3) TRADOC AHR, FY 79, pp. 257-313. (CONFIDENTIAL — Info used is UNCLASSIFIED)

13. *Army Green Book 1980*, pp. 220-288; 1981, p. 240; 1982, pp. 248-408.



The 1970's and 1980s encompassed one of the most massive modernization programs in the history of the Army. Among major weapons is the Multiple Launch Rocket System (photographed in Saudi Arabia prior to being repainted in desert camouflage).

to upgrade the M109 series. The Rattler medium guided antitank missile program was terminated. Two significant joint efforts were initiated: the joint tactical missile system (JTACMS), which however, lacked Air Force support and was picked up by the Army and renamed the Army tactical missile system (ATACMS) the next year, and the joint surveillance target acquisition radar system (JSTARS), a sophisticated long range radar system moved into the advanced development stage. Conceptual development began of an advanced antitank weapon system (AAWS) as successor to the Dragon and the ill-fated Rattler. From that point in time development would be slower and more sporadic. In 1986 the first Army artillery weapon to be evaluated, tested, and type classified as off-the-shelf, the M119 105-mm towed howitzer, was procured. The 120-mm mortar program was initiated; it was also off-the-shelf. The Apache helicopter was fielded.[14]

By the late 1980s, modernization planning was less dramatic and more aimed at coordinated effort and overall reduced budgets and available resources. For instance, in 1986, the Department of the Army commissioned the Armored Family of Vehicles Task Force to examine the next phase of modernization. The emerging concept was that of an armored family of vehicles to be built around two common chassis. A total, phased replacement of the tracked and wheeled fleet would ensure compatibility, commonality, and survivability. Simultaneously block improvements were projected for the Abrams and the Bradley.[15]

Combat requirements in the later 1980s were heavily influenced by the

14. *Army Green Book*, 1983, pp. 282-440; 1984, pp. 318-504.

15. TRADOC ACH, CY 89, pp. 61-62. (FOR OFFICIAL USE ONLY — Info used is not protected)

Vision 91 plan of TRADOC commander General Maxwell R. Thurman. Vision 91 proposed a better way to assess emerging technologies. It stressed a multi-branch, system-of-systems approach to materiel development, and the integrated testing of force structure, doctrine, training programs, and materiel. In 1989, the forward area air defense system (FAADS) moved past conceptualization. An integrated system of systems, it comprised several elements, all in various stages of development.[16] To follow, the advanced antitank weapons system program was expanded to incorporate medium and heavy capability to replace the Dragon and TOW. The advanced field artillery tactical data system (AFATDS), to supply fire support control and coordination, moved into full scale development. The Army tactical missile system moved into low rate initial production, and the single channel ground and airborne radio system (SINCGARS) was fielded.[17]

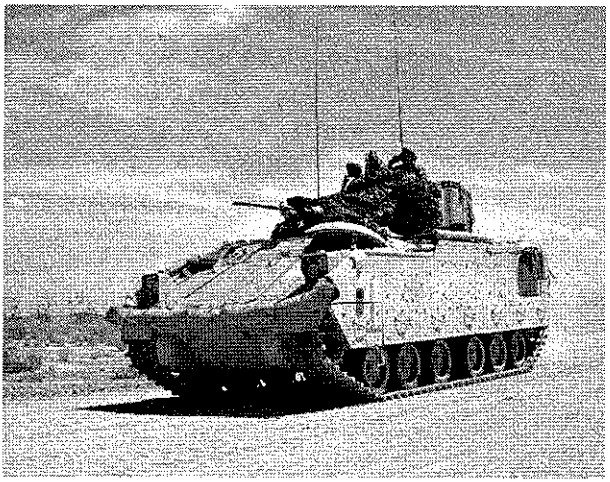
The success of the total modernization effort was demonstrated in Operation Desert Storm over 1990 and 1991. All of the "Big Five" systems were deployed and performed through the envelope of their capabilities. The Apache attack helicopter, the Black Hawk transport and utility helicopter, the Abrams main battle tank, the Bradley fighting vehicle, and the Patriot missile system validated the combat developments process and product. The Army helicopter improvement program (AHIP) had resulted in the OH-58D armed Kiowa Warrior which flew close reconnaissance and attack support for the Apache. Likewise deployed and successful were the Army tactical missile system (ATACMS), the longest range surface-to-surface missile in the Army inventory, along with its

Another major weapon of the massive modernization program is the AH-64 Apache.

16. The FAADS concept, and program, did not survive in its entirety into the 1990s. Some components were developed and fielded, some components were terminated. The system-of-systems approach proved a valuable developmental concept but an extremely expensive developmental tool.

17. TRADOC ACH, CY 89, pp. 61-78. (FOR OFFICIAL USE ONLY — Info used is unprotected)

companion multiple-launch rocket system (MLRS). Additionally, unmanned aerial vehicles, the joint surveillance target acquisition radar system (JSTARS),



Also a major weapon of the massive modernization program is the M-2 Bradley Fighting Vehicle.

and the XM40 series protective mask were success stories of Desert Storm.

Toward the Future

TRADOC's first twenty years marked a high ground for combat developments. The opening two decades witnessed a massive modernization program that was justified by a serious security threat, adequate resourcing, and enlightened leadership. The major systems in service in 1998 were developed during this time. With the opening of the 1990s, however, several external factors influenced that path. The demise of the unified Soviet threat and resulting down-sizing of American forces and resources seriously affected weapon development and acquisition. As cost of equipment went up, amounts procured would have to be reduced. As numbers went down, systems would have to be more accurate and lethal. Technology had to be harnessed to assure success on the nonlinear battlefield.

With decremented funding levels, equipment requirements shifted to focus on long-term development and acquisition. Weapons systems had to provide broad coverage in low, mid, and high intensity conflicts as well as contingency and special operations. Department of the Army proposed four principles to guide modernization decisions. Simply put, they were: Key future modernization programs would be protected; some current major weapons sys-

18. TRADOC ACH, CY 90, pp. 90-91. (FOR OFFICIAL USE ONLY — Info used is not protected)

The M1 Abrams main battle tank was one of the "big 5" weapons systems that validated the combat developments process and product of the 1980s.

tems would be terminated; investment in product improvements and systems modifications would be restricted; and new technologies would be advanced.[18]

On the management side, the concept of battle laboratories located at key TRADOC centers and schools evolved over the winter of 1991 and the spring of 1992 as TRADOC reassessed requirements for the post-Cold War Army. Without a clear external threat driving requirements, concepts of warfare and the associated equipment needed to be evaluated. The battle laboratories were designed to be the institutional means to determine, develop, and experiment with equipment and technology, organizational design, and training. That would be done through the technology of distributive, interactive simulation. The simulation network would allow subject matter experts at the TRADOC centers and schools to advance ideas and exert influence at the ground level. The battle laboratories were purposely located at centers that could tap resources such as units, troops, ranges, and training areas. The battle laboratories were organized into five areas: early entry lethality and survivability, dismounted and mounted battlespace, depth and simultaneous attack, battle command, and combat service support.[19]

The battle laboratories were to work with one another, coordinating their activities like units on the battlefield. They were to identify concepts, analyze new technologies, and exploit capabilities in virtual simulations that replicated reality. Adeptly utilized, the battle laboratories would determine the next stage of modernization. Under fiscally restrained conditions, the Army's stated modernization strategy was the concept of continuous modernization. For every class of major weapon system the goal was to have a system in production or under upgrade, or have the next generation system in development. The trend in combat developments, with battle laboratories assisting, would be for fewer starts and dollars, higher technology, better integration, and more focus on

19. (1) "Battle Labs: Where It's At," *Army*, February 1993, p. 22. (2) Brfg Slides, Battle Lab Integration and Technology Directorate, ODCSCD, "Battle Labs: An Overview," 9 Mar 93.

combined efforts.

Modernization for Army XXI

The U.S. Army's modernization objectives as the service looked forward to the twenty-first century were to project, sustain, and protect the force; win the information war; conduct precision strikes; and dominate the maneuver battle. Those objectives were formally set forth in the Army Modernization Plan update, published in May 1994. The Modernization Plan and the Force XXI process were designed to move the Army to Army XXI, beginning with a conceptual base and continuing forward to post-fielding improvements. Declining defense resources and downsizing of the force made it necessary for the Army to analyze future warfighting capabilities with an eye to development and fielding of battlefield systems that best supported the Army envisioned in the next century. TRADOC, as the architect of the future Army, continued to fulfill that role.[20]

The importance of projection and sustainment of the force could not be overstated. The Army of tomorrow would be a smaller, continental United States (CONUS) based force which would require a greater ability to project and sustain its power anywhere in the world. To realize that objective, Army systems needed to be light, lethal, and modular, in order that more capability could be achieved with fewer resources. The Army also needed to have sufficient strategic and tactical lift assets to move its forces around the globe. Finally, the Army had to project forces efficiently by taking advantage of new technologies to move only what was absolutely necessary. Improved logistical information systems and a new emphasis on split-based operations were designed to allow the Army to sustain its forces while projecting fewer support elements.

Major Regional Contingencies (MRCs) and crisis response operations especially required rapid movement of large numbers of assets. Plans for those intensive operations were also designed to support other missions such as humanitarian relief and peace operations. In most crises, the Army would need light, lethal, early entry forces to help secure entry points into a theater. Those forces would also need defense and logistics assets in order to hold the entry points. One system planned to meet this challenge was the Force Projection Tactical Operations Center, fielded to the Army in February 1995, which the

20. (1) Army Modernization Plan FY 1994-1999, May 1994, passim. (2) Susan Canedy, "Survey of Major Modernization Programs," TRADOC Annual Command History CY 1994, pp. 142-46. (3) An excellent source for detailed descriptions of the weapons system and equipment planned for the Army of the future is

commander an improved ability to manage the Theater Missile Defense fight during the buildup phase.

Once entry points were secure, heavier forces and logistics forces had to move into the theater of operations rapidly. This rapid build up depended heavily on equipment developed by sister services. The United States Air Force C-17 large transport aircraft and the Navy's Large Medium Speed Roll On/Roll Off ships were necessary to move equipment and supplies. The build-up phase also depended on conventional rail cars to move armored vehicles to the ships and the Family of Medium Tactical Vehicles to move the armored vehicles around in theater. Advanced technology such as the total distribution program allowed the Army to track items during transport.

As Army forces built up in a theater, forces required compact lightweight support systems to move supplies and meet other needs. Systems like Force Provider and the Family of Operational Rations improved the quality of life for deployed forces. Deployable Medical Systems and Telemedicine would also improve the availability of medical care as they were continuously upgraded in keeping with changing medical technology. The Integrated Family of Test Equipment would improve the repair and maintenance of systems in the theater. In short, project and sustain meant ensuring that the Army could get to where it had to fight with the equipment and supplies it needed.

On the future battlefield, Army forces would likely require improved protection against a variety of threats. The threat posed by the proliferation of tactical ballistic missiles (TBM) and nuclear, biological, and chemical (NBC) weapon technology had drawn the greatest attention. In the late 1990s, the Army was investing in a variety of active and passive defense systems to deal with those dual threats. The major weapon system of the Army's active defense was the Patriot Missile System that provided high- and medium-altitude defense against aircraft and tactical ballistic missiles. Also of great importance in that regard was the Theater High Altitude Area Defense (THAAD) System that was designed to intercept short- to medium-range missile threats and would employ increasingly sophisticated warhead technologies. The THAAD would also provide defense against weapons of mass destruction. The system was scheduled for final delivery in FY 1999. The Medium Extended Air Defense System (MEADS) would provide low-to-medium air and theater missile defense to maneuver forces and forward deployed assets during all phases of tactical operations. The Army also continued improvements to the

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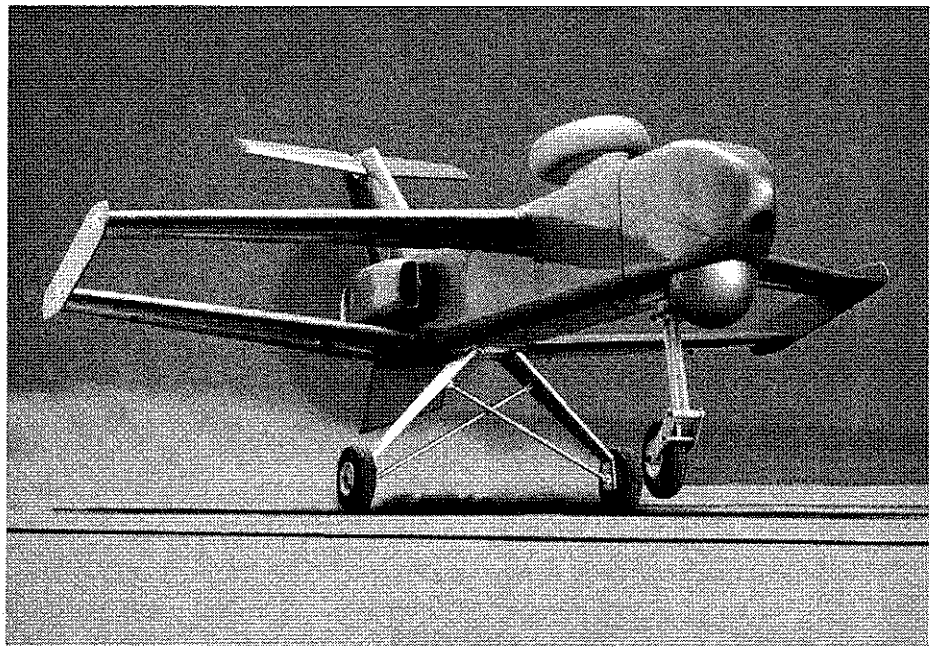
(continued)

Weapons Systems: United States Army 1997 (Department of the Army, Research, Development, and Acquisition, 1997). This section is based heavily on that publication.

Stinger, a short-range air defense missile for combat units against cruise missiles, unmanned aerial vehicles (UAV), helicopters, and low flying fixed wing aircraft.

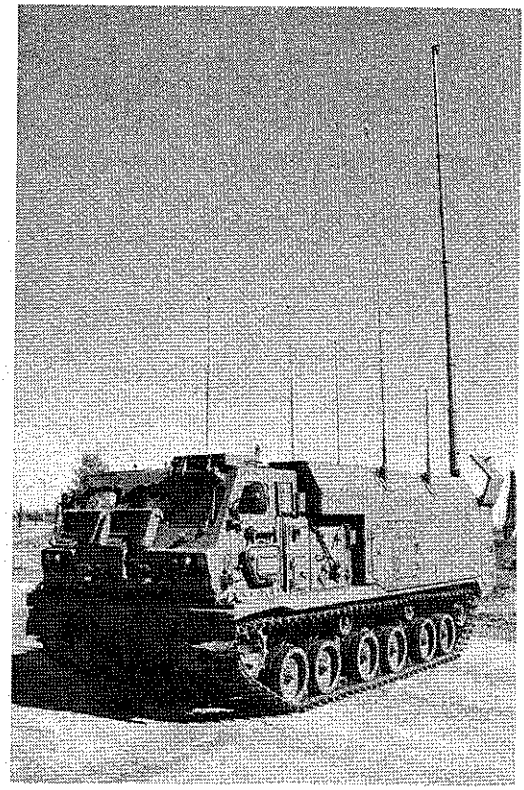
Passive defense would center around systems that could detect or offer protection against NBC agents. That included detection systems like the NBC



The Outrider Tactical Unmanned Aerial Vehicle would provide reconnaissance, surveillance, and target acquisition to U.S. Army divisions and brigades. The first system was expected to be delivered to the Army in December 1998.

Reconnaissance System-Fox that would detect, identify, and mark areas of contamination and report that information to supported commanders. An improved version of the currently fielded Fox was due to be fielded to the first units in March 1998. The Biological Detection System (BIDS) was a corps level asset designed to mitigate the effects of large area biological warfare attacks. The BIDS network would be used to confirm and warn commanders that a biological attack had occurred and to produce a safety configured sample for later laboratory analysis. For the individual soldier, the M40 series protective masks offered protection from dangerous airborne agents. The new protective masks provided respiratory, eye, and face protection against chemical and biological agents and other battlefield contaminants. The masks had been or would be issued to every soldier.

In the Army's efforts to design the Army of the future, two major concerns were the dangers proposed by advanced conventional weapons and by

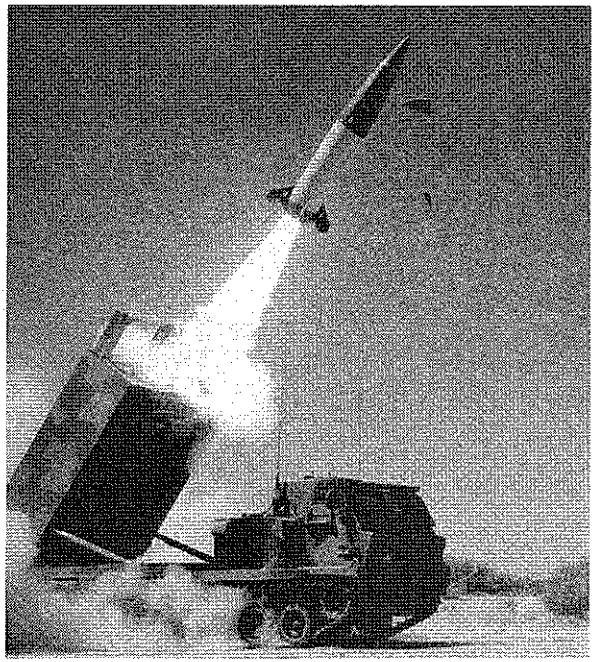


The Command and Control Vehicle (C2V) provides a highly mobile and reconfigurable platform to host current and future command, control, communications, computer, and intelligence systems. In FY 1998, six C2Vs were used to support the Division XXI exercise at Fort Hood, Texas.

fratricide, or "friendly fire." To counter the former, the service was developing lighter and stronger ballistic protection for the individual soldier as part of a "Soldier System Program." The developers' overall mission was to provide the soldier with everything he wore, carried, or consumed in combat. The Army was also acquiring new vehicle mounted smoke generators to provide large area obscuration for rapidly moving forces and high value targets. To reduce fratricide, which had received much attention since Operation Desert Storm in 1991, combat developers were pursuing two options. The Battlefield Combat Identification System would provide positive identification of friendly ground platforms and dismounted soldiers; the digitization program for Army forces would provide pilots and vehicle commanders with total situational awareness that would allow them to distinguish between friendly and hostile targets.

Modernization for the Army of the twenty-first century included denying information to the enemy through secure communications and direct attack against enemy command, control, communications, computers, and intelligence (C4I) assets. Joint efforts to expand their own C4I assets were designed to give U.S. forces a complete picture of the battlefield that could be transmitted to all units. The Army Battle Command System with its many components would

link commanders at all echelons. Some of the information systems that would gather the information to build the complete picture of the theater were the Guardrail/Common Sensor, the Ground Based Common Sensor, the tactical Unmanned Aerial Vehicle, and Trackwolf. Platforms such as the Comanche helicopter would play a prominent role in intelligence gathering through an

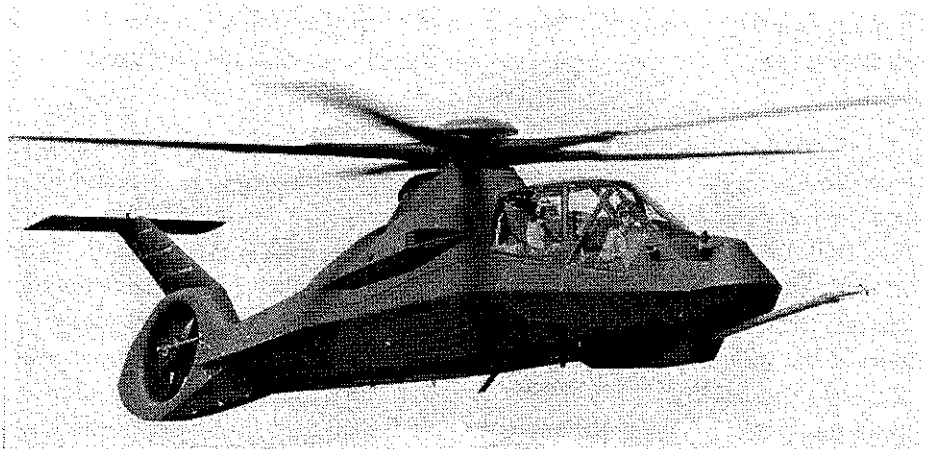


The Army Tactical Missile System (Army TACMS) Block II and IIA was a modification of the combat-proven ATACMS Block I missile family that would provide long-range, surface-to-surface fire support.

armed reconnaissance role. The NAVSTAR Global Positioning System (GPS)/ receivers provided precise targeting and navigation data.

A new information architecture also included communications systems to securely and rapidly move data from point to point. The communications backbone for Force XXI were the Single Channel Ground and Airborne Radio System (SINCGARS) and the Army Data Distribution System (ADDS). The former provided commanders with a secure and reliable combat net radio. The latter functioned to provide a tactical data distribution radio system as part of the Army Battle Command System (ABCS). Other systems that would create the network that would permit the movement of large amounts of data from the source to the soldier were the Mobile Subscriber Equipment (MSE) that operated at division and corps level and the Joint Satellite Communication that would allow the commander-in-chief to maintain communications between the forward deployed force and the CONUS sustaining base.

The third element of information warfare was the computer hardware and



The Comanche (RAH-66) is the Army's next generation helicopter designed to perform the armed and light attack reconnaissance mission.

software that turned the greatly increased flow of raw data into useable form. A common hardware and software program from echelons above corps to the foxhole and the Standard Army Management Information System (STAMIS) were essential to meeting that challenge. Those systems were designed to ensure that the information architecture was compatible and interchangeable. Other software systems like the Advanced Field Artillery Tactical Data System (AFATDS) and the All Source Analysis (ASAS) would provide the means for analyzing and using the data. The ASAS was the intelligence electronic warfare component of the Army Battle Command System. The AFATDS was the command and control system for fire support of the future. It was expected that the future Army would possess information dominance over the enemy, with an unprecedented awareness of its own situation and ability to more resources much more efficiently.

One method of giving numerically smaller forces the maximum possible advantage was to conduct precision strikes to disrupt and destroy enemy forces in rear areas before they could reach the forward area. The Army's precision strike capability would be composed of three categories of systems. First there were the systems that provided the intelligence necessary to allow highly accurate targeting of enemy forces. That function was performed by a variety of C4I systems. In the second category were the long-range weapons, such as the Extended Range Multiple Launch Rocket System (ER-MMLRS) and the Army Tactical Missile System (ATACMS) that delivered the munitions to the rear area of the enemy. The last is a variety of smart and brilliant submunitions that would sense, track, and destroy targets. In this category were the Brilliant Anti-Armor Submunition (BAT) and the Sense and Destroy Armor (SADARM)

pable of cutting off enemy forces from their reinforcements and supplies and blocking retreat allowing Army ground forces to control the maneuver battlefield.

One of the basic assumptions of the Force XXI and Army XXI initiatives was that in the future a smaller force would have to respond to as many, if not more crises as at present. Despite, and because of, its smaller size, the twenty-first century Army had to be able to dominate the maneuver battlefield. Army modernization efforts in that regard included both new systems and upgraded equipment. Upgrades to the Abrams tank and Bradley Fighting Vehicles improved the communications, data processing systems, night-fighting capability, and survivability of those major systems. Two examples of those upgrades were the Driver's Vision Enhancer and the Second Generation Forward-looking infrared that allowed operations to continue as planned despite fog, dust, or smoke. The Apache Longbow was designed to vastly improve the ability of the Apache attack helicopter to engage a large number of air and ground targets.

Among new weapons systems which focused on future domination of the battlefield was the Crusader artillery system which used a Regenerative Liquid Propellant Gun and an automated loading system. The 155-mm. self-propelled howitzer would also use three fewer crewmen than the existing systems. A new Command and Control (C2)Vehicle would allow C2 on the move from an armored vehicle that was highly mobile, survivable, and reconfigurable. The new system also was capable of keeping pace with the Bradley and Abrams systems. To improve mobility, the Army was developing two new combat engineer vehicles. The Grizzly breaching vehicle could breach a full-width lane to allow maneuver force mobility through minefield, rubble, wire, tank ditches, and other obstacles. The Wolverine heavy assault bridge vehicle, built on an M1A2 chassis, would allow bridging support over tank ditches, road craters, and partially damaged bridge sections. It was expected that the combination of improved firepower, improved mobility, and enhanced situational awareness would allow future Army maneuver forces to dominate the maneuver battle and to continue to be a strong deterrent to aggressors.

Chapter VI

DOCTRINAL RENAISSANCE

Few observers would disagree that in the intense internal debates and formulative work in tactics and doctrine in the late 1970s and early 1980s the U.S. Army experienced a renaissance in doctrinal thinking. A renewed and wide, even impassioned, interest in doctrine was evident not only in military journals but in media outlets of wider circulation in the years following publication of a new edition of FM 100-5, *Operations*, in 1976. The doctrinal phenomenon had underlying origins in the reaction of Army leaders to the strategic defeat in Vietnam. More immediately, it arose from the perception of a serious imbalance of military power by the United States and its NATO allies in relation to the rising military might of the Soviet Union, as exemplified in central Europe by the forward deployed armies of the Warsaw Pact. But other factors were present, too. Among them were the powerful lessons of the 1973 Mideast War between Israel and the Arab states. Heavy in the reckoning was the dedication of a generation of Army leaders and thinkers who came to positions of responsibility in the U.S. Army after Vietnam.

The development of Army doctrine in the 1970s and 1980s was not separable from its historical context. Nor was the doctrinal renaissance limited to the Army. There were parallels in the post-Vietnam evolution of the Maritime Strategy of the U.S. Navy and in the new Aerospace doctrine of the U.S. Air Force.[1] But in no other service was the renewed emphasis on doctrine so consequential to war strategy. Navies win control of the seas and mount land attack and invasion. Air forces win mastery of the air and wreak major destructive effects on enemy land targets. But armies defeat enemy forces and possess the land.

1.For a summary of "the remarkable renaissance" in American military thought experienced in all three services in the period, see Colonel Harry G. Summers, Jr., USA Ret., *On Strategy II: A Critical Analysis of the Gulf War* (New York: Dell, 1992), Chapters 4 through 8.

Charged by the dictates of its combat developments and training missions to formulate and write the Army's doctrine manuals, the Training and Doctrine Command had early undertaken a major effort to make Army tactical doctrine and training literature current. That first initiative of TRADOC, beginning in the last half of 1973, resulted in a generation of new tactical and training texts innovative in both thought and format. But it was the startling and dramatic lessons of the 1973 Yom Kippur War that gave the effort under TRADOC urgency and immediacy. It was led intellectually by General William E. DePuy, who also drove its rapid tempo. The effort had as its bedrock the publication of a new edition of the Army's basic war fighting manual, FM 100-5, *Operations*, in July 1976, the first stage in the post-Vietnam revival of Army doctrinal thinking.

Development of the 1976 FM 100-5

The study and absorption by TRADOC planners of the lessons of the 1973 Mideast War—the dramatic advance in the lethality of modern weaponry and the essentiality of better training, tactics, terrain use, and combined arms coordination—led to efforts in 1975 toward distilling a new, clear doctrinal vision focused specifically on the most critical theater of American strategic concern, NATO Europe.[2]

Working with the school commandants and with his deputy for training, Maj. Gen. Paul F. Gorman, General DePuy developed drafts of a new operations manual during 1974-1975. Eschewing the abstract, the new FM 100-5 was closely focused in its tactics on concrete realities such as the hit probabilities of Soviet weapons and the range at which U.S. gunners could expect to engage each Soviet weapon system. The new "capstone" doctrinal handbook grew out of penetrating inquiries into the meaning of the new weapon technology so emphatically demonstrated in the 1973 Mideast battles. It confronted directly the prime strategic problem the U.S. Army faced: a U.S. force quantitatively inferior in men and equipment on an armor dominated European battlefield. Historically, the U.S. Army had entered its wars unprepared. The new manual laid great emphasis on the requirement that the U.S. Army must, above all else, prepare to "win the first battle of the next war."

Facing expected superior forces, the Army had to prepare its forces to "fight outnumbered." Readiness and effectiveness were keynotes of the volume. Training had to yield systems and techniques that matched the realities of

2. For the official statement of the new doctrine, see FM 100-5, *Operations*, 1 Jul 76. Herbert, *Deciding What Has To Be Done: General William E. DePuy and the 1976 Edition of FM 100-5* (Leavenworth Paper No. 16) provides the definitive account of the development of the 1976 manual. See also Romjue, *AirLand Battle*, pp. 3-11, on which the account in this study is based.

the modern battlefield, in combined arms terms. In the face of a well-documented "new lethality" of battle, tacticians had to pay especial attention to the specific vagaries of natural and man-made terrain. The manual advanced a clear "battlefield dynamics," a delineation of the work and responsibilities of commanders. Generals, commanding corps and divisions, concentrated the forces. Colonels and lieutenant colonels, in brigades and battalions, channelled and directed the battle. Captains, in companies, troops, and batteries, fought the battle[3]

The doctrine of 1976 stressed strongly the commander's substitution of firepower for manpower, and the potential of U.S weapons for swift massing to concentrate combat power to decisively alter force ratios when and where chosen. Concentration of winning forces, full use of intelligence from all sources, the critical tasks of fire support, joint operations with the Air Force, and integration of electronic systems were main principles. A highly active defense characterized the requirement to move forces rapidly from battle position to battle position, using maneuver to concentrate at the right place and time. Firing first was a cardinal rule of the new lethality.

An M60A3 main battle tank deployed during a Reforger exercise in Germany. The lessons of the 1973 Mideast War led to efforts in 1975 to develop a new, clear doctrinal vision focus on NATO Europe.

A concise and clear declarative style, clear and imaginative graphics, pertinent historical data and battle examples, tables containing germane data on Soviet tactics, weapons, capabilities, points of doctrine, procedures, and practical reminders made the manual a valuable handbook. Doctrine gained full immediacy in the manual's application of tactics to specific conditions of German towns and villages.

The 1976 FM 100-5 recognized that a fundamental change had occurred in the technology of land battle. It recognized that change and provided a new and ordered handbook of how to fight in the 1970s and beyond on an unprecedently lethal battlefield. Both dominant strategic realities and the po-

3. FM 100-5, *Operations*, 1 Jul 76, pp. 3-3 to 3-4.

litical currents of the decade shaped its tactics and strong defensive themes. Its stress on firepower and on a tailored maneuver doctrine accompanied these prevailing realities.[4]

Doctrinal Debate

Sharp in its grasp of strategic realities and recognition of the lethal force of modern weaponry, the 1976 FM 100-5 established itself as a ready point of departure for tactical discussion. The new doctrinal bible was symbol and substance of the Army's reorientation from Vietnam back to Europe. At the same time, it presented a distinctly new vision of tactical warfare. Those characteristics invited critical attention, stirring a wide debate among military professionals, analysts, and historians. The debate extended through the end of the 1970s, accompanying and stimulating new doctrinal thinking.[5]

Major criticisms levied in the debate were that the new doctrine overemphasized the defense over the offense, that it focused too centrally on the "first battle" to the neglect of the subsequent battles, and that the doctrine was tied too specifi-cally to one possible Soviet operational maneuver — a massive breakthrough on a narrow front. Other criticisms were that the doctrine provided for inadequate tactical reserves, that it overemphasized firepower and slighted maneuver, and that the tactics of concentration invited unacceptable risks to lightly defended flanks and fronts.

The vigorous doctrinal debate of the late 1970s brought the tactics of the 1976 doctrine, styled the Active Defense by critics, severely into question. Concentration tactics depended on ease of lateral movement that seemed unlikely, and the lack of dedicated reserves entailed risks that were seen to be unacceptable. The perception was widespread that the primary emphasis on Soviet deep thrust maneuver encouraged a firepower attrition vision of the battlefield.

The Active Defense doctrine reflected a tactics of limits imposed by the political contexts of the mid-1970s, in which the assumptions of detente excluded a forthright tactical orientation to the offensive, but in which at the same time the reality of the Soviet military buildup required serious attention to the tactics of fighting outnumbered against a technologically proficient enemy. The lasting contribution of the 1976 doctrine was that it recognized the advanced technological changes taking place and created a close awareness of the new lethality of modern weaponry, which opened the way to a mature and balanced doctrine that would in the 1980s become the conceptual foundation of the Army as a war fighting component.

4. Romjue, *AirLand Battle*, pp. 3-11.

5. For a documented summary of the several points of debate, see ibid., pp. 13-21, which this section follows.

Development of AirLand Battle Doctrine

Late in the 1970s a sharp evolution in doctrinal thinking had set in, prompted in part by the debate of the Active Defense, but also arising out of new tactical concepts and concerns. The ferment of ideas led in 1982 to a new doctrine and a new edition of the Army's doctrinal handbook, FM 100-5. Just as with the Active Defense, the new doctrine was a product of the wider historical currents of the time, but it too sprang in large degree from the thinking and influence of one man, in this case, General Donn A. Starry, who succeeded General DePuy at Fort Monroe in July 1977. This new doctrine came to be called AirLand Battle. [6]

The evolution from Active Defense to AirLand Battle may be traced through a succession of major concepts formulated and developed by Starry, his doctrine staff at Fort Monroe, and his deputy at the Combined Arms Center, Lt. Gen. William R. Richardson. These concepts were further developed and expanded by field manual authors selected by Richardson in the Department of Tactics in the Command and General Staff College during 1980-1981.

General Starry, a major contributor to the earlier doctrine while commandant of the U.S. Army Armor School, examined its assumptions in the field during 1976-1977 as V Corps commander in Europe. From that experience, he brought to TRADOC a close appreciation of the powerful Soviet second and follow-on echelons beyond the main battle front. Whatever the success of a skillful Active Defense, the numerically superior follow-on echelons would at some point prevail by sheer numbers and roll over the defenders to secure victory. Starry's concept of the major Central Battle fought by the corps and divisions, analyzed functionally, suggested and clarified the requirement for U.S. forces to fight a deep battle simultaneously with the main or close-in battle. Thus could U.S. forces disrupt the enemy's echeloned line-up, throw off his timetable, and prevent defeat.

While the deep battle idea was the genesis and enduring principal idea of the new doctrine in evolution, there were other significant concepts and influ-

6. (1) General Starry viewed the development of AirLand Battle as part of a continuum, growing out of the Active Defense, and he stressed its debt to DePuy's doctrinal undertakings. Interview of General Donn A. Starry, USA Ret., by John L. Romjue, 19 Mar 93, Fairfax Station, Va. (2) The phrase "AirLand Battle" came from TRADOC's operational concept published as TRADOC Pam 525-5, *Military Operations: Operational Concepts for the AirLand Battle and Corps Operations - 1986*, 25 Mar 81. The phrase expressed, in its fused form, the concept of the close and integrated nature of air and land operations. The 1982 doctrine was styled AirLand Battle in the manual as the result of a decision by the TRADOC commander in 1982, General Glenn K. Otis. Otis also took steps to insert into the doctrine the clarifying notion of the operational level of war that existed between tactics and strategy. Romjue, *AirLand Battle*, pp. 44-50, 61. See this source, pp. 23-66, for a documented description of the evolution and development of AirLand Battle doctrine under Starry's guidance by Headquarters TRADOC and Combined Arms Center analysts and writers.

ences that went into the formulative work. A general doctrinal review was prompted by General Edward C. Meyer at the outset of his term as Chief of Staff of the Army in June 1979. Meyer pointed to the need, in the coming decade, for a doctrine more applicable across the range of global contingencies and not limited primarily to central Europe. Meyer also noted the need to overcome the perception of the defensive orientation of the Active Defense and its presumption of single-axis breakthrough by the Warsaw Pact.

TRADOC planners at the Field Artillery Center at Fort Sill, Oklahoma were, in the meantime, refining concepts of deep interdicting operations in line with General Starry's deep battle guidelines. Tactical nuclear planning, to provide a ready option to deter or counter Warsaw Pact forces if directed by national command authority, was an aspect of the planning. Deeper cooperative planning with the Air Force accompanied that work, and by late 1979, planners were developing joint concepts for deep interdiction and for operations upon an integrated conventional-nuclear-chemical battlefield. What was in development was not a plan to readily employ those unconventional capabilities, but to develop a ready state to do so if required, in the face of Soviet doctrine calling for such use. The integrated battlefield was a concept, however, larger than those options alone. The concept called for integrated air-land operations, and integrated maneuver and fire support, and it presented a larger total battlefield vision extending from the U.S. rear area forward and deep into the enemy rear.

This planning in 1979-1980 went forward in a changing national political climate, as the perceptions of the incumbent Carter Administration about the state of U.S. military readiness vis-a-vis the Soviet Union and the unstable third world underwent sharp revision. The year 1979 marked twin foreign policy defeats for the United States: The Soviet invasion of Afghanistan and the opening of the Iranian hostage crisis.

In late 1980, the ideas of the integrated battlefield were developed further and refined in the concept of an extended battlefield. That view possessed not only distance, but time and resource dimensions. Publication of this concept, retitled AirLand Battle, by Headquarters TRADOC followed in March 1981.

At the same time, drafting of a new edition of FM 100-5 began in the Department of Tactics at Fort Leavenworth, carefully overwatched by both Starry and Richardson. The field manual authors drew not only upon the evolving battlefield ideas but upon the intellectual patrimony of the classic military theorists. They formulated a broad vision that extended beyond the physical dimensions of battle and away from a mechanistic approach, to the human and moral dimensions of combat. In their thinking, the manual writers, Lieutenant Colonels Huba Wass de Czege, L.D. Holder, and Richmond B. Henriques, em-

The drafting of FM 100-5 drew on classical military theorists. One of the significant ideas adopted was the concept of inculcating in leaders the ability to act independently within their commander's intent.

phasized maneuver and the fundamentals of war. From those fundamentals, they distilled the tenets of depth, initiative, agility, and synchronization as the heart of AirLand Battle doctrine. The basic idea articulated, applicable to offense and defense, was to throw the enemy off balance with a powerful blow from an unexpected direction and to seize and retain the initiative and exercise it aggressively to defeat the enemy force.

Other significant ideas included the adoption of the German Army concept of *Auftragstaktik*, frequently translated inadequately as "mission orders." *Auftragstaktik* involved the inculcation in battle leaders of the ability to act independently, as exigency required, based on thorough training and a clear understanding of their commander's intent. Also significant was the delineation of the levels of war—the inclusion of the operational level between the strategic and the tactical. It was the delineation and clarification of the operational level of war in Air-Land Battle doctrine that lifted the vision of the commander/reader out of the realm of tactics alone to give him a view and grasp of how tactics served operational aims.

Retaining the training strengths and correcting the deficiencies of Active

Defense doctrine, the new doctrine placed emphasis on the fundamentals and imperatives of combat and restored the role of strong reserves. It stressed the intangibles of leader skill, initiative, and boldness. AirLand Battle emphasized maneuver and not only firepower, and drew on the maxims of Clausewitz and Sun Tzu. Air-land battle changed in its definition from cooperation and mutual support to the closely concerted operations of airpower and ground forces. In addition, the new doctrine emphasized contingencies beyond NATO.

Following publication of the revised FM 100-5 in August 1982, the concept of AirLand Battle was sanctioned as the Army's fighting doctrine for the decade ahead. Adjusted in 1986 to clarify and expand the idea of the operational level of war, to put into better balance the offense and defense, and to highlight the synchronization of the close, deep, and rear battles, AirLand Battle would furnish the doctrine of the Gulf War.[7]

With the restoration of American strategic perspective in the early 1980s, AirLand Battle provided the conceptual basis for an Army reassuming an explicitly initiative-oriented readiness posture. More than any other change of the period, the introduction of AirLand Battle doctrine marked the renaissance of an Army clear in its purpose and its will to fight and win.

Post-Cold War Doctrine

The post-Cold War era that followed upon the collapse of communism and the dismantlement of the Soviet state and empire during 1989-1991 introduced major military-strategic change affecting the United States Army and TRADOC as the Army's overall development agency. That change had encompassed the Army's rapid drawdown and reorientation from a substantially Europe-based Cold War force. That force, which had been focused on the primary, Soviet armored threat to NATO Europe, gave way to a smaller force-projection Army based preponderantly in the United States. At a strength of 780,000 and 18 Active Army divisions at its peak in the mid-1980s, the active force had shrunk to 495,000 by early 1998, with an active division count reduced to 10. The Cold War's end and the sharp troop reductions affected TRADOC across all its development missions. In no regard was that change more apparent than in the doctrine arena.[8]

7.FM 100-5, *Operations*, editions of 20 Aug 82 and 5 May 86. For a summary of the doctrinal adjustments introduced by the FM 100-5 edition of 1986, see General William R. Richardson, "FM 100-5: The AirLand Battle in 1986," *Military Review*, March 1986, pp. 4-11.

8.TRADOC ACH, CY 93, p.1.

Awareness that a new strategic era was at hand—and the advent of the Gulf War—had prompted TRADOC to start the significant revision of the Army's basic manual of Doctrine, FM 100-5, *Operations*. Early work on the manual began in April 1990, but was interrupted by Operations Desert Shield and Desert Storm and suspended in January 1991 with the onset of combat operations in the Gulf. Doctrinal work concentrated instead on the TRADOC mid-future concept document, TRADOC Pam 525-5, *AirLand Operations* as a projected basis for FM 100-5 revision. The completion of *AirLand Operations* occupied the final months of General John W. Foss's tenure as TRADOC commander. The FM 100-5 project resumed in August when General Frederick M. Franks, Jr. assumed command. Through 1991 and 1992, General Franks prosecuted the revision of the Army's basic operations manual, producing a final draft published on 19 January 1993. Franks was assisted by Col. James McDonough, Director of the School of Advanced Military Studies (SAMS) in the Command and General Staff College, the project's principal doctrine writer, who supervised a six-man SAMS writing team headed by Col. Rick Rowlett. The SAMS writers worked under the supervision of the deputy commander of the college, Brig. Gen. William M. Steele, and the commander of the Combined Arms Command, Lt. Gen. Wlilson A. Shoffner. General Franks managed the overall effort primarily through his Deputy Chiefs of Staff for Doctrine, Brig. Gen. Timothy Grogan through December 1992 and Brig. Gen. Lon E. Maggart from January 1993 to the end of the project at mid-year. In that office the Director of Army Doctrine, Col. Fred Berry, Lt. Col. Bobby J. McCarter as main project officer, supervised the larger project.

Following final revisions and editing, the new FM 100-5 was published by the Department of the Army and presented to the Chief of Staff of the Army, General Gordon R. Sullivan by General Franks on 14 June 1993, the Army's 218th anniversary date. Fourth in a line of operations manuals since 1976, the 1993 volume, like its predecessors, reflected the renaissance and centrality of doctrine as "the centerpiece of everything we do." In a message to Army commands on 16 June, he described the new body of ideas as a significant milestone in the Army's "intellectual bridge" to the future.[9]

The 1993 version of FM 100-5 was reoriented to a force projection Army and strategically widened to accommodate the Army's need for a new versatility to meet the deployment challenges of the new era. It was also, to an important degree, reoriented technologically to the emerging Information Age. However, the 1993 doctrine retained a strong focus on warfighting. It left behind the descriptor of the Army's predecessor doctrine, AirLand Battle, that had

9. (1) Msg, DA to distr, 221755Z Jun 93, subj: CSA-Transcript of CSA Conference. (2) MSG, DA TO DISTR, 161456Z June 93, subj: Army Birthday Celebration.

focused on the Soviet armored threat to NATO Europe. Significant new concepts were articulated, centered on the "battle dynamics" that were seen to encapsulate the critical main points of battlefield change in the 1990s. General Sullivan saw the doctrine as the Army's instrument and basis for change. Pursuing that approach, General Franks viewed the emerging doctrine as the basis for all TRADOC's work.

While, by 1994, support for the drive to Force XXI had become TRADOC's principal task, doctrinal activities were integral to that effort. On 1 August 1994, the command published a new edition of TRADOC Pamphlet 525-5, the key conceptual document TRADOC had employed to publish to the Army a credible and feasible overall fighting concept for the near-to-mid future during the early 1990s. The new edition was entitled *Force XXI Operations*. Formal work had begun on the 1994 futures concept when General Franks had established a Future Battle Directorate in his doctrine office in April 1993, shortly before the publication of the 1993 FM 100-5. Franks saw the concept work as a continuation of the evolutionary process, the first step toward new doctrine that would be formalized in the late 1990s. Building on the 1993 FM 100-5's doctrine for the near future, the pamphlet described its aim to be to promote the process of leading change.

The pamphlet assessed the future strategic environment, drew a picture of future land operations and laid out implications. The concept envisioned the next fifteen years as a transition time between a century of conflicting ideologies, world war, and strategic confrontations, and a 21st century "information age," an unknown era of "great strategic reordering" and possibly of world peace. That period would be characterized by continued challenge to U.S. vital security interests. Change would be its constant. As guided by the National Security and Military Strategies and Army direction, TRADOC's requirement was to lead that change and to lead it with the ideas that would drive it. Not technology per se, but its innovative and imaginative combination would be a key to harnessing the change militarily. Critical here was the supposition that in the flow of information, hierarchical (command channel) and internetted nonhierarchical processes would coexist in combinations that would attain a new and potentially overpowering tempo.[10] In sum, *Force XXI Operations* called for an Army of globally deployable forces unmatched in modern equipment, training and doctrine, that could succeed in the widest variety of major and minor security challenges.

Reprint editions of the 1 August 1994 concept carried an additional introduction by the new TRADOC commander, General William W. Hartzog. En-

10. (1) John L. Romjue, "Doctrine," TRADOC ACH, CY 1994, pp. 83-95. (2) TRADOC Pam 525-25, 1 August 1994.

dorsing *Force XXI Operations* in focus and direction, Hartzog indicated an approach shift. Departing from the idea of viewing the future from the present, he suggested and endorsed an intellectual move to "a mountaintop in the 21st century" from which to view and articulate a future vision. Publication of supporting concepts to 525-5 for each battle dynamic were disseminated between March and December 1994.

By 1996, fundamental operations doctrine was again in revision in order to shape, by 1998, the emerging fighting designs of Force XXI. By that time, additional factors to the fundamentally changed strategic situation suggested the changing character of military operations. They included the era's range of U.S. contingency actions—the Somalia, Rwanda, Haiti, Kuwait, Liberia, and Bosnia operations. Other factors were the continuing experience of and lessons learned from, Combat Training Center rotations and the Battle Command Training Program at Fort Leavenworth, Kansas. In addition were the flood of joint doctrine publications beginning in the 1990s and, of profound significance, the rapid and pervasive advance of information technology during the 1990s decade. The results of the digitization experiments of the Battle Laboratories that had led directly into the major Force XXI initiatives seemed to carry the seed of doctrinal revision.[11]

In August 1995, efforts began at TRADOC to once again revise the Army's basic operations doctrine. The latest revision was be the fourteenth in the series that had begun in 1905. The command's Deputy Chief of Staff for Doctrine recommended placing the responsibility for the current revision of FM 100-5 with the Combined Arms Center under the supervision of its commander. As with earlier editions, his plan was for the TRADOC commander and the Army Chief of Staff to have final authority as co-editors. General Hartzog accepted the plan and issued a program directive for the project on 25 October 1995. He saw the 1993 revision as the start of a new doctrinal cycle, the peace operations and force-projection trends of which he wanted updated and continued. However, he called for a "more homogeneous approach" than that taken by his predecessor, General Frederick M. Franks.[12]

Specifically Hartzog directed the doctrinal integration of peace operations, humanitarian assistance operations, and other military operations short of general war into the body of operational doctrine. He wanted force projection doctrine similarly integrated. Greater emphasis should be place on joint,

11. John L. Romjue, "Doctrine in the Mid-1990s" Draft, p. 11.

12. Ltr, General Hartzog to Lt. Gen. Leonard D. Holder, Jr., 27 Oct 95. Previous editions of FM 100-5 had been plagued by conflicting inter-headquarters lines of authority. See John L. Romjue, *American Army Doctrine for the Post-Cold War*, pp. 94-96.

13. Ibid.

interagency, and combined aspects of warfare. Finally, he made clear that while the headquarters DCS for Doctrine had proponency at the headquarters and would provide staff oversight from Fort Monroe, the mission of updating FM 100-5 lay entirely with the CAC commander.[13]

As with the 1993 version of the key doctrinal manual, the CAC commander formed a writing team in the School of Advanced Studies at Fort Leavenworth. The 1998 edition was to be grounded on the 1993 edition just as the 1986 edition had filled out and refined the pathbreaking 1982 AirLand Battle edition. Guidance to the small writing team was that the new manual contain broad principles and not specific tactics. It was also to reflect consistency with joint doctrine. The commander want the impact and integration of information technologies addressed at all levels throughout the force. And he wanted inclusion of support and stability operations.[14]

In June 1996, the writing team began intensive work on the revision. The team completed an internal draft in October 1996, and by mid 1997, Armywide staffing was complete. Publication was scheduled for 1998. The newest revision of FM 100-5 would reflect the lessons of nearly a decade of post-Cold War experience, assessments of technological advancements, and an appreciation of proven fundamentals and principles. It would address the full range of operations the U.S. Army expected to execute in the foreseeable future—offense, defense, stability, and support. It confirmed that the nation would call on the Army to conduct a wide array of operations beyond the scope of all-out war.[15]

Meanwhile, as its mid-future concept was widely distributed via TRADOC Pamphlet 525-5, *Force XXI Operations*, and FM 100-5 was revised and prepared for dissemination, the command turned its focus to a significant venture and procedure to outline a far-future concept of war fighting under the rubric "the Army After Next"—soon shortened to the "AAN" project. Formally begun in February 1996, the project sought to develop a credible concept document or mechanism that was capable of gaining wide Army support for the far-future 15-30-year period ahead. The Army After Next and the new process mechanism it pioneered for TRADOC and the Army were a new approach engendered by an imaginative development idea fed by the lively debates in national journals and fora in the early 1990s and ultimately made feasible by the decade's advances in wargaming simulation methods and technology.

AAN activity at TRADOC was centered in the office of the Assistant DCS for Doctrine and that office's Future Battle Directorate. A Headquarters TRADOC paper of November 1995, authored by Col. Michael Starry, weighed

14. Brf slides, HQ USACAC, 27 Nov 95, "Future FM 100-5, Mission Analysis."

15. Semiannual Staff Historical Report, ODCSDOC, CY 1997/I

factors of technological innovation, geostrategic evolution, and future defense reform as central influences on the Army beyond Force XXI. An important consideration was Army Chief of Staff General Dennis Reimer's concern that, in the period 2010-2015, the equipment of Force XXI would approach technological obsolescence. Late 1995 communications between Reimer and Hartzog moved Reimer to direct Hartzog in January 1996 to develop the concept together with the Army Staff, and to begin planning toward the right Force XXI-AAN transition and for Army research and development that would be AAN-focused.[16]

Behind the whole effort was the notion that there was present in the oncoming technology the potential for a military-doctrinal leap-ahead similar to the operational concept of *blitzkrieg* crystallized by the German Army in the 1930s from combined arms tactics and armored vehicle and radio technology. Many considerations were in play. A continuing state-based international system; a continuing "dominant U.S. war fighting" presence; the essential uncontrollability, hence limited utility of weapons of mass destruction; the potentialities, limits, and vulnerabilities to precision-strike capabilities; the need to attend to the politics of victory and not only the physics of victory; the strengths and weaknesses of a two-tiered high-tech/low-tech force versus a perhaps too-vulnerable one-dimensional high-tech force; force visibility; world economic crisis; and the possibility of radically more effective weapons—all those were major considerations entertained by TRADOC doctrinal planners in the spring of 1996.

In early May 1996, General Reimer approved a conprehensive approach to the far-future task. The AAN project would feature a cyclic annual process anchored by two events. The first event was to be a major concept paper to the Chief of Staff each June providing a comprehensive statement on the future. The second was a major theater-level war game each winter to be held at the Army's new war gaming facility, the Center for Strategic Leadership at the Army War College. The annual war game would serve both as a test bed and a basis for analysis.

By the close of 1996, the AAN project had grown into a major program involving more than 200 planners and representatives from all the armed services. Important to the project was the synchronization of planning with the Joint Chiefs of Staff Join Vision 2010 document which was published in mid-1996 contained a statement of the essential joint-service nature of future U.S. war fighting. In the first Winter Wargame at Carlisle Barracks, 27 January-6

16. Romjue, "Doctrine in the Mid-1990s," Draft, p. 7.

February 1997, more than 400 personnel participated, including government agencies, foreign military advisors, and representatives from academia.[17] The results of the latest wargame, held in the spring of 1998, indicated that ANN was producing the insights and judgements the Army needed to keep the Force XXI process oriented on developing the right capabilities to meet the predicted national security challenges of the 21st century. Significant insights from exercise included the recognition of potential threats; the belief that there were no "silver bullets" that would meet all future requirements; indications that strategic agility "makes all things possible"; a determination that technology would make a significant contribution; and the reaffirmation that leadership and the human dimension were central to success.

During 1997, the AAN group sponsored a study by the Army Science Board entitled "Human Behavior in Combat," to consider whether the Army could include variables pertaining to human and organizational behavior in it models and simulations. The study was scheduled to conclude with a final briefing to the TRADOC commander in May 1998. Also planned for later in 1998 was the publication of a book project, *Landpower in the 21st Century.* The book would discuss the enduring role of landpower, identify specific landpower requirements for the twenty-first century, and outline the long-range vision for the Army After Next.[18]

17. Ibid., pp. 5-11

18. Semiannual Staff Historical Report, CY 1997/I, pp. 2-3

Chapter VII

A TRAINING REVOLUTION

The DePuy-Gorman Initiatives

During the twenty years following the establishment of TRADOC in 1973, the Army's training system underwent a transformation. While the changes were evolutionary, a comparison of the system that existed in the immediate post-Vietnam period with that of 1993 revealed a true revolution. The mastermind of that revolution were TRADOC's first commander, General William E. Depuy, and his Deputy Chief of Staff for Training, Maj. Gen. Paul F. Gorman. Maj. Gen. Gorman came to TRADOC from the chairmanship of the Combat Arms Training Board (CATB) at Fort Benning. With him he brought many others who had served on that body. Together they brought a new concept of performance-oriented training and a concept of a systemized way to go about the setting of training objectives through the careful determination of tasks to be trained, conditions under which certain training would be required, and the setting of standards. Maj. Gen. Gorman and his "apostles and disciples" as General DePuy would later call them, also brought to training development an appreciation of rapidly advancing technology and an understanding of how it might be applied to training.[1]

When DePuy and Gorman came to TRADOC, soldiers and officers were being trained according to the Army Training Program (ATP), which had been

1. Romie L. Brownless and William J. Mullen III, *Changing an Army: An Oral History of General William E. DePuy, USA Retired* (Carlisle Barracks, Pa., United States Military History Institute and Washington, D.C., United States Army Center of Military History, n.d.) p. 184. The CATB was the successor to the Board for Dynamic Training established in July 1971 to make recommendations for decentralizing training and tailoring it to a unit's particular needs. Brig. Gen. Gorman was also president of the ad hoc board. After the Board published its report the ad hoc group was disestablished and a permanent Combat Arms Training Board put in its place. In 1977, the CATB was combined with the Logistics Training Board at Fort Lee to form the Army Training Board (ATB). The ATB was disestablished in October 1989. Anne W. Chapman, "The Quest for Dynamic Training: The Westmoreland Contribution," unpublished manuscript.

in use since World War I The ATP was a time-oriented process that prescribed how many hours would be devoted to each subject and task. As DePuy noted about the ATP, "Never mind whether or not the troops learned anything." The ATP was based on the availability of conscripts and on the assumption that the United States with its ocean barriers, would have sufficient time to raise, equip, and train a combat force, if necessary. After January 1973, the U.S. military services no longer could depend on the draft to meet their manpower needs. Other factors TRADOC had to consider in building a new training system were the post-Vietnam downsizing of the Army and shrinking defense budgets of the 1970s. The Army not only needed better training, it also needed efficient and cost-effective training.[2]

The philosophy DePuy and Gorman brought to TRADOC was influenced by revelations during the 1973 Arab-Israeli War of the lethality and range of modern weapons and of the tremendous importance of well-trained crews and tactical commanders. Gorman and DePuy agreed that what the Army needed was a "train-evaluate-train" program that would require soldiers to perform to established standards. That program, too, should be progressive and sequential so that each level was built on the next lower level. An important concept that guided TRADOC planners was a recommendation from the Board for Dynamic Training that better linkages needed to be forged between the Army's training institutions and its line units. Gorman would later write that "we believed that individual training in units was much neglected, and focused much of TRADOC's effort there." Gorman's idea was that the TRADOC school system should be reoriented so that it had a larger training, as opposed to educational, aspect. DePuy agreed. "I think you should train a man for the job he is going to perform, and then you can educate him so that the intellectual and moral environment in which he pursues his particular job will be enhanced." With an eye to the efficient, concentrated, and highly focused training demanded of Israeli soldiers, General DePuy believed that the prime objective of the training system should be effective weapons-system performance. Observing that training had "almost disappeared," DePuy tried to swing the pendulum between training and education back to the center. And finally, both men believed a solid link had to be established between doctrine and training. Thus the revision of Field Manual 100-5, *Operations*, in 1976 recognized the service schools as the "Army's source of combat developments and doctrine."[3]

2. (1) Anne W. Chapman, *The Army's Training Revolution, 1973-1990: An Overview* (Fort Monroe, Va.: TRADOC Office of the Command Historian, 1991), p. 3. (2) Brownlee and Mullen, p. 8 (quotation).

3. (1) Ltr, General Paul F. Gorman to the author, 5 Aug 1990. (2) FM 100-5, *Operations*, 1 Jul 76, pp. 1-3 to 1-5. (3) Brownlee and Mullen, p. 186 (quotation).

Basic to the process of change was the adoption of a "systems approach to training," or SAT. The SAT consisted of five interrelated phases: Analysis, design, development, implementation, and evaluation. All issues involved in systems training, unit training, individual training, and training support were studied following the SAT model. To help bring integration to unit and institutional training, TRADOC planners established a number of new programs and continued the development of other begun under CONARC. In the face of increasingly lean budgets, it was obvious to TRADOC leaders that much individual training would have to be conducted in units. As a result, TRADOC training developers began to develop and field several programs to bring the training to the soldier, including the Army Training and Evaluation System (ARTEP); Skill Qualification Tests (SQT); a new literature program, including soldiers' manuals; and training extension courses.

Perhaps the most important of the new approaches to training were the ARTEP and the SQT. The ARTEP was a new performance-oriented program for collective training which required unit elements from squad through battalion and their soldiers and leaders to perform to a standard, not just put in the training hours. The program defined specified missions and tasks, conditions,

Fourth ROTC Region Capstone Exercise in July 1985. When TRADOC was created in 1973, soldiers and officers were trained according to the Army Training Program in use since World war I. It was time oriented rather than performance based. General DePuy replaced it with a progressive and sequential process the built on performance at the next level.

and the standards that were to be met by a unit. At the same time it decentralized training by placing the responsibility for execution of the training program directly on the unit. The ARTEP was structured to allow Army troops to train as they would fight, evaluate the results of their training, and use the lessons learned to improve training. From the beginning there were problems, as the ARTEP became regarded as more an event than a program. Beginning in 1983, TRADOC began adopting "mission training plans" (MTP) to make the ARTEP

more responsive to collective training needs. The MTPs were concise training strategies designed to achieve unit proficiency for a specific battle mission. The plans described progressive training programs from individual tasks through battalion level missions.[4]

The SQT was designed to provide an indicator of soldier proficiency in a military occupational specialty (MOS). Use of SQTs to replace previous MOS tests began in 1977. The test consisted initially of a formally administered written test together with hands-on performance criteria made up of selected tasks from the MOS-specific soldier training publication. In 1983, the hands-on test was decentralized to the unit level as part of the commander's evaluation. At that time the SQT, along with a common task test of skills basic to all MOSs and the commander's evaluation became part of the Individual Training Evaluation Program (ITEP). Various refinements were made to the SQT over the years, but beginning in 1990, TRADOC began development of a Self-Development Test (SDT) to replace the SQT. The rationale behind the new SDT was that NCOs should have to take more responsibility for their own MOS and their own leadership development, and discipline themselves to study on their own. During FY 1992, 125,000 soldiers took the new SDT to evaluate the concept of having soldiers take some of the responsibility for their own career development.

For two years, TRADOC trainers fine-tuned the test based on scores and comments from the field. In general, plans were going ahead for fully implementing the new, but controversial SDT. However, in December 1994, shortly after becoming TRADOC commander, General William W. Hartzog recommended the Self Development Test be eliminated. The consensus of command sergeants major of the major commands was that the test was a redundant program that paralleled NCOES and did not provide a battle focus for the Army of the 21st century. It was felt that NCOES had advanced to the point where it objectively measured soldier performance better than the SDT. The Department of the Army accepted Hartzog's recommendation and the SDT was eliminated.

Tied directly to the SQTs, and later to the SDT, were new Soldiers' Manuals.[5] The Soldiers' Manuals set forth what the Army expected a soldier to know and be able to perform at each skill level. There were also Commanders' Manuals which told the commander what the soldier was supposed to learn and what the commander was responsible for adding, in order to produce a competent soldier. The new manuals were themselves a part of a much larger program at

4. Chapman, *Training Revolution*, pp. 7, 23.

5. (1) Ibid. (2) TRADOC Hist R, 84-86, p. 38 (SECRET – Info used is UNCLASSIFIED. (3) TRADOC ACH, CY 90, pp. 119-22; CY 94, p. 36

TRADOC to update and revise training and doctrinal literature. The command's literature production and development program included, besides Soldiers' Manuals, ARTEP materials, field manuals, "how to fight" manuals, technical manuals, and Training Circulars, to name only a few. At the time of TRADOC's establishment, the Army was publishing 1,345 items of training literature, 615 of which had first been published before 1969. In FY 1974 alone, TRADOC was responsible for creating or revising approximately 945 training literature documents. Over the command's twenty-five years, the training literature program saw many changes as it adapted to new programs and projects and looked to the Army of the 21st century.[6]

As noted above, increasing shortages in the manpower available to the Army made it necessary to conduct much individual training in units. As a result, General DePuy placed an increased emphasis on training development and support that could be "exported" to the field. A program to develop training extension courses (TEC), begun under CONARC, was greatly expanded to support that focus. The CONARC program had not been performance-oriented nor derived from an MOS definition. Under DePuy and Gorman the courses were extensively revised to concentrate on the critical tasks a soldier had to accomplish in performing his MOS duties. The primary delivery system for TEC were projectors and small tape recorders. Although simple compared to 1990s simulation technology, computer-based instruction, and distance learning, the early training extension courses marked a sharp departure from more traditional training methods.[7]

The DePuy and Gorman years also saw changes in the Initial Entry Training Program (IET) and the Noncommissioned Officer Education System (NCOES). In July 1974, a new basic combat training (BCT) program was implemented that stressed discipline, decentralization to the lowest possible level, and the teaching of basic combat skills. DePuy's aim was to make the system flexible enough to encourage commanders to become goal-oriented rather than procedure-oriented. TRADOC also made a major change in the structure of BCT. A new one-station unit training (OSUT) plan integrated some BCT and advanced individual training (AIT) programs into cohesive program. That action also meant that fewer soldiers undergoing IET would have to take the two phases at two different locations. With regard to NCOES, TRADOC began to establish a progressive and sequential system in line with Gorman's philosophy and with the officer education system. Self-paced instruction also became a feature of the NCOES.[8]

6. TRADOC Annual Report of Major Activities, FY 74, p. 99. (SECRET – Info used is UNCLASSIFIED)
7. Ibid., pp. 108-10.
8. TRADOC AHR, FY 75, pp. 50, 53-60. (CONFIDENTIAL – Info used is UNCLASSIFIED)

Generals DePuy and Gorman would later agree that the aforementioned programs represented the basic tenets of the new training system they had hoped to establish for TRADOC. Both officers 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 1998 would be more in degree than in kind.[9]

School Models and Long Range Plans

During the first twenty-five years of its existence, TRADOC employed a number of "school models" and long range training plans to guide the command in fulfilling its missions to train the Army's soldiers and officers. The first new school model adopted to replace the one that had been in use since the

Recruits at Fort Bliss, Texas learn hand-to-hand combat skills using padded pugil sticks. In July 1974, a new basic combat training program was implemented that stressed discipline, decentralization to the lowest possible level, and the teaching of basic combat skills.

STEADFAST reorganization in 1973, clearly bore marks of DePuy's interest in training, as opposed to education, and in exported training. It also bore witness to Maj. Gen. Gorman's interest in advanced technology. As a result of his awareness of the wide discrepancies that existed between what was known about modern educational technologies and what was practiced at TRADOC schools, General DePuy directed his staff to develop a new school model that would modernize and bring greater efficiency to the schools' organization. His aim was, he said, to turn the TRADOC schools into "training factories." School Model 76 was based on the premise that the commandants would be respon-

9. (1) Brownlee and Mullen, pp. 184-87. (2) Ltr, General Gorman (Ret) to author, 5 Aug 90. (3) Author's telephone conversation with General Gorman (Ret), 12 Apr 93.

sible for the interface between combat developments and training developments. The combat developments portion of the school would create new weapons requirements. The combat developments portion of the school would create new weapons requirements, tactics, and tactical and support organizations, based on approved doctrine. Training development personnel would be responsible for resident training and extension training, simulation devices and simulators, and training literature, to ensure the optimum employment of the combat developers' products. General DePuy intended that the schools become less "instructor intensive" and that they take advantage of existing technologies.[10]

Another initiative that would affect the TRADOC schools was the establishment of a Military History Education Program. In November 1979, General Donn Starry, then TRADOC commander, asked the newly created Combat Studies Institute at Fort Leavenworth to develop a plan which would lead to the creation of a program for the study of military history. That effort culminated in the publication of TRADOC Circular 350-81-3, TRADOC Military History Program, on 1 May 1981. TRADOC Regulation 350-13, Military History Education (MHEP), published on 19 January 1982 to supersede TRADOC Circular 350-81-3, vested proponency for MHEP with the Chief of Staff, TRADOC, and established command policy for the study of military history in the TRADOC service schools and in senior ROTC detachments. The TRADOC Military History Education Program was intended to foster a sense of historical mindedness in the Army community, resulting in a sensitivity to the intellectual and functional values of military history as a necessary component of professional education and development. The program was compatible with the MQS program recommended by the RETO Study Group.[11]

The TRADOC Commander's Advisory Board on Military History Education conducted an annual review of the quality and scope of military instruction and made recommendations to the TRADOC commander on MHEP program policy and direction. In 1983, proponency for MHEP management was moved to Commander, CAC, with executive agency given to the Director of the Combat Studies Institute. A 1983 version of TRADOC Regulation 350-13 placed the requirement for instruction in military history with uniformed officers outside the command history program, and made no provision for utilizing civilian branch historians in MHEP. However, as the TRADOC history program grew in the field, commandants began to use the branch historians to coordinate MHEP in their commands. By 1998, a majority of branch historians

10. (1)TRADOC AHRs. FY 76, p. 79; FY 77, pp. 51-52. (Both CONFIDENTIAL – Info used is UNCLASSIFIED) (2) Chapman, *Training Revolution*, pp. 7-9.

11. (1) TRADOC AHR, FY 82, p. 251-52. (CONFIDENTIAL — Info used is UNCLASSIFIED

served as adjunct instructors of military history. In August 1992, proponency for TRADOC's military history education program was moved once again, back to TRADOC headquarters and to the Office of the Command Historian. In 1998, TRADOC 350-13 was once again being revised to reflect visions of the Army of the 21st century.[12]

During the summer of 1981, General Glenn K. Otis, who became TRADOC commander in August 1981, determined that the time had come to develop and implement an Army training plan that could guide TRADOC activities to 1990 and beyond. Otis appointed Brig. Gen. Frederic J. Brown, TRADOC Deputy Chief of Staff for Training, head of a working group to write a description of what the status of training in the Army should be at the beginning of the next decade. "Army Training 1990" combined fine tuning of the programs instituted since 1973 with striking out in several new directions to bring all aspects of training together into a coherent plan which could serve as a guide for future actions. The Army Training 1990 concept was divided into three parts-institutional training, in which TRADOC's role as an executive command was defined; unit training, which addressed gaining and sustaining training proficiency in units; and training support, which laid out TRADOC's responsibility for support to all Army training. Over the next three years, the concept underwent numerous revisions. In the summer of 1984, the Army Deputy Chief of Staff for Operations and Plans (DCSOPS) decided not to publish Army Training 1990, on grounds that it dealt too specifically with TRADOC for general Army use. Many of its features, however, had already been incorporated into a DCSOPS study entitled "Army Training Roles and Responsibilities." In the fall of 1985, General William R. Richardson approved a much revised plan for TRADOC.[13]

Meanwhile, it had become obvious that there were problems inherent in School Model 76, the most notable of which was that instructors in the academic departments were barred from participation in the training development and combat development processes. Almost immediately after the model's adoption, the schools began to request exception to that policy, a practice that resulted in each school becoming, in essence, a separate organization, managed to some extent in its own way with regard to resources, personnel, and horizontal and vertical communications. In August 1982, TRADOC commander General Glenn K. Otis established a working group under Brig. Gen. Donald Morelli—than assigned as Special Assistant to the Commanding General—to

12. (1) Position Paper, Office of the Command Historian, 30 Jun 92. (2) Henry O. Malone, Jr. "Focus on the Field," *Army Historian*, Summer 1990, pp. 20-21.

13. For a detailed analysis of the development and content of the Army Training 1990 program, see TRADOC AHR, FY 82, pp. 194-213; TRADOC ACH, FY 83, pp. 1-24; TRADOC Hist R, 84-86, pp. 12-13.

look into revising School Model 76. Instead of revision, the group recommended the adoption of a new school model that would integrate the future direction of the Army with the school model. It was expected that abandoning a reactive approach would put TRADOC in a posture to actively participate in designing the way it operated in the future. Morelli's model for fulfilling TRADOC's training mission combined combat development and training developments in the same directorate, thereby bringing training developments and evaluation into the system acquisition process earlier. Thus evaluation could serve to provide information on the potential successes or failures associated with total system fielding.[14]

General Otis deferred any decision on School Model 83 to General William R. Richardson who assumed command of TRADOC in March 1983. In April 1983, he laid out his desire to give back to the school's Directors of Training and the academic departments, much of the responsibility for training developments they had lost in School Model 76. Richardson, in keeping with his philosophy that training should be TRADOC's first priority, directed that the writing of training doctrine and all training development products be accomplished by the instructors who were the command's subject matter experts. The Directorates of Training and Doctrine in the schools would be responsible for training concept development, training direction, planning, training management, and the identification of the major tasks critical to duty competence. Given those tasks, the training departments would perform the analysis to develop specific teaching tasks and write the objectives, complete with conditions and standards for training. Instructors would select training sites, describe the target population, determine methods and media, and prepare the training management plans. They would also write doctrine and develop training support materials.[15]

As TRADOC planners continued to examine how the command's schools should be organized and managed, General Carl E. Vuono, who replaced General Richardson as TRADOC commander in June 1986, directed the development of a long-range plan to guide the command for ten years into the future. TRADOC published its Long Range Plan in May 1987. Meanwhile TRADOC training planners began writing "Army Training 1997" in support of the command's long range plan. In reality, Army Training 1997 was an updated and retitled Army Training 1990. Specific guidance included the integration of reserve component training throughout the document under a "Total Army"

14. For a full discussion of School Model 83, see TRADOC ACH, FY 83, pp. 53-62. (SECRET – Info used is UNCLASSIFIED)

15. TRADOC ACH, FY 83, pp. 56, 62.

concept. Additional emphasis was given to developing joint and combined operations and to the distributed training system. Army Training 1997 was published in September 1987. Major changes included in the final version dealt with leader development, future technology strategy, the connection between training development and combat developments within the Concept Based Requirements System (CBRS), combat training centers, embedded training, and small group instruction. The long range strategy provided for a new training system for warrant officers and a strong emphasis on civilian leadership training. The plan also included the results of an important Initial Entry Training (IET) study, undertaken to draft a set of standards to improve training effectiveness and guide the evolution of IET.[16]

Shortly after the development of the Army Training 1997 concept, General Maxwell R. Thurman, who became TRADOC commander in June 1987, called for a reassessment of TRADOC's status and took a hard look at the command's priorities for the short term. In the late fall of 1988, he outlined for TRADOC and the Army leadership his "Vision 91" of how the command should fulfill its mission through 1991 with regard to doctrine, force design, equipment requirements, leader development, training, and mission support. As set forth in Vision 91, training had to be consistent with doctrine, "embedded" into the development of new equipment, and made an integral part of force modernization. Institutional, unit, and individual training had to focus on the teaching of warfighting skills in a tactical field environment to produce soldiers who understood the specific tasks of their jobs and could perform them to established standards. Training would, according to Vision 91 plans, make heavy use of technological advances—especially computer-based teaching and testing and the simulation of force-on-force maneuvers. Increased reliance on the reserve component would drive the exploration of innovative methodologies to meet their special needs. The Systems Approach to Training, discussed above, should be automated to improve the production and standardization of training products through automation.[17]

When work had begun on Army Training 1997, the intent was that as the architecture of the Army of the future evolved, the plan would be brought up to date and revised as Army 2004, to support the emerging doctrine of AirLand Battle-Future and Army 21. At the same time, an Army Training 21 concept was being developed. Approved by the TRADOC Deputy Chief of Staff for Training in November 1988, the plan laid down the specifics for developing a

16. TRADOC AHRs, CY 87, pp. 11-13. (SECRET – Info used is UNCLASSIFIED); CY 88, pp. 110-11. (FOR OFFICIAL USE ONLY – Info used is not protected)

17. (1)TRADOC AHR, CY 88, pp. 112-13. (FOR OFFICIAL USE ONLY – Info used is not protected) (2) General Maxwell R. Thurman, Vision 91 Monograph with attached Vision 91 Briefing, June 1989, THRC.

long-range "umbrella" training strategy for the late 1990s and the first twenty years of the 21st century. It included such training strategies as distributed training, strategies based on the technical requirements of each MOS, civilian vocational and technical training for appropriate MOSs, training in colleges and universities, recruiting by ability instead of aptitude, and reconfiguring the TRADOC school system to be more responsive to projected training requirements in the year 2020. The concept plan also addressed the Combat Training Centers (CTC) Master Plan, discussed below, and reserve component training.[18]

The principal thrust of Army Training 21 was to reduce the size, cost, and length of institutional training as it was known in the 1980s. Of special interest were the suggested options for initial entry training. After BCT a soldier could go directly to his unit and receive AIT there through a distributed training system, rather than at resident AIT after basic combat training. Other options were to have the soldier attend a civilian vocational school immediately upon enlistment and before BCT. Alternately, BCT generic tasks could be trained during secondary schooling, after which the soldier would report to his first unit assignment for on-the-job training through distributed training. Over the next four years, many variations of the suggested solutions to problems were tried, studied, and revised.[19]

As General Thurman looked at how the command could best meet its responsibilities down to 1991, TRADOC's training managers were examining School Model 83 for needed changes. School Model 1989 eliminated the School Secretary organizations at schools located on TRADOC installations, aligned the threat support office under the assistant commandant, and limited the number of training departments to four. Because of the number of requests for exemption, which had to be considered on a case-by-case basis, School Model 89 was not implemented until 1990.[20]

Meanwhile, it had become clear that the Army needed a new capstone training manual in order to keep pace with evolving training plans and doctrine. TRADOC's new training philosophy was contained in FM 25-100, *Training the Force*, published in 1988 to take its place alongside FM 100-5, *Operations,* and FM 22-100, *Military Leadership,* as part of a trilogy of "train, fight, lead" manuals. FM 25-100, however, focused primarily on senior active and reserve commanders above battalion level. It became clear that there was a

18. (1)TRADOC AHR, CY 88, p. 111. (FOR OFFICIAL USE ONLY – Info used is not protected) (2) Briefing, ODCST to TRADOC Commanders' Conference, Fort Monroe, Va., 7-8 Nov 89, THRC.

19. Chapman *Training Revolution*, pp. 34-35.

20. (1) GO Notes 05-89 May 1989. (2) SSHR, ODCST, 1 Jan - 30 Jun 89, p. 61; 1 Jul - 31 Dec 89, p. 54. Both in THRC.

need for additional guidance to better apply the concepts of FM 25-100 at battalion and company level. Accordingly, FM 25-101, *Battle Focused Training*,— published in 1990— was developed to fill the void and serve as a "how to" manual for units in the field.[21]

Training Technology

An important facet of the TRADOC training story was the command's efforts to take advantage of ever more sophisticated technology that could be applied to training. The development of audio-visual training extension courses to support General DePuy's concept of exported training has already been noted. Also during the DePuy-Gorman years, several tactical engagement simulation systems were in use to support unit training in the field. One of these was known as SCOPES, for Squad Combat Operations Exercise Simulation. SCOPES was designed to eliminate the judgment of umpires that was highly subjective, and featured a 6-power telescope mounted on a rifle with numbers affixed to each individual soldier for the identification of casualties. A similar system for training tank crews called REALTRAIN had a 10-power scope. The two simulations could be mixed in maneuvers between reinforced mechanized infantry units. Both systems saw limited use because they were expensive to run in terms of manpower.[22]

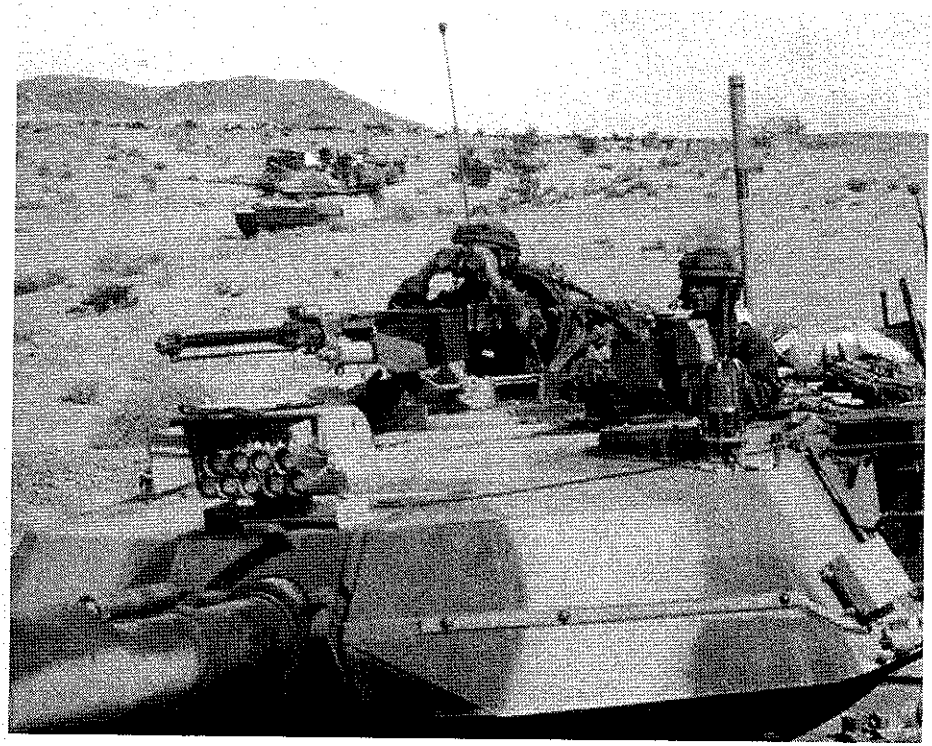
In the early-to-mid 1970s, TRADOC began developing a more sophisticated tactical engagement simulator for use in force-on-force field training exercises. That system, the Multiple Integrated Laser Engagement System, always known as MILES, revolutionized collective training in the Army. In 1998, the system—after several upgrades—was the most innovative and effective major training device in existence. MILES consisted of eye-safe laser transmitters that simulated live ammunition from direct fire weapons and laser detectors affixed on opposing troops' weapons systems and other equipment. The detectors were capable of signaling a "near miss," a "hit," or a "kill" thereby allowing objective assessment of the survival of soldiers or weapons. It was the MILES system that made possible three of the four combat training centers, discussed below.[23]

Since its establishment, TRADOC had been responsible for the development of dozens of systems and nonsystems training aids and devices. Most of those were computer-based and designed to allow training, when space, safety,

21. (1) Chapman, *Training Revolution*, pp. 29, 44-45. (2) General Carl E. Vuono, "Battle Focused Training: Key to Readiness," *Army Trainer*, Winter 1990, pp. 3-5.

22. TRADOC AHR, FY 77, 56-57. (CONFIDENTIAL – Info used is UNCLASSIFIED)

23. TRADOC ACH, CY 91, pp. 184-85.



M1 Abrams main battle tank equipped with the Multiple Integrated Laser Engagement Sustem (MILES). The strobe light on top of the turret and the laser sensors located on the turret and around the crew's helmets activated when the vehicle or individual was "hit". Photograph taken at the national Training Center, Fort Irwin, California. (Courestesy of Greg Stewart)

cost , or environmental considerations might have prevented it. Simulators and simulations such as the Simulation Network (SIMNET), that joined more than 200 simulators, allowed units to participate in simulated battles without leaving home station. In 1998, SIMNET technology was being applied to development of a family of Combined Arms Tactical Trainers (CATT). A family of simulators (FAMSIM), allowed for training in command and control from platoon level to echelons above corps. DePuy's and Gorman's faith in the value of advanced technology applied to training, and the imagination and support of their successors, had by TRADOC's 25th anniversary placed the Army first among the services in the field of training technology.

In August 1988, the TRADOC Deputy Chief of Staff for Training, in cooperation with the Department of the Army, FORSCOM, the National Guard Bureau, CATA, the TRADOC schools, Seventh Army Training Command, the Program Manager for Training Devices (PM TRADE), and other commands and agencies, began building a comprehensive force training strategy. As the Army Chief of Staff, General Vuono, envisioned it, the Combined Arms Train-

ing Strategy, usually known as CATS, would be a transition plan to modernize the total force's training system through time by linking near-term with long-term strategies across the spectrum of the seven battlefield operating systems. In each weapons area, CATS would identify the skills that each soldier needed to have and determine what training aids, devices, simulators, and simulations were available to train those skills, given the existing and projected resources.[24]

It was rapidly advancing technology, too, that allowed for the establishment of the Army's Combat Training Center (CTC) Program. In 1976, Maj. Gen. Gorman began developing a concept for a national training center where

Opposing force infantry prepare to move forward during an exercise at the National Training Center, Fort Irwin, California. The MILES sensors can be seen on the helmets and on the side of the M113. In 1976, TRADOC began developing the concept for a national training center where armored and mechanized infantry units could train force-on-force and live-fire exercises. (Photograph couresty of Greg Stewart)

heavy armored and mechanized infantry units could train in force-on-force and live-fire exercises and where data could be collected to support doctrine development, combat developments, and a "lessons learned" system. The first force-on-force maneuvers were conducted at the U.S. Army National Training Center (NTC) at Fort Irwin, Calif. In January 1982.

The NTC was a joint TRADOC-FORSCOM project. The major features of the training center were the employment of MILES for casualty assessment; a sophisticated data collection system for exercise control and data collection;

24. Chapman, *Training Revolution*, pp. 39-44.

a TRADOC Operations Group; a superbly trained opposing force (OPFOR); expert exercise observer-controllers; after action reviews of unit performance; and take home packages designed to aid units in correcting deficiencies while training at home station. After 1982, many changes occurred at the NTC. Contingency operations and heavy/light rotations were added to the schedule, the instrumentation and equipment were upgraded, and scenarios were changed to reflect lessons learned during Operation Desert Storm, to name only a few. And as a result of the establishment of the NTC and of the need to draw lessons from the performance of units there, the Center for Army Lessons Learned (CALL) was established at the Combined Arms Center at Fort Leavenworth in August 1985.[25]

The success of the NTC in training heavy mechanized forces led the Army to establish a similar facility for the training of light forces. The Joint Readiness Training Center (JRTC) opened, on a temporary basis, at Fort Chaffee in October 1987. Like the NTC, it featured a TRADOC Operations Group and an OPFOR. Unlike the NTC, the JRTC was completely a TRADOC project in its early days and until the light training center moved to a permanent home at Fort Polk in 1993. At that time the JRTC became a TRADOC-FORSCOM effort like the NTC. In 1988, the Army began to plan for a Combat Maneuver Training Center (CMTC) at Hohenfels, Germany, to provide for troops in Europe the same realistic combined arms training exercises as those at the NTC. Meanwhile in early 1987, the Chief of Staff of the Army approved the concept of the Battle Command Training Program (BCTP) to train active and reserve division and corps commanders, their staffs, and major subordinate commanders in warfighting skills. The program consisted of a five-day warfighting seminar at Fort Leavenworth followed by a five-day computer-driven division command post exercise driven by simulation.[26]

In May 1987, the four aforementioned programs were brought under a single training "umbrella" and became known as the Combat Training Centers, or CTC. Collectively, the CTC projects focused on integrating all elements of combat power, and were designed to provide tough, realistic combined arms and services training in accordance with AirLand Battle doctrine, for units from squad through corps. The CTCs, in short, provided the Army the capability to train heavy, light, and special operations forces across the spectrum of conflict.[27]

25. Anne W. Chapman, *The Origins and Development of the National Training Center* (Fort Monroe, Va.: TRADOC Office of the Command Historian, 1992), passim.

26. Chapman, *Training Revolution*, p. 25-26.

27. TRADOC ACH, CY 91, p. 156.

Officer and Noncommissioned Officer Education and Leader Development

One of General DePuy's requirements in the design of an integrated training system for the Army was that training programs were to be progressive and sequential. He also required that standards of performance be set and met at each level. As TRADOC reached the 25-year mark, the Officer Education System (OES) and the Noncommissioned Officer Education System met both those criteria. The OES remained much the same in structure as when the command had been established—with two exceptions. After completing the officer basic and advanced courses, captains were required to attend the Combined Arms and Services Staff School (CAS^3). Established at Fort Leavenworth in 1982, under command of the Command and General Staff College, the CAS course trained officers to function as staff officers with the Army in the field. A year later, an optional School of Advanced Military Studies (SAMS) was established, also at Fort Leavenworth, as a second-year program for selected graduates of the main command and staff course. SAMS contained two separate programs: the Advanced Military Studies Program for majors and the Advanced Operational Studies Program for lieutenant colonels. Officers were carefully selected for the programs. 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.[28]

In FY 1978, the Review of Education and Training for Officers (RETO) study group recommended the adoption of Military Qualification Standards (MQS), which would, among other things, standardize criteria for commissioning among the commissioning sources. The program made mandatory the teaching of common military skills and knowledge prior to commissioning, and served to standardize officer training throughout the Army. In 1985, the Professional Development of Officers Study reinforced the perceived need for standardization and vertical integration in the education and training of officers. The MQS program had three levels: MQS I, precommissioning; MQS II, company grade officers; and MQS III, field grade officers. By August 1993, all three levels were in place and manuals for all three levels published.[29]

However, as the MQS III manual was being edited for publication, the Army's senior leadership expressed concern over the effectiveness of the entire

28. (1) TRADOC AHR, CY 88, p. 125. (FOR OFFICIAL USE ONLY – Info used is not protected) (2) CAC AHR, CY 87, p. 81.

29. (1) TRADOC ACH, CY 89, pp. 181-82; CY 94, pp. 40-42. (2) SSHR, OSCST, CY 92/II, p. 51.

MQS system. The program did not seem to be making a difference, especially to the individual officer and the unit commander. Several studies of the program cited a multitude of difficulties, including the lack of adequate links to the OBC and OAC programs of instruction. As a result, a group composed of representatives from the Department of the Army, the service schools, the commissioning sources, TRADOC, CAL, CASCOM, and the Sergeants Major Academy closely studied MQS and made recommendations to the Army Chief of Staff, including the suggestion that the name of MQS be changed to Officer Foundation Standards (OFS). The Chief of Staff approved the study's recommendations on 26 January 1994. TRADOC personnel who were responsible for MQS saw the transition as a opportunity to reorganize all types of common officer training under one system. Thus the Officer Standards program became more than a revised MQS. Besides focusing on the institutional pillar of leader development, OFS would become TRADOC's mechanism for managing all common training within the Officer Education System, by combining the MQS common core curriculum with the OBC and OAC programs of instruction. TRADOC's plan called for developing a single common core list and designating the CGSC as the executive agent. The Warrant Officer Career Center and the SMA would each serve as executive agents for their respective education systems. Meanwhile TRADOC's Deputy Chief of Staff for Training determined all officer, warrant officer, and noncommissioned officer common military and directed an mandated training should be managed under the single "umbrella" of TRADOC's common core curriculum. As a result, the concept of a separate OFS was nulled.[30]

The Noncommissioned Officer Education System (NCOES) served as the cornerstone of the "train the trainer" emphasis that guided TRADOC's approach to its overall training responsibilities. DePuy and Gorman's efforts to establish a sequential and progressive education program for noncommissioned officers had evolved slowly over the quarter century of TRADOC's existence. NCOES featured four vertically integrated levels of training—primary, basic, advanced, and senior. Those levels had, over a period of years, been tied to promotion in accordance with TRADOC's long-range goals. That is completion of the Primary Leadership Development Course was mandatory for promotion to sergeant; Basic Noncommissioned Officer Course for promotion to staff sergeant; Advanced Noncommissioned Officer course for promotion to sergeant first class; and Sergeants Major Course for promotion to sergeant major.[31]

Leader development had been a concern of the Army for many years. However, TRADOC brought that concern into sharper focus and institutional-

30. For a more detailed discussion of the leader development changes see TRADOC ACH, CY 94, pp. 40-42.

31. PROFS Electronic-Mail Msg, ODCST, 21 Apr 93.

ized leader development programs on several levels. Since 1973, a number studies had been conducted to investigate the status of leader development the Army. In the fall of 1987, General Vuono, Army Chief of Staff, tasked Ma Gen. Gordon R. Sullivan to conduct a formal study of leader development the Army and to develop a leader development action plan to provide specif recommendations as to the changes needed in the Army leader developme process. The action plan, submitted in April 1988, envisioned a programs th rested on three doctrinal "pillars": institutional training; operational assig ments; and self-development.[32]

Developing leaders in all components of the Army, in light of decreasi resources, took on added importance to the maintenance of readiness and cha lenged TRADOC to maximize every developmental opportunity. To manag the leader development program, TRADOC had established in 1983, within th Combined Arms Center, a Center of Army Leadership (CAL). Leader develo ment was a continuous process of education, training, experience, assessmer review, reinforcement, evaluation, and selection for the next leadership leve The command was responsible for the institutional phase of leader develo ment and for identification of the goals of operational assignments and sel study. The leader development effort was guided by five Leader Developme Action Plans, one each for officers, warrant officers, noncommissioned offi ers, civilians, and the reserve component. The plans, collectively, were d signed to ensure that leadership assessment and development was incorporate into all levels of leader training and education.[33]

Another major initiative of the 1990s was the Future Army Schools Twenty one (FAST) effort. It was the mission of a FAST Task Force to "establish a effective and efficient Total Army School System of fully accredited and int grated AC/ARNG/USAR schools that would provide standard individual trai ing and education for the Total Army." One of the Task Force's recommend tions was the establishment of TRADOC as sole accrediting authority for th schools, effective January 1993. The major thrust of FAST was the establis ment of a regionally-based reserve component school system under the au pices of TRADOC headquarters.[34]

32. (1) The major studies dealing with leader development since the establishment of TRADOC were the Rev of Education and Training of officers (RETO), the Professional Development of Officers Study, the Total Warrant Officer System Study, and the Noncommissioned Officer Professional Development Study. (2) TRADOC AHR, CY 88, pp. 128-29. (FOR OFFICIAL USE ONLY – Info used is not protected) (3) Col. Mich A. Anastasio, "Leadership Development: Direction for the Future," *Military Review*, May 1991, pp. 10-19.

33. (1) TRADOC ACH, CY 92, (Draft). (2) PROFS Electronic-Mail Msg, Center for Army Leadership, Fort Leavenworth, Kan., 21 Apr 93.

34. FAST Briefing, n.d. [1993].

Army Training XXI

Looking to the Army of the 21st century, TRADOC trainers considered their challenge to be maintaining the essence of the Army's education and training system, but not necessarily the "pieces." For example, quality schools had to continue, but perhaps at different locations. A major part of the 21st century strategy was the utilization of the best combinations of live, virtual, and constructive simulations and simulators. That strategy was designed to unite the many ongoing training efforts into a clear, coherent vision to produce trained and ready units into the next century. To achieve the Army's objectives in Force XXI to transform the force from an Industrial Age Army into a knowledge and capabilities based power projection Army, TRADOC had concurrently to develop the means and methods to train and sustain the force. To support efforts to have Force XXI reach its maximum potential, the TRADOC training community developed Army Training XXI (AT XXI).[35]

TRADOC developed the AT XXI concept to ensure that training was included in every phase of Force XII development. In June 1995, the Army Deputy Chief of Staff for Operations (DSCOPS) formally acknowledged AT XXI as the training component of the Joint Venture (JV) axis of the Army Campaign Plan to develop Force XXI. TRADOC's AT XXI concept incorporated three strategic plans as the JV component: Warfighter XXI (WF XXI), Warrior XXI (W XXI), and Warfighter Network (WARNET).

Warfighter XXI was the major emphasis for AT XXI and focused on the unit training pillar. WF XXI provided a strategic vision and an integrated plan for how the future Army would train battle staff and collective tasks. WW XXI had five components: the Standard Army Training System (SATS); training support packages (TSP); training aids, devices, simulation, and simulators (TADSS); the Standard Army After Action Review System (STAARS); and the Army Training Digital Library (ATDL). SATS provided an automated training management system designed to enhance the planning, resourcing, execution, and assessment of battle-focused training for the unit and unit commanders. Training support packages were task-based information packages that provided structured situational training scenarios for live, virtual, and/or constructive environments and assisted the commander in training assessment. TADSS provided integrated, effective tools for the unit and institutional commander to efficiently conduct training. The STARRS provided the Army a doctrine-based information collection system to assist commanders in evaluating training programs. The ATDL would store the data and provide commanders access to

35. This section is based on the Commanding General's 1st Quarter Report, FY 97, Training.

data from many information sources necessary to plan, resource, execute and assess training.

The remaining components of AT XII supported Warfighter XXI. Warrior XXI focused on the development of the institutional and self-development pillars of training. Specifically, that program provided a strategic vision and an integrated plan for the development of the Total Army School System (TASS). WARNET XXI provided the linkage of training acquisition, new equipment training, and digitalization of training support products. The system integrated training support needs into system/hardware materiel requirements to ensure a complete training subsystem was fielded. WARNET XXI also ensured that contractor-developed training products were digitized in accordance with Army standards.

Initial Entry Training

On 1 October 1998, Army basic combat training (BCT) would be expanded from eight weeks to nine weeks so that new soldiers could be immersed in the Army's seven core values. The directive for the additional week of BCT came from General Dennis Reimer, Army Chief of Staff, in the wake of allegations of sexual harassment during initial entry training at several Army installations. The additional 54 hours of instruction stressed the Army's values and heritage and aimed to promote teamwork, discipline, and a sense of the Army's heritage. Each of the Army's seven values emphasized in BCT — loyalty, duty, respect, selfless service, honor, integrity and personal courage — would be expressed as training themes throughout the nine weeks. According to TRADOC commander General William W. Hartzog, "We found we needed more time in basic training to ensure that the recruits completed BCT at the appropriate physical levels, having gotten all of the tasks and training skills that we felt were necessary." Lt. Gen. William Bolt, TRADOC Deputy Commanding General—Initial Entry Training, added that "the goal of the expanded training is to not only make the training experience even more rigorous, but also to provide additional human relations training and allow more time for the inculcation of Army values into our newest soldiers. The intent is to challenge new volunteers and have them emerge from IET as proud values-based soldiers."[36]

IET included both BCT and advanced individual training (AIT), in which soldiers were trained in their military occupational specialties (MOS). One station unit training (OSUT) was also part of IET. OSUT, which would be lengthened by 54 hours, combined BCT and AIT for some career fields, prima-

36. This section is based on an article by Jim Caldwell of the TRADOC Public Affairs Office. The article appeared on the TRADOC News Service, 23 Apr 98.

rily combat arms. An additional 27 hours of human relations training included prevention of sexual harassment and sexual misconduct. Those subjects, too, would be taught in the context of Army values. Each of the seven values would be showcased during one week of BCT. The value for each week would be interwoven throughout all that week's training. Soldiers going through the longer BCT would still be required to meet standards in traditional training tasks such as weapons qualification, the Army Physical Fitness Test, hand grenade throwing, road marches and obstacle and confidence courses. Tasks like rape prevention or financial management would be integrated throughout every subject trained in BCT, and drill sergeants and instructors would relate how the Army core values were relevant.

Hours were added to give drill sergeants and company commanders more evaluation and assessment time with the trainees. Drill sergeants would conduct hour-long after-action reviews at the end of each week. During those reviews they would remind their platoons about what they have been taught, and reemphasize the Army value theme for that week. Company commanders would conduct "sensing" sessions with each platoon of trainees midway through and at the end of a BCT cycle. Sensing sessions were included so that commanders could receive feedback from the trainees' about the overall BCT experience. That included barracks, quality of life, and the quality of training. The increased time also meant that recruits would receive more physical training (PT).

An event that placed physical demands on trainees was the three-day field training exercise (FTX) at the end of BCT. The FTX reinforced all of the training given previously during BCT. Four hours would be added to the FTX. There would be time added to night infiltration exercises. During night land navigation, trainees would be ambushed. When they escaped the ambush, they would receive simulated indirect fire. During the FTX, drill sergeants would continue to relate Army values to activities trainees were engaged in. It was expected that a sense of accomplishment would be enhanced with a ceremony at the end of the FTX presided over by commanders and drill sergeants.

Values-based training would not end when soldiers graduated from BCT. It would continue into AIT to reinforce the type of instruction being given in basic training—values, heritage, tradition–about every three months for soldiers to keep those principles fresh. Rather than increase the lengths of AIT courses, which ranged from 4 to 52 weeks, POIM would be rewritten to include 16 hours of values-based training. Part of the new AIT training would promote identification with the Army branches in which soldiers would serve after graduation. That might include such activities as visits to branch muse-

ums at the training installation. The aim was to complete the soldierization process begun in BCT. It was expected that when soldiers reported to their first units, values would be reinforced within the organization.

Gender Integrated Training

An important development, and a controversial issue, in initial entry training during the 1990s was in what the Army termed "gender-integrated training (GIT)". After considerable study, the service decided in the summer of 1994 to do away with all-female training for the numerous non-combat jobs which were increasingly opening to both sexes.[37] On 17 August 1994, the Secretary of Defense announced implementation of gender-integrated basic combat training, effective in October 1994. It was not the first time the U.S. Army had tried training the sexes together after induction. In FY 1977, a Basic Initial Entry Training Test had demonstrated that male and female personnel could be trained under the same program of instruction. TRADOC had immediately taken steps to convert as soon as possible the basic training programs at Forts McClellan and Jackson and to integrate women into military police and chemical OSUT. This earlier program, however, integrated the sexes only down to company level. That is, BCT companies had three male platoons and one female platoon, or two male and two female platoons. After less than five years, the gender-integrated training companies were abandoned when reports were received that male performance was declining.[38]

The 1994 gender-integration program came about partly as a result of the Army War College commandant, Maj. Gen. Richard Chilcoat's briefing to Army Chief of Staff General Gordon R. Sullivan, on the subject. Chilcoat, and others, argued that times had changed and that women currently served with men in all of the Army's non-combat positions. If one of the Army's foremost principles was to train as soldiers were going to fight and support, it made little sense to train men and women separately during their first eight weeks in the military service. The advocates for the program pointed out that test programs had showed that mixed training did little to affect the physical conditioning, marksmanship, and individual proficiency scores of men, but did cause a striking increase in the morale and performance of women.[39]

37. At the close of 1997, women enlisted and NCO personnel were permitted in most of the Army's 314 MOSs. Women were excluded from MOSs in the Infantry and Armor branches and did not serve as Combat Engineers. Women were excluded from some Field Artillery MOSs.

38. For accounts of the 1977-1982 gender-integrated training programs see TRADOC AHR, FY 78, pp. 58-60; FY 79, p. 92; FY 82, p. 220. See also Women in the Army Policy Review, 12 Nov 82, Office of the Deputy Chief of Staff for Personnel, Department of the Army, Washington, D.C.

39. Bradley Graham, "In Coed Training, Army Revisits a Basic Strategy," *Washington Post*, 21 Nov 94.

Although accustomed for years to co-education in advanced individual training (AIT) programs, the Army had spent months considering the pros and cons of coed basic training. Once adopted, the new BCT program, unlike the earlier one, featured completely sex-integrated training, even coed barracks. Like the earlier program, the POI was the same for both sexes. Male and female recruits trained on the same courses, shot the same rifles, and carried the same weighty gear. The physical performance requirements, however, differed, on the grounds that men had larger hearts and lungs, more muscle mass, and longer strides. Men had to be capable of doing 32 push-ups, 42 sit-ups, and of running two miles in 17 minutes, to receive an average score. The standards for women were 13 push-ups, 40 sit-ups, and two miles in 20 minutes. The aim was to obtain the same amount of expenditure of energy by men and women.[40] Late in 1997, the physical training requirements were brought more in line for men and women.

In general, TRADOC personnel responsible for BCT considered the gender-integrated program a success. But critics remained, both inside and outside the Army. Some observers worried that mixing the sexes in basic training would open the door to allowing women in combat MOSs. Some male recruits complained about the inequality in physical training requirements. Women trainees complained of too few toilets and showers in barracks formerly intended for male occupancy. Commanders observed that female recruits suffered more injuries and illnesses—perhaps a result of pushing themselves too hard to keep up with their male colleagues. Some drill sergeants were concerned that sexually mixed training would mean "pulling the men down to the women's level."[41]

The first two all-male companies to receive female recruits were those scheduled for training at Forts Jackson and Leonard Wood, the only BCT locations where females were trained. In December 1994, TRADOC formed a GIT Steering Committee to monitor the new training programs and identify needed policy changes. Meanwhile, with the assistance of ARI, the service experimented with various ratios of men to women in the co-ed program. Their conclusion was that a mixture of 75 percent men to 25 percent women was probably optimal. According to a researcher for the Army Research Institute, "The males in the 75/25 combination felt much better about their training, they felt they were still in control. When we went to a 50/50 mix, there was more role confusion."

As TRADOC reached the quarter-century mark, an increasing number of MOS were being opened to women. Criticism, however, of the gender-inte-

40. Ibid.

41. Ibid.

grated training program in BCT had increased since 1994, in part because of the allegations of sexual harassment and rape during basic training. Some observers looked closely at the Marine Corps' basic training program, which segregated the sexes, as a model. By early 1998, studies were ongoing in the Department of the Army and the Congress which could conceivably result in changes in gender-integrated basic combat training.[42]

42. (1) Army News Service Report, 11 Oct 94. (2) For a more detailed discussion of gender-integrated training see "The Report of the Federal Advisory Committee on Gender-Integrated Training and Related Issues to the Secretary of Defense," December 16,1997 and Jacqueline A. Mottern, David A. Foster, and Elizabeth J. Brady, "The 1995 Gender Integration of Basic Combat Training Study," ARI Study Report 97-01, February 1997.

Chapter VIII

TRADOC IN THE JOINT SERVICE ARENA

TRADOC's work in the joint service arena was part of a long history of cooperation in wartime operations and peacetime planning between the U.S. ground, air, and sea services. America's 20th century wars and smaller military operations from World War II on were significantly joint in nature, as determined by the requirement to wage war on distant continents, to force entry from the sea, and to employ both land-based and sea-based air power in support of ground action. Though the joint service arena meant chiefly the strategic and operational levels, as carried out in war planning, amphibious operations, or strategic bombing and interdiction, the Army worked with air and naval forces at the operational-to-tactical level in important combat areas. The most significant of those was close air support to Army ground operations.[1]

At the same time, environment and mission put natural limits on joint-service cooperation. The very nature of the diverse combat environments, and the clear individual-service responsibility for ground, sea, and air operations enforced a necessary and traditional single-service focus on most materiel, doctrinal, organizational, and training developments. Yet, there were common equipment types, and there were many points of cooperation, known and potential, in the operational-to-tactical realm. The possibilities widened with the cumulative advance of military communications, intelligence, and automated technologies.

TRADOC's joint service work with Air Force agencies continued contacts long in place. In January 1946 as part of the post-World War II Army

1. For a background sketch of the many Air Force - Army cooperative developments and points of conflict up to and including the significant 31 Initiatives Program undertaken by the two services in 1983, see Richard G. Davis, *The 31 Initiatives: A Study in Air Force - Army Cooperation* (Washington, D.C.: Office of Air Force History, 1987). See pp. 5-24 for developments up to the TRADOC period. See also Frederick A. Bergerson, The Army Gets an Air Force: Tactics of Insurgent Bureaucratic Politics(Baltimore: 1972), and Alfred Goldberg and Lt Col Donald Smith, Army - Air Force Relations: The Close Air Support Issue (Washington, D.C.: ..1971).

reorganization, General Dwight Eisenhower, the Army Chief of Staff, had moved the Army Air Forces' newly created Tactical Air Command and the Army Ground Forces to the Hampton Roads area of Virginia where they could work with each other and with the Navy's Atlantic Fleet.[2] As noted earlier, TRADOC, with its training, doctrinal, and combat developments missions, was the lineal descendant of the Army Ground Forces through its successor Army Field Forces and Continental Army Command. Headquarters Tactical Air Command at Langley Air Force Base was disestablished in 1992 but formed the basis for the newly established Headquarters Air Combat Command, responsible for all Air Force combat forces, both tactical and strategic.

TRADOC's joint service work with its Air Force counterparts, as it developed over the 25-year period, was significant. Beginning in 1973 and developing steadily through the 1970s, it widened in the 1980s to yield important procedural and doctrinal results. The command's cooperative work with the U.S. Marine Corps through the Marine Corps Combat Development Command, began in the early 1980s, and also found points of common interest and agreement. In the post-Desert Storm period, cooperative ventures began with U.S. Navy agencies, as all the services increasingly turned to joint forums and projects.

TAC-TRADOC Dialogue and the ALFA Agency

Cooperative work between the Tactical Air Command and TRADOC began almost immediately upon establishment of the Training and Doctrine Command at Fort Monroe in July 1973. An openness to basic cooperation between Air Force and Army was promoted by the uniformed service heads, General Creighton Abrams, Chief of Staff of the Army, and his Air Force counterpart, General George S. Brown. The cooperation grew out of the increased interservice cooperation at the operational level engendered during the Vietnam conflict. Other influencing factors were the post-Vietnam force reductions, as well as the need to concentrate on war fighting in central Europe. General Abrams urged the new TRADOC commander, General DePuy, to further the Air Force - Army dialogue at his own level. A concomitant TAC initiative helped set up the first meeting of the "TAC-TRADOC dialogue" between DePuy and TAC commander General Robert J. Dixon in October 1973.

Early discussions centered on airspace management, reconnaissance and surveillance, and electronic warfare, for which the two headquarters set up joint

2. Davis, *The 31 Initiatives*, p. 25.

working groups. The early effort began with a focus on procedures to improve joint combat capabilities and to implement existing doctrine, rather than a concentration on creating new doctrine. A Joint Actions Steering Committee was set up, initially headed by TAC's Deputy Chief of Staff for Plans and TRADOC's Deputy Chief of Staff for Combat Developments, replaced later by the TRADOC DCS for Doctrine. Then, in July 1975, the two headquarters established an Air-Land Forces Application Agency (known as ALFA) with ten personnel dedicated to managing the working groups and mutual projects.[3]

As it had influenced other TRADOC endeavors, the 1973 Mideast War spurred the work of ALFA and the overall TAC-TRADOC dialogue. The great materiel-lethality lesson of that war was sobering for pilots and tankers alike. Effective defense against Israeli attack jets by Egyptian surface-to-air missiles and the heavy toll of Israeli tanks exacated by antitank guided missiles were costly lessons encouraging greater U.S. Air Force-Army cooperation.

Important joint procedures manuals and agreements came out of the ALFA work. In November 1976, a TAC-TRADOC working group produced a joint manual on airspace management, which the two commands co-published. It provided guidance to permit development of appropriate air control procedures on battlefields rendered far more complex by the greater tempo of operating systems and by new weapons and tactics such as attack helicopters and terrain contour-following flight.[4]

The ALFA work also contributed to the incorporation into NATO doctrine of battlefield air interdiction as an air support technique for attack of enemy reinforcements and lines of communications directly in the rear of the enemy's front line. Growing out of the TAC-TRADOC work, the two service chiefs signed agreed joint procedures on offensive air support in November 1984, allowing for allocation and apportionment of air sorties for specific ground support tasks. Joint suppression of enemy air defenses was another significant project of the two commands, joined by the U.S. Readiness Command, and a joint concept was published in April 1981 laying out respective Air Force and Army responsibilities. In December 1982, the three headquarters published another significant concept, Joint Attack of the Second Echelon, or J-SAK.[5] The J-SAK concept delineated attack procedures by level of command for the

3. (1) TRADOC ARMA, FY 74, pp. 257-58. (SECRET -- Info used is UNCLASSIFIED) (2) Davis, *The 31 Initiatives*, pp. 24-27.

4. AFM 2-14/FM 100-42, *Airspace Management in an Area of Operaions*, 1 Nov 76.

5. TAC-TRADOC-USREDCOM Joint Operational Concept, *Joint Attack of the Second Echelon (J-SAK)*, TAC Pam 50-26/TRADOC Pam 525-16/USREDCOM Pam 525-4, 13 Dec 82.

identification and attack of the enemy follow-on echelons. The project lay at the heart of TAC contributions to the deep attack aspect of the Army's AirLand Battle doctrine published in August 1982.[6]

By the early 1980s, the TAC-TRADOC projects had seen a marked evolution. From joint procedures, cooperation expanded in the late 1970s to joint tactical training projects, tests, and evaluations, mission area analyses, and materiel requirements. Those ventures led logically to joint doctrine endeavors invaluable to the development of Army doctrine.

Joint agreements on concepts and procedures did not necessarily lock the services in to joint agreements on doctrine. The issues of close air support and its related tactical categories, such as battlefield air interdiction, were complex. Other Air Force missions competed for the air resources the Army needed. In addition, theater needs and concerns were paramount in any resource decision and could overrule procedural and doctrinal agreements. Nonetheless, the requirement for ever closer joint cooperation was clear as the 1980s grew on. Not only did the logic of AirLand Battle require it, it was dictated by competing weapon costs and increasing public pressure. A much publicized lesson of Operation Urgent Fury, the 1982 joint action by which U.S. forces reversed a communist takeover in the Caribbean island-nation of Grenada, had dramatized the inadequacy of U.S interservice communication links.

TRADOC and The 31 Initiatives

New action by the two uniformed service chiefs to remedy the "jointness" problem began in April 1983 when General Charles A. Gabriel, the Air Force chief, and his Army counterpart, General Edward C. Meyer, cosigned a memorandum of understanding directed toward enhancing joint employment of the Army's new doctrine. Both services agreed to engage in joint training and exercises based on AirLand Battle doctrine and to continue and increase other interservice efforts under way. Subsequent steps led to inauguration of a major force development process by General Gabriel and General John A. Wickham, Jr., Meyer's successor. That program, "The 31 Initiatives," was heralded as a means to design and field the best affordable AirLand combat force.[7]

The 31 Initiatives program, addressing seven basic areas of AirLand combat, included projects and particulars with which TAC and TRADOC had long

6. (1) See Romjue, *AirLand Battle*, pp. 61-65, for a description of the co-development of J-SEAD and J-SAK concepts and the TAC impact of AirLand Battle. (2) Davis, The 31 Initiatives, pp. 27-33.

7. For a discussion of the formulation of The 31 Initiatives, see Davis, *The 31 Initiatives*, pp. 35-47.

worked together.[8] Thus, many of the initiatives fell in the purview of those two commands. Extending to 1988, this major program furnished a high-level forum and focus for the solution of difficult bi-service issues as well as a concerted program at the TAC-TRADOC level. Two new joint agencies joined ALFA as a direct result of the 31 Initiatives effort. An initiative on intratheater airlift led to establishment by TRADOC and the Air Force's Military Airlift Command (MAC) of the Airlift Concepts and Requirements Agency, or ACRA, at Scott Air Force Base, Ill. in August 1984. At Langley Air Force Base, the two services established the Army-Air Force Center for Low Intensity Conflict, or CLIC, in January 1986.

Several numbered initiatives addressed the air defense of U.S. forces against enemy air attack and suggested a major restructuring of air defense forces and systems. Another group dealt with rear area operations and closer integration of rear area defenders. A third group focused on the all-important TAC-TRADOC area of joint suppression of enemy air defenses. Several initiatives dealt with special operations forces and search and rescue. Still another group addressed joint munitions development, including a longer-ranged tactical missile system than what either service then possessed. A further group of initiatives covered combat techniques and procedures for the combined arms battlefield, including battlefield air interdiction, joint target assessment, close air support, and the link between air liaison officers and forward air controllers.

A final group of initiatives focused on the acquisition of aircraft to meet joint targeting and reconnaissance needs. Among these was the Joint Surveillance and Target Acquisition Radar System, or J-STARS, that eight years later would figure significantly in the Gulf War. The J-STARS initiative settled the aerial platform question when the Army agreed to accept the Air Force C-18 transport and to drop sponsorship of its own Mohawk aircraft for the mission.

Other initiatives were added subsequently, including agreement reaffirming Army primacy for rotary-wing combat support and Air Force fixed-wing support. An important part of the whole program was uniformed service-chief agreement to a combined budgetary submission package for priority programs and establishment of a Joint Assessments and Initiatives Office to institutionalize the joint force development process. In June 1986, U.S. Navy representation was added to that office.[9]

8. Air defense, rear area operations, suppression of enemy air defenses, special operations forces, joint munitions development, joint combat techniques and procedures, and the combining of combat reconnaissance and targeting data.

9. (1) TRADOC Hist R, 84-86, pp. 100-02. (SECRET -- Info used is UNCLASSIFIED) (2) Davis, *The 31 Initiatives*, pp. 47-64, contains a detailed description of the initiatives.

The 31 Initiatives program touched on many aspects of the AirLand Battle and was a significant step toward the goal of developing the most effective, affordable joint forces. In addition, the program inaugurated an agreed-on and workable joint force development process. Ultimately numbering thirty-eight in all, the initiatives were substantially completed by 1987. Closing out the Joint Actions Initiative Office in August 1988, bi-service planners estimated a total savings of $1 billion in cost avoidance. The remaining projects reverted to individual service management. At that point, the activation of a new J7 Directorate in the Office of the Joint Chiefs of Staff provided the services a new high-level organization for management of the growing joint service work of the late 1980s.[10]

Joint Doctrine Development

As the two services grew toward closer doctrinal understanding during the 1980s, TRADOC and its centers, schools, and the joint agencies worked with TAC and other Air Force activities to develop and co-publish joint doctrine.

TRADOC's work in joint doctrine proceeded along two tracks. The first, more appropriately called multiservice doctrine, consisted of doctrinal literature published together with one or more of the other services or elements thereof as multiservice field manuals. Multiservice doctrinal publications provided a basis for joint publications of the second type, those which were developed beginning in the latter half of the 1980s under the auspices of the Joint Chiefs of Staff.[11]

Joint service developments indeed took a decisive turn in 1986 with passage of the Goldwater-Nichols Defense Reorganization Act in September. The 1986 Reorganization Act assigned to the Chairman of the Joint Chiefs of Staff the responsibility to develop doctrine for joint employment of the armed forces. The central point of contact on the joint staff was, as noted above, a newly established Operational Plans and Interoperability Directorate (J7), responsible to the chairman for the management of the joint doctrine development process. At the direction of the chairman, the J7, together with the regional commanders-in-chief and the services, developed a Joint Doctrine Master Plan.[12]

As the Army's overall development command, TRADOC was a key player in the Army's contribution to the whole JCS development effort. Work got un-

10. TRADOC AHR, CY 88, p. 36. (FOR OFFICIAL USE ONLY -- Info used is not protected)
11. TRADOC ACH, CY 90, pp. 52-53. (FOR OFFICIAL USE ONLY -- Info used is not protected)
12. TRADOC AHR, CY 87, pp. 89-90. (SECRET -- Info used is UNCLASSIFIED)

der way in 1987 on a variety of future joint manuals of direct and indirect concern to the Army and the TRADOC mission. In the unfolding program, TRADOC and its subordinate centers and schools were assigned authorship of some manuals and review responsibilities for others.

In April 1988, the JCS completed and published a master plan document, titled Joint Publication System, *Joint Doctrine and Joint Tactics, Techniques, and Procedures Development Program*, JCS Pub 1-01. The master regulation specified publications in the major categories of reference, intelligence, operations, logistics, plans, and command, control, and communications (C3) systems. Each of those categories had a capstone manual. The system brought all joint doctrine approved by the four services together. It established a systematic hierarchy linking doctrine and procedures under single capstone manuals, and it included its own implementation plan.[13]

Over a dozen joint publications were under development in TRADOC by 1991 when the final drafts of several were issued. Formal publication began in 1992. By mid-1993, doctrinal publications were on the street or underway in such specific fields as logistics support of joint operations; command, control, communications, and computer (C4) systems support to joint operations; joint space operations; joint combat search and rescue; joint reconnaissance, surveillance, and target acquisition; and airlift support.

Among joint publications reviewed by TRADOC for other Army agencies was JP 1, *Joint Warfare of the U.S. Armed Forces*, for which TRADOC coordinated the Army review as well. Development of that publication was greatly accelerated by direction of General Colin Powell, Chairman of the Joint Chiefs of Staff, and it was published in November 1990 to aid the ongoing operations in the Persian Gulf. This significant manual proceeded from the belief, reinforced by Operations Just Cause and Desert Shield and Desert Storm, that "the nature of warfare in the modern era. . . is synonymous with joint warfare." The manual provided the basis for the future joint strategic view in discussions of American military power, the values and fundamentals of joint warfare, and the joint campaign. Related at the war fighting level was JCS Pub 3-0, *Doctrine for Unified and Joint Operations*, a capstone operational manual completed at Headquarters TRADOC and issued by the joint staff as a test publication in January 1990. In the new strategic world of the early 1990s, further work lay ahead for that key manual, which was in revision in 1993.[14]

13. TRADOC ACH, CY 90, p. 53. (FOR OFFICAL USE ONLY -- Info used is UNCLASSIFIED)
14. TRADOC ACH, CY 91, pp. 79-81.

A longstanding field of interest was joint air attack. Air attack had an Army component in the missile-bearing attack helicopters like the AH-64 Apache.

A longstanding field of interest between TAC and TRADOC was joint air attack, a function of close air support by Air Force fixed-wing aircraft and of battlefield air interdiction, the air operation by which air sorties were dedicated to the isolation and destruction of enemy forces and supply columns closing on the battle. Air attack had an Army component in the missile-bearing attack helicopters organic to divisions and corps and operating closer to the main ground battle.[15]

Cooperative work by TAC and TRADOC during 1989-1990 produced a White Paper, titled "Air Attack on the Modern Battlefield." Approved by the two uniformed service chiefs, the paper led to a five-part Air Attack Action Plan, which the Army and Air Force Chiefs of Staff signed to synchronize joint air attack combat planning and procedures. In that important joint field, a modernized Air Force tactical air control system-Army air ground system, or TACS-AAGS was tested and validated in exercises during 1990. A tactics, techniques, and procedures manual on tactical air power employment was developed. The two headquarters' long cooperative work on joint air attack team procedures was updated and published in October 1991, providing for the integrated use of helicopter teams, close air support aircraf,and field artillery.[16]

TRADOC prosecuted important joint work through the Airlift Concepts and Requirements Agency, or ACRA, in 1984. Multiservice employment of the C-17 aircraft, air drop zone procedures, joint airborne and tactical airlift operations, future theater airlift, and strategic and tactical mobility requirements were subjects of cooperative doctrinal and procedural effort between TRADOC, the Military Airlift Command, and the Marine Corps Combat Development Command.[17]

15. TRADOC ACH, CY 90, p. 57. (FOR OFFICIAL USE ONLY -- Info used is not protected)
16. TRADOC ACH, CY 91, p. 82.
17. Ibid., pp. 82-83.

At the time of the command's 25th anniversary, TRADOC continued its contribution to joint-service doctrine, still a development responsibility of the Joint Chiefs of Staff. Administratively separate from the JCS publications was a set of multiservice doctrine manuals of usually narrower, sometime bi-service, scope. Many of those manuals served as bases for subsequently developed JCS joint publications.[18]

Increasingly in the late 1990s, doctrine was joint doctrine. Army doctrine manuals reflected that reality and necessity more and more, in particular Army theater-level doctrine. Force projection from the continental United States, which constituted the prime deployment trend of the post-Cold War, was innately joint. Such operations were indeed the purview of the regional commanders-in-chiefs (CINC) of joint forces. By directive of the Chairman, Joint Chiefs of Staff, the CINCs' warfighting requirements actually "equaled" joint warfighting doctrine, that is to say, their needs were the real factor that determined doctrine.[19]

Joint Work in Low Intensity Conflict

Low intensity conflict was a force category consisting of the many and diverse conventional and unconventional military operations on either side of the outbreak-of-hostilities threshold. In the new Army doctrine of 1993, planners would draw a clearer delineation between war in its several types, and operations other than war. But for most of the 1970s and 1980s, low intensity conflict defined the whole realm of operations below high- and mid-intensity conflict. It received considerable attention by TRADOC doctrinal developers from the early 1980s on, as defense policy turned increasingly to that sector of military operations. Increasingly through the decade, low intensity conflict, or LIC, emerged as a major concern, ripe for joint planning and doctrine.

In July 1985, TRADOC joined the Air Force and other agencies in the major Joint Low Intensity Conflict Study, reported in August 1986. That effort summarized previous study, thought, and experience as a springboard for subsequent Army and joint doctrinal formulation and further work. The study revealed the major definitional problem present in low intensity conflict. The problem of definition persisted because the LIC spectrum was wide.

Planners recognized the major categories of insurgency-counterinsurgency, combatting terrorism, peacekeeping operations, and peacetime contingency operations, as well as a host of subcategories, such as counterdrug efforts and

18. Romjue, "Doctrine in the Mid-1990's," Draft, MHO Files, p. 22.

19. Ibid. p. 23.

disaster relief. Crucial questions emerged. In which of those categories of action was the use of force appropriate and at what stage of effort and under what circumstances? What other U.S. military or U.S. governmental operations were applicable? Low intensity conflict was a different and exceedingly diverse doctrinal realm. In April 1986, the Office of the Joint Chiefs of Staff promulgated an official definition of LIC, recognizing its diversity in general terms. But general definitions were only useful in a limited way for the formulation of such multifaceted doctrine. A bi-service LIC manual, *Military Operations in Low Intensity Conflict*, FM 100-20/AF Pam 3-20, was published in December 1990. The manual opened the way for effort on the JCS equivalent, JCS Pub 3-07, *Doctrine for Joint Operations in LIC,* shortly to be retitled *Military Operations Short of War.*[20]

An important bi-service step was the establishment, already noted, of the Army-Air Force Center for Low Intensity Conflict in 1986. Army oversight of the agency resided with Headquarters TRADOC until 1990 when it was transferred to the Department of the Army Deputy Chief of Staff for Operations and Plans. TRADOC retained, however, a close relationship with CLIC for assistance in LIC concepts, doctrine, and training matters.[21] Despite many successful joint ventures, on 28 June 1996 CLIC was inactivated and its missions dispersed to other agencies.

Air Force and Army planners believed that the various types of low intensity conflict had been a predominant form of engagement for military forces since the end of World War II and that that would in all likelihood continue. The new LIC doctrine of 1990 spelled out critical subtle differences between low intensity conflict and other conventional operations in such activities as foreign assistance and on law in relation to LIC. The doctrine provided an analysis of insurgencies and a guide to counter insurgency operations. In all categories, several imperatives applied: the dominance of political objectives, unity of effort among military and other governmental agencies, adaptability to circumstance, the legitimacy of the supported government, and perseverance in carrying out the long-term objective of the LIC action.

In the ambiguous environment of low intensity conflict, the contribution of military force to settling the strategic aim was supportive and indirect. Military operations in LIC might include tactical direct actions, although political, economic, or psychological objectives shaped the way such operations were executed. The direct and indirect actions in LIC were complementary, not mutually exclusive. "The political object and the original motive of the war,

20. TRADOC ACH, CY 89, pp. 96-97, and CY 90, pp. 55-56. (Both FOR OFFICIAL USE ONLY -- Info used is not protected)

21. TRADOC ACH, CY 90, p. 52. (FOR OFFICIAL USE ONLY -- Info used is not protected)

should be the standard for determining both the aim of the military force and also the amount of effort to be made," the doctrine cited Clausewitz. Air Force-Army LIC doctrine added the injunction of former Secretary of Defense Casper Weinberger: "What is important is to understand the role of military force and the role of other responses and how these fit together."[22]

The early 1990s found TRADOC and CLIC planners deeply involved in one aspect of low intensity conflict of persistent difficulty: joint counterdrug operations. But doctrine, procedures, and training to assist the interdiction of the illegal drug flow into the United States was but one of the many challenges and projects in which TRADOC, the joint agencies, and subordinate elements of the command were active in the early 1990s.

Other Joint Activities

The Mobility and Concepts Agency, or MCA, located at Fort Monroe since 1994, drew together doctrine and other developments for airlift and joint mobility for all the services. At TRADOC's quarter-century mark, ongoing and new projects included a C-17 multiservice employment concept, a study of early-entry deployability, and a study of joint theater airlift capabilities. Other studies of the period dealt with mobile offshore basing and the deployment sequence of joint reception, staging, onward movement and integration. Of focal interest was an initiative to produce a field manual outlining doctrine for a more integrative process for speeding troops to theater and marrying units to materiel in minimum time.

The Commander-in-Chiefs Support Program, dating from August 1991, was a tool by which TRADOC-led teams visited annually the headquarters of the regional CINCs to determine their key and pressing developmental demands. The program responded comprehensively to the commander-in-chief in all military development areas. Visits in the mid-to-late 1990s included those to U.S. Forces Korea, U.S. European Command and U.S. Army Europe, U.S. Atlantic Command, U.S. Pacific Command, and U.S. Central Command. In January 1996, the CINC, U.S. Central Command requested that TRADOC shift the program's emphasis from specifically Army areas of interest to one more joint in nature. The other unified headquarters concurred. Consequently TRADOC restructured the program, redesignating it the CINC Joint Warfighting Support Program. On 1 October 1996, the program was transferred to the Joint Warfighting Center at Fort Monroe.[23]

22. TRADOC ACH, CY 90, pp. 56-57. (FOR OFFICIAL USE ONLY — Info used is not protected)
23. Romjue, "Doctrine in the Mid-1990s," Draft, MHO Files, p. 27

A major support effort for TRADOC to the Department of the Army beginning late in 1994, related to the Commission on Roles and Missions of the Armed Services, an independent body chartered by Congress. The commission's aim was to review the efficiency and appropriateness of the services' respective assigned roles and missions in the post-Cold War era. Joint warfighting and new missions, major contingencies, and central support/infrastructure were the contested areas. The commission published its report on 23 May 1995. The Secretary of Defense responded to Congress the following August.[24]

The Joint Warfighting Center was officially activated at Fort Monroe on 4 October 1994. The JWFC had been established on 1 July 1993 at the Norfolk Naval Air Station, Va. From two elements: The Joint Doctrine Center at that location and the Joint Warfare Center at Hurlburt Field, Fla. The center headed, by a major general or equivalent rank, assumed the role of focal point for joint doctrine convergence. Located at the center of the four services' Hampton Roads doctrine complex, the center had the purpose of promoting joint doctrine and training by blending the development of joint doctrinal principles with the capability to train forces that would employ the doctrine.[25]

24. See MHO Reference File for documentation of Headquarters TRADOC support and reactions.

25. Romjue, "TRADOC in the Joint Service Arena," TRADOC ACH, CY 94. P. 1005

Chapter IX

INTERNATIONAL ACTIVITIES

Over the twenty-five years since its establishment, TRADOC'S program of international relations had greatly expanded. Included in the command's responsibilities was the coordination of a quadripartite, or ABCA (America, Britain, Canada, and Australia) forum, and NATO standardization and interoperability programs. In addition, beginning in 1975 with the German Army, TRADOC began a series of bilateral army-to-army staff talks with other countries. By 1993, there were staff talks on a regular basis with nine allied nations. In addition, TRADOC represented the U.S.Army in more informal discussions with the Israeli Defense Force. The command also had made contact with delegations of the Russian and Polish armies when representatives of each visited the Command and General Staff College in 1991. International activities, including work with selected armies of Latin American nations, increased greatly. As part of the TRADOC liaison network, TRADOC officers served abroad in Germany, the United Kingdom, France, Spain, Italy, Turkey, Israel, Korea, Japan, and Canada. At the same time, 13 nations sent liaison officers to TRADOC headquarters.[1]

Standardization and Interoperability

Upon its establishment, TRADOC continued CONARC's coordination of the service schools' participation in international standardization programs held under the auspices of NATO and ABCA. NATO meetings included separate panel and working party conferences relating to a wide variety of military topics including weapons, interservice tactical air operations, mobility, NBC defense, and intelligence. ABCA meetings--more doc-

1. TRADOC ACH, CY 91, p. 104. The following countries were represented at TRADOC headquarters by liaison officers: Australia, Brazil, Canada, France, Germany, Israel, Italy, Japan, Korea, The Netherlands, Spain, Turkey, and the United Kingdom.

trinally oriented than the NATO meetings--related, among other things, to standardization in the fields of command and control, aviation, air defense, communications, and quality assurance. In 1976, TRADOC assumed Department of the Army planning and coordination responsibilities for four NATO and four ABCA "working parties."

The new ABCA responsibilities included the air defense, armor, infantry, and surface-to-surface working groups. The NATO responsibilities were for the movements and transport, and rail movement and transport working parties; for the land based air defense weapons panel; and for the newly formed NATO helicopter interservice working party. TRADOC provided delegates and data to the sub-groups of both those forums. Actions in TRADOC's purview that were agreed to by the national parties and cleared by the review bodies were implemented by TRADOC upon Department of the Army approval.[2]

Over time, TRADOC served as the primary U.S. Army participant at working levels in both forums. NATO activity included participation in three major arenas--the International Materiel Evaluation Program (IME), the Military Agency for Standardization (MAS) and the NATO Army Armament Group (NAAG). The names of the sub-elements defined their areas of interest--the IME examined NATO equipment to assess interoperability, including materiel ranging from uniforms and ammunition to water purification systems. The MAS worked on standardization agreements (STANAG); working parties had been formed to develop STANAG in such widely diverse areas as amphibious warfare, intelligence, and rail movement and transportation. NAAG focused primarily on standardization of future weapons and equipment and developing functional area concepts to support NATO's Land Forces 2000 doctrinal concept. ABCA activities included most of the above, as well as high level meetings among Army leaders from the four countries.[3]

During FY 1977, a new Defense Department emphasis on developing standardized equipment with the NATO allies began to be felt at TRADOC. Prompted as part of that defense policy was the related notion of seeking "interoperability" between like weapons or pieces of equipment that were being developed separately by the United States and an allied nation. The Defense program "Rationalization, Standardization, and Interoperability" (RSI) grew out of a study by the Rand Corporation, "Alliance Defense in the Eighties." The issue of standardization had been brought to a head by the XM-1-Leopard II tank question. In that instance, adoption of a proposed foreign

2. TRADOC ARMA, FY 75, p. 150; AHR, FY 76, pp. 179-80. (Both CONFIDENTIAL -- Info used is UNCLASSIFIED)

3. TRADOC Hist R, 84-86, p. 147. (SECRET -- Info used is UNCLASSIFIED)

model for the U.S. Army's most important weapon system would have held the tank program hostage to factors the Army could not control. The issue of a "two-way" street in weapons development was sensitive, and would likely mean that the United States would have to adopt more allied-built weapons into its own arsenal if the principles of standardization and interoperability were to have any meaning. U.S. acceptance of the French-German ROLAND missile and the Belgium MAG-58 machine gun were cases in point. The Nunn-Culver Amendment to the 1977 Department of Defense appropriation formally committed the U.S. to standardization, or at least interoperability, with its allies.[4]

In August 1977, the RSI program was set up with the Army Vice Chief of Staff as the NATO focal point on the Army staff. The RSI was superimposed on the United States portion of the machinery of the NATO and ABCA bodies. The RSI mission was to achieve interoperability and standardization of equipment with the Allies and to establish a better "procurement balance" between the Atlantic partners. The first major product identified with the RSI programs in the tactical realm was a NATO manual entitld Land Force Tactical Doctrine, Allied Tactical Publication (ATP)-35A. The NATO nations had been working on the manual since 1970. Before its final publication in 1978, TRADOC made a number of changes and added seven new chapters to bring ATP-35A more in line with the U.S. Army's new FM 100-5 (1976).[5]

Another early issue of the RSI program was an assignment to the Army to prepare a list of items to buy from the European allies. Despite those efforts, standardization confronted a sizable strategic issue whose problems were formidable. Facing the standardized weaponry and centralized command of the Warsaw Pact, the NATO armies fielded contingents that derived in their organization, equipment, and tactics from many separate national military establishments and traditions. Despite long work by the standardization groups, the factors of American technological lead, U.S. fear of inferior foreign equipment, and the divergent requirements of the United States' other commitments, acted to preclude significant standardization in army weapons within the alliance. Interoperability, on the other hand, presented more open avenues, and by 1978, several cooperative weapon acquisition programs were in progress.[6]

One example of the cooperation fostered by the NATO, ABCA, and RSI organizations and by ongoing bilateral staff talks, discussed below, was allied participation in the 9th Infantry Division High Technology Test Bed (HTTB). Late in FY 1980, the Chief of Staff of the Army directed that plans be made for

4. TRADOC AHR, FY 77, pp. 46-48; FY 78, p. 171. (Both CONFIDENTIAL -- Info used is UNCLASSIFIED) For the story of the development of the XM-1-Leopard II tank, see TRADOC AHR, FY 77, pp. 200-203.

5. TRADOC AHR, FY 77, p. 44. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

6. TRADOC AHR, FY 78, pp. 171-72. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

extensive allied attendance to insure optimum development of an interoperable force and to help resolve some tactical and doctrinal issues standing in the way of increased interoperability. Accordingly, Headquarters TRADOC developed a plan which featured a special category of service called special project officers (SPO). Under that program, Allied officers would be attached directly to the HTTB. By the end of 1981, four of the fifteen invited nations had sent an SPO, including the United Kingdom, New Zealand, Australia, and Canada. The French Army designated its liaison officer to TRADOC as its HTTB SPO. Along with the benefits derived from observation, participating allied armies were encouraged to submit data on equipment which they believed to have potential for incorporation into HTTB operations.[7]

During the 1880s, it became evident that doctrine to guide U.S. Army operations with allied forces was an important need. Though the writing of up-to-date Army doctrine and joint doctrine were priority efforts by necessity, it was also true that future wars of any larger dimension would likely be allied enterprises. Some alliance-specific doctrine existed, such as the aforementioned land force tactical doctrine manual (ATP-35A) for NATO, and in the current U.S. Army FM 100-5, *Operations*, some chapters were devoted to combined army operations. Also already published in a test version was JCS Pub 3-0, *Doctrine for Joint Operations*. But there was no formal and general combined armies operations field manual in the U.S. Army inventory. Beginning in early 1989, TRADOC undertook the development of FM 100-8, *Combined Army Operations*. Doctrine writers completed the preliminary draft of FM 100-8 in September 1992 and sent it to the TRADOC Deputy Chief of Staff for Doctrine for approval. After some revision, it was resubmitted in December. Over the next five years, the draft manual underwent significant revision, and its name was changed to *The Army in Multilateral Operations*. FM 100-8 was finally published on 24 November 1997.[8]

Bilateral Staff Talks

By virtue of its Army-wide doctrinal, combat developments, and training missions, TRADOC acted as the U.S. Army's executive agent for bilateral staff talks and exercised multilateral contacts with allied and friendly armies around the world. Those significant activities were carried out from the headquarters at Fort Monroe. Beginning in 1975, with the first formal staff talks with the

7. TRADOC AHR, FY 81, p. 224; FY 82, pp. 192-93. (Both CONFIDENTIAL -- Info used is UNCLASSIFIED)

8. (1) TRADOC ACH, CY 90, p. 63. (FOR OFFICIAL USE ONLY -- Info used is not protected) (2) SSHR, ODCSDOC, CY 92/II, p. III-5. (3) Telephone conversation, Dr. Anne W. Chapman, Ofc Cmd Hist, with Maj. David Rose, ODCSDOC, 13 May 93.

army of the Federal Republic of Germany, the Bundesheer, the level of activity in bilateral army-to-army dialogue increased to include staff talks with armies of the United Kingdom, France, Italy, Spain, Canada, Brazil, Korea, and Japan. The primary objective for talks among formally allied armies was the enhancement of the ability to operate together with common understanding of the battlefield and interoperable equipment with which to fight. In discussions with friendly countries such as Israel and nonaligned countries such as the People's Republic of China, TRADOC aimed at developing instructive exchange on broader areas of interest. In addition, over the twenty year period, TRADOC increasingly carried out cooperative activities with the armies of several Latin American countries. In the absence of formal talks, informal bilateral exchanges were common, as were visits by senior officers of the allied, and some non-allied armies to TRADOC headquarters, centers, and schools and numerous visits by senior TRADOC officials to other armies.[9]

Germany

Agreement between the two major land armies of NATO on tactical concerns was not a new idea, though before 1975 it had received little emphasis. Every eighteen months, the two armies conducted a tactical concepts symposium, held at the Department of the Army staff and German operations staff level. Specific results, however, had been few. In 1974, officials of both armies came to believe that more intensive cooperation in the areas of equipment and tactics, by means of regular staff level discussions, was needed. In an August-September 1974 exchange of letters, the Deputy Inspector of the German Army, Lt. Gen. Siegfried Schulz, suggested this to U.S. Army Vice Chief of Staff, General Frederick C. Weyand. Because the areas of German interest were specific TRADOC responsibilities, General Weyand told General DePuy to explore the idea. The TRADOC commander responded by recommending that annual meetings be established between the U.S. Army Chief of Staff and the German Inspector of the Army. General Weyand, by then Army Chief of Staff, met with his counterpart Lt. Gen. Horst Hildebrandt in October 1974, and both agreed to the annual exchange.[10]

A formal apparatus for the talks began to take shape when General Weyand met again with General Hildebrandt in May 1975. Agreed to were regular formal discussions to promote a common understanding of concepts, tactics, and system requirements in selected areas, and the review of weapons and equip-

9. (1) TRADOC AHR, CY 87, p. 141. (SECRET -- Info used is UNCLASSIFIED) (2) TRADOC ACH, CY 91, p. 102.

10. TRADOC AHR, FY 76, pp. 48-49. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

ment toward the goal of interdependent development. It was agreed that the Army Materiel Command would contribute to the research and development aspects of the talks. Between formal talks, a bilateral steering committee would support the major talks. TRADOC's Assistant Deputy Chief of Staff for Combat Developments headed the U.S. steering committee.[11]

The exchanges were inaugurated at Bonn in October 1975 and at Fort Monroe the following June. As the personal representative of the Chief of Staff of the Army, the TRADOC commander led the U.S. delegations. In the early talks, the Deputy Inspector of the German Army headed their delegations. In late 1981, he was replaced by the Chief of the German Army Office (Heeresamt), the German Army organization most closely paralleling TRADOC. The discussions rapidly established a solid and productive exchange that set in motion a mechanism of basic conceptual agreements that brought agreement on the first five concept papers. Brought into harmony, too, by the exchange were the keystone U.S. and German tactical manuals, FM 100-5, *Operations*, and the German Army Service Regulation 100-100, *Command in Battle*.

It was General DePuy's policy to focus first on tactics and techniques; equipment requirements and development programs could come later. The many-sided talks were a fundamental attempt toward a combined U.S.-German concept of fighting, breaking new ground in inter-allied cooperation at basic tactical levels that would grow over the years. At a lower level, during these early talks, the TRADOC liaison network in Germany was expanded. General DePuy would later characterize the first meetings as "an unqualified success" that had progressed in a spirit of friendly cooperation, candor, and professional harmony. He wrote General Weyand after the June 1976 meeting that the doctrinal manuals 100-100 and 100-5 had been "harmonized and coordinated until there are no substantial differences in our basic tactics and techniques."[12]

Also agreed to during the first discussions in 1976 was a modus operandi. Participants came to an agreement that each nation would prepare parallel concept papers on major tactical subjects as the first major cooperative stage. Eleven subjects for the concept papers were initially agreed upon: antiarmor; airmobility (including antitank helicopters); mobility-countermobility (mine and countermine); air defense; the Warsaw Pact threat; terrain (West German urban growth); military operations in urban terrain (MOUT); fire support; reconnaissance-surveillance-target acquisition; night operations; and tactical air

11. Ibid. p. 49.

12. (1) TRADOC AHR, FY 77, p. 40. (CONFIDENTIAL -- Info used is UNCLASSIFIED) (2) Ltr ATCD-PG, DePuy to Weyand, 9 Jul 76.

support. Later other issues were added, such as command-control-communications, electronic warfare, and chemical defense. The steering committee assigned primary responsibility for each of the concept papers to either German or U.S. authors. Also agreed upon in these initial meetings was an exchange of technical data on important materiel items such as the main battle tank, antitank helicopters, and night vision equipment.[13]

While harmony and agreement were present in these initial talks, it was a measure of the directness of the doctrinal inquiries that hard issues were prominent and clear differences apparent. For example, the issue of military operations in built-up areas. That issue was especially sensitive to the Germans for obvious reasons. It was also unavoidable, and both armies realized agreement would take time. Little information was readily available on the full effects of the most modern weapons on built-up areas. And what type of training would such operations require? How should or would such operations affect materiel development?[14]

As the talks continued in subsequent years, materiel issues were promoted to a primary sphere of concern as the realm which interested the Germans most vitally. As a means of binding more closely the materiel and conceptual aspect of the cooperative effort, in 1977 the steering committee set up a three-phase process: first, harmonizing the concept, from selection to signature; second, the defining of requirements by the concept paper authors through "military equipment characteristics documents" (MECDs); and, in culmination, a cooperative fulfillment of requirements resulting in interoperable concepts and interoperable or standardized equipment. The MECD for any system would state a jointly agreed requirement, but would not be legally binding.[15]

In future meetings, discussions on materiel were prominent. By 1978, joint work with five "candidates for cooperation" was ongoing in earnest: night vision thermal imagery; short range air defense and the French-German ROLAND missile; the ribbon bridge; common features for the Leopard 2 and XM1 tanks; and the interactive computer presentation model. Good possibilities at that point were the German GEPARD Flakpanzer, a multiple rocket launcher, and the U.S. STINGER air defense system, among others. Also, by the late 1970s, the U.S.-German army talks had widened to address logistics matters, as well as data exchange agreements, co-production and licensing agreements, and joint testing. Another new emphasis in the late 1970s was in the training realm. The Germans exhibited strong interest in nuclear-biological-

13. TRADOC AHR, FY 76, pp. 48-54. (CONFIDENTIAL -- Info used is UNCLASSIFIED)
14. TRADOC AHR, FY 77, pp. 40, 42. (CONFIDENTIAL -- Info used is UNCLASSIFIED)
15. TRADOC AHR, FY 77, p. 44. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

chemical (NBC) defense training, engagement simulation technology, training simulators, bilingual training, and training ammunition.[16]

By that time, the exchange was aided by a comprehensive TRADOC-German Army liaison network. Besides TRADOC liaison officers at the German Army Office at Cologne and German officers at TRADOC headquarters, each stationed liaison officers at the other's equivalent major schools--armor, aviation, air defense, field artillery, engineer, infantry, signal, ordnance-maintenance, NBC, and staff colleges. In addition, TRADOC had a liaison officer at the German Transportation-Quartermaster School, and German officers were assigned to the U.S. Army Missile and Munitions School, the U.S. Army Intelligence School, and U.S. Marine Corps and Army Materiel Command headquarters. TRADOC had liaison officers at USAREUR headquarters in Heidelberg as well.[17]

The staff talks of September 1979 at Munich marked a new stage in the U.S.-German exchange. While activity continued down many separate lines, the two sides moved to a concentration on two concepts that both believed key to bilateral cooperation in the period ahead -- armor forces in the 1990s, and command-control (C2), to which communications was integral. The Munich talks reaffirmed the centrality of those leading concepts. Armor forces would dominate the battlefield of the 1990s. C2 interoperability was important not only for NATO planning and goals, but because it provided the unifying purpose at all levels of battle from theater to squad commander. In both concepts, conferees saw the second echelon issue inextricably involved. They believed that the talks had built the foundation to influence long term goals and that the two issues were well established for priority attention.[18]

The Munich talks saw agreement to a more systematic approach to cooperation. According to that approach, the foundation of the talks consisted of concepts, requirements and analytical work, and interoperability (including tests) toward producing agreed to doctrine, materiel, logistics, training, and force structure. Priorities for materiel cooperation had to be set. Coordinated analytical effort would help both parties evaluate concepts and requirements. Interoperability would continue to focus on command, control, communications, and intelligence (C4I). In the bilateral development of materiel, the two nations' acquisition systems were laid out side by side and arrangements considered for exchanges of information and joint training and testing in addition to materiel considerations.[19]

16. Ibid. pp. 158, 161, 162.

17. TRADOC AHR, FY 79, p. 215. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

18. TRADOC AHR, FY 79, p. 219. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

19. Ibid., p. 220.

Beginning in the early 1980s, concepts surrounding the general theme "Land-Air Battle of the '90s," later designated "AirLand Battle 2000," provided the most extensive single subject of the bilateral German staff talks. Much attention was given to the specific issue of attack of the second echelon as the most immediately important subject for further study. The focus was on current capabilities, possibilities for incorporating the second echelon attack concept into doctrine, and joint evaluation of both armies' abilities to accomplish a second echelon attack mission.[20]

Throughout the 1980s, the U.S. and German armies, the two largest armies under NATO control, continued to hold annual staff talks. The bilateral discussions were the most highly developed of all such talks TRADOC conducted, and they focused on virtually every aspect of the modern battlefield--combat development, doctrine, organization, and training. A set of eight long range goals guided the talks from year to year. Goals included compatibility in major warfighting concepts, doctrine, and tactics, techniques, and procedures; interoperable communications, command and control and computer applications and equipment; compatible views on use of battlefield airspace; compatible materiel requirements aimed at standardized of interoperable systems and components; training cooperation leading to tough, realistic combat proficiency; combined efforts in training support and development; interoperable logistics; and interoperability of intelligence and electronic warfare. In an atmosphere of long-standing mutual interests, the subjects of the talks continued to widen over time. Discussions indicated that the two armies were in unison on most essential principles governing the operational level of war.[21]

Some controversy, however, did arise over the concept of the NATO battlefield of the future. In 1979, General Starry determined to launch an initiative with both the British and the Germans to open discussions on a concept for the NATO battlefield beyond the organization and concept for 1986. Titled AirLand Battle 2000, the U.S.-German concept was signed by U.S. Army Chief of Staff General Edward C. Meyer and his German Army counterpart, Lt. Gen. Meinhard Glanz in August 1982. That action soon resulted in a political imbroglio in West Germany, when a prominent Stuttgart newspaper accused Lt. Gen. Glanz of "having high-handedly approved a controversial U.S. strategy concept."[22]

20. TRADOC AHR, FY 81, pp. 212-13. (CONFIDENTIAL – Info used is UNCLASSIFIED)

21. TRADOC ACH, CY 89, p. 123. (FOR OFFICIAL USE ONLY -- Info used is not protected)

22. (1) TRADOC AHR, FY 79, p. 229. (CONFIDENTIAL -- Info used is UNCLASSIFIED) (2) TRADOC ACH, FY 83, pp. 243-44. (SECRET -- Info used is UNCLASSIFIED) (3) Msg, CINCUSAREUR to Cdr TRADOC, 231054Z Aug 83, subj: AirLand Battle 2000 Controversy in FRG.

The controversy revolved around misperceptions that the bilateral future AirLand Battle 2000 concept was synonymous with the unilateral U.S. Army AirLand Battle doctrine, and that both the U.S. Army doctrine and the future U.S.-NATO doctrine connoted a new U.S. strategic offensive doctrine of preemptive and nuclear attack upon the Warsaw Pact. Sensitive to the political situation, SACEUR General Bernard Rogers, distanced himself from the future concept. Stillborn in the SHAPE (Supreme Headquarters Allied Powers Europe) arena, AirLand Battle 2000 was effectively terminated when TRADOC commander, General Richardson, cancelled the project's "third phase" effort. The concepts of AirLand Battle 2000 continued to figure for some time in NATO meetings and international staff talks in which TRADOC was involved, but the U.S. version of the AirLand Battle 2000 document itself was not made available to the allies.[23]

During 1989-1992, talks with the Germans brought to the fore the impact of the major political-strategic changes in Eastern Europe and the Soviet Union: The reunification of Germany in October 1990; the force reductions resulting from the CFE treaty of November 1990; and the collapse of the Warsaw Pact and the demise of Communism. Both armies were in agreement that, in light of the new international situation, they were at a crossroads in which efforts based on linear battlefield assumptions were obsolete. Current bilateral five-year goals needed a complete review after the events of 1989-1990. As noted above, there was general German-U.S. agreement on basic operational principles, but there were primary outstanding issues, such as the question of operational parity, not just numerical parity, coming out of the CFE (Conventional Forces in Europe) process. Other issues included the role of short range nuclear weapons, Air Force roles, and deep battle requirements. The German plan for the future suggested the brigade as the decisive element of combined arms combat and featured strong air mechanized units.[24]

The waging of the Gulf War by the United States and its coalition partners in early 1991 was an omen of the changed relationship developing which, if as close as before, indicated the diffusion of U.S. concerns to the wider world. In the future, the U.S. Army planned to transition from a forward deployed force to a force projection Army, primarily deployable from North American bases. At the same time, as a result of reunification, Germany faced a new strategic situation as a Western power with economic and political roles to play in both

23. TRADOC Hist Rev, 1 Oct 83 - 31 Dec 86, pp. 89-90. For a detailed discussion of AirLand Battle 2000, see TRADOC ACH 83, pp. 9-15. (Both SECRET -- Info used is UNCLASSIFIED) More information can be found in MFR, ATCS-H, Interview with Maj Gen Harry D. Pentzler, DCSDOC, 16 Jun 86, THRC.

24. (1) TRADOC ACH, CY 90, p. 68. (FOR OFFICIAL USE ONLY -- Info used is not protected)

Western and Eastern Europe. Multinational force discussions called for placing national divisions in multinational corps. Both parties agreed on a force geared to operational level maneuver and capable of task organization. In the spring of 1993, the U.S. and German armies combined forces to form the first two multinational corps in Europe. The new NATO force structure combined a German corps with the U.S. V Corps and integrated one of the two U.S. divisions remaining in Europe into the II German Corps. The divisions would remain under national control until contingency operations required a transfer of authority to NATO. Both sides agreed also on "harmonizing" as much as possible their future operational concepts and the new drafts of the two armies' key operations manuals.[25]

United Kingdom

In 1978, the U.S. Army inaugurated formal bilateral talks with another of its NATO allies--the United Kingdom. During a visit to that country in April 1977, General DePuy's discussions with the British Directors of Army Training and Combat Developments established a clear British interest in staff talks, and the groundwork was laid. As with the Germans, materiel and tactical doctrinal concepts were the focus of British interest. The British also showed an early interest in training issues. The British preference for a combat developments framework resulted in a link between the British Army Combat Developments Directorate and the TRADOC Deputy Chief of Staff for Combat Developments. Also for that reason, the U.S. Army Materiel Command was represented in the exchange from the start. The two sides anticipated discussions on scientific-technological trends,materiel requirements, the forward defense, the corps and the Airland Battle, division restructuring, and training developments.[26]

The two staffs held their first meeting in February 1978 at Fort Monroe. The two sides agreed that their talks would be guided by three continuing aims: to agree on tactical concepts for corps and below; to identify short term interoperability goals; and to establish long term operational requirements having potential for standardization or interoperability. The talks would be an adjunct to the long existent NATO and ABCA standardization programs by focusing views for subsequent resolution through the NATO and ABCA machinery. As with the German talks, one nation would take the lead for each

25. (1) TRADOC ACH, CY 91, pp. 90-91. (FOR OFFICIAL USE ONLY--Info used is not protected) (2) Casemate, Fort Monroe, Va., 30 Apr 93.

26. TRADOC AHR, FY 78, p. 164. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

concept paper. Unlike the German exchange, the British did not want a common concept paper format, insisting on an open-ended approach. Likewise, the British talks would be semiannual rather than annual.[27]

Other distinct differences in the two series of talks emerged. Those differences were implicit in the two NATO allies' differing strategic circumstances, the British military commitment outside the European Continent, particularly in Northern Ireland, her much smaller ground forces on the NATO line in Germany, and a defense establishment geared to a smaller national economy. As time went on, those fundamental differences became clear.[28]

Despite these basic differences, the initial talks and those held in September 1978 at Aldershot, dealt with many of the same issues that concerned the Germans: standardization; engagement of the second echelon; C3; antiarmor; and tactical engagement simulation. The Aldershot talks pointed up notable divergences in certain equipment requirements rooted in the tradition of a long independent and self-contained defense establishment. The independence of British armor development had been underscored by their announcement of a decision to build a new battle tank that also would retain rifled cannon armament. On the development of remotely piloted vehicles, the U.S. had chosen fixed wing models, while the British had chosen rotary wing models. The first U. S.-U.K. talks were not so substantial as those with the Germans, but they held definite promise.[29]

The British representatives at the bilateral meetings evinced a strong interest in the training system the U.S. Army was developing, especially its technical aspect. TRADOC suggested cooperative possibilities in battle simulation, engagement simulation technology such as MILES, extension training, training devices, computer-based instruction, and instructional systems design models. As a result, the TRADOC DCS for Training and his British counterpart, the Director of Army Training, formulated procedures for future training discussions. The major subjects of common interest which the two sides settled on were battle simulation, tactical engagement simulation, range-target development, and training in military operations on urbanized terrain.[30]

The TRADOC headquarters reorganization of 1979 altered responsibility for the British exchange. The DCS for Combat Developments continued as before to represent the U.S. Army, head the U.S. delegation, coordinate ac-

27. Ibid. p. 165.

28. Ibid., p. 164.

29. Ibid., pp. 166-70.

30. TRADOC AHR, FY 79, p. 226. (CONFIDENTIAL -- Info used is UNCLASSIFIED)

tions, and manage military equipment requirements documents. But the DCS for Training acquired the training aspects, and the DCS for Doctrine assumed responsibility for concepts.[31]

By the early 1980s, staff talks with the British had established a focus on significant issues facing NATO in the foreseeable future—C3, the armor battle, the threat, and the issue of the large Soviet second echelon -the same key issues agreed to with the Germans at that point. Major topics for the British were antiterrorism in Northern Ireland, the lessons of the Falklands campaign, and extensive armor-antiaramor and anti-helicopter studies. The British talks gave the U.S. Army a whole set of perspectives on the many aspects of the challenge facing NATO.[32]

As the U.S.-United Kingdom exchange matured, training topics were increasingly added to the agendas. The goal was to exchange information on training concepts, methods, and technology to enhance training and to promote the goal of coordinated operations between the two armies. Issues included leadership training, air defense training, training in military operations in urban terrain, and antitank and moving infantry targetry. The final portion of the FY 1983 talks took place at the Army's capstone training center--the National Training Center at Fort Irwin, Calif.[33]

Since its establishment in 1973, TRADOC had been involved in a speaker exchange program with the United Kingdom known as the Kermit Roosevelt Lectures. The lecture series, begun in 1947, was named for the son of Theodore Roosevelt who had held commissions in both the British and American Armies during both the First and Second World Wars. Under the program, sponsored by the U.S Army War College, senior officials from each army gave lectures at senior military schools of the other on their respective missions, doctrine, force structure, and operational concepts, among other things.[34]

Beginning in 1988, the changes in Europe and the Soviet Union, and the implications of the CFE discussions, were major concerns that influenced a range of U.S.-British efforts and future plans. What the ultimate effect of those historic political and economic changes would be to the NATO defense, remained unclear. In general, the topics discussed reflected close understanding between the two allied armies on the changing European situation and the pros-

31. Ibid., p. 227.

32. Ibid., p. 228.

33. TRADOC ACH, FY 83, p. 515. (SECRET -- Info used is UNCLASSIFIED)

34. Maxwell R. Thurman,, General, United States Army, Selected Works of the Sixth Commander, United States Army Training and Doctrine Command, June 1987 - August 1989, p. 40.

pect of reduced armies and nonlinear battle. The broad range and the give and take of the U.S.-British exchange attested to the United States long-term commonality of interests with its closest ally.

France

In late 1978, the United States began efforts to establish staff talks with a third NATO ally, France. Planning by Army Chief of Staff General Bernard W. Rogers and TRADOC commander General Donn A. Starry, and their French counterparts came to fruition in September 1979 with the first talks at Fort Monroe. The U.S.-French talks were to take place every six to nine months. At the initial talks, Brig. Gen. Jean Ebert, Deputy Chief of Staff for Studies, Plans, and Finances in the French Army, led the French delegation. Representing TRADOC was Brig. Gen. Carl E. Vuono, Deputy Chief of Staff for Combat Developments. The first talks focused on two principal topics--armor forces, and military operations on urbanized terrain (MOUT). The French Army had almost completed a reorganization of its armor and mechanized units, based on a 4-company, 4-battalion principle and a dissolution of the brigade headquarters within divisions. Because the French representatives objected to a structure as formal as the concept papers of the German exchange, the U.S.-French talks each were based on two themes commonly agreed upon in advance, with each side choosing its own topics within the theme. It was also understood by both parties that, unlike the German and British exchanges, the talks with the French were for informational purposes only.[35]

The U.S.-French talks held in the United States were usually held away from TRADOC headquarters in order to give the U.S. delegation an opportunity to demonstrate its rapidly advancing technology. Of the Allied nations involved in bilateral talks over time, the French had been the most steadfastly skeptical about the introduction of sophisticated, high technology, on the grounds that commanders might grow to depend on wizardry rather than military judgment and that training and materiel based on high technology might prove too complex for many soldiers. As the talks proceeded, it was clear that the two armies had many common interests if not always common tactics, techniques, and procedures. The Americans characterized the FY 1982 talks as a watershed when the French received with intense interest the U.S.proposal to move toward applications of interoperability.[36]

35. TRADOC AHR, FY 79, pp. 228-31; FY 81, p. 218. (Both CONFIDENTIAL – Info used is UNCLASSIFIED)

36. (1) Future Direction of FR/U.S. Staff Talks, Encl 1 to Ltr, DCSCD to distr, 5 May 82, subj: French/U.S. Staff Talks V. (2) TRADOC AHR, FY 81, p. 219. (Both CONFIDENTIAL – Info used is UNCLASSIFIED)

TRADOC considered the French talks to be particularly important, since France remained pivotal in the defense structure for Western Europe, while remaining outside the NATO military structure. As the ties between the two armies became closer, many of the topics of discussion were the same as those addressed with the Germans and the British. They included command and control, airmobility, Grenada lessons learned, threat and future battlefield studies, and joint and combined doctrine. Of special interest to the Americans were the French briefings on the use of their Rapid Assistance Force in the operations in Chad and on engineer operations in Beirut. The French increasingly showed desire to move away from informational talks toward more formal forums. As with the other bi-national talks, TRADOC senior officers recognized the critical role of the talks with the French army in a time of transition and uncertainty.[37]

Italy

In December 1984, the Italian government proposed initiation of formal staff talks between the armies of Italy and the United States. Upon approval by the U.S. Army Chief of Staff, planning began immediately, and the first discussions were held in Rome in September 1985. The talks with the Italians were structured much like those with the Germans and British, with a steering committee and expert working group arrangements. A unique feature of the Italian talks was a list of ten diverse interoperability objectives to be realized between 1991 and 1994. The topics and issues were many of the same as those discussed with the other allies. Of particular interest to the TRADOC delegation were the Italian briefings on mountain training and warfare. Although Italian force reorganization plans were affected by the uncertainty regarding NATO's future, current planning suggested that up to five brigades would be available for a multinational force. Although the Italian talks lacked the depth of those with the Germans, the bilateral forum gave both the U.S. and Italian armies a widening opportunity to focus on specific categories of cooperation such as mountain warfare and military operations in urban areas.[38]

Spain

The newest of the staff talks with European allies, annual talks with the Spanish Army began in 1987, with the structure of the exchange emerging in

37. TRADOC Hist R, 84-86, p. 143. (SECRET -- Info used is UNCLASSIFIED)

38. (1) TRADOC Hist R, 84-86, p. 144. (SECRET -- Info used is UNCLASSIFIED (2) TRADOC AHR, CY 88, p. 5 (FOR OFFICIAL USE ONLY -- Info used is not protected)

1988-1989. Each side stood to gain from formal talks. For the Spanish Army, the forum brought accessibility to its U.S. counterpart. Because of the presence of United States Air Force and Navy units in Spain, the Spanish Air Force and Navy enjoyed much more direct access to information on U.S. doctrinal, weapons, and interoperability issues than had the Spanish Army. The U.S., for its part, sought to underscore the strategic importance of Spain and to bring exchanges into balance with other NATO nations. Before the initial talks in Madrid in September 1987, the Spanish had agreed to include the widest range of topics possible, placing no restrictions on the focus of discussion. Early talks resulted in the establishment of several exchange programs involving small units, exercise observers, liaison officers and students. The Spanish talks, unlike those with the French, were structured by agreed annexes to a formal aide memoire. They also featured a steering committee and expert working groups. As TRADOC looked to its twenty-fifth year as a major Army command, the talks were beginning to branch out along a growing number of paths.[39]

Canada

Beginning in 1978, the armies of the United States and Canada had begun a series of programs to exchange information and viewpoints on doctrinal questions. The program was not considered to be on a par with the staff talks with other armies, which were regarded as vehicles to promote concerted action of interoperability. It was not until November 1986 that formal staff talks between the two countries began. The Canadian-U.S. talks complemented Canada's many defense links to the United States through NATO and the ABCA forum. Concern with the defense of North America, the NATO mission, and a traditional participation by Canada in global peacekeeping operations gave the two armies many common outlooks and mutual interests. During the early 1990s annual talks, the two armies discussed doctrinal issues--especially AirLand Battle-Future and Canadian Army 2002, together with Canadian peacekeeping operations, training, and materiel development. Discussions led to plans to share information and the results of relevant studies on several subjects, as well as to U.S. agreement to host Canadian observers at U.S. training facilities.[40]

39. (1) TRADOC AHR, CY 87, pp. 146-47. (SECRET -- Info used is UNCLASSIFIED) (2) TRADOC AHR, CY 88, p. 53. (FOR OFFICIAL USE ONLY -- Info used is not protected)

40. (1) TRADOC ACH, FY 83, p. 520-21. (SECRET -- Info used is UNCLASSIFIED) (2) TRADOC AHR, CY 88, p. 54. (FOR OFFICIAL USE ONLY -- Info used is not protected)

Just as with the U.S. forces, future Canadian forces were expected to be shaped by budget reductions and the new European situation. The Canadians were looking toward a field-deployable division headquarters and four regional forces -- western, central, Quebec, and Maritime Provinces. Though a small army, the Canadian force was focused not only on territorial defense and peacekeeping, but on commonwealth contingencies, and more recently on Latin America. In addition, the Canadian delegation signaled their nation's increasing interest in other Western Hemisphere matters, including counter-narcotics actions. At the June 1990 talks, the two armies agreed, for budgetary reasons to increase the time between talks from 12 to approximately 18 months.[41]

Brazil

In October 1983, Army Chief of Staff General John A. Wickham, Jr., through the TRADOC Deputy Chief of Staff for Training, invited the Brazilian Army to join in periodic bilateral staff talks. The Brazilians agreed and the first talks were held in March 1984. Over the next years, the talks focused primarily on doctrinal and organizational issues, including U.S. assistance in force development, to include incorporation of a rotary wing aviation arm and introduction of electronic warfare into force structure and training. The Brazilians were also intensely interested in low intensity conflict, given current political instabilities in Central and South America. TRADOC regarded the bilateral talks with the Brazilian Army as having potential for cooperative work in all functional areas and as the cornerstone of a maturing relationship.[42]

Republic of Korea

In July 1983, the Korean Army proposed direct talks on doctrine, weapons and materiel development, and training with the U.S. Army. TRADOC Commander General Richardson accepted the invitation, and the first talks were held in Taejon, Korea at the Korean Army Training and Doctrine Command headquarters in April 1984. The commonality of interests of the two armies, partners in a specifically bi-national defensive alliance, was of long standing. The 1984 talks and subsequent discussions resulted in expanded opportunities for training the Korean Army in areas such as electronic warfare and hazardous munitions handling, and increased cooperation on doctrinal and force develop-

41. (1) Msg, Cdr TRADOC to HQDA (General Vuono), 051415Z Jul 90, subj: Canada/U.S. Army Staff Talks V, 25-29 Jun 90. (2) TRADOC ACH, CY 91, p. 74. (FOR OFFICIAL USE ONLY -- Info used is not protected)

42. (1) TRADOC Hist R, 84-86, p. 143. (SECRET -- Info used is UNCLASSIFIED) (2) TRADOC AHR, CY 87, p. 144. (SECRET -- Info used is not protected) (3) TRADOC AHR, CY 88, p. 55. (FOR OFFICIAL USE ONLY -- Info used is not protected)

ment issues. The two armies also agreed to "rapid, mobile, combined arms operations targeted to gaining the initiative." U.S. conferees saw this agreement as somewhat of a breakthrough, since Korea concepts of armor employment in the past had focused mainly on a support role. TRADOC regarded the talks as an excellent forum for identifying significant areas of common interest and for facilitating cooperative work.[43]

Japan

Relatively low level exchanges with the Japanese Self Defense Forces had been occurring with some regularity since th late 1970s, but it was not until 1986 that formal talks were begun. Most of the other allied staff talks had focused on organizational issues in initial discussions, but because the Japanese and U.S. armies were well familiar with each other's organization, the first talks with the Japanese focused on training issues. Notwithstanding Japan's enforced limited military role since 1945, few military relationships were potentially more critical than that between the world's two largest industrial powers. As the U.S.-Japanese talks matured, rapport between the delegations progressively increased, as the content of presentations expanded. The talks evolved from preliminary, mutually informative meetings to a substantive exchange. The Japanese briefings and discussions reflected the highly advanced technological society that supported the Japanese military structure.[44]

Other Bilateral Relations

In addition to formal staff talks, TRADOC also carried out less formal "subject matter expert" exchanges with several Latin American countries. In addition, the command also conducted future-battlefield conferences with the Israeli Defense Force and a limited training seminar exchange with the army of the People's Republic of China.

Latin America

In the mid 1980s, bilateral subject matter exchanges began between the U.S. Army, represented by TRADOC, and three Latin American countries be-

43. (1) TRADOC Hist R, 84-86, pp. 143-44. (SECRET - Info used is UNCLASSIFIED) (2) TRADOC AHR, CY 88, pp. 55-56. (FOR OFFICIAL USE ONLY -- Info used is not protected)

44. (1) TRADOC Hist R, 84-86, pp. 144-45. (SECRET -- Info used is UNCLASSIFIED) (2) TRADOC AHR, CY 87, p. 145. (SECRET -- Info used is UNCLASSIFIED) (3) TRADOC AHR, CY 88, p. 57. (FOR OFFI-CIAL USE ONLY – Info used is not protected)

sides Brazil -- Argentina, Chile, and Peru. The first Peruvian exchange took place in December 1985 at the request of the Peruvian Army Chief of Staff. The meeting was the first formal contact between the armies since 1965. First exchanges with the Chilean and Argentinean armies occurred in October 1986. Late in 1988, General Maxwell R. Thurman, TRADOC commander, laid the groundwork for wider TRADOC subject matter expert activity in Latin America during a trip to Panama, Peru, and Colombia, as well as to Brazil. While some new efforts provided basic assistance in training and other cooperative endeavors, other projects focused on means to support Latin American nations seeking to control the hemispheric illicit drug problem at its source. The Thurman visit resulted in agreement with the Guatamalan army for subject matter expert exchanges in the future. With the overthrow, in December 1989, of Panamanian strongman Manuel Noriega, a figure deeply involved in drug trafficking operations, U.S. Army exchanges with Latin American armies increased. During 1990, TRADOC added the Venezuelan Army to its list of SME exchanges[45]

People's Republic of China

TRADOC conducted a limited exchange with the People's Liberation Army (PLA) of the People's Republic of China. During a visit to China in 1981, General William R. Richardson, TRADOC commander, discussed the possibility of talks with the PLA. That exchange led to a trip with Secretary of Defense Casper Weinberger in 1983, during which Richardson discussed exchanges which focused on training, logistics, and medicine. That visit led to visits to the U.S. by a delegation from the PLA and to formal seminars during 1985-1988. Most of the discussion centered on institutional training. The U.S.-PLA exchanges, in which TRADOC saw positive signs, were canceled by President George Bush after the Chinese crackdown on the popular freedom movement in June 1989.[46]

Israel

TRADOC contacts with the Israeli Defense Force (IDF) dated from 1973, the year of the Yom Kippur War and of TRADOC's establishment. Although

45. (1) TRADOC Hist R, 84-86, p. 146. (SECRET — Info used is UNCLASSIFIED) (2) TRADOC ACH, CY 89, pp. 138-39; CY 90, pp. 78-79 (Both FOR OFFICIAL USE ONLY — Info used is not protected)

46. (1) TRADOC Hist R, 84-86, pp. 145-46; TRADOC AHR, CY 87, p. 147. (Both SECRET — Info used is UNCLASSIFIED) (2) TRADOC ACH, CY 89, p. 135. (FOR OFFICIAL USE ONLY — Info used is not protected)

constrained by political considerations from becoming a formal relationship, the two armies had exchanged visits and training, doctrine, and combat developments information from time to time. In a program known as IDEAS (Israeli Dialogue with Army Schools), commandants from TRADOC service schools exchanged visits with their counterparts in the IDF. Israel's June 1982 incursion into Lebanon dampened political reltions between the two countries and moderated the scope of the bilateral dialogue. In 1987, however, the U.S. and Israeli armies signed an agreement to participate in a bilateral Tactical Intelligence Development Exchange Program which established a framework for the exchange of tactical and operational intelligence at the working level. Meanwhile, In June 1985, Israel moved its liaison officer to the U.S. Army from the TRADOC Combined Arms Test Activity at Fort Hood to TRADOC headquarters. Early in 1988, delegations of senior officers of both armies inaugurated annual "future battlefield conferences" that featured alternating visits by each side to the host country and an exchange of briefings. The briefings,discussions, and mutual visits characterized the close and longstanding, if structurally informal, relationship between the two armies.[47]

International Relations, 1993-98

In the 1993-1998 period, Army staff talks between the United States and NATO, Latin American, and Asian allies continued to undergird the nation's treaty and security obligations. Acting for the Department of the Army, TRADOC conducted regular staff talks with the armies of nine allies: Germany, the United Kingdom, France, Italy, Spain, Canada, Brazil, Korea, and Japan. The command also held an annual but less formal battlefield conference with the Israeli Defense Force. In addition, TRADOC and its subordinate commands and schools took part in longstanding multilateral exchanges in the NATO and America-British-Canada-Australia (ABCA) fora, and in numerous informal bilateral subject matter expert and other exchanges with other armies in Latin America and elsewhere. Contacts continued with the Russian Army, the armies of other nations of the former Soviet Union, as well as with the armies of several Eastern European and Balkan nations. During the period, the Army Materiel Command (AMC) and other major Army commands took part in many of those meetings, as the agenda topics or theater interest warranted.[48]

47. (1) TRADOC AHR, FY 82, p. 193. (CONFIDENTIAL — Info used is UNCLASSIFIED) (2) TRADOC Hist R, 84-86, p. 146-47; CY 87, p. 148. (Both SECRET — Info used is UNCLASSIFIED) (3) TRADOC AHR, CY 88, p. 58; TRADOC ACH, CY 90, p. 77. (Both FOR OFFICIAL USE ONLY — Info used is not protected)

48. Romjue, "Doctrine in the Mid-1990s," Draft, 1997, MHO Files.

TRADOC also continued strong support to the liaison officer program. TRADOC officers continued to serve abroad in ten nations. At the same time, thirteen nations had liaison officers resident at TRADOC Headquarters.[49]

The focus of the important bi-lateral staff talks varied widely from nation to nation, but there were matters of concern common to all the talks. All the allied nations' delegations wished to discuss the effects of almost universal downsizing on military preparedness. In addition, there was much interest in the United States Army's Battle Laboratory program; the Army XXI, Force XXI, and Experimental Force (EXFOR) efforts and the accompanying digital weapons and equipment issues; and the futures effort in the Army After Next program. Other prominent issues were training simulation and peace operations.

Each of the principals involved in the talks had concerns peculiar to their situation and missions. For example, the first-established staff talks, those with Germany, focused especially on the U.S. defense relationship with the key, newly unified continental power. Key to the talks with the United Kingdom were briefings on the future structure of the British Army and on NATO, in which strategic lift remained a problem for both armies. Talks with the French Army were heavily influenced by extensive and frank discussions of the future operational and organization development of both armies in light of the recent French decisions to transition to a smaller all-volunteer force. Of common concern to the U.S. and Italian armies was Italy's role as the key Southern European ally, providing important logistics and staging facilities for the U.N. and NATO Bosnia operation and for unforeseen future Mideast contingencies.[50]

Of particular interest during talks with the Spanish Army was the continuation of the annual "Replay" exercises which featured Spanish and U.S. unit co-training alternately in Spain and Germany. Talks with the Canadian Army registered a shifting of Canadian focus from Europe to Latin America and the Pacific—a move influenced by changing economic, politics, and potential threat. A major theme of talks with the Brazilian Army was the structure and employment of light forces. Talks with the Republic of Korea Army (ROKA) naturally focused in the post-Cold War on the ROKA's unstable North Korean neighbor, a militant communist threat unique in the world of the mid-to-late 1990s. Japan-U.S. Army staff talks featured, among other things, subject matter expert exchanges, logistics, and disaster relief operations.[51]

49. For a list of the TRADOC liaison network members, see fn 1, this chapter.

50. Romjue, Doctrine in the Mid-1990s," Draft, 1997, MHO Files

51. Ibid.

Of particular interest in the 1990s were the visits of two high-ranking Asian military leaders to Headquarters TRADOC. General Xu Huizi, First Deputy Chief of the General Staff, Peoples Liberation Army, Peoples Republic of China visited in August 1994. That visit was the first visit to the United States of a high-level Chinese Army official since the Tiananmen Square incident in 1989. Also during 1994, General B. C. Joshi, Chairman of the Chiefs of Staff Committee and Chief of the Army Staff, Indian Armed Forces visited the command.[52]

52. ACH, CY 94, p. 108.