TRADOC Historical Study Series

PREPARE THE ARMY FOR WAR

A HISTORICAL OVERVIEW OF THE ARMY TRAINING AND DOCTRINE COMMAND 1973 - 1993

TRADOC
20th Anniversary Commemoration

by John L. Romjue
Susan Canedy and Anne W. Chapman

Office of the Command Historian
United States Army Training and Doctrine Command

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20th Anniversary Commemoration

Office of the Command Historian
United States Army Training and Doctrine Command
Fort Monroe, Virginia

1993

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 Frederick M. Franks, Jr.	Commander
Major General John P. Herrling	Chief of Staff
Dr. Henry O. Malone, Jr.	Chief Historian
Mr. John L. Romjue	Chief, Historical Studies and Publication

TRADOC HISTORICAL STUDY SERIES

Henry O. Malone and John L. Romjue, General Editors

TRADOC Historical Studies are research reports published by the Office of the Command Historian, 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.

Table of Contents

Charts

Illustrations

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

Cover Photo: Army soldier - 1993 (U.S. Army Photo)

PREFACE

The year 1993 marks the 20th anniversary of the Army's establishment—on 1 July 1973—of the Training and Doctrine Command, or TRADOC, as the major innovation in its post-Vietnam War reorganization. Skeptics were free with predictions that the new organization would not survive the test of time, but at the 20-year point, it is appropriate to note that 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 20th anniversary on the same date. The formal observance of TRADOC's 20th anniversary provides not only the opportunity, but the obligation for the TRADOC Office of the Command Historian to produce a historical assessment that surveys the reasons for the 1973 reorganization and the role TRADOC played in carrying out its assigned mission responsibilities as the instrument for change and development in the Army.

As noted on the dedicatory page, this historical study is offered 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 was commissioned 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 G3. 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 was the leader and driving force in a small General Staff planning group that developed the concept of revitalizing the Army by focusing the work of preparing the Army to accomplish its wartime mission in a command dedicated solely to that task. Like Eisenhower, who developed the plan for the 1944 invasion of Europe, then was put in charge of it, DePuy was put in charge of establishing the new command 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. Retiring on 1 July 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 on 9 September 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 1990-1991.

Both at the beginning of its existence in 1973 and at the 20-year mark, 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 eight different commanders. A series of thematic chapters deal with the major developments during the 1970s and 1980s: the training revolution, a new generation of weapons, the focus on warfighting doctrine, design of the Army of the 1980s, as well as TRADOC's

involvement in joint service issues and work with Allied armies. The narrative includes a survey of the command's organizational structure and how it evolved over the first 20-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. In the midst of that readjustment, TRADOC, as a command, went to war for the first time in its history as the Army mobilized for Desert Shield and Desert Storm. In the aftermath of that experience, TRADOC accepted the challenge of leading the Army through the intellectual readjustment required by the new world order.

As the subtitle suggests, this is not a definitive history of TRADOC for the period 1973-1993, but rather an overview, focusing on the aspect of TRADOC's mission external to itself, and giving less attention to the mission activity directed internally. The narrative is based primarily on periodic annual histories of the command, produced by the Office of the Command Historian as a part of the Army Historical Program. Without the foundation provided by those annual histories over the years, with their associated collection of primary source documents, the present study could not have been written. Abbreviations and acronyms in both the text and in the footnotes can be identified by reference to the list in the back of the volume. Indexes provide 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), to identify a specific document behind the narrative.

Principal author and leader of the writing team for this study was Mr. John L. Romjue, who heads up the Historical Studies and Publication function in the Office. Chapters I, II, VI, VII, VIII, X, XI, and XIII, are from his pen and he also oversaw the production tasks. In the writing task, he was ably assisted by Dr. Susan Canedy, Archivist, who wrote Chapters III, V, and XII, and Dr. Anne W. Chapman, Research Historian, who contributed Chapters IV and IX. Mr. Joseph H. Mason III, Archives Technician, continued to carry out his usual tasks of layout, manuscript production, and editorial assistance, but for this study he also collected and evaluated a large amount of data to produce the key personnel appendices which help to make the study a useful reference source for readers who want 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, Staff Curator, who arrived back at Fort Monroe from USMC reserve duty in Somalia after this project was well advanced, but still soon enough to make that contribution. Valuable conceptual advice came from Dr. James T. Stensvaag. From the Office of the CAC Historian, Dr. J. Patrick Hughes supplied numerous photographs, and Dr. Marilyn Kindred in the Office of the Soldier Support Center Historian provided much needed dates on activities at Fort Benjamin Harrison. TRADOC Office of Public Affairs assisted with locating photographs and Mr. Willard Owens and his staff at the Fort Monroe Photo Lab made a large contribution by making their collection available and reproducing photos selected for inclusion in the volume. Mention has to be made of the crucial role played by the TRADOC Deputy Chief of Staff for Information Management, who put special priority

on timely completion of this volume. Mrs. Linda Christensen, DCSIM Visual Information Specialist, skillfully and quickly transformed the manuscript into a camera ready product and Mrs. Pat Brinkley, Printing Specialist, proficiently handled the contract printing process to insure delivery at the appointed time. Thanks are due to all of these and to many others, unnamed, who made various contributions. Overall editorial responsibility belongs to the undersigned.

Fort Monroe
17 May 1993

HENRY O. MALONE, JR., Ph.D.
Chief Historian

General William E. DePuy
First Commanding General of TRADOC
1973 — 1977

Chapter I

CHANGING AN ARMY

Charged with the major Army missions of individual training and combat developments, the Army Training and Doctrine Command, or TRADOC, was established as the 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.

The transformation of the American Army between the early 1970s and the early 1990s and TRADOC's role in that change merit close study by military analysts and historians.[1] How and by what mechanisms did it come to pass, in the long period of peace from the end of the Vietnam

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1 For a picture of the post-Vietnam Army and a summary of institutional changes through 1983, see Russell F. Weigley, *History of the United States Army*, enlarged edition (Bloomington: Indiana University Press, 1984), pp. 567-92. Paul H. Herbert, *Deciding What Has To Be Done: General William E. DePuy and the 1976 Edition of FM 100-5, Operations* (Leavenworth Paper No. 16) (Fort Leavenworth, Kan.: Combat Studies Institute, Command and General Staff College, 1988) provides an outstanding 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. See also Major Robert A. Doughty, *The Evolution of U.S. Army Tactical Doctrine, 1946-1976* (Leavenworth Paper No. 1) (Fort Leavenworth, Kan.: Combat Studies Institute, Command and General Staff College, 1979). Anne W. Chapman, *The Army's Training Revolution, 1973-1990: An Overview* (Fort Monroe, Va.: Office of the Command Historian, HQ TRADOC, 1991) furnishes a summary of training innovations and programs for the period. 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 Monroe, Va.: Historical Office, HQ TRADOC, 1982) describes TRADOC's force design work 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 Fiscal Year 1974, for documented discussions of the several aspects of TRADOC's development work.

conflict to the Gulf War, that the United States Army underwent a thoroughgoing modernization of its fighting units and a fundamental reform in its training and doctrine? What precise role did TRADOC, the major Army command that "worked for" the rest of the Army, have in those significant aspects of intellectual and physical institutional change? How well did the institutional experiment itself work that, in 1973, created an overall development command, a requirements command for the Army on an equal status and footing with the "users" of TRADOC's work, the major troop commands?

Whoever looks back over this twenty-year period in the history of America's Army will be struck not only by its historical unity and dynamic of transformation but by the historical parallels that bracket it. Both in the strategic realm, and in the field of military technology, observers in the early 1970s, as well as the early 1990s, looked across new thresholds.

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, culminating in the fall of Saigon to North Vietnamese forces in May 1975, seemed to call in 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 policymakers 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.

For the Army, a second set of historical parallels bracketed the period under study. In both the early 1970s and the early 1990s, military leaders were aware that they were transiting new technological thresholds. The startling combat evidence of the acceleration in the tempo of land battle and its dramatic materiel lethality were powerful lessons of the 1973 Arab-Israeli War. Significant changes to the training, equipment, organization, and doctrinal preparation of the U.S. Army flowed from those revelations.

In the early 1990s, observers of the air and land battles of the 1991 Gulf War had a similar sense of entering upon a new dimension of technological warfare. For the Army, 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.

The advent of a new strategic world and the emergence of a new higher level of technological warfare in the early 1990s took place in the context of a U.S. military establishment sharply declining in the wake of the retrenchment of Soviet power. In a period governed by radically

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

altered strategic assumptions, TRADOC was by 1993 leading 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. That mandate and challenge was a continuation of the command's twenty-year-old responsibility to the Department of the Army to prepare the Army for war and chart its future. 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—the 20-year period extending from the end of the Vietnam War, through the historic final challenge of the Cold War, to the onset of a new strategic order.

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 organizations for unit training before shipment to the war theaters. Army Training Centers replaced the RTCs in the postwar Army, and 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.

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1 (1) For a documented account of Operation STEADFAST, see Jean R.Moenk, *Operation STEADFAST Historical Summary: 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 HQ TRADOC, 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).

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]

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

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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).

Developments Experimentation Command. In its short existence between 1962-1973, 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 focused specifically and exclusively on training, teaching, and developing the Army.

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

The Tasks of TRADOC

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

What was new in the idea of a training and doctrine command was focus. The TRADOC-FORSCOM arrangement solved the span-of-control problem, put combat developments back into the schools, and focused the development of the Army's tactical organizations, weapons and equipment, doctrine, and the training of soldiers in that doctrine, in one command. Making the better alignment work was the 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 the field, the U.S. Army was returning in the early 1970s from a lost war. Facing it was not only a situation of psychological and institutional uncertainty, but a dangerous and growing strategic threat to the North Atlantic Alliance. The situation was exacerbated by what military observers in the United States and Europe described as a lost decade of weapon development by the U.S. Army, owing to its ten years of concentration on fighting and equipping for the Vietnam conflict.

Chapter III

HOW TRADOC OPERATED

In its first two decades, the U.S. Army Training and Doctrine Command had eight 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, 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 training. 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

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1 See Preface for DePuy's background.
2 TRADOC ARMA, FY 75, p. 15. (CONFIDENTIAL—Info used is UNCLASSIFIED)

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 outlined 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]

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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.

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.

(Photograph courtesy of Greg Stewart)

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]

The move into the 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 the fuller Army 86 Studies, 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 integrated 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]

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4 TRADOC AHR, FY 78, pp. 1-3. (CONFIDENTIAL—Info used is UNCLASSIFIED)
5 TRADOC AHR, FY 77, p. 11. (CONFIDENTIAL—Info used is UNCLASSIFIED)
6 TRADOC AHR, FY 77, p. 11. (CONFIDENTIAL—Info used is UNCLASSIFIED)
7 TRADOC AHR, FY 80, p. 74. (CONFIDENTIAL—Info used is UNCLASSIFIED)
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)
10 (1) ibid. (2) Msg, CG TRADOC to Commanders/Commandants, 171736Z Jul 79, subj: Military History.

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 prioritized 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 published under General Otis and work continued on the second 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

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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)

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 promote 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

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

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.

must set high standards and ensure that those standards were understood and met. The second maxim involved confidence, one must, whether that be individual or organization, 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 Training Activity, the Center for Army Lessons Learned, and the Combined Arms Operations Research Activity. A final significant reorganization was his idea to transform the Deputy Chief of Staff for ROTC into the ROTC Cadet Command as a major subordinate command of TRADOC.

Vuono

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

Vuono understood that doctrine had to apply to the Army and had to be operative in the joint and combined arena. It was imperative that doctrinal publications from echelons above corps, through corps, division, all the way down to the brigade manual be in harmony with the overall doctrine. Vuono instituted guidelines for doctrinal development to assist in the evolution of the doctrine. In the training arena, Vuono developed the concept of the advanced collective training facilities, which led to the opening of the Joint Readiness Training Center at Fort Chaffee, Arkansas, and the Combat Maneuver Training Center at Hohenfels, Germany, and the initiation of the Battle Command Training Program at Fort Leavenworth. Efforts in force modernization concentrated on improved application of the Concept Based Requirements System and a new emphasis on a systems of systems approach to equipment modernization to exploit opportunities for commonality. Leader development was concentrated in the development of small group instruction and the invigoration of the noncommissioned officer education system. Leading and caring addressed excellence in the individuals and the installations of which they were a vital part.

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16 Oral history interview with General William R. Richardson, 27 August 1986, by Dr. H.O. Malone, Jr.
17 TRADOC Hist R, 84-86, p. 3. (SECRET — Info used is UNCLASSIFIED)

Toward that end, the command instituted procedures for developing a long range plan. The long range plan was designed to facilitate construction of the various 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 primary mission elements but broke out combat developments 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.

Thurman's concept for TRADOC was set forth in a plan 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 timespan 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. The plan 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 development; 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.

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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 AH, CY 88, pp. 4-7. (FOR OFFICIAL USE ONLY — Info is not protected)

While Vision 91 addressed the immediate period, Thurman developed a TRADOC planning vehicle 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 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

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

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 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 the 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 requiremments. 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

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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.
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 interviews with 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.

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 sequential 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]

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

Chapter IV

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 masterminds 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 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

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1 Romie L. Brownlee 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.

Major General Paul F. Gorman.
With General William E. DePuy, Major General Gorman brought a new concept of performance-oriented training that revolutionized Army training.

draft to meet their manpower needs. Other factors TRADOC had to consider in building a new training system was 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 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 development and doctrine."[3]

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 others 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: the Army Training and Evaluation Program (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

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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, *Changing an Army*, p. 186 (quotation).

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 that built on performance at the next lower level.

just put in the training hours. The program defined specified missions and tasks, conditions, 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]

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

U. S. Army Infantry Center and School, Fort Benning, Georgia.
The STEADFAST Reorganization of 1973 recognized the service schools as the Army's source of development and doctrine.

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 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 time. As this study of TRADOC's first twenty years went to

press, most of the proponent schools had completed development of the new test and it was just beginning to be fielded.[5]

Tied directly to the SQTs, and later to the SDT, were new Soldiers' Manuals. 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 to add in order to produce a competent soldier. The new manuals were themselves a part of a much larger program at 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 twenty years, the training literature program saw many changes as it adapted to new programs and projects.[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 and computer-based instruction, 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 then 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 one 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]

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5 (1) Ibid. (2) TRADOC Hist R, 84-86, p. 38. (SECRET — Info used is UNCLASSIFIED) (3) TRADOC ACH, CY 90, pp. 119-22.
6 TRADOC Annual Report of Major Activities, FY 74, p. 99. (SECRET — Info used is UNCLASSIFIED)
7 TRADOC Annual Report of Major Activities, FY 74, pp. 108-10. (SECRET — Info used is UNCLASSIFIED)
8 TRADOC AHR, FY 75, pp. 50, 53-60. (CONFIDENTIAL — Info used is UNCLASSIFIED)

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.

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 1993 would be more in degree than in kind.[9]

9 (1) Brownlee and Mullen, *Changing an Army*, 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.

School Models and Long Range Plans

During the first twenty years of its existence, TRADOC employed a number of "school models" and long-range training plans to guide the command in fulfilling its mission 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 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 training 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 responsible for the interface between combat developments and training developments. 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 insure 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 history 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.

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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)

However, as the TRADOC history program grew in the field, commandants began to use the branch historians to coordinate MHEP in their commands. By 1993, most branch historians served as adjunct instructors of military history. In August 1992, proponency for TRADOC's military history education program was moved once again, that time back to TRADOC headquarters and to the Office of the Command Historian.[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 exceptions 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 Glenn K. Otis established a working group under Brig. Gen. Donald Morelli—then assigned as Special Assistant to the Commanding General—to 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 developments and training developments in the same directorate, thereby bringing training developments and evaluation into the system acquisition process earlier.

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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.

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" 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 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

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

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

16 (1) 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)

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 advancements—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 began 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 long-range "umbrella" training strategy for the late 1990s and the first twenty years of the twenty-first 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. Many continued under study as TRADOC reached its 20th anniversary as a command.[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 89 eliminated the School Secretary organizations at schools located on TRADOC installations, aligned the threat support office under the assistant commandant, and limited the

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.

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.

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 need for additional guidance to better apply the concepts of FM 25-100 at battalion and company level. Accordingly FM 25-101 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 tank or 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 1993, the system 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 for objective assessment of the survival of soldiers and units. By 1993, MILES devices were available for air-ground engagement and air defense systems and MILES was being integrated into the Simulated Area Weapons Effects-Radio Frequency and Global Positioning System (SAWE-RF-GPS/MILES II) program development. It was the MILES system that made possible three of the four Combat Training Centers, discussed below.[23]

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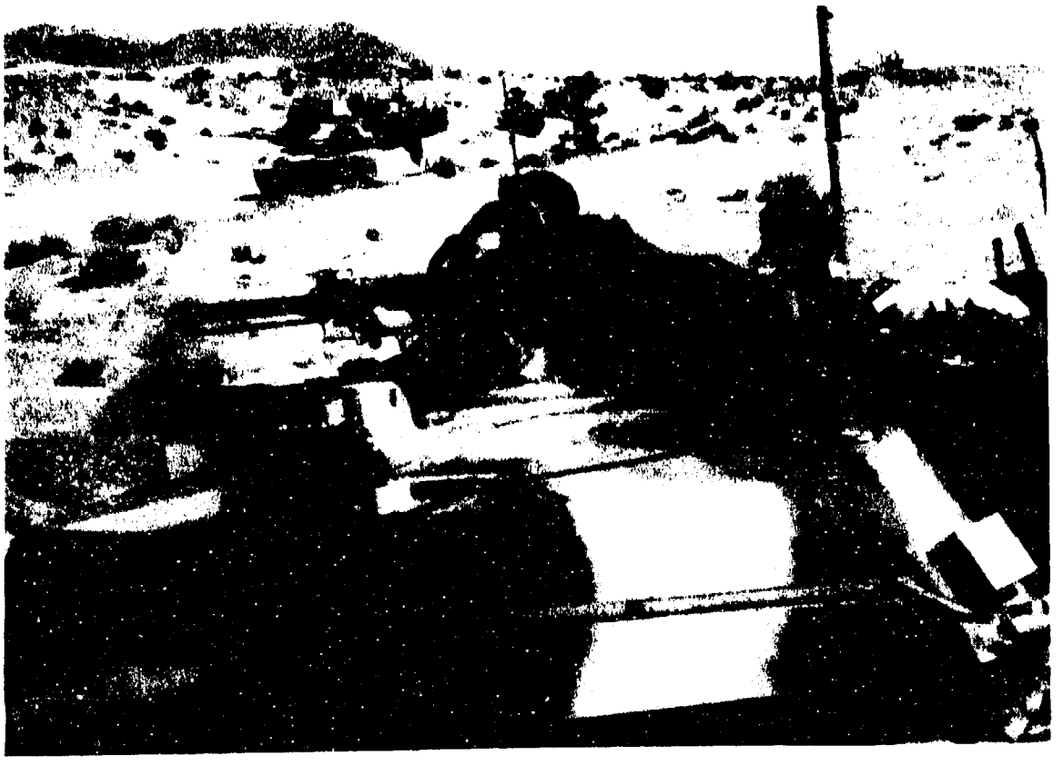
20 (1) GO Notes 05-89, May 1989. (2) SSHR, ODCST, 1 Jan - 30 Jun 89, p. 61; 1 Jul - 31 Dec 89, p. 54. Both in THRC.

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.

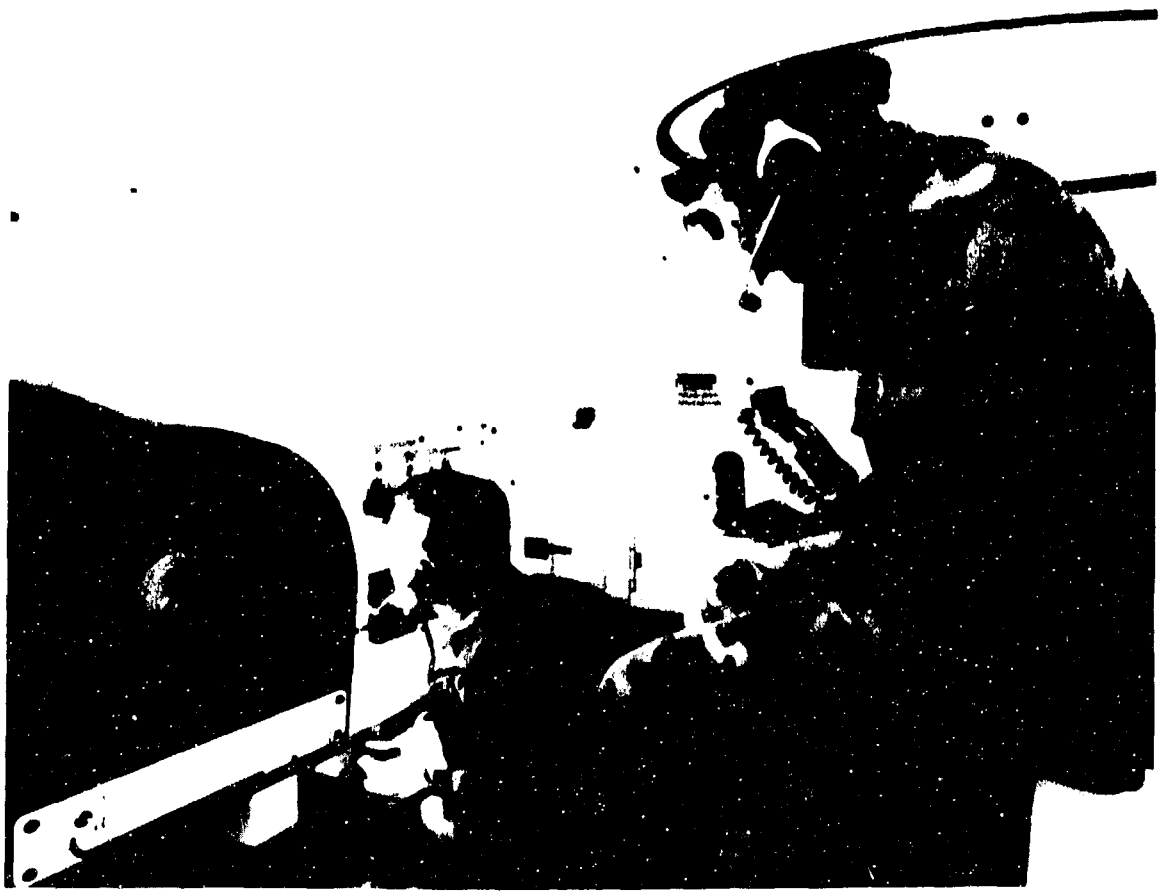
22 TRADOC AHR, FY 77, pp. 56-57. (CONFIDENTIAL — Info used is UNCLASSIFIED)

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



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

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 for training, when space, safety, cost, or environmental considerations might have prevented it. Simulations and simulators such as the Simulation Network (SIMNET), that joined more than 200 simulators, allowed units to participate in simulated battles without leaving home station. In 1993, SIMNET technology was being applied to 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 1993 placed the Army first among the services in the field of training technology.



Simulators permitted units to participate in simulated battles without leaving their home station. Two soldiers from the Infantry School, Fort Benning, "fight" an engagement in an M1 Abrams tank simulator.

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 Training 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. Plans were that CATS would

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 courtesy Greg Stewart)

gradually be folded into a larger "capstone" concept and strategy to serve as the training equivalent to the AirLand Battle-Future warfighting concept.[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 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.

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

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 instrumentation system for exercise control and data collection; 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 in 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 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 1988, the Army began to plan for a Combat Maneuver Training Center at Hohenfels, Germany, to provide for troops in Europe the same realistic combined arms training exercises as those at the NTC. In 1993, that training center, like the others, was still under development, and the prototype instrumentation system was being tested. 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]

Officer and Noncommissioned Officer Education and Leader Development

One of General DePuy's requirements in the designing 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. By 1993, the Officer Education System (OES) and the Noncommissioned Officer Education System met both those criteria. The OES

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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. In June 1993, the JRTC was scheduled to begin a move to Fort Polk. When fully established there, plans were for the light forces training center to become a joint TRADOC-FORSCOM organization like the NTC.

27 TRADOC ACH, CY 91, p. 156.

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^3 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. Initially, the MQS program had three levels: MQS I, precommissioning; MQS II, lieutenant; and MQS III, captain. In July 1985 General John A. Wickham, Jr., Chief of Staff of the Army, approved MQS I as implemented in the U.S. Military Academy, ROTC, and Officer Candidate School, and set the start date for MQS III for 1987. Meanwhile TRADOC began development of MQS IV for majors and MQS V for lieutenant colonels. However, as a result of a review of the MQS system begun in 1987, MQS was restructured into a three-tiered program. MQS I continued to apply to precommissioning, but MQS II would serve all company grade officers and MQS III all field grade officers. Early in 1993, MQS I and II were in place, with MQS III awaiting final approval.[29]

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 first twenty years of the command's existence. In 1993, the 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. Effective 1 October 1989, completion of the Primary Leadership Development Course was mandatory for promotion to sergeant. On 1 October 1992, completion of the Basic Noncommissioned Officer Course became a requirement for promotion to staff sergeant. On 1 October 1993, completion of the Advanced Noncommissioned

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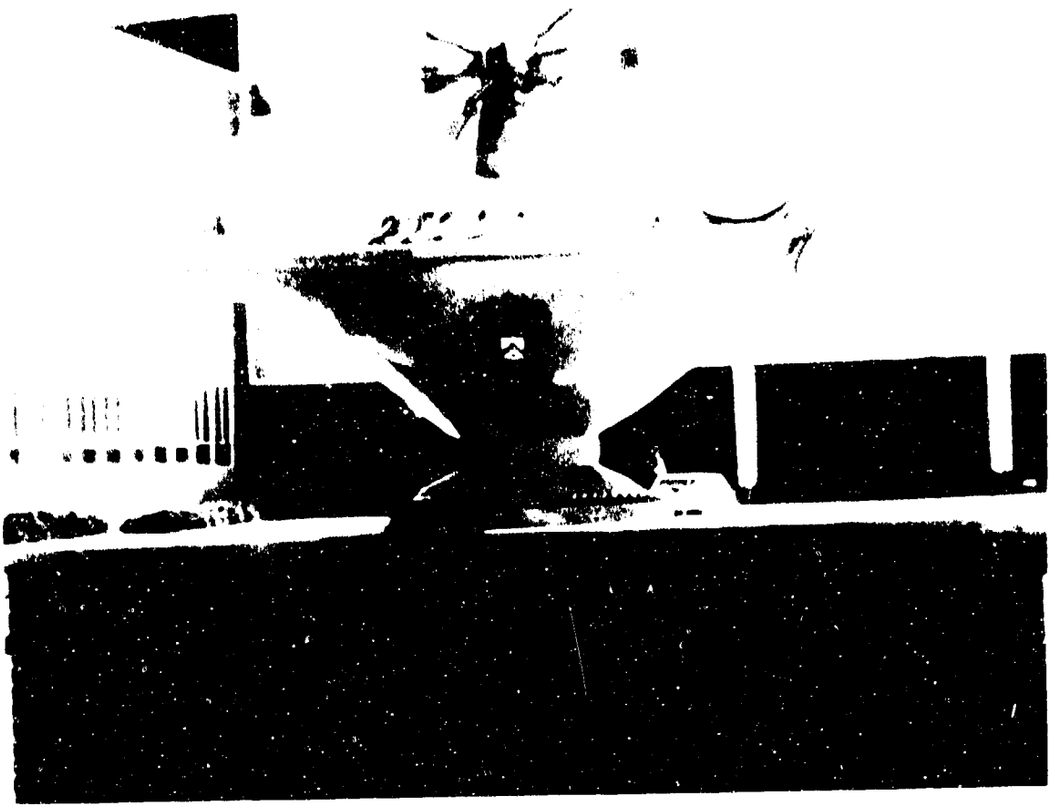
28 (1) TRADOC AHR, CY 88, p. 125. (FOR OFFICIAL USE ONLY—Info used is not protected) (2) CAC AHR, CY 87, p. 81.

29 (1) TRADOC ACH, CY 89, pp. 181-82. (FOR OFFICIAL USE ONLY—Info used is not protected) (2) SSHR, ODCST, CY 92/II, p. 51.

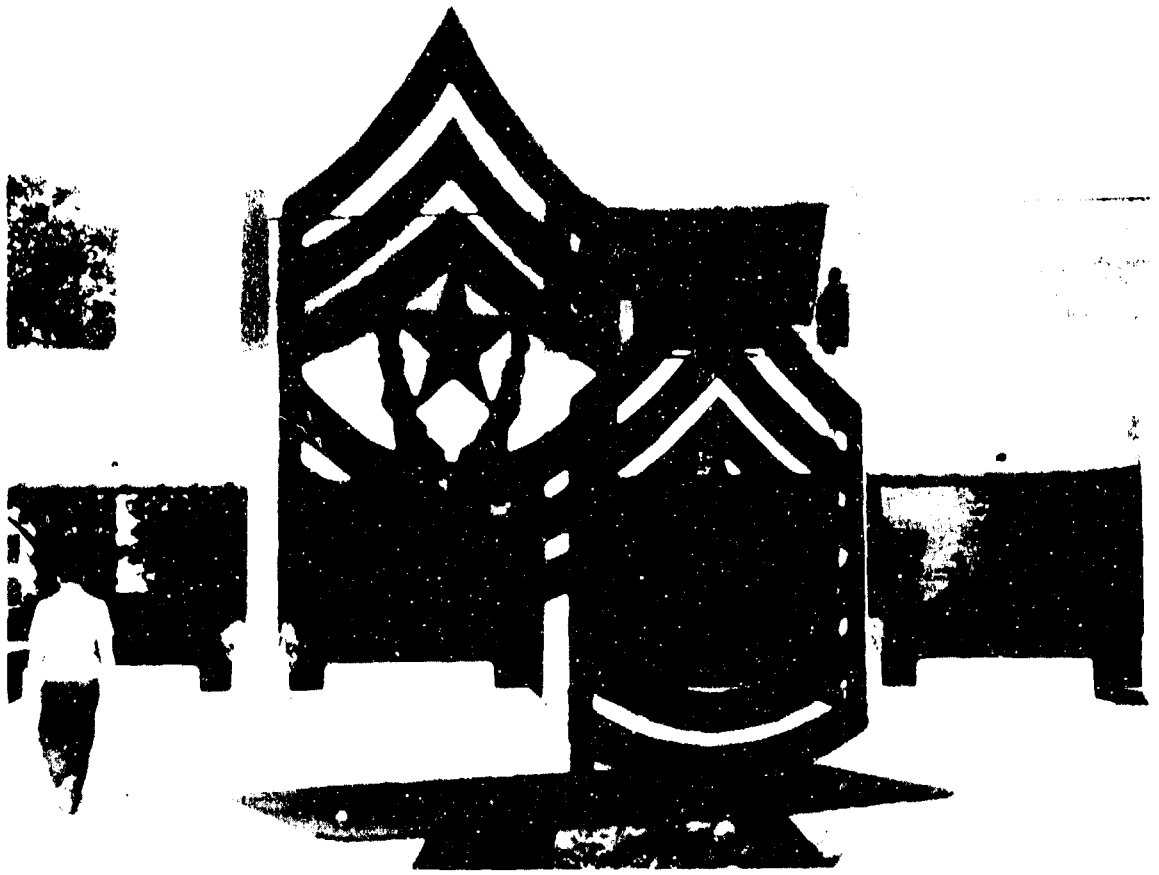


A central part of officer professional education was the Command and General Staff College, Fort Leavenworth, Kansas. Beginning with the Combined Arms and Services Staff School for captains and progressing through the Command and General Staff course for majors and the School of Advanced Military Studies for specially selected field grade officers, the college provided officers with training for staff duties at various levels in the Army.

Officer Course would be mandatory for promotion to sergeant first class and the Sergeants Major Course would become a requirement for promotion to sergeant major.[30]

Leader development had been a concern of the Army for many years. However, TRADOC brought that concern into sharper focus and institutionalized leader development programs on several levels. Since 1973 a number of studies had been conducted to investigate the status of leader development in the Army. In the fall of 1987, General Vuono, Army Chief of Staff, tasked Maj. Gen Gordon R. Sullivan to conduct a formal study of leader development in the Army and to develop a leader development action plan to provide specific recommendations as to the changes needed in the Army leader development process. The action plan, submitted in April

30 PROFS Msg, ODCST, 21 Apr 93.



Entrance to the Sergeants Major Academy, Fort Bliss, Texas. Completion of the Sergeants Major Course was a requirement for promotion to sergeant major.

1988, envisioned a program which rested on three doctrinal "pillars": institutional training; operational assignments; and self-development.[31]

Developing leaders in all components of the Army, in light of decreasing resources, took on added importance to the maintenance of readiness and challenged TRADOC to maximize every developmental opportunity. To manage the leader development program, TRADOC had established in 1983, within the Combined Arms Center, a Center for Army Leadership (CAL). Leader

31 (1) The major studies dealing with leader development since the establishment of TRADOC were the Review of Education and Training of Officers (RETO), the Professional Development of Officer's 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 Michael A. Anastasio, "Leadership Development: Direction for the Future," *Military Review*, May 1991, pp. 10-19.

development was a continuous process of education, training, experience, assessment, review, reinforcement, evaluation, and selection for the next leadership level. The command was responsible for the institutional phase of leader development and for identification of the goals of operational assignments and self-study. The leader development effort was guided by five Leader Development Action Plans, one each for officers, warrant officers, noncommissioned officers, civilians, and the reserve component. The plans, collectively, were designed to ensure that leadership assessment and development was incorporated into all levels of leader training and education.[32]

As TRADOC celebrated its twentieth anniversary, two new initiatives with training impacts were underway. One of these was a Department of the Army effort that Chief of Staff of the Army General Gordon R. Sullivan called Louisiana Maneuvers (LAM) 94. The LAM Task Force was physically located at TRADOC headquarters at Fort Monroe, Va. LAM 94 was so named for the maneuvers that General George C. Marshall and Lt. Gen. Lesley J. McNair held in Louisiana in 1941 to assess readiness and identify deficiencies in the Army's performance. LAM 94 had a similar thrust in that its aim was to find ways to focus and manage change as the Army downsized and sought to make the most of shrinking resources in the post-Cold War environment. It was the mission of the Task Force to direct a multi-step process to identify the issues the Army faced or would face and to determine the most appropriate means of investigation for each issue. The LAM process would make extensive use of networked simulation as well as other "tools" as it built a bridge to the future Army.[33]

The other major ongoing training initiative was the Future Army Schools Twenty-one (FAST) effort. It was the mission of the FAST Task Force to "establish an effective and efficient Total Army School System of fully accredited and integrated AC/ARNG/USAR schools that would provide standard individual training and education for the Total Army." FAST was a four-phase campaign to identify efficiencies, set standards, and distribute resources to meet twenty-first century training demands. One of the Task Force's recommendations, early approved by the Chief of Staff of the Army, was the establishment of TRADOC as sole accrediting authority for the schools, effective 1 January 1993. The major thrust of FAST was the establishment of a regionally-based reserve component school system under the auspices of TRADOC headquarters.[34]

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32 (1) TRADOC ACH, CY 92 (Draft). (2) PROFS Msg, Center for Army Leadership, Fort Leavenworth, Kan., 21 Apr 93.
33 TRADOC ACH, CY 92 (Draft).
34 FAST Briefing, n.d. [1993].

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 activities 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]

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.

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

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 Developments 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

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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)

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.

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 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]

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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)

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 and M3 Bradley fighting vehicles, the Blackhawk and Apache helicopters, and Patriot air defense missile were developed and fielded. Those weapons systems all had their genesis in the Vietnam draw-down 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]

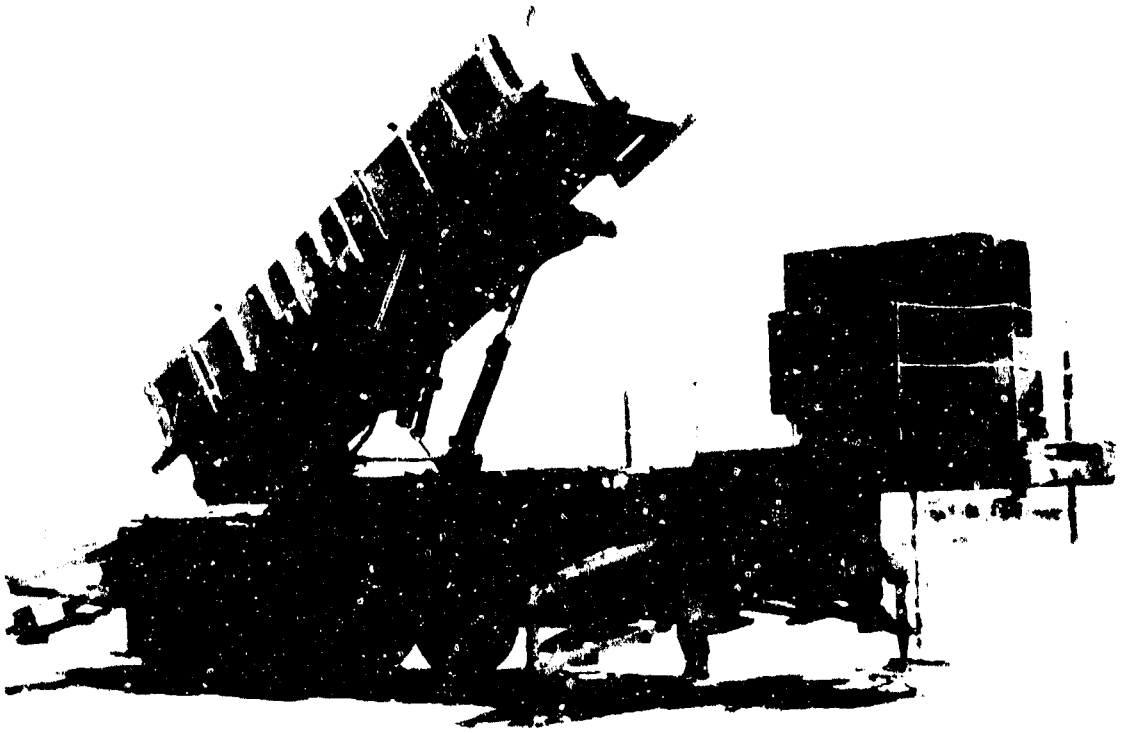
Over the course of time, the appearance and characteristics of some of the major systems changed, but not the impetus or drive to institutionalize the changes.[10] By 1974 the "big eight" had been reduced to five key developmental programs which included, in contemporary terminology, an advanced attack 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

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 Breakthrough," *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.

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-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]



One of the significant weapons developed 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.

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)

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 Blackhawk transport helicopter, the Army's first true aerial infantry 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, and 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 multi-mission (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 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

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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.

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 was heavily influenced by the 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 Blackhawk 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 companion multiple-launch rocket system (MLRS). Additionally, unmanned aerial vehicles, the joint surveillance target acquisition radar system (JSTARS), and the XM40 series protective mask were success stories of Desert Storm.

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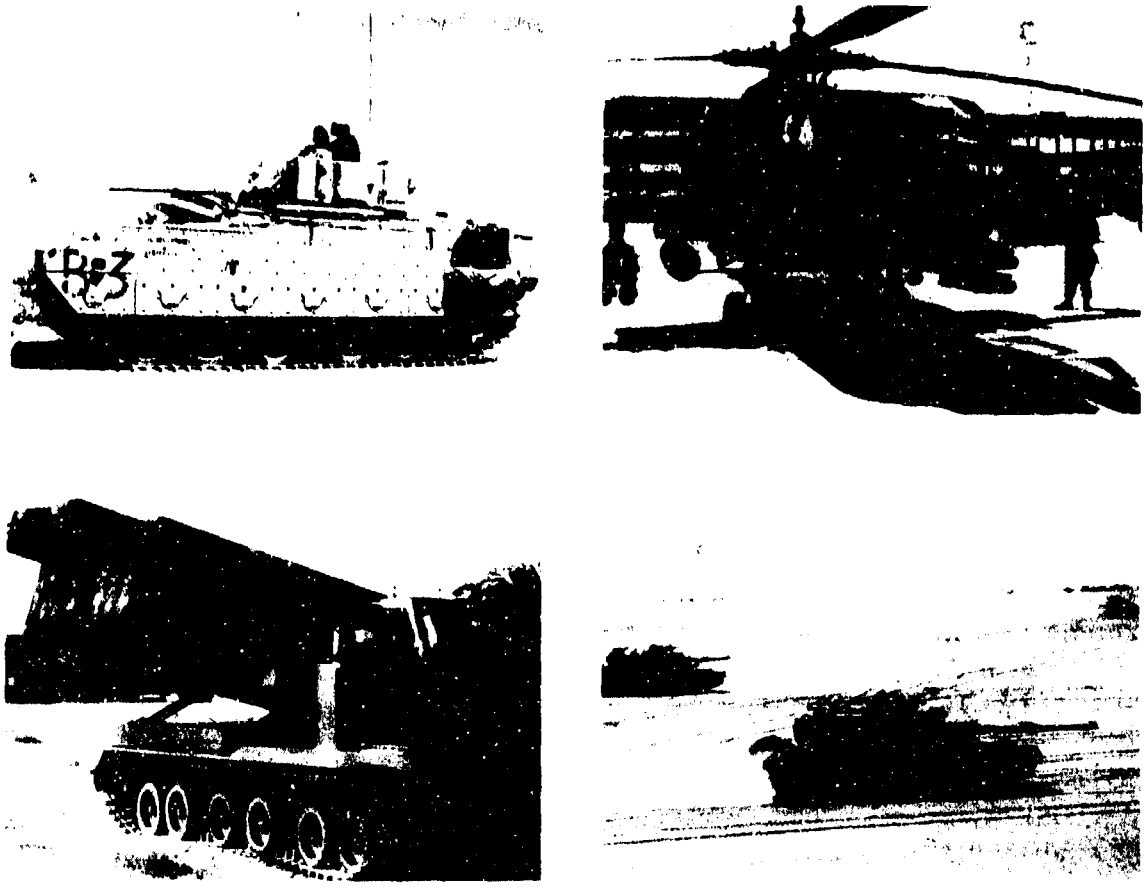
14 *Army Green Book*, 1983, pp. 282-440; 1984, pp. 318-504.
15 TRADOC ACH, CY 89, pp. 61-62. (FOR OFFICIAL USE ONLY—Info used is not protected)
16 The FAADS concept, and program, did not survive in its entirety into the 1990s. Some components were developed and fielded, some components were terminated. 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)



The 1970s and 1980s encompassed one of the most massive modernization programs in the history of the Army. Among major weapons, the Multiple Launch Rocket System (photographed in Saudi Arabia prior to being repainted in desert camouflage); the AH-64 Apache (assigned to the 101st Airborne Division being prepared for combat operations during Operation Desert Storm); the M-2 Bradley Fighting Vehicle (photographed at Fort Irwin in desert camouflage); and the M1A1 Abrams main battle tank (photographed during the ground offensive in Operation 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 at this writing 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 systems 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 by plan 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 combined.

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

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.

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.

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

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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.

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 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.

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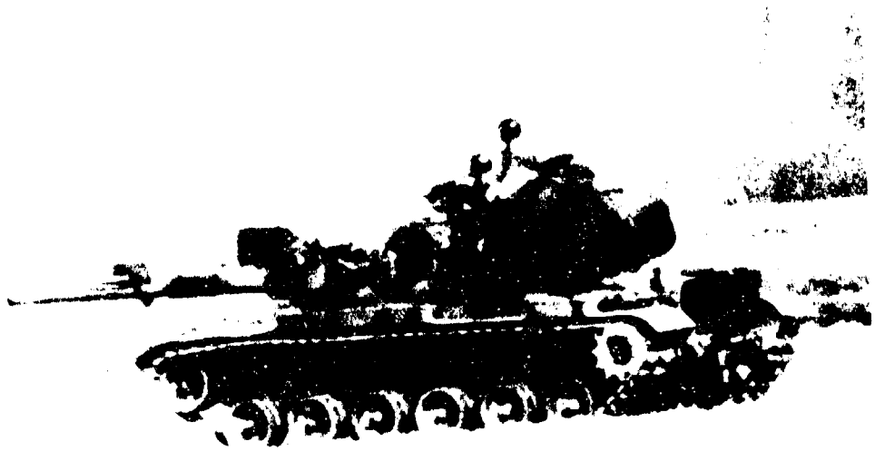
2 For the official statement of the new doctrine, see FM 100-5, *Operations*, 1 Jul 76. Herbert, *Deciding What Has To Be Done: General William E. DePuy and the 1976 Edition of FM 100-5* (Leavenworth Paper No. 16) provides the definitive account of the development of the 1976 manual. See also Romjue,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

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



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 focused 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 political 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]

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

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 specifically 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.

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]

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

6 (1) General Starry viewed the development of AirLand Batle 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 Batle and Corps Operations - 1986, 25 Mar 81. The phrase expressed, in its fused form, the

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 influences 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

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(continued...) 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.

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.

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.

Holder, and Richmond B. Henriques, emphasized 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 AirLand 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.

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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.

Chapter VII

DESIGNING THE 1980s ARMY

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 AirLand 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 accommodate the heavily armed modernized forces that had evolved by the early 1970s? The

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

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 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

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

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

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

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 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 integrated heavy/light or light/heavy force. The light infantry division gave the Army a new and necessary

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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.

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.

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.

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.

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 channelled 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 outgun, 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.[7]

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]

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

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 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

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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).

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

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 20-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 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 exacted 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

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

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 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

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4 AFM 2-14/FM 100-42, Airspace Management in an Area of Operations, 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.

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 on AirLand Battle. (2) Davis, *The 31 Initiatives*, pp. 27-33.

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 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 suport. 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]

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.

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

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.

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 under 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]

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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)
13 TRADOC ACH, CY 90, p. 53. (FOR OFFICAL USE ONLY — Info used is UNCLASSIFIED)

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.

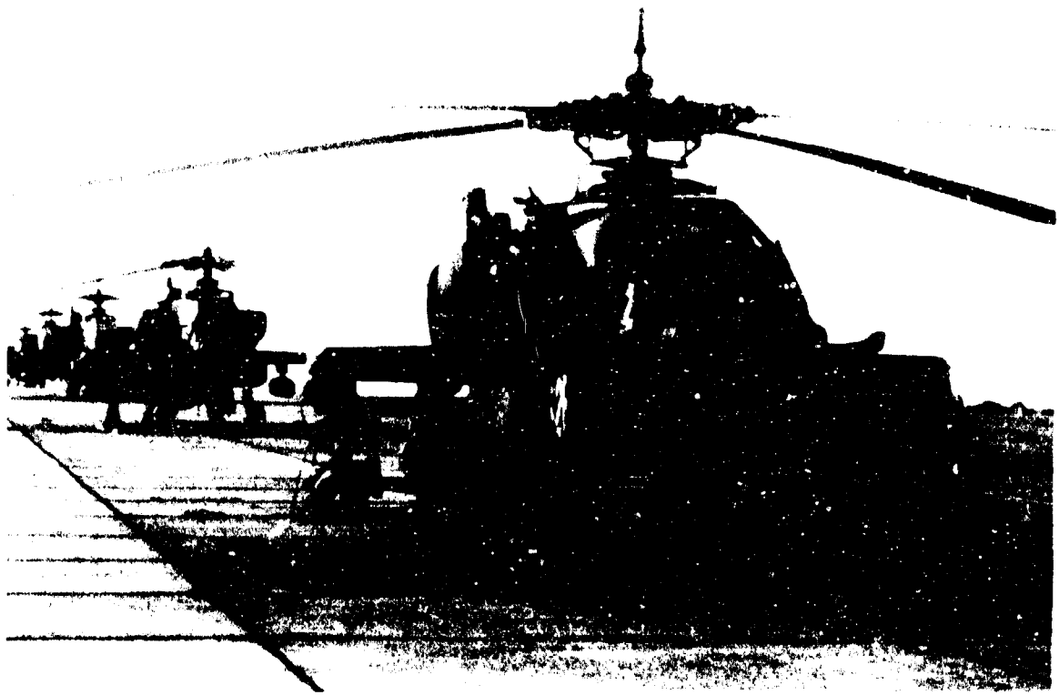
Among joint publications reviewed by TRADOC for other Army agencies was JP 1, *Joint Warfare of the U.S. Armed Forces*, for which TRADOC coordinated the Army review as well. Development of that publication was greatly accelerated by direction of General Colin Powell, Chairman of the Joint Chiefs of Staff, 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]

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 aircraft, 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

14 TRADOC ACH, CY 91, pp. 79-81.
15 TRADOC ACH, CY 90, p. 57. (FOR OFFICIAL USE ONLY — Info used is not protected)
16 TRADOC ACH, CY 91, p. 82.



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.

TRADOC, the Military Airlift Command, and the Marine Corps Combat Development Command.[17]

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

17 Ibid., pp. 82-83.

policy turned increasingly to that sector of military operations. More and more 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 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*.[18]

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.[19]

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 counterinsurgency 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

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

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

mutually exclusive. "The political object and the original motive of the war, 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."[20]

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.

20 TRADOC ACH, CY 90, pp. 56-57. (FOR OFFICIAL USE ONLY — Info used is not protected)

Chapter IX

WORKING WITH ALLIED ARMIES

Over the twenty 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, had greatly increased by 1993. 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 doctrinally 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

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.

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 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 Belgian 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 entitled Land Force Tactical Doctrine, Allied Tactical Publication (ATP)-35A. The NATO nations had been working on the manual since 1970. Before

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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)
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.

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 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. As of mid-1993, the draft of FM 100-8 had been staffed to the field for coordination. Comments were due by the end of June 1993.[8]

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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)
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.

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 army of the Federal Republic of Germany, the *Bundesheer*, the level of activity in bilateral army-to-army dialogue increased by 1993 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 equipment 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.

(continued...) David Rose, ODCSDOC, 13 May 93.

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)

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 - counter-mobility (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 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, anti-tank 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

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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.
13 TRADOC AHR, FY 76, pp. 48-54. (CONFIDENTIAL — Info used is UNCLASSIFIED)

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-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 (C^2), to which communications was integral. The Munich talks reaffirmed the centrality of those leading concepts. Armor forces would dominate the battlefield of the 1990s. C^2 interoperability was important not only for NATO planning and

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)
16 Ibid. pp. 158, 161, 162.
17 TRADOC AHR, FY 79, p. 215. (CONFIDENTIAL — Info used is UNCLASSIFIED)

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 (C^4I). In the bilateral development of material, the two nation's 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]

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

18 TRADOC AHR, FY 79, p. 219. (CONFIDENTIAL — Info used is UNCLASSIFIED)
19 Ibid., p. 220.
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)

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]

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 for 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 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

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.

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)

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 air-land 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 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; C^3; 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

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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)
27 Ibid. p. 165.
28 Ibid., p. 164.

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 actions, 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 — C^3, 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-antiarmor 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]

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29 Ibid., pp. 166-70.
30 TRADOC AHR, FY 79, p. 226. (CONFIDENTIAL — Info used is UNCLASSIFIED)
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*

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 prospect 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]

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 French. They included command and

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(continued...) Army Training and Doctrine Command, June 1987 - August 1989, p. 40.

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)

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 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 twentieth year as a major Army command, the talks were beginning to branch out along a growing number of paths.[39]

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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. 52. (FOR OFFICIAL USE ONLY — Info used is not protected)

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)

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]

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]

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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)

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)

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 development 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 Korean 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 the 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 besides Brazil — Argentina, Chile, and Peru. The first Peruvian exchange took place in December 1985 at the request of the Peruvian Army

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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 OFFICIAL USE ONLY — Info used is not protected)

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]

Peoples 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 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 relations 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

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)

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]

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)

Chapter X

ORGANIZATIONAL STRUCTURE

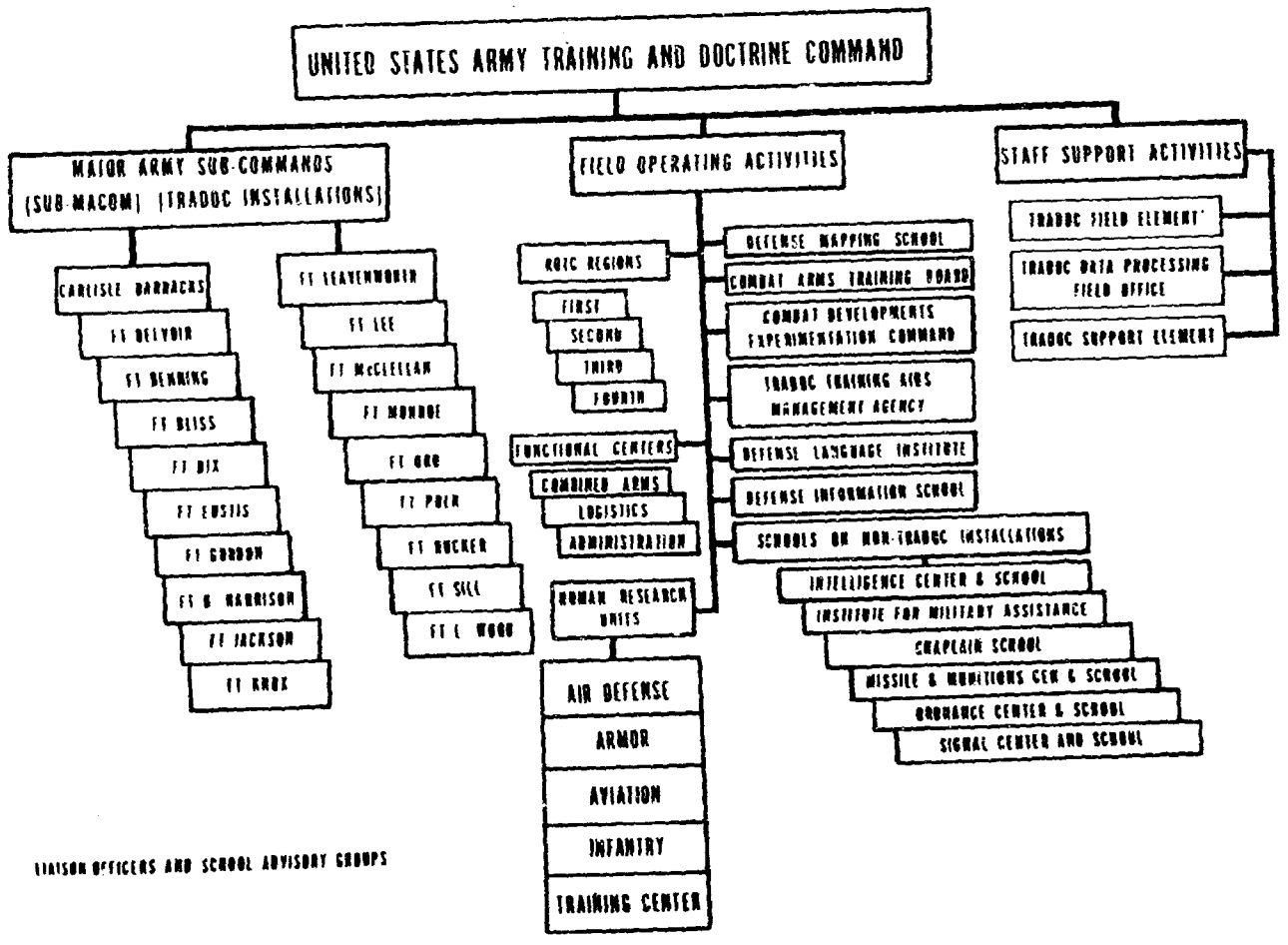
A major Army command, TRADOC commanded subordinate elements at installations throughout the continental United States. It also commanded most of the installations where its components were located, specifically those whose major mission elements had a training and doctrinal focus. The headquarters span of control reached out to a considerable variety of subordinate commands, many with complex command and support relationships. In 1973, TRADOC headquarters commanded, separately, its own installations, certain TRADOC tenants on those installations, and TRADOC tenants on non-TRADOC installations. Support agreements (intra-Army, interservice, interagency) together with memoranda of understanding internal and external to TRADOC, helped smooth the complex administrative, logistical, and funding relationship. A logical rationale underlay the surface complexity. The STEADFAST Reorganization had divided and assigned the parts of the Army field establishment in the United States not by geography but by function.

Initial Subordinate Organization

Organized on the STEADFAST principles of centralized management and decentralized operations, TRADOC executed its individual training mission through its Army training centers, service schools, ROTC regions and subordinate detachments, and through U.S. Army Reserve schools, training divisions, and brigades under its operational control. In 1973, TRADOC monitored individual training in Army-operated Department of Defense schools, the Army War College, logistics-related schools operated by the Army Materiel Command, and other non-TRADOC schools and training centers. The headquarters accomplished its combat developments mission in 1973 through three mid-level functional centers, later designated integrating centers, as well as through the service schools and other combat developments activities. The initial structure of the command (Chart 1) was as follows.

TRADOC directly commanded 20 major installations in 1973, exercising its command through the commanders of the centers resident on 18 of the installations and through the post commanders of 2 installations that were not centers of one kind or another, Fort Monroe, and Carlisle Barracks, Pa.

CHART 1
TRADOC SUBORDINATE STRUCTURE—1973



SOURCE: TRADOC Reg 10-5, *Org and Functions*, Hq, USATRADOC, 1 Nov 73 (UNCLASSIFIED).

The 18 installations with centers were actually of three different types. Three functional centers—the Combined Arms Center and Fort Leavenworth, the Administration Center and Fort Benjamin Harrison, and the Logistics Center at Fort Lee—drew together the training and combat developments tasks in their respective functional areas of combat and combat support, personnel administration, and logistics or combat service support. Two of the three functional center headquarters oversaw separate school and combat developments activities. The Combined Arms Center commanded the Command and General Staff College, the Combined Arms Combat Developments Activity, and the installation garrison. The Administration Center commanded the Institute of Administration, the Personnel and Administration Combat Developments Activity, and the garrison. The third functional center, the Logistics Center, was initially a combat developments-oriented organization, operating as a tenant on Fort Lee.

Ten more of the initial 18 center-type installations of TRADOC were Army branch or specialist school centers: the Engineer Center and Fort Belvoir, the Infantry Center and Fort Benning, the Air Defense Center and Fort Bliss, the Transportation Center and Fort Eustis, the Signal Center and Fort Gordon, the Armor Center and Fort Knox, the Quartermaster Center and Fort Lee, the Aviation Center and Fort Rucker, the Field Artillery Center and Fort Sill, and the Primary Helicopter Center/School and Fort Wolters.[1]

The six remaining TRADOC center installations were training centers devoted primarily to basic combat and advanced individual training or, at Fort McClellan, to Women's Army Corps basic training. These were the Training Center and Fort Dix; the Training Center and Fort Jackson; the Training Center and Fort Ord; the Training Center, Engineer and Fort Leonard Wood; the School/Training Center and Fort McClellan; and the Training Center, Infantry and Fort Polk. Basic combat training was also administered by the commander of the Armor Center and Fort Knox.

TRADOC had 16 Army branch schools. Eight schools—the Air Defense, Armor, Engineer, Field Artillery, Infantry, Quartermaster, Southeast Signal, and Transportation Schools—were components of their respective branch centers, at which they were located. Three other branch schools were situated on TRADOC installations. The Insitute of Administration was subordinate to the Administration Center and Fort Benjamin Harrison and commanded the resident Army Finance School and Army Adjutant General School. The Women's Army Corps Center and School was subordinate to the School/Training Center and Fort McClellan. And the Military Police School was subordinate to the Signal Center and Fort Gordon. The five remaining TRADOC branch schools were tenants on non-TRADOC posts — the Chaplain Center and School at Fort Hamilton, N.Y.; the Intelligence Center and School at Fort Huachuca, Ariz.; the Missile and Munitions Center and School at Redstone Arsenal, Ala.; the Ordnance Center and School at Aberdeen Proving Ground, Md.; and the Signal School at Fort Monmouth, N.J.

Besides the 16 branch schools, TRADOC commanded in 1973 four schools then designated as specialist—the Aviation School, part of the Aviation Center and Fort Rucker; the Primary

1 Initially, the U.S. Army School/Training Center, Fort Gordon, redesignated effective 1 Oct 74. Later, after the initial three "functional centers" became "integrating centers," the branch school type center came to be known as functional centers.

Helicopter School and Fort Wolters; the U.S. Army Element, School of Music, Norfolk, Va.; and the U.S. Army Institute for Military Assistance at Fort Bragg, N.C. TRADOC also commanded, through the installations involved, the Command and General Staff College at Fort Leavenworth and the U.S. Army Sergeants Major Academy at Fort Bliss. Department of Defense schools operated by TRADOC were the Defense Information School at Fort Benjamin Harrison, and the Defense Language Institute at the Presidio of Monterey, Calif.[2]

TRADOC administered the Army Reserve Officers' Training Corps (ROTC) Program through the Deputy Chief of Staff for ROTC at Headquarters, TRADOC, Fort Monroe, and later through the Commander, U.S. Army Rotc Cadet Command at that location.

2 Headquarters of the Defense Language Institute was relocated from Washington, D.C. to the California site on 1 Oct 74. The institute was retitled Defense Language Institute, Foreign Language Center on 1 Jul 76. TRADOC AHR, CY 76/7T, pp. 21, 23. (CONFIDENTIAL — Info used is UNCLASSIFIED) Full documentation for the organizational events and changes noted in this chapter exists in and may be obtained from the footnotes on the annual history pages cited.

TRADOC initially administered the Army Reserve Officers' Training Corps, or ROTC, Program through four ROTC Regions established under the STEADFAST Reorganization. The Region headquarters, One through Four, were tenants on Forts Bragg, Knox, Riley, and Lewis. These organizations, which were under the direction of the Deputy Chief of Staff for ROTC at TRADOC headquarters, managed college-level Senior ROTC, high school-level Junior ROTC, and National Defense Cadet Corps units throughout the states and territories.

A special activity related to combat developments and reporting directly to TRADOC headquarters was the Combat Developments Experimentation Command, or CDEC, earlier noted. Other directly subordinate elements included the TRADOC Data Processing Field Office, at Fort Leavenworth, serving both the training and combat developments missions; the TRADOC Field Element, at Fort Monroe, which supervised the command's liaison officer network; the Combat Arms Training Board at Fort Benning; the Training Aids Management Agency at Fort Eustis; and the Army Personnel Center at Oakland, Calif. The mission of five small CONARC organizations, Human Research Units which were dispersed at five installations to provide military support to behavioral research contractors, was assumed by TRADOC and transferred in March 1974 to the Army Research Institute, a Department of the Army agency.[3] (Commanders of TRADOC subordinate organizations are listed, with dates of tenure, in Appendices B, C, and D).

Initial Headquarters Organization

Command of TRADOC resided with the commanding general, assisted at his headquarters at Fort Monroe initially by a single deputy commander also resident, a chief of staff, and general and special staff. The general staff consisted of seven deputy chiefs of staff who managed the major elements of the headquarters and exercised staff responsibilitity for the commanding general to the installations, centers, schools, and other subordinate elements. (Appendix A lists the TRADOC commanding generals, the deputy commanders, including those subsequently appointed to handle specific elements of the command mission, to be discussed below. Appendix A also lists the TRADOC chiefs of staff, the command sergeants major, and the headquarters deputies, as those positions were adjusted in their missions and duties over the twenty-year period).

The seven deputy chiefs of staff (DCS) established in Headquarters TRADOC in 1973 were responsible for Training and Schools, ROTC, Combat Developments, Resource Management, Personnel, Logistics, and Operations and Intelligence. In January 1974 the last named general staff agency was restructured as DCS for Operations, *Readiness*, and Intelligence. In 1974, schools was dropped from the title but not from the purview of the DCS for Training. For those responsible for TRADOC's major missions, the responsibilities were wide. The DCS for Training (DCST) had responsibility for all TRADOC schools and for all individual training—basic combat and advanced individual training—of both active duty and reserve component personnel at the assigned schools, Army Reserve schools, and Army training centers. The DCST monitored

3 The above section treating the initial organization of TRADOC is based on the documented accounts in TRADOC ARMA, FY 74, pp. 11-14 (SECRET — Info used is UNCLASSIFIED), and FY 75, pp. 11 and 18-27. (CONFIDENTIAL — Info used is UNCLASSIFIED)

Formerly the headquarters for the Coast Artillery Board, Army Ground Forces, Army Field Forces, and later Continental Army Command, Building 37 housed the offices of the TRADOC commanding general, the chief of staff, the command sergeant major, and the secretary of the general staff. In honor of the pioneering work of TRADOC's first commander, Building 37 was named DePuy Hall in June 1993.

training programs, managed training literature, and supervised training support. Those responsibilities, which saw significant change under TRADOC, are summarized below.[4]

The DCS for Combat Developments (DCSCD), absorbing the functions of Headquarters Combat Developments Command, represented the TRADOC commander in the exercise of command responsibilities for combat developments in the Army, excepting specific excluded fields such as medical. DCSCD duties addressed virtually the full range of Army organization, materiel, and doctrine. The agency supervised the design of Army tactical and support forces, and managed the effort of defining and formulating operational requirements for Army weapons and equipment. It participated, in coordination with the Department of the Army and the Army

4 For a disscussion of the "training revolution" under TRADOC, see Chapter IV.

Materiel Command, in the major decisions of the materiel acquisition process. The combat developments deputy also planned and coordinated operational and force development tests and experiments, analyses, studies, and scenarios to document improved and new organization, materiel and concepts. He contributed to the formulation of doctrinal instruction in the schools and to the formulation and production of doctrinal literature. Chart 2 depicts the TRADOC headquarters organization in 1973.[5]

Significant organizational changes took placed in the Training and Doctrine Command in the twenty-year period. Most major changes occurred within the first years, as the command adjusted to the new structure and to the needs and emphases of its missions.

Installations

TRADOC commanded twenty major installations on the day it was established. The command lost one installation with the inactivation of Fort Wolters in June 1974, when its basic tenant, the U.S. Army Primary Helicopter School, was discontinued, eliminating one of TRADOC's specialist schools.[6] Two more TRADOC installations were transferred the following year. In keeping with the Army's mid-1970s goal to rebuild to a 16-division Active Army force, the Department of the Army took steps to activate divisions at Forts Ord and Polk. That move changed the primary mission of those installations from individual training to unit stationing. Departmental orders transferred both posts to the Forces Command on 1 July 1975, though initial entry training continued at both posts through 1976.[7] Thereafter until the late 1980s, TRADOC commanded 17 major installations. Several of those additionally commanded subinstallations in their vicinity.

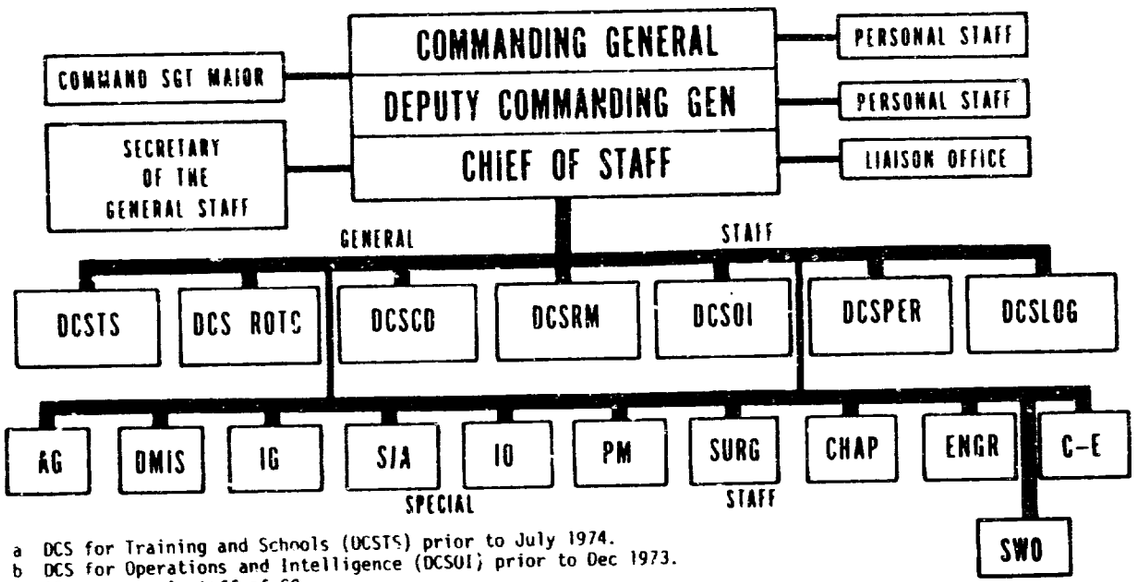
Consolidations in the late 1980s resulted in the loss of two TRADOC posts and the gain of one. Several years of planning resulted in the consolidation of all engineer training at Fort Leonard Wood, Mo. on 1 June 1988, when the U.S. Army Engineer Center and School was relocated there from Fort Belvoir, Va. On 2 October 1988, the Missouri post was redesignated the U.S. Army Engineer Center and Fort Leonard Wood. Command of Fort Belvoir was transferred one day earlier to the U.S. Army Military District of Washington.[8] Late in the period, plans to move and consolidate TRADOC's Intelligence School, Fort Devens, Mass. with the Intelligence Center at Fort Huachuca, Ariz. by 1994 led to transfer to TRADOC of Fort Huachuca from the U.S. Army Information Systems Command on 1 October 1990.[9] As diminishing Cold War pressures prompted overall Army reductions beginning in the late 1980s, consolidation planning resulted in the phase-out of training at Fort Dix, N.J. in 1992. On 1 October 1992, command of that TRADOC installation passed to the Forces Command, reducing TRADOC posts to sixteen.

Mid-Level Headquarters

A significant organizational change was the strengthening of the intermediate-level structure in 1977 to give the three functional centers a stronger integrating role vis-a-vis their associated

5 TRADOC ARMAs, FY 74, pp. 2-9, (SECRET — Info used is UNCLASSIFIED); FY 75, pp. 11-18. (CONFIDENTIAL — Info used is UNCLASSIFIED)
6 TRADOC ARMA, FY 74, p. 11. (SECRET — Info used is UNCLASSIFIED)
7 TRADOC ARMA, FY 75, p. 22. (CONFIDENTIAL — Info used is UNCLASSIFIED)
8 TRADOC AHR, CY 88, pp. 9-10. (FOR OFFICIAL USE ONLY — Info used is not protected)
9 TRADOC ACH, CY 90, p. 19. (FOR OFFICIAL USE ONLY — Info used is not protected)

CHART 2
HEADQUARTERS TRADOC—1973



a DCS for Training and Schools (DCSTS) prior to July 1974.
b DCS for Operations and Intelligence (DCSOI) prior to Dec 1973.
c Also personal staff of CG.

Source: TRADOC Reg 10-5, Org and Functions, Hq, USATRADOC, 1 Nov 73 (UNCLASSIFIED).

TRADOC schools. This command concept accorded with the command philosophy of TRADOC's second commander, General Donn Starry, for the delegation of functions to subordinate headquarters. By instructions of 1 September 1977, General Starry moved the three-star TRADOC deputy commanding general position from Fort Monroe to Fort Leavenworth, dual-hatting it upon the Combined Arms Center commander. Beyond his local command duties, the deputy commander was to execute specific TRADOC missions. He was to direct, coordinate, and integrate combined arms doctrine, organization, and combat and training development programs for the Army. The instructions also gave the dual-hatted Combined Arms Center commander a stronger voice in TRADOC test and analysis activities and empowered him as deputy commanding general to issue tasks to the Administration and Logistics Centers. At the same time, General Starry made all three functional center commanders members of the TRADOC headquarters Program Resource Advisory Committee, giving them a stronger voice in resource allocation to their associated schools. Starry additionally placed the school centers under the three functional centers for commander-rating purposes.[10] Those measures and implementing regulations effectively transformed the Combined Arms, Logistics, and Administration Centers into integrating centers for combined arms and combat support, for combat service support, and for personnel-related concerns.

Although the dual-hatting of the Combined Arms Center (CAC) commander as TRADOC deputy commander made CAC first among equals, TRADOC took steps in the early 1980s to strengthen each of the other integrating centers. In 1980, TRADOC obtained approval from the Army Chief of Staff to strengthen the limited combat developments and doctrine role the STEADFAST planners had settled on the Administration Center. In line with a growing focus on the soldier element of combat effectiveness, TRADOC reorganized and redesignated the Fort Benjamin Harrison agency as the U.S. Army Soldier Support Center effective 3 June 1980 with much stronger doctrinal and training responsibilities in the personnel, administration, finance, and automatic data processing areas. The action also included replacement of the center's Institute of Administration by a newly renamed U.S. Army Institute of Personnel and Resource Management. Under the new institute were aligned two branch schools, the Finance and Adjutant General Schools, along with two new specialist-type schools, the Computer Science School and the Personnel Management School. The institute was subsequently redesignated, in 1984, the Soldier Support Institute.[11]

A second strengthening measure was the dual-hatting, on 19 April 1983, of the Logistics Center commander at Fort Lee as the TRADOC Deputy Commanding General for Logistics, with the upgrading of the position to a three-star billet. The implementing directive authorized the new deputy commander important links to the Army logistics community. [12] The Logistics Center remained in tenant status on the installation, which was commanded by one of its subordinate organizations, the U.S. Army Quartermaster Center and Fort Lee. That anomaly was rectified on 3 January 1989 when the TRADOC commander brought the Fort Lee structure in line with that

10 TRADOC AHR, FY 77, pp. 21-22. (CONFIDENTIAL—Info used is UNCLASSIFIED) Provisional regulations implemented the concept for all three centers, which were published at length as TRADOC Reg 10-41, Organization and Functions: Mission Assignments, 1 May 80.

11 TRADOC AHR, FY 80, pp. 339-40, 345. (CONFIDENTIAL — Info used is UNCLASSIFIED)

12 TRADOC ACH, FY 83, pp. 598-99. (SECRET — Info used is UNCLASSIFIED)

existing at Fort Leavenworth and Fort Benjamin Harrison by establishing the U.S. Army Logistics Center and Fort Lee, with the U.S. Army Quartermaster Center and School becoming the tenant.[13]

The integrating center structure remained in place up to the period of Army drawdown and consolidation in the waning Cold War. Implementing command-wide cuts and realignments and looking to further consolidations as well as base closures, TRADOC on 1 October 1990 replaced the integrating-center structure with two major subordinate commands. The Combined Arms Command (CAC) took the place of the Combined Arms Center, with internal reductions and realignments recasting the commanders of the Combined Arms Combat Developments Activity and the Combined Arms Training Activity at that center as deputy CAC commanders for combat developments and for training. The second major action merged the Soldier Support Center with the Logistics Center as the Combined Arms Support Command (CASCOM) headquartered at Fort Lee. At that time, the Soldier Support Center's Soldier Support Institute was eliminated as an administrative organization layered between the center and the resident schools.[14]

Schools

Most of the 24 military schools and colleges, branch schools, and specialist schools that TRADOC commanded in 1973 saw little external change in the period down to 1993. But there were significant exceptions. Consolidations, expanded missions, policy changes, and other exigencies resulted in acquisition or establishment of new schools as well as realignment, physical transfer, redesignation and closure of others.

As previously noted, the Primary Helicopter School at Fort Wolters, Tex. was discontinued on 30 June 1974. TRADOC had inherited two signal schools from CONARC, the Signal School at Fort Monmouth, N.J., and the Southeast n Signal School at Fort Gordon, Ga. On 1 July 1974 those schools were redesignated, the Monmouth organization becoming the Communications-Electronics School, and the Gordon organization redesignated the Signal School, a step in the consolidation of all signal training at the southern post. That occurred two years later when, on 31 October 1976, the Communications-Electronics School was discontinued.[15] The Chaplain School, located at Fort Hamilton, moved to larger facilities at Fort Wadsworth, N.Y., a subpost under the jurisdiction of Fort Dix, on 15 August 1974, where it was situated until Army planning to close that station prompted its relocation to Fort Monmouth, N.J. on 1 August 1979.[16] The Military Police School, initially at Fort Gordon, was relocated to Fort McClellan, Ala. on 1 July 1975, a move necessitated by the pending consolidation of signal training at Fort Gordon noted earlier.[17]

A new school, established on 1 July 1975 at Fort Ord, Calif., to inculcate and teach organizational skills, was the Organizational Effectiveness Training Center. That school was redesignated the Organizational Effectiveness Center and School on 2 April 1979. Following a Department of

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13 TRADOC ACH, CY 89, p. 23. (FOR OFFICIAL USE ONLY — Info used is not protected)
14 TRADOC ACH, CY 90, pp. 13-14. (FOR OFFICIAL USE ONLY — Info used is not protected)
15 TRADOC ARMA, FY 74, p. 11. (SECRET — Info used is UNCLASSIFIED) (2) TRADOC AHR, FY 76/7T, p. 21. (CONFIDENTIAL — Info used is UNCLASSIFIED)
16 TRADOC AHR, FY 79, p. 85. (CONFIDENTIAL — Info used is UNCLASSIFIED)
17 TRADOC ARMA, FY 75, p. 24. (CONFIDENTIAL — Info used is UNCLASSIFIED)

Chaplains and chaplain assistants at the U.S. Army Chaplain Center and School, Fort Monmouth, New Jersey, trained in realistic scenarios during participation in a medical evacuation exercise. Initially stationed at Fort Hamilton, the Chaplain School moved to larger facilities at Fort Wadsworth, New York, in 1974 and to Fort Monmouth, New Jersey, in 1979.

the Army policy decision to eliminate the organizational effectiveness program in light of competing manpower needs, the school was closed on 1 October 1985.[18]

On 1 October 1976, Department of the Army planning was executed for transfer of the U.S. Army Security Agency Training Center and School at Fort Devens, Mass. into the TRADOC school system. The new TRADOC school was titled the Intelligence School, Fort Devens, subordinate to the commandant of the Intelligence Center and School at Fort Huachuca.[19]

Of historic moment was the discontinuance of the Women's Army Corps Center and School at Fort McClellan. That event, carried out on 1 April 1977, was a step in the Army's move toward integrating the training and schooling of women soldiers into the standard system.[20] The first

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18 (1) TRADOC AHRs, FY 78, p. 33, and FY 79, p. 85. (Both CONFIDENTIAL — Info used is UNCLASSIFIED) (2) U.S. Army Organizational Effectiveness Center and School Unit History, 1976-1980 (draft), p. 26, THRC.

19 TRADOC AHR, FY 76/TT, p. 21. (CONFIDENTIAL — Info used is UNCLASSIFIED)

20 TRADOC AHR, FY 77, p. 27. (CONFIDENTIAL — Info used is UNCLASSIFIED)

post-Vietnam move in the direction of a larger chemical training program occurred with the redesignation on 30 November 1976 of the Ordnance Center and School at Aberdeen Proving Ground, Md. as the Ordnance and Chemical Center and School. As plans unfolded, the Chemical School was moved and established as a separate school at Fort McClellan on 14 September 1979.[21]

Changes continued in the 1980s. The Aviation School, historically a specialist school, became a branch school following designation of Army aviation as a branch by the Secretary of the Army on 12 April 1983.[22] Concomitant expansion of the aviation logistics mission prompted TRADOC to establish an Aviation Logistics School, colocated with the Transportation School, at Fort Eustis on 1 October 1983. Shortly thereafter, on 10 January 1984, those two schools were merged as the Transportation and Aviation Logistics Schools.[23] That arrangement continued until 1988 when, on 1 October of that year, TRADOC brought the Aviation Logistics School under the direct authority of the Commander, U.S. Army Aviation Center, while leaving it in place at Fort Eustis.[24] A similar realignment occurred with placement of the Missile and Munitions Center and School at Redstone Arsenal, Ala. under the commander of the Ordnance Center and School at Aberdeen Proving Ground. On 3 August 1984, the Redstone facility was realigned and retitled the Ordnance Missile and Munitions Center and School.[25]

The Institute for Military Assistance at Fort Bragg, N.C. was, on 1 October 1983 redesignated the JFK Special Warfare Center, as a result of a special operations forces (SOF) realignment of that year. The JFK Special Warfare Center was in essence a branch school, but was categorized as a TRADOC special activity. Further SOF realignments in 1990 transferred the TRADOC school to the U.S. Army Special Operations Command at Fort Bragg, by orders of 20 June.[26] TRADOC gained the U.S. Army School of the Americas when provisions of the Panama Canal Treaty of 1977 necessitated the transfer of that U.S. Army Security Assistance Agency component, located at Fort Gulick, Panama, to the continental United States. The school was relocated to Fort Benning and transferred provisionally to TRADOC on 16 December 1985 and formally on 16 April 1986.[27] Movement of the Engineer School from Fort Belvoir to Fort Leonard Wood on 1 June 1988, coincident with consolidation of engineer training, has been noted. In 1988, following earlier designation of the Signal Center as proponent for the information mission area, the Computer Science School, a component of the Soldier Support Institute at Fort Benjamin Harrison, was transferred to Fort Gordon.[28]

TRADOC acquired an additional college when, following Department of the Army decisions to develop advanced training for Army civilians, the Army Management Staff College opened initial courses in July 1986 in Baltimore, Md. TRADOC assumed proponency for the college, and in August 1987 the Under Secretary of the Army selected Fort Belvoir as the school site.

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21 TRADOC AHR, FY 80, p. 346. (CONFIDENTIAL — Info used is UNCLASSIFIED)
22 TRADOC ACH, FY 83, p. 614. (SECRET — Info used is UNCLASSIFIED)
23 TRADOC Hist R, 84-86, p. 7. (SECRET — Info used is UNCLASSIFIED)
24 TRADOC AHR, CY 88, p. 10. (FOR OFFICIAL USE ONLY Info used is not protected)
25 TRADOC Hist R, 84-86, p. 7. (SECRET — Info used is UNCLASSIFIED)
26 TRADOC ACHs, FY 83, p. 614, (SECRET — Info used is UNCLASSIFIED), and CY 90, p. 15. (FOR OFFICIAL USE ONLY — Info used is not protected)
27 TRADOC Hist R, 84-86, pp. 6-7. (SECRET — Info used is UNCLASSIFIED)
28 TRADOC AHR, CY 88, p. 12. (FOR OFFICIAL USE ONLY — Info used is not protected)

A Drill Sergeant instructs a female recruit in the use of a light antitank weapon. In April 1977 the Women's Army Corps Center and School at Fort McClellan was discontinued as a step in the Army's move to integrate the training and schooling of women soldiers into the standard system.

Following assignment of a full-time commandant, classes were convened at the new site in 1990.[29] A second college institution acquired, on 1 October 1991, was the Army Logistics Management College at Fort Lee. That transfer from the Army Materiel Command resulted from a 1990 study directed by the Department of the Army to determine the best command and control structure for Army schools not assigned to TRADOC.[30] In 1993 TRADOC headquarters commanded 20 branch schools, 5 military schools and colleges, and 2 specialist schools, a total of 27.

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29 (1) TRADOC AHRs, CY 87, p. 7, (SECRET — Info used is UNCLASSIFIED), and CY 88, p. 12. (FOR OFFICIAL USE ONLY — Info used is not protected) (2) TRADOC ACH, CY 90, pp. 133-34. (FOR OFFICIAL USE ONLY — Info used is not protected)

30 TRADOC ACH, CY 91, p. 16.

Training Organizations

TRADOC organizations dedicated to initial entry training and to training support to the troop commands saw considerable evolution. Throughout most of the period, a large portion of basic combat and advanced individual training was conducted by the Army training centers, or ATCs, at the 3 installations devoted specifically to that mission, Forts Dix, Jackson, and Leonard Wood. But initial entry training was also conducted at ATCs at some school installations, including WAC training at Fort McClellan, and male soldier training at Forts Knox, Benning, Gordon, Sill, and Bliss. Through its installations, TRADOC commanded 7 ATCs in 1973, a number that rose to 11 in 1976 when one station unit training was phased in at several posts. One station training enabled trainees to pass directly from basic to branch-related advanced individual training, saving both time and travel. Transfer of Forts Ord and Polk to the Forces Command in July 1975 led to phase-out of the ATCs there by the end of 1976. The number of ATCs dropped to 8 in the early 1980s and was maintained at that level until the close-out of training at Fort Dix in 1992. TRADOC also commanded noncommissioned officer academies and drill sergeant schools through several of its installations, as well as an officer candidate school at Fort Benning.

The two specialized training agencies under TRADOC jurisdiction in 1973, the Combat Arms Training Board at Fort Benning and the Training Aids Management Agency at Fort Eustis, were joined on 1 August 1974 by a new Training Devices Requirements Office at Fort Benning, responsible for Army-wide training device requirements.[31] The Fort Eustis agency was redesignated the Army Training Support Activity on 1 July 1975. The training support program at Fort Eustis was expanded and consolidated in a retitled Army Training Support Center on 1 July 1976.

A Training Management Institute was also established at Fort Eustis, on 16 July 1975, to further training improvements through workshops and special projects.[32] That institute was redesignated the Training Developments Institute on 2 May 1977. A further change was the combination of the Logistics Training Board at Fort Lee and the Combat Arms Training Board at Fort Benning into a redesignated Army Training Board on 1 October 1977, situated at Fort Eustis.[33] Both the Training Developments Institute (to be retitled the Training Technology Agency) and the Army Training Board eventually moved to Fort Monroe. The former was inactivated in 1988 and the latter in 1989.[34] A significant organizational addition to TRADOC training capabilities was the Joint Readiness Training Center, established with headquarters at Little Rock Air Force Base, Ark., with maneuver areas at Fort Chaffee, Ark. Approved by the Secretary of the Army on 10 October 1986, the new center provided advanced collective training for light (nonmechanized) infantry.[35]

Test Organizations

There were important early additions to TRADOC's experiment and test capability that served the command in prosecution of its combat developments mission into the late 1980s. On 1 August

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31 TRADOC ARMA, FY 75, p. 27. (CONFIDENTIAL — Info used is UNCLASSIFIED)
32 TRADOC AHR, FY 76/TT, p. 24. (CONFIDENTIAL — Info used is UNCLASSIFIED)
33 TRADOC AHR, FY 77, p. 31. (CONFIDENTIAL — Info used is UNCLASSIFIED)
34 TRADOC ACH, CY 89, pp. 29-30. (FOR OFFICIAL USE ONLY — Info used is not protected)
35 TRADOC Hist R, 84-86, p. 8. (SECRET — Info used is UNCLASSIFIED)

1974, TRADOC acquired from the Forces Command the major test facility at Fort Hood, Headquarters Modern Army Selected Systems Test Evaluation and Review, or MASSTER. The Department of the Army transferred MASSTER to TRADOC on that date as a result of recommendations by the Army Materiel Acquisition Review Committee (AMARC), a group appointed by the Secretary of the Army the previous year to review the Army's problematic materiel acquisition process.

Also transferred to TRADOC at the prompting of the AMARC group were the five test boards of the Army Materiel Command's subordinate Test and Evaluation Command. The test boards were the descendants of branch-related boards in existence since the late 1940s. Transferring on 1 July 1975, those boards were: the Airborne, Communications and Electronics Board at Fort Bragg; the Field Artillery Board at Fort Sill; the Infantry Board at Fort Benning; the Armor and Engineer Board at Fort Knox; and the Air Defense Board at Fort Bliss. The MASSTER transfer, added to the Combat Developments Experimentation Command, centralized operational and force development testing under TRADOC. The test boards gave TRADOC, as the user representative, control over the means for early-stage conceptual and experimental work.[36]

Three more boards were subsequently transferred to or established in TRADOC. On 1 July 1976, the Aviation Board at Fort Rucker transferred to TRADOC.[37] Then, on 31 March 1977, the Intelligence and Security Board was organized and assigned to the Intelligence Center and School at Fort Huachuca. That action followed assignment of the Army Security Agency's combat developments responsibilities to that center in October 1976.[38] On 1 July 1978, the Communications-Electronics Board was established at Fort Gordon, taking over functions from the former Airborne and Communications-Electronics Board at Fort Bragg. At that time, that board was redesignated the Airborne Board.[39]

On 1 April 1976, Headquarters MASSTER was retitled the TRADOC Combined Arms Test Activity (TCATA), as the agency moved increasingly into large-scale combined arms testing.[40] As the testing mission grew, TRADOC established a headquarters Deputy Chief of Staff for Test and Evaluation (DCSTE) on 30 December 1980 to centralize management of the TCATA, CDEC, and test board work and the TRADOC test support to other Army commands and agencies. The DCSTE position was actually dual-hatted on the TCATA commander, with the CDEC commander assuming additional duty as Assistant DCSTE for Operations. The headquarters element was headed by a civilian Assistant DCSTE for Resources and Policy.[41]

By 1985, however, the TRADOC leadership was dissatisfied with the test arrangement, which combined staff and operational responsibilities. On 12 March 1985, the command dissolved the DCSTE and returned staff responsibility to the headquarters Deputy Chief of Staff for Combat Developments. At the same time, the Commander, TCATA assumed command over CDEC.[42] That event prompted study of how to improve the diverse TRADOC test apparatus. The study,

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36 TRADOC ARMA, FY 75, pp. 132-34. (CONFIDENTIAL — Info used is UNCLASSIFIED)
37 TRADOC AHR, FY 76/7T, p. 24. (CONFIDENTIAL—Info used is UNCLASSIFIED)
38 TRADOC AHR, FY 77, pp. 30-31. (CONFIDENTIAL—Info used is UNCLASSIFIED)
39 TRADOC AHR, FY 78, p. 34. (CONFIDENTIAL—Info used is UNCLASSIFIED)
40 TRADOC AHR, FY 76/7T, p. 177. (CONFIDENTIAL—Info used is UNCLASSIFIED)
41 TRADOC AHR, FY 81, pp. 131-33. (CONFIDENTIAL — Info used is UNCLASSIFIED)
42 TRADOC Hist R, 84-86, pp. 5-6. (SECRET — Info used is UNCLASSIFIED)

led by TCATA commander Maj. Gen. Robert Drudik, resulted in establishment at Fort Hood of the TRADOC Test and Experimentation Command, or TEXCOM, provisionally in November 1987 and formally on 2 October 1988, replacing Headquarters TCATA. TEXCOM commanded the TEXCOM Combined Arms Test Center (TCATC) at Fort Hood, and the TEXCOM Experimentation Center, or TEC, at Fort Ord, which replaced CDEC. Command of 7 of the 8 test boards transferred to TEXCOM the same day, with the eighth soon following.[43]

TEXCOM had no sooner completed its formal establishment, however, when the Deputy Secretary of the Army for Operations Research directed a review of the Army's test and evaluation organizations as part of a services-wide review aimed at consolidation. The result, which removed from TRADOC its immediately responsive test capability, was the consolidation of all its test organizations through a merger with the Operational Test and Evaluation Agency, a Department of the Army field operating agency at Falls Church, Va., to form an Operational Test and Evaluation Command at the Virginia location. TEXCOM transferred to that organization on 8 November 1990.[44]

Analysis Organizations

Like the TRADOC test agencies, the command's analysis agencies saw considerable evolution; but they remained under TRADOC authority throughout the period. In line with the AMARC deliberations earlier noted, steps had been taken in 1974 to assign TRADOC the U.S. Army SAFEGUARD Systems Evaluation Agency at White Sands Missile Range, New Mexico. Transferred on 1 July 1974, that agency was reorganized as the TRADOC Systems Analysis Activity, or TRASANA.[45] Several TRADOC schools also possessed analysis cells to support their combat developments and training developments work. Another analysis organization, brought in following planning at the Combined Arms Center at Fort Leavenworth in 1979, was the Combined Arms Studies and Analysis Agency, or CASAA.[46]

Expanding demands for additional support, not only for weapon development but for TRADOC's force design work and for analytical models and simulations, moved the command in 1982 to establish an umbrella organization, the TRADOC Operations Research Activity, or TORA, at White Sands Missile Range. At the same time, analytical activities at Fort Leavenworth were reorganized as the Combined Arms Operations Research Activity, or CAORA. TRASANA and CAORA became operational under TORA on 1 October 1982 and were officially established on 1 January 1983. TORA also supervised several small analytical elements in the command.[47] In 1986, TRADOC moved control of its analysis network to Fort Leavenworth when, on 1 October, it reorganized TORA and its agencies as the TRADOC Analysis Center, or TRAC, reporting directly to the TRADOC commander. TORA and TRASANA were reorganized as TRAC-White Sands Missile Range. TRAC was retitled the TRADOC Analysis Command in 1987. TRAC cells were subsequently established at Forts Lee and Benjamin Harrison.[48]

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43 TRADOC AHR, CY 88, pp. 8-9. (FOR OFFICIAL USE ONLY — Info used is not protected)
44 TRADOC ACHs, CY 89, pp. 16-18, and CY 90, p. 15. (Both FOR OFFICIAL USE ONLY—Info used is not protected)
45 TRADOC ARMA, FY 74, pp. 12-13. (SECRET — Info used is UNCLASSIFIED)
46 TRADOC AHR, FY 799, p. 248. (CONFIDENTIAL — Info used is UNCLASSIFIED)
47 TRADOC ACH, FY 83, p. 420. (SECRET — Info used is UNCLASSIFIED)

Other Organizations

Among other noteworthy adjustments to the organizational structure, the U.S. Army Retraining Brigade at Fort Riley, Kan. and the U.S. Disciplinary Barracks at Fort Leavenworth were transferred from the Provost Marshal to TRADOC on 20 May 1974.[49] Command of the Retraining Brigade passed out of TRADOC's hands in 1978. TRADOC discontinued one of its original suborganizations, the U.S. Army Personnel Center at Oakland Army Base, Calif., on 15 December 1974.[50]

A significant organizational change was the 1986 establishment, following study, of Headquarters U.S. Army ROTC Cadet Command at Fort Monroe. Earlier, on 1 March 1983, the Deputy Chief of Staff for ROTC on the TRADOC staff had assumed the title Commander, U.S. Army ROTC Command. The new headquarters began operations in March 1986, with formal implementation effective 15 April and establishment ceremonies on 2 May 1986.[51] The TRADOC subordinate command structure in 1993 was as shown on Chart 3.

Headquarters Reorganizations

TRADOC headquarters saw only two significant reorganizations during the 20-year period, exclusive of individual functional adjustments. The major staff reorganizations occurred in 1979 and 1990.

The 1979 TRADOC headquarters reorganization, implemented provisionally in April and formally on 1 October that year, was prompted by the decision of the TRADOC commander, General Starry to shift resources to the main mission components, the deputies for training, combat developments, and ROTC. Another impelling cause was General Starry's decision to involve TRADOC more emphatically in doctrine development. The new structure retained Deputy Chiefs of Staff (DCS) for Training, Combat Developments, ROTC, and Resource Management. It disestablished DCSs for Personnel; Logistics; and Operations, Readiness, and Intelligence. The 1979 action established new DCSs for Doctrine, Personnel and Logistics, and Engineer (Chart 4).[52]

An important headquarters staff addition, but one with command-wide and Army-wide duties, was establishment of the three-star position of Deputy Commanding General for Training and Army Inspector of Training, at TRADOC headquarters by instructions of 8 September 1981. The incumbent of the position assisted the TRADOC commander in executing the training mission, acting to insure the institutionalization of the system and directly rating the commanders of Forts Dix, Jackson, and Leonard Wood Army training centers. As Army Inspector of Training, he reported directly to the Chief of Staff of the Army on training policy and standardization throughout the Army.[53] The Chief of Staff withdrew the Army-wide training inspector element of

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48 TRADOC Hist R, 84-86, P. 6. (SECRET — Info used is UNCLASSIFIED)
49 TRADOC ARMA, FY 74, p. 12. (SECRET — Info used is UNCLASSIFIED)
50 TRADOC ARMA, FY 75, p. 27. (SECRET — Info used is UNCLASSIFIED)
51 (1) TRADOC Hist R, 84-86, pp. 9-10. (2) TRADOC ACH, FY 83, pp. 603-04. (Both SECRET — Info used is UNCLASSIFIED)
52 For a discussion of the 1979 TRADOC headquarters reorganization, see TRADOC AHR, FY 79, pp. 60-66. (CONFIDENTIAL — Info used is UNCLASSIFIED)
53 TRADOC AHR, FY 81m oo, 426-27. (CONFIDENTIAL — Info used is UNCLASSIFIED)

CHART 3
TRADOC SUBORDINATE STRUCTURE--1993

Major Subordinate Commands

U.S. Army Combined Arms Command and Fort Leavenworth
U.S. Army Combined Arms Support Command and Fort Lee

Installations/Centers

U.S. Army Soldier Support Center and Fort Benjamin Harrison
U.S. Army Infantry Center and Fort Benning
U.S. Army Air Defense Artillery Center and Fort Bliss
Carlisle Barracks
U.S. Army Transportation Center and Fort Eustis
U.S. Army Signal Center and Fort Gordon
U.S. Army Intelligence Center and Fort Huachuca
U.S. Army Training Center and Fort Jackson
U.S. Army Armor Center and Fort Knox
U.S. Army Engineer Center and Fort Leonard Wood
U.S. Army Chemical and Military Police Centers and Fort McClellan
Fort Monroe
U.S. Army Aviation Center and Fort Rucker
U.S. Army Field Artillery Center and Fort Sill

U.S. Army ROTC Cadet Command
First ROTC Region
Second ROTC Region
Fourth ROTC Region

TRADOC Schools and Colleges

TRADOC Military Schools and Colleges
Army Logistics Management College
Army Management Staff College
Command and General Staff College
Defense Language Institute, Foreign Language Center
Sergeants Major Academy

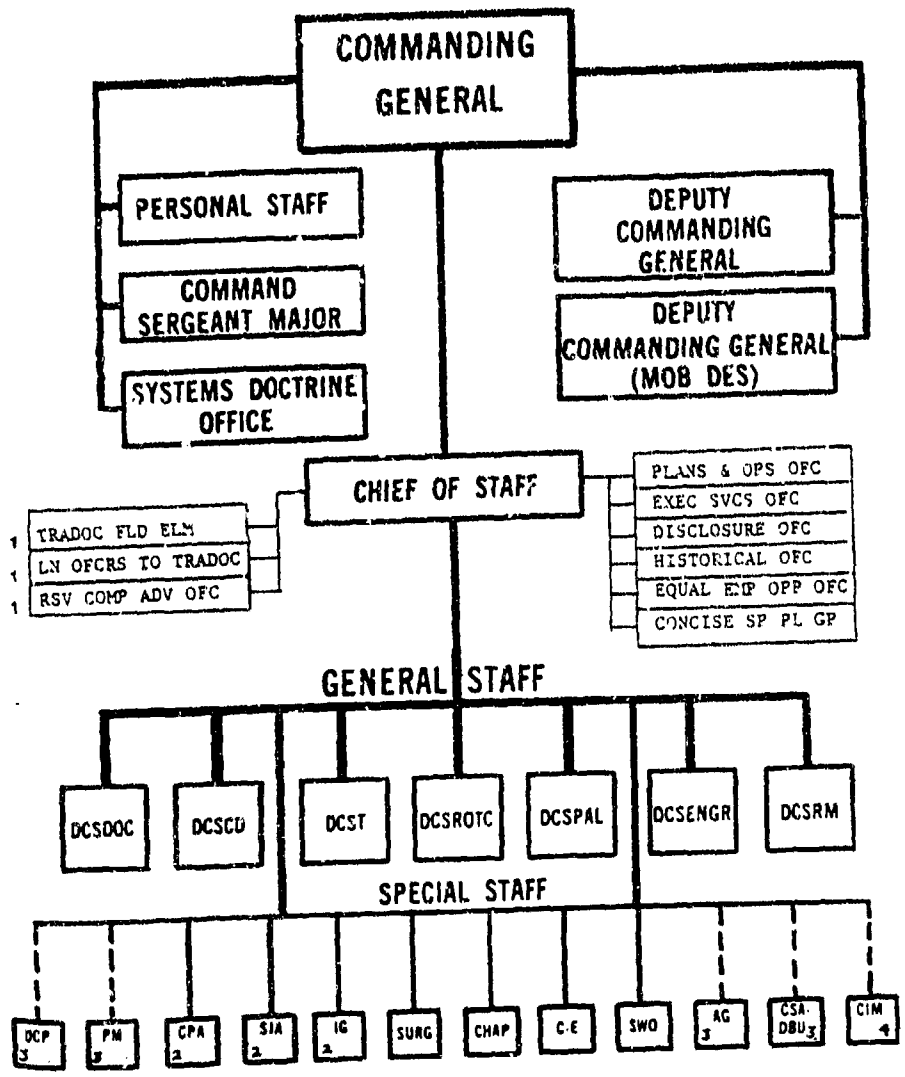
TRADOC Branch Schools
Adjutant General
Air Defense Artillery
Armor
Aviation
Aviation Logistics
Chaplain
Chemical
Engineer
Field Artillery
Finance
Infantry
Intelligence Center and School
Intelligence, Fort Devens
Military Police
Ordnance Missile and Munitions
Ordnance
Quartermaster
Signal
Special Operations
Transportation

Specialist Schools
School of Music, Norfolk
School of the Americas

Other TRADOC Activities

TRADOC Analysis Command
Army Training Support Command
Joint Readiness Training Center
U.S. Disciplinary Barracks
Security Assistance Training Field Activity
TRADOC Management Engineering Activity
TRADOC Library and Information Network Center
TRADOC Operations and Management Activity

CHART 4
HEADQUARTERS TRADOC 1979 REORGANIZATION



Source: Adapted from TRADOC Reg 10-5, 10 Dec 79 (UNCLASSIFIED).

1. NOT ON HQ TRADOC TDA
2. ALSO PERSONAL STAFF OF CG
3. ASSIGNED TO DCSPAL
4. ASSIGNED TO DCSRM

The Deputy Chief of Staff for Base Operations Support operated out of Building 5. Located within the walls of Fort Monroe, Building 5 was built in 1879 as a barracks for soldiers assigned to coast artillery units. A principal organizational change at Headquarters TRADOC in 1990 was the merger of the offices of the Deputy Chiefs of Staff for Personnel, Administration, and Logistics; Contracting; and Engineer together with selected other staff offices, to create the Deputy Chief of Staff for Base Operations Support.

the position in March 1985, transferring those responsibilities to the Deputy Chief of Staff for Operations and Plans on the Army Staff, effecting that change in July 1985.[54] The Deputy Commander for Training position itself was eliminated on 22 September 1989, following retirement of its final incumbent in August of the same year. Concomitantly, the Chief of Staff, TRADOC was redesignated Deputy Commanding General/Chief of Staff and was assigned as proponent for initial entry training and reserve component training support and other training responsibilities.[55]

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54 TRADOC Hist R, 84-86, p. 9. (SECRET — Info used is UNCLASSIFIED)
55 TRADOC ACH, CY 89, pp. 26-27. (FOR OFFICIAL USE ONLY — Info used is not protected)

Other major staff adjustments included formation of of a Deputy Chief of Staff (DCS) for Automation and Information Management (DCSAIM) on 1 November 1983, absorbing the Data Processing Field Offices at Forts Monroe and Leavenworth. In December 1984, the DCSAIM was merged with the Office of the Chief, Communications and Electronics, a U.S. Army Communications Command tenant at Fort Monroe to form the office of the DCS for Information Management (DCSIM). That organization was subordinate to the newly created U.S. Army Information Systems Command, a new major Army command. The DCSIM was dual-hatted as a TRADOC staff officer. The TRADOC Data Processing Field Offices were transferred to the Army Information Systems Command on 1 October 1985.[56] Another new office, established on 2 June 1986, was the DCS for Intelligence, formed from other headquarters elements in order to centralize the intelligence function.[57] A DCS for Contracting (DCSK) was established and functioned briefly between October 1989 and August 1990.

In 1990, the headquarters carried out a major staff reorganization in line with general downsizing and consolidation principles following from the reduction trends of the era (Chart 5). Changes took effect on 16 August. A principal change was merger of the offices of the Deputy Chiefs of Staff for Personnel, Administration, and Logistics; Contracting; and Engineer, together with Surgeon, Chaplain, and other selected staff offices, into a DCS for Base Operations Support. A second principal merger brought the DCSs for Doctrine, Intelligence, and Combat Developments together into a DCS for Concepts, Doctrine, and Development, with transfer of some functions to Headquarters Combined Arms Center. A third major change was establishment of the TRAC commander situated at Fort Leavenworth as DCS for Analysis on the headquarters staff, albeit with a local staff representative. The 1990 reorganization left the offices of the DCSs for Information Management, Resource Management, and Training substantially unchanged; the office of the DCS for Training had undergone internal realignments during 1989.[58]

The 1990 recombination of the doctrine office with combat developments did not prove long lasting. Actually most of the former doctrine directorates had remained intact in the larger organization. On 1 October 1992, the office of the DCS for Doctrine was again made separate. The short-lived DCS for Concepts, Doctrine, and Development was again designated the DCS for Combat Developments. (Chart 6)[59]

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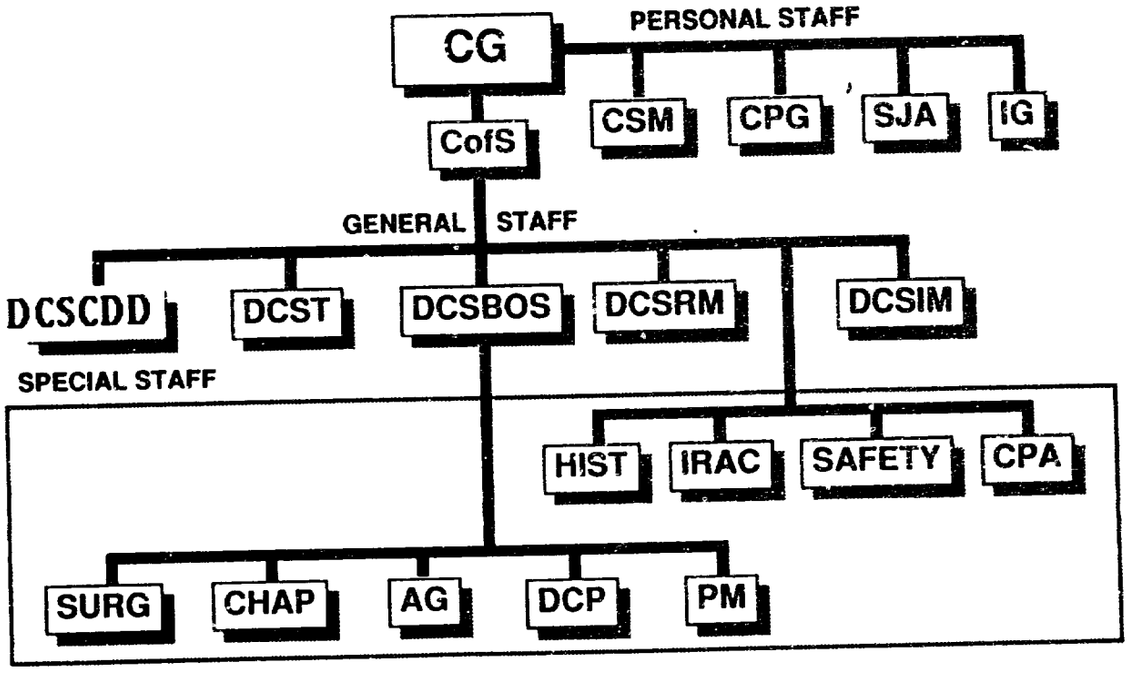
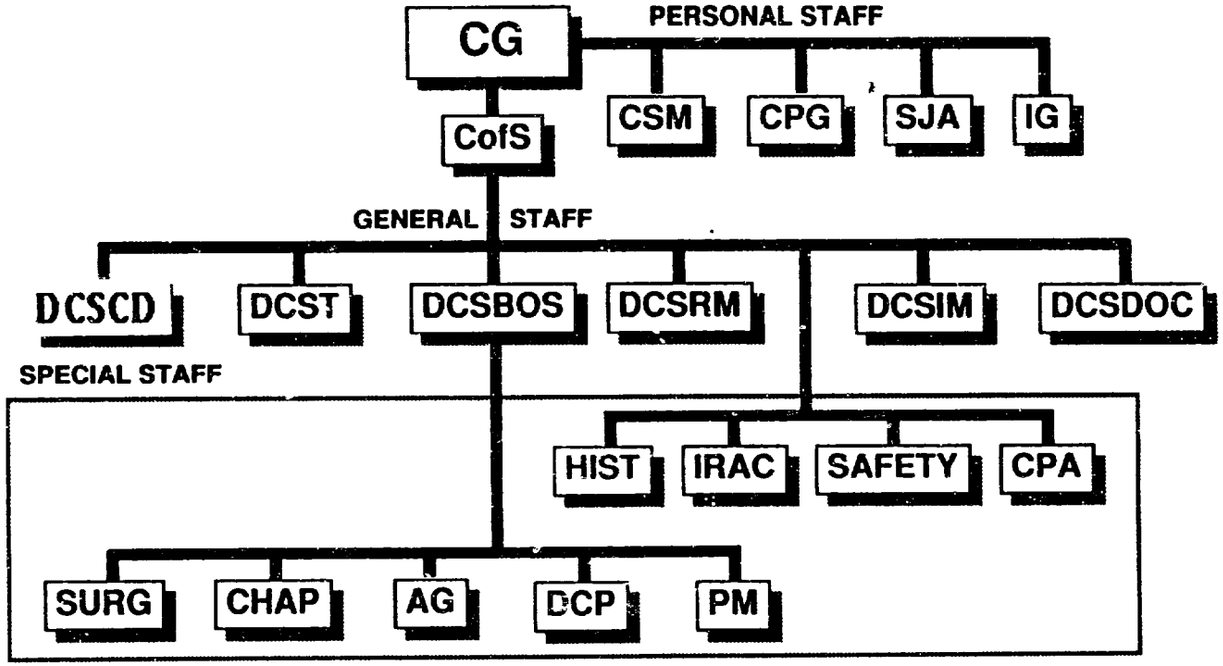
56 TRADOC Hist R, 84-86, p. 10. (SECRET — Info used is UNCLASSIFIED)
57 TRADOC Hist R, 84-86, p. 10. (SECRET — Info used is UNCLASSIFIED)
58 TRADOC ACH, FY 90, pp. 11-13. (FOR OFFICIAL USE ONLY — Info used is not protected)
59 SSHR, ODCSDOC, Jul-Dec 92, p. I-1.

CHART 5
HEADQUARTERS TRADOC 1990 REORGANIZATION



Source: Combat Developments Briefing Files, THRC.

CHART 6
HEADQUARTERS TRADOC—1993



Source: Combat Developments Briefing Files, THRC

Chapter XI

ADJUSTING TO RADICAL CHANGE IN THE THREAT

The world-changing events of the years 1989-1991 brought to a close the long tension-ridden era of the Cold War, extending back to the end of World War II. The collapse of communism, the dismantlement of the Soviet empire, and the disintegration of the Soviet Union ushered in a new international world. Those events removed the dominating threat to the security of the free world against which American military policy had arrayed its defensive forces since the late 1940s. A period of warming superpower relations had preceded the events of 1989-1991, opening prospects and plans for a general drawdown of forces. As tensions eased and the diplomatic situation opened through the late 1980s—to be transformed radically at the turn of the decade—the U.S. Army entered a period of major adjustment.

For the story of TRADOC, several related questions emerge. How did the historic changes unfold? What was the Army's response as a major component of U.S. military preparedness, and what was TRADOC's immediate role in that response? This chapter will summarize the events of 1989-1991, their military implications, and the Army and TRADOC adjustment to them.

Unravelling of Soviet Power

The complex of causes leading to the unravelling of Soviet power that began in the mid-1980s furnishes a challenge to future historians and can only be noted here. The appeal of national independence, the free market, and democratic institutions; the cumulative effects of the information revolution; and Western policies of containment and deterrence were the long range factors that led to the abrupt collapse of communist party rule in Eastern Europe and the Soviet Union after 1989.

There were many more immediate causes. Foreshadowing the political upheaval to come was the advent in 1980 of the free Solidarity union movement in Poland, which demonstrated mass popular appeal and which the communist government succeeded in driving underground only temporarily. Of unquestioned importance was the U.S. defense buildup that began in earnest with the new administration of President Ronald Reagan in 1981. Backed by higher defense budgets, U.S. commitment to a modernized Army and Air Force and an expanding Navy, together with the launching in March 1983 of an advanced space-based strategic concept, the Strategic Defense

A Russian Hind MI-24 attack helicopter provided Soviet forces with a significant ground attack capability. The collapse of communism in Eastern Europe signified the end of the forty-year standoff between the world's two major military alliances. Post Cold War instability posed new challenges for the Army.

Initiative, presented a formidable challenge to the defense resources of the Soviet Union, with direct consequences for its foreign policy.

There were additional reasons for the dramatic events of the end of the decade. The U.S. strike in 1983 freeing the Caribbean island nation of Grenada from a communist takeover signalled a resurgent American will to counter power moves by the Soviet Union and its client states to impose revolutionary socialist rule. Of the greatest significance was the NATO decision, pressed by President Reagan, to deploy the Pershing II missile, providing the NATO alliance a powerful intermediate range weapon to counter earlier SS-20 missile deployments by which the Soviet Union sought to alter the power balance. Deployment of the Pershing II's began in November 1983 and was complete in December 1985.[1]

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1 TRADOC Hist R, 84-86, p. 132. (SECRET — Info used is UNCLASSIFIED)

Of foremost importance was the crisis of the Soviet economy evident to observers as early as the 1970s. The end of a declining gerontocracy of aged Soviet leaders brought to power in 1985 the historic figure of Mikhail Gorbachev, who launched new foreign and domestic initiatives under the rubrics *glasnost* ("opening") and *perestroika* ("restructuring"). Gorbachev's policies were a reaction to the stark military, economic, and political realities in whose grip the Soviet system found itself in the mid-1980s. A new Soviet openness to arms accommodation became evident which led to the historic agreement, signed in December 1987 by Reagan and Gorbachev and ratified in May 1988, to remove the entire class of intermediate range nuclear missiles with ranges from 500 to 5,000 kilometers from U.S. and Soviet arsenals. The Intermediate Range Nuclear Forces, or INF, Treaty, which removed Soviet SS-20 and U.S. Pershing II and Cruise missiles from central Europe, was the first major consequence of the new rapprochement.[2]

Conventional Forces in Europe Talks

More consequential for U.S. forces across the board was the inauguration, in March 1989, of the Conventional Forces in Europe, or CFE, talks. This new disarmament forum resulted from the elevation of the long ongoing Mutual and Balanced Force Reduction talks between NATO and the Warsaw Pact into a dialogue and a new forum from which actual results might be expected. That change occurred when Soviet negotiators signalled indications of a genuine interest in reducing the long-held asymmetrical advantages enjoyed by the Warsaw Pact vis-a-vis NATO in troops, tanks, armored troop carriers, and other force categories.

The NATO CFE proposals on the table in June 1989 were for mutual reduction to parity, or equal levels, as follows. The number of tanks both sides could maintain would be reduced to 20,000, artillery tubes to 16,500, and armored troop carriers to 28,000. Those cuts would require NATO reductions of 10, 5, and 5 percent, respectively, but far larger reductions for the Warsaw Pact—cuts in fact of over 50 percent in tanks and artillery in order to reach parity.

The CFE changes pending and promised posed a significant planning factor for TRADOC. With the prospect of sharply reduced U.S. and other NATO forces in Europe, major new considerations affecting doctrine, organization, and training and not only weapon levels were apparent. Studying these ramifications, TRADOC engaged the services of two research firms for closer analyses. The CFE analyses, both completed in the summer of 1989, supported the common view that NATO's ability to withstand an all-out attack at current levels was insufficient. The analyses also agreed that implementation of the NATO CFE proposal for asymmetrical Warsaw Pact NATO reductions to achieve a parity of forces would enable NATO to defend successfully and contribute a greatly improved deterrence. However, the two analyses, by Vector Research, Inc. and Rand Arroyo, also agreed that deterrence at parity was fragile and that that negotiations to significantly lower parity levels were to be resisted. Deep cuts would require smaller force dispositions relocated deeper in NATO's defended territory, and could spell NATO defeat, should a Soviet reintroduction of forces from outside the treaty region occur.

The CFE proposals clearly introduced a new defense situation. While parity at the proposed NATO CFE levels enhanced stability, parity at lower levels introduced the unknown, not to say

2 TRADOC ACH, CY 89, pp. 4, 7-8. (FOR OFFICIAL USE ONLY — Info used is not protected)

considerable risk as well. One such implication of lower levels was the end of the linear front. From that change, many implications flowed in turn for U.S. and NATO doctrine based on forward defense and the continuous strategic front. In addition, as the force contracted, it was clear that the CFE reductions portended significant change not only of force structure, but of force design. For example, how would current logistics doctrine and structure fare along a discontinuous front? Planning toward this and other CFE-engendered possibilities was shortly to be overtaken, however, by the dramatic political changes in Eastern Europe during the last months of 1989.[3]

The Revolution of 1989 and Its Military Implications

Revolution

The political opening occurring in superpower relations presaged rising and assertive internal currents in the Soviet Union's Eastern European satellites. In 1988, the Solidarity movement in Poland resurfaced as a continuing reminder of the incompatibility of democratic yearnings and the socialist party-state. Not to be suppressed a second time in the dawning era of *glasnost*, the Solidarity movement gained legal status and forced the first free elections in Eastern Europe since the consolidation of Soviet power at the close of World War II. The election victory of Solidarity-backed candidates in June 1989, which brought formation of a Solidarity-led cabinet in September, was followed by the naming of a non-communist Polish prime minister. The Polish defection from the Marxist world was the first in a train of events that by the end of December came to be styled the Revolution of 1989.

More dramatic was the physical cracking of the Iron Curtain. The exodus of hundreds of East German refugees to the West via the West German embassies in East European capitals during August and September 1989 was followed by a mass exodus to the West soon after the Hungarian government removed portions of its border security fencing with Austria. In September and October, thousands of East Germans, travelling via Czechoslovakia and Hungary, crossed into the West. On 18 October 1989, the old-line communist regime was toppled. The refugee flood had reached over 200,000 when, on 9 November 1989, the East German state, its economy gravely threatened by the losses, announced the opening of the Berlin Wall and the intra-German border to free passage in both directions.

Meanwhile, the Hungarian communist party in early October 1989 declared itself no longer communist. The East German communist party followed suit on 16 December, after internal purges of its leadership accompanied by massive anticommunist demonstrations in Leipzig and other cities. On 10 December, Czechoslovakia, reacting to popular pressure, established a cabinet with a non-communist majority. Revolutionary events in Rumania led to the flight and execution, on 25 December 1989, of the communist dictator, Nicolae Ceaucescu. Anticommunist demonstrations in Bulgaria resulted in the renunciation by the communist party of that state of its leading role on 13 December.

Observers witnessed a major historical shift in the last half of 1989. The collapse of the communist governments of the Eastern European satellites proceeded concomitantly with the

3 TRADOC ACH, CY 89, pp. 4-7. (FOR OFFICIAL USE ONLY — Info used is not protected)

dismantling of party authority, along with elements of the socialist command economy, in the Soviet Union itself. The collapse of communism in Eastern Europe signified the end of the forty-year standoff between the world's two major military alliances and the end of the Cold War as the world had known it since the late 1940s. A watershed in 20th century history, the rejection of the socialist organization of economy and society marked the end of the revolutionary impulse that had actuated Soviet policy since the Bolshevik seizure of power in 1917. In 1989, the myth of the inevitable political and economic triumph of Marxist socialism dissipated, and with it, the major political impulse and sustained threat to peace of the 20th century.

Implications

The military implications of the the Revolution of 1989 were almost immediately evident. The breakup of communism in the six Warsaw Pact satellites destroyed the fundamental rationale for the existence of the pact itself. Together with the arms reduction efforts already under way, the events of 1989 pointed toward three significant changes in the military power balance.

The first implication for the military balance was the end of the opposing alliance armies' solid strategic force lineup north to south across central Europe. With dissolution of the Warsaw Pact in prospect, its armies could be expected to withdraw from their poised forward positions and strategic orientation to the attack of Western Europe, to the individual security needs of newly independent states. Likewise to be expected in the new political situation was the pullback from central Europe of the major component of the dissolving alliance, the forward armies of the Soviet Union. Together, those prospects would obviate the need for the heavy and solid NATO lineup of national corps long in place along West Germany's East German and Czech borders.

Secondly, the implications of 1989 involved not only a disunified threat, but one which was of considerably less magnitude. The onrushing currents of 1989 supported, and promised to hasten completion of, the ongoing Conventional Forces in Europe talks. Those talks were focused on agreed goals of creating reduced arms levels and a parity in the armed strengths of the opposing sides. The third change came out of the first two. The end of the strategic lineup in central Europe, together with the posited major reduction of opposing forces, meant the thinning and disappearance of a continuous battle front and a far less dense strategic terrain. What this meant was a reversion from linear to nonlinear warfare in the major strategic theater of Europe.[4]

Demise of the Warsaw Pact, the Reunification of Germany, and the CFE Treaty

The political collapse in Eastern Europe that had begun in the second half of 1989 proceeded through 1990, with still further consequences for the European political-military constellation. As the separate national movements proceeded toward political independence and democratic-based government, the year witnessed the effective collapse of the Warsaw Pact as a military entity. At the same time, events in the politically key German Democratic Republic moved rapidly forward to reunification of the two German states under the Federal Republic of Germany in October 1990.

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4 TRADOC ACH, CY 89, pp. 7-9; CY 90, pp. 2-3. (Both FOR OFFICIAL USE ONLY — Info used is not protected)

The demise of the Warsaw Pact followed inevitably upon the unfolding political events, as the irreversible decoupling from Soviet power occurred. Parliamentary elections in Hungary in April and Czechoslovakia in June 1990 yielded non-communist majorities. The election to the Polish preidency of the Solidarity leader Lech Walesa followed in December 1990. Non-communist forces assumed the leadership in Bulgaria and Rumania. Overshadowing all these events was the rapid 1990 timetable of elections in the German Democratic Republic leading in July to the landmark Soviet agreement to allow a united Germany in NATO, a signed agreement on the new German state by the four World War II allied powers—the United States, Great Britain, France, and the Soviet Union—in September, and formal German unification on 3 October 1990.[5]

The following month, after further negotiations, the United States and the Soviet Union reached agreement on the Conventional Forces in Europe Treaty. Under the auspices of the Conference on Security and Cooperation in Europe, NATO and the Warsaw Pact countries formally signed the CFE treaty in Paris on 19 November 1990. The major provisions allowed each side as planned to keep 20,000 tanks, 30,000 armored combat vehicles, 20,000 artillery pieces, 6,800 combat aircraft, and 2,000 attack helicopters. In Germany, U.S. troops were to be reduced from 230,000 to 195,000, with all reductions to be carried out over the succeeding forty months.[6]

End of the Soviet Threat

Under the leadership of Soviet President Gorbachev, democratic and free-market reform measures went forward during 1990, reducing the central power position of the communist party in Soviet political and economic institutions. In February 1990, that party declared an end to its legalized monopoly on political power. In July, Boris Yeltsin, President of the largest Soviet republic, the Russian Federation, announced his withdrawal from the communist party, an announcement followed the next day by the mayors of Moscow and Leningrad. Reform currents continued in 1991. In March, leaders of mass demonstrations in Moscow and other Soviet cities called for an end to communist rule. The continuing devolution of power from the institutions of the Soviet Union to the Russian Republic and the other constituent Soviet states was emphasized by the popular election of Yeltsin to the Russian presidency in June 1991. On 31 July, Soviet President Gorbachev and U.S. President George Bush signed the Strategic Arms Reduction, or START, Treaty in Moscow, limiting strategic warheads.

Those events and others triggered in August 1991 a coup against Gorbachev by hard-line elements of the Soviet Ministry of the Interior, the army, and the KGB. That act, however, lacked popular support and commanded insufficient strength in the army and party organs to prevent a popular counterstroke carried out by Yeltsin. Restoring Gorbachev to his presidential post, Yeltsin forced the subsequent firing of Gorbachev's cabinet and declared the communist party excluded in the Russian Republic. With the tumbling of Lenin statues, those days saw the collapse of the communist party in Russia and in most states of the Soviet Union. On 24 August, the party was declared barred from state institutions, party property was nationalized, and Gorbachev resigned

5 For the details of the reunification events, see TRADOC ACH, CY 90, pp. 3-5. (FOR OFFICIAL USE ONLY — Info used is not protected)

6 TRADOC ACH, CY 90, pp. 5-6. (FOR OFFICIAL USE ONLY — Info used is not protected)

his party post of general secretary. On 29 August 1991, the Soviet National Assembly deconstituted the communist party and closed its offices throughout the USSR.

In the meantime, the breakup of the Soviet Union state structure began, with the Ukraine and Beylorussia and most other states declaring independence by early September. The same month, the Soviet Congress of Peoples Deputies dissolved itself. In early December 1991, Russia, Beylorussia, and the Ukraine signed a treaty establishing a new "Commonwealth of Independent States" and informed President Gorbachev that the Soviet Union no longer existed. On 21 December, the presidents of most of the former republics declared formation of the Commonwealth, replacing the Soviet Union. On 25 December 1991, in the final act of the disintegration of the once totalitarian state that had funded and armed world revolution since the end of World War I, the Soviet Union was formally disbanded, Gorbachev resigned the Soviet presidency, and the hammer-and-sickle banner was lowered over the Kremlin, replaced by the white, red, and blue flag of prerevolutionary Russia.

The death of communism and the disintegration of the Soviet Union in 1991 was accompanied by other finalizing events affecting threat considerations. On 25 February 1991, the Warsaw Pact nations signed documents facilitating the dissolution of the military arm of the alliance. On 31 March the military arm was disbanded, and on 1 July 1991 the Warsaw Pact was formally disbanded. In Bulgaria, voters drove from power the socialist (formerly communist) party in October. Popular elections in Poland the same month returned a non-communist majority. Farther afield, the last troops of the former Soviet surrogate, Cuba, departed Angola in May.

The stupendous political events of 1989-1991 culminating in the collapse of communism and the breakup of the world's most powerful revolutionary state signified a turning point in 20th century history. But with the sharp diminution of mortal threat to U.S. national security came another danger, the prospect of an uncritical and premature reduction of U.S. military force to levels insufficient to meet the challenges of the still uncertain and dangerous world.[7]

Strategic Reorientation and TRADOC

As events moved forward in 1990-1991 toward the final dissolution of the Warsaw Pact and the end of the Soviet threat, the question of the future military role of NATO loomed large. Cautious viewpoints prevailed, as observers watched both the beginnings of Soviet army withdrawals from Eastern Europe and the continuing contest for power in Russia. That a planned drawdown of U.S. troops in Europe was on the horizon, however, was undisputed. The plan was a portion of the larger reduction of the entire Army urged by the U.S. Congress in the wake of the warming relations of the superpowers and the events of 1989. By 1990, Army planning called for the phased reduction of the active force to a level of under 600,000 by the mid-1990s. The reduction, added to the new strategic picture, suggested many changes ahead in the presuppositions governing Army doctrine and the design and equipping of the fighting force.

As the effects of geopolitical change were felt, the Army's forward-deployed and forward-defense focus in Europe shifted to a new strategic orientation. That new policy stance by

7 TRADOC ACHs, CY 90, p. 4, (FOR OFFICIAL USE ONLY — Info used is not protected); CY 91, pp. 4-6.

Department of Defense and Department of the Army planners emphasized the projection of U.S. land combat power and reinforcement of those forces from the continental United States. Secondary was the maintenance of a forward presence in smaller contingents of forward-deployed forces. The focus of the new strategy was no longer an overriding Soviet threat, but the range of less-ominous regional threats, the unpredictability and likelihood of which the operations in Panama in 1989-1990 and the Persian Gulf in 1990-1991 had so amply demonstrated.[8]

The new strategy outlined by the Department of the Army in late 1991 looked toward a reduced, four-corps force by 1995 commanding 12 active and 6 reserve component divisions along with 2 cadre divisions. Army divisions abroad would be limited to 2 Active Army heavy divisions in Europe and 2 Active Army divisions in the Pacific — 1 heavy, 1 light. From its 780,000 peak in the late 1980s, Active Army strength would be reduced to 535,000 in 1995, with equivalent reserve component reductions.

The floor of the phased drawdown to 535,000 was by no means certain at the close of 1991, as voices in the Congress argued for deeper cuts. In the face of the uncertain future of the force, the Army Chief of Staff, General Carl E. Vuono and his successor, General Gordon R. Sullivan enunciated the need to maintain the Army's fighting and technological edge, to reshape the Army skillfully to the new strategic situation, to secure and provide the necessary resources to maintain the new smaller structure, and to strengthen the Total Force — Active Army, Army Reserve, Army National Guard, and the Department of the Army civilian work force. General Sullivan emphasized the Army's historical record of deterioration following its wars. Those radical declines in strength and readiness had led to debacles such as the Kasserine Pass in 1943, Task Force Smith in 1950, and Desert One in 1980. "No more Task Force Smiths," was a watchword in the Army in 1991, as planners dealt with the new problem of force retrenchment following on the strategic reorientation of the Army.[9]

Assuming office as TRADOC's seventh commanding general in August 1989, with the period of rapid strategic change under way, General John W. Foss would see his charge to be the design and training of a smaller Army needed in the strategically transformed world. The shift of the Army to the projection of land power primarily from the continental United States had implications across the spectrum of TRADOC's missions: from development of war fighting doctrine and tactical organizational structure to determination of equipment requirements and training of soldiers and leaders.

The immediate and fundamental challenge for TRADOC in the new strategic situation of the 1990s was doctrinal. General Foss pressed forward doctrinal discussions and regional map exercises with the TRADOC school commandants throughout 1990 as a means to explore doctrinal implications. Foss pushed to completion in August 1991 a conceptual basis for the Army which applied and extended AirLand Battle doctrine to the new conditions and to the strategic sphere, designated initially as AirLand Battle Future, then as "AirLand Operations." Beyond the emerging doctrine, all aspects of the Army would require redefinition and adaptation. Weapons

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8 For an account of TRADOC support to Operations Just Cause and Desert Shield and Desert Storm, Chapter XII, "TRADOC Goes to War."

9 TRADOC ACH, CY 90, p. 6, (FOR OFFICIAL USE ONLY — Info used is not protected); CY 91, pp. 6-7.

and equipment programs were sharply affected by the shrinking budgetary climate ahead, as force designers and materiel developers faced the need to maintain the technological edge. Training in all its diversity would have to adjust to the smaller establishment. Tactical organization design had to await the shape of the new doctrine.[10]

10 TRADOC ACH, CY 90, pp. 7-8, (FOR OFFICIAL USE ONLY — Info used is not protected); TRADOC ACH, CY 91, p. 7

Chapter XII

TRADOC GOES TO WAR

The United States Army Training and Doctrine Command's reason for existence was to prepare the Army for war today while planning the Army that would be needed to win in future war. Over 1990 and 1991 with the launching of Operation Desert Shield and the follow-on Desert Storm, TRADOC was able to witness the fruits of twenty years of concept, doctrine, and training development. As the Army's trainer and combat developer, and as the management headquarters responsible for directing seventeen major Army installations, TRADOC made significant contributions to the Army's mission in the Gulf War. Support fell chiefly in the areas of mobilization and personnel, logistics and CONUS replacement centers, as well as in training and doctrinal development, and family assistance.

Desert Shield and Desert Storm

As the United States began action against Iraq's invasion of Kuwait in early August 1990, TRADOC was called upon to fulfill its mobilization mission, one that it had not had to do in any real sense over the last seventeen years of its history. That mission included assisting U.S. Army Forces Command in mobilizing troop units, expanding the training base as necessary, establishing CONUS Replacement Centers, and expediting combat developments. The objective was to provide trained personnel for active component and mobilized reserve component units and combat-ready theater replacements.

Operations Desert Shield and Desert Storm were successful beyond all expectations. The overall success of the operations was attributed to sound doctrine, comprehensive training, superior equipment, and dedicated people, both military and civilian. TRADOC thus met its mission responsibility, both in preparing the Army for war and assisting it to mobilize, deploy, and sustain itself when the test came.

Mobilization

Deployment of Army forces to Southwest Asia technically commenced on "C Day"—7 August 1990—when active component units were alerted and began deployment to the theater. Unit deployments were historically a Forces Command (FORSCOM) mission except when subject to augmentation by TRADOC assets. Before the initiation of the reserve forces call-up on 22 August (effective 27 August), TRADOC was required to provide personnel to fill units to deployment

Private First Class Carpenter, 18th Engineer Brigade, holds his child while awaiting transportation to Saudi Arabia during Operation Desert Shield. American soldiers went to the Gulf War well trained, equipped, and led. Concern over dependents left behind was eased somewhat by the knowledge that their home installations had elaborate family support programs.

standards. Additionally, the Chief of Staff of the Army had directed that combat units would be deployed at one hundred percent strength. While that action affected only the active component at that time, the result was that TRADOC filled the vacancies in many cases from its base operations support assets, leaving some installations, from the outset, precariously light in some specialties. That shortfall became a significant issue at Forts Knox, Rucker, and Sill. In addition, combat support and combat service support unit deployments, for instance, maintenance units, in some cases left their installations without critical support personnel and capability — critical in the sense that most were supporting an enhanced mobilization mission.[1]

On 22 August, the President invoked the Selected Reserve Call-Up Authority. That authority allowed him to authorize the Secretaries of Defense and Transportation to order to active duty units and individual members of the Selected Reserve. The callup allowed for the involuntary levy of 200,000 members of the selected reserve from all services for a period of ninety days, extendible by another ninety days. The Selected Reserve comprised troop program units, individual mobilization augmentees (IMAs), and Active Guard Reserves (AGRs) in the general categories of installation support, Army medical department support, training base expansion, strategic signal support, depot support, port operations, and theater defense.

On 23 August, the Secretary of Defense delegated to the secretaries of the military departments authority to order up to 48,800 selected reservists to active duty. Concurrently, on 23 August, the Commanding General, TRADOC, informed Headquarters Department of the Army that TRADOC would not request reserve component backfill for TRADOC missions. General Foss maintained that, further mobilization notwithstanding, TRADOC missions would be accomplished with existing TRADOC assets in an effort to preserve the spaces in the call-up for the warfighting commander-in-chief.

On 24 August, the first Air National Guard and Air Force Reserve units were called up. The first Army National Guard and Army reserve units were ordered to active duty three days later along with selected naval and Coast Guard reservists. Marine Corps reservists were called up on 11 October to perform combat service support duties. By the end of 1990, over 135,000 selected reservists from all services had been called up.

On 25 August the Department of the Army issued a directive for the reserve component called STOP LOSS which suspended conditional resignation, selected changes in service obligations, expiration of service obligation, non-select for promotion, and retirements with less than twenty years qualifying service. STOP LOSS initially applied to members of mobilized units and those alerted for mobilization as well as individual mobilization augmentees (IMAs), but STOP LOSS was extended to the active component on 1 September.

Headquarters Department of the Army issued its first mobilization order on 27 August, calling up 45 reserve component units. On the 28th of August, the department issued a second mobilization order bringing to active duty eight reserve component medical units. One hundred fifteen

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1 Msg, CJCS to distr, 091332Z Aug 90, subj: Operation Desert Shield. (SECRET — Info used is UNCLASSIFIED). For a more extensive study, see *TRADOC Support to Operations Desert Shield and Desert Storm: A Preliminary Study*, Office of the Command Historian, HQ TRADOC, 1992.

additional units were alerted. On 11 September the Secretary of the Army authorized the involuntary order to active duty of up to 500 members of the Regular Army or Retired Reserve.[2]

Army reserve units began reporting to their mobilization stations on 30 August. The first units deployed on 7 September. Among them were transportation, quartermaster, judge advocate general, and public affairs detachments. On 14 November, the Secretary of Defense announced authorization for the call-up of additional reserve component units to support the operation. That action raised the ceiling to 80,000 —from 25,000—of the Army's portion of the presidential call-up. Also within that action was the authority to call reserve combat units to active duty for as long as 180 days, which could be extended by another 180 days. Three Army National Guard combat brigades—the round-out brigades—were activated. The 48th Infantry Brigade (Mechanized) from Georgia and the 256th Infantry Brigade (Mechanized) from Louisiana were activated on 30 November; the 155th Armored Brigade from Mississippi was activated on 7 December. By the first part of December, almost 450 units had been alerted and approximately 400 had received activation orders. Primarily these were dental, transportation, petroleum and water-handling, chemical decontamination, linguist units, and USAR hospitals.[3]

On 19 January 1991, by executive order, the Secretary of Defense announced T-Day, or partial mobilization. Within that came Order #1, which extended current forces; Order #2, which authorized the call-up of 20,103 members of the Individual Ready Reserve (IRR) which were to report 31 January; and Order #3 (which came out on 20 January), which mobilized the training base units. The announcement of partial mobilization increased the political and military capability of the armed forces. Partial mobilization sent definite signals to allies and enemy alike, indicating a level of preparedness and willingness that the presidential call-up did not.

As the level of mobilization progressed from the first 200,000 to partial, different populations of the reserve were mobilized. The reserve pool was made up of the Ready Reserve, the Standby Reserve, and the Retired Reserve. Each of the three categories was separate and distinct from the other two, subject to call-up at different times under different circumstances. The first line of defense for the reserve component was the Ready Reserve. The largest reserve pool, the Ready Reserve, was also the most highly trained. The Ready Reserve consisted of the Selected Reserve and the larger Individual Ready Reserve (IRR).

The Selected Reserve were those closest to the active component. It included drilling reserve units and individual mobilization augmentees (IMAs). That category was maintained on a regular

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2 (1) Desert Shield Briefing Notes, 27 August 1990. (2) Memorandum for Record ATBO-JM, 28 August 1990, subj: Operation Desert Shield Summary #9. (3) Memorandum for Record ATBO-JM, 31 August 1990, subj: Operation Desert Shield Summary #10. (All SECRET/NOFORN/WNINTEL — Info used is UNCLASSIFIED) (4) Msg, HQDA to distr, 240300Z Aug 90, subj: Suspension of Voluntary Separation of Officers and Enlisted Personnel (STOP LOSS) for Reserve and National Guard. (5) Msg, Cdr TRADOC to HQDA, 231900Z Aug 90, subj: Commander's Sitrep. (All SECRET — Info used is UNCLASSIFIED) (6) Msg, Cdr PERSCOM to distr, 292200Z Aug 90, subj: Suspension of Active Component Voluntary Separation of Officers and Enlisted Personnel (STOP LOSS).

3 (1) Gen Colin L. Powell, "All Elements of Total Force Give Military Prowess," *The Officer*, Feb 91, pp. 12-16. (2) John O. Marsh, Jr., "Reserve Reaches Unprecedented Readiness Level," *The Officer*, Feb 91, pp. 34-38. (3) Msg, HQDA to distr, 142005Z Nov 90, subj: SecDef Authorized Additional Reserve Call-Up.

pay status and trained alongside the active component for specified periods of time. The Selected Reserve was the category mobilized under the initial presidential call-up.

The Individual Ready Reserve made up the remainder of the Ready Reserve. That category did not regularly train with the active component nor was it on any kind of regular pay status. Rather it comprised those individuals who had left the active service for a number of reasons and were eligible for call-up under partial mobilization. The IRR housed the "RT-12" subset which included those personnel trained within the last twelve months, or, those who had left active service a year ago or less. Theoretically, then, the RT-12 comprised the most up-to-date and technically competent portion of the Individual Ready Reserve.

For Operations Desert Shield and Storm, various components of the Ready Reserve were mobilized. At the outset, with the presidential call-up, the Selected Reserve was mobilized. Later, with the declaration of partial mobilization, the remainder of the Ready Reserve was available for call-up. Operation Desert Storm tapped the IRR, and hence the RT-12 population, as well as selective call-up from the retired community.[4]

With the announcement of partial mobilization, troop strength to the Southwest Asian theater increased steadily. By 1 February 1991 the total number of reserve component units in the area of operations was 595; thirty-one units had been dispatched to supplement the U.S. Army in Europe. A total of 990 reserve component units were on active duty.[5]

Following a 39-day air campaign which launched Desert Storm on 17 January, the ground campaign began on 24 February, putting into action all the forces that had heretofore been mobilized and massed. President George Bush declared two objectives of the military action: First, to drive Iraqi forces from Kuwait, and second, to deny Saddam Hussein the ability to reinforce the theater or pose a threat to Kuwait in the future.[6] By 28 February Operation Desert Storm was over; the ground campaign had lasted a hundred hours. On 9 March Headquarters Department of the Army issued the Demobilization Order authorizing mobilized reserve component units and individuals to be released from active duty as they were identified as being no longer required to support Operation Desert Storm.[7] Operation Proud Return began, comprising the withdrawal of forces, dismantling of the coalition, and demobilization and force reconstruction. Personnel and equipment began the journey out of the theater. By 15 March CONUS replacement centers at Forts Benning and Knox had closed. Fort Jackson remained open, taking the remainder of returning individuals, until 15 May.

On 6 April Operation Provide Comfort was established to provide humanitarian relief to some two million Kurds who had fled northern Iraq and resettled in temporary camps in Turkey and Iran. Hailed as the largest international military relief effort since the Berlin Airlift, Operation Provide Comfort comprised some 21,000 military personnel from thirteen countries. The United States

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4 The Standby Reserve was not accessed for Operation Desert Shield or Storm. The Standby Reserve functioned almost as a back-up pool, to be used after the IRR had been exhausted.

5 Army Operations Update, Operation DESERT STORM (U), Information Memorandum #178, 1 Feb 91. (SECRET — Info used is UNCLASSIFED)

6 CSA ltr, "Operation Desert Storm," 28 Feb 91, CSA *Weekly Summary*, 1 Mar 91.

7 CSA, *Weekly Summary*, 22 Mar 91.

carried the lead with over 11,000 personnel—infantrymen, Special Forces teams, construction and transportation teams, civil affairs teams, and medical personnel.[8]

On 9 June Fort Dix opened to serve as the processing point for the sustainment force. In that respect, Fort Dix functioned much as a replacement center, although with a slightly different mission and agenda. Fort Dix processed active and reserve component individuals to the Southwest Asian theater. Active soldiers arrived, registered, and were sent out on the next available aircraft. Reserve component soldiers were passed through a processing much like the replacement center format and generally departed within seven days. A total of 3,588 soldiers were processed through Fort Dix before the processing point closed on 25 August 1991.[9]

Logistics and the CONUS Replacement Centers

One of the highlights of Operations Desert Shield and Desert Storm, from the TRADOC headquarters vantage point, was the mobilization and activation of the CONUS replacement centers (CRCs). The CRC concept dated from 1984, had been exercised specifically at Fort Jackson and Fort Lewis, but for all intents and purposes had never been fully tested. With the initiation of mobilization, the replacement center concept came fully to life.

For Operations Desert Shield and Desert Storm, three CRCs were activated - one each at Fort Benning, Fort Knox, and Fort Jackson. TRADOC, the executive agent for the replacement centers, had responsibility for their training and development of the doctrine on their employment; TRADOC also handled their operational project stock development, distribution, and management; and budget program development; as well as providing training guidance to replacement center installations, support to the replacement center mission during peacetime training, and base operations support during execution. The replacement centers exercised command and control of non-unit related personnel flowing to the theater of operations. Individuals were called up and reported to the replacement center from their mobilization station to spend approximately four days processing for deployment. The replacement centers received and processed all Army individual replacements, crews, teams, small detachments and civilians; provided billeting, food service, and other required support functions; ensured that replacements were prepared for deployment and verified processing for overseas replacement (POR) requirements (POR requirements were to be completed at the home or mobilization station prior to arrival at the replacement center); and issued organizational clothing and individual equipment (OCIE). In effect, the replacement center was a staging area.

For Operations Desert Shield and Desert Storm, replacement center operations were housed on the three installations in what was colloquially termed "World War II wood." The structures were outdated, substandard structures scheduled for demolition as new construction was planned. Ironically, had the structures not been available for use, installations would have been hardpressed

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8 (1) Donna Miles, "Helping the Kurds," *Soldiers*, July 1991, pp. 13-20.(2) Major James A. Franklin, TRADOC LO to Turkey, "Operation Provide Comfort: A TRADOC LO Perspective," unpublished undated ms. (3) *Civil Affairs in the Persian Gulf War, A Symposium, Proceedings*, 25-27 October 1991, USA JFK Special Warfare Center and School, Fort Bragg, N.C., p. 364.

9 Brfg Slides, "How TRADOC Went to War," prepared by HQ TRADOC CPG, Sep 91. On the Fort Dix effort in training of Kuwaiti nationals during Desert Shield and Desert Storm, see the following section on training.

to provide the 2,000 to 2,500 billets and the necessary administrative offices required. Subsequently, much of that "World War II wood" was demolished.

The replacement centers began receiving equipment from operational projects in early September 1990.[10] Weapons delivery began mid-month. Equipment lists had to be reviewed to provide necessary equipment for the desert scenario. Ideally, the replacement centers should have been able to take possession of the stockage from the operational project within a week's time. From that point the wholesale system was designed to feed the operational project. However, for this contingency, one of the initial, and major, problems was the fact that there was virtually no stock in the operational project. Stockage built up incrementally at all three replacement centers during the fall of 1990.[11]

The CONUS replacement centers at Fort Jackson and Fort Benning were activated on 9 December. Active component unit replacements entered the system immediately, and the first soldiers exited on the 14th.[12] Even unit soldiers, while not a regulation replacement center mission, were sent through them to expedite their deployment to Southwest Asia and provide on-the-job training for the CRC system. At that point, the replacement center structure was not yet complete. Installation commanders, as commanders of the CONUS replacement centers, initially ran them with existing installation assets. That was a direct result of General Foss' decision to channel as many reserve assets as possible to directly supply the Commander-in-Chief, United States Central Command (USCENTCOM). As noted above, the TRADOC commander's decision resulted in the operation of the replacement centers with in-house resources, which in all three cases, were already strained. All three installations used their pre-existing reception battalion capability to provide early support and processing.

The formal replacement center structure was activated on 27 December 1990. The replacement centers were structured with U.S. Army reserve replacement battalions and companies. The total authorized replacement center strength was eight battalions and sixteen companies. Each replacement center was authorized a replacement battalion and five companies except for Fort Jackson, which, because of its anticipated workload, was slated to receive six companies.[13] The actual force structure in place, however, included only three battalions and nine companies overall, to be shared among the sites. In effect, then, each replacement center was run by a battalion and three companies. Any additional units were pieced together from existing assets. Replacement centers were organized at authorized level of organization (ALO) C (Cadre). Augmentation, when and if necessary, was to be provided by the installation. Force structure, in the planning stages at least, determined anticipated flow rate. The replacement centers were structured to process 100

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10 In the grand scheme of what was called the CRC flow, CRCs received equipment (OCIE) to hand out to soldiers as they processed through. The equipment was the stockage that was held within the operational project. The operational project was the stockage level that was held in depots earmarked for specific contingency operations. The operational project was similar to the war reserve in concept.

11 Oral history interviews with Ms Dawn Hustus, DCSBOS Directorate of Logistics, HQ TRADOC, 30 April 1991; Mr. Payton Hutsell, DCSBOS Directorate of Logistics, 30 April 1991, both by Dr. Susan Canedy and Mr. Edwin Burgess.

12 (1) Msg, Cdr FORSCOM to distr, 011655Z Dec 90, subj: CONUS Replacement Centers (CRC). (2) Msg, Cdr FORSCOM to distr, 052220Z Dec 90, subj: CONUS Replacement Center (CRC) Activation.

13 Memorandum for Record ATBO-JM, 31 December 1990, subj: Operation Desert Shield Summary #31. (SECRET/NOFORN/WNINTEL—Info used is UNCLASSIFIED)

people per assigned company per day. A higher anticipated flow rate would have required additional companies in the replacement center. Flow rate was ultimately to be determined by theater needs.

Because of the short duration of Operation Desert Storm, the replacement centers never reached a sustained maximum flow rate. What they did experience, while preparing for peak flow, were inaccurate and unpredictable flow rate projections on a continual basis. Not only did that inaccuracy create havoc at the command level, but unreliable projections made it impossible to anticipate proper accommodations for arriving soldiers. Bed space, messing facilities, processing capability, range usage, and transportation all had to be provided resources, readied, and contracted for; inaccurate projections caused unnecessary expense in dollars and manhours, both already in short supply.

Training

According to its mobilization plans, TRADOC prepared to expand the training base in order to train the mission. Training base expansion included classroom space, instructors, support materials, ranges, ammunition, and increased medical and dental services. The scope of the conflict never required full expansion. While TRADOC prepared to train 75,000 members of the Individual Ready Reserve, the numbers actually trained were closer to 20,000. Highlights of the training mission included IRR refresher training, heavy equipment driver training, and Kuwaiti training.

TRADOC was involved with developing short train-up programs of a few days in duration for military occupational specialty (MOS) refresher courses. Operations Desert Shield and Desert Storm demonstrated the need to plan and provide the mandatory pre-mobilization refresher training and post-mobilization refresher and reclassification training to IRR soldiers in critical MOSs. In a related action, TRADOC was tasked to interview, select, and package IRR soldiers as replacement squads and crews. While squads and crews could be easily identified and formed, leadership for the squads and crews proved elusive. Most soldiers were judged to be at skill levels 1 or 2 and could not provide the necessary leadership. Moreover, gaining units broke up the squads and crews as they arrived and used them as individual replacements.

Training programs and training support were strained to accomplish the mission. Equipment, ammunition, and instructors were distributed across installation and major command to meet training requirements. The strain was nowhere more apparent than in the requirement for additional MOS 88M, motor transport drivers, in theater. During Operation Desert Shield it was noted that there was a shortage of drivers to support the operation. Headquarters Department of the Army identified a requirement for an additional one thousand 88Ms. To fulfill the requirements, TRADOC and FORSCOM were directed to jointly provide two hundred and sixty 88Ms, two hundred and eighty 88M Advanced Individual Training (AIT) graduates were diverted to Southwest Asia, 149 IRR soldiers were provided 88M familiarization training at 5 CONUS training sites, and CONUS-based forces redistributed 311 reserve personnel. Those one thousand heavy truck drivers were used to make up personnel shortages. Due to the immediate requirement for 88Ms, the MOS 88M AIT was accelerated from an eight-week program of instruction to a four-week program of instruction, and 5 mobile training teams were dispatched to 5 CONUS

locations to provide reserve soldiers abbreviated training. TRADOC's school support structure was significantly affected due to the levy of 190 of its 88M soldiers. Reserve Transportation Corps instructors were often required to augment Fort Eustis' mobile training teams.[14]

Mobile training teams and new equipment training teams were dispatched from TRADOC over the course of Operations Desert Shield and Desert Storm. Combat engineer teams, Abrams and Bradley train-up teams, and even language training teams were provided to the theater and on-site in CONUS.

In December 1990, TRADOC was alerted to prepare to train 300 Kuwaiti personnel for service as linguists with selected U.S. Army units in Southwest Asia. Three groups of Kuwaiti students were ultimately trained with a total of approximately 600 deployed to Southwest Asia. The first group consisted of 292 students trained at Fort Dix by drill sergeants from the 3d Basic Combat Training Brigade and members of the 306th Military Intelligence Battalion from Fort Devens. Training included weapons familiarization; nuclear, biological, and chemical warfare; basic first aid; field sanitation; desert survival; introductory signal intelligence training; and military language familiarization. The training began on 7 January and was completed by 14 January. The students deployed from McGuire Air Force Base on 15 January. The second group of sixty students was trained at Fort Devens by the 306th Military Intelligence Battalion with assistance by the Fort Devens Noncommissioned Officer Academy for the soldierization portion of the training. Training began on 28 January and was completed by 4 February. The third group of 269 students was trained at Fort Dix with special orientation conducted by mobile training teams from the Intelligence School, the Military Police School, the Staff Judge Advocate School, the Special Warfare Center and School, and the Academy of Health Science. Because of the various orientations and the request for additional weapons training, the training cycle was slightly longer. Students arrived at Fort Dix on 14 February and deployed to Southwest Asia from McGuire on 26 February.[15]

Combat Developments

Another of TRADOC's missions at time of mobilization was to expedite combat developments. As a result, some equipment, weapons, and munitions still in the development stage were fielded test and evaluation schedules were completed. Those included, but were not limited to, laser eye protectors, combat vehicle crewman helmets, desert camouflage uniforms, individual microclimate cooling gear, and the NBC protective mask.

The Gulf War tested an entire generation of weapons systems. Operation Desert Storm proved a laboratory for the Army's modernization program. Among the performers were the weaponry produced by the so-called "Big Five" development programs of the 1970s: the AH-64A Apache

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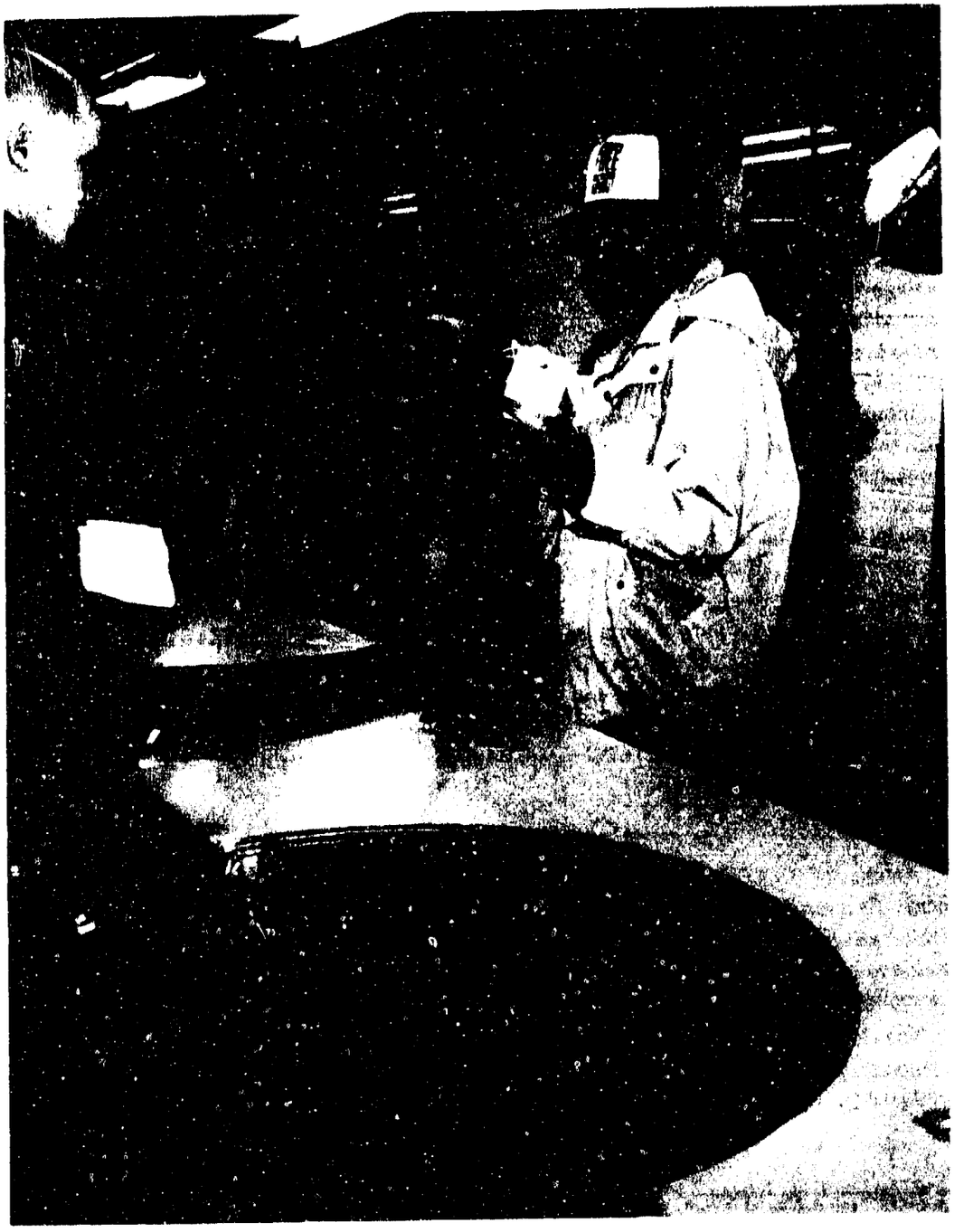
14 (1) Desert Shield oral history interview with Col Al Isaac, DCST, HQ TRADOC, 24 April 1991. (2) JULLS #61030-34200 (00001), title: MOS 88M Deficiency in Southwestern Asia. (3) Desert Shield oral history interview with Maj Gen James Wurman, CG USATC and Fort Dix, 10 April 1991, and Brig Gen David Cooper, DCG USATC and Fort Dix, 23 April 1991, by Dr. Daniel Zimmerman.

15 Desert Shield oral history interviews with Maj Gen James Wurman, CG USATC and Fort Dix, 10 April 1991, and Brig Gen David Cooper, DCG USATC and Fort Dix, 23 April 1991, by Dr. Daniel Zimmerman.



In late 1990, a Kuwaiti volunteer processes through a clothing issue point prior to training at Fort Dix, New Jersey.

attack helicopter, the M1A1 Abrams main battle tank, the Patriot air defense missile system, the UH-60 Black Hawk helicopter, and the Bradley fighting vehicle.[16]

Similarly battle tested was a new generation of weaponry which included the global positioning system which immensely aided unit navigation in the desert, the joint surveillance and target acquisition radar system (JSTARS), the Army tactical missile system and the multiple launch rocket system, as well as unmanned aerial vehicles.

Community and Family Support

Family support was an important mission during Operation Desert Storm. Family support systems were established at once, and augmented and refined over the course of the operations. Headquarters TRADOC had established the Soldier/Family Planning Group at the headquarters level to support installation activities and problems. The group was made up of experienced action officers from the base operations support and morale, welfare, and recreation directorates. Their mission was to resolve systemic problems, respond to hotline calls of an unusual nature, and provide interface for the field to the command. Some of the issues addressed by the group were family care plans, casualty assistance, orders, financial problems, housing concerns, and crisis counseling.[17] Headquarters TRADOC also developed and sent out Army Community Services guidelines for services to family members which were sent down to the supporting installations, although in the interim, most installation community services activities had developed their own. Family support coordinators at all levels organized and participated in family assistance briefings aimed at both the soldier and his family and covered all aspects of deployment.

For the installations, family support organizations included the family assistance centers, rear detachments, and family support groups. Over 520 active and reserve component assistance centers were established in all the states and affected installations in Europe.[18] Assistance centers operated as a single stop for referral and assistance. Generally they were manned by representatives from Army Community Service, the Red Cross, CHAMPUS, and the finance, personnel, legal, dental and medical, and the chaplain's offices, as well as agents from the inspector general's office, the directorate of logistics, the directorate of engineering and housing, and the public affairs office. Most were operated 24 hours a day, seven days a week. Forts Lee, Eustis, and Benning were the first to establish assistance centers operating such a schedule.[19] As early as 20 August 1990, TRADOC had issued information to the assistance centers concerning family support to deploying troops.[20] That had been quickly followed with guidance on family

16 TRADOC Annual Command History, CY 91, p. 118.

17 (1) Draft manuscript, "Out of Hide: A History of the U.S. Army Training and Doctrine Command Base Operations Support of Operations Desert Shield and Desert Storm," edited by Mr. James Byrn, 1992. (2) Oral history interview with Ms Shirley Young, CFAD, HQ TRADOC, 24 April 1991, by Mrs. Janet Scheitle.

18 Desert Storm Special Study Project, Operation Desert Storm After Action Report, 16 Oct 91, p. V-2-1. Unpublished manuscript in the Historical Research Collection, Office of the TRADOC Command Historian. (SECRET — Info used is UNCLASSIFIED)

19 (1) Center for Army Lessons Learned Special Bulletin No. 91-2, The Yellow Ribbon, Fort Leavenworth, Kan., June 1991. (2) Memorandum for Record ATBO-JM, 16 August 1990, subj: Operation Desert Shield Summary #1. (SECRET/NOFORN/WNINTEL — Info used is UNCLASSIFIED)

20 Msg, Cdr TRADOC to distr, 201531Z Aug 90, subj: Operation Desert Shield: Army Community Service (ACS) Guidelines for Services to Family Members.

support to the reserves.[21] Assistance centers were established at the installation commander's discretion; thus they were not uniform throughout TRADOC. Some installations chose not to establish them at all, placing the responsibility for family support on Army Community Services or other individual family support agencies. Some installations established an assistance center at the corps level, as did Fort Sill, while some others at the brigade level, as did Fort Lee.

Providing resources for the assistance centers was each installation's responsibility. Consequently, centers had to scramble for facilities which were often inadequate, lacking waiting areas, meeting rooms, training centers, and other space to accommodate a twenty-four hour operation. Telephones, furniture, and office equipment were lacking in many cases.[22] In accordance with General Foss' decision not to use call-up forces to man the BASOPS, staffing came out of installation resources. Staffing for family support was difficult business. Distributing assets across installation was deemed out of the question, as most family support personnel were civilian. The temporary hire pool did not meet the special needs of the job. Most installation commanders found themselves diminishing ongoing services and stretching existing manpower.[23]

The resourcing shortage was most keenly felt at Forts Benning, Knox, Jackson, the three installations that housed CONUS replacement centers (CRCs). Units processed primarily through mobilization in-processing validation centers while individuals processed through CRCs. In both cases, family support services were concentrated with the center to facilitate the in-processing. The most time-consuming issue handled by family support personnel during the mobilization was that of family care plans. Although family care plans were technically an adjutant general responsibility at the unit level, the lack of adequate plans became problematic with the call-up of the Individual Ready Reserve (IRR).[24] Due to the nature of that population, many soldiers reported to their mobilization station or CRC with less than satisfactory or no family care plan. Family care plans allowed for the care and feeding of a soldier's family and attendant assets during his absence. Lack of an adequate family care plan made the soldier nondeployable. Family care plans surfaced as an issue on 7 November 1990 when reserve units began processing through the CRCs.[25] At Fort Benning, twenty-five soldiers did not deploy because they could not put together an adequate family care plan.[26] Headquarters TRADOC studies indicated that, overall in TRADOC, two

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21 Msg, Cdr TRADOC to distr, 271201Z Aug 90, subj: RC Unit Linkage to Installation Family Assistance.

22 Center for Army Lessons Learned Special Bulletin No. 91-2, The Yellow Ribbon, Fort Leavenworth, Kan., June 1991, pp. 16-18.

23 (1) Draft manuscript, "Out of Hide: A History of the U.S. Army Training and Doctrine Command Base Operations Support of Operation Desert Shield and Desert Storm," edited by Mr. James Bym, 1992. (2) Oral history interview with Col Frost, DPCA, Ft Knox, 13 March 1991, by Mrs. Janet Scheitle. (3) Family support personnel interviewed at Forts Knox, Benning, and Jackson indicated that this situation occurred with varying degrees of impact. Fort Jackson, which was able to hire high quality temporaries to serve as action officers did not feel the impact of this as much as Forts Knox and Benning.

24 Oral history interview with Chaplain (Col) Roy Mathis, HQ TRADOC Chaplain, 6 March 1991, by Dr. Susan Canedy and Mrs. Janet Scheitle; Mr. Gerry Compton, Director, Community and Family Activities, HQ TRADOC, 6 March 1991, by Mrs. Janet Scheitle; and Ms Audrey Wise, Chief, Family and Community Support, Fort Jackson, 14 March 1991, by Mr. James Bym and Mrs. Janet Scheitle.

25 (1) Memorandum for Record ATBO-JM, subj: Operation Desert Shield, Summary #24, 7 November 1990. (SECRET/NOFORN/WNINTEL—Info used is UNCLASSIFIED) (2) JULLS #31229-08931 (00007), title: Family Care Plans. (3) JULLS #10112-84633 (00006), title: Family Care Plans for RC Soldiers. (4) JULLS #42251-37587 (00808), title: Single Parents' Family Care Plans.

26 Oral history interview with COL Frost, DPCA, Fort Knox, 13 March 1991, by Mr. James Bryn and Mrs. Janet Scheitle.

percent of deploying soldiers had problems with their family care plans, except for Fort Benning where the breakout was almost five percent.

One of the missions of the assistance center was to support and link the rear detachment and family support groups to the active component structure. The rear detachment bore primary responsibility for supporting the families of deployed soldiers. In addition, the rear detachment, as that part of the unit left behind, accomplished unit tasks for installation support, training of replacements, and property accountability. The rear detachment had to be capable of handling a variety of problems, many of them family related, with attention and care.[27] Family support groups were made up of volunteers within the unit that assisted the rear detachment in sustaining families by exchanging support and transmitting information. Support groups were primarily made up of unit spouses, guardians of dependent children, parents, and soldier volunteers. The support group was organized with the very important mission of coordinating among families, deployed soldiers, unit rear detachments, and local support agencies.[28] Support groups played a key role in Operations Desert Shield and Desert Storm by reassuring families, reducing feelings of isolation and anxiety, and sustaining morale. Often the groups played a major role linking the active structure to the reserve as assistance centers strove to work through the support groups. Due to their makeup, some groups were better than others; personnel turnover was high as soldiers returned and spouses and others dropped out. Because of the intensity of emotions involved, burn-out was a common problem.[29]

Family support was also addressed at the chaplains' level of activity. At all installations, chaplains organized family support groups through their family life centers and chapel activities. Both community and family activities personnel and the Chaplain Corps prepared for and staffed group activities, counseling sessions, family support groups, and casualty assistance programs. Activity was such that, and mobilization to a level that, the chaplains, Army-wide, were stretched thin.

TRADOC had responsibility for providing chaplains to active component units mobilized at TRADOC installations and to reserve forces passing through TRADOC sites. Unit ministry teams (UMTs) deployed as the units deployed. Assigned to operational units at the battalion level, each UMT consisted of a chaplain and a chaplain's assistant. In peacetime, UMTs were consolidated at the installation level. With the mobilization for Operation Desert Shield, installation assets were drawn down to support the deploying forces. For example, Fort Benning lost fifteen UMTs almost immediately as units deployed. That left twenty-five UMTs to do the work that was previously done by forty. That work included serving the families, maintaining ongoing religious services, officiating over weddings and funerals, hospital duty, and community ministering.[30] To

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27 The role of the rear detachment, and some of the problems generated by Operations Desert Shield and Desert Storm, are discussed in section I of The Yellow Ribbon, Center for Army Lessons Learned Special Bulletin No. 91-2, June 1991.

28 FSGs are covered in DA Pam 608-47, A Guide to Establishing Family Support Groups.

29 (1) See section II of The Yellow Ribbon, Center for Army Lessons Learned Special Bulletin No. 91-2, June 1991. (2) JULLS #51931-25100 (00008), title: Family Support Group Role, Authorized Support, and Training. (3) JULLS #10108-25893 (00005), title: Assistance to National Guard and Reserve Component Families.

30 (1) Draft manuscript, "Out of Hide: A History of the U.S. Army Training and Doctrine Command Base Operations Support of Operations Desert Shield and Desert Storm," edited by Mr. James Byrn, 1992. (2) Oral

7th Transportation Group altar set up for an Easter sunrise service overlooking the Persian Gulf port of Dammam. TRADOC had responsibility for providing chaplains to active commands mobilized at TRADOC installations. Unit ministry teams went with deploying units.

make the situation even more complex, deploying units required the correct mix of chaplains to serve the various religious needs of the soldiers. Almost immediately a critical shortage of Catholic and Jewish chaplains was noted.[31] For example, Fort Benning was left with two Catholic chaplains to serve the installation, and they worked alternate days, twenty-four hours a day; Fort Bliss operated with one Catholic chaplain.[32] Fort Story was left with only one chaplain for the

(continued...) history interview with Chaplain (Col) Roy Mathis, TRADOC Chaplain, HQ TRADOC, 6 March 1991, by Dr. Susan Canedy and Mrs. Janet Scheitle.

31 TRADOC UMT Training Conference, Radisson Hotel, Hampton, Va., 6-8 May 1991.

32 (1) Ibid. (2) Draft manuscript, "Out of Hide: A History of the U.S. Army Training and Doctrine Command Base Operations Support of Operations Desert Shield and Desert Storm," edited by Mr. James Bym, 1992. (3) JULLS #10305-90344 (00422), title: Attendence at Chapel Services.

entire installation. All the while, TRADOC installations saw an increase in attendance at chapel services and an increased need for family support.

Adding further strain to the shortage of chaplains, the Chief of Staff of the Army prescribed that casualty assistance centers would be staffed with two chaplains. As TRADOC operated sixteen casualty assistance centers throughout the command, a statement of immediate need was sent forward. A call-up of retired Army chaplains was initiated through the Army Reserve Personnel Center.[33] The call-up of retired chaplains was not unlike the call-up of the IRR in terms of quality control, or more specifically, lack thereof. The Reserve Personnel Center initially called for active duty terms of thirty to ninety days, later changing the term to up to one year. Some chaplains called were over-age. Most important, the call-up was too late. The Reserve Personnel Center ordered the chaplains to report on 4 March 1991. The ground war began on 24 February. Had the war turned out differently—had the Iraqis fought back, had chemical weapons been used, had the United States suffered the mass casualties that were projected—postwar analysis indicated that chaplain manning at the installations would have been inadequate.[34]

33 Due to the organization of the Chaplain corps, there was some confusion, and resulting delay, as agencies quarrelled over jurisdiction. ARPERCEN, OCCH, and Command Chaplains Offices all had some play in the call-up.

34 (1) Oral history interview with Chaplain (Col) Roy Mathis, TRADOC Chaplain, HQ TRADOC, 6 March 1991, by Dr. Susan Canedy and Mrs. Janet Scheitle. (2) TRADOC UMT Training Conference, Radisson Hotel, Hampton, Va., 6-8 May 1991. (3) JULLS #31952-57700 (60505), title: Timely Call-Up of Retiree Chaplains.

Chapter XIII

LEADING THE ARMY THROUGH INTELLECTUAL CHANGE

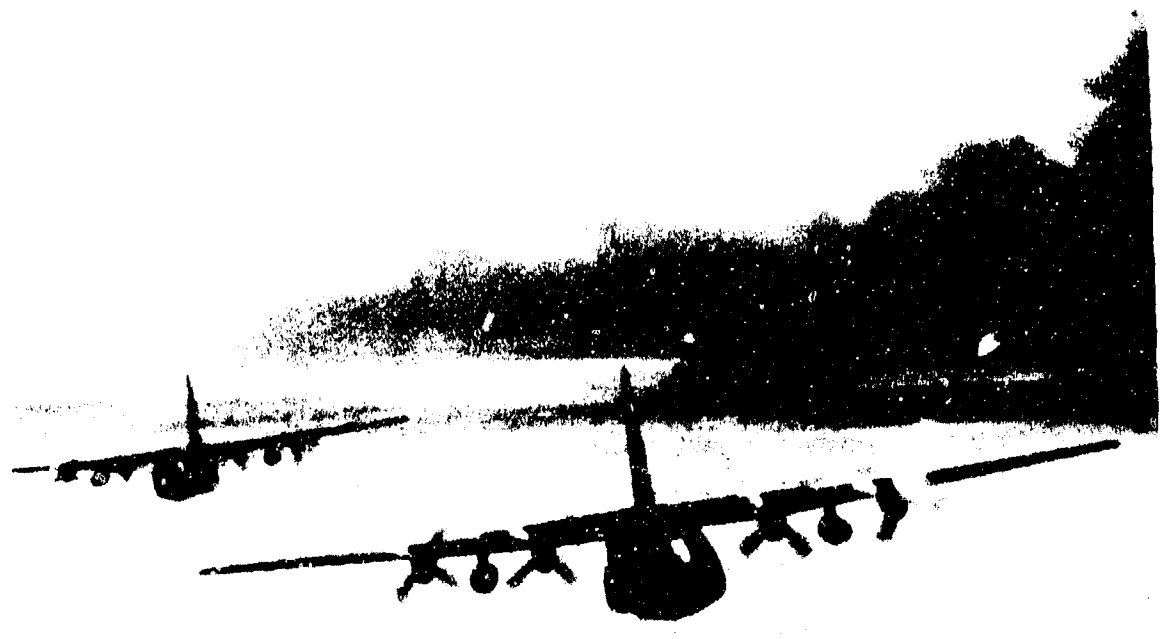
The major historical currents that were converging in the latter part of 1991 affecting the U.S. Army brought to TRADOC a special charge consonant with its mission: reorientation of the Army's doctrinal foundation. We have noted the Army's initial adjustments to the end of the Cold War and TRADOC's first efforts to gauge the implications bearing on its mission tasks. In parallel with the final acts of the terminating Cold War, the conflict in the Persian Gulf—dramatic in its demonstration of modern military technology—signified a new point of departure for the study of war.

Preceding and concurrent with the tumultous international events of 1989-1991 was the drawdown of U.S. armed forces in reaction to the receding Soviet strategic nuclear and conventional threat. That reduction of the Army and other U.S. services had been halted only temporarily by the short Gulf War. Out of the converging currents of 1991 came Army plans for strategic realignment of its force structure. The new force composition was based on the central idea of an Army that would project power primarily from a force base in the continental United States.

In August 1991, command of TRADOC passed from General Foss to General Frederick W. Franks, Jr., who had commanded VII Corps in Germany and in the Persian Gulf during Operation Desert Storm. General Franks brought to TRADOC an immediacy of experience in the climate of change that it was TRADOC's task to harness. He based his command direction on guidelines from the Army's new Chief of Staff, General Gordon R. Sullivan, who had succeeded General Vuono in that office in June 1991. The sum of General Sullivan's guidance, as he monitored the training and doctrinal work during 1991-1993, was the commission to TRADOC and its commander to lead the Army through the intellectual change required to conform it to the greatly altered demands of the new era.

National Military Strategy

Underlying Army planning for the period ahead was the National Military Strategy completed during late 1991. Chairman of the Joint Chiefs of Staff General Colin L. Powell issued the new



Air Force C-130s fly over burning oil wells in Kuwait during Operation Desert Storm. In formulating the 1993 doctrine, TRADOC planners took into account the relief activities in the postwar "no fly" zones in northern and southern Iraq which pointed to the need in battle planning for post-conflict operations.

military strategy in January 1992.[1] It set forth U.S. defense responsibilities in the climate of rapid force reduction in a new strategic world. The strategy had the principal policy objective of defeating aggression wherever it occurred in concert with U.S. allies. Subsidiary aims were to insure global access, to promote regional stability and cooperation, to stem the flow of illegal drugs, and to combat terrorism. The National Military Strategy enunciated four points: strategic deterrence and defense; maintaining a forward military presence in overseas deployments, prepositioned forces, exercises, and other means; crisis response by quick and effective military measures should deterrence fail; and reconstitution—the ability to reassemble a credible defense

1 Booklet, National Military Strategy of the United States, s/Colin L. Powell, Chairman Joint Chiefs of Staff (Washington, D.C.: GPO, Jan 1992).

An Iraqi tank goes up in flames as its ammunition explodes. The rapid defeat of the Iraqi Army during Operation Desert Storm was a stunning demonstration of efficacy of the reforms begun by General DePuy.

by generating required forces and equipment from a sufficient industrial base should a global threat reemerge.

The National Military Strategy required of the Army that it be able to project decisive force, maintain technological superiority, and maintain a high degree of readiness. With forces to be provided as needed to the U.S. regional commanders-in-chief, the Army had several broad strategic roles. Those were: to maintain combat ready ground forces—armored, light, and special operations forces; to maintain selective forward presence with forward deployed units; to maintain reinforcing units and a force-expandable capability; to support civil authorities in disaster relief, emergency assistance, drug interdiction, and combatting terrorism; and international peacekeeping and security assistance support.

In its Active Army portion, the National Military Strategy was carried out by a force reduced in 1992 to fourteen divisions. Modernization in the new era of force reductions and shrinking

resources was based on principles of continuous modernization through equipment upgrade, fielding new equipment to pre-designated "first-to-fight" units, modernizing by designated force packages or groupings of units according to their war fighting priority, providing maximum lethality and survivability capabilities, designing and providing equipment optimizing readiness and training through embedded training devices, and building and maintaining a balanced force capability.

General Sullivan enunciated the qualities the Army had to have in the new era. It had to be trained to fight as part of a joint or combined force. It had to be versatile in order to face the whole range of expected military challenges. It had to be rapidly deployable and expandable should new major world crises erupt. It had to be capable of decisive victory. Modern equipment, the right doctrine, the proper force mix, the best training, quality personnel, good leader development—those were the imperatives for the trained and ready force it was critical to maintain for the nation's security. General Sullivan stated the Army's "enabling strategies" to assure that outcome: maintaining the Army's war fighting edge, reshaping the force to the new strategic conditions, achieving greater efficiencies in resources for the force, and strengthening the total force, active and reserve.[2]

A New Doctrinal Basis

To prepare the Army for war in the post-Cold War world, General Franks set his staff to work on revision of the Army's war fighting doctrine as a first order of business when he assumed command in August 1991. Continuing the conceptual and doctrinal work of his predecessor, General Foss, Franks believed, with the Army Chief of Staff, that the Army's and TRADOC's tasks had to firmly grounded in sound doctrine. Doctrine and its revision was both a product and a process by which the Army communicated and informed itself internally. Doctrine was "the engine of change."[3]

To formulate and describe how the Army would fight in the greatly altered strategic world of the post-Cold War and post-Desert Storm was the point of departure for all future force and modernization decisions and for the necessary training programs to follow. A force no longer structured primarily to deter a powerful Soviet armor threat in Europe, but structured instead for rapid projection from the continental United States to respond to contingencies worldwide was the new requirement. Another necessity was to define clearly, for the Army's doctrinal basis, the new dynamics of the battlefield suggested by the experience of the Gulf War. In that conflict, observers saw the emerging indications of the advent of post-industrial technological warfare.

The consequent revision of the Army's key manual of doctrine, FM 100-5, *Operations*, was the first priority of the TRADOC commander. General Franks brought to that effort his own direct experience of 1990-1991 as commander of VII Corps in Operations Desert Shield and Desert

2 (1) Ibid. (2) Booklet, Strategic Force, Strategic Vision for the 1990s and Beyond: A Statement on the Posture of the United States Army, Fiscal Year 1993, by the Hon. Michael P.W. Stone and General Gordon R. Sullivan, presented to the Committees and Subcommittees of the United States Senate and the House of Representatives, Second Session, 102s Congress.

3 TRADOC ACH, CY 91, p. 66.

Storm. The doctrinal revision, begun in August 1991 and proceeding through the course of 1992, was completed in a final draft in January 1993. Army publication was scheduled for mid-year.

Prepared under General Franks' oversight by a writing team in the School for Advanced Military Studies in the Command and General Staff College headed by Col. James McDonough, the field manual drafts were widely staffed and briefed throughout the Army and to retired senior Army leaders. Periodic Army and TRADOC commanders conferences, war fighting conferences, and other meetings served as forums for further influence on the developing doctrine. Meetings by General Franks with his close advisors, including his deputies at the Combined Arms Command and the Combined Arms Support Command, Lt. Gen. Wilson A. Shoffner and Lt. Gen. Samuel N. Wakefield, together with his headquarters Deputy Chiefs of Staff for Combat Developments and for Doctrine, Maj. Gen. Wesley K. Clark and Brig. Gen. Timothy J. Grogan, helped distill and relate the central ideas. Highly focused "off site" meetings to refine the doctrine occurred at Fort A.P. Hill, Va. in August 1992 and at Fort Story, Va. in November 1992.

Significant doctrinal issues involving Army/Air Force cooperation were involved. Franks believed that deep battle, a hallmark of AirLand Battle doctrine, was moving into a new definition from the experience of the Gulf War. From fighting the deep battle in order to shape the main battle, doctrinal currents suggested that battle would take place throughout the depth of the enemy's formations simultaneously. The targeting and attack means of both the Army and the Air Force had grown greatly in the past half-dozen years and became a principal focus. Targeting and attacking in depth required new coordination procedures, as technology began to make possible near-real-time and real-time combat action. Important Army/Air Force meetings during 1992 brought the development of biservice doctrine and procedures along.[4]

The new doctrine drew continuity from AirLand Battle and its latest expresssion in the FM 100-5 of May 1986. It adopted ideas from the 1991 operational concept, AirLand Operations, previously noted. But it also drew heavily on the Army's most recent experience in mid-to-high-intensity and low-intensity war: Operations Desert Shield and Desert Storm and Operation Just Cause. It harnessed intuitions and insights drawn from the Persian Gulf war concerning the changing nature of the battlefield. It took full cognizance of the new strategic world of post-1991 and the National Military Strategy.

What were the leading ideas of the doctrine for the 1990s? The new doctrine was fashioned for a force projection Army. The primarily U.S.-based Army of the new era had to work from that strategic reality. It had to be prepared to deploy and to wage, in the same theater, all types of war—conventional, unconventional or, potentially, nuclear—and to transition easily between them. Secondly, the 1993 doctrine extended the old AirLand Battle into a wider interservice integration, and it planned for the likelihood of combined operations. Third, the new doctrine, while it maintained emphasis on the conduct of warfare, transcended AirLand Battle doctrine to provide fully for all operations in which the Army could expect to be involved: peacekeeping tasks, disaster relief, humanitarian assistance, and antidrug and similar operations—in other words, "operations other than war."

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4 TRADOC ACH, CY 91, p. 68.

Important battle dynamics were emphasized—doctrinal points for which General Franks and his planners believed the evolution in warfare was in sharp change. Those elements of battle were: the early entry of the deploying force, combat service support, depth and simultaneous attack, battle command, and battle space. Battle space was a significant new concept referring to the commander's view and vision, the reach of his unit and its weapons. Its dimensions were not physical only, but intellectual, determined by the commander's exercise of vision and intuition. Battle command was emphasized as an art exercized by the commander and not a technology- or procedures-driven function. Tempo, another important emphasis, was a concept whose meaning on the technological battlefield had changed. More than speed alone, it included the necessity for adjustment in rate to battle circumstance, and for assessment in relation to the enemy's capability to detect and react. The tenet of versatility was highlighted and added to the AirLand Battle tenets of depth, initiative, agility, and synchronization. It was not enough that a force was agile. Missions, regions, environments all could change rapidly during an operation.

There were other new ideas in the 1993 doctrine. Some came out of the recent war experience. For example, experience indicated that the highly useful levels of war—strategic, operational, and tactical—were sometimes blurred on the technological battlefield. A precision-striking weapon of operational or strategic range might serve either tactical, operational, or strategic aims. Commanders had to possess the supple discernment and imagination to transition from one level of war to another. There was also a critical need to define and set clear the conflict's end state at the beginning of operations. And battle planning had to allow for post-conflict activities, as had Operation Desert Storm in the relief activities in the postwar "no-fly" zones in northern and southern Iraq. Strategic ends might depend on operations that continued after the end of the war.

TRADOC believed that the keystone doctrine that FM 100-5 provided for the Army was the engine of change. The 1993 *Operations* manual reflected the collective wisdom of the Army against the background of history and the lessons learned from recent experience as well as the setting of the strategic and technological realities of the era.[5]

New Directions

To carry out TRADOC's mission responsibilities under the National Military Strategy and Department of the Army guidance in the new era of a smaller Army, General Franks advanced a strategy for the command. It was based on the work of headquarters planners aided by retired senior officers whom Franks set to work to formulate and put into effect new paradigms for bringing changes to the Army. The paradigms undertaking examined the processes by which TRADOC developed doctrine, training programs and leaders, materiel, organizations, and soldier improvements for the Army. The paradigms effort also examined a gamut of issues, such as the proper "tooth-to-tail," or combat-to-support ratio for the future Army, how the force should be echeloned, and theater missile defense. Significant new ways of doing things came out of the effort, for which TRADOC called on Headquarters Department of the Army, the Concepts

5 (1) See FM 100-5, *Operations*, for the Army's official statement of the new doctrine. (2) ODCSDOC Briefing, FM 100-5, *Operations*: The 1993 Revision, delivered to the TRADOC Liaison Officers Conference, 15 Mar 93, Hampton, Va. (3) Interview of Brig Gen Timothy J. Grogan, DCS for Doctrine, by John L. Romjue, HQ TRADOC, Ft. Monroe, Va., 22 Jan 93.

Analysis Agency, and the Rand Corporation for advice and support. The paradigms work helped TRADOC develop a strategy for mission tasks and for the management of change. Titled the TRADOC Vision in Support of the Force Projection Army, it was presented to Secretary of the Army Michael Stone and General Sullivan in November 1992 and was approved in concept.[6]

By the TRADOC strategy, General Franks meant to foster and implement intellectual change in the Army. Foremost was the work just noted to reformulate the Army's basic doctrinal manual, FM 100-5. A second significant intellectual element of change was the Louisiana Maneuvers project, which General Sullivan established under his own authority at Fort Monroe in May 1992 as a multiyear effort to bring together and focus the forces of change and cohesion in the transition to the power projection Army. This fundamental and wide-ranging total-Army project, which paid homage to the Army's pre-war Louisiana Maneuvers of 1941, was forecast to result in major simulated exercises at the theater level of war. The Louisiana Maneuvers simulations would examine such issues as industrial readiness, mobilization of the reserves, force mixes, and power projection relationships among the services.[7]

A third important effort consisted of new "battle laboratories" which General Franks established on six TRADOC installations in May 1992. The "battle labs" grew directly out of the formulative work on battlefield dynamics with FM 100-5. Franks saw battle labs as a means to develop more rapidly the capabilities of the force projection Army in the specific areas where the dynamic of battle was in sharp change: early entry, lethality, and survivability; depth and simultaneous attack; mounted battle space (armor); dismounted battle space (infantry); battle command; and combat service support. The battle labs would employ experimentation, simulations, exercises, analyses, and prototypal work harnessing "virtual reality" technology, as their tools. They would address all the TRADOC mission concerns: future equipment requirements, force designs, doctrine, training and leader development, and soldier requirements. TRADOC saw the battle labs as a way to particularize, intensify, and accelerate the development process. They would also serve to support the Louisiana Maneuvers endeavor.[8]

A further component of the TRADOC strategy to lead through intellectual change was a command link to the region-assigned commanders-in-chief, a conduit for serving the development needs of those commands directly and expeditiously. A program of divestiture was an internal measure complementing TRADOC's focus on pursuing new ways to effectuate and support Army change. The divestiture effort emphasized elimination of command activities, tasks, and missions that were no longer relevant or that had marginal value or poorly defined purposes.

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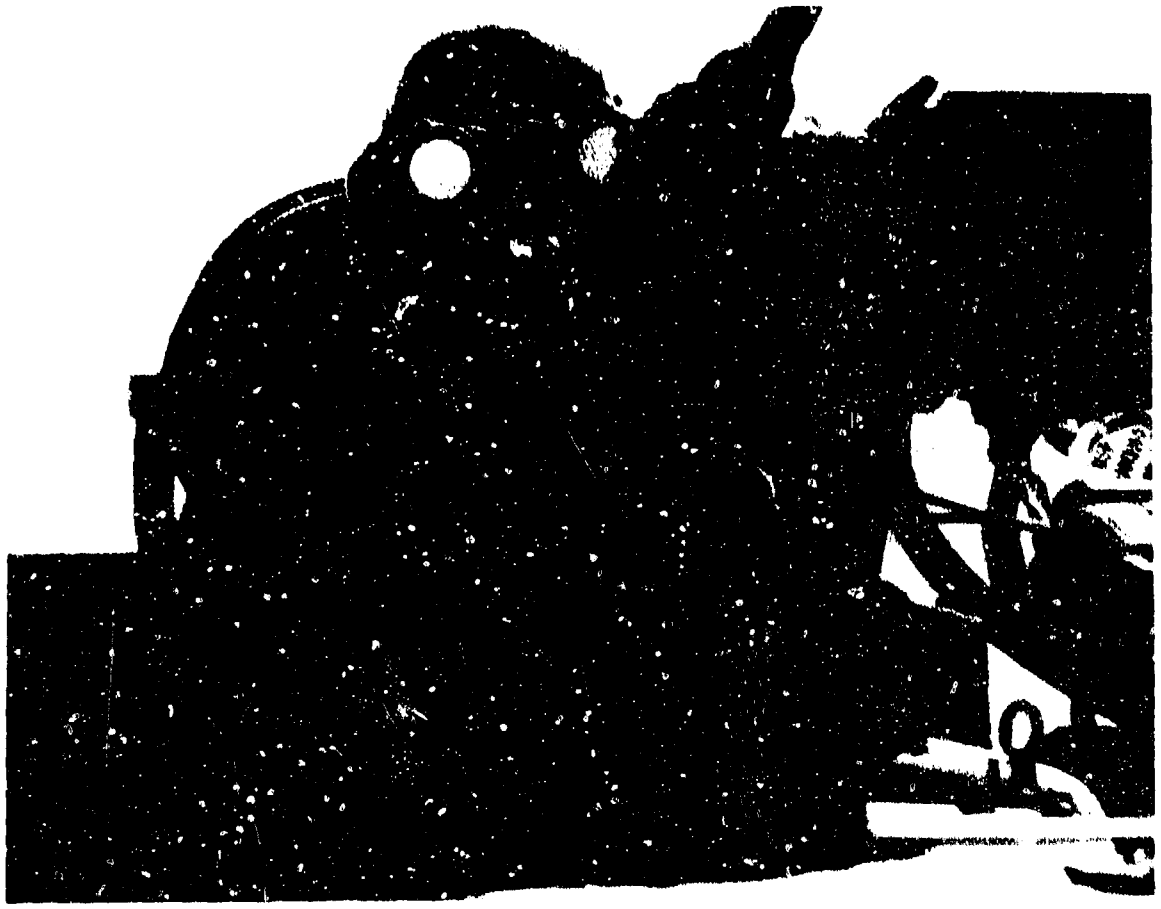
6 (1) Grogan Interview by Romjue, 27 Jan 93. (2) Memo ATCS-OS, Maj Gen John P. Herrling, Chief of Staff to Cdrs, TRADOC Installations, HQ TRADOC Chiefs, General and Special Staff Offices, 23 Nov 92, subj: TRADOC Vision, w/encl: MACOM Vision Brief for SecArmy and CSA, 16 Nov 92, subj: TRADOC Vision in Support of the Force Projection Army.

7 (1) Memo, General Gordon R. Sullivan, CSA to Brig Gen Tommy R. Franks, Director, Louisiana Maneuvers Task Force, 22 May 92, subj: Letter of Instruction for Louisiana Maneuvers (LAM). (2) ODCSDOC Briefing, TRADOC Umbrella Brief, presented by Brig Gen Timothy Grogan to Republic of Korea Army officials, 13-16 Oct 92.

8 Briefing, Battle Laboratories: An Overview, presented by Maj R.W. Hallum, Battle Lab Integration and Technology Directorate, ODCSCD, HQ TRADOC to TRADOC Military History Workshop, Carlisle Barracks, Pa., 26 Jan 93. For further information on the battle laboratories, see Chapter V of this study.



A soldier looks for the enemy during an exercise at the National Training Center. As doctrine continued to evolve following Operation Desert Storm, it envisioned a force projection Army. The new Army would be primarily based in the United States and had to be prepared to deploy for all types of conflict.
(Photograph courtesy Greg Stewart)

TRADOC viewed intellectual change as a driving force for the physical changes to the Army that lay ahead. New tactical organizations for the 1990s would have to come out of the new operations doctrine. And doctrine, organization, training, materiel, leader development, and soldier support all would be influenced by the battle labs and Louisiana Maneuvers work.

In the early 1990s, the command saw the fundamentals of its future structure to rest with its strategically positioned headquarters, and with its branches and schools. In the ever closer world of joint operations, joint doctrine, and joint development, the location of TRADOC's headquarters at Fort Monroe, Virginia placed it in immediate proximity to the headquarters of the Air Force's Air Combat Command and the multi-service Air-Land-Sea Application Agency and Center for Low Intensity Conflict at Langley Air Force Base; as well as to the headquarters of the Navy's U.S. Atlantic Command, the Atlantic Fleet, the Joint Doctrine Center, the Armed Forces Staff College, and NATO's Supreme Allied Commander, Atlantic, all in Norfolk, Va. The

doctrine-oriented service headquarters and agencies clustered about Hampton Roads were in close proximity to the Marine Corps Combat Development Command at Quantico, Va. and an hour's flight time to the Pentagon in Washington, D.C.

In 1993, the twentieth anniversary of its founding in July 1973, TRADOC was indeed leading the Army through intellectual change to prepare it to meet the demands of a new era. Army planners and those in the Training and Doctrine Command commissioned to carry through that responsibility were aware that they were serving in a time of major historical transformation. It was TRADOC's mission to prepare and shape the best possible Army to serve and defend the nation for the 1990s and on into the 21st century.

Appendix A

HEADQUARTERS TRADOC KEY PERSONNEL AND DEPUTY COMMANDING GENERALS, TRADOC 1973-1993

COMMANDING GENERALS

General William E. DePuy	1 Jul 1973 - 30 Jun 1977
General Donn A. Starry	1 Jul 1977 - 31 Jul 1981
General Glenn K. Otis	1 Aug 1981 - 10 Mar 1983
General William R. Richardson	11 Mar 1983 - 29 Jun 1986
General Carl E. Vuono	30 Jun 1986 - 11 Jun 1987
General Maxwell R. Thurman	29 Jun 1987 - 1 Aug 1989
General John W. Foss	2 Aug 1989 - 22 Aug 1991
General Frederick M. Franks, Jr.	23 Aug 1991 -

DEPUTY COMMANDING GENERALS

LTG O. C. Talbott	1 Jul 1973 - 31 Aug 1975
LTG F. A. Camm	1 Sep 1975 - 31 Aug 1977
LTG J. R. Thurman III[1]	1 Sep 1977 - 30 Sep 1979
LTG W. R. Richardson	9 Oct 1979 - 23 Aug 1981

1 TRADOC Deputy Commander position established at Fort Leavenworth, Kan., 1 Sep 77.

CHIEFS OF STAFF

MG B. E. Huffman, Jr.	1 Jul 1973 - 27 Jul 1975
MG R. C. Hixon	28 Jul 1975 - 30 Jun 1979
MG J. B. Blount	1 Jul 1979 - 4 Jul 1983
MG R. H. Forman	5 Jul 1983 - 7 Jul 1985
MG C. H. McNair, Jr.	8 Jul 1985 - 3 Sep 1987
MG R. E. Haddock	4 Sep 1987 - 20 May 1988
MG J. B. Farris, Jr.	17 Jun 1988 - 27 Jul 1989

DEPUTY COMMANDING GENERALS/CHIEFS OF STAFF[2]

MG. J. W. van Loben Sels	28 Jul 1989 - 13 Sep 1991
MG D. M. Lionetti	12 Nov 1991 - 20 Aug 1992
MG J. P. Herrling	8 Sep 1992 -

DEPUTY COMMANDING GENERALS FOR COMBINED ARMS[3]

LTG H. F. Stone	24 Aug 1981 - 6 Jul 1982
LTG J. N. Merritt	26 Jun 1982 - 6 Jun 1983
LTG C. E. Vuono	24 Jun 1983 - 9 Jun 1985
LTG R. W. RisCassi	10 Jun 1985 - 9 Jun 1986
LTG G. T. Bartlett	10 Jun 1986 - 13 Jul 1988
LTG L. P. Wishart III[4]	14 Jul 1988 - 6 Aug 1990

DEPUTY COMMANDING GENERALS/CDR, COMBINED ARMS COMMAND

LTG L. P. Wishart III	6 Aug 1990 - 15 Aug 1991
LTG W. A. Shoffner	16 Aug 1991 -

DEPUTY COMMANDING GENERALS FOR TRAINING

LTG J. W. Becton, Jr.	21 Jul 1981 - 26 Aug 1983
LTG C. W. Bagnal	31 Aug 1983 - 20 Jun 1985
LTG R. H. Forman	21 Jun 1985 - 31 Aug 1987
LTG J. S. Crosby[5]	1 Sep 1987 - 31 Aug 1989

2 Redesignation from CofS 28 Jul 89.
3 Stationed at Fort Leavenworth, Kan.
4 Realigned as Deputy Commanding General/CDR, Combined Arms Command, 6 Aug 90.
5 Position abolished 22 Sep 89.

DEPUTY COMMANDING GENERALS FOR LOGISTICS[6]

LTG R. L. Bergquist	4 Apr 1983 - 10 Jan 1986
LTG W. G. T. Tuttle	11 Jan 1986 - 25 Sep 1989
LTG L. E. Salomon[7]	25 Sep 1989 - 5 Aug 1990

DEPUTY COMMANDING GENERALS/CDR COMBINED ARMS SUPPORT COMMAND[8]

LTG L. E. Salomon[9]	6 Aug 1990 - 8 Jan 1992
LTG S. N. Wakefield	9 Jan 1992 -

DEPUTY COMMANDING GENERALS FOR MOBILIZATION[10]

MG G. Smith	1 Jul 1979 - 30 Jun 1983
MG L. H. Ginn, III	11 Jul 1983 - 19 Jul 1987

DEPUTY COMMANDING GENERALS FOR ARMY NATIONAL GUARD

MG J. M. Miller	1 Jan 1989 - 31 Aug 1992
MG G. W. Schuler	1 Sep 1992 -

DEPUTY COMMANDING GENERALS FOR US ARMY RESERVE

MG R. E. Hammond	20 Jul 1987 - 30 Jan 1991
MG J. H. Mukoyama, Jr.	1 May 1991 -

DEPUTY CHIEFS OF STAFF FOR RESERVE OFFICERS' TRAINING CORPS[11]

BG W. H. G. Smith	1 Jul 1973 - 11 Sep 1975
MG C. C. Rogers	12 Sep 1975 - 19 Nov 1978
MG D. W. French	20 Nov 1978 - 10 Jun 1981
MG R. A. Sullivan	14 Sep 1981 - 26 Jan 1983
MG J. P. Prillaman	27 Jan 1983 - 9 Mar 1986
MG R. E. Wagner	10 Mar 1986 - 14 Apr 1986

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6 Stationed at Fort Lee, Va.
7 Realigned as Deputy Commanding General/CDR, Combined Arms Support Command, 6 Aug 90.
8 Stationed at Fort Lee, Va.
9 Realigned 6 Aug 90.
10 Realigned as DCG for USAR, 20 Jul 87.
11 Redesignated ROTC Cadet Command, 15 Apr 86.

DEPUTY CHIEFS OF STAFF FOR RESOURCE MANAGEMENT

MG J. R. McGiffert	1 Jul 1973 - 16 Apr 1975
BG M. R. Thurman	27 May 1975 - 13 May 1977
BG M. W. Noah	16 May 1977 - 14 Aug 1979
BG L. P. Rhidrllehoover, Jr.	15 Aug 1979 - 31 Jul 1980
BG H. M. Davis, Jr.	1 Aug 1980 - 7 May 1982
BG R. L. Gordon	28 Jul 1982 - 12 Jul 1985
BG W. H. Reno	19 Aug 1985 - 12 Jun 1987
BG T. G. Stroup, Jr.	13 Jun 1987 - 4 Aug 1989
MG H. M. Hagwood, Jr.	11 Sep 1989 -

DEPUTY CHIEFS OF STAFF FOR TRAINING & SCHOOLS[12]

MG I. A. Hunt	1 Jul 1973 - 30 Sep 1973

DEPUTY CHIEFS OF STAFF FOR TRAINING

MG P. F. Gorman	1 Oct 1973 - 24 Jun 1977
MG J. W. Seigle	27 Jun 1977 - 3 Sep 1979
MG D. E. Rosenblum	4 Sep 1979 - 20 Jul 1980
MG H. G. Crowell, Jr.	21 Jul 1980 - 19 Jul 1981
MG F. J. Brown	3 Aug 1981 - 31 Dec 1982
MG M. O. Edmonds	4 Jan 1983 - 21 Jun 1985
MG J. H. Corns	22 Jun 1985 - 2 Oct 1986
MG G. C. Mallory, Jr.	3 Oct 1986 - 10 Jun 1988
MG W. A. Downing	15 Aug 1988 - 27 Nov 1989
MG C. A. Hagan	16 Dec 1989 - 13 Sep 1991
MG D. R. Malcor	14 Sep 1991 -

DEPUTY CHIEFS OF STAFF FOR PERSONNEL

MG A. H. Smith, Jr.	1 Jul 1973 - 31 Dec 1973
MG S. L. McClellan	1 Jan 1974 - 4 Feb 1977
MG J. H. Merryman	7 Feb 1977 - 30 Sep 1977
BG R. B. Hankins[13]	10 Aug 1978 - 30 Sep 1979

12 Redesignated DCS for Training 1 Oct 73.
13 Realigned as DCS for Personnel, Administration & Logistics, 1 Oct 79.

DEPUTY CHIEFS OF STAFF FOR PERSONNEL, ADMINISTRATION AND LOGISTICS

BG R. B. Hankins[14]	1 Oct 1979 - 31 Oct 1980
BG W. C. Cousland	10 Nov 1980 - 4 May 1982
BG A. S. Cannon, Jr.	5 May 1982 - 9 Sep 1983
MG A. K. Ono	27 Sep 1983 - 4 Jun 1985
MG J. H. V. McCrea, Jr.	5 Jun 1985 - 25 Feb 1987
MG J. W. Wurman	30 Mar 1987 - 28 Jun 1988
MG R. L. Dilworth[15]	20 Aug 1988 - 6 Aug 1990

DEPUTY CHIEFS OF STAFF FOR ENGINEER

COL C. L. Roberts	1 Oct 1979 - 13 Jul 1980
COL J. M. Adsit	14 Jul 1980 - 19 Jun 1981
COL J. W. R. Adams	20 Jun 1981 - 8 Jul 1984
COL G. C. Brown	9 Jul 1984 - 12 Sep 1986
COL(P) R. F. Yankoupe	31 Oct 1986 - 24 Jul 1989
COL T. Ono[16]	25 Jul 1989 - 6 Aug 1990

DEPUTY CHIEFS OF STAFF FOR BASE OPERATIONS SUPPORT

MG R. L. Dilworth	6 Aug 1990 - 16 Jun 1991
BG P. Y. Chinen	17 Jun 1991 - 3 Sep 1992
MG W. J. Bryde, Jr.	7 Sep 1992 -

DEPUTY CHIEFS OF STAFF FOR COMBAT DEVELOPMENTS

MG R. C. McAlister	1 Jul 1973 - 17 Jul 1975
MG W. H. Vinson, Jr.	18 Jul 1975 - 7 Oct 1977
MG J. H. Merryman	8 Oct 1977 - 8 Dec 1978
MG C. E. Vuono	13 Aug 1979 - 29 May 1981
MG R. D. Boyle	20 Aug 1981 - 28 Jun 1982
MG J. B. Oblinger, Jr.	29 Jun 1982 - 21 Jun 1983
MG C. H. McNair, Jr.	25 Jun 1983 - 7 Jul 1985
MG G. M. Krausz	29 Jul 1985 - 14 Jun 1987
MG D. M. Maddox	15 Jun 1987 - 15 Jul 1989

14 Served as DCS for Personnel 10 Aug 78 - 30 Sep 79.
15 Realigned under DCS for Base Operations Support, 6 Aug 90.
16 Realigned under DCS for Base Operations Support, 6 Aug 90.

MG S. Silvasy, Jr.[17]	1 Sep 1989 - 5 Aug 1990
BG(P) L. Lehowicz[18]	27 Jul 1992 -

DEPUTY CHIEFS OF STAFF FOR CONCEPTS, DOCTRINE & DEVELOPMENT

MG S. Silvasy, Jr.	6 Aug 1990 - 1 Oct 1991
MG W. K. Clark	2 Oct 1991 - 16 Jul 1992

DEPUTY CHIEFS OF STAFF FOR DOCTRINE

BG D. R. Morelli	17 Dec 1979 - 25 Jun 1982
BG C. T. Ivey	26 Jun 1982 - 27 Mar 1983
MG D. R. Morelli	28 Mar 1983 - 30 Jan 1984
MG H. D. Penzler	18 Oct 1984 - 25 Jun 1986
MG W. A. Shoffner	15 Aug 1986 - 9 Mar 1987
MG T. C. Foley	10 Mar 1987 - 26 Feb 1988
BG R. Ostovich, III	23 May 1988 - 23 Sep 1989
BG T. J. Grogan[19]	24 Sep 1989 - 6 Aug 1990
BG T. J. Grogan[20]	1 Aug 1992 - 31 Dec 1992
BG L. E. Maggart	1 Jan 1993 -

DEPUTY CHIEFS OF STAFF FOR LOGISTICS

MG K. T. Sawyer	1 Jul 1973 - 30 Jun 1974
BG R. M. Connell	15 Jul 1974 - 5 Sep 1974
MG A. G. Post	6 Sep 1974 - 22 Aug 1975
MG H. D. Smith	2 Sep 1975 - 27 Jul 1977
COL H. L. Dukes, Jr.	28 Jul 1977 - 15 Jun 1979
BG R. B. Hankins[21]	18 Jun 1979 - 30 Sep 1979

DEPUTY CHIEFS OF STAFF FOR TEST & EVALUATION[22]

MG L. C. Menetrey	30 Dec 1980 - 3 May 1981
MG B. F. Doty	4 May 1981 - 3 Apr 1983
MG J. E. Drummond	6 Jul 1983 - 14 Mar 1985

17 Realigned under DCS for Concepts, Doctrine & Development, 6 Aug 90.
18 Realigned from under DCS for Concepts, Doctrine & Development, 27 Jul 92.
19 Realigned under DCS for Concepts. Doctrine & Developments, 6 Aug 90.
20 Realigned from under ADCS for Concepts & Doctrine, 27 Jul 92.
21 Additional duty. Realigned under DCS for Personnel, Administration & Logistics, 1 Oct 79.
22 Abolished effective 15 Mar 85. Function merged into DCS for Combat Developments.

DEPUTY CHIEFS OF STAFF FOR OPERATIONS & INTELLIGENCE

BG J. C. Faith	1 Jul 1973 - 31 Oct 1973
BG V. B. Lewis, Jr.[23]	1 Nov 1973 - 30 Dec 1973

DEPUTY CHIEFS OF STAFF FOR OPERATIONS, READINESS & INTELLIGENCE

BG V. B. Lewis, Jr.	1 Jan 1974 - 30 Jun 1974
COL J. D. Ayers	15 Jul 1974 - 14 Oct 1974
COL C. Morrow, Jr.	15 Oct 1974 - 7 Jul 1978
COL R. T. Hayden[24]	10 Jul 1978 - 29 Sep 1979

DEPUTY CHIEFS OF STAFF FOR INTELLIGENCE

COL E. A. Cozanitis	24 Feb 1986 - 26 Jul 1987
COL T. K. Newell	27 Jul 1987 - 30 Jun 1989
COL M. J. Flynn[25]	14 Jul 1989 - 6 Aug 1990

DEPUTY CHIEFS OF STAFF FOR AUTOMATION & INFORMATION MANAGEMENT[26]

COL L. M. Kosiba	1 Nov 1983 - 30 Nov 1984

DEPUTY CHIEFS OF STAFF FOR INFORMATION MANAGEMENT

COL T. W. Humell	1 Dec 1984 - 31 May 1988
COL B. W. Goss	1 Jun 1988 - 20 Jul 1988
COL(P) R. E. Wynn	21 Jul 1988 - 23 Jan 1990
COL D. Fitz-Enz	15 Feb 1990 -

DEPUTY CHIEFS OF STAFF FOR CONTRACTING[27]

Mr. W. E. Benson	1 Oct 1989 - 6 Aug 1990

DEPUTY CHIEFS OF STAFF FOR ANALYSIS[28]

Mr. M. Bauman	6 Aug 1990 - 30 Oct 1990
BG R. W. Tragemann	1 Nov 1990 - 14 Sep 1992
BG M. A. Canavan	4 Oct 1992 -

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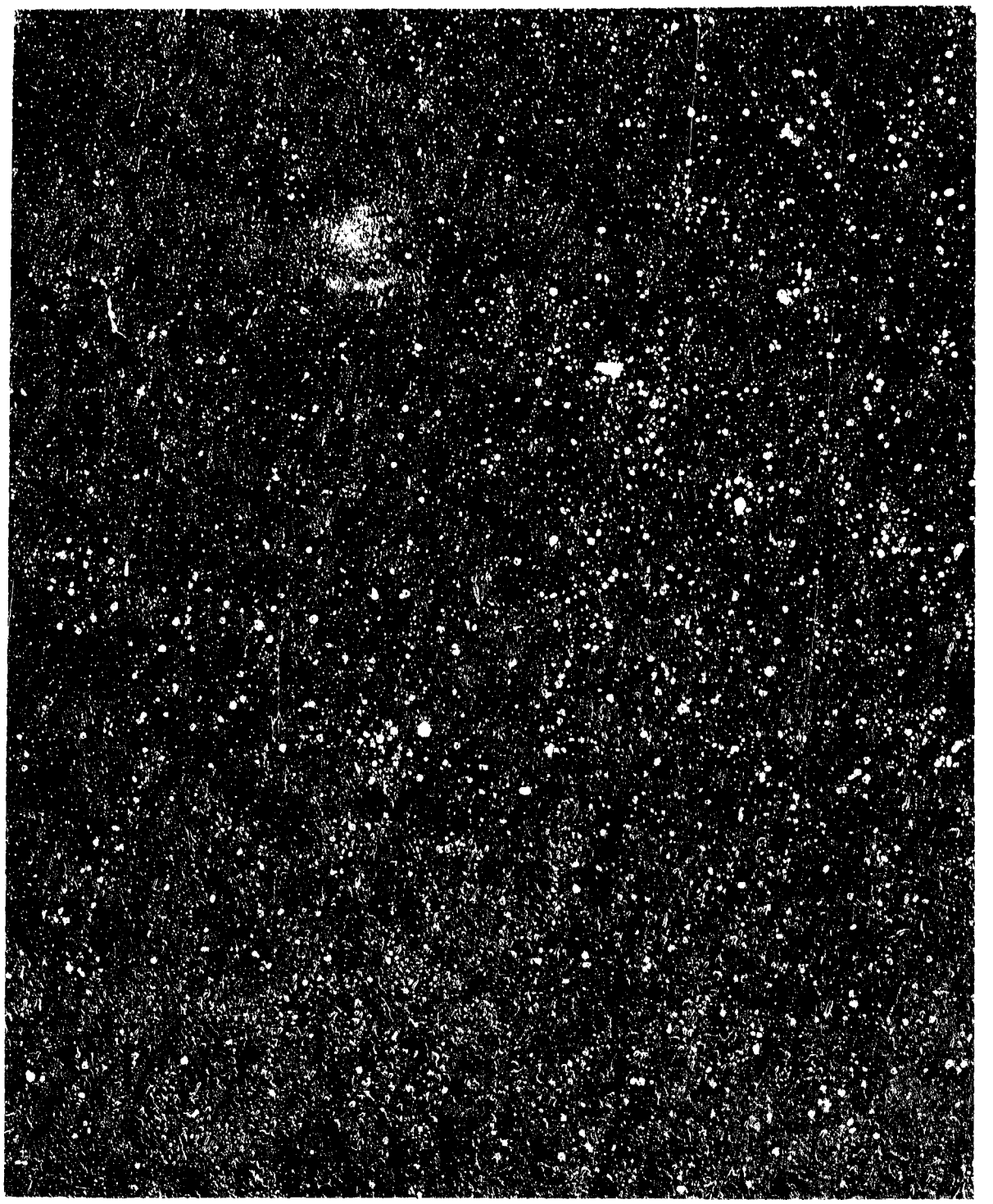
23 Realigned under DCS for Operations, Readiness & Intelligence 1 Jan 74.
24 Disestablished 1 Oct 79. Intelligence element transferred to DCS for Doctrine; remaining elements organized as Plans and Operations office.
25 Realigned under DCS for Concepts, Doctrine & Development, 6 Aug 90.
26 Retitled DCS for Information Management, 1 Dec 84.
27 Realigned under DCS for Base Operations Support, 6 Aug 90.
28 CDR TRADOC Analysis Command dual-hatted as DCS for Analysis, 6 Aug 90.

COMMAND SERGEANTS MAJOR

CSM J. F. LaVoie	1 Jul 1973 - 31 May 1977
CSM H. F. Wren	1 Jun 1977 - 13 Aug 1980
CSM J. B. Craft	14 Aug 1980 - 13 Aug 1983
CSM W. J. H. Peters	14 Aug 1983 - 28 Aug 1987
CSM H. J. Goodwin	16 Oct 1987 - 30 Apr 1991
CSM W. E. Woodall	1 May 1991 -

General William E. DePuy
Commanding General
1 July 1973 - 30 June 1977



General Donn A. Starry
Commanding General
1 July 1977 — 31 July 1981

General Glenn K. Otis
Commanding General
1 August 1981 — 10 March 1983

General William R. Richardson
Commanding General
11 March 1983 — 29 June 1986

General Carl E. Vuono
Commanding General
30 June 1986 — 11 June 1987

General Maxwell R. Thurman
Commanding General
29 June 1987 — 1 August 1989

General John W. Foss
Commanding General
2 August 1989 — 22 August 1991

General Frederick M. Franks, Jr.
Commanding General
23 August 1991 —

LTG Orwin C. Talbott
Deputy Commanding General
1 July 1973 — 31 August 1975

LTG Frank A. Camm
Deputy Commanding General
1 September 1975 — 31 August 1977

LTG John R. Thurman III
Deputy Commanding General
1 September 1977 — 30 September 1979

LTG William R. Richardson
Deputy Commanding General
9 October 1979 — 23 August 1981

MG Burnside E. Huffman, Jr.
Chief of Staff
1 July 1973 — 27 July 1975

MG Robert C. Hixon
Chief of Staff
28 July 1975 — 30 June 1979

MG John B. Blount
Chief of Staff
1 July 1979 — 4 July 1983

MG Robert H. Forman
Chief of Staff
5 July 1983 — 7 July 1985

MG Carl H. McNair, Jr.
Chief of Staff
8 July 1985 — 3 September 1987

MG Raymond E. Haddock
Chief of Staff
4 September 1987 — 20 May 1988

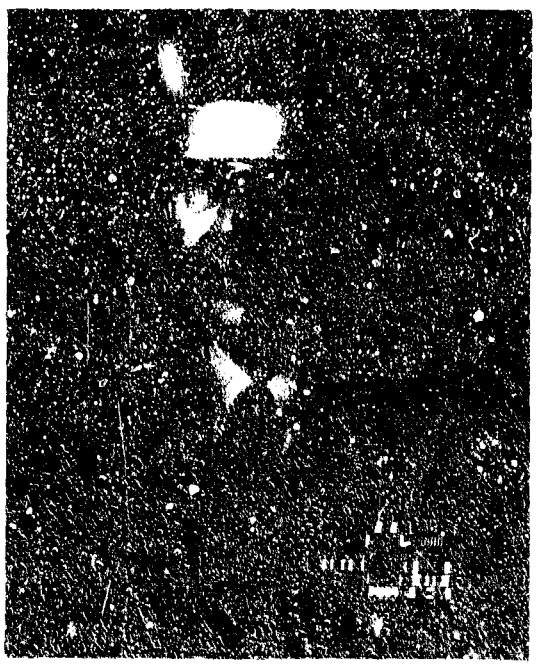
MG Jack B. Farris, Jr.
Chief of Staff
17 June 1988 — 27 July 1989

MG James W. van Loben Sels
Deputy Commanding General/Chief of Staff
28 July 1989 — 13 September 1991

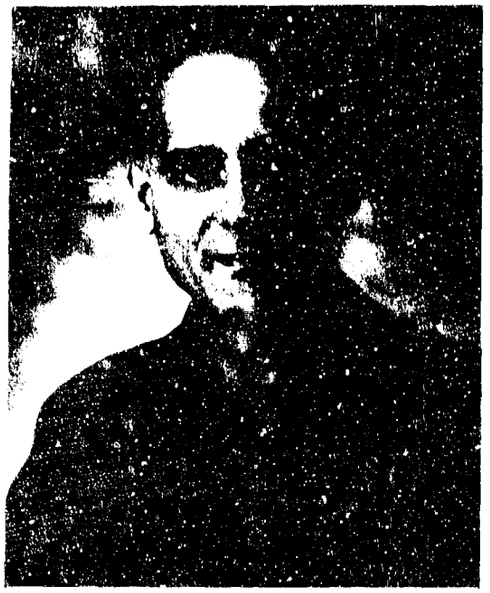
MG Donald M. Lionetti
Deputy Commanding General/Chief of Staff
12 November 1991 — 20 August 1992

MG John P. Herring
Deputy Commanding General/Chief of Staff
8 September 1992 —

LTG Howard F. Stone
Deputy Commanding General for
Combined Arms
24 August 1991 — 6 July 1992



LTG Jack N. Merritt
Deputy Commanding General for
Combined Arms
26 June 1992 — 6 June 1993



LTG Carl E. Vuono
Deputy Commanding General
for Combined Arms
24 June 1983 — 9 June 1985

LTG Robert W. RisCassi
Deputy Commanding General
for Combined Arms
10 June 1985 — 9 June 1986

LTG Gerald T. Bartlett
Deputy Commanding General for
Combined Arms
10 June 1986 — 13 July 1988

LTG Leonard P. Wishart III
Deputy Commanding General for
Combined Arms
14 July 1988 — 6 August 1990

LTG Leonard P. Wishart III
Deputy Commanding General/
Commander Combined Arms Command
6 August 1990 — 15 August 1991

LTG Wilson A. Shoffner
Deputy Commanding General/
Commander Combined Arms Command
16 August 1991 —

LTG Julius W. Becton, Jr.
Deputy Commanding General
for Training
21 July 1981 — 26 August 1983

LTG Charles W. Bagnal
Deputy Commanding General
for Training
31 August 1983 — 20 June 1985

LTG Robert H. Forman
Deputy Commanding General
for Training
21 June 1985 — 31 August 1987

LTG John S. Crosby
Deputy Commanding General
for Training
1 September 1987 — 31 August 1989

LTG Robert L. Bergquist
Deputy Commanding General
for Logistics
4 April 1983 — 10 January 1986

LTG William G. Tuttle
Deputy Commanding General
for Logistics
11 January 1986 — 25 September 1989

LTG Leon E. Salomon
Deputy Commanding General
for Logistics
25 September 1989 — 5 August 1990

LTG Leon E. Salomon
Deputy Commanding General /Commander
Combined Arms Support Command
6 August 1990 — 8 January 1992

LTG Samuel N. Wakefield
Deputy Commanding General/ Commander
Combined Arms Support Command
9 January 1992—

Photograph
not available

MG G. Smith
Deputy Commanding General
for Mobilization
1 July 1979 — 30 June 1983

MG Louis H. Ginn, III
Deputy Commanding General
for Mobilization
11 July 1983 — 19 July 1987

MG James M. Miller
Deputy Commanding General
for Army National Guard
1 January 1989 — 31 August 1992

MG George W. Schuler
Deputy Commanding General for
Army National Guard
1 September 1992 -

MG Rudolph E. Hammond
Deputy Commanding General
for U.S. Army Reserve
20 July 1987 — 30 January 1991

MG James H. Mukoyama, Jr.
Deputy Commanding General for U.S. Army Reserve
1 May 1991 --

Appendix B

TRADOC INSTALLATION COMMANDERS 1973-1993

U.S. ARMY ENGINEER CENTER & FORT BELVOIR[1]

MG R. R. Ploger	1 Jul 73 - 30 Aug 73
MG H. R. Parfitt	31 Aug 73 - 27 Mar 75
MG J. A. Johnson	28 Mar 75 - 2 Aug 77
MG J. L. Kelly	3 Aug 77 - 30 Sep 80
MG M. A. Noah	1 Oct 80 - 18 Mar 82
MG J. N. Ellis	19 Mar 82 - 20 Aug 84
MG R. S. Kem	21 Aug 84 - 8 Jul 87
MG W. A. Reno	9 Jul 87 - 1 Jun 88

U.S. ARMY ADMINISTRATION CENTER & FORT BENJAMIN HARRISON[2]

MG L. B. Taylor	1 Jul 73 - 30 Sep 73
MG E. P. Forrester	1 Oct 73 - 30 Jun 75
MG W. L. Mundie	1 Jul 75 - 30 May 78
MG B. L. Harrison	12 Jul 78 - 31 Aug 79
MG S. L. Melner	1 Oct 79 - 30 Jun 80

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1 Fort Belvoir transferred to Military District of Washington, 1 Oct 88. Engineer Center and School relocated to Fort Leonard Wood, Mo., 1 Jun 88.

2 Reorganized as U.S. Army Soldier Support Center and Fort Benjamin Harrison, Ind., 3 Jun 80.

U.S. ARMY SOLDIER SUPPORT CENTER & FORT BENJAMIN HARRISON

MG S. L. Melner	1 Jul 80 - 24 Jun 81
MG D. W. French	24 Jun 81 - 28 Jun 85
MG M. G. Edmonds	28 Jun 85 - 27 Jul 88
MG S. R. Woods, Jr.	27 Jul 88 - 31 Aug 90
MG R. E. Brooks	31 Aug 90 -

U.S. ARMY INFANTRY CENTER & FORT BENNING

MG T. M. Tarpley	1 Jul 73 - 28 Aug 75
MG W. Latham	28 Aug 75 - 24 Jul 77
MG W. J. Livsey, Jr.	25 Aug 77 - 14 Jun 79
MG D. E. Grange, Jr.	15 Jun 79 - 3 Aug 81
MG R. L. Wetzel	4 Aug 81 - 13 Jul 83
MG J. J. Lindsay	14 Jul 83 - 29 Mar 84
MG J. W. Foss	29 Mar 84 - 7 Jan 86
MG E. N. Burba, Jr.	7 Jan 86 - 19 Jun 87
MG K. C. Leuer	19 Jun 87 - 7 Sep 88
MG M. F. Spigelmire	21 Sep 88 - 19 Jun 90
MG C. J. Cavezza	19 Jun 90 - 4 Oct 91
MG J. A. White	4 Oct 91 -

U.S. ARMY AIR DEFENSE ARTILLERY CENTER & FORT BLISS

MG C. J. LeVan	1 Jul 73 - 11 Jun 76
MG R. J. Lunn	11 Jun 76 - 7 Sep 77
MG J. J. Koehler, Jr.	7 Sep 77 - 11 Oct 79
MG J. B. Oblinger, Jr.	11 Oct 79 - 23 Jun 82
MG J. P. Maloney	23 Jun 82 - 30 Aug 85
MG D. R. Infante	30 Aug 85 - 6 Sep 89
BG J. M. Garner	6 Sep 89 - 6 Nov 89
MG D. M. Lionetti	6 Nov 89 - 6 Nov 91
MG J. A. Little	6 Nov 91 -

CARLISLE BARRACKS

MG F. M. Davis, Jr.	1 Jul 73 - 26 Jun 74
MG D. C. Smith, Jr.	1 Jul 74 - 31 Jul 77
MG R. G. Yerks	1 Aug 77 - 31 Jul 78
MG D. C. Smith, Jr.	1 Aug 78 - 30 Jun 80

MG J. N. Merritt	1 Jul 80 - 22 Jul 82
MG R. D. Lawrence	2 Aug 82 - 22 Sep 83
MG T. F. Healy	26 Oct 83 - 19 Jun 85
MG J. E. Thompson	20 Jun 85 - 30 Sep 87
MG H. D. Graves	1 Oct 87 - 7 Jul 89
MG P. G. Cerjan	10 Jul 89 - 18 Aug 91
MG W. A. Stofft	19 Aug 91 -

U.S. ARMY TRAINING CENTER & FORT DIX[3]

MG D. A. Bert	1 Jul 73 - 9 Feb 74
MG T. U. Greer	13 Feb 74 - 10 Aug 75
MG W. A. Patch	2 Sep 75 - 30 Jul 78
MG R. W. Sennewald	30 Jul 78 - 17 Jan 80
MG C. K. Heiden	17 Jan 80 - 20 Feb 81
MG R. H. Forman	20 Feb 81 - 29 Jun 83
MG T. W. Kelley	30 Jun 83 - 29 May 86
MG R. Negris	30 May 86 - 29 Jul 88
MG J. W. Wurman	29 Jul 88 - 19 Jun 91
MG J. P. Herrling	15 Jul 91 - 3 Sep 92

U.S. ARMY TRANSPORTATION CENTER & FORT EUSTIS

MG J. C. Fuson	1 Jul 73 - 25 Aug 75
MG A. G. Post	26 Aug 75 - 30 Jul 78
MG O. E. DeHaven	14 Aug 78 - 31 Jul 79
MG H. I. Small	20 Aug 79 - 4 Jul 83
MG A. L. Lilley, Jr.	5 Jul 83 - 8 Aug 85
MG F. E. Elam	9 Aug 85 - 25 Apr 88
MG S. N. Wakefield	26 Apr 88 - 8 Jan 92
MG K. P. Wykle	9 Jan 92 -

U.S. ARMY SIGNAL CENTER & FORT GORDON[4]

MG C. R. Myer	1 Aug 73 - 7 Sep 77
MG W. J. Hilsman	20 Oct 77 - 27 Sep 80
MG C. E. McKnight	28 Sep 80 - 26 May 82
MG H. J. Schumacher	18 Jun 82 - 26 Sep 83

3 Fort Dix transferred to U. S. Army Forces Command, 1 Oct 92. U.S. Army Training Center discontinued.
4 Initially U.S. Army School/Training Center, Fort Gordon, redesignated on 1 Oct 74.

MG T. D. Rodgers	27 Sep 83 - 2 Jun 86
MG B. R. Harris	3 Jun 86 - 2 Jun 88
MG L. M. Childs	3 Jun 88 - 17 May 90
MG R. E. Gray	18 May 90 - 16 Jul 90
MG P. A. Kind	17 Jul 90 - 14 Aug 91
MG R. E. Gray	15 Aug 91 -

U.S. ARMY INTELLIGENCE CENTER & FORT HUACHUCA

MG P. E. Menoher, Jr.	2 Oct 90 -

U.S. ARMY TRAINING CENTER & FORT JACKSON

MG R. C. Hixon	1 Jul 73 - 18 Jul 74
MG W. B. Caldwell III	19 Jul 74 - 16 Jul 76
MG R. L. Prillaman	17 Jul 76 - 14 Jul 77
BG J. B. Blount	15 Jul 77 - 22 Jun 79
MG L. E. Bolduc, Jr.	23 Jun 79 - 31 Aug 81
MG A. B. Akers	1 Sep 81 - 30 Jun 84
MG R. B. Solomon	6 Jul 84 - 23 Jun 87
MG G. M. Krausz	24 Jun 87 - 3 Aug 89
MG J. A. Renner	4 Aug 89 - 10 Dec 91
MG R. F. Siegfried	10 Dec 91 -

U.S. ARMY ARMOR CENTER & FORT KNOX

MG D. A. Starry	1 Jul 73 - 7 Feb 76
MG J. W. McEnery	28 Feb 76 - 17 Jan 78
MG T. P. Lynch	18 Jan 78 - 6 Jun 80
MG L. C. Wagner, Jr.	7 Jun 80 - 4 Jan 83
MG F. J. Brown	4 Jan 83 - 20 Jun 86
MG J. M. Tait	20 Jun 86 - 28 Aug 89
MG T. E. Foley	29 Aug 89 - 20 Jul 92
MG P. E. Funk	20 Jul 92 -

U.S. ARMY COMBINED ARMS CENTER AND FORT LEAVENWORTH[5]

MG J. H. Cushman	1 Jul 73 - 31 Aug 77
LTG J. R. Thurman III	1 Sep 77 - 30 Sep 79
LTG W. R. Richardson	9 Oct 79 - 23 Aug 81

5 Redesignated U.S. Army Combined Arms Command, Fort Leavenworth, 6 Aug 90.

LTG H. F. Stone	24 Aug 81 - 25 Jun 82
LTG J. W. Merritt	26 Jun 82 - 6 Jun 83
LTG C. E. Vuono	24 Jun 83 - 9 Jun 85
LTG R. W. RisCassi	10 Jun 85 - 9 Jun 86
LTG C. T. Bartlett	10 Jun 86 - 13 Jul 88
LTG L. P. Wishart III	14 Jul 88 - 5 Aug 90

U.S. ARMY COMBINED ARMS COMMAND AND FORT LEAVENWORTH

LTG L. P. Wishart III	6 Aug 90 - 15 Aug 91
LTG W. A. Shoffner	16 Aug 91 -

U.S. ARMY LOGISTICS CENTER, FORT LEE[6]

MG E. M. Graham, Jr.	1 Jul 73 - 28 Jul 77
MG H. D. Smith, Jr.	29 Jul 77 - 30 Jul 79
MG O. E. DeHaven	31 Jul 79 - 15 Jul 81
MG W. K. Hunzeker	15 Jul 81 - 3 Apr 83
LTG R. L. Bergquist	4 Apr 83 - 10 Jan 86
LTG W. G. T. Tuttle	11 Jan 86 - 25 Sep 89
LTG L. E. Salomon	25 Sep 89 - 5 Aug 90

U.S. ARMY COMBINED ARMS SUPPORT COMMAND AND FORT LEE

LTG L. E. Salomon	6 Aug 90 - 8 Jan 92
LTG S. N. Wakefield	9 Aug 92 -

U.S. ARMY QUARTERMASTER CENTER AND FORT LEE[7]

MG D. Van Lydegraf	1 Jul 73 - 28 Sep 77
MG F. C. Sheffey	29 Sep 77 - 16 Sep 80
MG W. K. Hunzeker	17 Sep 80 - 14 Jul 81
MG H. L. Dukes, Jr.	15 Jul 81 - 28 Mar 84
MG E. L. Stillions, Jr.	29 Mar 84 - 14 Jun 87
MG W. J. McLean	15 Jun 87 - 13 Jul 89
BG P. J. Vanderploog	14 Jul 89 - 3 Jun 91
BG J. J. Cusick	4 Jun 91 -

6 On 3 Jan 89 realigned as U.S. Army Logistics Center and Fort Lee. Redesignated U.S. Army Combined Arms Support Command and Fort Lee, Va, 6 Aug 90.

7 On 3 Jan 89 redesignated U.S. Army Quartermaster Center & School, Fort Lee.

U.S. ARMY TRAINING CENTER ENGINEER AND FORT LEONARD WOOD[8]

MG R. P. Young	1 Jul 73 - 31 Jul 74
MG J. G. Waggener	20 Aug 74 - 17 Jul 76
MG R. L. Harris	19 Aug 76 - 11 Jun 78
MG W. E. Peel	15 Aug 78 - 15 Aug 79
MG L. W. Prentiss, Jr.	16 Aug 79 - 30 Sep 81
MG C. J. Fiala	3 Nov 81 - 23 May 84
MG J. H. Moellering	12 Jul 84 - 9 Sep 85
MG J. W. van Loben Sels	21 Oct 85 - 18 Jul 88
MG D. R. Schroeder	18 Jul 88 - 12 Jun 91
BG J. N. Ballard	12 Jun 91 - 19 Jul 91
MG D. W. Christman	19 Jul 91 -

U.S. ARMY SCHOOL TRAINING CENTER, FORT MCCLELLAN[9]

BG A. R. Escola	23 Jul 73 - 16 Aug 74
MG J. P. Kingston	3 Sep 74 - 14 Oct 76

U.S. ARMY MILITARY POLICE SCHOOL/TRAINING CENTER, FORT MCCLELLAN[10]

MG J. P. Kingston	14 Oct 76 - 12 Nov 76
MG E. R. Ochs	22 Nov 76 - 17 May 78
MG M. E. Clarke	18 May 78 - 14 Dec 79

U.S. ARMY MILITARY POLICE & CHEMICAL SCHOOLS/TRAINING CENTER & FORT MCCLELLAN[11]

MG M. E. Clarke	15 Dec 79 - 10 Aug 80

U.S. ARMY CHEMICAL & MILITARY POLICE CENTERS & FORT MCCLELLAN

MG J. D. Granger	11 Aug 80 - 30 Sep 82
MG A. A. Nord	1 Oct 82 - 24 Jul 85
MG G. G. Watson	25 Jul 85 - 30 Jul 89

8 Engineer Center and School relocated from Fort Belvoir, 1 Jun 88. Reorganized as U.S. Army Engineer Center & Fort Leonard Wood, 2 Oct 88.
9 Reorganized as U.S. Army Military Police School/Training Center & Fort McClellan, 14 Oct 76.
10 Reorganized as U.S. Army Military Police & Chemical Schools/ Training Center and Fort McClellan, 14 Dec 79.
11 Reorganized as U.S. Army Chemical & Military Police Centers & Fort McClellan, 14 Dec 79.

MG C. A. Hines	31 Jul 89 - 13 Aug 92
MG R. D. Orton	13 Aug 92 -

FORT MONROE

COL B. Big	1 Jul 73 - 23 Jan 76
COL B. M. Hayward	22 Jan 76 - 29 Oct 78
COL W. B. Bramblet	30 Oct 78 - 8 Aug 82
COL R. E. Mackin	9 Aug 82 - 16 Aug 84
COL S. H. Kelley	17 Aug 84 - 22 Jul 87
COL E. F. Scott	23 Jul 87 - 14 Sep 90
COL R. R. Wolfe	15 Sep 90 - 17 Feb 92
COL N. E. Nelson	18 Feb 92 - 3 Jun 93
COL W. B. Clark	4 Jun 93 -

U.S. ARMY TRAINING CENTER & FORT ORD

MG R. G. Gard, Jr.	1 Jul 73 - 21 Sep 75
MG M. C. Ross	22 Sep 75 - 28 Oct 76

U.S. ARMY TRAINING CENTER, INFANTRY & FORT POLK

MG C. E. Spragins	1 Jul 73 - 17 Dec 74
MG R. Haldane	7 Jan 75 - 1 Jul 75

U.S. ARMY AVIATION CENTER & FORT RUCKER

MG A. M. Burnett, Jr.	1 Jul 73 - 7 Sep 73
MG W. J. Maddox, Jr.	22 Sep 73 - 30 Jun 76
MG J. C. Smith	19 Jul 76 - 8 Dec 78
MG J. H. Merryman	11 Dec 78 - 27 Jul 80
MG C. H. McNair, Jr.	28 Jul 80 - 17 Jun 83
MG B. J. Maddox	17 Jun 83 - 16 Jan 85
MG E. D. Parker	17 Jan 85 - 3 Oct 89
MG R. Ostovich III	3 Oct 89 - 22 Jul 91
MG J. D. Robinson	23 Jul 91 -

U.S. ARMY FIELD ARTILLERY CENTER & FORT SILL

MG D. E. Ott	1 Jul 73 - 13 Oct 76
MG(P) D. R. Keith	14 Oct 76 - 21 Oct 77
MG J. N. Merritt	26 Oct 77 - 27 Jun 80
MG E. A. Dinges	28 Jun 80 - 27 Sep 82

MG J. S. Crosby	28 Sep 82 - 3 Jun 85
MG E. S. Korpal	4 Jun 85 - 20 Aug 87
MG R. J. Hallada	21 Aug 87 - 18 Jul 91
MG F. F. Marty	19 Jul 91 -

Appendix C

TRADOC SCHOOL COMMANDANTS 1973-1993

MILITARY SCHOOLS AND COLLEGES

DEFENSE INFORMATION SCHOOL (Fort Benjamin Harrison, Ind.)

COL W. N. Moore, Jr.	1 Jul 73 - 25 Aug 74
COL R. D. Bentley	15 Oct 74 - 1 Aug 77
COL D. E. Gelke	1 Aug 77 - 1 Sep 81
COL B. Spangler	1 Sep 81 - 1 Oct 83
COL G. L. Werner	1 Oct 83 - 1 Jan 86
COL E. M. McDonald	1 Jan 86 - 14 Mar 89
COL R. O. Hahn	15 Mar 89 - 1 Oct 92
COL K. Wells	1 Oct 92 -

DEFENSE LANGUAGE INSTITUTE (Washington, D.C.)

COL J. F. Hook	1 Jul 73 - 27 Sep 74
COL J. R. Koenig	27 Sep 74 - 1 Oct 74

DEFENSE LANGUAGE INSTITUTE, FOREIGN LANGUAGE CENTER (Presidio of Monterey, Calif.)[1]

COL J. F. Hook	1 Jul 73 - 27 Sep 74
COL J. R. Koenig	28 Sep 74 - 27 Aug 75
COL S. L. Stapleton	28 Aug 75 - 21 Sep 78

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1 DLI Headquarters, Anacostia Annex, Washington, DC supervised four separate activities. 1) DLI West Coast Branch, Presidio of Monterey, Ca.; 2) DLI East Coast Branch, (co-located with HQ DLI), Anacostia Annex, Washington, DC; 3) DLI Southwest Branch, Fort Bliss, Tex. (inactivated 1 Jul 73); and 4) DLI English Language Branch, Lackland Air Force Base. Tex. HQ DLI and East Coast Branch relocated to Presidio of Monterey, 1 Oct 74. HQ DLI, East Coast and West Coast were disestablished and reestablished as provisonal commands during transition to Monterey, Ca. until 30 Jun 75. DLI English Language Center reverted to USAF control Oct 76. DLI Monterey redesignated DLI Foreign Language Center, 1 Jan 76.

COL T. G. Foster III	22 Sep 78 - 29 Jun 81
COL D. A. McNerney	30 Jun 81 - 29 Aug 85
COL M. R. Bullard	30 Aug 85 - 14 Oct 87
COL T. R. Poch	15 Oct 87 - 27 Sep 88
COL R. I. Cowger	28 Sep 88 - 10 Aug 89
COL(P) D. C. Fischer, Jr.	11 Aug 89 - 21 Jan 93
COL V. Sobichevshy	22 Jan 93 -

U.S. ARMY ELEMENT, DEFENSE LANGUAGE INSTITUTE, ENGLISH LANGUAGE CENTER (Lackland Air Force Base, Tex.)

COL J. R. Shaw

U.S. ARMY COMMAND & GENERAL STAFF COLLEGE (Deputy Commandant) (Fort Leavenworth, Kan.)

BG B. L. Harrison	1973 - 1976
BG W. C. Louisell	1976 - 1977
BG R. Arter	1977 - 1979
BG R. H. Forman	1979 - 1981
MG C. B. Saint, Jr.	Jun 81 - Oct 83
MG D. Palmer	Oct 83 - May 85
MG F. M. Franks, Jr.	Jun 85 - Mar 87
MG G. R. Sullivan	Mar 87 - Jul 88
MG B. H. Peay, III	Jul 88 - Jul 89
MG J. E. Miller	Jul 89 - Jul 91
MG W. M. Steele	Jul 91 - May 93
BG R. W. House	May 93 -

U.S. ARMY SERGEANTS MAJOR ACADEMY (Fort Bliss, Tex.)

COL K. R. Morton	1 Jul 73 - 31 Jan 75
COL(P) W. F. Honeycutt	28 Feb 75 - 13 Jun 75
COL R. M. McGraw	14 Jun 75 - 1 Jul 76
COL J. E. Crow	2 Jul 76 - 31 Aug 79
COL J. Ostrowidzki	1 Sep 79 - 26 Jul 83
COL F. M. Chandler, Jr.	27 Jul 83 - 27 Jun 86
COL R. C. Edwards	28 Jun 86 - 12 Sep 88
COL(P) K. W. Simpson	13 Sep 88 - 8 Jul 90
COL F. E. Van Horn	9 Jul 90 -

ARMY LOGISTICS MANAGEMENT COLLEGE (Fort Lee, Va.)[2]

COL T. C. Wakefield	1 Oct 91 - 27 May 93
COL R. E. Cadorette	27 May 93 -

ARMY MANAGEMENT STAFF COLLEGE (Fort Belvoir, Va.)[3]

COL A. F. Bondshu	1990 - 22 Jun 92
COL M. D. Clark	22 Jun 92 -

BRANCH AND SPECIALIST SCHOOLS

ADJUTANT GENERAL (Fort Benjamin Harrison, Ind.)[4]

COL F. C. Foster, Jr.	Sep 86 - 15 Jul 90
COL J. R. Daugherty	15 Jul 90 - 1 Jul 91
COL E. M. Simms	1 Jul 91 - 20 Mar 92
COL J. R. Daugherty	20 Mar 92 - 12 Jul 92
COL M. J. Goodman	13 Jul 92 -

AIR DEFENSE ARTILLERY (Fort Bliss, Tex.)

MG C. J. LeVan	1 Jul 73 - 13 Jun 76
MG R. J. Lunn	14 Jun 76 - 6 Sep 77
MG J. J. Koehler, Jr.	7 Sep 77 - 10 Oct 79
MG J. B. Oblinger	11 Oct 79 - 22 Jun 82
MG J. P. Maloney	23 Jun 82 - 30 Aug 85[5]
MG D. R. Infante	30 Aug 85 - 6 Sep 89
MG D. M. Lionetti	6 Sep 89 - 6 Nov 91
MG J. H. Little	7 Nov 91 -

ARMOR (Fort Knox, Ky.)

MG D. A. Starry	1 Jul 73 - 7 Feb 76
MG J. W. McEnery	28 Feb 76 - 17 Jun 78
MG T. P. Lynch	18 Jun 78 - 6 Jun 80
MG L. C. Wagner, Jr.	7 Jun 80 - 4 Jan 83
MG F. J. Brown	4 Jan 83 - 20 Jun 86

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2 Transferred from the Army Materiel Command to TRADOC, 1 Oct 91.
3 Initial courses convened Baltimore, Md., Jul 86. Courses convened at Fort Belvoir, Va. with full-time commandant, 1990.
4 Aligned under Institute of Administration and sucessor organizations 1 Jul 73 - 1 Oct 90. 1973-1986 data not available.
5 Redesignated from Air Defense School, 1 Jan 83.

MG T. H. Tait	20 Jun 86 - 28 Aug 89
MG T. C. Foley	29 Aug 89 - 20 Jul 92
MG P. E. Funk	20 Jul 92 -

AVIATION (Fort Rucker, Ala.)

MG A. M. Burnett, Jr.	1 Jul 73 - 7 Sep 73
MG W. J. Maddox, Jr.	22 Sep 73 - 30 Jun 76
MG J. C. Smith	19 Jul 76 - 8 Dec 78
MG J. H. Merryman	11 Dec 78 - 27 Jul 80
MG C. H. McNair, Jr.	28 Jul 80 - 17 Jun 83
MG B. J. Maddox	17 Jun 83 - 16 Jan 85
MG E. D. Parker	17 Jan 85 - 3 Oct 89
MG R. Ostovich III	3 OCt 89 - 22 Jul 91
MG J. D. Robinson	23 Jul 91 -

AVIATION LOGISTICS (Fort Eustis, Va.)[6]

MG E. D. Parker	1 Oct 88 - 3 Oct 89
MG R. Ostovich III	3 Oct 89 - 22 Jul 91
MG J. D. Robinson	23 Jul 91 -

CHAPLAIN SCHOOL (Fort Monmouth, N.J.)

Ch. (COL) C. R. Lindsey	1 Jul 73 - 25 Mar 75[7]
Ch. (COL) J. J. Murphy	26 Jan 76 - 15 Sep 76
Ch. (COL) C. T. Weathers	16 Sep 76 - 30 Nov 76
Ch. (COL) C. R. Kriete	1 Dec 76 - 5 Nov 78
Ch. (COL) R. V. Peters	6 Nov 78 - 25 Mar 81[8]
Ch. (COL) R. R. Tupy, Jr.	26 Mar 81 - 14 Dec 84
Ch. (COL) C. J. McDonnell	15 Dec 84 - 8 Sep 86
Ch. (COL) C. J. Clanton	9 Sep 86 - 26 Jul 89
Ch. (COL) B. L. Windmiller	27 Jul 89 - 31 Jul 92
Ch. (COL) B. H. Lieving	31 Jul 92 -

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6 Established 1 Oct 83. Merged as Transportation and Aviation Logistics Schools 10 Jan 84. Separated from merged status and redesignated Aviation Logistics School 1 Oct 88 under direct authority of U.S. Army Aviation Center, but remaining in place at Fort Eustis. 1983 data unavailable. For 1984-1988 data, see Transportation School listing.

7 Redesignated, U.S. Army Chaplain Center & School and relocated from Fort Hamilton, N.Y., to Fort Wadsworth, Staten Island, N.Y., 15 Aug 74.

8 Relocated to Fort Monmouth, N.J., 6 Nov 78.

CHEMICAL (Fort McClellan, Ala.)

MG M. E. Clarke	14 Sep 79 - 10 Aug 80[9]
MG J. D. Granger	11 Aug 80 - 1980
BG G. G. Watson	1981 - 30 Sep 82
MG A. A. Nord	1 Oct 82 - 24 Jul 85
MG G. G. Watson	25 Jul 85 - 27 Jul 89
MG R. D. Orton	28 Jul 89 -

ENGINEER (Fort Leonard Wood, Mo.)

MG R. R. Ploger	1 Jul 73 - 30 Aug 73
MG H. R. Parfitt	31 Aug 73 - 27 Mar 75
MG J. A. Johnson	28 Mar 75 - 2 Aug 77
MG J. L. Kelly	3 Aug 77 - 30 Sep 80
MG M. W. Noah	1 Oct 80 - 18 Mar 82
MG J. N. Ellis	19 Mar 82 - 20 Aug 84
MG R. S. Kem	21 Aug 84 - 8 Jul 87
MG W. H. Reno	9 Jul 87 - 18 Jul 88[10]
MG D. R. Schroeder	18 Jul 88 - 12 Jun 91
BG J. N. Ballard	12 Jun 91 - 19 Jul 91
MG D. W. Christman	19 Jul 91 -

FIELD ARTILLERY (Fort Sill, Okla.)

MG D. E. Ott	1 Jul 73 - 13 Oct 76
MG D. R. Keith	14 Oct 76 - 21 Oct 77
MG J. N. Merritt	22 Oct 77 - 27 Jun 80
MG E. A. Dinges	28 Jun 80 - 27 Sep 82
MG J. S. Crosby	28 Sep 82 - 3 Jun 85
MG E. S. Korpal	4 Jun 85 - 20 Aug 85
MG R. J. Hallada	21 Aug 85 - 18 Jul 91
MG F. F. Marty	19 Jul 91 - 14 Jun 93
MG J. A. Dubia	15 Jun 93 -

9 Chemical School separated from Ordance and Chemical Center and School, Aberdeen Proving Ground, Md., and relocated and established as Chemical School, Fort McClellan, Ala., 14 Sep 79.

10 Relocated from Fort Belvoir to Fort Leonard Wood, 1 Jun 88.

FINANCE (Fort Benjamin Harrison, Ind.)[11]

COL H. W. Neill, Jr.	22 Jun 87 - 15 Jun 89
COL J. C. Rogers	15 Jun 89 - 29 Jun 90
COL J. D. Heard	30 Jun 90 - 18 Aug 92
COL R. H. Dowden, Jr.	19 Aug 92 -

INFANTRY (Fort Benning, Ga.)

MG W. Latham	1 Jul 73 - 28 Aug 75
MG T. M. Tarpley	28 Aug 75 - 24 Jul 77
MG W. J. Livsey, Jr.	25 Aug 77 - 14 Jun 79
MG D. E. Grange, Jr.	15 Jun 79 - 3 Aug 81
MG R. L. Wetzel	4 Aug 81 - 13 Jul 83
MG J. J. Lindsay	14 Jul 83 - 29 Mar 84
MG J. W. Foss	29 Mar 84 - 7 Jan 86
MG E. N. Burba, Jr.	7 Jan 86 - 19 Jun 87
MG K. C. Leuer	19 Jun 87 - 17 Sep 88
MG M. F. Spigelmire	21 Sep 88 - 19 Jun 90
MG C. J. Cavezza	19 Jun 90 - 4 Oct 91
MG J. A. White	4 Oct 91 -

INSTITUTE FOR MILITARY ASSISTANCE (Fort Bragg, N.C.)

BG M. D. Healy	1 Jul 73 - 19 Sep 75
MG R. C. Kingston	6 Oct 75 - 30 Jun 77
MG J. V. Mackmull	4 Jul 77 - 20 Jun 80
BG J. C. Lutz	20 Jun 80 - 14 Jul 83[12]

JOHN F. KENNEDY SPECIAL WARFARE CENTER (Fort Bragg, N.C.)

COL D. L. Pemberton	14 Jul 83 - 19 Dec 83
BG(P) R. D. Wiegand	19 Dec 83 - 27 Aug 85
BG J. A. Guest	28 Aug 85 - 30 Jun 88
BG D. J. Baratto	30 Jul 88 - 20 Jun 90[13]

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11 Aligned under Institute of Administration and successor ogranizations 1 Jul 73 - 1 Oct 90. 1973-1987 data not available.

12 Reorganized as John F. Kennedy Special Warfare Center, 14 Jul 83.

13 Special Warfare Center transferred from TRADOC to U.S. Army Special Operations Command by order of 20 Jun 90, with its subordinate Special Operations School subject to guidance from TRADOC on organizational and curricular structure.

SPECIAL OPERATIONS (Fort Bragg, N.C.)

MG D. J. Baratto	20 Jun 90 - 24 Jul 92
MG S. Shachnow	24 Jul 92 -

INSTITUTE OF ADMINISTRATION (Fort Benjamin Harrison, Ind.)

MG L. B. Taylor	1 Jul 73 - 20 Sep 73
MG E. P. Forrester	1 Oct 73 - 30 Jun 75
BG(P) W. L. Mundie	1 Jul 75 - 30 Jun 76
COL F. B. Bowling	1 Jul 76 - 29 Jun 77
COL R. B. Adams	29 Jun 77 - 1 May 78
COL G. L. Roberts	1 May 78 - 30 Jun 80[14]

INSTITUTE OF PERSONNEL & RESOURCE MANAGEMENT (Fort Benjamin Harrison, Ind.)

COL L. N. Brockway, Jr.	1 Jul 80 - 1984[15]

SOLDIER SUPPORT INSTITUTE (Fort Benjamin Harrison, Ind.)

MG D. W. French	1984 - 28 Jun 85
MG M. O. Edmonds	28 Jun 85 - 27 Jul 88
MG S. R. Woods, Jr.	27 Jul 88 - 31 Aug 90
COL R. J. Bavis III	1 Sep 90 - 1 Oct 90[16]

INTELLIGENCE (Fort Devens, Mass.)

BG E. K. Kelley, Jr.	1 Oct 76 - 31 Jul 77[17]
BG A. N. Stubblebine III	1 Aug 77 - 30 Jun 79
BG J. A. Teal, Jr.	1 Jul 79 - 25 Dec 81
BG R. W. Wilmot	26 Dec 81 - 27 Aug 82
BG S. T. Weinstein	28 Aug 82 - 2 Aug 85
MG J. Parker, Jr.	3 Aug 85 - 15 Sep 89
MG P. E. Menoher, Jr.	15 Sep 89 -

14 Redesignated Institute of Personnel and Resource Management, 30 Jun 80.
15 Redesignated Soldier Support Institute, 1984.
16 Soldier Support Institute eliminated 1 Oct 90 in reorganization and realignment of Soldier Support Center under Combined Arms Support Command.
17 Transferred from U.S. Army Security Agency and established as U.S. Army Intelligence School, Fort Devens, 1 Oct 76.

INTELLIGENCE (Fort Huachuca, Ariz.)

BG H. H. Heistand	1 Jul 73 - 10 Aug 75
BG E. K. Kelley, Jr.	11 Aug 75 - 31 Jul 77
BG A. N. Stubblebine III	1 Aug 77 - 30 Jun 79
BG J. A. Teal, Jr.	1 Jul 79 - 25 Dec 81
BG R. W. Wilmot	26 Dec 81 - 27 Aug 82
BG S. T. Weinstein	28 Aug 82 - 2 Aug 85
MG J. Parker, Jr.	3 Aug 85 - 15 Sep 89
MG P. E. Menoher, Jr.	15 Sep 89 -

MILITARY POLICE (Fort McClellan, Ala.)

COL Z. V. Kortum	1 Jul 73 - 30 May 74
COL W. D. Getz	31 May 74 - 13 Oct 76[18]
MG J. P. Kingston	14 Oct 76 - 12 Nov 76
MG E. R. Ochs	22 Nov 76 - 17 May 78
MG M. E. Clarke	18 May 78 - 10 Aug 80
MG J. D. Granger	11 Aug 80 - 30 Sep 82
BG C. J. Archer	1 Oct 82 - 6 Jun 85
BG D. H. Stem	7 Jun 85 - 20 Jan 87
BG P. T. Berry	20 Mar 87 - 31 Jul 89
MG C. A. Hines	31 Jul 89 - 13 Aug 92
BG S. P. Chidichimo	13 Aug 92 -

ORDNANCE MISSILE & MUNITIONS (Redstone Arsenal, Ala.)

COL D. C. Smith	1 Nov 73 - 28 Jul 74
COL E. E. Hayes, Jr.	29 Jul 74 - 31 Jun 75
COL D. C. Smith	31 Jun 75 - 17 Nov 75
COL E. A. Rudd	17 Nov 75 - 31 Jul 78
COL H. L. Foradori	31 Jul 78 - 31 Jul 82
COL J. R. Cote	31 Jul 82 - 2 Jul 85[19]
COL P. A. Wilbur	6 Aug 85 - 9 Jan 88
COL E. G. Haggett	29 Jan 88 - 20 May 88
COl J. H. Griffin	20 May 88 - 2 Nov 89
COL J. R. Allred	2 Nov 89 - 6 Dec 89

18 Relocated from Fort Gordon, Ga., 1 Jul 75.
19 Redesignated from Missile and Munitions Center and School, 3 Aug 84.

COL J. W. Boddie, Jr.	6 Dec 89 - 13 Jan 92
COL W. W. Stirling	13 Jan 92 -

ORDNANCE (Aberdeen Proving Ground, Md.)

BG L. J. Faul	2 Jul 73 - 15 Dec 74
BG J. W. Sharp	16 Dec 74 - 5 May 77[20]
BG D. D. Ball	6 May 77 - 19 Mar 79
BG D. W. Stallings	2 Apr 79 - 19 Mar 81[21]
BG J. E. Rozier, Jr.	20 Mar 81 - 10 Nov 83
MG W. E. Potts	11 Nov 83 - 13 Jun 86
BG L. E. Solomon	14 Jun 86 - 11 Aug 88
BG J. W. Ball	12 Aug 88 - 12 Jul 90
MG J. E. Wilson	13 Jul 90 - 30 Jun 92
MG J. G. Coburn	1 Jul 92 -

ORGANIZATIONAL EFFECTIVENESS CENTER & SCHOOL (Fort Ord, Calif.)[22]

COL G. E. Palmer	30 Mar 77 - 31 Aug 78
LTC A. L. Denzler	1 Sep 78 - 12 Dec 78
BG J. C. Lutz	12 Dec 78 - 8 Jun 79[23]
COL W. L. Golden	9 Jun 79 - 1983
COL W. W. Witt	1983 - 1983
COL D. K. Griffin	1983 - 30 Sep 85[24]

ARMY PRIMARY HELICOPTER SCHOOL (Fort Wolters, Tex.)

COL H. M. Moore	1 Jul 73 - 30 Jun 74[25]

ARMY QUARTERMASTER (Fort Lee, Va.)

MG D. Van Lydegraf	1 Jul 73 - 28 Sep 77
MG F. C. Sheffey	29 Sep 77 - 16 Sep 80
MG W. K. Hunzeker	17 Sep 80 - 14 Jul 81
MG H. L. Dukes, Jr.	15 Jul 81 - 28 Mar 84

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20 Redesignated as U.S. Army Ordnance & Chemical Center & School, 30 Nov 76.
21 Redesignated U.S. Army Ordnance Center and School upon transfer of Chemical School to Fort McClellan, Ala., 14 Sep 79.
22 Established as the U.S. Army Organizational Effectiveness Training Center, 1 Jul 75. 1975-1977 data unavailable.
23 Redesignated Organizational Effectiveness Center and School, 2 Apr 79.
24 Discontinued, 1 Oct 85.
25 School discontinued, 30 Jun 74.

MG E. L. Stillions, Jr.	29 Mar 84 - 14 Jun 87
MG W. J. McLean	15 Jun 87 - 13 Jul 89
BG P. J. Vanderploog	14 Jul 89 - 3 Jun 91
BG J. J. Cusick	4 Jun 91 -

U.S. ARMY ELEMENT SCHOOL OF MUSIC (Norfolk, Va.)

COL O. McCown	Jul 73 - Jul 75
CPT R. W. Fairchild	Jul 75 - Sep 75
CPT R. C. Chalfant	Sep 75 - Mar 76
MAJ W. E. Clark	Mar 76 - Jul 78
CPT L. B. Shelburne, Jr.	Jul 78 - Feb 79
MAJ W. E. Clark	Feb 79 - Apr 79
CPT L. B. Shelburne, Jr.	Apr 79 - Jul 79
CPT V. R. DiFiore	Jul 79 - Aug 79
LTC M. E. Keefer	Aug 79 - Jul 84
MAJ W. M. Shipe, Jr.	Jul 84 - Jul 85
LTC J. H. Grogan, Jr.	Jul 85 - Jun 88
MAJ T. R. Davis	Jun 88 - Mar 93
MAJ R. A. McCormick	Mar 93 -

SCHOOL OF THE AMERICAS (Fort Benning, Ga.)[26]

COL M. A. Garcia	16 Apr 86 - 5 Jan 89
COL W. A. Depalo, Jr.	6 Jan 89 - 3 May 91
COL J. R. Feliciano	3 May 91 - 17 Mar 93
COL J. M. Alvarez	18 Mar 93 -

SIGNAL (Fort Monmouth, N.J.)

MG C. R. Myer	1 Jul 73 - 30 Jun 74[27]

COMMUNICATIONS-ELECTRONICS (Fort Monmouth, N.J.)

MG C. R. Myer	1 Jul 74 - 31 Oct 76[28]

SOUTHEASTERN SIGNAL (Fort Gordon, Ga.)[29]

COL E. R. Arnold	1 Jul 73 - 30 Jun 74

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26 Relocated from Fort Gulick, Canal Zone, Panama, to Fort Benning, Ga., and assigned to TRADOC, 16 Apr 86.
27 Redesignated U.S. Army Communications-Electronics School, 1 Jul 74.
28 Discontinued 31 Oct 76.
29 Redesignated U.S. Army Signal School, 1 Jul 74

SIGNAL (Fort Gordon, Ga.)

MG C. R. Myer	1 Jul 74 - 7 Sep 77
MG W. J. Hilsman	20 Oct 77 - 27 Sep 80
MG C. E. McKnight, Jr.	28 Sep 80 - 26 May 82
MG H. J. Schumacher	18 Jun 82 - 26 Sep 83
MG T. D. Rodgers	27 Sep 83 - 2 Jan 86
MG B. R. Harris	3 Jun 86 - 23 Jun 88
MG L. M. Childs	3 Jul 88 - 17 May 90
MG R. E. Gray	17 May 90 - 16 Jul 90
MG P. A. Kind	17 Jul 90 - 14 Aug 91
MG R. E. Gray	14 Aug 91 -

TRANSPORTATION (Fort Eustis, Va.)[30]

MG J. C. Fuson	1 Jul 73 - 25 Aug 75
MG A. G. Post	26 Aug 75 - 30 Jul 78
MG O. E. DeHaven	14 Aug 78 - 31 Jul 79
MG H. I. Small	20 Aug 79 - 4 Jul 83
MG A. L. Lilley, Jr.	5 Jul 83 - 8 Aug 85
MG F. E. Elam	9 Aug 85 - 25 Apr 88
MG S. N. Wakefield	26 Apr 88 - 8 Jan 92
MG K. R. Wykle	9 Jan 92 -

WOMEN'S ARMY CORP (Fort McClellan, Ala.)[31]

COL M. E. Clarke	1 Jul 73 - 4 Sep 74
COL S. R. Heinze	5 Sep 74 - 1 Jun 76
COL L. A. Rossi	2 Jun 76 - 31 Dec 76
(position not filled)	1 Jan 77 - 1 Apr 77[32]

30 Aviation Logistics School established/colocated with the Transportation School, Fort Eustis, 1 Oct 83. On 10 Jan 84 both schools merged as U.S. Army Transportation and Aviation Logistics Schools. On 1 Oct 88 Aviation Logistics School brought under control of U.S. Army Aviation Center, while remaining at Fort Eustis.

31 Source: Mattie E. Treadwell, *The Women's Army Corps 1945-1978* (Wash, DC; GPO, 1953), pp. 366 & 432.

32 Discontinued 1 Apr 77.

Appendix D

OTHER TRADOC ACTIVITIES - COMMANDERS 1973-1993

TEST ACTIVITIES

U.S. ARMY COMBAT DEVELOPMENTS EXPERIMENTATION CENTER (Fort Ord, Calif.)

BG E. R. Ochs	1 Jul 73 - 13 Jul 73
BG J. B. Starker	24 Jul 73 - 30 Sep 77
BG D. F. Packard	1 Oct 77 - 31 Jul 78
BG J. A. Hemphill	1 Aug 78 - 8 Jun 80
BG B. E. Doty	16 Jun 80 - 3 May 81
BG G. L. Brookshire	15 Jun 81 - 23 Mar 83
Dr. M. R. Bryson	23 Mar 83 - 1 Oct 87[1]

TEXCOM EXPERIMENTATION CENTER (Fort Ord, Calif.)

Dr. M. R. Bryson	1 Oct 87 - 8 Nov 90[2]

MODERN ARMY SELECTED SYSTEMS TEST EVALUATION & REVIEW (Fort Hood, Tex.)[3]

MG S. C. Meyer	1 Aug 74 - 31 Mar 76[4]

TRADOC COMBINED ARMS TEST ACTIVITY (Fort Hood, Tex.)

MG S. C. Meyer	1 Apr 76 - 7 Nov 77
MG J. N. Jaggers, Jr.	8 Nov 77 - 13 Aug 78

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1 Redesignated from U.S. Army Combat Developments Experimentation Command, 5 Jul 83.
2 Redesignated from U.S. Army Combat Developments Experimentation Center, 1 Oct 87. Transferred with TEXCOM to HQ, U.S. Army Operational Test and Evaluation Command, 8 Nov 90.
3 Transferred to TRADOC from Forces Command, 1 Aug 74.
4 Redesignated TRADOC Combined Arms Test Activity, 1 Apr 76.

MG W. R. Todd	13 Aug 78 - 16 Jul 80
MG L. C. Menetrey	22 Sep 80 - 3 May 81
MG B. E. Doty	3 May 81 - 16 Jun 83
MG J.E. Drummond	6 Jul 83 - 12 Feb 86
MG R.L. Drudik	24 Mar 86 - 30 Sep 87[5]

TRADOC TEST AND EXPERIMENTATION COMMAND
(Fort Hood, Tex.)

MG R. L. Drudik	1 Oct 87 - 23 Oct 88
MG W. C. Page, Jr.	24 Oct 88 - 8 Nov 90[6]

AIRBORNE, COMMUNICATIONS & ELECTRONICS BOARD
(Fort Bragg, N.C.)[7]

COL R. Apt	1 Jul 75 - 28 Aug 75
COL B. E. Wallace	29 Aug 75 - 1 Jul 78[8]

AIRBORNE BOARD (Fort Bragg, N.C.)

COL B. E. Wallace	1 Jul 78 - 30 Nov 78
COL G. G. Thomas, Jr.	30 Nov 78 - Jun 80
COL C. H. Ferguson	Jun 80 - Sep 81
COL W. R. Foley	Sep 81 - Jan 84[9]

AIRBORNE & SPECIAL OPERATIONS TEST BOARD
(Fort Bragg, N.C.)

COL W. T. Palmer	Mar 84 - Jul 87
COL G. S. Gilmore	Jul 87 - Jul 89[10]
COL F. J. Hillyard	Jul 89 - 8 Nov 90[11]

AIR DEFENSE ARTILLERY BOARD (Fort Bliss, Tex.)[12]

MG C. J. LeVan	1 Jul 75 - Jun 76
MG R. J. Lunn	Jun 76 - Jan 77
COL G. R. Giles	Jan 77 - Sep 77

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5 Reorganized and redesignated as Test and Experimentation Command (PROV), 1 Oct 87.
6 Provisonal from 1 Oct 87 - 2 Oct 88. Transferred to HQ Operational Test and Evaluation Command, 8 Nov 90.
7 Transferred from AMC, 1 Jul 75.
8 Reorganized 1 Jul 78, Communications & Electronics Board established at Fort Gordon. The redesignated Airborne Board remained at Fort Bragg.
9 Redesignated Airborne and Special Operations Test Board in 1984.
10 Redesignated TEXCOM Airborne and Special Operations Test Board, Jan 1988.
11 The TEXCOM Boards transferred with TEXCOM to HQ Operational Test and Evaluation Command, 8 Nov 90.
12 Transferred from AMC, 1 Jul 75.

COL J. C. Crosby	Sep 77 - Jul 81
COL W. M. Burch	Jul 81 - Jan 82
COL P. E. Holman	Jan 82 - Oct 83
COL R. M. McGraw	Oct 83 - Jun 84
COL J. M. Box	Jul 84 - Jun 86[13]
COL W. E. Pedigo	Jun 86 - Aug 88
COL F. P. Weichel	Aug 88 - Sep 90[14]
COL J. C. Yeisley	Sep 90 - 8 Nov 90[15]

ARMOR & ENGINEER BOARD (Fort Knox, Ky.)[16]

COL E. P. Davis	1 Jul 75 - 7 Jul 76
COL J. L. Pigg	8 Jul 76 - 5 Jun 81
COL J. L. Fleming	8 Jun 81 - 5 Jun 83
COL C. L. Shrader	14 Jul 83 - 13 Oct 84
COL B. E. Duncan, Jr.	13 Oct 84 - 28 Oct 88[17]
COL D. E. Deter	28 Oct 88 - 8 Nov 90

AVIATION BOARD (Fort Rucker, Ala.)[18]

COL R. A. Honifacio	1 Jul 76 - 22 Jan 82
COL R. A. Wagg, Jr.	22 Jan 82 - 21 May 84
LTC Robert E. Housley	21 May 84 - 10 Aug 84
LTC F. E. Burrow	15 Aug 84 - 24 Jun 85
COL S. E. Grett	24 Jun 85 - 31 Aug 87
COL G. H. Fredrick	31 Aug 87 - 31 Oct 88[19]
COL T. A. McFarlin	31 Oct 88 - 8 Nov 90

COMMUNICATIONS-ELECTRONICS BOARD (Fort Gordon, Ga.)[20]

COL D. E. Poe	1 Jul 78 - 1979
BG N. E. Archibald	1979 - 1980
LTC C. S. Dugan	1980 - 1980
COL E. W. Chandler	1980 - 1984

13 Redesignated from U.S. Army Air Defense Board, 1 Jul 84.
14 Redesignated TEXCOM Air Defense Artillery Board, 2 Oct 88.
15 TRADOC relinquished the TEXCOM Test Boards to HQ, U.S. Army Operational Test and Evaluation Command, 8 Nov 90.
16 Transferred from AMC, 1 Jul 75.
17 Redesignated TEXCOM Armor and Engineer Board, 2 Oct 88.
18 Transferred from AMC, 1 Jul 76.
19 Redesignated TEXCOM Aviation Board, 2 Oct 88.
20 Established at Fort Gordon 1 Jul 78 from elements of former Airborne, Communications and Electronics Board.

COL H. L. Peterson, Jr.	1984 - 1987
COL R. S. Snead	1987 - 1989[21]
COL F. J. Collins	1989 - 8 Nov 90

FIELD ARTILLERY BOARD (Fort Sill, Okla.)[22]

COL E. L. Weber, Jr.	1 Jul 75 - 22 Jun 76
COL E. A. Kelley, Jr.	23 Jun 76 - 6 Jan 77
COL B. Pogoloff	7 Jan 77 - 9 Aug 78
COL M. J. Kinne, Jr.	10 Aug 78 - 14 Oct 81
COL C. S. Nobles	15 Oct 81 - 2 Jul 86
COL W. J. Furtado	3 Jul 86 - 11 Jul 88
COL R. L. Elder	12 Jul 88 - 8 Nov 90[23]

INFANTRY BOARD (Fort Benning, Ga.)[24]

COL W. E. Meinzen	1 Jul 75 - May 78
COL J. C. Scott	May 78 - Jul 78
COL J. P. Leighton	Aug 78 - Nov 78
COL A. J. Kinzel	Dec 78 - Jan 82
COL R. A. Humphrey	Jan 82 - Aug 84
COL J. N. Meloy	Aug 84 - Jun 86
COL H. D. Watson	Jun 86 - Oct 87
LTC B. D. O'Leary	Oct 87 - Apr 88
COL B. E. Zais	Apr 88 - Jul 89[25]
COL A. J. Nahas	Jul 89 - Nov 90

INTELLIGENCE & SECURITY BOARD (Fort Huachuca, Ariz.)[26]

LTC J. R. Sutherland, Jr.	31 Mar 77 - 1 Oct 77
COL D. F. Pins	1 Oct 77 - 31 May 79
COL R. L. Dunlap	19 Jun 79 - 29 Oct 82
COL J. F. Phelps	29 Oct 82 - 30 Jun 86
COL J. D. Mrozinski	1 Jul 86 - Nov 90[27]

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21 Redesignated TEXCOM Communications-Electronics Board, 2 Oct 88.
22 Transferred from AMC, 1 Jul 75.
23 Redesignated TEXCOM Field Artillery Board, 2 Oct 88.
24 Transferred from AMC, 1 Jul 75.
25 Redesignated TEXCOM Infantry Board, 2 Oct 88.
26 Established 31 Mar 77.
27 Redesignated TEXCOM Intelligence and Security Board, 2 Oct 88.

U.S. ARMY COMBAT DEVELOPMENTS EXPERIMENTATION CENTER BOARD (Fort Lewis, Wash.)

COL A. B. Johnson	1984 - 1986[28]
COL J. E. Vanvleck	1986 - 1986
COL H. F. DeBolt	1986 - 1989
LTC C. Brockway	1989 - 1989
LTC P. J. Skells	1990 - Nov 90[29]

ANALYSIS ACTIVITIES

TRADOC SYSTEMS ANALYSIS ACTIVITY (White Sands Missile Range, N. Mex.)[30]

COL M. L. Haskin	Jul 74 - 1975
Dr. W. B. Payne	1976 - 30 Sep 82
Mr. L. F. Goode	1 Oct 82 - 30 Sep 86[31]

TRADOC OPERATIONS RESEARCH ACTIVITY (White Sands Missile Range, N. Mex.)[32]

Dr. W. B. Payne	1 Oct 82 - 30 Sep 86

U.S. ARMY COMBINED ARMS OPERATIONS RESEARCH ACTIVITY (Fort Leavenworth, Kan.)[33]

BG J. L. Ballantyne III	Oct 82 - Oct 83
COL A. E. West, Jr.	Oct 83 - Oct 83
COL S. Friend	Oct 83 - Nov 83
BG D. M. Maddox	Nov 83 - Jun 86
BG J. D. Robinson	Jun 86 - 30 Sep 86[34]

U.S. ARMY TRADOC ANALYSIS COMMAND (Fort Leavenworth, Kan.)[35]

BG J. D. Robinson	1 Oct 86 - Jul 88[36]
COL J. T. Pitman	Jul 88 - Sep 88
BG R. T. Howard	Sep 88 - Jun 90

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28 Established by CDEC at Fort Lewis, Wash., 1984.
29 Transferred with TEXCOM to HQ OPTEC, 8 Nov 90.
30 U.S. Army SAFEGUARD Systems Evaluation Agency reassigned, reorganized, and established under TRADOC as TRADOC Systems Analysis Activity, 1 Jul 74.
31 Realigned under TORA, 1 Oct 82.
32 Established 1 Oct 82. Disestablished 30 Sep 86.
33 Established 1 Oct 82.
34 Reorganized as TRADOC Analysis Center, Fort Leavenworth, 1 Oct 86.
35 Established 1 Oct 86 as TRADOC Analysis Center with all TRADOC analysis elements subordinate.
36 Redesignated TRADOC Analysis Command, 1987.

Mr. M. F. Bauman	Jun 90 - Dec 90
BG R. W. Trageman	Dec 90 - 1992
BG M. A. Canavan	1992 -

U.S. ARMY TRADOC ANALYSIS COMMAND-FORT LEAVENWORTH (Fort Leavenworth, Kan.)

COL S. K. Wasaff, Jr.	1986 - 1987
Dr. R. Larocque	1987 - 1991[37]

U.S. ARMY TRAC-OPERATIONS ANALYSIS CENTER (Fort Leavenworth, Kan.)

Dr. R. Larocque	1991 -

U.S. ARMY TRAC-STUDY & ANALYSIS CENTER (Fort Leavenworth, Kan.)

COL R. H. Wood	1991 - 1991
COL M. A. Resnick	1991 -

U.S. ARMY TRAC-SCENARIO & WAR GAMING CENTER (Fort Leavenworth, Kan.)

COL C. M. Black	1991 - 1991
COL W. D. Garlock	1991 -

U.S. ARMY TRAC-WSMR (White Sands Missile Range, N. Mex.)

Mr. L. F. Goode	1 Oct 86 - 1987
Dr. D. L. Collier	1938 -

U.S. ARMY TRAC-LEE (Fort Lee, Va.)[38]

Mr. R. Cameron	1989 -

U.S. ARMY TRAC-FBHN (Fort Benjamin Harrison, Ind.)[39]

Dr. G. Klopp	1989 -

TRAINING ACTIVITIES

TRAINING AIDS MANAGEMENT AGENCY (Fort Eustis, Va.)

COL E. M. Cesar, Jr.	1 Jul 73 - 1975

37 Reorganized 1991 into TRAC Operations Analysis Center, TRAC Study and Analysis Center, and TRAC Scenario and Wargamming Center.
38 Established 1989.
39 Established 1989.

COL G. B. Howard	1975 - 1 Jul 75[40]

U.S. ARMY TRAINING SUPPORT ACTIVITY (Fort Eustis, Va.)[41]

BG C. J. Wright	Apr 76 - Aug 76
BG P. F. Pearson	Aug 76 - Sep 78
BG R. C. Forman	Sep 78 - Dec 79
BG R. J. Sunell	Dec 79 - Jun 83
BG O. R. Whiddon	Jun 83 - May 84
BG J. W. Nicholson	Jun 84 - Jul 86
COL L. V. Hightower III	Jul 86 - Sep 87
COL M. E. Ekman	Sep 87 - Aug 90
COL E. S. Broderick	Aug 90 - Jun 92
COL J. W. Braden, Jr.	Aug 92 -

U.S. ARMY COMBAT ARMS TRAINING BOARD (Fort Benning, Ga.)

COL F. A. Hart	1 Jul 73 - 1975
LTC(P) E. A. Smart	1975 - 1976
COL G. R. Stotser	1976 - 1 Oct 77[42]

U.S. ARMY TRAINING BOARD (Fort Eustis, Va.)

COL R. H. Harrington	1 Oct 77 - 1980
COL C. A. Hagan	1980 - 1983
COL A. P. O'Meara, Jr.	1983 - 30 Nov 85
COL B. W. Covington III	1 Dec 85 - 14 Jul 89[43]

TRAINING MANAGEMENT INSTITUTE (Fort Eustis, Va.)[44]

COL R. P. Dirmeyer	16 Jul 75 - 2 May 77[45]

TRAINING DEVELOPMENTS INSTITUTE (Fort Monroe, Va.)

COL R. P. Dirmeyer	2 May 77 - 2 Apr 78
COL F. A. Hart	3 Apr 78 - 1979
COL F. A. Nerone	1980 - 1982
COL E. J. Glabus	1982 - 1983

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40 Redesignated Army Training Support Activity, 1 Jul 75.
41 Redesignated Army Training Support Center, 1 Jul 76.
42 Reorganized, redesignated Army Training Board and relocated to Fort Eustis, Va., 1 Oct 77.
43 Moved to Fort Monroe 1 Oct 85. Inactivated 14 Jul 89.
44 Established 16 Jul 75.
45 Redesignated Training Developments Institute, 2 May 77.

Dr. J. H. Kanner	1983 - 1984[46]

TRAINING TECHNOLOGY AGENCY (Fort Monroe, Va.)

Dr. J. H. Kanner	1984 - 14 Mar 88[47]

U.S. ARMY JOINT READINESS TRAINING CENTER (Little Rock AFB/Fort Chaffee, Ark.)[48]

COL(P) D. A. Leach	21 Oct 87 - 1 Jun 89
BG J. M. Keane	1 Jun 89 - 2 Jul 91
BG G. A. Fisher	2 Jul 91 -

U.S. ARMY COMBINED ARMS TRAINING DEVELOPMENTS ACTIVITY (Fort Leavenworth, Kan.)[49]

MG L. C. Menetrey	1 May 77 - 1978
BG J. J. Brophy	1978 - Aug 80
BG F. F. Woerner, Jr.	Aug 80 - Apr 82
BG J. L. Ballantyne III	Apr 82 - Oct 82

U.S. ARMY COMBINED ARMS TRAINING ACTIVITY (Fort Leavenworth, Kan.)[50]

COL W.F. Streeter	1984 - 1985
COL J.L. Haupt	1985 - 1985
BG J.C. Heldstab	1985 - 1987
BG W.J. Mullen III	1987 - 1989
BG J.M. Lyle	1989 - 1991[51]
BG M.S. Davison, Jr.	1991 - 1992
BG W.L. Nash	1992 -

TRAINING OPERATIONS & MANAGEMENT ACTIVITY (Fort Monroe, Va.)[52]

COL J. H. Getgood	1986 - 3 Jun 88[53]
COL J. A. Kendra	3 Jun 88 - 15 May 91
COL P. Treolo, Jr.	16 May 91 - 30 Apr 92

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46 Redesignated Training Technology Agency, 1984.
47 Realigned within Training Development and Analysis Directorate, Office of the DCST, 14 Mar 88.
48 Established October 1987.
49 Established under Combined Arms Center 1977. Disestablished Oct 82.
50 Established 1984.
51 Realigned 1990 as Deputy Commander CAC for Training.
52 Established 1986 as Training Accession Management Activity (TAMA).
53 Redesignated Training Operations and Management Activity (TOMA), 1987.

COL W. B. Snow III	15 Jul 92 -

OTHER AGENCIES

U.S. ARMY RESERVE OFFICERS' TRAINING CORPS CADET COMMAND

MG R. E. Wagner	15 Apr 86 - 23 Apr 90
MG W. C. Arnold	24 Apr 90 - 16 Jun 93
MG J. M. Lyle	17 Jun 93 -

FIRST ROTC REGION (Fort Bragg, N.C.)

BG W. S. Goodwin, Jr.	16 Jul 73 - 27 Sep 74
BG(P) J. F. Cochran III	5 Nov 74 - 9 Oct 77
BG W. D. Barnes	10 Oct 77 - 14 Jun 79
BG F. C. Adams, Jr.	15 Jun 79 - 2 Aug 82
BG C. F. Hoglan	3 Aug 82 - 30 May 85
BG P. W. Lash	1 Oct 85 - 17 Apr 87
BG W. C. Arnold	18 Jun 87 - 23 Apr 90
BG J. F. Johnson	8 Jun 90 -

SECOND ROTC REGION (Fort Knox, Ky.)

BG P. S. Williams	16 Jul 74 - 20 Sep 74
BG J. M. Leslie	30 Sep 74 - 14 Sep 77
BG J. M. Wroth	15 Sep 77 - 30 Jun 79
BG J. P. Prillaman	27 May 80 - 21 Feb 81
BG I. D. Smith	6 Apr 81 - 18 Aug 83
BG T. G. Lightner	14 Nov 83 - 17 Aug 85
BG J. A. White	10 Sep 85 - 21 Aug 87
BG J. A. Musselman	10 Sep 87 - 15 Sep 89
BG C. R. Hansell	16 Sep 89 - 22 Jun 91
BG J. N. Frazar	23 Jun 91 -

THIRD ROTC REGION (Fort Riley, Kan.)

BG R. Arter	1 Jul 73 - 25 Aug 75
BG G. Childress	26 Aug 75 - 1976
BG D. W. French	1977 - 1978
BG R. S. Fye	1979 - 26 May 80
BG C. B. Hutchinson, Jr.	27 May 80 - 29 Mar 83
BG H. G. Watson	30 Mar 83 - 31 Jul 84

BG M. H. Williamson	1 Aug 84 - 1987
BG R. F. Keller	1987 - 27 Nov 88
BG F. J. Walters, Jr.	18 Dec 89 - 25 Apr 91
COL M. P. Eskaw	26 Apr 91 26 Aug 91
COL J. C. Parrish	27 Aug 91 - 31 Dec 92[54]

FOURTH ROTC REGION (Fort Lewis, Wash.)

BG S. L. Melner	3 Jul 73 - 1 Sep 75
BG J. M. Shea	2 Sep 75 - 25 Aug 77
BG C. F. Gordon	3 Oct 77 - 16 Aug 81
BG J. F. Shelton	17 Aug 81 - Mar 83
BG R. E. Wagner	Mar 83 - 28 Apr 86
BG U. S. French III	29 Apr 86 - 30 Sep 87
BG G. L. Brown	25 Nov 87 - 3 Oct 89
BG R. S. Siegfried	10 Oct 89 - 30 Jan 92
BG J. N. Daly	31 Jan 92 -

U.S. ARMY COMBINED ARMS COMBAT DEVELOPMENTS ACTIVITY (Fort Leavenworth, Kan.)

MG W. R. Wolfe	Jul 73 - 1975
MG M. J. Brady	1975 - 1976
MG G. K. Otis	1976 - 1977
MG F. K. Mahaffey	1977 - 1979
MG J. A. Walker	1979 - 1981
MG T. G. Jenes, Jr.	May 81 - Jul 82
BG C. L. Powell	Aug 82 - Jun 83
MG L. P. Wishart III	Aug 83 - Jun 86
MG C. P. Otstott	Jun 86 - Jun 88
MG W. C. Knudson	Jul 88 - 2 Jul 92[55]
BG E. G. Anderson III	2 Jul 92 -

U.S. DISCIPLINARY BARRACKS (Fort Leavenworth, Kan.)

COL O. E. O'Kier	20 May 74 - 24 Jul 75[56]
COL D. D. Kasson	14 Sep 75 - 7 Jul 77

54 Inactivated, 31 Dec 92.
55 Realigned 1990 as Deputy Commander CAC for Combat Developments.
56 Transferred from Provost Marshal to TRADOC, 20 May 74.

COL D. J. Poel	7 Jul 77 - 11 Jan 79
COL P. W. Grossheim	11 Jan 79 - 26 Jun 80
COL C. C. Nix	26 Jun 80 - 14 Dec 81
COL O. L. McCotter	15 Dec 81 - 14 Jun 84
COL G. H. Braxton	14 Jun 84 - 18 Jun 86
COL G. N. Zelez	18 Jun 86 - 22 Jun 88
COL L. B. Berrong, Jr.	22 Jun 88 - 20 Jun 90
COL W. L. Hart	20 Jun 90 - 18 Jun 92
COL G. A. Lowe	18 Jun 92 -

U.S. ARMY RETRAINING BRIGADE (Fort Riley, Kan.)

COL T. W. Adair	20 May 74 - 14 Feb 75[57]
COL J. D. Granger	15 Feb 75 - 1 Jul 76
COL C. A. Druit	2 Jul 76 - 1 Oct 77[58]

U.S. ARMY TRADOC DATA PROCESSING FIELD OFFICE (Fort Leavenworth, Kan.)

LTC G. J. Harber	1 Jul 73 - 20 Jan 76
LTC R. J. Terseck	15 Jun 76 - 30 Sep 79
MAJ W. F. Timmons	1 Jun 80 - 26 Jun 83
LTC L. Pearson	27 Jun 83 - 31 Aug 87[59]

U.S. ARMY TRADOC DATA PROCESSING FIELD OFFICE (Fort Monroe, Va.)

LTC A. L. Keyes	1 Apr 80 - 1982[60]
LTC W. O. Hunt	1982 - 1984
LTC T. C. Kentfield	1984 - 1987[61]

U.S. ARMY PERSONNEL CENTER, OAKLAND (Oakland Army Terminal, Calif.)

COL E. L. Fuller	1 Jul 73 - 30 Jul 73
LTC V. G. Nielsen	1 Aug 73 - 26 Jul 74
LTC C. F. Carattini	27 Jul 74 - 15 Dec 74[62]

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57 Transferred from Provost Marshal to TRADOC 20 May 74.
58 Transferred to U.S. Army Forces Command, 1 Oct 77.
59 Realigned 1987 under U.S. Army Information Systems Command Directorate of Information Management.
60 Established 1980.
61 Realigned 1987 under U.S. Army Information Systems Command Directorate of Information Management.
62 Discontinued 15 Dec 74.

SECURITY ASSISTANCE TRAINING FIELD ACTIVITY
(Fort Monroe, Va.)[63]

COL W. E. Davis	1982 - 7 Feb 83
COL A. D. Johnson	8 Feb 83 - 30 Jun 87
COL J. T. Clark	30 Jun 87 - 27 Jul 89
COL M. H. Crumley	27 Jul 89 - 28 Jun 91
Mr. T. E. Schnurr	29 Jun 91 -

TRADOC MANAGEMENT ENGINEERING ACTIVITY
(Fort Monroe, Va.)[64]

COL J. C. House	1 Apr 83 - 30 Jun 86
Mr. C. H. Sullivan	1 Jul 86 - 4 Nov 92
Mr. H. Buck, Jr.	18 Apr 93 -

TRADOC LIBRARY & INFORMATION NETWORK CENTER
(Fort Monroe, Va.)[65]

Mr. J. H. Byrn	5 Sep 78 - 3 Sep 92[66]

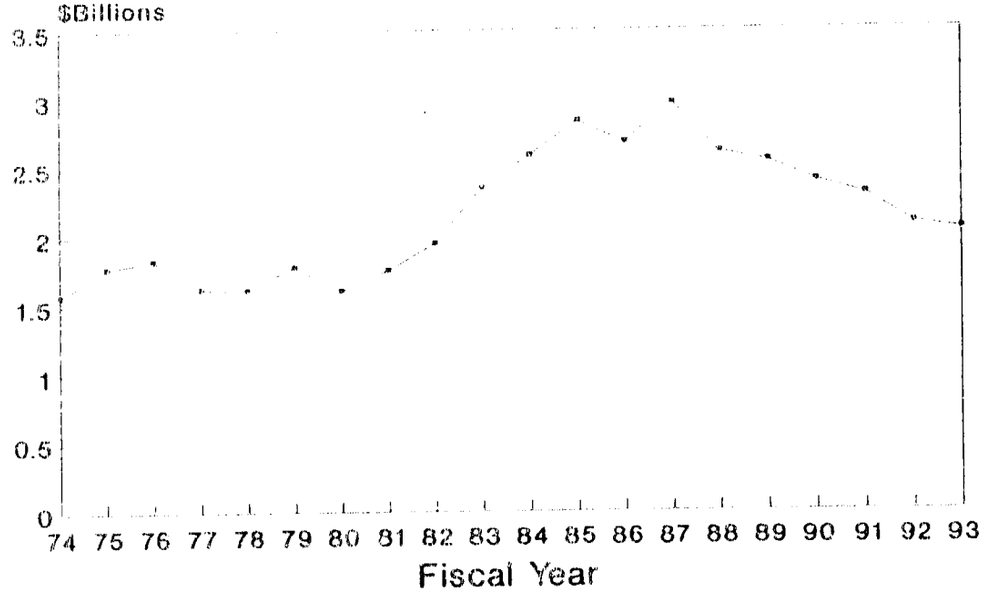
U.S. ARMY TRADOC FIELD ELEMENT (Fort Monroe, Va.)

COLR. H. Phillips	1973 - 1975
COL G. N. Dreybus, Jr.	1975 - 1976
COL J. O. Heyward	1976 - 1979
COL R. G. Komornik	1979 - 1980
COL M. J. Cockill	1980 - 1983
MAJ J. B. Dyer	1983 - 1984
LTC D. M. Bergeron	1984 - 1986
LTC T. P. Meyer	1986 - 1989
LTC J. C. Shannon	1989 - 1992
LTC W. G. Bishop	1992 -

63 Established 1982.
64 Established 1983.
65 Established 1978.
66 Position vacant since 4 Sep 92.

Appendix E

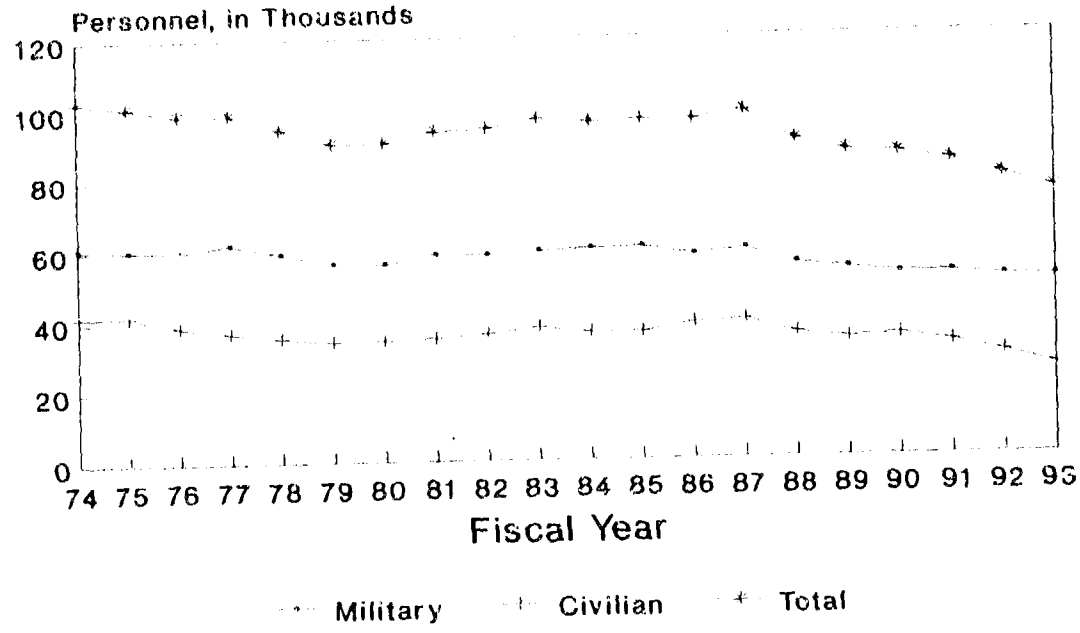
TRADOC DIRECT OBLIGATION FUNDING
By Fiscal Year



Source: TRADOC Annual Command Histories

Appendix F

TRADOC MANPOWER RESOURCES
By Fiscal Year



Source: TRADOC Annual Command Histories

LIST OF ACRONYMS

AAWS	Advanced Antitank Weapons Systems
ABCA	America-Britain-Canada-Australia
AC	active component
ACH	Annual Command History
ACRA	Airlift and Concepts Requirements Agency
ACS	Army community service
AFATDS	Advanced Field Artillery Tactical Data System
AFM	Air Force manual
AGF	Army Ground Forces
AGR	Active Guard Reserve
AHIP	Army Helicopter Improvement Program
AHR	Annual Historical Review
AIT	advanced individual training
ALFA	Air-Land Forces Application (Agency)
ALO	authorized level of organization
AMARC	Army Materiel Acquisition Review Committee
AMC	U.S. Army Materiel Command
AOE	Army of Excellence
ARMA	Annual Report of Major Activities
ARNG	Army National Guard
ARPERCEN	Army Personnel Center
ARTEP	Army Training and Evaluation Program
ATACMS	Army Tactical Missile System
ATC	Army training center
ATP	Allied tactical publication
ATP	Army Training Program
BASOPS	base operations support
BCT	basic combat training
BCTP	Battle Command Training Program

C^3	command, control, and communications
CAC	U.S. Army Combined Arms Center/Combined Arms Command
CAL	Center for Army Leadership
CALL	Center for Army Lessons Learned
CAORA	Combined Arms Operations Research Activity
CAS^3	Combined Arms and Services Staff School
CASCOM	Combined Arms Support Command
CATB	Combat Arms Training Board
CATS	Combined Arms Training Strategy
CATT	Combined Arms Tactical Trainer
CBRS	Concept Based Requirements System
CDC	U.S. Army Combat Developments Command
CDEC	U.S. Army Combat Developments Experimentation Command
CFE	Conventional Forces in Europe
CLIC	Center for Low Intensity Conflict
CMTC	Combat Maneuver Training Center
CONARC	U.S. Continental Army Command
CONUS	continental United States
CPG	Command Planning Group
CRC	CONUS replacement center
CSA	Chief of Staff of the Army
CTC	Combat Training Center
CY	calendar year
DARCOM	U.S. Army Materiel Development and Readiness Command (later AMC)
DCG	deputy commanding general
DCS	deputy chief of staff
DCSTE	Deputy Chief of Staff for Test and Evaluation
DIVAD	division air defense
FAADS	Forward Area Air Defense System
FAMSIM	family of simulations
FAST	Future Army Schools Twenty-one

FM	field manual
FORSCOM	U.S. Forces Command
FRG	Federal Republic of Germany
FSG	family support group
FY	fiscal year
GSRS	General Support Rocket System
HIP	howitzer improvement program
HTTB	High Technology Test Bed
IDF	Israeli Defense Force
IET	initial entry training
IMA	individual mobilization augmentee
IME	International Materiel Evaluation Program
INF	Intermediate Range Nuclear Forces (Treaty)
IRR	Individual Ready Reserve
JCS	Joint Chiefs of Staff
JRTC	Joint Readiness Training Center
JSTARS	Joint Surveillance and Target Acquisition Radar System
J-SAK	Joint Attack of the Second Echelon
JULLS	Joint Universal Lessons Learned System
LAM	Louisiana Maneuvers
LIC	low intensity conflict
MACOM	major Army command
MAS	Military Agency for Standardization
MASSTER	Modern Army Selected Systems Test Evaluation and Review
MECD	military equipment characteristics documents
MFR	memorandum for record
MILES	Multiple Integrated Laser Engagement System
MLRS	Multiple Launch Rocket System
MOS	military occupational specialty

MOUT	military operations on urban terrain
MQS	military qualification standards
MTP	mission training plan
NAAG	NATO Army Armament Group
NATO	North Atlantic Treaty Organization
NBC	nuclear, biological, and chemical
NCOES	Noncommissioned Officers Education System
NMS	National Military Strategy
NOFORN	not for foreign nationals
NTC	National Training Center
OCAFF	Office, Chief of Army Field Forces
OCCH	Office of the Chief of Chaplains
OCIE	organizational clothing and individual equipment
ODCSA	Office of the Deputy Chief of Staff for Analysis
ODCSBOS	Office of the Deputy Chief of Staff for Base Operations
ODCSCD	Office of the Deputy Chief of Staff for Combat Developments
ODCSDOC	Office of the Deputy Chief of Staff for Doctrine
ODCSIM	Office of the Deputy Chief of Staff for Information Management
ODCSRM	Office of the Deputy Chief of Staff for Resource Management
ODCST	Office of the Deputy Chief of Staff for Training
OES	Officer Education System
OSUT	one-station unit training
PLA	People's Liberation Army (China)
POR	processing for overseas replacement
PRC	People's Republic of China
PROFS	Professional Office System
RC	reserve component
RETO	Review of Education and Training for Officers
ROAD	Reorganization Objective, Army Divisions
ROTC	Reserve Officers' Training Corps

RSI	Rationalization, Standardization, and Interoperability
RTC	replacement training center
SADARM	sense-and-destroy armor
SAMS	School of Advanced Military Studies
SAT	systems approach to training
SCOPES	Squad Combat Operations Exercise Simulation
SDT	Self Development Test
SIMNET	simulation networking
SINCGARS	Single Channel Ground and Airborne Radio System
SQT	skill qualification test
SSHR	semiannual staff historical report
STANAG	standardization agreement
START	Strategic Arms Reduction Treaty
TAC	Tactical Air Command (U.S. Air Force)
TCATA	TRADOC Combined Arms Test Activity
TEC	Training Extension Program
TEXCOM	TRADOC Test and Experimentation Command
THRC	TRADOC Historical Records Collection
TOE	tables of organization and equipment
TORA	TRADOC Operations Research Activity
TOW	tube-launched, optically tracked, wire-guided
TRAC	TRADOC Analysis Command
TRADOC	U.S. Army Training and Doctrine Command
TRASANA	TRADOC Systems Analysis Activity
TSM	TRADOC system manager
UMT	unit ministry team
USAR	U.S. Army Reserve
USAREUR	United States Army, Europe and Seventh Army
USCENTCOM	United States Central Command
USREDCOM	U.S. Readiness Command

SUGGESTIONS FOR ADDITIONAL READING

Army Green Books (October issues of *Army* magazine, 1973-1993). These issues include articles by all the TRADOC commanders, as well as information on the command's personnel.

DePuy, William E. *Changing an Army: An Oral History of General William E. DePuy, USA Retired.* Conducted by Romie L. Brownlee and William J. Mullen III. United States Army Military History Institute and United States Army Center of Military History. Washington, D.C.: Government Printing Office.

Chapman, Anne W. *The Army's Training Revolution 1973-1990: An Overview.* TRADOC Historical Study Series. Office of the Command Historian. United States Army Training and Doctrine Command, 1991.

_____. *The Origins and Development of the National Training Center 1976-1984.* TRADOC Historical Monograph Series. Office of the Command Historian. United States Army Training and Doctrine Command, 1992

Dastrup, Boyd L. *King of Battle: A Branch History of the U.S. Army's Field Artillery.* TRADOC Branch History Series. Office of the Command Historian. United States Army Training and Doctrine Command, 1992.

_____. *The US Army Command and General Staff College: A Centennial History.* Leavenworth, Kansas: J.H. Johnston III and Manhattan, Kansas: Sunflower University Press, 1982.

Gorman, Paul F. *The Secret of Future Victories.* Institute for Defense Analyses Paper P-2653, February 1992. Contains a section focused on DePuy's vision of the future Army.

Herbert, Paul H. *Deciding What has to be Done: General William E. DePuy and the 1976 Edition of FM 100-5, Operations.* Leavenworth Papers No. 16. Fort Leavenworth, Kan.: Combat Studies Institute, U.S. Army Command and General Staff College, 1988.

Moenk, Jean R. *Operation Steadfast Historical Summary: A History of the Reorganization of the U.S. Continental Army Command (1972-1973).* Headquarters, U.S. Army Forces Command, Fort McPherson, Ga. and Headquarters, U.S. Army Training and Doctrine Command, Fort Monroe, Va., 1974.

Office of the Command Historian, United States Army Training and Doctrine Command. *TRADOC Support to Operations Desert Shield and Desert Storm: A Preliminary Study.* TRADOC Historical Study Series, 1992.

Richardson, William R. "FM 100-5: The AirLand Battle in 1986," *Military Review*, March 1986, pp. 4-11.

Romjue, John L. *The Army of Excellence: The Development of the 1980s Army.* TRADOC Historical Monograph Series. Office of the Command Historian. United States Army Training and Doctrine Command, 1993 (forthcoming).

_____. *From Active Defense to AirLand Battle: The Development of Army Doctrine 1973-1982. TRADOC Historical Monograph Series.* Historical Office. United States Army Training and Doctrine Command, June 1984.

_____. *A History of Army 86,* Vol. I, *Division 86: The Development of the Heavy Division,* and Vol. II, *The Development of the Light Division, The Corps and Echelons Above Corps.* Fort Monroe: Va.: Historical Office, HQ TRADOC, 1982.

Weigley, Russell F. *History of the United States Army.* Enlarged edition. Bloomington, Ind.: Indiana University Press, 1984.

Weinert, Richard P. and Robert Arthur. *Defender of the Chesapeake: The Story of Fort Monroe.* Shippenburg, Penn.: White Mane Publishing Co., third revised edition, 1989.

SUBJECT INDEX

NAME INDEX