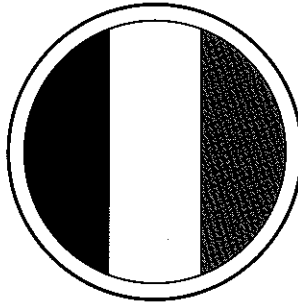


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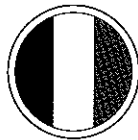
# THE NATIONAL TRAINING CENTER MATURES 1985-1993



By Anne W. Chapman

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

1997



## U. S. ARMY TRAINING AND DOCTRINE COMMAND

General William W. Hartzog

Commander

Major General James J. Cravens, Jr.

Chief of Staff

Dr. James T. Stensvaag

Chief Historian

Mr. John L. Romjue

Chief, Historical Studies and Publication

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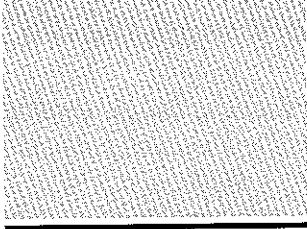
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TRADOC Historical Monographs are published by the Military History Office, U.S. Army Training and Doctrine Command. These studies of training and leader development, and doctrinal and combat developments subjects provide historical perspective to support the Command's mission of preparing the Army for war and charting its future.



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Cover photo: M1A1 Abrams main battle tank silhouetted against sunset at Fort Irwin, California (Greg Stewart)

Photographs in this book courtesy Greg Stewart, Laguna Beach, Calif., excepting p. 224 (official U.S. Army photo)



## Foreword

No single training reform since World War II has had so profound an impact on the readiness of the United States Army's fighting battalions as has the National Training Center at Fort Irwin, California. Established in 1980, the National Training Center introduced to Army units an unprecedented combat realism under rigorous, spartan field conditions by staging force-on-force mock battle through laser-simulated fire and near-real-time location, communications, and casualty assessment instrumentation. The outstanding record that our Army set in Desert Storm was built on our experience at the National Training Center and at the other heavy, light, and battle-command Combat Training Centers it spawned.

TRADOC historian Anne Chapman's study, *The National Training Center Matures, 1985-1993*, provides a valuable record of this historic training reform. It follows her excellent initial volume, which documented the NTC's origins in TRADOC studies of 1976 and early development through 1984. Dr. Chapman presents the National Training Center's experience comprehensively and with critical focus on the problems encountered as the center developed and refined its training methods and instrumentation.

Providing a force of soldiers and units trained and equipped to the highest state of readiness is our Army's great responsibility to the Nation. I commend Dr. Chapman's study to Army commanders and trainers as a

historical handbook of how the National Training Center evolved to operate as a world model for land combat training.

*William W. Hartzog*  
WILLIAM W. HARTZOG  
General, United States Army  
Commanding

Fort Monroe, Virginia, May 1997



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## Author's Preface

The Mojave Desert is home to the U.S. Army's National Training Center (NTC) at Fort Irwin, California, the Army's first combat training center (CTC). The victory achieved by the U.S. Army, its sister services, and the United States' allies over Iraq in the Gulf War to liberate Kuwait, seemed to vindicate the Army's huge investment in the CTCs to provide highly realistic tactical engagement and live-fire training. While a direct cost-benefit determination is difficult to achieve, it is clear that the CTC experience was instrumental in preparing the Army for war.

The author's first volume on the NTC, *The Origins and Development of the National Training Center, 1976-1984*, was an account of the development of the concept for the NTC, which would become the capstone experience in U.S. Army training of the 1980s and 1990s. Volume I focused on the early days of the training center and brought the NTC story to the close of 1984 when the success of the project seemed assured. The present volume provides a view of the NTC over the next nine years of its evolution, as the instrumentation system became increasingly more sophisticated and the opposing force (OPFOR) and exercise observer/controllers refined their roles. The 1993 cutoff for this second volume was chosen as a transition point from the focus of the NTC on pure training to the use of the training center additionally for battlefield digitization and Force XXI experiments. Unlike Volume I, the second volume is topical rather than

chronological. Its chapters present snapshots in time that, hopefully, capture the facets of the training center that make it unique. No effort has been made to focus on any particular period at the NTC over the nine years from 1985-1993; rather, the emphasis is on the evolutionary changes that would produce—in the National Training Center—the institution that was the major component of the post-Vietnam revolution in U.S. Army training.

Most of the primary sources cited herein are located in the United States Army Training and Doctrine Command's (TRADOC) Historical Research Collection in the TRADOC Military History Office at Fort Monroe, Va. Histories prepared at the U.S. Army Combined Arms Center, a major subordinate TRADOC command; at the U.S. Army Forces Command; and the U.S. Army Field Artillery Center and Fort Sill, were also consulted.

The author owes a large debt to many people who believed in the project to record the NTC experience and offered help and encouragement along the way. Historians on the staff of the Military History Office offered encouragement and patiently endured periods of discouragement. Dr. H. O. Malone and Dr. James T. Stensvaag as office chiefs provided support and understanding. A special expression of gratitude goes to John L. Romjue for sharing his knowledge and experience and for expert editing that made this a much better study. It would be difficult to overstate the contribution of military photographer Greg Stewart who made his vast collection of NTC photographs available, provided photographs of special subjects at the author's request, and offered numerous suggestions on the text. Design, layout, and camera-ready preparation were very expertly accomplished by Ms. Carolyn Haynes of the Fort Eustis Training and Audiovisual Support Center. Thanks also to Mr. Willard Owens and Mr. Will Moffett, Chief of the Fort Monroe Multimedia Services Division for their support,

and to Mrs. Diane Johnson of the Directorate of Information Management for efficient publication processing.

A number of NTC veterans willingly offered their insights. Special thanks are owed to Capt. Steve Small of the Army's Picatinny Arsenal who read and offered suggestions on large portions of the manuscript. This study is the richer for the numerous NTC observer/controllers and OPFOR personnel who left behind interviews recounting their NTC experiences. The TRADOC Technical Library staff and George Siehl of the Congressional Research Service were always willing to provide whatever support was needed. Members of the staff of the U.S. Army Training Support Center, Combat Training Support Directorate, provided information on tactical engagement simulation and NTC instrumentation. John Q. Smith of the U.S. Air Force Air Combat Command read the portion of the manuscript concerning Air Force participation at the NTC, and saved the author many errors. Winn B. McDougal, as with Volume I, read the entire manuscript and shared his extensive knowledge of Army training unstintingly. Lastly, much gratitude is owed the staffs of the NTC commander's office and the Fort Irwin Public Affairs and Protocol offices for making my visit to the National Training Center and Fort Irwin so pleasant and profitable. Many other friends and colleagues contributed to the improvement of this study with information and suggestions. Whatever flaws and shortcomings remain are the author's responsibility alone.

ANNE W. CHAPMAN, PH.D  
Research Historian  
Military History Office  
United States Army Training  
and Doctrine Command





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# Introduction

*Again and again we have owed peace to the fact that we were prepared for war.*

*—Theodore Roosevelt  
June 1897*

The establishment of the United States Army National Training Center (NTC) at Fort Irwin, Calif. in 1980 was the pinnacle and the capstone achievement of the revolution in training that had taken place in the United States Army since 1973. Since the end of American involvement in Vietnam, and spurred on by the lessons learned from the 1973 Arab-Israeli War, a group of senior leaders in the Army—in particular the first commander of the U.S. Army Training and Doctrine Command (TRADOC), General William E. DePuy, and his Deputy Chief of Staff for Training, Maj. Gen. Paul F. Gorman—realized that one of the Army's major wartime shortcomings had been the inability to train as the Army intended to fight. Historically, the United States had entered wars either unprepared, or prepared for the last war fought, a situation that often resulted in high casualties and costly campaigns. Further, there was the realization that, because of the overwhelming strength of its major potential adversary the Warsaw Pact, United States forces would have to fight and win outnumbered. The nation needed a ground warfare component with a modern doctrine and a new training

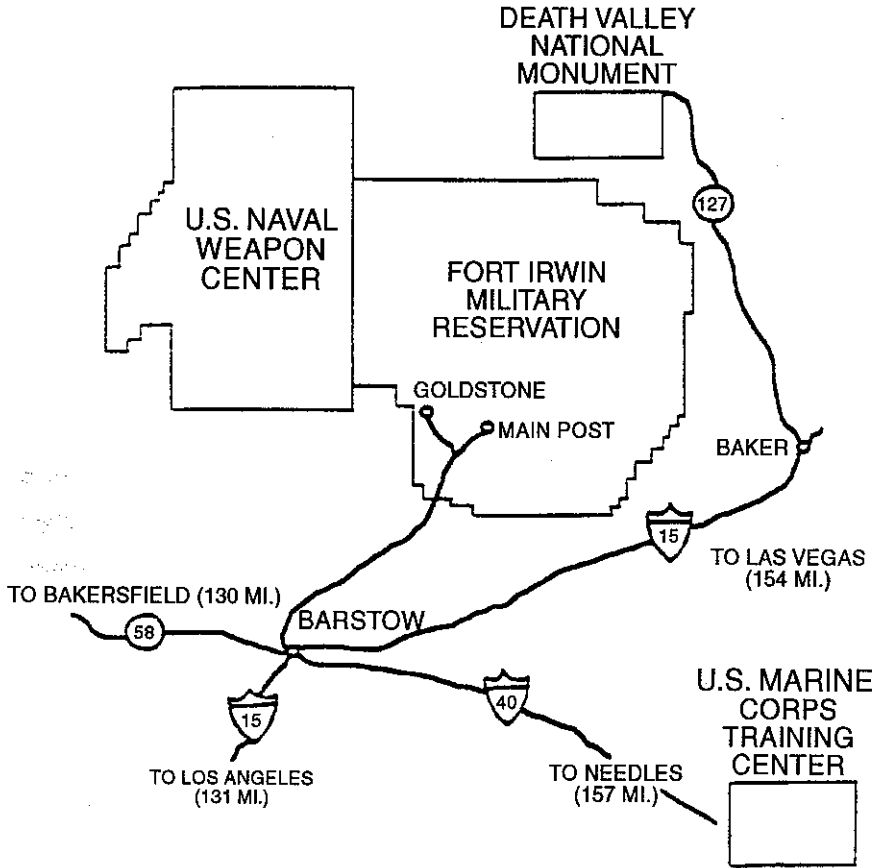
strategy. Maj. Gen. Gorman postulated that by applying a new doctrine and tactics to a realistic training battlefield, the Army might gain better insight into the inherent weaknesses of its training program. Realistic training would also provide a laboratory for the fielding of many new weapons systems. In addition, the Army needed a training center large enough to accommodate the range of modern weapons. These visionary ideas set in motion the birth of the NTC at Fort Irwin, a 1,000 square-mile installation of the U.S. Forces Command (FORSCOM) in California's Mojave Desert (Map 1).<sup>1</sup>

The first U.S. Army maneuver battalions conducted exercises at the National Training Center in 1981. Each of what came to be known as "rotations" featured a heavy armor and a mechanized infantry battalion task force from a FORSCOM heavy division or separate brigade, which, in keeping with Army doctrine, formed the task organization for mounted land warfare. Battalion task forces were specially tailored with tanks and infantry supported by field artillery, attack helicopters, and close air support—provided by the United States Air Force at the NTC. Later, as the NTC matured, rotations featured light infantry, cavalry squadrons, and motorized units. The objectives of the NTC as set forth in the original concept were to provide a facility where soldiers stationed in the continental United States could undergo combined arms training that could not be accomplished at their home stations because of physical limitations and the prohibitive cost of providing a realistic training environment. Brigades also participated by controlling the exercising battalions and their combat support

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1. An account of the choice of Fort Irwin is in Anne W. Chapman, *The Origins and Development of the National Training Center, 1976-1984*, hereafter *NTC*, Vol I (Office of the Command Historian, United States Army Training and Doctrine command, Fort Monroe, Va., 1992), pp. 25-32.

**Map 1**  
**The Mojave Area and Fort Irwin**



Source: Visitors' Notebook, Advanced Warfighting Experiment, April 1994.

and combat service support elements through simulated command post exercises. The NTC would also gather data to assist in improving doctrine, tactics, training, equipment, and procedures. The story of the early years of the NTC was recounted in the author's *Origins and Development of the National Training Center, 1976-1984*.<sup>2</sup>

During their time in the field at Fort Irwin, units experienced both force-on-force and live-fire training. To accomplish the mission of training soldiers for war in a setting as close as possible to the reality of combat, NTC training was based on three "pillars": an opposing force (OPFOR); a group of experienced trainers serving as exercise observer/controllers (O/C); and a sophisticated instrumentation system to gather data and provide the raw material for assessing unit performance. The OPFOR consisted of two U.S. heavy battalions, one infantry and one armored, which were permanently stationed at Fort Irwin. The two battalions were configured for battle as a Soviet motorized rifle regiment that considerably outnumbered the rotating units or "Blue Forces (BLUFOR)."<sup>3</sup> For the most part, their vehicles were U.S. equipment visually modified to resemble Soviet tanks, personnel carriers, air defense systems, light reconnaissance vehicles, and helicopters. Their battle doctrine and tactics were usually modeled on that used by Warsaw Pact forces.<sup>4</sup> The observer/controllers were teams of U.S. Army officers and noncommissioned officers on regular assignment to the NTC. Teams of O/Cs were assigned to each battalion task force rotation and accompanied the BLUFOR throughout that rotation. The O/C teams' functions were to control the battle, assess results, and provide an after action report

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2. Ibid. passim.

3. The friendly forces at the NTC were also sometimes referred to as the "BLUFOR" or the "friendly force."

4. Cuban and Iraqi doctrinal models were also used on occasion.

at the conclusion of each engagement. Other O/Cs acted as training analysts in a central Operations Center located on the main post at Fort Irwin.

In order to achieve realism and adjudge "kills," "hits," and "near misses," the NTC featured a complex system of computers, laser engagement devices, and communications networks to collect data from encounters between the forces. Laser-based engagement simulation via the Multiple Integrated Laser Engagement System (MILES) provided a degree of realism in casualty assessment eclipsed only by actual combat. The data provided by MILES were then communicated to the aforementioned Operations Center and displayed on computer graphics terminals. Analysts could thus observe and control the battle and communicate with the observer/controllers in the field. In preparing the after action reports, the O/Cs depended heavily on the data processed by the instrumentation system. Simply put, sophisticated instrumentation helped training analysts and BLUFOR units to determine what happened, why it happened, and how revealed deficiencies could be corrected before the next battle.

The National Training Center also featured one of the Army's most sophisticated live-fire ranges. Located in the northern portion of Fort Irwin, the training range gave rotating troops an opportunity to attack or defend their positions against a simulated advancing force. Task forces armed with small arms, tank, and artillery ammunition faced approximately 1,500 computerized, radio-controlled pop-up targets that simulated the appearance, thermal signature, and firepower of a Soviet-style motorized rifle regiment. Some of the targets had the ability to "shoot back" with simulated tank fire and AT-3 Sagger anti-tank missiles.

In the summer of 1984, as the NTC approached its fifth year of operations, Army Chief of Staff General John A. Wickham, Jr. declared the innovative training center a success and called for plans to guide its future

development. As a result, Army and NTC leaders outlined the initiatives they believed would assure the NTC's continued evolution and maturity. Over the next nine years, the training center expanded existing programs and undertook a number of new ones. A ten-year plan established the parameters. Plans to exercise three actual BLUFOR battalions simultaneously, per rotation, rather than the current two battalions and a brigade "slice," were formulated. In order to accommodate brigade-level training, the center set in motion the necessary actions to acquire more training land. During that period, the Army addressed such issues as upgrades for the MILES and other instrumentation; new "surrogate" vehicles for the OPFOR; prepositioned equipment for BLUFOR use at Fort Irwin; and the configuration of the OPFOR given a changing world political and military environment. The role of the Air Force received much attention from both services. And the NTC's data collection function and a lessons learned program stirred considerable controversy.

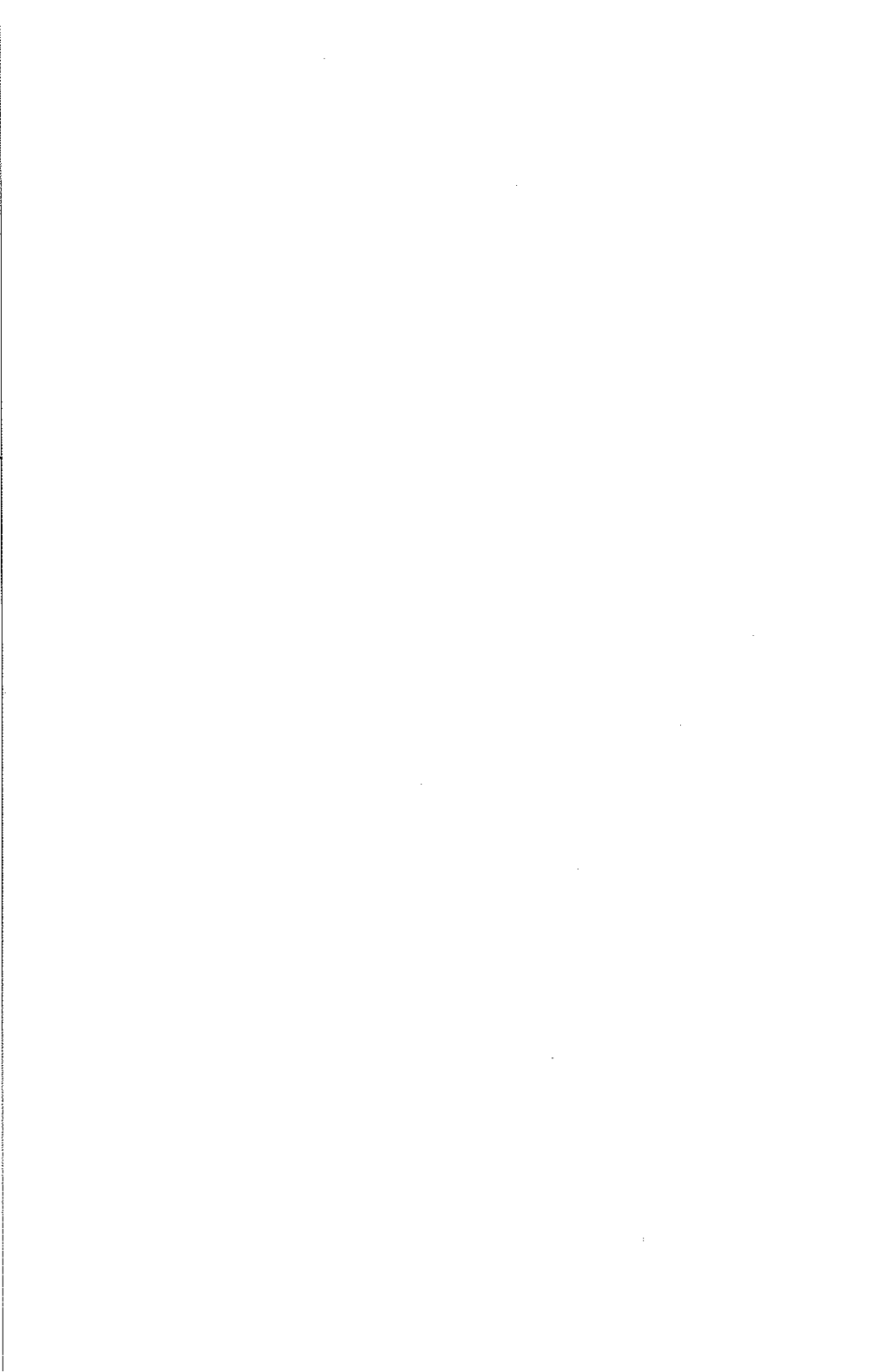
It would be difficult to overstate the impact of the National Training Center on Army training. The successful training center at Fort Irwin stood as a tribute to the systems-based, hands-on approach that had dominated Army training since the mid-1970s. The NTC was a one-of-a-kind training and evaluation system found nowhere else. The system was designed to provide both subjective and objective observations and a degree of insight into unit performance never available previously in the history of military training. Between 1981 and October 1993, the NTC had trained 524,187 soldiers; 153,924 noncommissioned officers; and 39,228 officers, including 4,216 company commanders and 724 battalion commanders and their staffs, making it the Army's premier combat leader development environment. The NTC had also been the model for the establishment of two more—but somewhat different—maneuver combat training centers: the

U.S.-based Joint Readiness Training Center (JRTC)<sup>5</sup> for light forces, and the Combat Maneuver Training Center (CMTC) at Hohenfels, Germany, for forces assigned in Europe. Perhaps the most convincing testimony to the contribution of the NTC to Army training was the fact that a majority of the combat troops that deployed to the Arabian peninsula in Operations Desert Shield and Desert Storm in 1990-1991, had already experienced "war" in the desert and learned its harsh lessons, because of their training at the NTC.

As of the close of 1993, there was still much to do to assure that training at the NTC was the most realistic possible. And the question remained as to how the NTC, the most costly sustained Army training project in the peacetime history of the United States, would be affected as defense budgets shrank. Whatever the result, the United States Army was justly proud of its achievement in the successful establishment of its National Training Center in the Mojave Desert and the innovative center's proven impact on the Army's ability to fight and win.

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5. The JRTC was established provisionally at Fort Chaffee, Ark. in 1987; between June and September 1993, it moved to a permanent home at Fort Polk, La.



# The Evolving Basis of the National Training Center

In the late summer of 1984, having dubbed the National Training Center a total success, General John A. Wickham, Jr., Chief of Staff of the Army, requested that the commanders of the Training and Doctrine Command, Forces Command, the U.S. Army Combined Arms Center (CAC), and the National Training Center provide him their opinions on a number of "alternate concepts" for the NTC. He believed the time had come to examine the status of the training center and to develop plans for its future. In September, Wickham called for the Army to develop a five- and a ten-year plan for the NTC so that budget requirements could be accurately assessed. He wanted to consider such issues as the size of the OPFOR, the level of participation for units, combat support and combat service support, upgrading of the instrumentation system, formalizing the lessons learned system, land acquisition, and the capacity of the center to expand.<sup>1</sup>

General Wickham's decision to continue and to expand the successful venture was a signal event in the evolving basis of the National Training Center. Before turning to the major features of the NTC as it grew during the last half of the 1980s and the early 1990s, we will take note of the changing conceptual, planning, regulatory, personnel, and organizational basis of the Fort Irwin facility. It was this background that provided the stage for the maturity of National Training Center programs.

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1. Msgs, Cdr TRADOC to CSA, 301911Z Jul 84, subj: Alternative Concepts for NTC; Cdr FORSCOM to CSA, 231900Z Aug 84, subj: Alternate Concepts for NTC. (2) Unless otherwise noted, all documents cited are located in the National Training Center Collection of the TRADOC Historical Records Collection (THRC), TRADOC Military History Office, Fort Monroe, Va. Prior to the spring of 1995, that office was known as the TRADOC Office of the Command Historian.

## The Futures Concept and the Operations Concept - 1986

In 1985, the NTC Programs Office,<sup>2</sup> in accordance with Wickham's directive, began to update and revise the original National Training Center Development Plan of 3 April 1979. By mid-1986, a strawman concept entitled "Operational Concept for the National Training Center" had been developed. The document established development and operational guidelines for the NTC over the next ten years. The new guidelines would serve as the basis for promulgation of the bi-annual NTC five to ten year plans developed as part of the Army budget process. Following an NTC "functional area assessment" in June 1986 for General Maxwell R. Thurman, Vice Chief of Staff of the Army (VCSA), the task of developing an "NTC Futures Concept" fell to the Combined Arms Training Activity (CATA) of the Combined Arms Center at Fort Leavenworth, Kansas.<sup>3</sup>

By fall 1986, the NTC Programs Office of CATA (renamed the Advanced Collective Training Facility Programs Office late in 1986) had revised the operational concept strawman document and added the NTC futures concept as an introduction. During a meeting on 4 September, the NTC General Officer Executive Committee (GOEC)<sup>4</sup> concurred with the concept as a mark for planning.<sup>5</sup> Forces Command, with TRADOC assistance, identified the resources that would be required to implement the new operational concept. The Programs Office was then ready to brief the introductory portion, the futures concept, to the commanders of TRADOC, FORSCOM, and the Army Materiel Command (AMC). That briefing took place during 8-10 October 1986, followed by a briefing to the VCSA, General Thurman, on 20 October. As a result of another GOEC meeting at

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2. Beginning in July 1984, the NTC Programs Office was an agency under the Combined Arms Training Activity (CATA) at the Combined Arms Center at Fort Leavenworth, Kansas.

3. Operational Concept for the National Training Center, [1986], p. 1.

4. Referred to variously as GOEC, General Officer Steering Committee (GOSC), and General Officer Working Group (GOWG). In the text, the usage follows the document from which the information was taken. The GOEC was chaired by the Department of the Army Director of Training, Office of the Deputy Chief of Staff for Operations and Plans. Voting members of the GOEC were representatives of HQDA; Army National Guard Deputy Director; TRADOC Deputy Chief of Staff for Training; CAC Deputy Commanding General-Training; FORSCOM G-3; NTC commander; JRTC Commander; AMC Deputy Commanding General for Research, Development, and Acquisition; USAREUR Assistant Deputy Chief of Staff-Training/Commander CMTC; and the USASOC Deputy Commanding General, Combat Training Center Directorate, CAC E-Mail, Fort Leavenworth Kansas, 16 Feb 94, subj: CTC GOSC.

5. Msg, HQDA to distr, 291344 Oct 86, subj: National Training Center-Future Concept "1996." The GOEC met twice a year, usually in March and September.

Headquarters TRADOC on 23 November, the concept was revised to reflect an incremental approach to bringing new equipment and personnel to the NTC. The revised concept was again briefed to the commanders of the major commands on 24-26 November 1986 and to Thurman on 3-4 December.<sup>6</sup>

The introductory NTC Futures Concept examined plans for the center's development at three points in time—past, present, and future—and forecast what the NTC would look like in 1996. In 1979, the original NTC Development Plan had envisioned an exercise area for FORSCOM battalion task forces as the primary NTC function. As a secondary function, the training center would serve as a source of data to answer questions concerning force readiness and the effectiveness of training and doctrine products. The early plan saw that at any given time, the NTC would host as many as four battalion task forces. Two of the task forces would be without troops and would participate in command post exercises (CPX) under the control of a brigade headquarters. According to the 1979 plan, the evaluation of the brigade headquarters was a unit responsibility; that is, the brigade would essentially evaluate itself. The remaining two task forces would take part in an engagement simulation exercise under brigade headquarters control and a live-fire exercise under control of the NTC, respectively. Neither a specific number of annual rotations nor a definite length of time for an individual rotation was set. The plan did assume that each Active Army battalion would exercise at the NTC twice every eighteen months—once as a CPX unit without troops and once as a full battalion task force. The original plan had not discussed methodologies for Armywide application of NTC data.<sup>7</sup>

By FY 1983, the CPX idea had been set aside, and the NTC played host to only two battalions at a time. One was involved in force-on-force exercises while the other participated in a live-fire exercise. Then the two task forces changed places so that each could conduct both types of training. That same arrangement had existed since the first rotation early in 1982. However, by FY 1983, the NTC provided a "notional" division headquarters represented by the TRADOC Operations Group. The division did not evaluate the brigade headquarters or the combat support or combat

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6. (1) Operational Concept for the National Training Center [1986]. (2) NTC Futures Concept [1986]. (3) CAC Annual Historical Review, 1986, pp. 163-64. (4) Msg, Cdr CAC to distr, 151540Z Sep 86, subj: CAC Update. (5) Msg, HQDA to Cdr TRADOC et al, 091845Z Oct 86, subj: National Training Center (NTC) Futures Concept Briefing to VCSA. (6) TRADOC Deputy Chief of Staff for Training Significant Activities ATTG-ZX, 26 Nov 86. After the establishment of three other combat training centers, the ACTF Office became the CTC Directorate under CATA.

7. NTC Futures Concept, pp. i-vi.

service support elements of the brigade. Although the controlling Army Regulation 350-50, National Training Center (1980), had reiterated the NTC's secondary objective of data collection, the instrumentation still served largely to provide information for use in unit after action reviews (AAR) rather than as a data vehicle to "provide insights into the effectiveness of doctrine, organizations, equipment, tactics, and training techniques."<sup>8</sup>

By FY 1986, the number of annual rotations had been fixed at fourteen. Rotations of light infantry units with heavy armor and mechanized units (usually referred to and written as "heavy/light") had been introduced in 1985 to gain insights into the effectiveness of heavy/light doctrinal concepts emerging from Army of Excellence light forces expansion and restructuring efforts. Introduction of heavy/light and light/heavy rotations is discussed in Chapter II. Extended rotations of twenty-five days were added to allow commanders a chance to pause in the middle of a rotation and correct those deficiencies identified during the rotation to that point.<sup>9</sup>

A key point of the 1986 concept was the retention of the training focus on the maneuver battalion task force but with a commitment to move toward fully training a three-battalion brigade, set at that time to begin in FY 1992. In the interim, training and evaluation for the brigade slice would be significantly enhanced. Brigade operations with both battalion task forces in the same engagement simulation exercise became a standard part of each rotation. The controversial issue of training an actual brigade will be examined in greater detail below. Suffice it to say here that approval of greater brigade participation was, in part, a result of the retirement of TRADOC commander General William R. Richardson on 30 June 1986. Richardson had strongly opposed any move that threatened the strong focus on battalion-level training at the NTC.

In addition to those changes, field artillery participation had grown from a fire direction center and one firing battery that evaluated themselves, to a complete direct support battalion and an additional fire direction center—all evaluated by a new twenty-man trainer-controller section. As late as the end of 1983, Army aviation had taken no part in the exercises. By 1986 there was at least an entire attack helicopter company of 7 AH-1

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8. (1) NTC Futures Concept, pp. ii-iii. (2) AR 350-50, National Training Center, 15 April 1980, p. 1 (quotation).

9. (1) NTC Futures Concept, 1986, p. iii. (2) National Training Center Executive Committee Meeting, 12 Mar 85. On the Army of Excellence see John L. Romjue, *The Army of Excellence: The Development of the 1980s Army* (Fort Monroe, Va.: Headquarters TRADOC, Office of the Command Historian, 1993).

Cobra and 5 OH-58 Kiowa helicopters evaluated by a ten-man trainer-controller section.<sup>10</sup> Logistics support, formerly unevaluated, now had a nine-man trainer-controller section. Instrumentation was still used largely to assemble after action reports, but a new Center for Army Lessons Learned (CALL), located at Fort Leavenworth, was expected to improve the collection and interpretation of NTC data. Data analysis and lessons learned efforts are discussed below. Efforts were underway to collect as much data as possible from the Phase I instrumentation system until a more sophisticated system could be developed and put in place.<sup>11</sup>

Ten years in the future, or by 1996, planners saw an NTC which conducted twelve rotations annually, of twenty-five days each. The focus of training would be on the brigade of three actual battalions, two of which would be, at any one time, in engagement simulation controlled by brigade headquarters, while the third would be in live-fire under NTC control. The other elements of the brigade—headquarters, the artillery battalion, the attack helicopter battalion, the forward support battalion and other “slice” units—would all be evaluated by NTC trainer-controllers. The division and corps-level battles would be portrayed via simulation. The Futures Concept called for improvement of the Phase II instrumentation system to permit “inobtrusive [sic], non-interference collection of data and information to aid in the combat developments process.” Plans for the installation of interactive work stations at units’ home stations promised to provide the capability to replay NTC data tapes to aid in the improvement of home station training. NTC planners also saw the possibility of conducting simulated command post exercises at the division and corps levels.<sup>12</sup>

The Operational Concept for the National Training Center, for which the Futures Concept served as an introduction, went on to flesh out the Futures Concept. The NTC’s mission and philosophy had not changed and would not change significantly from that adopted in the original concept and the 1979 Development Plan. The NTC would remain an institution dedicated to the most realistic battlefield training possible through force-on-force maneuvers and live-fire exercises. Its secondary mission—that of

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10. The term “trainer-controller” appears to have been coined to mean both the field observer-controllers and the training analysts in the TRADOC Operations Group who operated the fixed instrumentation system and monitored the training exercises. Only with regard to the 1986 futures and operational concepts has the author used the term. Elsewhere the more familiar “observer/controller” (OC) and “training analysts” have been employed.

11. NTC Futures Concept, pp. iii-iv.

12. NTC Futures Concept, pp. vi-v.

data collection and analysis leading to lessons learned—also remained in place. A major change from the 1979 NTC Development Plan, as noted above, included exercises for FORSCOM or U.S. Army Western Command (WESTCOM) active Army or reserve component close-combat light brigades, which would engage in field training exercises with a heavy brigade. And, as noted in the Futures Concept, the 1986 concept called for twelve rotations of twenty-five days each instead of the traditional fourteen annual rotations of 20-21 days each.<sup>13</sup>

The remainder of the document, in general, reemphasized the principles already in place in 1986 and implied by the very reason for its being—that is, to map out a ten-year plan—that would remain in place through 1996. A change, however, would take place in the opposing forces (OPFOR) when training focused on a brigade headquarters task-organized with up to three, rather than the customary two, heavy ground maneuver battalion task forces. The OPFOR would then replicate a Soviet-style motorized rifle division (MRD) rather than a motorized rifle regiment (MRR). The concept also restated a commitment to the development of a system to automatically replicate and record the effects of indirect fire other than the use of fire markers. The inability to adequately simulate indirect fire had plagued the NTC from the beginning. Plans through 1996 included the expansion of the NTC maneuver area to allow for exercises by “full-up” brigades. Finally, The Operational Concept optimistically looked to the Air Force to develop a laser engagement system that would be compatible with the Army’s MILES. All these topics are discussed in greater detail below.

## More Training Centers and A Master Plan

As the NTC charted a course for its future, the Army, based on the NTC’s success, began planning for the establishment of other training centers modeled after the center at Fort Irwin. One of the new centers would provide NTC-like training for light forces. Another would provide realistic battlefield training for forces stationed with U.S. Army Europe (USAREUR). The last would be a simulated division and corps level command post exercise similar to that called for in the 1986 Futures and Operational Concepts.

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13. Operational Concept, [1986], pp. 1-5. The 12-rotation annual schedule was based on a “28 day model” for each rotation, which included in addition to a total of 25 days for equipment issue, training, equipment turn-in, and final clean-up, three “comp” days.

In the decade following the end of the Vietnam War, the United States Army had concentrated almost exclusively on heavy force doctrine and organization, in response to the Soviet threat. In 1983, the Army's new Chief of Staff, General John A. Wickham, Jr., took measures to establish a more balanced force structure. Light forces were a substantial part of his restructuring strategy, especially the light division, with approximately 10,000 personnel, which could be rapidly deployed. Wickham established training as "the most critical element of our light infantry blueprint." In line with that belief, he directed the TRADOC commander, General William R. Richardson, to develop a concept for a light infantry training center, modeled on the National Training Center, where airborne, air assault, Ranger, special operations forces, and the new light battalions could engage in realistic battlefield maneuvers. At that time (October 1983), the NTC trained only heavy battalions. Three years later, after much controversy, the Secretary of the Army, John O. Marsh, Jr., approved the Joint Readiness Training Center (JRTC) effort.<sup>14</sup> Planners chose Fort Chaffee, Arkansas, as the temporary location of the new training center. The JRTC was exclusively a TRADOC effort, unlike the NTC which, as noted above, was a joint TRADOC and FORSCOM program. In October 1987, the first units rotated through the JRTC.<sup>15</sup>

As the Army looked ahead to the training of the first light forces at the JRTC in October 1987, it began planning for the establishment of the heavy-unit oriented Combat Maneuver Training Complex (CMTC) to be located on a 44,000-acre site at Hohenfels, Federal Republic of Germany. Like the JRTC, the CMTC was modeled on the NTC. Training offered there would provide European-based troops with similar realistic combined arms training exercises as were available at the NTC. Plans were for fifty-two armor and mechanized battalion task forces and cavalry squadrons to train annually against an opposing force, in a mid- to high-intensity environment. The training center at Hohenfels would also feature a TRADOC operations group and an instrumentation system which would be developed in two phases, initial (interim) and objective. In early February 1988, a CMTC working group met at Seventh Army Training Command headquarters to draft a concept plan and amendment to the U.S. Army Europe

14. A detailed discussion of the debate over the creation of a light forces training center is at Chapter II.

15. (1) CAC Annual Historical Review, 1986, pp. 343-44. (2) General John A. Wickham, Jr. Chief of Staff, US Army, White Paper 1984: Light Infantry Divisions (Washington, DC, Department of the Army, 16 Apr 84) p. 4. The original name of the JRTC was the Light Forces National Training Center. In June 1993, the JRTC moved to Fort Polk, La. At that time it became a joint TRADOC and FORSCOM enterprise along the same lines as the NTC.

(USAREUR)-TRADOC memorandum of understanding establishing TRADOC's presence in USAREUR. The operations group would start out under USAREUR control. Plans called for control to be transferred to TRADOC in FY 1992.<sup>16</sup> To train the opposing forces, an OPFOR academy began operations at the CMTC in October 1988. The first training rotation was conducted in 1989. USAREUR decided on a rotation of interim OPFOR until the center became fully operational in FY 1991, at which time a dedicated OPFOR battalion would be stationed at Hohenfels.<sup>17</sup>

If the NTC provided effective training for heavy forces, the JRTC for light forces, and the CMTC for Europe-based forces, what of advanced training opportunities for active and National Guard division and corps commanders, their staffs and major subordinate commanders? To meet that need, General Wickham, still Chief of Staff of the Army, approved the concept of the Battle Command Training Program, or BCTP, in January 1987. According to the concept, BCTP would train senior commanders in warfighting skills in a five-day seminar at Fort Leavenworth or home station, followed by a five-day computer-driven warfighter command post exercise conducted by mobile training teams at home station or at a regional site. The seminars were designed to provide the training audience an opportunity to discuss doctrine and tactics and arrive at insights about modern warfighting. They also were intended to build cohesiveness between the commander and his battle staff. Warfighter exercises would provide a realistic battlefield simulation that required the player unit to fight as a team while performing to standards. As with the other new training centers, planners hoped the BCTP could provide the Army a means of determining strengths and weaknesses in its training programs. The goal was for every division and corps commander to receive a BCTP experience at least once during his command tour.<sup>18</sup>

Exercises in the BCTP began in November 1987. Plans for the future included training the commanders and staffs of ten active and National Guard divisions and two corps, or eight divisions and three corps, per

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16. Transfer of control of the CMTC Operations Group to TRADOC was postponed and had not occurred at this writing.

17. (1) TRADOC Annual Historical Review, 1989, pp. 209-10 (FOR OFFICIAL USE ONLY — Info used is not protected). (2) Issue Summary Sheet, ODCST, 18 Oct 88, subj: Combat Maneuver Training Center (CMTC). (3) Semiannual Staff Historical Report, ODCST, 1 Jan 89 - 30 Jun 89, p. 91. The original name of the training center at Hohenfels was the "Combat Maneuver Training Complex."

18. (1) TRADOC Annual Historical Review, 1989, pp. 210-11. (FOR OFFICIAL USE ONLY — Info used is not protected). (2) End of Tour Report, Thurman to Vuono, August 1989. (3) For a description of the technology and operation of the BCTP, see Lt. Col. (Ret) Thomas D. Morgan, "BCTP: Preparing for War," *Military Review*, November 1989, pp. 3-10.

year. As this study was completed, program advances included the continued development of a remoting capability that would allow units in the continental United States to "fight" at their home station as opposed to deployment to a corps battle simulation center. If it proved successful, that capability would be expanded and offered to USAREUR units. In addition, a permanent "world class" OPFOR began transmitting Red Force exercise play from a new Fort Leavenworth Battle Simulation Center (later titled the National Simulation Center) to exercise locations at the various corps. Whatever the future, the elevation of NTC-style training and evaluation to corps and division level was bound to raise anew many of the issues and concerns surrounding NTC training.<sup>19</sup>

With all the activity to establish sites and programs for advanced training, the effort to develop a "futures concept"—discussed above—took a new turn. On 23 January 1987, General Wickham approved a "master concept" which would, in effect, bring the NTC, JRTC, and CMTC, all under a unified training umbrella, especially for planning and resourcing purposes. Most of the issues addressed in the Operational Concept and the NTC Futures 1996 plan of October 1986 were outlined in what was known as the Advanced Collective Training Facilities (ACTF) concept.<sup>20</sup>

In September 1987 the Combined Arms Training Activity (CATA) at Fort Leavenworth, Kansas, articulated the need for an evolutionary "Master Plan" that would encompass the entire CTC program and ensure coordinated growth of the three new centers in conjunction with further development of the NTC. The ACTF designation was changed to "Combat Training Centers (CTC)" in May 1987 when the BCTP was added to the concept. The CTC program was designed to provide tough, realistic, combined arms and services training—in accordance with AirLand Battle doctrine—for leaders and units from company through corps. Collectively, the four facilities would serve as places where Active Army, National Guard, and Army Reserve units could undertake mission essential training that could not be accomplished at home station because of physical limitations or the prohibitive cost of providing a realistic environment. While the NTC would remain the "capstone" Army training experience, planners wanted a consolidated program that would have the capacity to train heavy, light, and

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19. (1) End of Tour Report, General Maxwell R. Thurman, Cdr TRADOC to General Carl E. Vuono, CSA, August 1989. (2) Semiannual Historical Reports, ODCST, 1 Jan - 30 Jun 89, p. 76; 1 Apr - 30 Sep 89, p. 65. (3) Briefing, ODCST to TRADOC Liaison Officers' Conference, 7-11 Aug 89, Hampton, Va.

20. (1) TRADOC Annual Historical Review, 1987, p. 35 (SECRET — Info used is UNCLASSIFIED). (2) Briefing Slides, CATA to CSA, [1986], subj: Advanced Collective Training Facilities. That briefing also requested approval of the gradual movement to training three "full-up" battalions at the NTC.

special operations forces across the spectrum of conflict. The Master Plan, which would be updated twice yearly, would also allow for the "cross-leveling" of resources across the four training programs.<sup>21</sup>

The Master Plan itself was designed to chart a course for the combat training centers—in a series of steps—from FY 1990 through FY 2000 via a centrally managed program. To provide that management, the plan provided for a CTC Quarterly Review Board and Council of Colonels made up of representatives of the Department of the Army, FORSCOM, TRADOC Headquarters staff, the Army Training Support Center (ATSC), USAREUR, the U.S. Special Operations Command, CATA, and the four training centers. The review board and Council of Colonels monitored progress and established priorities in meetings normally held in November, February, May, and August. A General Officer Executive Committee chaired by the Department of the Army Director of Training met in March and September of each year to consider recommendations of the quarterly review panel and provide final approval of new CTC program requirements (Chart 1).<sup>22</sup> In October 1988, planners for each of the CTCs presented a first draft of their plans to CATA. After a number of quarterly reviews, reviews by the General Officer Executive Committee, and numerous briefings to senior Army officials, General Carl E. Vuono, now Army Chief of Staff, approved the original CTC Master Plan in August 1989. Thereafter, the plan was revised biennially in accordance with the Department of the Army "program objective memorandum" (POM) cycle to meet changing circumstances and requirements.<sup>23</sup>

The 1989 plan was detailed in five volumes. The first four volumes included master plans developed by each of the combat training centers. In the fifth volume, the Army Deputy Chief of Staff for Operations and Plans provided an executive overview that detailed Department of the Army policy, guidance, and current resourcing for the CTC program. If all

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21. (1) TRADOC Annual Historical Review, 1987, p. p. 35 (SECRET — info used is UNCLASSIFIED). (2) TRADOC AHR, 1988, p. 151. (3) CATA Briefing to CSA, [1986], subj: Advanced Collective Training Facility. (4) CTC Master Plan, enclosure to Memorandum ATZL-CTC, CAC Commanding General for Training to DA Director of Training, 21 June 1991, subj: Combat Training Centers Master Plan [hereafter cited as CTC Master Plan] Appendix 1, p. 1-1.

22. The 1989 Master Plan made no provision for a "4-Star Review" (a panel of senior general officers), but such a forum subsequently became a part of the CTC decision-making process. The 4-Star Review was conducted once a year to review CTC status and accomplishments as identified by the Council of Colonels and the General Officer Executive Committee. Combat Training Center Directorate, ODCST, HQ TRADOC, Fort Monroe, VA, E-Mail, 7 Dec 94, subj: Combat Training Centers Master Plan.

23. (1) TRADOC Annual Historical Review, 1988, p. 151. (2) CTC Master Plan, 21 June 1991, Appendix 1, p. 1-1. The NTC GOEC became the CTC GOEC.



the elements of the program became fully operational, the Army would have the ability to train heavy, light, heavy/light, and special operations forces, at all levels of organization, across the conflict continuum. Developers of the master plan also saw the four programs included in the CTC concept as capable of providing a means of collecting and analyzing a variety of data concerning battlefield performance and the effectiveness of training under simulated combat conditions. Properly managed and employed, such data could provide a source of guidance for the development of Army training systems, doctrine, force structure, and materiel acquisition programs for new weapons systems and equipment.<sup>24</sup>

The NTC volume of the 1989 Master Plan included the proposed expansion of the NTC to support brigade operations by adding a brigade headquarters, a third battalion and a forward support battalion. That action would make necessary a corresponding expansion of the TRADOC Operations Group and the OPFOR. Meanwhile, in October 1987, the NTC began to train and evaluate the brigade commander and his staff, in addition to the maneuver battalion task forces.<sup>25</sup> The Army planned to continue to train twenty-eight battalion task forces each year through FY 1992. Beginning in FY 1993, plans were to train 12 brigades of three battalion task forces each, annually. That change was later moved forward to FY 1994. It was hoped that focusing on the battalion fight in context of the brigade fight would allow better training in the synchronization of maneuver, air-ground operations, combat support, and combat service support. However, the Master Plan specifically stated that the NTC was not to have a third maneuver battalion during each rotation until the JRTC, CMTC, and BCTP were "on line." Maj. Gen. Wesley K. Clark, a former commander of both the Operations Group and of the NTC, would later express his belief that that stipulation was a serious mistake, in that the cross-leveling of resources from the NTC upgrades to the other programs severely slowed improvements at the NTC.<sup>26</sup>

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24. (1) TRADOC Annual Historical Review, 1989, pp. 201-02 (FOR OFFICIAL USE ONLY — Info used is not protected). (2) Gen Maxwell R. Thurman, "TRADOC: Evolving to Meet the Threat," *Army*, Oct 1988, p. 60. (3) General Carl E. Vuono, "Today's U.S. Army: Trained and Ready in an Era of Change," *ibid.*, p. 25. (4) TRADOC General Officer Notes, Jun 89; Jul 89; Sep 89. (5) Vision 91 Briefing, ODCST, TRADOC Commanders' Conference, 4-7 Oct 88. (6) TRADOC ODCST Briefing to TRADOC Liaison Officers' Conference, 7-10 Aug 89, Hampton, Va. (7) AR 350-50, Combat Training Center Program, 27 May 88.

25. As aforementioned, the controversy over the expansion of the training program to include three "real" battalions is discussed in greater detail in Chapter II.

26. (1) CTC Master Plan, *passim*. (2) Interview with Maj. Gen. Clark, TRADOC Deputy Chief of Staff for Concepts, Doctrine, and Development by John L. Romjue and Anne W. Chapman, 8 July 1992.

To support the expansion of the NTC—that is, the training of three battalion task forces—FORSCOM would have to increase the OPFOR by one armor battalion and one mechanized infantry battalion. TRADOC would have to increase the instrumentation and provide enough observer-controllers (O/Cs) to accommodate heavy brigade exercises. Such exercises would also require considerably more maneuver space. As noted above, efforts had already begun to acquire more land in the Mojave Desert contiguous to the existing acreage. Other NTC plans for the future included linking the instrumentation systems at Fort Irwin with those of the Air Force's Red Flag air combat maneuver operations at Nellis Air Force Base, Nevada, and the establishment of integrated debriefing and after action review facilities at the NTC, Nellis AFB, and George AFB, California. In addition, the plan looked to new combat vehicles for the OPFOR to replace an aging and worn fleet and a communications network between the four CTCs. Most of these topics are covered in detail in subsequent chapters.<sup>27</sup>

Following a CTC General Officer Executive Meeting on 26 March 1991, the Army Director of Training, Brig. Gen. Larry Lehowicz, directed CATA to prepare a Master Plan document to describe the CTCs through FY 1994. The document was also to capture all relevant CTC actions approved to date by the Chief of Staff of the Army. Lehowicz was anxious that the document be completed before the Chief of Staff, General Carl E. Vuono, retired in June and that it be available to the new Army Chief of Staff, General Gordon R. Sullivan. On 21 June, Brig. Gen. James M. Lyle, Deputy Commanding General for Training at the Combined Arms Center, submitted the 1991 CTC Master Plan to Lehowicz. For the most part, the NTC objectives for FY 1994 remained the same, except that when funding levels had failed to support some of the original objectives, they had been acknowledged as valid by the senior Army leadership, but designated as "not fully funded." Those programs included land acquisition, military construction, additional prepositioned equipment, new vehicles for the OPFOR, and the planned communications network between the CTCs. The CMTC and BCTP had no unfunded requirements and the JRTC had only one. However, because of limited resources, the projected completion dates of most programs for the CTCs were moved forward to FY 1994. The

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27. (1) TRADOC Annual Historical Review, 1989, pp. 204-05. (2) Issue Summary Sheet, ODCST, 18 Oct 88, subj: National Training Center. (3) Semiannual Staff Historical Report, ODCST, 1 Jan - 30 Jun 89, p. 65; 1 Jan - 30 Jun 90, p. 72. (4) End of Tour Briefing, General Maxwell R. Thurman, TRADOC Commander, to General Carl E. Vuono, Chief of Staff of the Army, August 1989. (5) Msg, Cdr FORSCOM to distr, 211650Z Sep 89, subj: NTC Options - Combat Training Center Master Plan.

1991 document became the basis for further development of an updated CTC Master Plan in conjunction with upcoming "POM" cycles.<sup>28</sup>

In order to provide structure to the prioritization of resources required to support the CTC programs, all future growth and development requirements would be categorized in terms of the unit; OPFOR; Operations Group; Training Facility, to include instrumentation; and base operations. While some CTC programs would have to be delayed because of budget pressures, they received support from the top Army leadership. After having been briefed on the Master Plan in August 1989, General Vuono had stressed the need for the Army to create a realistic and exciting training environment on the CTC battlefield in order that it might continue to recruit and retain intelligent men and women in the Army. At that time he also directed the Army leadership to be certain that the force understood that in an era of constrained resources, the Army might have to cut back in other areas to allow for building the CTC battlefields.<sup>29</sup>

Despite the strong support of senior Army leaders for the NTC program and for the programs of the other CTCs, circumstances forced frequent adjustments to the Master Plan. The original 1989 plan called for the NTC—by 1994—to conduct ten light battalion-level exercises per year, three to four of which would involve rehearsing contingency operations (CONOPS). The unit deployment requirements of Operations Just Cause in Panama in 1989 and Desert Shield and Desert Storm in Saudi-Arabia in 1990-1991 and the subsequent downsizing of the Army beginning in 1992, caused some disruption in the program. For example, in 1991, the NTC conducted only six heavy/light and two CONOPS exercises. The 1991 Master Plan took those changes into account and reduced the number of rotations annually from 14 to 12 for 1994, but light forces would be integrated to a large degree and the NTC would work toward the instrumentation capability to integrate air-ground and contingency operations.<sup>30</sup>

As the Army and the defense budget grew smaller, the CTC Master Plan evolved, and the process was refined, the Army turned to automation to provide a tool to give access to data to support the decision-making process—primarily with regard to the allocation of scarce resources among the CTCs. In short, the database created would assist the Council of Colonels

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28. CTC Master Plan, 1991, *passim*. Brig. Gen. Lyle became Army Director of Training in August 1991. The 1989 Master Plan proposed funding the CTCs at \$2.4 billion; funding later had to be revised to \$1.3 billion. POM stood for Program Objective Memorandum.

29. (1) TRADOC Annual Historical Review, 1989, p. 202. (2) CTC Master Plan, 1991, pp. 7-8.

30. Heavy/light and light/heavy rotations are discussed in Chapter II.

and the GOSC in integrating the management of the four training programs. In October 1992, the CTC Directorate, through CAC-Training, awarded a contract for development of a program to link the databases of the CTCs and provide an efficient means of updating the Master Plan as changes occurred. To further assist program managers, the automated "living Master Plan" was accompanied by a published document consisting of fifteen volumes and five appendices. Seven of the printed resource volumes addressed issues pertaining to all the CTCs, such as program funding, and information on each of the training facilities. The remaining volumes addressed issues concerning the major commands involved in the CTC program.<sup>31</sup>

### Army and Forces Command Regulations 350-50

The regulation that had governed the NTC development process since April 1980 was Army Regulation (AR) 350-50, National Training Center. The two-and-a-half page regulation, signed by then Army Chief of Staff General Edward C. Meyer, briefly set forth the concept of the NTC and its purposes and objectives. It also defined the roles and responsibilities of FORSCOM, TRADOC, and AMC. At the time of its adoption, it had been designed to settle a number of disagreements between TRADOC and FORSCOM over control of the various functions of a National Training Center.<sup>32</sup>

On 30 June 1984, after nearly two and a half years of battalion task force rotations at the NTC, FORSCOM published Circular 350-84-10, Rotational Training at the National Training Center. The twenty-five-page circular drew on the experience thus far gained and was obviously meant to "assign responsibilities for NTC activities" and serve as a guide for FORSCOM active and reserve units and the NTC support elements at Fort Irwin, but it also outlined TRADOC responsibilities.<sup>33</sup> As set forth in FORSCOM Circular 350-84-10, TRADOC's role was almost identical to that set forth in the 1980 version of AR 350-50, with one exception: a section was added making the identification and dissemination of "lessons

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31. CombinedArms Command-Training, Combat Training Center Directorate, Fort Leavenworth Kansas, Combat Training Center Master Plan: The CTC-MP Process, 25 May 93. The October 1992 contract for development of a program to link the CTC databases was awarded to Titan Applications.

32. The adoption of AR 350-50 (1980) is discussed in Chapman, *NTC*, Vol I, p. 34.

33. TRADOC never adopted a separate regulation governing that command's role at the NTC.

learned" one of TRADOC's roles. The significance of that addition will become clear further on in this study.<sup>34</sup>

With the end of the first phase of NTC development at hand, a new edition of the Department of the Army regulation seemed in order. The task of authoring the new regulation fell to the five-person National Training Center Programs Office at the Combined Arms Training Activity. On 19 September 1985, the Army Director of Training sent out a final draft of the regulation for comment. The September 1985 draft of AR 350-50, National Training Center, did not change the basic NTC concept contained in the 1980 edition, nor did it significantly change FORSCOM's or TRADOC's responsibilities. Like the 1984 FORSCOM circular, the draft regulation did specifically spell out TRADOC's responsibility for lessons learned at the NTC.<sup>35</sup>

The 1985 draft regulation also contained a section not found in its 1980 predecessor—one dealing with visitors to Fort Irwin and the NTC. The authors of the earlier regulation, which had been written before the NTC began operations, could not have anticipated the interest the training center would generate nationally and internationally among the military, political, and media communities. In its first two and a half years, the NTC had received numerous requests for visits and hosted hundreds of visitors. The NTC cadre complained of training distracters and NTC commanders complained that they were not notified of impending visits. The draft of the revised regulation categorized visitors to the training center from 1 to 5, those military personnel involved in training being category one, and local news media, civic groups, and others not involved in training being category five. Others such as members of Congress, senior military officials, representatives of foreign governments, industry executives, and national news media representatives, fell somewhere in between. The draft also established formal procedures that all persons who requested a visit to the NTC had to follow. As the September 1985 draft of AR 350-50 was being fielded, the aforementioned efforts to consolidate management of the NTC with the three combat training centers under development served to make it obsolete. Although retitled "Advanced Collective Training Centers," the 1985 draft was never adopted. The procedures for the approval of visits were, however, adopted separately and remained in place at the end of 1993.<sup>36</sup>

34. FORSCOM Circular 350-84-10, Rotational Training at the National Training Center, 30 Jun 84.

35. AR 350-50 (Draft), National Training Center, 19 Sep 85.

36. (1) AR 350-50, National Training Center, 15 April 1980. (2) AR 350-50 (DRAFT), National Training Center, 19 Sep 85, pp. 9-12. (3) AR 350-50, Combat Training Centers, 27 Jun 88, p. 1. (4) Msg, Cdr FORSCOM to distr, 171425Z Dec 93, subj: Approval of Requirements to Visit the CONUS Cbt Tng Ctrs (CNCTC) (NTC and JRTC).

On 27 May 1988, six months after General Wickham had approved the concept of a Master Plan, the Department of the Army finally circulated a new AR 350-50, Combat Training Centers, to become effective exactly one month later. The new regulation was designed to establish and prescribe Department of the Army policies, objectives, and responsibilities for the entire CTC Program, including the NTC. Although the new regulation was much more detailed, its structure radically revised, and it contained much greater emphasis on joint and combined arms operations than its 1980 predecessor, the roles and responsibilities of TRADOC and FORSCOM at the NTC remained essentially the same. Two issues, however, that had been addressed in the NTC regulation of 1980, were conspicuous by their absence.

First, no mention was made as to the status of the testing of new concepts, equipment, or systems at the CTCs. The 1980 NTC AR 350-50 had permitted such testing when "it does not interfere with the training . . ." However, over the first years of the NTC's existence, the question of the effect of such tests on the quality of training had arisen many times. Indeed, as this study is being written, the debate continues. The CTC regulation offered no guidance.

The second issue concerned data collection, analysis, and dissemination at the CTCs. Although the 1980 NTC regulation clearly stated that "the training environment will be paramount at the NTC. Data collection will be secondary to accomplishing training objectives," that concept was widely misunderstood. That misunderstanding was especially widespread among members of Congress who believed the NTC was not living up to its potential by failing to analyze data to assist in assessing doctrine, tactics, and evaluating training development efforts. The results of the struggle are told in much greater detail in Chapter VIII. Suffice it to say here that while data collection was mentioned in the 1988 AR 350-50, no guidance was given as to its priority.<sup>37</sup>

The 1988 edition of AR 350-50, Combat Training Center Program, survived for five years before an interim draft of a revised regulation was sent to the field for review. Although the format was significantly changed, the June 1993 interim draft made few changes in the assignment of responsibilities to Department of the Army elements and the major commands involved in CTC development and management. The proposed regulation was in general somewhat more detailed than the 1988 regulation. Again, no

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37. (1) AR 350-50, Combat Training Center Program, 27 Jun 88. (2) For the early debate over data collection, analysis, and dissemination at the NTC, see Chapman, *NTC*, Vol. 1, pp. 111-27.

specific mention was made as to the policy toward testing and experimentation or to the relative importance of data collection and the dissemination of "lessons learned" as opposed to the paramount function of training.<sup>38</sup>

As of the close of 1993, the new regulation had not been approved. Several issues had arisen and policy changes had been made that dictated another look at AR 350-50 and a companion document, DA Pam 350-50, Combat Training Center Program Management. The issues that most affected the NTC dealt with the role of the CTCs in reserve component training, the prepositioning of equipment at Fort Irwin for BLUFOR use, and the use of the NTC for "advanced warfighting experiments." The training of reserve forces at the NTC, and elsewhere, had taken on added importance as the Army grew smaller and more reliance had to be placed on the potential call-up of the U.S. Army Reserve and Army National Guard troops. Still in question was who should pay for National Guard training. Also, still unresolved was the use of the maneuver training centers for "advanced warfighting experiments" (AWE). Army Chief of Staff Sullivan and TRADOC commander General Frederick M. Franks, Jr. wished to employ the centers to test new technology based on "digitization" principles which, it was hoped, would aid commanders in "situational awareness" on the battlefield. They planned to begin demonstrations of the new technology at the NTC in the spring of 1994. Forces Command strongly objected on the grounds that turning the CTCs into testing sites would detract from training. As for the issue of prepositioning equipment, many commanders wanted to leave all equipment at home station and use prepositioned equipment, to train soldiers for quick reaction in emergencies by eliminating the necessity to prepare equipment for transport.<sup>39</sup>

## Personnel Issues

Even before the first battalion task forces conducted force-on-force or live-fire exercises at the NTC, the table of distribution and allowances authorizing personnel and equipment for the TRADOC Operations Group had been a major problem. The difficulties, examined in detail in Volume I of this study, were also symptomatic of the tensions between TRADOC and FORSCOM in coordinating their efforts in the best interest of the NTC and

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38. AR 350-50, Combat Training Center Program, interim draft, June 1993.

39. Msg, Cdr TRADOC to distr, 211430Z Nov 1994, subj: C1 to AR 350-50, Combat Training Center Program and C1 to DA Pam 350-50, CTC Program Management. The prepositioning issue reflected the Army's efforts to establish a program for prepositioning equipment afloat as part of plans for rapid deployment.

its training program. From time to time since operations had begun at Fort Irwin, disagreements between the two commands over personnel had surfaced. On 15 June 1991, FORSCOM published a new regulation 350-50, Training at the National Training Center. The new regulation was, in part, an update of the 1984 Circular 350-84-10 which had expired in January 1985 and FORSCOM Regulation 350-50, Training at the National Training Center, of 15 November 1987, but it also addressed some new issues and incorporated changes that had occurred as the NTC matured. Among those changes were the establishment of a Leader Training Program and guidance for the deployment of reserve forces to the NTC for training.

Perhaps most importantly, the new regulation had a major effect on the TRADOC Operations Group. Specifically, the regulation made allowances for training units to deploy troops and equipment in excess of the support capabilities of the Operations Group. To make matters worse, a U.S. Army Force Integration Support Agency (USAFISA) manpower survey mandated that the maximum authorized strength of the Operations Group be based on the deployed strength and task organization of the standard troop list for each rotation. The study also endorsed the use of augmentee O/Cs, which FORSCOM would supply when excess requirements existed. Further complicating the issue was the USAFISA recommendation that 35 positions within the Operations Group be eliminated. The Operations Group commander had requested, under the Schedule X procedures, a personnel increase of some 175 positions. The recommendation, therefore, represented a manpower shortfall of some 211 positions from mission essential levels as represented by the Operations Group commander. In light of all that, the central question became which command had control over the FORSCOM-supplied, but TRADOC Operations Group-assigned O/Cs?<sup>40</sup>

In addition to those deep personnel cuts, the manpower survey served to highlight once again the delicate issues associated with the joint MACOM control of the National Training Center. Under AR 350-50 (1988) TRADOC was required to:

provide and train an Operations Group . . . that is sufficiently staffed and organized to develop scenarios, assess the performance of training units against Army doctrinal standards, collect embedded source data/information, operate components of the fixed instrumentation system, and provide detailed feedback to both unit and unit's chain-of-command.

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40. (1) Chapman, *NTC*, Vol. I, pp. 49-54. (2) CAC Annual Historical Review, 1991, p. 107. (3) TRADOC ODCST SSSR, 1 Jul - 31 Dec 91, p. 90.

With regard to staffing, the regulation required FORSCOM to "provide force structure for the CTC less the TRADOC provided OPSGRP." The USAFISA determined that the base operations portion of the FORSCOM table of distribution and allowances that directly supported the operations group required review. Specifically the survey identified the need for a TRADOC-FORSCOM memorandum of understanding (MOU) concerning support of the Personnel Administration Center, Maintenance Operations, Air Force Liaisons for Nellis Air Force Base, and for A Company, Support Battalion. The memorandum, when completed, addressed the general operating procedures for the coordination of operations between FORSCOM and TRADOC.<sup>41</sup>

As this study was being prepared, the MOU between the commands had not been signed, and it appeared that it would not be, since too many disagreements had arisen between the two headquarters on personnel manning for the Operations Group. In September 1992, General Franks directed that—in the face of the manpower problems TRADOC was having—the CTCs look at ways to reduce military spaces in the Operations Group by contracting out training support positions. The NTC had the most potential for an action of that sort because it had a higher ratio of military to civilian authorizations than did the other CTCs. The NTC (FORSCOM) proposed to contract out a total of 119 spaces (15 officer, 1 warrant officer, and 103 enlisted) from the Video Section, fire markers, live-fire maintenance, live-fire operations and scenario writers. The spaces would be phased out gradually during FY 1994 and FY 1995, to ensure a smooth transition. The TRADOC commander approved the NTC's keeping 65 military authorizations to be used to increase the number of observer/controllers. The NTC proposed keeping 28 officer, 5 warrant officer and 32 enlisted authorizations, that is, 13 more officers and 4 more warrant officers than were being replaced by contracting. Such an action would mean, of course, that the conversion would not be a one-for-one switch and the additional officers and warrant officers would have to come from elsewhere. In September 1993, CTC representatives at the Combined Arms Command, at the direction of General Franks, informed the Chief of the NTC Operations Group that there would be no such increase in the Operations Group table and that any restructuring had to be done "in-house."<sup>42</sup>

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41. (1) AR 350-50, Combat Training Center Program, 27 Jun 88, p. 2. (2) CAC Annual Command History, 1991, p. 107.

42. (1) CAC PROFS Bulletin Board, CTC Dir, CAC-T, 9 Sep 93; 7 Oct 93. (2) Briefing, ODCST, CTC Quarterly Review, Hampton, Va., 27-28 Oct 93, subj: NTC Ops Grp Contract to TDA Conversion Update. (3) PROFS Messages, Capt. Michael Worth, ODCST to TRADOC Office of the (Continued)

On 27 September 93, Maj. Gen. Carl G. Ernst, the TRADOC Deputy Chief of Staff for Training, was briefed on the situation for the purpose of determining who would "pay the bill" for the 13 officer and 4 warrant officer decrement. Ernst's guidance was that TRADOC schools not be directed to give authorizations to the NTC. However, school commandants could volunteer spaces. In addition, all switches would be one-for-one. In an effort to break the impasse and to conduct "a good, tough analysis of O/C TDA positions" at all the Combat Training Centers, Brig. Gen. Joe N. Frazar III, in his capacity as CAC Deputy Chief of Staff for Training created a cell at CAC. The group's mission was to take a fresh look at the functions of the operations groups' tables considering their responsibilities for safety, assessment, after action reviews, training unit coverage, and analysis. The question of contracting civilians at the NTC, probably for the Training Analysis and Feedback Division, was only a part of that effort. Brig Gen. Frazar's efforts were ongoing at this writing. Whatever the outcome, the result would mean fewer military personnel at the NTC and JRTC.<sup>43</sup>

## The Leader Development Program

Forces Command Regulation 350-50 of June 1991 also established procedures for implementing a Leader Development Program designed to enhance the warfighting and military decision-making combat skills of brigade and battalion commanders and their battle staffs prior to a unit's rotation to the NTC, as well as to the other two maneuver training centers. The courses were conducted by O/C subject matter experts for active component forces on site at each center. The emphasis during the pre-rotation period was on planning, the synchronization of combat assets, team building, and battle drills. Developers saw the program as an integral part of the maneuver training center experience that could provide consistency and transition to a unit's maneuver training scenario. The focus was balanced

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42. (Continued) Command Historian, 15, 22 Dec 93. The contracting issue with regard to the NTC Operations Group went back at least to 1988 when a Contract Analysis Study—directed by General Vuono, CSA, and conducted by CATA—investigated options to meet the manpower requirements of all the CTCs, by contracting. The group looked at all aspects of contracting at the CTCs and analyzed a full range of options. However, when the study was briefed to General Vuono, he directed that the study group look for additional options. See Msg, Cdr TRADOC to distr, 192025Z Jan 88, subj: Combat Training Center (CTC) Contract Analysis Study, TRADOC AHR CY 1988.

43. (1) CAC Profs Bulletin Board, CTC Dir, CAC-T, 7 Oct 93; 12 Nov 93. (2) Briefing, ODCST, CTC Quarterly Review, Hampton, Va., 27-28 Oct 93, subj: NTC Ops Grp Contract to TDA Conversion Update. (3) PROFS Msgs, ODCST to TRADOC OCH, 15, 22 Dec 93.

between the decision-making process and the execution of operations plans and orders.

Officers taking part in the 6-day program—offered twelve times a year—prepared operations plans for tactical missions identical to missions assigned training units. Subsequently, the group was briefed on the training unit and OPFOR tactical plans before observing the execution of the training operation and taking part in the after action review. After action reviews were conducted with the same formality as during unit rotations. Opportunity was given for program participants to discuss and compare plans and concepts with the executed plan. Each course at the NTC was, in accordance with FORSCOM Regulation 350-50, of three days duration. The TRADOC Operations Group was responsible for the Leader Development Programs, which were conducted by the observer/controllers with assistance from contractor coaches.<sup>44</sup>

## Organizational Changes, 1985-1993

The original AR 350-50 (1980) and its successors had placed overall responsibility for NTC policy in the Office of the Deputy Chief of Staff for Operations and Plans, Department of the Army. Planning and programming for the resources required for research, development, and procurement of materiel to support the NTC fell to the Department of the Army Deputy Chief of Staff for Research, Development, and Acquisition (RD&A). The functional aspects of RD&A were the responsibility of the U.S. Army Materiel Development and Readiness Command (DARCOM).<sup>45</sup> The Forces Command operated the training center as a FORSCOM training facility and provided the force structure for the OPFOR and base operations. Forces Command also appointed the NTC commander who commanded all units and elements assigned to the NTC. TRADOC's responsibilities were to maintain and operate the training environment, oversee the operation of the instrumentation system, and develop the operational scenarios. As previously noted, the TRADOC element responsible for those functions at the NTC was the TRADOC Operations Group. The "Ops Group" was the heart of the TRADOC presence at Fort Irwin.<sup>46</sup>

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44. CTC Issue Sheet, 3 Apr 96., subj: Leader Training Program (LTP).

45. DARCOM was retitled the U.S. Army Materiel Command in 1984.

46. For detailed discussion of the TRADOC Operations Group's activities at the NTC, see Chapman, *NTC*, Vol I, pp. 343, 52-53.

As the NTC matured and the Combat Training Centers program concept took shape, FORSCOM's organizational structure, based in the G-3 (operations) at Forces Command headquarters at Fort McPherson, Ga., seemed to change little. The TRADOC Operations Group was not to be so fortunate. The organizations to which the NTC TRADOC element had to report seemed constantly to be changing. Under the NTC Development Plan of 1979, the U.S. Army Combined Arms Center at Fort Leavenworth had overall responsibility for the training environment at the NTC, a role it fulfilled through its Combined Arms Training Development Activity (CATRADA) at Fort Leavenworth.<sup>47</sup> CATRADA, in turn, passed that function on to its Unit Training Directorate, which discharged its responsibility through its NTC Division. From 1978 to mid 1980, the CATRADA commander, a brigadier general, reported directly to the major general commanding the CAC Combined Arms Combat Development Activity (CACDA). In April 1980, CAC commander Lt. Gen William R. Richardson freed CATRADA from the CACDA chain of command and directed it be reorganized as a new mission activity.<sup>48</sup>

That alignment lasted until 1 October 1982 when CATRADA was disestablished and its training directorates realigned under the U.S. Army Command and General Staff College (CGSC). Under that arrangement CAC's training missions took a back seat to the traditional missions of the college and had to share the attention of the CGSC deputy commandant with more than twenty other college agencies and directorates. The resulting turbulence in the training development community had a severely detrimental affect on the Operations Group at Fort Irwin as it struggled to stabilize a new and untried training system for the Army. In July 1984, General Richardson, by then TRADOC commander, directed that the training directorates at CAC, including jurisdiction for the NTC Operations Group, be separated from the CGSC and formed directly under CAC headquarters into a new Combined Arms Training Activity, or CATA. Direct responsibility for the NTC Operations Group fell to the aforementioned National Training Center Programs Office which was created in February 1985 and aligned directly under CATA headquarters. Later in 1985, the Center for Army Lessons Learned (CALL) was created as a directorate of CATA primarily to improve the NTC data collection and analysis program. At that time, the

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47. CATRADA was established on 1 Dec 76 as part of General William E. DePuy's and Maj. Gen. Paul F. Gorman's efforts to make the Army's training development and combined arms training efforts more coherent and efficient. See CAC AHR 1987, p. 267.

48. The specific responsibilities of the NTC Division and the reasons for the CAC reorganization of 1980 are detailed in Chapman, *NTC*, Vol. I, p. 52.

CATA Combined Arms Integration and Standardization Directorate established a separate NTC Lessons Learned team, which was absorbed into CALL five months later. The complicated data collection and NTC "lessons learned" issues are examined in detail in Chapter VIII.<sup>49</sup>

Late in 1986, with the "umbrella" concept for the NTC and the other combat training centers under development, the NTC Programs Office was renamed the Advanced Collective Training Facilities (ACTF) Programs Office. On 1 February 1987, the ACTF Programs Office was separated from CATA headquarters and established as a CATA directorate and renamed the Combat Training Centers (CTC) Program Directorate. That development was a result not only of the CTC concept but of the fact that CATA had become TRADOC's executive agent for the NTC in reality as well as in theory. TRADOC involvement at Fort Irwin, which had lagged after the disestablishment of CATRADA, had by 1987, been reinvigorated.<sup>50</sup>

Aligned under the CTC Directorate of CATA, the NTC Operations Group enjoyed a relatively stable organizational arrangement until the fall of 1990. At that time, all of TRADOC, including the Combined Arms Center, formally initiated changes that were primarily a response to world-changing events and to public pressure to reduce the size of the military and reduce costs. At that time, also, CAC was redesignated as the Combined Arms Command. CATA became the Combined Arms Command-Training (CAC-T) when its commander received the new position of Deputy Commanding General for Training. At the same time, CAC-T gained from TRADOC headquarters the responsibility for maintaining and upgrading the instrumentation systems at the combat training centers and proponency for tactical engagement simulation. As part of the reorganization, the CTC Programs Directorate acquired the new name of Combat Training Center Directorate, but with little change in mission. The Operations Group at Fort Irwin now reported to the CAC Commander through the CAC-T Commander/DCG-Training. At this writing, a proposal to return many functions of CAC, including those of the CTC Directorate, to TRADOC headquarters awaited the decision of the Chief of Staff of the Army.<sup>51</sup>

The above discussion depicts the organizational background against which the National Training Center TRADOC Operations Group operated

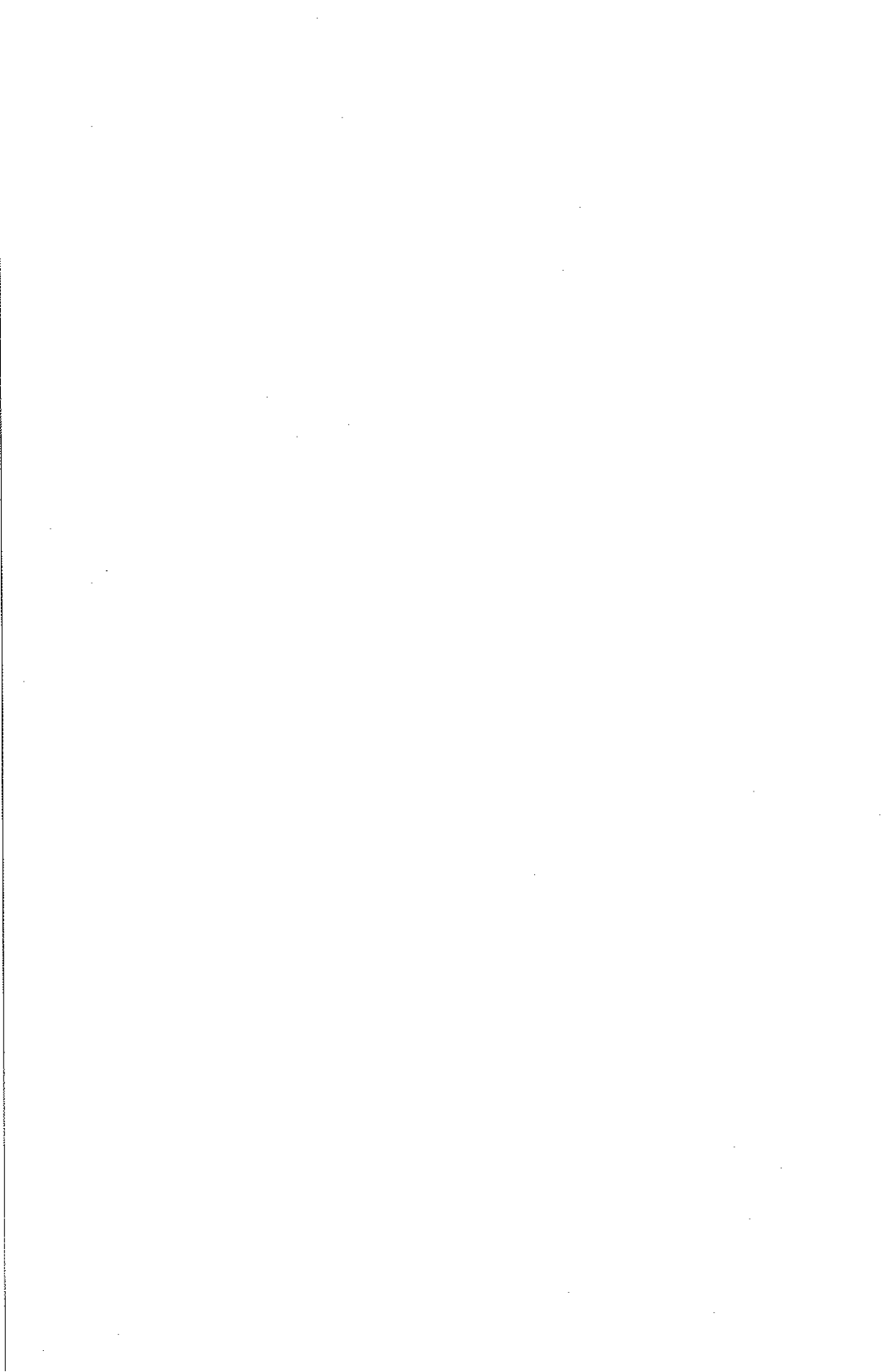
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49. CACAHR, 1987, p. 268; 1990, p. 81. CATA was established provisionally on 1 Jul 84 and officially on 22 May 1985.

50. (1) TRADOC AHR 1987, p. 35. (2) CAC AHR 1987, pp. 268-69.

51. (1) CAC AHR 1990, pp. 15, 81-82, 110-11. (2) TRADOC ACH 1989, pp. 7, 15.

over the decade following 1984, as it strived to continuously improve the training experience for the FORSCOM units who visited Fort Irwin. During those ten years since General Wickham had declared the NTC a success, the training center at Fort Irwin had served as the model for three more training centers and had become the senior and largest facility in the Combat Training Center Program. While relations between TRADOC and FORSCOM and, indeed, between TRADOC headquarters and the Combined Arms Center were not always harmonious, there was no disagreement as to the importance of the NTC and its training program to combined arms training for the Total Army.



## The Focus of Training

**F**rom the time of its conception, the developers of the National Training Center had seen it not only as a potentially revolutionary improvement in military training, but also as an evolutionary process. That is, they did not envision the day the NTC would reach a point in development where it could be declared "complete." Indeed, in the almost ten years since 1984 when General Wickham had made his "go, no go" decision in favor of continuing and expanding the NTC, much had changed. "Heavy/light" (light units attached to heavy task forces) and light/heavy (heavy armor and mechanized infantry forces attached to light forces) rotations had been introduced, and the training center had completed its first rotations involving contingency operations. Divisional cavalry squadrons had also taken part in the training exercises, and rotations had been conducted with motorized forces from the 9th Infantry Division. One thing, however, had not changed. The "futures" and operations plans of 1986 had called for the NTC to move toward brigade level operations, that is, the training of three "real" heavy battalions instead of the current two battalions with a brigade slice to serve as higher headquarters. At this writing only two battalions were being trained during each rotation, although the level of participation by brigade staffs and support elements had increased. The subject of adding a third actual battalion during each rotation, however, had been hotly debated over the years.

### The "Brigade-Level" Controversy

How the brigade should be exercised at the National Training Center was a two-part question. The first issue was the level of participation of the brigade "slice." What was the appropriate command level for NTC training? More specifically, who should evaluate the brigade commander and his staff and the brigade slice elements? The NTC concept as of the end of 1984 was based on training two "full-up" battalion task forces (TF). One TF participated in tactical engagement simulation under control of its

brigade headquarters, and the Operations Group evaluated that battalion. The Operations Group provided a notional division headquarters but did not evaluate the brigade. The brigade evaluated itself through its chain of command, and other elements of the brigade, such as field artillery, also evaluated themselves. While one battalion was conducting force-on-force maneuvers against the OPFOR, the second battalion task force took part in live-fire exercises and was also evaluated by the Operations Group. During the rotation, the two battalions exchanged places so that both could participate in live-fire and force-on-force training. Almost from the beginning there had been a theoretical debate over whether the focus of training should be on the battalion, or at a higher level. A second question concerned the practical pros and cons of actually fielding a third battalion rather than a "notional" one.

The controversy over what level of training ought to be provided at the NTC went back at least to August 1983 when the Field Artillery School proposed elevating the level from battalion to brigade. Some senior Army officials believed that training for a full three-battalion brigade would provide a more realistic battlefield environment and enhance training in command and control (C<sup>2</sup>). Many top level Army leaders had remarked upon visiting the NTC and observing the force-on-force maneuvers, that C<sup>2</sup> was a serious problem for almost all BLUFOR commanders. Another factor behind the re-look at the level of the training at Fort Irwin was criticism from some members of Congress that the NTC was too expensive and that the Army was not taking full advantage of its investment there. Perhaps training three battalion task forces at once would make the investment easier to justify and be more efficient. In July 1984, a study sponsored by the Army Deputy Chief of Staff for Operations and Plans, Lt. Gen. Fred K. Mahaffey, looked at a number of the key issues associated with the NTC as the training center neared the end of its first phase of development. One of the alternatives the study suggested for improving the training program at the NTC was "true" brigade level training.<sup>1</sup>

The TRADOC commander at that time, General William R. Richardson, was quick to react. In a visit to Lt. Gen. Mahaffey on 28 June 1984, Richardson expressed his opposition to "gearing NTC up to the brigade level." Again, two weeks later, also in a letter to Mahaffey, the TRADOC commander declared that "we must be absolutely adamant in protecting the battalion task force orientation at NTC." Richardson's reference was to both the proposed concurrent training of three battalions, and

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1. Ltr, General William R. Richardson to Lt. Gen. Fred K. Mahaffey, 13 Jul 84, General William R. Richardson Papers, U.S. Army Military History Institute, Carlisle Barracks, Pa. [hereafter cited as Richardson Papers].