

DOCTRINAL CHANGES AT THE DIVISION LEVEL AND BELOW DURING  
THE INTEGRATION OF TACTICAL NUCLEAR WEAPONS

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MASTER OF MILITARY ART AND SCIENCE  
General Studies

by

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## ABSTRACT

DOCTRINAL CHANGES AT THE DIVISION LEVEL AND BELOW DURING THE INTEGRATION OF TACTICAL NUCLEAR WEAPONS, by Major James Lee, 89 pages.

Throughout the early Cold War Period, the Army rapidly integrated tactical nuclear weapons in order to best prepare for the future battlefield. This period represents one of the few times where the Army integrated a materiel solution, nuclear weapons, and then updated its organizations, doctrine, and other elements around that materiel solution. This study focuses on the doctrinal changes the Army made at the tactical level during this period. This study is significant because as technology evolves at an increasingly rapid pace, the Army will likely find itself adopting a materiel solution and then organizing and updating its doctrine around that solution as it did during the 1950s.

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## ACRONYMS

AR	Army Regulation
DOTMLPF-P	Doctrine, Organization, Training, Materiel, Leadership/Education, Personnel, Facilities, Policy
FM	Field Manual
PME	Professional Military Education
POI	Program of Instruction
USSR	Union of Soviet Socialist Republics

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## CHAPTER 1

### INTRODUCTION

#### Chapter Introduction

The purpose of this research paper is to determine the changes the Army made across the doctrine and education domains of the doctrine, organization, training, materiel, leadership and education, personnel, facilities and policy (DOTMLPF-P) spectrum in response to the integration of nuclear capabilities in the immediate post-World War II era. This topic is significant because the Army continues to integrate new technology, the effects of which may not be fully understood. The actions the Army took during this period to adjust to the changing technology can provide insight into how to best update the Army as it enters a time of significantly increasing technological capabilities.

The Army is constantly evolving. There are numerous examples of changes the Army has made across DOTMLPF-P throughout its over 200-year existence. The Army undertakes the majority of these changes in order to fill capability gaps to better prepare for future conflict. As an example, the Army began its changes in the 1970s by updating its doctrine, then subsequently updating its training practices and then completing the changes through materiel solutions by adopting the big five.<sup>1</sup> The Army implemented these changes because of the identified Soviet threat and the changing characteristics of

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<sup>1</sup> Combat Studies Institute (CSI), U.S. Army Command and General Staff College, *Case Study, Summary: CSI Report No. 14, Sixty Years of Reorganizing for Combat: A Historical Trend Analysis* (Fort Leavenworth, KS: Combat Studies Institute, January 2000).

the battlefield, particularly the Arab-Israeli War. The changes indicated here were born of a need and started with the implementation of AirLand Battle Doctrine.<sup>2</sup> This doctrine codified changes to the way the Army envisioned fighting the Soviet threat in a conventional war in Europe.<sup>3</sup> The majority of changes the Army makes follow this general framework; the Army identifies a gap and begins the change through the easiest domain of DOTMLPF-P, which is generally doctrine. This is because these changes, made through the doctrine domain, require minimal resources when compared with the other domains and can be implemented more expeditiously. The actions the Army took during the New Look Era were somewhat different in that the Army adopted a materiel solution first, and then began to initiate changes in the doctrinal, organization, policy and other domains of DOTMLPF-P. The Army knew that in order to maintain relevance, it needed to integrate nuclear capabilities. Once they possessed these weapons in sufficient numbers, they began to look more closely at how to best integrate them and how to best update the other domains of DOTMLPF-P in order to utilize this technology.

Numerous works exist that detail the Army's changes during this era, most of them focusing on the Army at the division, corps, or theater army levels. Additionally, while the current body of work covers portions of DOTMLPF-P at higher echelons, they only touch briefly on the education, and doctrinal changes the Army implemented during this period. This is the gap this thesis will fill; the doctrinal changes the Army implemented at the Division level and below, as well as the education changes made to

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<sup>2</sup> CSI, *Sixty Years of Reorganizing for Combat*.

<sup>3</sup> Ibid.

field grade Officer Education, and how this applies to future Army decisions when integrating technology.

### Research Questions

The primary research question is what doctrinal and education changes, at or below the division level, did the Army make during the New Look Era (1953-1961)?

Secondary research questions are:

1. What factors necessitated these changes and how similar are they to the contemporary environment? This question must be covered with respect to internal factors to the Army and the external factors within the military and national environment.
2. Which of these changes were enduring?
3. How do these factors relate to the current and future technological developments?
4. What lessons from these changes can the Army apply as it integrates new technology?

### Limitations

From a research perspective, the primary limitation to the study of this topic is within the education domain. This limitation exists because historical programs of instruction (POI) are not readily available for all courses of instruction that existed during the New Look Era. Primarily, due to the multiple transitions and changes made, the POIs for courses below the field grade level are not available, or available in such insufficient detail that they would not add to this thesis. Fortunately, the impact of nuclear weapons was likely insignificant enough at the company level to not necessitate significant

changes outside of integrating the updated doctrine and discussing the implications of the changes to maneuver formations at echelons above the company.

While POIs exist more consistently for the Command and General Staff College and the Army War College, there may still be gaps in the POIs that limit the analysis of education changes across this time. Some of the intended updates may only be codified in internal memorandums or in schedules, and not full programs of instruction.

An additional limitation to this study is the doctrine available from the period. While the entirety of the maneuver doctrine from the period is readily available, some nuclear doctrine from the period remains classified. In addition to issues with classification, there is nuclear doctrine, FM 100-31: *Nuclear Operations*, referenced in doctrine from the time that does not exist in available doctrine archives. While only one specific manual, the amount of nuclear doctrine produced during the period is relatively small, so this represents a significant limitation. Additionally, the number of times the Army updated doctrine during the period is limited, so doctrine from before or after the New Look Era may be relevant if it helps to illustrate changes codified during the era.

#### Scope and Delimitations

This paper will be delimited in multiple ways. Based on initial research, this paper will focus on the doctrinal and education changes made during the period as the other aspects of DOTMLPF-P are well covered by other authors and researchers. Additionally, the doctrinal focus of this paper will be on maneuver doctrine. While the Army integrated nuclear capabilities through multiple branches and components, their effects across all domains are most apparent in maneuver, defined here as Infantry and Armor, formations at the tactical level. Acknowledging that many of the materiel solutions were

implemented in the Field Artillery branch, this thesis may discuss Field Artillery doctrine from the time, but that will not be the focus. Also, in reference to doctrine, this paper will primarily focus on the division, brigade, and battalion levels, as these were the tactical echelons in the Army that experienced the most significant changes in response to the integration of nuclear weapons during the New Look Era. The doctrinal changes that are present indicate the Army made a decision to adopt specific changes and codify them in doctrine, which generally takes a level of validation through either simulation, exercise, or general professional agreement.

From the educational perspective, the focus of this paper will be on the education of field grade officers during the time. This delimitation is because education of field grade officers during the period will most accurately portray educational changes across the Army. This is because at the field grade level, the professional military education becomes generalized for the first time, encompassing all branches instead of maintaining educational separation.

Finally, from a general perspective, this thesis will avoid in-depth analysis of the strategic implications that drove the Army's decision to develop nuclear capability. While these implications clearly influenced doctrinal changes by necessitating them, other authors have covered them in significant depth such that any discussion here would be both redundant to their work and detract from the focus on tactical maneuver doctrine.

#### Significance of Study

This study is significant because of its ability to provide insight about how the Army can best integrate emerging technology through doctrine and education updates. Given the current situation, with the Army's transition to a focus on Large Scale Combat

Operations (LSCO), the evolving concept of Multi-Domain Operations (MDO), and the rapidly emerging slew of technologies that the Army must integrate, the study of this becomes increasingly important. This import is because the Army updates its doctrine at a more rapid pace now, and members of the service have greater access to it, primarily through digital versions. As doctrine becomes more widely propagated and as access to it increases the Army's responsibility to align doctrine with the integration of technology grows.

## CHAPTER 2

### LITERATURE REVIEW

#### Chapter Introduction

There exists a multitude of resources providing insight about the conditions surrounding the Army during the New Look Era. The majority of these works, whether book, journal, essay or otherwise, focus on the Army between the Korean and Vietnam conflicts. Additionally, these resources typically focus on the development of new weapons, capabilities or the reorganization the Army completed during the time frame. As such, the doctrinal or education changes the authors cover are in support of their primary topics and not in great depth. Complementing the general sources that provide background for the time period, the current archived doctrine provides a large amount of options that help comprehensively detail the changes the Army codified in doctrine over this time period. Various other sources, to include periodical writings and leadership studies, provide additional literature to help inform this research. This chapter will provide the background information necessary to understand the environment in which the Army operated during this time period, an overview of doctrinal changes the Army made during the period, and an understanding of the educational environment in the Army during the time period.

#### Background

From the period encompassing the end of World War II through the end of the Korean War, the United States Army struggled to maintain its relevance both comparatively to the other military services and absolutely in terms of its utility in pursuit

of the national interests of the United States. The significance of the strain on the Army in the post-World War II era is evidenced by the fact that Brian McAllister Linn, author of *Elvis's Army*, titled the first chapter of his book about the U.S. Army on the nuclear battlefield, "The Army Was Coming Apart".<sup>4</sup> While all services experienced this strain following the end of World War II, the Army, as the largest service, struggled to maintain its relevance in an era dominated by the nuclear capability. Additionally, the Korean War exacerbated the Army's difficulties with its lack of a conclusion and the primary role the Army played in the conflict. Linn's analysis focuses on the changes the Korean War had on the Army and the effects they had following the conflict. Linn notes the officer corps' transition from an Officer Candidate School (OCS)-focused commissioning program to one that heavily relied on the Reserve Officer Training Corps (ROTC).<sup>5</sup> Linn links the expectation of changing how the Army commissions officers to how it recruited and retained Soldiers of all ranks in the post-Korean conflict Army.<sup>6</sup>

In addition to discussing Korea's impact on the personnel strategies the Army pursued, Linn also describes the three essential problems facing nuclear theorists in the army:

The first was to prove the Army was still relevant in the Cold War. The second problem was how to transform the army's existing doctrine, organization, equipment, and personnel to fight on the nuclear battlefield. The last problem was how to reverse the army's decline in prestige and funding, win public and political

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<sup>4</sup> Brian McAllister Linn, *Elvis's Army* (Cambridge: Harvard University Press, 2016), 9.

<sup>5</sup> *Ibid.*, 69.

<sup>6</sup> *Ibid.*, 72.

support, inspire those who wore its uniform, and restore the service's preeminent role in national defense.<sup>7</sup>

While not all these problems will be the focus of this thesis, these fundamental problems help to inform the reader as to the environment in which the Army operated during the New Look Era. Linn clearly highlights Korea's impact on the Army's move towards nuclear weapons and the impact this has on the Army in the 1950s. The Army's inability to counter the mass and casualty acceptance of the communist forces led them to seek new technological capabilities and scale them down to meet tactical objectives, such as mitigating the effects of large enemy formations.<sup>8</sup>

Overlapping the same time period as Linn's analysis, A.J. Bacevich's *The Pentomic Era* primarily focuses on the internal effects of the Army's efforts to adopt nuclear capabilities and their efforts to organize Army formations around the new technology. Bacevich covers both the effects of the Korean War and the impact the strategic context had on the Army's decision to adopt nuclear weapons.<sup>9</sup> This information helps researchers understand the environment in the Army that necessitated the Army's implementation of nuclear weapons; specifically the Army's reduced status and the impact this had on the Army's competition with other services for resources.<sup>10</sup> Bacevich uses this analysis to illustrate how and explain why the Army shifted from a policy of

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<sup>7</sup> Linn, *Elvis's Army*, 74.

<sup>8</sup> *Ibid.*, 77-78.

<sup>9</sup> A. J. Bacevich, *The Pentomic Era* (Washington, DC: National Defense University Press, 1986), 39.

<sup>10</sup> *Ibid.*, 35.

only having utility during conflict to one of helping to deter conflict through nuclear capability.<sup>11</sup> This consideration helps frame all changes across DOTMLPF-P in terms of the Army's changing role, not just the Army's integration of nuclear capabilities.

In addition to establishing the post-Korean impact on the Army's integration of nuclear weapons, Bacevich covers in detail the Army's reorganization to a Pentomic structure, the specific weapons systems the Army developed and adopted, and the Army's decision to move away from the Pentomic Army. All these changes happened within the time period covered in this paper. While these domains are outside the scope of this paper, the Army's organizational and materiel changes are variables that must be considered when analyzing changes across the other domains. Additionally, these changes can help provide historical reference when looking at the second and third order effects of future changes the Army makes, while influencing the determination of how the Army can best sequence change across the domains of DOTMLPF-P.

Another general source, Ingo Trauschweizer's *The Cold War U.S. Army* covers the period beginning after the Korean War and prior to the Vietnam War. Trauschweizer's work focuses primarily on the Army's role in Europe during the period, as that was the Army's highest priority.<sup>12</sup> Trauschweizer describes the central question answered by the book as, "the role of a military institution with a nation's strategy."<sup>13</sup> The author's focus on the Army in Europe provides a contextual understanding of the

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<sup>11</sup> Bacevich, *The Pentomic Era*, 50.

<sup>12</sup> Ingo Trauschweizer, *The Cold War U.S. Army* (Lawrence, KS: University of Kansas Press, 2008), 1.

<sup>13</sup> *Ibid.*, 4.

organizational changes covered by the other general sources. Throughout the work, Trauschweizer briefly discusses topics across doctrine and education, but not in the depth required to indicate a significant focus. Subsequently, the author's analysis provides context for the Army's operational focus during the time period, but limits the utility when examining the finite doctrine and education changes during the time period.

The general works described above serve to provide information and reference for this study, as well as providing conduits to deeper research on the specific domains of DOTMLPF-P. While the above authors studied the time period and the Army as a whole, their analyses are not focused specifically on education or doctrinal changes that the Army made. This gap in clear, concrete analysis on these two domains helps to form the necessity of this research work.

#### Periodical Articles

Writings in professional journals of the time also further the body of research for this thesis. The professional discourse regarding the integration of nuclear weapons during this period is immense. The majority of these works serve to provide general considerations for the employment of nuclear weapons or highlight the organizational changes the Army made. This study will focus on those whose insights directly influence doctrinal concepts or education changes. Additionally, some articles will provide background information for this thesis, or inform the general perspective of the time period.

Beginning at the division level, John Cushman's article in *Military Review* in January 1958 gives an overview of recent doctrinal concepts as they pertain to the newly-

adopted Pentomic Division.<sup>14</sup> Cushman's article links the new organization to current doctrinal concepts, citing specific considerations for the employment of nuclear weapons with the current doctrine. He outlines the issues with control of the new organization, which is an issue not clearly identified in doctrine at the time.<sup>15</sup> Also highlighted is the varying scale on which doctrinal concepts apply, specifically the ranges between a position defense and a mobile defense.<sup>16</sup> While the forms of the defense were previously described in mutually exclusive terms, and the mobile defense was a new doctrinal concept, the author used this interpretation to highlight the utility of the Pentomic Division across this array of defensive situations. This article informs the research conducted in this thesis because it not only represents the professional thoughts of an instructor of military education, but it represents an attempt to apply doctrinal concepts to a recently developed organization while integrating the effects of technological innovation.

While Cushman's article focuses on doctrinal implications for the Pentomic Division, Brigadier General William F. Train's article "The Atomic Challenge" focuses on the application of doctrinal concepts across all echelons. Train comprehensively discusses considerations for retrograde, defensive and offensive operations, integrating new doctrinal concepts such as the increased need for dispersion due to enemy nuclear

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<sup>14</sup> John H. Cushman, "Pentomic Infantry Division in Combat," *Military Review* 37, no. 10 (January 1958): 19.

<sup>15</sup> *Ibid.*, 22.

<sup>16</sup> *Ibid.*, 27.

capability.<sup>17</sup> In addition to covering these foundational concepts, Train discusses logistical implications of fighting on a nuclear battlefield and the integration of Army air mobility assets.<sup>18</sup> While covering doctrinal concepts that are key to this study, Train also alludes to the difficulty of integrating technology that has not been used in a tactical manner on the battlefield, somewhat in contradiction to other military leaders of the period who seemed decisive in their beliefs on the method and utility of employment.<sup>19</sup>

From an educational perspective, a significant professional discussion takes place through a series of articles in *Military Review*. This discussion begins with an article written by Major General Lionel C. McGarr, who was the Commandant of the Command and General Staff College at the time the article was written. This article, entitled “USA Command and General Staff College Keeps Pace With the Future”, appeared in the April 1957 edition of *Military Review*. It describes the significance of the changes he believes must take place in order to best integrate nuclear weapons. He underlines a need to abandon thinking typical of World War II and Korea and adopt updated doctrine and tactics to best utilize nuclear weapons.<sup>20</sup> This article also outlines specific changes that took place during the period in order to update how the college taught and the

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<sup>17</sup> Brigadier General William F. Train, “The Atomic Challenge,” *Military Review* 36, no. 8 (November 1956): 5-9.

<sup>18</sup> *Ibid.*, 10.

<sup>19</sup> *Ibid.*, 5.

<sup>20</sup> Major General Lionel C. McGarr, “USA Command and General Staff College Keeps Pace With the Future,” *Military Review* 37, no. 1 (April 1957): 4.

reorganization that it made within its departments.<sup>21</sup> While an organizational change when viewed through DOTMLPF-P, this adjustment helps inform understanding of how the education domain worked to integrate nuclear weapons.

Expanding on this initial article, CGSC staff wrote a series of three articles that appeared in *Military Review* between July and October of 1957. This first article, “Keeping Pace With the Future-- Methods for Teaching Officers to Think”, written by Ivan J. Birrer appeared in July of 1957. It details changes the College made in response to the changing environment, the integration of nuclear weapons, and guidance from the Commandant.<sup>22</sup> This will help shape how CGSC changed methods of instruction and facilities in support of the addition of nuclear weapons to the program of instruction.

Following this, Colonel Edward C. Dunn published “Keeping Pace With the Future-- Other Roads to Leavenworth” in the August 1957 edition of *Military Review*. Colonel Dunn focuses on the peacetime training and education of the Reserve Officer Corps, discussing the non-resident education department organization and that department’s interaction with resident instructors in detail.<sup>23</sup> While not directly related to the changes made in order to integrate nuclear weapons, this article helps to better understand educational initiatives and focuses the Army had during the period in question.

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<sup>21</sup> McGarr, “USA Command and General Staff College Keeps Pace With the Future,” 5-9.

<sup>22</sup> Dr. Ivan J. Birrer, “Keeping Pace With the Future—Methods for Teaching Officers to Think,” *Military Review* 37, no. 4 (May 1957): 58-63.

<sup>23</sup> Colonel Edward C. Dunn, “Keeping Pace With the Future—Other Roads to Leavenworth,” *Military Review* 37, no. 7 (August 1957): 11-19.

Finally, Colonel William E. Roberts published “Keeping Pace With the Future-- Training Officers to Fight on Atomic Battlefields” in the October 1957 edition of *Military Review*. Roberts’ article is the most relevant to the analysis of changes the Army made during the New Look Era. Roberts’ discussion of both the addition of the Special Weapons Course and the Chemical, Biological, and Radiological Warfare instruction indicates the importance of integrating these new weapons.<sup>24</sup> Additionally, Roberts links the changes made to the instruction to the doctrinal updates the college is responsible to integrate. This helps to establish the linkage between the emerging doctrine and the advancing of professional military education.

While the articles mentioned above represent a fraction of the professional writing available during the period, they help to illustrate how leaders and educational instructors of the time planned to integrate updated doctrinal concepts and adjust instructional material. In addition to providing context for the development of updated doctrine during the New Look Era, these articles help to illustrate the connection between the education and doctrine domain. By illustrating this connection, these articles help to establish the importance of the changes made across both domains and their importance when applying new technologies.

#### Doctrinal Studies

Multiple resources exist that focus their study on doctrinal changes within the United States Army. Robert Doughty’s *Evolution of U.S. Army Tactical Doctrine, 1946-*

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<sup>24</sup> Colonel William E. Roberts, “Keeping Pace With the Future—Training Officers to Fight On Atomic Battlefields,” *Military Review* 37, no. 8 (October 1957): 25-26.

1976, and Walter Edward Kretchik's *US Army Doctrine from the American Revolution to the War on Terror* both focus on general doctrinal changes the United States Army made during the stated periods. In addition to these general doctrinal studies, John P. Rose's *The Evolution of Nuclear Doctrine, 1945-1980* and *United States Army Nuclear Doctrinal Developments: The Nuclear Battlefield 1945-1977* are the most significant nuclear-focused doctrinal studies available. Finally, "National Policy and Military Doctrine: The Development of a Nuclear Concept of Land Warfare, 1949-1964" provides an overview of how the Army leadership planned to integrate nuclear weapons into the evolving tactical concepts.

Beginning with the general doctrinal studies, Doughty's, given the time period, primarily overlaps with the research for this thesis. Doughty focuses his analysis of the Army's early attempts to integrate weapons on the literature available at the time, though in the early 1950s these sources consist of books and articles, not accepted doctrine.<sup>25</sup> The majority of the sources Doughty discusses during this time period influence this research, and will be covered in later sections of the literature review. While analyzing the field tests that took place during the time period, he does so in reference to the organizational changes the Army made, which forms the bulk of his discussion about the period.<sup>26</sup> The one specific doctrinal change that Doughty denotes is that of the addition of the mobile defense to doctrine in 1954. Doughty attributes this change in defensive thinking and the integration of the mobile defense to lessons learned in both World War

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<sup>25</sup> Robert A. Doughty, *Evolution of U.S. Army Tactical Doctrine, 1946-1976* (Fort Leavenworth, KS: Combat Studies Institute, 1979), 12-13.

<sup>26</sup> *Ibid.*, 15-18.

II, Korean, and also the recently increased focus on the armored force.<sup>27</sup> In addition to studying doctrinal changes of the time, Doughty recognizes the education changes made to the Command and General Staff College when the college changed the curriculum to focus almost entirely on the nuclear battlefield.<sup>28</sup> While Doughty's analysis of the New Look Era spans approximately seven pages, his work serves to establish the more noticeable doctrinal and education changes in the time period and orient the researcher on more finite sources.

In some contrast to Doughty, Kretchik's *US Army Doctrine from the American Revolution to the War on Terror* studies a much larger scope of doctrinal changes the Army underwent. Consequently, the author spends a small proportion on changes during the New Look Era. Kretchik's discussion centers primarily on both the adoption of the Pentomic Organization and the changes in the 1954 version of Field Manual 100-5.<sup>29</sup> The author also covers the integration of nuclear concepts by CGSC, highlighting here the struggle to fully integrate the concepts in the classroom and the effects it had on graduates from 1957-1960.<sup>30</sup> Closing his analysis of this period, Kretchik does note that at least one senior Officer in Europe had begun to question the utility of nuclear weapons.<sup>31</sup> While one disparate opinion, this addition helps to illustrate the tension

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<sup>27</sup> Doughty, *Evolution of U.S. Army Tactical Doctrine, 1946-1976*, 15.

<sup>28</sup> *Ibid.*, 18.

<sup>29</sup> Walter E. Kretchik, *U.S. Army Doctrine: From the American Revolution to the War on Terror* (Lawrence, KS: University Press of Kansas, 2011), 172-176.

<sup>30</sup> *Ibid.*, 176.

<sup>31</sup> *Ibid.*

within the Army regarding the addition of nuclear weapons and the Army's expanding role. Kretchik covers the New Look Era, highlighting major doctrinal and education changes, while also alluding to their ultimate lack of employment on the battlefield.

Specific to nuclear doctrine, Rose thoroughly analyzes both the doctrine the Army produced during period and the conditions that influenced its production. The earlier work, *United States Army Nuclear Doctrinal Developments: The Nuclear Battlefield 1945-1977*, is the author's dissertation in pursuit of a Doctorate of Philosophy, published in 1978, while *The Evolution of U.S. Army Nuclear Doctrine, 1945-1980* is an updated version of that dissertation intended to facilitate publication more easily. Given the similarities and overlap between the two works and the additions to the latter, this literature review and thesis will utilize only *The Evolution of U.S. Army Nuclear Doctrine, 1945-1980*. In this work, Rose comprehensively links the national policies of the United States to changes in both the thought displayed by Officers in the Army and the doctrinal concepts put forth by the Army. While he covers multiple decades and provides analysis across a significant number of sources from the time period, Rose's work primarily focuses on doctrine published toward the later portion of his time period.<sup>32</sup> While specific analysis for the New Look Era is lacking in Rose's work, his general analysis of the doctrinal concepts of the time helps to provide a deeper understanding of the intended use of nuclear weapons that the Army codified in doctrine.<sup>33</sup> In the education domain, Rose discusses the changes made to the curriculum

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<sup>32</sup> John P. Rose, *The Evolution of U.S. Army Nuclear Doctrine, 1945-1980*, (Boulder, CO: Westview Press, 1980), 250-252.

<sup>33</sup> *Ibid.*, 198-207.

at the Command and General Staff College. Primarily, he focuses on the increased hours given to the instruction of atomic and nuclear weapons in the classroom as well as the increase in articles, specifically in *Military Review*, that focused on using atomic weapons to support Army operations.<sup>34</sup> While the title of the work seems to render much of this thesis redundant, the author's focus on doctrine outside of the New Look Era and above tactical echelons helps provide framework and context for this thesis without duplication of effort or analysis.

A PhD dissertation published in 1985, Diana Bockar's "National Policy and Military Doctrine: The Development of a Nuclear Concept of Land Warfare, 1949-1964" provides a comprehensive overview of how national policy of the time influenced military doctrine. Unique in comparison to other studies, Bockar also provides contrary views to those of U.S. Army leaders at the time.<sup>35</sup> These differing viewpoints help to not only provide a more holistic picture of the environment but also to explain the unintended effects of the decisions Army leaders made.

### Historical Doctrine

A study of the influence of nuclear weapons on Army doctrine, even limited by the time period, would extend through multiple volumes, as nuclear capabilities became relevant through all echelons and across multiple branches. Many of the previous works that mention nuclear doctrine focus on generalized doctrinal concepts and do not identify

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<sup>34</sup> Rose, *The Evolution of U.S. Army Nuclear Doctrine, 1945-1980*, 57.

<sup>35</sup> Diana Bockar, "National Policy and Military Doctrine: The Development of a Nuclear Concept of Land Warfare, 1949-1964," (Ph.D. diss., Columbia University, New York, NY, 1985), 112.

specific changes made during the New Look Era. While the authorities for the employment of the weapons remained at levels above tactical echelons, changes at the division, brigade and battalion levels can help identify significant concepts the Army integrated in order to better utilize nuclear weapons. Some changes happened at the platoon and company levels, but the preponderance of changes to tactical units took place between the division and battalion. Through the New Look Era, the maneuver doctrine of the time was typically updated every three to four years, with changes incorporated between each of the updates. This study will examine each of those iterations to determine both the changes made and attempt to rationalize the reason for those changes. The reasoning behind each of the changes and its linkage to the integration of nuclear weapons will help form a template for how the Army best integrates future technological capabilities.

Foundational doctrine during the period was FM 100-5. This doctrine covers operations for Army forces and is the Army manual most commonly cited through works on the period when discussing changes in Army doctrine. This field service regulation (FSR), the name in common usage prior to field manuals, appears in three variations across the time period. The Army published an iteration in 1949, one in 1954 with multiple successive changes through 1956, and one in 1962.

At the battalion level, FM 7-20 covered the infantry battalion. Two versions of this document span the time period in question: the 1944 version, titled *Infantry Battalion* and the 1962 version, titled *Infantry, Airborne Infantry, and Mechanized Infantry Battalions*. While primarily the same, there are minor changes from the 1944 version to the 1962 version aside from the change in naming convention. Specifically, while not

incorporated in the 1944 version, the 1962 version adds a member of the Battalion Operations Section to control the coordination of air assets: the S-3 Air.<sup>36</sup> Also likely in reaction to the recent incorporation of aviation assets, the Army added the concept of an aerial envelopment to the Forms of Maneuver in 1962.<sup>37</sup> While not annotated as the first time the Army uses them in doctrine, the Principles of War appear in the 1962 version and not the 1944 version.<sup>38</sup> While tangential to the inclusion of nuclear weapons, these changes helped to integrate a new capability, vertical lift, and can help establish norms regarding technological integration of the period.

At the brigade level, while generally the same formation, the doctrine spans the changes from regiment to battle group to brigades. The applicable doctrine is FM 7-40 (1950), *Infantry Regiment*, FM 7-40 (1959), *Infantry and Airborne Division Battle Groups*, and FM 7-30 (1965), *Infantry, Airborne, and Mechanized Division Brigades*. This change in doctrinal naming convention adjusts doctrine to the recently completed reorganization to pentomic divisions. This represents both an alignment across the doctrine and organization domains of DOTMLPF-P and the Army's adjustment of doctrine to employment of a new organization. While many of the principles and fundamentals of operations are the same across all iterations, the 1959 version focusing

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<sup>36</sup> Department of the Army, Field Manual (FM) 7-20, *Infantry, Airborne Infantry, and Mechanized Infantry Battalions* (Washington, DC: U.S. Government Printing Office, 1962), 19.

<sup>37</sup> *Ibid.*, 98.

<sup>38</sup> *Ibid.*, 96.

on battle groups can help determine how the Army changed its views of these principles based on the new organization.

### Leadership Accounts

These books, essays and papers provide insight into the decisions leaders made and the environment in which they operated during the time period. While not all-encompassing, the sources here will attempt to balance insights from leaders across all levels of the Army during the time period.

John Galvin's *Fighting the Cold War: A Soldier's Memoir* provides a firsthand account of the changes witnessed by General Galvin as a young officer in the 101st Airborne Division it underwent changes in the latter part of the New Look Era. While General Galvin does not focus on the changes to organization he witnessed at a level deeper than passing references, the perspective is one of the few available from junior officers during the New Look Era.<sup>39</sup>

Another book written by Ingo Truschweizer, *Maxwell Taylor's Cold War: From Berlin to Vietnam* provides a comprehensive account of one of the Army's primary senior leaders during the New Look Era. Truschweizer provides both contextual understanding of the tensions that existed in Army leadership over the use of nuclear weapons and specific accounts of Taylor's actions and opinions on the subject. Primarily, these details come through Truschweizer's analysis of Taylor's time as the Chief of Staff of the

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<sup>39</sup> John Galvin, *Fighting the Cold War: A Soldier's Memoir* (Lexington, KY: University Press of Kentucky, 2015).

Army, which took place from 1955-1959.<sup>40</sup> Of note, Trauschweizer outlines Taylor's influence on the educational domain when CGSC leaders resisted implementing the Pentomic Division in the college's curriculum.<sup>41</sup> This period represents the majority of the Army's changes to integrate nuclear weapons, and Traushweizer's work provides significant detail regarding how the Army leadership dealt with this change.

Finally, *War and Peace in the Space Age*, LTG James Gavin's account of his time in the Army, provides the perhaps the best account from the strategic level about the Army's actions while integrating nuclear weapons. Influenced by the fact that the Army ushered Gavin out inauspiciously, Gavin provides a unique perspective of both the Army's integration and the decision-making of the national-level leadership. Gavin also discusses specific tactics, both nuclear and non-nuclear, which is something that strategic-level leaders rarely do in retrospectives.<sup>42</sup> Gavin's perspective provides insight across all levels of war and decision-making during the period, helping to understand considerations in greater depth.

These leadership works, and others, will help to frame the analysis of the Army's doctrinal and educational decision-making during the New Look Era. By providing primary accounts of the decisions Army leaders made and how they reacted to the

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<sup>40</sup> Ingo Trauschweizer, *Maxwell Taylor's Cold War: From Berlin to Vietnam* (Lexington, KY: University Press of Kentucky, 2019), Chronology.

<sup>41</sup> *Ibid.*, 85.

<sup>42</sup> James Gavin, *War and Peace in the Space Age* (New York: Harper and Brothers Publishers, 1958), 146-150.

adoption of nuclear weapons, these sources provide the context and reasoning behind the doctrinal and education changes the Army implemented.

### Non-doctrinal Sources

These books and essays provide information relevant to the Army's expected employment of nuclear weapons. While not doctrine, they precede the establishment of official doctrine by the Army and help to bridge the gap between the adoption of nuclear weapons and the doctrine published toward the latter part of the period in question. Additionally, these works provide the scientific detail regarding the employment of nuclear weapons that influences how the Army intends to deploy them at the tactical level.

G.C. Reinhardt and W.R. Kintner's *Atomic Weapons in Land Combat*, with the first edition published in 1953, is one of the few examples of extensive work on nuclear capabilities that predates Field Manual 100-5's 1954 publication. While not doctrine, *Atomic Weapons in Land Combat*, comprehensively covers the entire range of situations in which nuclear capabilities could be used by the Army. Assigned to Fort Leavenworth together, the two authors originally intended this work to influence tactical thinking on the employment of nuclear weapons.<sup>43</sup> Evolving from a study at Fort Leavenworth, this work will be useful when determining the evolution of thought on tactical nuclear warfare and how the Army captured this in doctrine and education.<sup>44</sup>

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<sup>43</sup> G. C. Reinhardt and W. R. Kintner, *Atomic Weapons in Land Combat* (Harrisburg, PA: The Telegraph Press, 1954), Authors' Preface.

<sup>44</sup> Ibid.

*Nuclear Tactics* by Theodore C. Mataxis and Seymour L. Goldberg provides additional information about the expected employment of nuclear weapons and a scientific understanding of their effects. Published in 1958, this work generally coincides with the transition to a Pentomic Army. Covering the tactical application and considerations of nuclear weapons similarly to Reinhardt and Kintner, *Nuclear Tactics* integrates a more scientific approach to the calculated employment of nuclear weapons. As an example, the authors provide multiple examples of how to utilize nuclear weapons in the attack, and where to place varying yield weapons in order to maximize their effects. The examples concern all echelons from the Corps to the Company.<sup>45</sup> As well as providing clear scientific implications, this work also represents the first in-depth discussion as to risk and mitigating safety factors when employing nuclear weapons.<sup>46</sup> While the authors definitively believe nuclear weapons have utility in a tactical role, they balance this with a scientific baseline and understanding of risk to troops in a way that few sources from the period do.

#### Education Sources

The primary sources to establish changes across military education will be the Programs of Instruction (POI) for each military course. The POIs are intermittently available during this time period, with the best records available during the middle years of the 1950s. Additionally, for years where full POIs have not been recorded, some

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<sup>45</sup> Theodore C. Mataxis and Seymour L. Goldberg, *Nuclear Tactics, Weapons, and Firepower in the Pentomic Division, Battle Group, and Company* (Harrisburg, PA: The Military Service Publishing Company, 1958), Chapter 9.

<sup>46</sup> *Ibid.*, Chapter 5.

summaries of the courses exist that provide general descriptions of the instruction. In contrast to the general doctrinal studies indicated above, few comprehensive analyses of Army education exist, regardless of the school or echelon.

The primary POIs available during the beginning of the period are those from 1954 to 1956. In addition to these POIs, multiple archival documents detail multiple relevant subjects to include end of tour reports for the school leadership, student feedback, and recommended course adjustments. Finally, the comprehensive report filed by the Officer Education and Training Review Board, 1958, details findings during its tasking to determine the adequacy of Army Officer education and training.<sup>47</sup> While not comprehensive, these sources provide data points intermittently throughout which can help establish adjustments to the instruction or ways the curriculum changed in order to adjust to the changing Army.

In addition to the POIs, available internal communications or reports will help frame recommendations or discussions about curriculum changes during the time period. The most easily accessible of these reports, *Committee Report: Nature of the Curriculum Command and General Staff College in Light of the Impact of nuclear Weapons, 1955-1956*, is the internal memorandum and record of recommendations that helped frame the Command and General Staff College's curriculum changes mentioned during Doughty's study, referenced above. This document, prepared as a recommendation for adjustment of instruction at CGSC, provides clarity on how those responsible for both Doctrine development and Professional Military Education (PME) planned to incorporate the use

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<sup>47</sup> Williams Board, *Report of the Department of the Army Officer Education and Training Review Board*, 1 July 1958.

of nuclear weapons in the instruction of those attending CGSC. Essentially, committee responsible for the recommendations focused on two courses of action. Each of these courses of action for the implementation of nuclear weapons in to the curriculum assumed both sides had nuclear weapons, but differed in how they intended to present the students' with their employment and scale.<sup>48</sup> While the report states that the differences between the views is the degree of emphasis to be placed on the integration of nuclear weapons, the recommendations both integrate considerations of nuclear weapons throughout the curriculum.<sup>49</sup> This indicates the Army's focus on nuclear weapons during the early period of integration prior to the establishment of codified doctrine. The two proposals also use the current POI for the foundation of their adjustments and simply note which modules will add considerations for the employment of nuclear weapons.<sup>50</sup> Additionally, this report notes throughout issues concerning the classification of certain aspects of nuclear weapons.<sup>51</sup>

Reports from leaving CGSC leaders and instructors also provide information on the education changes during the time period. During the New Look Era, instructors at CGSC were required to submit end of tour reports detailing their time at the college and making recommendations for changing to the course, curriculum, and post. While the

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<sup>48</sup> Easterbrook Committee, *Committee Report: Nature of the Curriculum Command and General Staff College in Light of the Impact of Nuclear Weapons, 1955-1956* (Fort Leavenworth, KS: Command and General Staff College, 1955), 2.

<sup>49</sup> *Ibid.*, 4.

<sup>50</sup> *Ibid.*

<sup>51</sup> *Ibid.*, 1.

majority of reports cover information that is tangential at best to this study, specific reports provide insight in to instructors' opinions on recent updates to the course.

In addition to the reports submitted by instructors leaving the college, the Commanding Generals of CGSC submitted after action reviews following their tours of duty at the college. The primary after action review referenced will that the review Major General Garrison H. Davidson submitted following the completion of his tour in 1959. This report changes to the curriculum, recommended doctrinal changes, and overviews of the faculty and student body.<sup>52</sup> This report helps to provide both an understanding of the curriculum updates Major General Davidson made during the period and the reasons those updates were integrated. Also of note, these updates are closely linked to doctrinal changes as a chapter in the after action review is dedicated to doctrinal updates.<sup>53</sup>

Finally, while not specific to the analysis of the education domain, speeches by Army leaders at professional military education courses can contribute to this thesis by further indicating the beliefs leaders espoused to those preparing to leave the education domain to rejoin the Army force. While some of these speeches are not for attribution, those that are attributable are primarily graduation speeches. One of the most notable is LTG James Gavin's speech to the CGSC graduating class of 1956. During the speech, Gavin focuses the majority of his time imploring graduates to understand the significance of the change currently happening and the certainty that the graduates would execute

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<sup>52</sup> Garrison H. Davidson, *After-Action Report*, 9 July 1956.

<sup>53</sup> *Ibid.*, Table of Contents.

warfare with atomic weapons.<sup>54</sup> This speech helps to illustrate how certainly Army leaders viewed the use of nuclear weapons in future warfare and how they viewed atomic warfare as something greater than an incremental change in warfare.

### Summary

While the body of work regarding the Army's changes during the New Look Era across all domains of DOTMLPF-P is vast, specific studies on tactical doctrine and education changes are limited or nonexistent depending on the scope sought. This thesis will use general sources to help frame the problem and provide background information while relying on primary sources such as historical doctrine and POIs to help determine changes made during the period and how the Army can apply those changes in the future.

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<sup>54</sup> James Gavin, "Graduation Address to Regular Course," (Graduation address to 1956 CGSC graduating class, Fort Leavenworth, KS, 15 June 1956).

## CHAPTER 3

### RESEARCH METHODOLOGY

We're in an atomic era. Atomics are here to stay. [ . . . ] They will serve in every echelon. This is a certain course you must adjust to.

—James L. Gavin, Address to CGSC Class of 1956

#### Chapter Introduction

This research will help to understand the changes made through the doctrinal and education domains of DOTMLPF-P, how these changes affected the Army during time period, and which of these changes are applicable to today's Army as it continues to integrate technology and update its concepts. This thesis will use qualitative methods to describe the changes the Army made within the domains and time period described above. This qualitative study will utilize both a historical methodology and a descriptive case study methodology. In order to describe the case study methodology, this chapter will discuss the qualitative methods in detail. Following this, the chapter will define applicable terms and describe the criteria that will help evaluate the research; including the credibility of the sources and the relevance to the field of study.

#### Methodology

Part of the research methodology in this case study is the use of the DOTMLPF-P framework to divide the research effort. This framework is useful given the context because it divides the Army's modernization efforts across domains according to the need. This need begins with a strategic capability that the nation's leadership identifies based on the templated threat. As the Army aligns the capabilities it believes it must have in the future with those it currently has, it identifies gaps. These capability gaps, once

identified, help the Army prioritize its force management programs. These force managements updates translate to efforts to update the Army across the domains of DOTMLPF-P.<sup>55</sup> Because these domains cover all modernization efforts across the Army, this is an appropriate framework by which to analyze changes the Army made across this period of time. The general sources reviewed above primarily focus on the Army's updates through the organizational and materiel domains. These domains are the most visible and generally require the most resources, which leads to a tendency to focus studies on changes made within them. In contrast, comprehensive doctrinal studies are limited and the amount of study devoted education changes is also relatively sparse. Analyzing these two often-neglected domains of DOTMLPF-P will contribute to a more complete picture of Army force modernization centered around nuclear weapons and help to provide determine how best to change the Army in support of future technological innovations.

Primarily, this thesis will employ a case study methodology, using the Army's actions during the New Look Era as the time period. In *Doing a Successful Research Project*, Martin Brett Davies describes a starting point of a case study as "the introduction of an innovation".<sup>56</sup> The introduction of nuclear weapons in the Army's contemporary operating environment provides sufficient change to analyze. This change is important

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<sup>55</sup> U.S. Army War College, *How The Army Runs: A Senior Leaders Reference Handbook* (Carlisle, PA: U.S. Army War College, 2018), 3-2, [https://www.afms1.belvoir.army.mil/files/HTAR2018/HTAR%202017-18%20\(Online%20Version\).pdf](https://www.afms1.belvoir.army.mil/files/HTAR2018/HTAR%202017-18%20(Online%20Version).pdf).

<sup>56</sup> Martin Brett Davies, *Doing a Successful Research Project: Using Qualitative or Quantitative Methods* (New York: Palgrave MacMillan, 2007), 204.

because of how it differs from previous periods of change in the Army. Before the New Look Era, the Army analyzed the threat and operational environment, determined the updates necessary across DOTMLPF-P, and integrated those updates as efficiently as possible. Following the New Look Era, the Army went back to the same model; identify a gap, determine the solution that best balances effectiveness and efficiency, and implement that solution. As noted above, the New Look Era is unique in that it represents a deviation from the normal pattern of force updates.

This case study will look at Army doctrine and education before and after the New Look Era, providing an embedded analysis of these domains. The results of this case study will attempt to provide a template and make recommendations for the integration of future technologies. Upon initial analysis, the changes that endured for the longest period of time seem to be have the most utility for this study. The reason for the focus on enduring changes is that they represent changes that span both the norm, the Army's assessment of a gap that it needs to fill, and the deviation from the norm, the technologically-driven force update that filters down through the domain of DOTMLPF-P.

While these enduring changes may provide input to how the Army can best incorporate technology by determining usefulness across multiple decades, less enduring changes cannot be ignored. These rapidly fleeting changes provide opportunities to identify how the Army reacted to new technology, integrated it in through the doctrinal and education domains, and subsequently discarded it due to the change back to the normative method of force updates. While not as enduring as other changes, short-lived force updates across DOTMLPF-P help to illustrate how the Army reacted to the stimulus

of new technology and provide analogies for how the Army can best change in conjunction with new technology. Conversely, updates the Army made that were reversed in a short period of time help to provide insight to courses of action the Army should not undertake when integrated new technological solutions or concepts.

Secondarily this work will use a historical model to analyze the idea that the integration of nuclear weapons provided a model for how the Army can integrate technology in the future. Primarily, the historical portion of this work will focus on doctrine from the time period of the case study, analyze changes or updates to that doctrine, and determine if this change was directly related to or caused by the integration of nuclear weapons. Once determined, this linkage can help to provide a framework by which to analyze how the Army integrates technology through doctrine and education during future periods of technological innovation. As a byproduct of this historical research, this work will identify gaps in the doctrine the Army produced during the period in order to help identify what crucial areas of doctrine the Army did not address, and how the Army can efficiently present doctrinal solutions in the future.

#### Evaluation Criteria and Definition of Terms

In order to determine the relevancy that a source may have, it is important to clearly define terms this thesis will use. While both joint and Army definitions exist for the terms, where possible this thesis will utilize Army definitions. Beginning with the two domains of DOTMLPF-P, Army Regulation (AR) 5-22 defines doctrine as “Fundamental principles by which the military forces or elements thereof guide their actions in support

of national objectives.”<sup>57</sup> Given the vague nature of this definition, for the purposes of this thesis, the qualification of being codified by the Department of War or the Department of the Army will apply in addition. AR 5-22 goes on to define the leader development and education domain as “the product of a learning continuum that comprises training, experience, formal education, and continual self-improvement.”<sup>58</sup> Most applicable to this thesis, the focus will be on formal education at an Army professional military school, whether through resident attendance or by distance learning. Acknowledging that education takes place through other modes, the Army primarily integrates new doctrine and concepts through formal education so that portion of education will be the focus of this thesis.

The definition of the New Look Era is important, as well. Generally accepted as the period when President Eisenhower was in office, 1953-1961, this definition will be used flexibly throughout the thesis. Many doctrinal publications bookend the period. While they will fall outside, either before or after the technical New Look Era, their changes will still indicate the state prior to the era or the changes made during the era. As such, while the New Look Era took place from 1953-1961, sources outside those specific years will contribute to the study of the doctrinal changes due to the integration of nuclear weapons.

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<sup>57</sup> Headquarters, Department of the Army (HQDA), Army Regulation (AR) 5-22, *The Army Force Modernization Proponent System* (Washington, DC: Army Publishing Directorate, 2015), 13.

<sup>58</sup> Ibid.

The primary criterion this thesis will use to evaluate the utility of sources will be relevance. More clearly, relevance to both the domains of doctrine and education, using the definitions above, and relevance to the incorporation of nuclear weapons. As an example, the Army made changes such as the addition of an S-3 Air at the Battalion level, as noted above, that might not be related to the Army's integration of tactical nuclear weapons. This assists the work in maintaining a focus on the reasons the Army changed and ensuring those reasons closely relate to the inclusion of nuclear capability. This will allow the prioritization of sources that provide analogous conditions to those the Army experiences today, and help determine the best ways to apply the lessons learned during the New Look Era to future Army periods of change.

Next, these relevant sources will provide the ability to analyze changes across the doctrine and education domains within the time period. Once these changes are apparent, the next criterion will be the impact these changes generated within the Army. This impact will be defined as a combination of the resources the Army required to support the change, and the time for which this change endured. Here, resources will primary be defined as money, but time may be valid as well, specifically in regards to the education domain where the POIs dictate a specific amount of time available for each course. As such, the integration of new concepts and doctrine presents a cost to the school in terms of time. Given the thesis statement and the broad scope of work across the other domains of DOTMLPF-P, these criteria will help to limit the research efforts and prioritize analysis during later chapters.

#### Use of Human Subjects

This research project will not use human subjects.

## CHAPTER 4

### ANALYSIS

The rapid evolution of the tools of war have caused numerous revolutionary changes in the concepts of ground warfare. Atomic weapons in quantity, potential improvements in target acquisition, and missiles of vastly increased range present new extensions of firepower. Evaluations must be made of the means of battlefield and strategic mobility and communications to permit new considerations of time and space.

—Maxwell D. Taylor, U.S. Army Chief of Staff, FM 17-100, 1958

#### Chapter Introduction

This research will help to understand the changes made through the doctrinal and education domains of DOTMLPF-P. Once these changes are determined, it is important to understand how these changes affected the Army during time, and which of these changes are applicable to today's Army as it continues to integrate technology and update its concepts. In order to answer all the research questions posed above and meet the intent of the research, it is necessary to provide the analysis of changes across the doctrine and education domains and determine the utility of these changes to today's Army.

Primarily, the main areas of focus for the analysis are the Army's increased focus on the defensive operations, the struggle with how to command and control the new technology, and adjustments to the conduct of offensive operations. Additionally, it is important to understand how military education changed along with the doctrinal changes. While the three topics mentioned above are the focus areas for the analysis, the integration of other doctrinal changes in order to determine the full extent of doctrinal changes implemented by the Army during the New Look Era is important, as well.

Before discussing the doctrinal changes the Army made, it is important to highlight how the Army's visualization of the future nuclear battlefield influenced the changes it made. As the Army integrated nuclear weapons, it updated its vision of the future battlefield. In the 1959 update to FM 7-40, the Army included a chapter on the general considerations for nuclear warfare. The Army focused on the rapidity of change at the tactical level during warfare, the importance of terrain across all types of warfare, and providing access to nuclear fires across all echelons of tactical command.<sup>59</sup> Furthermore, the Army discussed two principles that became closely associated with nuclear war: mobility and dispersion.<sup>60</sup> These two principles stem from the Army's visualization of the battlefield. On a nuclear battlefield, concentrated forces will be much more susceptible to the effects of the enemy's tactical weapons. Additionally, the rapidly changing character of the nuclear battlefield meant that mobility became more important in order to allow commanders to reposition forces in pursuit of tactical opportunities.<sup>61</sup> While the Army lists multiple other considerations regarding nuclear war, to include the importance of leadership morale, and intelligence, these principles did not receive the focus from other sources that mobility and dispersion do.<sup>62</sup> Army leaders visualized a battlefield in the future where nuclear weapons both increased the speed of the battle and expanded the battlefield on which nuclear war would take place. These considerations

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<sup>59</sup> Department of the Army, Field Manual (FM) 7-40, *Infantry and Airborne Division Battle Groups* (Washington, DC: U.S. Government Printing Office, 1959), 5.

<sup>60</sup> *Ibid.*, 5-6.

<sup>61</sup> *Ibid.*, 5-8.

<sup>62</sup> *Ibid.*

significantly shaped how the Army developed doctrine and changed the education of its leaders.

### Specific Doctrinal Changes

#### Shift to the Defense

As doctrine is often the first domain of DOTMLPF-P the Army updates, the changes the Army codifies in doctrine help to provide the earliest indications of the Army's adjustments. The Army made significant changes to foundational doctrine during the New Look Era that greatly influenced the employment of forces at the division level and below. The most significant doctrinal change the Army made during the New Look Era was the increased emphasis on defensive operations. The Army made this increased emphasis clear based on updated doctrine throughout the time. At the division level, the Army updated field manuals every four to five years within the era. Iterations of FM 17-100, *Armored Division and Combat Command*, appeared in 1944, 1949 and 1958, before the manual transitioned to FM 61-100, *The Division*, in 1962. Across these four iterations, the number of pages the Army devoted to defensive operations increased. From 1944 to 1962, the Army increased the doctrine on defensive operations from nine pages to thirty-seven.<sup>63</sup> As a percentage of the doctrine devoted to the defense, there was also a clear increase. In the 1958 version of 17-100, the Army devoted twenty-five of 389

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<sup>63</sup> Department of the Army, Field Manual (FM) 17-100, *Armored Division and Combat Command* (Washington, DC: U.S. Government Printing Office, 1949), Table of Contents; Department of the Army, Field Manual (FM) 61-100, *The Division* (Washington, DC: U.S. Government Printing Office, 1962), Table of Contents.

pages to defense operations, slightly over six percent of the total.<sup>64</sup> In 1962, in FM 61-100, this increased to just above ten percent as thirty-seven of the 376 pages cover defensive operations.<sup>65</sup> While the Army's allocation of four percent more doctrine to the defense may not seem significant on the surface, in the span of four years the Army nearly doubled the percentage of divisional doctrine that specifically focused on defensive operations. As doctrine moved from the division, through the regiment, and down to the battalion this emphasis decreased. At the regiment and battle group level, the Army published two versions in 1950 and 1959, *Infantry Regiment* and *Infantry and Airborne Division Battle Groups*. In the 1950 publication, fifty-six of 401 pages focused on defensive operations for the Infantry regiment, just short of fourteen percent of the total.<sup>66</sup> In 1959, as the Army transitioned the battle groups as part of the pentomic division, forty-three of 233 pages, or slightly over eighteen percent, focused on the defense.<sup>67</sup> The Army's decisions to update doctrine and to focus a larger percentage of a manual on defensive operations indicated an increasing emphasis on the defense. Standing alone, a page increase in doctrine of any one given subject could be a statistical anomaly, may indicate a leader's preference for a subject, or could simply be a mistake. However, when this doctrinal increase took place during a time of increased professional

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<sup>64</sup> Department of the Army, Field Manual (FM) 17-100, *Armored Division and Combat Command* (Washington, DC: U.S. Government Printing Office, 1958), Table of Contents.

<sup>65</sup> Department of the Army, FM 61-100, Table of Contents.

<sup>66</sup> Department of the Army, Field Manual (FM) 7-40, *Infantry Regiment* (Washington, DC: U.S. Government Printing Office, 1950), iv-v.

<sup>67</sup> Department of the Army, FM 7-40, (1959), 2.

discussion on the subject and adjustment to the curricula of professional military schools, it helps to signify a broader change within the Army.

One of the primary causes for the increased emphasis is the way the Army viewed the changing strategic environment. The Army could no longer hope to avoid a conflict long enough to build sufficient combat power, as it had done during the two World Wars. Additionally, the Army could not count on the ability to stockpile large quantities of troops and supplies in order to immediately transition to offensive operations.

Throughout the 20th century, primarily through successful operations across two world wars, the Army used offensive operations as the primary and most effective means to prosecute operations and tactical engagements. Following the Korean War, as the Army reoriented to its most likely next war; facing the Union of Soviet Socialist Republics (USSR) and other Warsaw Pact nations in Europe. Given the size of these forces in Europe, between seventy and ninety-five divisions deployed against NATO, the military leadership of the United States estimated they could conduct defensive but not offensive operations in order to protect allies in Europe. This limitation was due to the number of divisions the United States and its allies could field in Europe.<sup>68</sup> The United States and its allies could field an estimated sixteen divisions worth of combat power at any given time, leaving them exceptionally overmatched even when accounting for the typical 1:3 planning factor for combat forces in the defense.<sup>69</sup> At the operational and tactical levels, the lack of resources the Army had available forced them to consider the utility of the

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<sup>68</sup> Trauschweizer, *Cold War U.S. Army*, 73-74.

<sup>69</sup> *Ibid.*, 126.

defense. Nearly coincidental with the Army's inability to conduct offensive operations due to significant numerical overmatch was the integration of tactical nuclear weapons, which provided a technological capability that bridged the numerical gap created by Soviet forces. While these were not the ideal resources to balance the maneuver disparity, they at least provided the firepower that would help blunt the first echelon attack of the Warsaw Pact forces. Despite the fact the Army professed to maintain the spirit of the offensive, the operational situation in the primary theater forced them to consider the defense as the most likely course of action.<sup>70</sup>

In concert with the influence from the strategic environment, the tactical issues surrounding the conduct of the defense helped drive the doctrine focus. The United States' strategic situation forced commanders at the tactical and operational levels, as well as doctrine writers and educators, to implement this shift, as well. As the Army focused on offensive operations through the Second World War and the Korean War, the lack of doctrinal options for the defense left those conducting defensive operations with little flexibility or room for interpretation. The Army realized conditions would force it to conduct a defense in the European theater given the force ratios and it worked to fill that gap doctrinally. The significance of this doctrinal update grew exponentially as the Army realized the increasing complexity of conducting a defense utilizing atomic capabilities. As Major Cushman notes in his comprehensive review of division tactics on the nuclear battlefield, defensive operations could be more complex than offensive actions:

The defense, which implies enemy superiority, becomes one of the knottiest problems of atomic war, and requires a high order of tactical judgment and

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<sup>70</sup> Department of the Army, Field Manual (FM) 22-100, *Military Leadership* (Washington, DC: U.S. Government Printing Office, 1961), 66.

ingenuity to be successful. The problem of how to use the terrain and forces available in atomic warfare so as to maximize our strengths to the enemy's disadvantage is not solved by printed material-it must be done on the ground.<sup>71</sup>

This complexity, whether perceived or real, helped to shift the Army's focus to defensive operations. Many of the Officers in the Army at the time had limited experience with any type of defensive operation, let alone a mobile defense. This lack of experience drove doctrine writers to focus more heavily on the inclusion of defensive operations in order to provide those who were inexperienced a starting point.

In addition to a general increase in focus on defensive operations, the Army also changed its doctrine to reflect updated views on how to best conduct defensive operations. It did this by expanding the doctrinal options for conduct of the defense and the ends these types of defenses sought to achieve. Multiple authors note that the concept of the mobile defense became increasingly integrated with Army doctrine and practice during this time. Primarily, Robert Doughty focuses on this addition as one of the most significant doctrinal updates of the 1950s. While Doughty notes the addition of mobile defense to Army doctrine in 1954, this concept appeared in the 1949 iteration of FM 100-5, described as a defense that takes place "along mobile lines" that integrates depth and rapid movement. In addition to appearing in the Army's capstone doctrine, the concept of the mobile defense appeared in the 1949 iteration of FM 17-100, *Armored Division and Combat Command*. Here, the Army described a mobile defense as best employed using armored forces in order to cover a sector larger than that typically assigned for an area defense. While the conduct of a mobile defense was not completely novel to the Army

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<sup>71</sup> Cushman, "Pentomic Infantry Division in Combat," 24.

prior to the New Look Era, the mobile defense began the New Look Era as a relatively novel doctrinal concept that the Army quickly embraced. The Army chose to accept this concept because it fit in with its vision for how the future battlefield would look. General Willard Wyman, commander of the Continental Army Command (CONARC) from 1956 to 1958, described the updated visualization of the defense as:

Fluid with units shifting their positions frequently according to an overall plan. The entire front is screened by covering forces whose elements may resist fiercely [ . . . ] counterattack violently or even attack in apparently illogical patterns. The purpose of these deceptive operations is to confuse the enemy, induce him to commit his forces prematurely, create attractive atomic targets, and provide the opportunity for offensive action to destroy him by fire and maneuver.<sup>72</sup>

This view of the future battlefield is significant as it was indicative of the changes in battlefield visualization. No longer were units tied to battle positions for specific periods of time. The defense was now holistically a concept that integrated movement and maneuver. It also illustrates that Army senior leadership no longer viewed the area defense as the most tenable defensive technique. It also shows that senior leaders now thought of the defense as both a way to implement nuclear weapons and a way to inflict decisive damage on the enemy.

The Army implemented the doctrinal concept of the mobile defense rapidly because of the situation it anticipated facing in Europe, how it visualized the future battlefield, and because of the rapidly expanding technologies it could use to execute the new concept. Prior to the integration of atomic weapons, the concept of the mobile

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<sup>72</sup> General Willard Wyman, *1955-1956 Instruction in Technical Employment of Atomic Weapons* (Fort Leavenworth, KS: Command and General Staff College, 1954), quoted in John P. Rose, *The Evolution of U.S. Army Nuclear Doctrine, 1945-1980* (Boulder, CO: Westview Press, 1980).

defense appeared primarily in doctrine for armored forces due to their inherent mobility, internal resupply capability, and the advantage their weapon systems gave them when attempting to focus their defense on the enemy instead of the terrain, as in an area defense. As the Army added atomic capabilities, the firepower advantage that armored divisions previously had was less disparate. Additionally, the mobility advantage specific to armored forces also diminished as the Army reorganized to the pentomic divisions and integrated vehicle lift capability. Though, as Bacevich noted, each pentomic division had only thirty-seven helicopters, even this small number of helicopters greatly increased the division's mobility and its suitability for utilization in the mobile defense.<sup>73</sup> With the capacity of the helicopters within the division, this number of helicopters meant the division could lift up to five rifle companies, giving the division commander the ability to reposition the majority of a given battle group as a reserve. As the Army reorganized to a force centered on atomic weapons, it attempted to bridge the mobility gap between different divisions. In closing this gap, the more mobile infantry division could now use the mobile defense and the Army updated the doctrine to reflect that capability.

In contrast to the minimal focus on the mobile defense and the Army's reservation to use it with anything but armored forces at the beginning of the New Look Era, by the end of the era the Army began to describe it as a method by which to engage and defeat the enemy, something previously reserved for offensive operations.<sup>74</sup> This embracing of the mobile defense came because of the addition of tactical nuclear weapons. As Mataxis

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<sup>73</sup> Bacevich, *The Pentomic Era*, 118.

<sup>74</sup> Department of the Army, FM 61-100, 147.

and Goldberg note, the mobile defense is “a defense in which the minimum forces will be forward to block, canalize, delay, and disorganize the enemy, while the preponderance of the division or corps, initially in reserve, counterattacks, strongly supported by atomic weapons.”<sup>75</sup> As the authors of *Nuclear Tactics* viewed atomic weapons as greatly enhancing the Army’s ability to use the defense to its advantage, so too did the Army by the end of the New Look Era. The addition of tactical nuclear weapons gave the Army the ability to offset a gross mismatch in terms of traditional combat power: tanks, armored personnel carriers, and traditional artillery. By employing this new weapon to create a sizable increase in firepower, the Army now had the ability to transition more rapidly to offensive operations after blunting the initial enemy attack. This transition to the offensive previously took longer with conventional forces because of the amount of firepower needed and the fact that most units needed to be engaged in the defense before the transition. This change helped to drive doctrinal and educational changes for the use of nuclear weapons at the tactical level.

This shift towards an increased focus on defensive operations is also clear in the education documents from the time. The intact POIs, those from 1951, 1954, 1955, and 1956, help to provide evidence of the Army’s shifting focus. In the 1951 POI for CGSC, of the 169 hours of instruction focused on either offensive or defensive division operations, 116 focus on offensive operations.<sup>76</sup> In contrast, in the 1956 POI only

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<sup>75</sup> Mataxis and Goldberg, *Nuclear Tactics, Weapons, and Firepower in the Pentomic Division, Battle Group, and Company*, 127.

<sup>76</sup> Command and General Staff College (CGSC), *Program of Instruction for Regular Course (250-0-1)* (Fort Leavenworth, KS: CGSC, 1950), Annex No. 12, 43-59.

seventy-five hours of 167 focus on the offense.<sup>77</sup> This shift to an increase in the hours spent covering defensive operations includes the addition of two defense-specific practical exercises, the retrograde and the delay, accounting for thirty-one hours of instruction for defensive operations.<sup>78</sup> Though the POIs do not offer assessments or summaries of changes, the descriptions of the practical exercises help to provide reasoning for the shift in the allocation of instruction.

The 1951 POI described the exercises taken to instruct the defense in traditional terms. Students were to plan for area defenses to prevent enemy penetrations and were to plan for a counterattack only with the reserve, not a dedicated unit, and under the correct conditions.<sup>79</sup> These descriptions mirror the doctrinal uses for the defense in the 1949 version of FM 100-5, where commanders employ the defense to “gain time pending the development of more favorable conditions for undertaking the offensive, or to economize forces on one front for the purpose of concentrating superior forces for a decisive action elsewhere.”<sup>80</sup> In 1956, the mobile defense comprised one of the larger practical exercises, at seventeen hours, focusing more on the planned counterattack.<sup>81</sup> Additionally, even when planning for a positional defense aligned on a wide front, where most forces would

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<sup>77</sup> Command and General Staff College (CGSC), *Program of Instruction for Regular Course 1955-1956* (Fort Leavenworth, KS: CGSC, 1955), Annex NR, 52-62a.

<sup>78</sup> *Ibid.*, 53, 61.

<sup>79</sup> CGSC, *Program of Instruction for Regular Course (250-0-1)*, 45, 48.

<sup>80</sup> Department of the Army, Field Manual (FM) 100-5, *Field Service Regulations: Operations* (Washington, DC: U.S. Government Printing Office, 1949), 120.

<sup>81</sup> CGSC, *Program of Instruction for Regular Course 1955-1956*, 55.

be employed forward, the exercise description specified that students would plan for and commit a counterattack force.<sup>82</sup> While writers of the POI did not explicitly state the reasoning behind the course adjustments, the changes to instruction mirror those to division doctrine of the time. In specifically forcing students to plan for a counterattack, the POI developers were likely anticipating the use of atomic weapons to slow the enemy attack and allow friendly forces to transition to a counterattack. Doctrine and writing from the 1950s favored this assumption. Mataxis and Goldberg note this use of nuclear weapons allowed an enemy to commit his attacking force, blunt it with nuclear weapons, and then rapidly transition to a counterattack while the enemy is reorganizing.<sup>83</sup> In this visualization of the evolving defense, the firepower advantage helped friendly forces not just hold terrain but allowed friendly forces to severely affect the enemy's formations and rapidly transition to the offense to defeat the enemy. This change indicated a shift in propensity to the mobile defense based on the current strategic situation and the changing organizations within the Army. With the increased instruction and practical exercise of defensive operations, the college began to focus more clearly on the type of operations its graduates would be most likely to conduct.

#### Command and Control

In addition to shifting its focus in the doctrine and education domains of DOTMLPF-P, the Army also updated its view on command and control. In the 1969

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<sup>82</sup> CGSC, *Program of Instruction for Regular Course 1955-1956*, 57.

<sup>83</sup> Mataxis and Goldberg, *Nuclear Tactics, Weapons, and Firepower in the Pentomic Division, Battle Group, and Company*, 153-154.

version of *Dictionary of United States Army Terms*, the oldest available version, the Army defined command and control as “An arrangement of personnel, facilities, and the means for information acquisition, processing, and dissemination employed by a commander in planning, directing, and controlling operations.”<sup>84</sup> While this doctrinal reference is well beyond the New Look Era, it represents the most period-correct definition that the Army codified in doctrine. The Army specifically changed how it envisioned commanders planning, directing, and controlling operations as part of the changes it implemented as it integrated nuclear weapons. These changes were evident in the Army’s task organization updates and its focus on decentralizing operations due to dispersion on the battlefield.

Across the New Look Era, the Army reorganized the division structure five times: Atomic Field Army (AFTA-1), the Pentomic Division, the Interim Pentomic Division, the Modern Mobile Army (MOMAR) initiative, and finally, the Reorganization Objective, Army Divisions (ROAD).<sup>85</sup> The ROAD division the Army ended up with consisted of a common division base that allowed the brigades within the division to be tailored to the mission with a mix of tank, mechanized infantry, and infantry battalions.<sup>86</sup> These task organization changes show the Army’s search for an appropriate command

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<sup>84</sup> Department of the Army, Army Regulation (AR) 310-25, *The Dictionary of United States Army Terms* (Washington, DC: U.S. Government Printing Office, 1969), 108.

<sup>85</sup> Fort Leavenworth Research Unit, *Review of Division Structure Initiatives* (Washington, DC: U.S. Army Research Institute for the Behavioral and Social Sciences, 1994), B-3 to B-4.

<sup>86</sup> *Ibid.*, B-4.

structure and task organization that could best implement nuclear weapons while maintaining conventional capability.

Prior to the New Look Era, the Army organized its divisions by platform type, either infantry or armor. This made all the divisions relatively homogeneous with most subordinate units made up primarily of the branch after which the Army named their division. This meant that most divisions were primarily composed of infantry or armor formations, with some field artillery in support. This also meant that these units were not flexible and did not facilitate gaining experience working with other branches or forms of maneuver. Additionally, this inflexibility limited the number of different variations into which commanders could task organize their subordinate elements. As the 1949 version of FM 100-5 described it, the armored division is “tactically and administratively self-contained.”<sup>87</sup> This statement implies that, in the Army’s view, there would be little need to add additional combat power or enablers for the division to function in its intended role, which was relatively narrow. Given this intended self-containment, the Army recognized that mission sets would often be divided by the type of division. As such, another component of this view was the Army’s doctrinal espousal of specific mission sets for specific formations. For instance, armored divisions conducting both mobile and defenses while infantry divisions were only capable of conducting an area defense. Prior to the integration of nuclear weapons, the main characteristics that influenced a unit’s capability to perform a specific mission were mobility and firepower. The armored division possessed these characteristics in exponentially larger quantities than infantry

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<sup>87</sup> Department of the Army, FM 100-5 (1949), 258.

divisions. With the integration of tactical nuclear weapons, all formations now had exponentially increased firepower, helping to close the capability gap between formations. With the updated division structures, the Army also worked to close the mobility gap. By allowing commander's increased flexibility to task organize to the battalion level, with tank, mechanized infantry, and infantry, mobility increased across all formations.

As the Army evolved its view on defensive tasks for each division, it also changed how it envisioned directing and controlling operations. In contrast to the centralized control and limited flexibility of the standard armor or infantry divisions, the ROAD divisions represented greater flexibility with respect to the forces in each subordinate unit and how the division would best employ those forces. In the FM 61-100, *The Division*, the Army focused on this flexibility:

The division consists of a relatively fixed command, staff, and combat and administrative support structure to which is assigned combat battalions (airborne infantry, infantry, mechanized infantry, tank) in proportion to and in numbers appropriate to the division's mission and its anticipated operational environment. Determination of the types and numbers of combat battalions in a particular division is called 'tailoring'.<sup>88</sup>

Doctrinally, the Army made a significant shift towards flexibility with the command and control of forces during the New Look Era. Instead of seeing divisions as mission specific organizations, the Army gave commanders the capability to tailor their divisions to the mission at hand. By closing the firepower gap with tactical nuclear weapons and giving commanders additional options for increased mobility, each brigade could be tailored to best suit the terrain, enemy, and friendly mission.

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<sup>88</sup> Department of the Army, FM 61-100, 5.

The integration of nuclear weapons helped to change the Army's view of command and control at the division level and allow for greater flexibility in the employment of divisions. The Army's primary change in the organizational domain of DOTMLPF-P during the New Look Era was the transition to the Pentomic Division. As the name implies, this organizational structure focused on the integration of atomic weapons into Army Divisions. As part of this transition to the Pentomic structure, a division commander's responsibilities changed as well. The Pentomic structure gave the division commander more subordinate elements to control, removed a subordinate commander from the previous structure, and allowed the division commander greater flexibility in establishing mission-specific subordinate task forces.<sup>89</sup> As shown in the diagram below, the Pentomic division structured five rifle companies, a combat support company, and a headquarters company directly under the battle group commander.<sup>90</sup> This increased his span of control to seven subordinate elements, but also increased the flexibility with respect to task organization. The battle group commander could choose to task organize the elements of the combat support company to best fit the terrain, enemy, and friendly mission. This doctrinal organization ensured flexibility and the capability to achieve greater dispersion, necessary characteristics on the nuclear battlefield, but also allowed the commander the best use of all non-nuclear capabilities within his organization.

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<sup>89</sup> Cushman, "Pentomic Infantry Division in Combat," 22.

<sup>90</sup> Department of the Army, FM 7-40 (1959), 6.

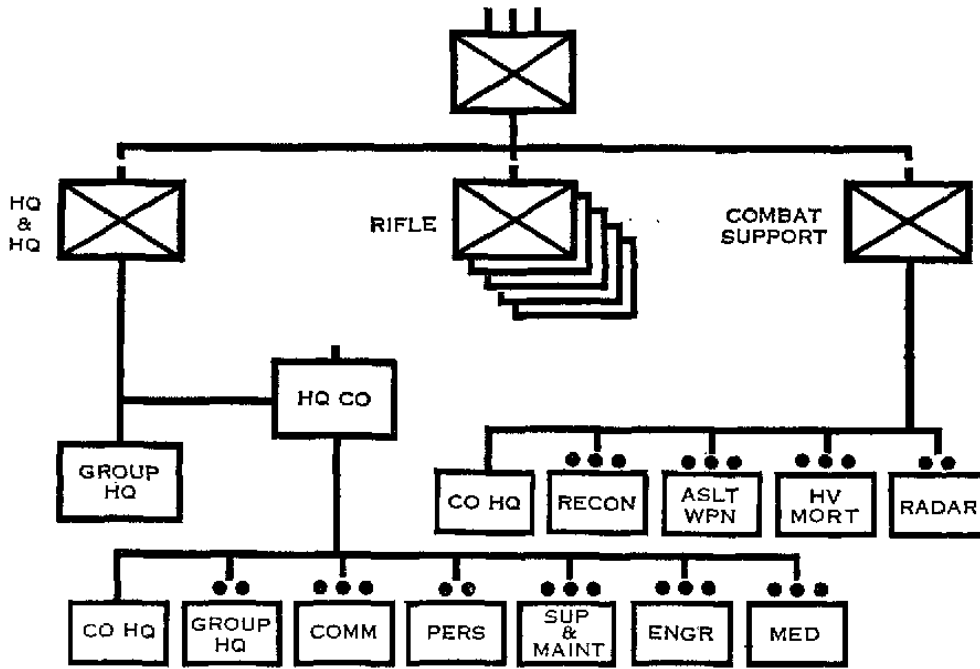


Figure 1. Infantry and Airborne Division Battle Groups

Source: Department of the Army, Field Manual 7-40, *Infantry and Airborne Division Battle Groups* (Washington, DC: U.S. Government Printing Office, 1959), 5.

While giving the commander additional options for task organization within the battle group, the updated structure also focused on the near certainty of integrating additional enablers from echelons above the battle group. The battle group field manual, FM 7-40, focused on this need to change the task organization, emphasizing both a capability to accept non-organic forces and the responsibility of the commander to decentralize control of his subordinate support forces to best suit the mission and conditions.<sup>91</sup> This concept bears resemblance to the Combat Commands that served as

<sup>91</sup> Department of the Army, FM 7-40 (1959), 3-4.

subordinate, skeleton headquarters in the World War II armored divisions. Not typically manned, these headquarters served to give the commander flexibility when task-organizing, allowed a structure that integrated multiple branches and functions depending on the mission needs.<sup>92</sup> By doctrinally establishing these headquarters the Army created flexibility for the division commanders. The subsequent doctrinal updates reflected this shift. Across multiple tactical echelons, the Army's doctrine changed to allow commander's more options when commanding and controlling forces on the nuclear battlefield. While the Army initially implemented a more flexible division structure to help facilitate operations on the nuclear battlefield, they retained this sense of creating flexibility within units in later doctrine for use on nonnuclear battlefields because of the need to task organize units to better suit all foreseeable conditions.

In framing doctrinal and organizational concepts for the 1960s, Continental Army Command (CONARC), the precursor to today's Training and Doctrine Command and Forces Command, emphasized the need for flexibility at the division level:

It is essential that allied forces achieve a mobility differential over the enemy. This mobility differential is derived from more than a mere increase in speed of movement, and is the sum of many other factors, among which are development of balanced tactical combat organizations, possessing versatility, flexibility, and endurance.<sup>93</sup>

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<sup>92</sup> Robert S. Cameron, *Mobility, Shock, and Firepower* (Washington, DC: Center of Military History, U.S. Army, 2008). 375.

<sup>93</sup> U.S. Army Continental Army Command (CONARC), "Doctrinal and Organizational Concepts for an Atomic – Nonatomic Army During the Period 1960-1970," (Headquarters, U.S. Army Continental Army Command, Fort Monroe, VA, 1957), 3.

While nuclear weapons served as the reason for the Army's focus on mobility and pushed it towards flexibility with respect to organizing forces, the concept of flexibility in organizing formations at or below the division remained long after the use of tactical nuclear weapons transitioned from a certainty to a likelihood to a remote possibility.

While the Army rapidly transitioned from the Pentomic Division to something more analogous to a traditional division structure, the doctrine retained the focus on flexibility with respect to command and control across multiple tactical echelons. In addition to granting commanders more freedom with respect to task organizing their forces for operations, doctrine also increasingly focused on the decentralized nature of operations. One of the main characteristics of the nuclear battlefield was dispersion, forcing all potential combatants to consider appropriate measures. While described generally, "consistent with the performance of the mission", all agreed on its necessity as a unit protection measure due to the likely effects of an adversary's nuclear weapons.<sup>94</sup> The importance of dispersion became deeply ingrained in all commanders, with Mataxis and Goldberg going as far as describing it as having the potential to "become the bugaboo of the unit commander's existence."<sup>95</sup> Clearly, the concern regarding a unit's capability to disperse became foremost as the Army updated its organizations and doctrine. The firepower increase the Army experienced with the inclusion of tactical nuclear weapons also increased the threat to units. With the enemy's tactical nuclear capability, commanders now viewed force protection on an exponentially larger scale. No

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<sup>94</sup> Mataxis and Goldberg, *Nuclear Tactics, Weapons, and Firepower in the Pentomic Division, Battle Group, and Company*, 83.

<sup>95</sup> *Ibid.*

longer could units mass before an attack or maintain static defensive positions. In order to avoid the effects of the enemy's tactical nuclear weapons, commanders sought to mitigate the effects of nuclear weapons by positioning forces as far apart as possible while still maintaining mission capability. As dispersion increased in importance due to the anticipated effects of nuclear weapons, Army leaders realized that subordinate commanders would need to execute operations in a more decentralized manner.

Doctrinally, the Army integrated the evolving concept of increasing decentralization with FM 100-5, its capstone doctrine. In the 1949 version of FM 100-5, decentralized execution was a method the Army saved for specific instances, such as when attacking urban areas or discussing the employment of artillery at levels above the regiment.<sup>96</sup> In contrast, by 1962, the Army laid out decentralized control as part of its organizational principles, emphasizing the need to allow subordinate commanders additional freedom in the execution of operations.<sup>97</sup> This manual also specifically stressed the need to avoid exerting too much influence over the control of subordinates.<sup>98</sup> As the battlefield grew, commanders could no longer maintain control of their subordinate elements throughout an operation. This lack of capability to control forced commanders to allow subordinates additional freedom during operations, and the new doctrine and organization reflected this.

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<sup>96</sup> Department of the Army, FM 100-5 (1949).

<sup>97</sup> Department of the Army, Field Manual (FM) 100-5, *Field Service Regulations: Operations* (Washington, DC: U.S. Government Printing Office, 1962).

<sup>98</sup> *Ibid.*, 20.

CONARC echoes this emphasis on decentralization during Army operations is their assessment of how to best tailor doctrine and organizations between 1960 and 1970. With the CONARC structure the Army identified multiple requirements to implement during the decade. These included strategic and tactical mobility, force projection reach and survivability on the nuclear battlefield, and emphasizing the importance of maintaining flexibility of command.<sup>99</sup> While all of these requirements echo the integration of principles necessary for success on the nuclear battlefield, the focus was on building organizations that have “the capability of unsupported self-defense.”<sup>100</sup> The Army integrated this requirement because of the dispersion it anticipated as necessary on the future battlefield. This is important because organizations are one of the more difficult domains of DOTMLPF-P to change due to the time required and the necessary funding, but the Army specified this capability in designing future organizations in order to best prepare as many organizations at the tactical as possible for success on the nuclear battlefield. As units became increasingly dispersed, they were more vulnerable and unsupported self-defense emerged as a requirement to address this increased risk. As the Army prepared for the use of tactical nuclear weapons, decentralization became more important in both the Army’s capstone doctrine and the development of organizations to execute that doctrine.

During the same time, this updated capstone doctrine set the conditions for doctrinal changes at the tactical level. In the 1949 version of FM 17-100, the doctrine

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<sup>99</sup> CONARC, 3-5.

<sup>100</sup> Ibid., 4.

briefly described decentralizing control between echelons, but immediately placed a significant caveat on this decentralization. The Army, through FM 17-100, stated that, “higher commanders keep close contact with the leading elements of their commands and make maximum use of liaison planes in order to insure prompt decisions and to take immediate advantage of any favorable situation which may develop.”<sup>101</sup> This paragraph represented the Army’s doctrinal hesitancy to allow subordinate commanders too much initiative. It also reflected the ability commanders had within the operating environment to exert and maintain control of subordinate elements.

In contrast to the pre-New Look doctrinal view of command and control, doctrine published as the Army transitioned to a nuclear battlefield approached subordinate control and execution differently. In FM 61-100, published in 1962, in nearly every operation, from attacks in mountainous terrain to the conduct of a retirement, the doctrine stressed the importance of decentralized execution.<sup>102</sup> One echelon down, the battle group doctrine also made this emphasis clear, attributing the focus to the integration of nuclear weapons; “Nuclear warfare is characterized by sudden and drastic changes in the tactical situation. This demands an alert and flexible system of command, with firm, centralized direction, decentralized execution, and a doctrine that stresses initiative and flexibility by subordinate commanders.”<sup>103</sup> While not a completely novel concept, the amount of emphasis on decentralized execution by subordinates and their use of initiative

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<sup>101</sup> Department of the Army, FM 17-100 (1949), 158.

<sup>102</sup> Department of the Army, FM 61-100, 82, 114, 186, 195.

<sup>103</sup> Department of the Army, FM 7-40 (1959), 5.

marked a dramatic change for the Army. This was due to how leaders visualized the nuclear battlefield, with the necessity of increased dispersion and the need for subordinates to take advantage of tactical opportunities. Additionally, the Army's reorganization to divisions that increased the span of control for commanders helped to solidify this view of initiative. By increasing the span of control, or the number of direct subordinates, the Army expanded the number of decisions to make for that commander. This enlarged span of control necessitated that a commander delegate responsibility and allow initiative from subordinates as commanders could no longer be as prescriptive as they had in the past. The Army's updated organization also gave commanders additional options for task organization, helping expand the options available to commanders. Driven by gaps in doctrine and adjustments to organization implemented in order to achieve success on the nuclear battlefield, the Army updated its view on how best to command and control forces at the tactical level.

While the Army made its evolving viewpoint on command and control evident through doctrinal revisions, this change was less pronounced in the education domain. Neither the summaries of courses nor the POIs available have enough detail in course descriptions to determine the extent to which the courses adopted an updated approach to command and control. The primary education reference that points to updated thinking regarding command and control and task organization came from MG Lionel McGarr, then Commandant of CGSC. In his article that began the series in *Military Review* he noted that the updated division organizations and the change in thinking about how these divisions employed atomic and non-atomic tactics forced a revision of CGSC

instruction.<sup>104</sup> While this is certainly not a definitive determination of causality between the integration of nuclear weapons and how the education domain updated its thinking on command and control, it does help to provide context for the doctrinal changes the Army made during the era.

While educational evidence from the New Look Era is less than conclusive, professional writing indicates some inculcation of this updated view of command and control. Multiple authors during the early portion of the New Look Era note the complexity surrounding issues of task organization and command and control. Primarily, LTC F.O. Miskche noted the difficulty of finding the correct task organization and the utility of building flexibility into an organization in his book *Atomic Weapons and Armies*.<sup>105</sup> Additionally, Mataxis and Goldberg, instructors at the time, spend twenty-five pages of their *Nuclear Tactics* discussing the organizational options available to best employ atomic weapons.<sup>106</sup> The authors note the options then available to the Army, and tangentially the Marine Corps, and analyze the impact of the adjustments and options. Most germane to this thesis, the authors note the importance of building organizations around the atomic capability and the importance of pushing self-sufficiency to lower levels.<sup>107</sup> By focusing on the importance of self-sufficiency with respect to task

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<sup>104</sup> McGarr, "USA Command and General Staff College Keeps Pace with the Future," 6.

<sup>105</sup> F. O. Miskche, *Atomic Weapons and Armies* (New York: Praeger, 1955), 174.

<sup>106</sup> Mataxis and Goldberg, *Nuclear Tactics, Weapons, and Firepower in the Pentomic Division, Battle Group, and Company*, 99-124.

<sup>107</sup> *Ibid.*, 103.

organization at the division level, the writers of the time help to provide context for and support the doctrinal changes the Army made.

### Offensive Operations

While the Army changed how they characterized and emphasized defensive operations during the New Look Era and updated how they anticipated that commanders controlled subordinate elements, the Army also shifted its view regarding offensive operations. As the Army's preferred method for conducting warfare, from the Second World War to the Korean War, Army senior leaders generally favored offensive operations. Part of this preference comes from the United States' geographic location, which allows it to avoid invasion and only fight wars in other peoples' territories. Another part of this preference comes from the Army's ability to build combat power on its own timeline prior to entering an operation or a conflict. This ability to choose the timeframe in which it committed forces gave it a preference for immediately beginning offensive operations, as they had the capability and could rapidly establish the initiative. Given the Army's preference for the offense, the changes the Army made during the New Look Era increased in magnitude. The defensive changes, while larger in scope, were somewhat overshadowed as the Army tended to focus on what it traditionally had focused on; offensive operations. While the Army significantly changed defensive operations, it was still clear that defense alone does not win wars.

After the Second World War, the Army recognized two principal forms of the offense; the envelopment and the penetration. In addition to these forms of the offense, the Army added the exploitation, a subsequent phase to both. The Army identified the exploitation as a phase of the offense that may take place after either an envelopment or a

penetration.<sup>108</sup> Essentially, these two offensive actions gave commanders a choice between massing combat power at a single point on the enemy's front in order to penetrate his defense or using mobility to avoid his principal defenses and conduct an envelopment.<sup>109</sup> While the basic conduct of each of these forms of maneuver did not drastically change during the New Look Era, the inclusion of tactical nuclear weapons influenced how the Army planned to conduct offensive operations. The addition of tactical nuclear weapons also helped to change how the Army prioritized the forms of offensive operations.

The previously displayed quantifiable doctrinal evidence is not available with respect to offensive operations. Without an easily quantifiable metric to show a shift in emphasis, the analysis of the changes the Army made initially begins with writers' opinions on the matter in both books and articles. LTC F.O. Miksche provides one of the earliest examples of the evolving views of how to best utilize nuclear weapons during offensive operations. In *Atomic Weapons and Armies*, he describes the updates to offensive operations in general terms

Successful bombardment with atomic missiles would undoubtedly soften the enemy's spirit of resistance, making attack easy. Thus, in a way, we may arrive at a sort of revised version of Marshal Petain's dictum in the First World War: 'A-bombs capture the terrain and ground forces have only to occupy it. [ . . . ] The trouble is that such considerations are overwhelmingly theoretical and of a rather elusive nature. The real influence of weapons can only be determined when one assumes that they would also be used by the other side.'<sup>110</sup>

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<sup>108</sup> Department of the Army, FM 17-100 (1949), 86.

<sup>109</sup> *Ibid.*, 86-87.

<sup>110</sup> Miksche, *Atomic Weapons and Armies*, 113-114.

This singular paragraph provides multiple pieces of information essential to understanding how the Army updated its doctrine for offensive operations to account for nuclear capability. First it shows the initial, simplistic reaction to the inclusion of nuclear weapons; nuclear weapons will provide such a large amount of firepower that traditional ground maneuver will be significantly easier. Additionally, it immediately identifies a more realistic perspective that friendly capabilities only matter when framed in terms of enemy strengths. While not itself part of doctrine, this early view provides an excellent lens through which to view the specific doctrinal changes the Army made.

Also helping to describe the popular thought regarding offensive operations as the Army was working to integrate nuclear weapons were Reinhardt and Kintner in *Atomic Weapons in Land Combat*. Their visualization of changes to offensive operations focused almost exclusively at the division level and incorporated considerations such as speed, the importance of targeting and the usefulness of the penetration in this process. They anticipate that following an atomic strike

Each of our divisions, once through the shell, becomes a pursuit force temporarily thrown on its own resources. [ . . . ] The enemy is more or less shocked into paralysis. Somewhere in that larger area hostile reserves, hastening to close the gap, may be me. All the elements of a hard-hitting war of maneuver are involved. Calculated audacity will count much more than sheer numbers. Reconnaissance in force will be the rule.<sup>111</sup>

This echoes Miksche's thoughts in that the window for maneuver forces to exploit the effects of an atomic strike is relatively small and requires rapid exploitation. This also helps to illustrate the shifting view with respect to the diminishing importance of manpower in the face of tactical nuclear weapons. While just two examples of the

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<sup>111</sup> Reinhardt and Kintner, *Atomic Weapons in Land Combat*, 182.

thinking that helped influence how the Army changed doctrine, these provide insight into the general considerations that influenced changing offensive doctrine.

Before the integration of nuclear weapons, Army doctrine described the envelopment as the preferred form of maneuver, indicating that it “usually offers more decisive results than does the penetration.”<sup>112</sup> Educational leaders of the period also subscribed to this belief, with the Assistant Commandant of CGSC describing it as such while discussing the multiple challenges ahead for commanders when integrating tactical nuclear weapons.<sup>113</sup> As discussed above, the way the Army viewed all operations principally ran through the lenses of both firepower and mobility. Before the integration of tactical nuclear weapons, the Army viewed the envelopment as the preferred form of maneuver because it avoided the enemy’s principal defenses and allowed armored forces to take advantage of their mobility against a relatively static enemy in the defense. While the enemy in the defense may have had parity or even an advantage in terms of firepower, that same enemy was almost certainly guaranteed to be at a disadvantage with respect to mobility. The Army also saw the penetration as the less preferred form of maneuver because of the amount of firepower it required. Since forces were primarily massing along the enemy’s front in his main engagement area, the unit conducting the penetration needed significant firepower in order to mitigate the enemy’s effects. Prior to the integration of tactical nuclear weapons, the Army did not possess sufficient firepower

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<sup>112</sup> Department of the Army, FM 7-40 (1950), 125.

<sup>113</sup> Train, “The Atomic Challenge,” 9.

at the tactical level to allow forces to conduct a penetration with less risk than an envelopment.

As the Army realized the exponential shift in firepower that tactical nuclear weapons provided, their thinking on offensive operations began to shift, as well. Generally, the Army placed tactical nuclear weapons in a more centralized role during planning and the Army's doctrine reflects this shift to a focus on firepower. The first manual published to support the pentomic division, *Infantry and Airborne Division Battlegroups*, clearly defines the centralized role of nuclear fires when planning the scheme of maneuver, "Because of the magnitude of nuclear fires, they may strongly influence the scheme of maneuver, and the scheme of maneuver may be designed to exploit nuclear weapons or to cause the enemy to form into remunerative targets."<sup>114</sup> The Army placed this as a consideration early in the doctrine because it applied across all the operations the newly-formed battle groups were expected to undertake. While it applied across all types of operations, whether defensive or offensive, the increase in firepower was the primary reason for the shift in thinking regarding offensive operations.

In addition to changing some of the considerations during the planning of offensive operations, the inclusion of tactical nuclear weapons helped to change the Army's preference with respect to using the envelopment or penetration. Contemporary writing provides evidence of this shift. Mataxis and Goldberg note this changing view given the integration of tactical nuclear weapons offering that a reconsideration of this view is necessary with the increased firepower

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<sup>114</sup> Department of the Army, FM 7-40 (1959), 43.

The possession of atomic weapons should increase the desirability of the penetration since it should simplify the blowing of a hole in the enemy position in terrain which will facilitate speed by the attacker. In atomic warfare, therefore, the relative importance of the forms of offensive action may well be reversed.<sup>115</sup>

Nuclear weapons theoretically gave the attacker the ability to mass fires in a way that made the penetration less risky. By helping to mitigate this risk, leaders could now better take advantage of the useful characteristics of the penetration. These characteristics, rapid movement towards the enemy's rear and an increased ability to build momentum, gave it an advantage over the less-direct envelopment. This mitigation of risk using atomic weapons was not the attack of ease that Miksche initially described, but it did indicate why the Army began to prefer the penetration over the envelopment.

While doctrine clearly preferred the envelopment prior to the addition of nuclear weapons, that view shifted towards the end of the 1950s. As the authors above note, the shift in firepower was instrumental in shifting the doctrine on offensive operations. Following the inclusion of nuclear weapons, doctrine discusses the penetration in more decisive terms. The 1962 Field Manual covering all divisions, *The Division*, described the penetration as the form of maneuver that “facilitates the destruction in detail of his divided force and the movement of forces deep into his rear areas in exploitation.”<sup>116</sup> This represented a marked change from the earlier versions of doctrine that clearly preferred the envelopment over the penetration. The Army made this doctrinal change

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<sup>115</sup> Mataxis and Goldberg, *Nuclear Tactics, Weapons, and Firepower in the Pentomic Division, Battle Group, and Company*, 164.

<sup>116</sup> Department of the Army, FM 61-100, 67.

because of the exponential increase in firepower that nuclear weapons gave them and how that shift countered a previous mobility advantage.

While changing the preference for forms of maneuver, the Army also updated how it defined and described offensive operations. Prior to the integration of tactical nuclear weapons, the Army only identified two forms of maneuver, the penetration and the envelopment. By the time the Army published the 1962 Field Manual covering divisions, it had expanded the forms of maneuver to include the exploitation as a separate form of maneuver. Additionally, the Army added single and double envelopments to the subsets of the envelopment. Finally, along with establishing the exploitation as a form of maneuver, it added the pursuit as a phase of that form of maneuver.<sup>117</sup> While some of these simply reflect the natural revolution of doctrine and the tendency to add details during revisions and updates, others illustrate how the integration of nuclear weapons and the updated battlefield visualization helped to drive doctrinal changes.

Principally, the change most clearly tied to the integration of tactical nuclear weapons is the change from the exploitation as a subsequent phase of either a penetration or an envelopment to being its own form of maneuver or type of offensive operation. One of the main reasons for this change is that Army leaders anticipated the nuclear battlefield would move much more rapidly than a conventional battlefield. As Mataxis and Goldberg note when discussing the division in the attack, “We must be sure therefore that we located each [enemy] position and drive through it with the maximum speed - lengthy

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<sup>117</sup> Department of the Army, FM 61-100, 67.

halts for regrouping can be fatal in atomic offense.”<sup>118</sup> As the authors note here, any regrouping during the operation will be costly in terms of time. This focus on speed is emphasized in the Division level field manual circa 1962 which discusses the need for exploitation forces to maintain momentum in order to be less susceptible to enemy threats.<sup>119</sup> By establishing the exploitation as a separate offensive operation, the Army allowed commanders to assign it to a subordinate unit during planning, minimizing the number of adjustments during execution. Because of the speed Army leaders envisioned seeing on the nuclear battlefield, doctrine changed to incorporate this novel battlefield visualization.

#### Chapter Conclusion

During the New Look Era, the integration of nuclear weapons helped to facilitate doctrinal changes across defensive operations, offensive operations, and the command and control of those operations. The Army made these changes based on their anticipation of what the nuclear battlefield would look like. This visualized battlefield expanded geographically, mandated dispersion for the forces to be employed, and incorporated the exponential increase in firepower that nuclear weapons provided. The changing battlefield and the integration of new technology helped to drive the doctrinal changes the Army made. While this battlefield visualization changed as the use of tactical nuclear weapons decreased in likelihood, many of these doctrinal concepts remained. The

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<sup>118</sup> Mataxis and Goldberg, *Nuclear Tactics, Weapons, and Firepower in the Pentomic Division, Battle Group, and Company*, 174-175.

<sup>119</sup> Department of the Army, FM 61-100, 115.

mobile defense, updated options for task organization, and a preference for the penetration are all doctrinal concepts that are inextricably linked to the integration of nuclear weapons. While the United States did not ultimately see its anticipated battlefield, many of the doctrinal concepts intended for use on that battlefield remain enduring.

## CHAPTER 5

### CONCLUSIONS AND RECOMMENDATIONS

#### Chapter Introduction

During the general period of the New Look Era, encompassing the period prior to Eisenhower's presidency and the lasting effects of decisions that endured after Eisenhower left office, the Army rapidly changed many domains of DOTMLPF-P. From the addition of nuclear weapons to the material domain to the multiple changes of the organizational domain, most of these changes revolved around the addition of nuclear weapons. Multiple works investigated these organizational changes, specifically the transition to and from the pentomic division. While most of these tangentially discuss doctrinal changes, none cover these changes in depth. The purpose of determining doctrinal changes and factors that influenced them is to draw parallels between the New Look Era and the contemporary operating environment as a way to determine best practices for the Army to update its doctrine in the contemporary period.

#### Primary Research Question

Answers to the primary research question are illustrated in depth in Chapter 4. Before examining the secondary research questions that help frame the doctrinal changes the Army made at the tactical level, it is important to highlight the broad doctrinal changes the Army made.

Beginning with defensive operations, the Army made several changes. Primarily, defensive doctrine expanded to emphasize mobile defense. CGSC also greatly increased the hours of instruction aligned towards the defense. The next major concept that the

Army updated through doctrine was that of command and control. The doctrine changed with respect to the task organization of units, the view on initiative taken by subordinates, and increased the emphasis on decentralization during the execution of operations. Finally, the Army also changed its doctrine to reflect updated considerations for offensive operations. The Army, through doctrine, expanded the forms of maneuver commanders could use to conduct offensive operations. Additionally, given the large shift in firepower, doctrine preference regarding forms of maneuver began to shift from the envelopment to the penetration. Though some of these doctrinal preferences influenced operations below the division level, the primary focus for this preference is the division. While these doctrinal changes were enduring and represent significant shifts, they are only as significant as the factors that necessitated them.

#### Considerations for Multi-Domain Operations

The secondary research questions help to frame the environment and consider as many reasons as possible for the doctrinal and education changes the Army made during and immediately after the New Look Era. As for factors that necessitated these changes, the largest ones were the Army's strategic and operational situation in Europe, the visualization of the future battlefield, and reorganizations of forces at the tactical level throughout the era. These factors closely parallel the current situation in the United States Army today. The Army's updated visualization of the battlefield has changed significantly, the strategic situation now is markedly different than just five years ago,

and the Army continues to struggle with how to best organize forces.<sup>120</sup> The actors have changed and the operating environment is different, but many of the factors that necessitated the Army's doctrinal changes during the New Look Era remain similar today. These similarities help to illustrate the utility of studying doctrinal changes more than six decades old.

The United States' strategic position is similar to that of seventy years ago. While not almost singularly focused on fighting a large conventional war in Europe, many of the lessons the Army learned during the New Look Era are still applicable. Primarily, the importance of the defense. The Army's strategic position in Europe and its lack of a relative combat power advantage helped to drive a doctrinal shift to defensive operations. Given the anticipated expeditionary nature of likely operations, the Army's first operations in a theater will likely take place against an enemy that has significantly more combat power.<sup>121</sup> Much the same as in Europe, the strategic situation will force Army units at the tactical level to conduct defensive operations while building sufficient combat power to transition to offensive operations. While clearly the offense is the preferred method by which to initiate a conflict, by necessity the Army will have to focus on the defense in order to ensure it is around long enough to transition to the offense.

While the strategic similarity may help provide a similar impetus to re-examine current doctrine across offensive and defensive operations, as well as how to command and control those operations, the expansion of the operational environment helps to

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<sup>120</sup> Headquarters, Department of the Army (HQDA), Field Manual (FM) 3-0, *Operations* (Washington, DC: Army Publishing Directorate, 2017), Chapter 1.

<sup>121</sup> *Ibid.*, 1-3.

provide a greater array of potential solutions. During the New Look Era, the Army adopted a material solution and then worked to fit the other domains of DOTMLPF-P around the material portion. While not the focus at the division level, it is important to understand the Army did not choose this order: the strategic situation helped to force nuclear weapons upon the Army in order to maintain relevance. In the contemporary operating environment, the Army could start with the most responsive domain of DOTMLPF-P: doctrine. By gradually building innovative doctrinal solutions based on the operation environment, the Army has the potential to build the right solutions across the other domains instead of merely finding an acceptable solution.

### Conclusions

The Army's efforts to update doctrine during the New Look Era provide a few notable examples that the contemporary Army might easily apply to current transition. These examples include ensuring the basic principles of firepower and mobility are at the center of doctrinal changes, ensuring doctrinal language provides appropriate consideration for the operating environment, and looking throughout the entirety of the Army for potential solutions.

Many of the changes the Army made during the New Look Era revolved around the two primary capabilities the Army sought to increase continuously: firepower and mobility. The most comprehensive and enduring changes to Army doctrine were born of advances to both. As an example, the mobile defense, a concept that has remained enduring since the New Look Era, made use of both the increased mobility of Army forces and the increased firepower available to forces with the addition of tactical nuclear weapons. This integration of firepower and mobility helped to ensure the mobile defense

would remain relevant as a doctrinal concept across a longer period. All other doctrinal changes noted above integrated advances in firepower and mobility.

The implications of increased firepower and mobility manifested themselves chiefly in the land and air domains, though doctrine of the time did not recognize multiple domains as it does today.<sup>122</sup> The Army increased mechanization for ground forces allowing them greater mobility, while also integrating helicopters in increasingly significant numbers. The newfound mobility worked to more rapidly move forces across the ground or through the air, making necessary doctrinal changes to make the best use of these changes. Firepower followed a similar model, though the Army's increases in firepower delivered in a direct manner were dwarfed by those delivered in an indirect manner, meaning most of the firepower crossed both the land and air domain.

While not recognized in doctrine as domains during the New Look Era, the delineation of battle space has become more important in the years since. After doctrinally recognizing five domains, the Army greatly expanded the implications of firepower and mobility. The Army is not constrained to maneuver across just the land and air domains, it can rapidly implement mobility across at least four, if not all five, of the domains. Similarly, the Army can apply effects, "fires", across four of these domains, impacting the enemy's actions. While the parallels between maneuver in the land domain and the cyber domain are not apparent, the principles of mobility and firepower still apply across the cyber domain as clearly as they do in the land domain. The Army must still develop and leverage capabilities necessary to apply effects across all available

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<sup>122</sup> HQDA, FM 3-0, 1-3.

domains. It must also determine how to best create mobility across domains and, more importantly, between them. While the operational environment has expanded significantly, the Army's primary means to evaluate capabilities remain the same. The doctrine of the New Look Era, or influenced by the New Look Era, has endured in part because of its ability to focus correctly on the core principles of how best to use firepower and maneuver. Prior to this period, many DOTMLPF-P updates took place along either firepower or maneuver and failed to combine both. The Army's integration of firepower and maneuver during the New Look Era helped to solidify changes across multiple strategic settings and future DOTMLPF-P updates. Any updates the Army makes to doctrine in consideration of multi domain operations will endure for the same reasons.

In addition to aligning doctrinal changes with the primary considerations of firepower and maneuver, the Army also utilized solutions specific to smaller parts of the Army and expanded them to better the entirety of the force. Two of the main doctrinal changes the Army made, the increased emphasis on the mobile defense and the addition of a more flexible task organization, both came from the armored community. As noted above, the mobile defense existed prior to the New Look Era, but the Army expanded its role as the use of the mobile defense began to apply to a larger portion of the Army with the addition of nuclear weapons.

Similarly, the Army's updates to command and control evolved from the combat command concept armored forces used during the Second World War. An armored division had two combat commands, A and B. These headquarters did not have permanently assigned subordinate units but instead were assigned subordinate units based

on the needs of the mission.<sup>123</sup> This organizational flexibility allowed the commander to truly combine arms within the division and give combat commanders the correct forces for the terrain, enemy, and mission. While it is impossible to determine what doctrinal changes the Army will make in the face of multi domain operations, using solutions that already exist, as the Army did during the 1950s, will help to ease the transition with novel doctrinal concepts. While successful examples from the past are not the solution to every problem, they can help to provide clues to the most successful solutions.

Finally, looking from the 21<sup>st</sup> century, the Army used the domains of DOTMLPF-P during the New Look Era to change preferences in doctrine, specifically with respect to offensive operations. With the changes to firepower and mobility, the Army updated its preferred method for offensive operations, moving from the envelopment to the penetration. More importantly, the doctrine was also clear regarding this preference and the factors that influenced this.

### Recommendations

There exist several ways to extend research involving the doctrinal implications of nuclear weapons. The Army maintained nuclear capability well past the end of the New Look Era or its direct effects. As the battlefield visualization changed, so too did the Army's anticipated use of nuclear weapons. This changing visualization, coupled with the myriad of technological advances beginning in the 1960s after the New Look Era, greatly changed the way the Army organized and fought across multiple decades. As the Army's doctrinal changes during and immediately following the New Look Era shaped

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<sup>123</sup> Cameron, *Mobility, Shock, and Firepower*, 374.

its operations for decades to come, so too did its doctrinal changes in the 1970s, 1980s, and 1990s. While the more greatly removed from the New Look Era the less nuclear weapons influence doctrine, this technology still impacts doctrine and education. This impact helps to identify similarities between previous technology and the coming technologies that may impact operations at the tactical level in the future.

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