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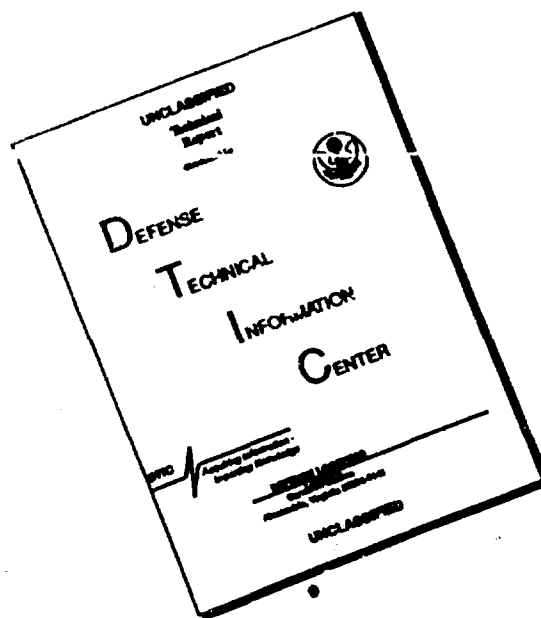
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**ABSTRACT**

DEMBOSKY, ANDREW DAVID. Meeting the Enduring Challenge: United States Air Force Basic Doctrine Through 1992. (Under the direction of Drs. Joseph William Caddell, Joseph Patrick Hobbs, and Robert Hetherington Dorff.)

Since the 1920s, the United States Air Force has based much of its doctrine on beliefs in the capabilities of strategic bombing that history has not fully borne out. These beliefs, and a lack of critical, objective analysis of experience, are evident in successive versions of the Air Force manual for basic doctrine. The first part of this thesis reviews these doctrine manuals and Air Force thinking through the 1970s.

During the 1970s and 1980s, an increasing number of Air Force officers began to realize these, and other, deficiencies in the service's doctrine. The publication of their criticisms and suggestions in various books, articles, and research studies coincided with the establishment of two Air Force organizations specifically devoted to the study of air power history and doctrine. The combination during the late 1980s of these organizations and the officers who worked in them led to the development of a completely new doctrine manual.

Based on interviews and material from the working files of the Center for Aerospace Doctrine, Research and Education (CADRE) and the Air Staff, the second part of this thesis

traces the development of the 1992 edition of Air Force Manual (AFM) 1-1. In contrast with previous manuals, the new AFM 1-1 displays a greater appreciation for the study of air power history. This objective analysis of experience is directly attributable to the combination of officers, organizations, and timing that existed in the 1980s and early 1990s.

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**MEETING THE ENDURING CHALLENGE: UNITED STATES AIR FORCE  
BASIC DOCTRINE THROUGH 1992**

by

**ANDREW DAVID DEMBOSKY**

A thesis submitted to the Graduate Faculty of  
North Carolina State University  
in partial fulfillment of the  
requirements for the Degree of  
Master of Arts

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**BIOGRAPHY**

Andrew David Dembosky (b. 1968) grew up in Peabody, Massachusetts. He graduated from St. John's Preparatory School in 1986, and the United States Air Force Academy as a 2nd Lieutenant in May 1990. He completed Euro-Nato Joint Jet Pilot Training at Sheppard AFB, TX, in October 1991. Through the Air Force Institute of Technology, he attended North Carolina State University from January 1992 through May 1993. He is presently assigned to Holloman AFB, NM.

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## Introduction

"If those who distill doctrine from experience or devise it by logical inference in the abstract fail to exercise the utmost rigor in their thinking, the whole service suffers."

-- I.B. Holley, 1974.<sup>1</sup>

Professor of history at Duke University (and a Major General in the USAF Reserve) I.B. Holley, Jr., made the above statement during a Harmon Memorial lecture at the United States Air Force Academy. He defined doctrine as "what is officially approved to be taught. . . ." and ". . . the point of departure for virtually every activity in the air arm."<sup>2</sup> During the presentation, he also reviewed the "doctrinal myopia" of the 1920s and 1930s that led to heavy U.S. Army Air Corps losses during unescorted bombing missions over Europe in World War II. In his opinion, the failure to perform rigorous self-criticism led to ". . . doctrines of strategic air power [that] were seriously and dangerously flawed."<sup>3</sup>

Professor Holley characterized Air Force doctrine as "an enduring challenge." Like any challenge, successful doctrinal development hinges on finding the correct approach. Professor Holley has indicated, in numerous other

writings on doctrine, that rigorous and objective analysis of history is one of, if not the, most important ingredients to the formulation of sound doctrine.<sup>4</sup> Both his lecture and other works have had an undeniable influence on the Air Force and its doctrine.<sup>5</sup>

The Air Force sets forth its basic doctrine in Air Force Manual (AFM) 1-1. In the March 1992 edition, Chief of Staff, General Merrill A. McPeak echoes Professor Holley by stating that "doctrine is important because it provides the framework for understanding how to apply military power. It is what history has taught us works in war, as well as what does not."<sup>6</sup> The manual's "Introduction" adds that "aero-space doctrine is, simply defined, what we hold true about aerospace power and the best way to do the job in the Air Force. It is based on experience, our own and that of others."<sup>7</sup> Indeed, a review of the nine other basic doctrine manuals published since 1953 reveals that the Air Force has continually professed experience to be a major input to doctrine.<sup>8</sup>

Nevertheless, despite Air Force claims to the contrary, pivotal assertions in these nine other manuals did not display a conscious recognition of what "history has taught." Manuals prior to 1979 predominantly reflected Air Force beliefs in the "decisive" impact of air power in World War II, but did not include an understanding of some of air power's important limitations revealed by experiences in

Korea and Vietnam. The 1979 edition, described by many within the Air Force as a "comic book," did little to foster an air of professionalism regarding the way the service viewed doctrine.<sup>9</sup> The 1984 edition significantly redressed this deficiency through its structure and emphasis on the role of aerospace power in achieving national security objectives. As in the previous manuals, though, the 1984 manual asserted a belief in the efficacy of air power, specifically strategic bombing, that operational experiences in Korea and Vietnam did not support.<sup>10</sup> Strongly held institutional beliefs in strategic bombing had prevented the Air Force from formulating a doctrine based on a broad and rigorous analysis of experience.

In support of these contentions, the first part of this thesis will review the history of Air Force basic doctrine from the 1920s through the 1980s. It will focus primarily, but not exclusively, on doctrinal claims that strategic air attacks\* can independently and completely destroy the will of an enemy nation, and the lack of historical evidence offered in doctrine manuals to support these claims. This

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\*The U.S. military officially defines "strategic air warfare" as "air combat and supporting operations designed to effect, through the systematic application of force to a selected series of vital targets, the progressive destruction and disintegration of the enemy's war-making capacity to a point where the enemy no longer retains the ability or the will to wage war" (Joint Pub 1-02, as quoted in AFM 1-1 (1992), Vol. II, p. 302.). For this thesis, the author considers the terms "strategic bombing," "strategic attack," and "strategic aerospace offense" synonymous, and consistent with this definition.

review will illustrate the failure of the Air Force to derive its doctrine from an objective and critical analysis of experience, as prescribed by Professor Holley.

In contrast with these previous manuals, the 1992 edition of AFM 1-1 represents a willingness to deal critically with air power history, both "our own and that of others." For the first time the manual has been published in two volumes. The first volume contains pithy statements explaining the Air Force's understanding of and beliefs about war, aerospace power, the employment of aerospace forces, and how it should prepare for war. This volume, in and of itself, does not fundamentally differ in format from past manuals. Rather, much of its content, and the collection of twenty-five essays in the second volume, written specifically to support statements made in the first, provide the seminal difference.<sup>11</sup>

These essays rely on historical evidence, some of the latest historical scholarship, and a rigorous analysis of experience to derive and explain Air Force doctrine. Their content and the sources on which many were based directly challenge and contradict some long-held Air Force beliefs, including beliefs in the capabilities of strategic bombing.<sup>12</sup> Together, the two volumes provide a manual that recognizes and incorporates many important lessons about air power discovered during World War II, Korea, and Vietnam.

This new manual's attempt to grapple with the challenges posed by critical historical analysis and the development of doctrine suggests a change in the organizational behavior of the Air Force. An attempt could be made to characterize the repetition of ideas in previous manuals as an example of "institutional inertia," with the development of the new manual fitting some sort of model for organizational change. However, this thesis makes no claim to territory best studied by social scientists. Instead, it merely attempts to point out historical differences in Air Force doctrine and doctrinal development.

The passage of nearly twenty years since the end of the Vietnam War and the publication of the new manual also raises the following question: why in 1992 did the Air Force switch to a conceptually different approach to its basic doctrine? Some of the factors that commonly affect doctrine -- changes in technology, changes in the nature of the perceived threat, changes in the amount spent on defense -- do not provide sufficient answers. While many technological advances have been made in the past twenty years, none compelled the Air Force to re-evaluate its own history. In fact, the capabilities ascribed to the "stealth bomber" logically should have intensified beliefs in the efficacy of strategic bombers and bombing. Similarly, the men and ideas involved in the creation of the new manual began to coalesce in the early and mid 1980s, before the drastic changes to

both the former Soviet Union and the American defense budget.<sup>13</sup>

Professor Holley's 1974 lecture indirectly deserves some of the credit for the new, more historically oriented, doctrine. The Air University Review, the professional journal of the Air Force from 1947 to 1987, served, according to its last editor, as ". . .a truly open forum for presenting and stimulating innovative thinking on military doctrine, strategy, tactics, force structure, readiness, and other national defense matters."<sup>14</sup> In the twenty-seven years prior to Holley's lecture, the journal averaged two articles per year under the subject of doctrine. In the thirteen years after 1974, this figure jumped to five.<sup>15</sup> Its successor as the Air Force's professional journal, Airpower Journal, has continued this trend, with an article related to doctrine appearing in nearly every issue. Clearly, a significant increase in the kind of rigorous thinking Holley advocated had taken place.

The surge in articles, however, reflected increasing debates over more than just air power doctrine. Topics discussed included the new "AirLand Battle" doctrine, Soviet military doctrine, and the need for a formal space doctrine.<sup>16</sup> Therefore, while Professor Holley's lecture provided part of the impetus for more thoughtful reflection and the Air University Review the forum, they do not provide the answer to the question at hand.

The second part of this thesis will show that the answer stems from a combination of key individuals brought together at an appropriate place and opportune moment. More specifically, the new manual, its format and content, resulted primarily from the critical thinking and efforts of several Air Force officers at the Airpower Research Institute (ARI) and the Center for Aerospace Doctrine, Research and Education (CADRE) during the 1980s and early 1990s. The conceptually new approach to doctrine embodied by the manual required incisive people who believed in the merits of studying history, dedicated research agencies to foster such study, and a time receptive to their work and conducive to change. No such combination had previously existed, marking the 1992 edition of AFM 1-1 as a unique articulation of Air Force basic doctrine.

The manual that resulted from the work of these men will probably not immediately alter the daily flying, training, and hard work Air Force personnel do in support of American national security interests. Nor will it remain free from criticism. However, it does represent a fundamental shift in the way in which the Air Force approaches the development of basic doctrine and its own history. The work done at ARI and CADRE, co-located at the Air University (AU), Maxwell Air Force Base (AFB), Alabama, has provided the Air Force with a doctrinal manual that stems from the critical analysis of experience. In dealing with the past,

the new AFM 1-1 and the manner in which it was developed seem to create a foundation better suited to meet the needs of the future than that supplied by previous manuals. Thus, it stands as an excellent example of how to meet the "enduring challenge."

### Notes to Introduction

In the interest of space, the author has used standard abbreviations for ranks in both the text and the notes after the first full use of a rank. In addition, all officers belong to the USAF unless otherwise noted. In the notes, Air University Review has been abbreviated as AUR, and Air University Press as AUP. All cited material is fully listed, without abbreviations, in the bibliography.

<sup>1</sup>I.B. Holley, Jr., "An Enduring Challenge: The Problem of Air Force Doctrine," Sixteenth Harmon Memorial Lecture, U.S. Air Force Academy, CO: 1974, p. 3.

<sup>2</sup>Ibid., pp. 4-5.

<sup>3</sup>Ibid., pp. 10-11.

<sup>4</sup>See any of Gen. Holley's works listed in the bibliography, especially "Of Saber Charges, Escort Fighters, and Spacecraft -- The Search for Doctrine," AUR 34 (September-October 1983): 2-11.

<sup>5</sup>Gen. Holley provided a definition of doctrine in his article "Of Saber Charges, Escort Fighters, and Spacecraft," p. 4. This definition bears a striking similarity to the one used in the 1992 edition of Air Force Manual 1-1, Basic Aerospace Doctrine of the United States Air Force. Colonel Dennis M. Drew, the primary writer of the 1992 edition, provided a definition of doctrine in his article "Of Trees and Leaves: A New View of Doctrine," AUR 33 (January 1982):41. Col. Drew attributed the idea for this definition to Gen. Holley.

<sup>6</sup>Headquarters, Department of the Air Force, Air Force Manual 1-1, Basic Aerospace Doctrine of the United States Air Force, Vol. I, March 1992, p. v.

<sup>7</sup>Ibid., p. vii.

<sup>8</sup>Headquarters, Department of the Air Force: Air Force Manual 1-1, Basic Aerospace Doctrine of the United States Air Force, 16 March 1984, p. v; Air Force Manual 1-1, Functions and Basic Doctrine of the United States Air Force, 14 February 1979, p. i; Air Force Manual 1-1, United States Air Force Basic Doctrine, 15 January 1975, Foreword and Preface; Air Force Manual 1-1, United States Air Force Basic Doctrine, 28 September 1971, Foreword; Air Force Manual 1-1, United States Air Force Basic Doctrine, 14 August 1964, p. i; Air Force Manual 1-2, United States Air Force Basic Doctrine, 1 December 1959, p. i; Air Force Manual 1-2, United States Air Force Basic Doctrine, 1 April 1955, p. ii;

Air Force Manual 1-2, United States Air Force Basic Doctrine, 1 April 1954, p. ii; Air Force Manual 1-2, United States Air Force Basic Doctrine, 1 April 1953, p. i. Hereafter all citations from these manuals will use the following format: AFM 1-# (19##), p. #.

<sup>9</sup>The author has had conversations with several senior Air Force officers, and a former Chief of the Air Force Office of History, who have made this reference. In addition, Col. Drew used the same term in "Two Decades in the Air Power Wilderness: Do We Know Where We Are Yet?" AUR 37 (September-October 1986): 12. For further criticism of this manual, and its less than serious tone, see the articles by Murray (1983) and Lt. Col. Baucom (1984), cited both in Chapter 2 and the bibliography of this thesis.

<sup>10</sup>See Chapter 2 of this thesis for an analysis of the 1984 edition of AFM 1-1.

<sup>11</sup>AFM 1-1 (1992), Vol. I, p. v.

<sup>12</sup>See AFM 1-1 (1992), Vol. II, footnotes to all essays for sources used.

<sup>13</sup>See Chapter 3 of this thesis.

<sup>14</sup>Major Earl H. Tilford, Jr., "Finis," AUR 37 (January-March 1987): 12.

<sup>15</sup>Author's calculation based on listing of articles under heading of "doctrine" in Air University Review Index (Maxwell AFB, AL: AUP, October 1991), pp. 254-59.

<sup>16</sup>Ibid.

## Chapter 1

"I think we have been consistent in our concepts since the formation of GHQ Air Force in 1935. Our basic doctrine has remained generally unchanged since that time." -- Gen. Curtis LeMay, 1961.<sup>1</sup>

In the wake of World War I many countries sought a means to avoid a repetition of the horrific losses suffered during years of stalemated trench warfare. The airplane, with its ability to strike anything it could fly over, offered one such means. Air power proponents and theorists authored many works. Italian General Giulio Douhet has since gained fame for his 1921 work The Command of the Air. Douhet theorized, according to historians Richard H. Kohn and Joseph P. Harahan, that "by bombing cities and factories instead of military forces (except air forces), the enemy could be defeated through shattering the civilian will to continue resistance" [emphasis added].<sup>2</sup>

Brigadier General Billy Mitchell emerged as the champion of air power in the United States. His widely publicized use of aircraft to sink the German battleship Ostfriesland in 1921, his court-martial in 1925, and publication in the same year of his book Winged Defense: The

Development and Possibilities of Modern Air Power --

Economic and Military, captivated young airmen.<sup>3</sup> In a 1926 appearance before the House of Representatives Committee on Military Affairs, Mitchell theorized that ". . .in the future, we will strike, in case of armed conflict, when all other means of settling disputes have failed, to go straight to the vital centers, the industrial centers, through the use of an air force and hit them."<sup>4</sup> Thus, Mitchell planted the idea of strategic bombing in the minds of American airmen.

The task of synthesizing these ideas, and many others, into a doctrine for the fledgling Army Air Corps fell to the Air Corps Tactical School (ACTS). Created at Maxwell Field, Alabama, between 1926 and 1931, the school indoctrinated future air leaders. "There," according to Professor I.B. Holley, "in the decade from 1931 to 1941 a small but able and dedicated faculty, in conjunction with a succession of some enthusiastic, if atypical, students, hammered out the doctrinal guidelines for the modern Air Force."<sup>5</sup> The ideas developed at ACTS, and the reasons why they had such a tremendous influence on Air Force doctrine and strategic thinking and planning during World War II, have undergone significant historical analysis.<sup>6</sup> Two observations of particular relevance to this thesis should be made about the ideas formulated and professed at ACTS.

First, as historian and Air Force officer Dr. Mark Clodfelter has noted, ACTS officers "contended that destroying an enemy's war-making capability through attacks on its economic 'vital centers' would disrupt its social fabric and lead to a collapse of morale" [emphasis added].<sup>7</sup> Second, the Air Corps officers who translated this belief into doctrine had relatively little empirical evidence to support their contention.<sup>8</sup> Consequently, an untested belief became dogma, and dogma became doctrine. As air power historian Michael Sherry wrote, "the Air Corps' dismissive attitude toward past experience was neatly captured in the tactical school's motto, Proficimus More Irrentiti (we make our progress unhindered by custom)."<sup>9</sup>

As with any theory, strategic bombing needed a definitive test to substantiate the claims made by its proponents. World War II provided the great test for the Air Corps' faith in its doctrine. Not surprisingly, since 1945 participants and historians have debated the accomplishments of the American strategic bombing campaigns conducted against Germany and Japan.<sup>10</sup>

The United States Strategic Bombing Survey (USSBS), the official government assessment of air power's effectiveness, provided, in retrospect, as much "proof" for proponents of strategic bombing as it did for opponents. The USSBS firmly stated that "Allied air power was decisive in the war in Western Europe."<sup>11</sup> After studying the war in the Pacific,

it projected that "for the future, it is important fully to grasp the fact that enemy planes enjoying control of the sky over one's head can be as disastrous to one's country as its occupation by physical invasion."<sup>12</sup> The survey also cautioned that "air power had not yet reached maturity and all conclusions drawn from experience in the European theatre must be considered subject to change."<sup>13</sup> Thus, while the report considered air power vitally important, it did not find the American experience a wholly valid basis for future air combat thinking and planning.

Indeed, strategic bombing, independent of other considerations, did not completely destroy the capability or will of either Germany or Japan in World War II despite its proponents' claims. The enemy surrendered only after complete occupation in the case of the former, and complete isolation by a combined air, sea, and land effort in the case of the latter. Strategic bombing laid waste to a staggering amount of each country's urban and industrial areas, but it did not produce the promised results of completely destroying an enemy's will.<sup>14</sup>

"But," as military historian and analyst Walter Millis noted, "experience is seldom a strong answer to dogma."<sup>15</sup> Many leading airmen believed that strategic bombing had broken the will of the enemy and had been the predominant reason for Allied victory in Europe and the Pacific. Based on this belief in air power's ability to win wars, airmen

argued that the Air Force should be given its independence from the Army. The USSBS's conclusions and the enormous potential for destruction afforded by atomic weapons bolstered their case. As a result, the National Security Act of 1947 officially created the U.S. Air Force, and the U.S. Air Force officially began to codify a doctrine based on the ideas taught at ACTS.<sup>16</sup>

The 1946 Army Air Forces Regulation 20-61 had established that Maxwell Field's Air University (AU), the ACTS successor, "reviews, revises, and prepares publication of AAF basic doctrine. . . ."<sup>17</sup> Official Air Force historian Dr. Robert Frank Futrell's monumental work Ideas, Concepts, Doctrine: Basic Thinking in the United States Air Force, 1907-1984 exhaustively documents AU's efforts between 1948 and 1953 to produce the Air Force's first basic doctrine manual. Futrell's history reveals three important problems that hindered the manual's development.

First, the Air Staff in Washington, D.C. repeatedly refused to relinquish to AU the authority to approve and publish basic doctrine. Second, the Air Staff was often slow to review AU drafts, and then disapproved them. Last, considerable debate took place over what should, or should not, be included in the manual. Particularly lively was the discussion as to whether AU's term "theater air forces" should replace "tactical air operations" (eventually AU deleted the term from its drafts).<sup>18</sup>

These problems engendered a sense of frustration among some senior officers at AU.<sup>19</sup> This appears understandable given that the final product, published somewhat ironically on 1 April 1953 after six years of work, contained only seventeen pages, organized into five very short chapters. Printed as a pamphlet, it measured a slim four inches by six and one-half inches.<sup>20</sup>

The new manual, AFM 1-2, United States Air Force Basic Doctrine, proclaimed that "basic air doctrine evolves from experience gained in war and from analysis of the continuing impact of new weapons systems on warfare."<sup>21</sup> Yet, the chapter entitled "Employment of Air Forces" revealed a tendency to ascribe to air power capabilities not completely borne out by experience, much as the theorists at ACTS had done. The manual maintained that air forces, by attacking a nation's "heartland," or vital war-making capabilities, ". . . can effectively reduce its will to fight. . . ."<sup>22</sup> It further asserted that "no nation can long survive unlimited exploitation by enemy air forces utilizing weapons of mass destruction,"<sup>23</sup> a clear reflection of Air Force beliefs in the efficacy of strategic bombing and nuclear weapons.

Interestingly, the end of this same chapter contained a carefully worded paragraph addressing the "emotional responses" of people whose nation suffered air attack:

These responses, depending upon how the air forces are employed, can be of a positive or negative nature. By careful consideration of the social structure of a nation, it may be possible to apply air forces against

those parts of the structure that will tend to develop cleavages favorable for exploitation.<sup>24</sup>

It seems entirely plausible that whoever wrote this section recognized that strategic attacks and bombing had actually strengthened the will to resist of many people during World War II.<sup>25</sup> This section, however, and its implied recognition of history, would remain a part of AFM 1-2 for only one more year.

The Air Force was quickly developing a tendency to avoid rigorous analysis of its doctrine. The favorable reception of AFM 1-2 by all major air commanders led to its re-publication on 1 April 1954 with only a few slight changes in wording.<sup>26</sup> This seems unfortunate since the Air Force also had its experiences in Korea to draw upon in revising this manual. An attentive study of this recent experience might have helped dispel some beliefs about strategic bombing, and reinforced the idea that it can strengthen an enemy's resolve.

As with World War II, the Korean war seemed only to strengthen Air Force beliefs in the capabilities of strategic bombing. As the USSBS had projected, the U.S. achieved air superiority over North Korea, but this did not prevent the war from becoming stalemated. Airmen turned to strategic bombing, modeled after the campaigns of World War II, to break the enemy's capability and will to fight. Due to the enemy's resourcefulness, the incorrect assumption by the U.S. Air Force that enemy armies required the same

amount and kind of logistical support as American armies, and the political pressures restraining military power, strategic bombing again failed to achieve the promised results.<sup>27</sup> Yet, as Dr. Clodfelter later described, "despite the failure of air power to secure an armistice independent of other considerations, many in the Air Force believed that bombing made the significant contribution toward achieving a truce."<sup>28</sup>

Other trends and developments in the 1950s contributed to the failure of the Air Force to take full advantage of a rigorous analysis of recent experiences with strategic bombing. The adoption by the Eisenhower Administration of the "New Look" towards defense policy favored the Air Force and the development of the Strategic Air Command (SAC) under the firm guidance of Gen. Curtis LeMay.<sup>29</sup> In 1955, Secretary of the Air Force Thomas K. Finletter, believing that preparedness for nuclear war would deter more limited wars, announced that "the Korean War was a special case, and air power can learn little there about its future role in United States foreign policy in the East."<sup>30</sup> In the words of one historian, "the Air Force looked to its future unhampered by its immediate past."<sup>31</sup> Of course, the growing U.S. involvement in Southeast Asia would highlight the cost of Finletter's, and the Air Force's, narrow focus.

The third edition of AFM 1-2 did little other than present the material contained in the previous editions in a

more concise eight and one-half inch by eleven inch format. Published on 1 April 1955, the ten-page manual was the shortest and best received attempt to date to provide the Air Force with a statement of purpose.<sup>32</sup> Although the "Foreword" again asserted that "basic doctrine evolves from experience and from analysis of the continuing impact of new developments,"<sup>33</sup> the manual did not, in fact, demonstrate an appreciation of the difficulties involved in the employment of air power in World War II and Korea. Instead, the manual emphasized strategic attacks on both military installations and "major cities" as a means to destroy an enemy's capability and will to wage war, thereby demonstrating the Air Force's continuing belief in the traditional ACTS ideas.<sup>34</sup>

Events in 1958 soon led to a significant shift in doctrinal development. First, the Air Staff rejected an AU draft of a revised AFM 1-2, believing that rapid advances in technology had made attempts to publish doctrine outmoded. Then, under the Defense Reorganization Act of 1958, the Air Staff supplanted AU as the entity responsible for preparing the basic doctrine manual. Lieutenant General W.E. Todd, AU commander, quickly asserted that the 1955 AFM 1-2 was "so far out of date that it has practically become archaic." In response, the Air Staff published a revision on 1 December 1959.<sup>35</sup>

Despite Gen. Todd's criticism, the Air Staff actually made only a few minor changes to the wording of the manual's

five brief chapters. The "Foreword," much of the body of the manual, and statements emphasizing that attacks against an enemy nation could ". . .reduce the enemy's will and capacity to resist or to pursue a war objective," remained virtually unchanged.<sup>36</sup> In recognition of new satellite and missile technology, the manual substituted "aerospace" for all references to "air" "forces," "operations," etc. In retaining its old statements, and adding a few new ones stating that "the best preparation for limited war is proper preparation for general war,"<sup>38</sup> the Air Force displayed a desire to eschew its frustrating experience fighting a limited war in Korea in favor of its perceived "successful" application of strategic bombing in World War II.<sup>38</sup>

The statements in AFM 1-2 also reflected the growing predominance of strategic air power thinking in the Air Force during the 1950s and 1960s. In Air Force slang, the service had been "SACumsized."<sup>39</sup> Dr. Earl H. Tilford, historian, former Air Force intelligence officer and editor of Air University Review, examined this period in his book Setup: What the Air Force Did in Vietnam and Why. In Tilford's opinion, "from the late 1950s and into the 1960s Air Force thinking and writing became increasingly insipid." This lack of critical thinking led to inflexible and unsubstantiated dogma rather than carefully considered doctrine. Airmen believed that bombers and nuclear weapons could win any kind of war. Above all, "the fact that limited wars

are, indeed, very different from conventional war was ignored during and then forgotten after Korea."<sup>40</sup>

Advocates of "flexible response" in the early 1960s, especially in the Kennedy administration, attempted to improve U.S. military capabilities across the spectrum of conflict.<sup>41</sup> The Air Force responded by completely refocusing its doctrine to meet the new concept of national security engendered by the proliferation of thermonuclear weapons.<sup>42</sup> In doing so, its basic doctrine moved away even further from experience as the basis for operational guidance.

Published as AFM 1-1 on 14 August 1964, the new United States Air Force Basic Doctrine bore the signature of Air Force Chief of Staff, Gen. Curtis LeMay. The "Foreword," in declaring the new focus of the doctrine, stated the following:

Basic doctrine evolves through the continuing analysis and testing of military operations in the light of national objectives and the changing military environment. Accordingly, the thermonuclear age has created conditions necessitating a rapid advance in the development of new concepts for air warfare.<sup>43</sup>

While implying that analysis of experience played some role in the conceptual development of doctrine, the 1964 manual seemed reminiscent of the visionary ideas espoused by ACTS, merely substituting thermonuclear weapons for conventional. In keeping with this emphasis on the new "national objectives" of "flexible response," the chapter "Employment of Aerospace Forces in General War" discussed counterforce and

countervalue targetting, still calling for the destruction of "major urban/industrial areas of the enemy."<sup>44</sup>

Certainly a strong argument exists that the perceived Soviet threat and nuclear arms build-up of the early 1960s required Air Force thinking oriented towards nuclear war. The dismissal of the Korean War as a subject of little relevance to doctrinal development both reflected and resulted from the continued focus by the Air Force on preparing for a major war with the Soviets. In retrospect, though, Korea should have demonstrated the need for greater thinking about air power and limited war in non-industrialized nations.

To be fair, the 1964 AFM 1-1 did contain a one and a half-page chapter on "Employment of Aerospace Forces in Counterinsurgency." It stressed the importance of enhancing the indigenous support of the local government through Air Force civic actions. In combat operations, "when insurgents have been separated from the cover of civilian communities, hunter-killer aircraft can be used to destroy hard-core units."\* The chapter also held the ability to locate and attack enemy supply routes, regardless of weather and possible location in adjacent countries, essential to

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\*Emphasis added. This prescription was not always followed during the Vietnam War, as evidenced by the origins of Air Force Maj. Chester I. Brown's now cliché'd statement "We had to destroy the village to save it." For a fuller account, see George Donelson Moss, Vietnam: An American Ordeal (Englewood Cliffs, NJ: Prentice-Hall, Inc., 1990), p. 253.

effective interdiction.<sup>45</sup> Unfortunately, events in 1965 would quickly prove the inadequacy of this chapter, and the manual in general, to meeting the conditions actually faced in Vietnam.

Many works have thoroughly analyzed air power and its use in Vietnam. Operation "Rolling Thunder" from 1965 to 1968 has received a great deal of the attention because of its attempt to employ strategic bombing to influence the will of the North Vietnamese by destroying their military and scant industrial capabilities. Critical scholarship has since pointed out that the planning and organization of "Rolling Thunder" stemmed from Air Force beliefs in strategic bombing nurtured since the 1930s. And, despite a reasonable degree of "control of the sky" (again, as the USSBS had projected), this thinking proved unsuited for the kind of war actually being fought.<sup>46</sup> The failure of "Rolling Thunder" to achieve its desired objectives called into question Air Force doctrine. As one Air Force officer and authority on doctrine has since remarked about "Rolling Thunder," "in the aftermath of Vietnam and in the midst of the doubts that war raised, can we honestly say that we know how air power can best be used to achieve decisive results across the spectrum of conflict?"<sup>47</sup>

Some of the experiences from Vietnam, the invasion of Czechoslovakia, and the Middle East War of 1967 left the Air Force thinking its doctrine needed revision. After four

years rewriting drafts, the Air Staff published a new AFM 1-1 on 28 September 1971.<sup>48</sup> Although still dominated by chapters on the employment of air power in a nuclear war, the new edition considered the terms "general war" and "limited war" overly broad since, "to be appropriate as well as effective, military power must relate to a wide spectrum of potential military involvement."<sup>49</sup> For the first time, the manual had a chapter devoted to "special operations," as well as a short section actually addressing the Air Force's role in space (the 1959 and 1964 editions had incorporated the term "aerospace" without further defining any space missions).<sup>50</sup>

More importantly, the new manual returned to specifically stating that doctrine "is based on an accumulation of knowledge gained through study, military experience, and test."<sup>51</sup> It still defined "strategic attack" "as an attack by means of aerospace forces directed at selected vital targets of an enemy nation so as to destroy its war-making capacity or will to fight."<sup>52</sup> Yet, in what might have been the first small recognition of the questionable effectiveness of strategic bombing, the manual placed "strategic attack" sixth, and last, in its list of Air Force basic tasks.\*,<sup>53</sup>

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\*This version was also the only one signed by the Vice Chief of Staff rather than the Chief of Staff. The author has found no explanation for this. It seems far too coincidental to explain it as a rejection by the Chief of Staff of the manual's denigration of strategic attack.

A study by AU's Air Command and Staff College (ACSC) in 1972 further indicated that some Air Force officers had begun to question the efficacy of strategic attacks. The 1972 ACSC study of basic doctrine culminated with a proposed new AFM 1-1. This draft highlighted the difficulty of producing specific military, political, and psychological effects through the use of aerospace forces. It relied on historical examples to illustrate its point, as seen in the following:

A military victory can be a psychological defeat. The 1968 Tet offensive was a military victory by the United States but a political and psychological victory for the Viet Cong. The psychological effects of the Japanese bombing of Pearl Harbor united the American people against a common enemy. The psychological effects of all operations must be considered to ensure the proper employment of aerospace forces.<sup>54</sup>

This recognition that strategic attack might not destroy an enemy's will bears some similarity to the remark in the 1953 and 1954 versions of AFM 1-1 on "positive and negative" "emotional response" (the manuals that AU wrote before the Air Staff assumed full responsibility for basic doctrine).

Events in Vietnam, however, soon gave the Air Force what it believed to be "proof" that strategic bombing could destroy an enemy's will to fight. Operation "Linebacker II" in December 1972 employed air power in strategic bombing missions reminiscent of World War II. It brought an end to the Vietnam War, while vindicating to many airmen Air Force doctrine and its belief in the ability of strategic bombing to destroy an enemy's will. It also gave rise to the myth

that had such a bombing campaign, unhindered by political restrictions, been conducted from 1965 to 1968, the war would have ended sooner. Critical scholarship has since refuted this.<sup>55</sup> Many historians have also asserted that the treaty "Linebacker II" compelled the North Vietnamese to sign differed little from one previously agreed to.<sup>56</sup> Nevertheless, re-armed with "experience" that confirmed the capabilities of air power and strategic bombing, the Air Force revised its basic doctrine again.

Published on 15 January 1975, the new AFM 1-1 drew heavily from the ACSC draft, but deleted the paragraph on the psychological effects of strategic attack. It contained only twelve pages organized into three chapters, a dramatic reduction from the 1964 version's seven chapters and the 1971 version's six. Yet, like previous manuals it retained a heavy emphasis on nuclear warfare capabilities and operations.<sup>57</sup> It also stated that "USAF Basic Doctrine is derived from knowledge gained through experience, study, analysis and test."<sup>58</sup> Reflecting the Air Force's view of its most recent experience, the manual's list of basic missions re-ordered the 1971 list, returning strategic attack to the top.<sup>59</sup>

The disparity between the size of the 1971 and 1975 manuals, and their lists of basic tasks and missions, mirrored larger problems and changes within the Air Staff during the 1970s. By 1974 the Directorate of Doctrine (HQ

USAF/XOD) had little time to actually think about doctrine. As one XOD officer commented that year, "sometimes we feel we are so busy stamping ants we let the elephants come thundering over us."<sup>60</sup> Again, Futrell's history, Ideas, Concepts, Doctrine, documents the numerous doctrinal studies and Air Staff reorganizations undertaken to improve doctrinal development and scope.<sup>61</sup> These efforts did little to remedy the problems, for as one doctrine expert reflected, 1979 represented "the nadir of Air Force doctrine."<sup>62</sup>

On 14 February 1979 the Air Force published a new AFM 1-1, entitled Functions and Basic Doctrine of the United States Air Force. At over 75 pages, it far surpassed all previous editions in length. In the "Foreword," Chief of Staff Gen. Lew Allen maintained that "the experience and ideas of dedicated leaders in the world of airpower" over the previous 60 years had "gradually led to reasoned change" in doctrine. He added that "whether you are enlisted, an officer, or a civilian in the Air Force family, I believe this manual will help you think seriously about why we are in business. . . ."<sup>63</sup>

The format and content of the 1979 AFM 1-1, however, made it difficult to take the manual "seriously." Nor did its content reveal much "reasoned change" based on analysis of experience. Its length stemmed not from the addition of text, of which there was very little, but from the use of numerous quotations, graphics, and illustrations of famous

people and aircraft, which led to its being dubbed the "comic book edition." Under its list of missions, it placed "strategic aerospace offense" first, calling for attacks ". . . against any of the enemy's vital targets and thereby destroy[ing] the enemy's ability and will to continue the war."<sup>64</sup> These deficiencies, and others, would receive a great deal of criticism from both scholars and Air Force officers during the 1980s.<sup>65</sup>

This review of Air Force basic doctrine and its related manuals reveals the particular bias of the service in its analysis of experience.<sup>66</sup> That many doctrinal assertions could not be proven through an objective review of air power history mattered little. Historian Donald Mrozek, in a 1988 publication, traced the origins of the "Air Force's chronic impatience with history" to the prophecies of Billy Mitchell.<sup>67</sup> These prophecies became ingrained as doctrine first through the teachings at ACTS, and then through years of bloody fighting in World War II. After the war, according to another air power historian, "the marriage of the atomic bomb to Guilio Douhet's precepts clouded the vision of Air Force leaders with 'congenital conservatism.'"<sup>68</sup> Senior airmen deemed experiences in Korea irrelevant, preferring to rest on the laurels of perceived successes in World War II.

This conservatism readily appeared in the successive editions of AFM 1-1. Since the 1953 version, the Air Force

had overlooked that part of its history which contradicted or did not fit with its belief in the ability of strategic bombing/strategic attack/strategic aerospace offense to destroy an enemy's will to fight. The Air Force also narrowly focused its doctrine on a large-scale war against an industrialized adversary. A recent thesis for the Air Force School of Advanced Airpower Studies (SAAS) similarly found that "the 1971, 1974, and 1979 versions of Air Force basic doctrine largely ignored Vietnam, just as previous doctrine writers had forgotten about Korea."<sup>69</sup> Analysis of experience held value only if it confirmed dogma.

Occasionally, critical analysis of history crept into doctrinal thinking, as seen in the remarks about the psychological effects of strategic attack in the 1953 and 1954 versions of AFM 1-1 and the 1972 ACSC study. Overshadowed by the inflexible belief in the capabilities of strategic bombers and bombing, these statements had little impact. "The independent and unique role of strategic air power," asserted historian Michael R. Terry, "remained the mainstay in Air Force thinking and budgetary justifications."<sup>70</sup> Independence as a branch of the military required the ability to win wars independently, and a doctrine that specifically stated this.

The propensity to dismiss history and open-minded historical analysis betrays an institutional and organizational shortcoming. Several historical works have discussed

the Air Force's narrow focus on the future of strategic bombing and bombers to the exclusion of both analysis of past experiences and tactical aviation. These works generally cite the need to justify independence and budgetary appropriations, the technological nature of air power, and the rapid advances in bomber aircraft aerodynamics from the 1920s to the 1960s as the main factors in Air Force intellectual inertia.<sup>71</sup> A more in-depth study of the causes and nature of this organizational failing would benefit from the expertise of a social scientist, and, as previously noted, fall outside the scope of this thesis.

While a variety of reasons existed for the selective use of history in the formulation of Air Force basic doctrine, the results remain undeniable. Numerous historians have documented how the Air Force planned and built its post-World War II and -Korean war force structure around strategic bombing and strategic bombers, while forsaking tactical air power.<sup>72</sup> As Professor Holley remarked in his 1974 Harmon lecture, the failure to exercise rigorous thinking caused the whole service to suffer. The Air Force had little to offer in Vietnam except a return to its pre-World War II thinking. Consequently, air power was misused, and pilots often flew the wrong kinds of missions in the wrong kinds of aircraft.<sup>73</sup>

Empirical evidence existed to refute specific doctrinal statements. However, as Dr. Tilford has written, "since the

theories of air power were grounded in prophecies that had no real basis in historical fact, questioning doctrines and the strategies built on those theories tended toward heresy." This aura of immutability coincided with "a steady decline in the intellectual quality of articles" in the professional journal of the Air Force, Air University Review.<sup>74</sup> The Air Force of the 1950s, 1960s, and early 1970s had not fostered a service in which officers could challenge established doctrinal beliefs with new and critical interpretations of the available historical evidence.

The Air Staff, responsible for the formulation of doctrine since 1958, suffered not only from these larger institutional problems, but also from its own organizational difficulties. According to Professor Holley, the Air Staff never established criteria for the selection of officers to write doctrine manuals. The military's assignment process also meant that the Air Staff had a "revolving door," as different officers came and went. In general, there was no way of ensuring that officers qualified to critically analyze past experiences actually wrote doctrine.<sup>75</sup>

The lack of any formal procedural-manual for the formulation of doctrine, and the fact that research material was scattered between Bolling AFB, D.C., and AU, further hindered the efforts of the Air Staff. With much of their energy devoted to "fighting for the Air Force" and meeting

other projects with more immediate suspense dates, little time remained for critical thinking. Every institutional and organizational arrangement worked against the formulation of sound doctrine based on a rigorous analysis of experience.<sup>76</sup>

These criticism do not imply that Air Staff officers never reviewed air power history. The arguments presented in this chapter assume just the opposite. When the time existed, many officers actually did derive doctrinal assertions from an analysis of what had historically worked best. Unfortunately, many generally accepted beliefs about the effectiveness of air power and strategic bombing were repeatedly taken as historical facts. Doctrine, as described by Professor Holley, remained nothing more than "generalizations" lacking "assurances that they were based on a multiplicity of cases."<sup>77</sup>

Lacking an institutional appreciation for the study of history, an organization suited to such a task, and a staff of qualified officers to perform it, Air Force doctrine suffered. By 1979 AFM 1-1 had been reduced to a "comic book." The enduring challenge of doctrine had proven too difficult to meet without rigorous and objective analysis of experience. The Air Force, according to one doctrine expert, had lost its bearings in the "doctrinal wilderness."<sup>78</sup> However, officers and scholars had begun to offer suggestions on how the Air Force could extricate

itself. Their comments and criticisms deserve close scrutiny.

## Notes to Chapter 1

<sup>1</sup>Gen. Curtis E. LeMay, address to the Air Force Association, 21 September 1961, as quoted in Earl H. Tilford, Jr., Setup: What the Air Force Did in Vietnam and Why (Maxwell AFB, AL: AUP, June 1991), p. 1.

<sup>2</sup>Giulio Douhet, The Command of the Air, eds. Richard H. Kohn and Joseph P. Harahan (Washington, D.C.: Office of Air Force History, 1983), p. viii.

<sup>3</sup>Robert Frank Futrell, Ideas, Concepts, Doctrine: Basic Thinking in the United States Air Force, 1907-1984, 2 Vols. (Maxwell AFB, AL: AUP, December 1989), Vol. I, pp. 36-53.

<sup>4</sup>As quoted in Futrell, Vol. I, p. 49.

<sup>5</sup>Holley, "An Enduring Challenge," p. 3.

<sup>6</sup>The most informative and critical works include those by Clodfelter (1989), Fabyanic (1973), Finney (1955), Flugel (1965), Futrell (1989), Greer (1955), Hansell (1972), Maurer (1987), and Watts (1984).

<sup>7</sup>Mark Clodfelter, The Limits of Air Power: The American Bombing of North Vietnam (New York: The Free Press, 1989), p. 2.

<sup>8</sup>Holley, "An Enduring Challenge," p. 4. See also Lee Kennett, A Short History of Strategic Bombing (New York: Charles Scribner's Sons, 1982), pp. 39-51.

<sup>9</sup>Michael S. Sherry, The Rise of American Air Power: The Creation of Armageddon (New Haven, CT: Yale University Press, 1987), p. 56.

<sup>10</sup>See the books by Clodfelter (1989), Frankland (1965), Hansell (1972), Hastings (1979), Higham (1972), Kennett (1982), McFarland and Newton (1991), and Sherry (1987).

<sup>11</sup>United States Strategic Bombing Survey (Reprint of Summary Reports, Europe and the Pacific) (Maxwell AFB, AL: AUP, October 1987), p. 37.

<sup>12</sup>*Ibid.*, p. 110.

<sup>13</sup>*Ibid.*, p. 5.

<sup>14</sup>Clodfelter, pp. 3-12; Tilford, Setup, pp. 6-7; and Walter Millis, Arms and Men: A Study in American Military History (New Brunswick, NJ: Rutgers University Press, 1986), p. 291.

<sup>15</sup>Millis, p. 349.

<sup>16</sup>Clodfelter, p. 11; and Tilford, Setup, pp. 6-7. See also Smith's (1970) book for a discussion of the dominance of the strategic bombing mission in post-World War II Air Force thinking and planning.

<sup>17</sup>As quoted in Futrell, Vol. I, p. 365.

<sup>18</sup>Futrell, Vol. I, pp. 365-400.

<sup>19</sup>Col. William M. Momyer, of the Air War College's doctrine evaluation group, found the whole process "a long and laborious task." AU vice-commander Maj. Gen. John D. Barker considered the many revisions ordered by the Air Staff to have resulted "in no change of importance in the doctrine," and was "disappointed" with the published manual. He was also one of the many senior officers to recommend that AU be given authority to approve and publish basic doctrine free of Air Staff authority. Both officers quoted in Futrell, Vol I, pp. 385-93.

<sup>20</sup>AFM 1-2 (1953), p. i.

<sup>21</sup>Ibid.

<sup>22</sup>Ibid., p. 12.

<sup>23</sup>Ibid., p. 13.

<sup>24</sup>Ibid., p. 16.

<sup>25</sup>For example, the Japanese attack on Pearl Harbor electrified the U.S. The Battle of Britain equally proved that strategic attacks can strengthen, rather than weaken, the will to resist.

<sup>26</sup>Futrell, Vol. I, p. 398.

<sup>27</sup>M.J. Armitage and R.A. Mason, Air Power in the Nuclear Age, 2d. ed. (Urbana, IL: University of Illinois Press, 1985), pp. 32-45; Clodfelter, pp. 12-26; and Tilford, Setup, pp. 18-20.

<sup>28</sup>Clodfelter, p. 25. Unfortunately, little critical analysis of air power in Korea is available. Clodfelter's assessment is taken as one of the most authoritative. The Air Force's official history of the conflict contains some critical analysis. See Robert F. Futrell, The United States Air Force in Korea, 1950-1953, rev. ed. (Washington, D.C.: Air Force Office of History, 1983), pp. 195, 515-21, 710-11.

<sup>29</sup>Tilford, Setup, p. 25; and Clodfelter, p. 29. For a broader treatment of the "New Look," see Huntington's (1961) book, especially chapters three and five.

<sup>30</sup>As quoted in Eugene M. Emme, The Impact of Air Power (New York: D. Van Nostrand Co., Inc., 1959), p. 783.

<sup>31</sup>Tilford, Setup, p. 24.

<sup>32</sup>Futrell, Vol. I, p. 400.

<sup>33</sup>AFM 1-2 (1955), p. ii.

<sup>34</sup>Ibid., p. 8; and Futrell, Vol. I, p. 9.

<sup>35</sup>Futrell, Vol. I, pp. 9-10.

<sup>36</sup>AFM 1-2 (1959), p. 11.

<sup>37</sup>Ibid., p. 4, as quoted in Clodfelter, pp. 30-31.

<sup>38</sup>Clodfelter, p. 36.

<sup>39</sup>This term refers to the enormous influence SAC and SAC officers had within the Air Force in the 1950s and 1960s. For a description of "SACumsizing," and its demise, see Lt. Col. Phillip S. Meilinger, "The Problem With Our Air Power Doctrine," Airpower Journal 6 (Spring 1992): 24-31.

<sup>40</sup>Tilford, Setup, pp. 38-39.

<sup>41</sup>Richard Smoke, National Security and the Nuclear Dilemma, 2d. ed. (New York: Random House, 1987), pp. 90-94; and Donald M. Snow, National Security: Enduring Problems in a Changing Defense Environment (New York: St. Martin's Press, Inc., 1991), pp. 64-65.

<sup>42</sup>Futrell, Vol. II, pp. 230-35, 711-17.

<sup>43</sup>AFM 1-1 (1964), p. i.

<sup>44</sup>Ibid., p. 3-1.

<sup>45</sup>Ibid., p. 6-2.

<sup>46</sup>See especially Clodfelter and Tilford, Setup. See also the works by Drew (1986, cited immediately below), Littauer (1972), Moss (1990), and Thompson (1980).

<sup>47</sup>Col. Dennis M. Drew, "Rolling Thunder 1965: Anatomy of a Failure," Report No. AU-ARI-CP-86-3 (Maxwell AFB, AL: AUP, October 1986), p. 51.

<sup>48</sup>Futrell, Vol. II, pp. 719-20.

<sup>49</sup>AFM 1-1 (1971), pp. 1-4, 1-1.

<sup>50</sup>Ibid., p. 6-1, 2-4.

<sup>51</sup>Ibid., p. 1-1.

<sup>52</sup>Ibid., p. 2-4.

<sup>53</sup>Ibid., p. 2-1.

<sup>54</sup>As quoted in Futrell, Vol. II, p. 724.

<sup>55</sup>See Clodfelter and Tilford, Setup. See also the article by Werrell (1987).

<sup>56</sup>For a broader view of the Vietnam War, and the political impact of the bombing on the peace negotiations, see the books by Moss (1990) and Szulc (1979).

<sup>57</sup>Futrell, Vol. II, P. 725. See also AFM 1-1 (1975).

<sup>58</sup>AFM 1-1 (1975), "Foreword."

<sup>59</sup>Ibid, p. 3-2. The text preceding this list parenthetically adds that "(this order is not intended to indicate priority)." However, given the Air Force's well documented obsession with strategic bombing, the disparity with the 1971 list, and the equally well documented belief by senior Air Force leaders that Linebacker II broke the will of the North Vietnamese, the author discounts the validity of the manual's qualification.

<sup>60</sup>Holley, "An Enduring Challenge," p. 11. See also Futrell, Vol. II, p. 728.

<sup>61</sup>Futrell, Vol. II, pp. 722-40. See also Maj. Edward J. Felker, "Does the Air Force Practice Its Doctrine: A Limited and Focused Air Campaign Concept" (Fort Leavenworth, KS: Thesis for U.S. Army Command and General Staff College, June 1991), pp. 39-41.

<sup>62</sup>Drew, "Two Decades in the Air Power Wilderness," p. 12.

<sup>63</sup>AFM 1-1 (1979), p. i.

<sup>64</sup>Ibid., p. 2-8.

<sup>65</sup>Futrell, Vol. II, p. 736. For criticism of the 1979 manual, see Murray's (1983) article, discussed in Chapter 2 of this thesis, and Col. Drew's "Two Decades in the Air Power Wilderness."

<sup>66</sup>The best and most articulate brief review of Air Force doctrine and its inflexible belief in strategic bombing remains Col. Drew's "Two Decades in the Air Power Wilderness."

<sup>67</sup>Donald J. Mrozek, Air Power and the Ground War in Vietnam (Maxwell AFB, AL: AUP, January 1988), pp. 8-9.

<sup>68</sup>Maj. Michael R. Terry, "Formulation of Aerospace Doctrine From 1955 to 1959," Air Power History 38 (Spring 1991): 48.

<sup>69</sup>Lt. Col. Kurt A. Cichowski, "Doctrine Matures Through A Storm: An Analysis of the New AFM 1-1" (Maxwell AFB, AL: Thesis for the School of Advanced Airpower Studies, May 1992), p. 21.

<sup>70</sup>Terry, p. 50.

<sup>71</sup>For example, see the books by Holley (1983), Huntington (1961), Smith (1970), and Tilford, Setup, and the papers by Holley and Gropman in Borowski's (1986) book.

<sup>72</sup>See any or all of the works by Futrell, including his paper in Borowski (1986). See also Clodfelter and Tilford, Setup, and the books by Hallion (1992) and Smith (1970).

<sup>73</sup>See Drew's "Rolling Thunder" and "Two Decades in the Air Power Wilderness," Clodfelter, Tilford, Setup, and the books by Armitage and Mason (1985), Higham (1972), Mrozek (1988), and Thompson (1980).

<sup>74</sup>Tilford, Setup, pp. 38-39, 286-87.

<sup>75</sup>Interview with Professor I.B. Holley, 25 March 1993.

<sup>76</sup>Ibid.

<sup>77</sup>Ibid.

<sup>78</sup>Drew, "Two Decades in the Air Power Wilderness," p. 3.

## Chapter 2

"Amid the confusion, accusations, and suspicions that surrounded air power doctrine since 1965, perceptive airmen have begun to realize that war is not the simplistic affair visualized by the pioneers of air power doctrine." -- Col. Dennis M. Drew, 1986.<sup>1</sup>

As the previous chapter revealed, Air Force doctrine, as articulated in AFM 1-1, espoused a belief in the capabilities of air power and strategic attack not fully substantiated by empirical evidence and experience. A decline in critical thinking within the Air Force had resulted in the continual acceptance of old ideas coupled with the new atomic weapons. The quality and narrow focus of articles found in U.S. military professional journals, particularly the Air University Review, during the 1950s, 1960s, and early 1970s also attested to this decline, as Dr. Tilford remarked and as confirmed by other historians.<sup>2</sup>

But in the wake of Vietnam, and then Professor Holley's 1974 lecture, some Air Force officers began to question their doctrine and its development. Essays at the senior military colleges, especially AU's Air Command and Staff College, and articles in Air University Review

examined past and present doctrine and doctrinal concepts. While the exact impact of these papers and articles remains difficult to judge, their content indicates an increase in critical analysis. It is also worthwhile to discuss their content in order to judge the degree to which later editions of AFM 1-1 incorporated suggested changes.

In 1973, one Air Force officer attending the National War College argued that "the 1965-1968 air campaign in North Vietnam violated to a great extent the principles of air power doctrine."<sup>3</sup> His essay embraced the somewhat parochial view that "political constraints" had as much to do with the failure of air power in "Rolling Thunder" as did ". . .the lack of a significant [North Vietnamese] warmaking, industrial structure. . . ."<sup>4</sup> The essay, though, traced the roots of some of these problems to a lack of objective thinking. It clearly stated ". . .that nuclear strategy, escalation, gradualism, and deterrence have so dominated thinking in the last 20 or so years that nonnuclear air power doctrine and its historical lessons have been forgotten."<sup>5</sup> The fact that these same topics dominated AFM 1-1 evidences this point.

Five other Air Force officers combined their work at ACSC to produce "A Critical Analysis of USAF Basic Doctrine" in the same year.<sup>6</sup> A key section by Maj. Dale C. Tabor (a major general as of 1992<sup>7</sup>) reviewed previous manuals. Tabor

helped explain part of the reason why some doctrinal statements rarely changed:

It is apparent that once a principle or concept was published in one of the manuals, it tended to be carried to the next manual. In view of the lengthy time spent in coordinating and approving changes to basic doctrine, this tendency to carry forward items most likely stemmed from the rationale that if it sold once it probably would sell again.<sup>8</sup>

Tabor's postulation makes sense given that all of the manuals had to receive approval from the Air Staff hierarchy in Washington, D.C.

Yet, even the Air Staff attempted to stimulate new thinking, undertaking a "Conceptual Issue Series" of papers in early 1975.<sup>9</sup> Air University Review published one of these papers in its winter issue of that same year. The article called for the Air Force to step back and re-examine its fundamental beliefs about the nature of air power in order to meet the technological increases and budgetary decreases of the mid-1970s. Its author lamented that "nowhere in the Air Force do we see a bold, bubbling fountain of fresh ideas. In the field of concepts the Air Force has become a status-quo institution, feeling middle age and inclined to rephrase proven formulas."<sup>10</sup>

An ACSC study in May 1976 helped explain this lack of "fresh ideas." Entitled "United States Air Force Basic Doctrine -- Whatever That Is," it maintained that few officers analyzed doctrine partly because they inadequately understood it, and partly because they did not wish "to

challenge the corporate experts and judgement" of the Air Staff.<sup>11</sup> Part of the confusion, according to the author, stemmed from viewing doctrine as a set of strict guidelines. Instead, "basic doctrine just might make more sense when viewed as a departure point for future thought and decision making than it does when viewed as a guide for the employment of aerospace forces."<sup>12</sup> The 1992 edition of AFM 1-1 would eventually, and explicitly, echo this view.<sup>13</sup>

Another ACSC study one year later went even further in criticizing doctrine and suggesting remedies. Maj. Leland Conner presented a lengthy review of the Air Force doctrine process for AFM 1-2 and AFM 1-1. Like the previous study, Conner found little impetus for Air Force officers to analyze doctrine. Consequently, written doctrine had evolved haphazardly and sporadically, often resulting in manuals that inadequately addressed current political and military considerations. At first this problem with the manuals stemmed from the requirement that AU obtain approval for doctrine manuals from the Air Staff. After 1958, the problem stemmed from having the Air Staff as the sole agency responsible for doctrine since ". . .the Washington milieu seems to foster confusion, frustration, and inefficiency."<sup>14</sup> To stimulate creative thinking, and enhance the doctrinal process, Conner suggested that "a central Air University office should be designated as the primary agency of responsibility for basic doctrine."<sup>15</sup>

As already noted, the 1979 edition of AFM 1-1 seems to have derived little benefit from all these studies and articles. The manual did offer a fresh presentation with quotations from historical figures, but this did not mean that much thoughtful analysis of experience had taken place. In fact, those authors who encouraged more officers to study doctrine might have seen the 1979 manual and some of the initial reactions to it as a step backward. For example, one officer stated in 1979 in the less than scholarly Air Force Magazine that "probably the best written, most thought-provoking, and useful version of AFM 1-1 is the current edition. It contains less esoteric doctrinal language, making the text much more readable."<sup>16</sup>

Fortunately, for the Air Force, not all officers were so easily enamored of the new manual. Officers in the early 1980s continued to publish articles critical of doctrine. Many of these increasingly emphasized the benefits of studying air power history.

Maj. Robert C. Ehrhart, an associate professor of history at the Air Force Academy with a Ph.D. in military history, authored one such article. In 1977 he had served as part of an Air Staff project seeking ways to better define and refine doctrine and its development. On the basis of his research, Maj. Ehrhart published "Some Thoughts on Air Force Doctrine" in Air University Review in early 1980.<sup>17</sup>

Maj. Ehrhart thought that doctrine "explains what air forces are capable and incapable of doing and why they should be structured and used in certain ways," thus providing "general guidance."<sup>18</sup> He warned of the dangers of founding doctrine primarily on unsubstantiated theories, arguing instead that "doctrine must be based on a critical analysis of what air power did and did not do in specific situations rather than on institutional shibboleths, widely accepted but not really proved."<sup>19</sup> To foster this, he stated that ". . .we need to establish a stronger link between those responsible for the development and implementation of doctrine and those agencies within the Air Force involved in historical research." An objective historical approach, in Maj. Ehrhart's opinion, would provide the Air Force with the best means to discern the best guidelines.<sup>20</sup> Above all, he felt that "we must rid ourselves of the notion that air power can do anything and everything."<sup>21</sup>

The publication of Maj. Ehrhart's thoughts about increasing historical awareness coincided with the establishment of an organization well-suited to the task. During 1979 and 1980, Col. Thomas A. Fabyanic, Chief of the Military Studies Division at AU's Air War College (AWC) argued for and received approval to create the Airpower Research Institute (ARI) at AU.<sup>22</sup> Col. Fabyanic had outstanding qualifications as the head of the new organization devoted to studying air power and its history. He had flown

in combat in Vietnam, written a Ph.D. dissertation in 1973 on U.S. air war planning in World War II, and taught history at the Air Force Academy. In June 1980, ARI officially began operations with a staff of three, devoting most of the next two years to work on a monograph series on Vietnam.<sup>23</sup>

Within one year, a new AU commander, Lt. Gen. Charles G. Cleveland, proposed that ARI become part of a larger center for air power and doctrinal studies. However, according to Dr. Futrell, Gen. Jerome F. O'Malley, the deputy Chief of Staff for Operations, Plans, and Readiness (HQ USAF/XO) for the Air Staff, "reasoned that the responsibility for doctrinal development ought to remain in Washington since the Air Force needed a doctrine spokesman in the Pentagon to look after its interests." Negotiations for the larger organization would continue until 1983.<sup>24</sup>

Maj. Ehrhart's ideas also enjoyed the sympathetic ear of one member of the Air Staff itself. Col. Alan L. Gropman held key positions in Air Staff agencies responsible for long-range planning and doctrine from 1978 to 1981 (and would again in 1984). Gropman, a Ph.D. in history, a former Director of Military History at the Air Force Academy, and a distinguished graduate of the Air War College in 1978, made every effort to secure officers with history degrees for duties with the Air Staff agencies writing doctrine. Maj. Ehrhart would eventually be one of these officers.<sup>25</sup>

Meanwhile, Air Force officers continued to analyze doctrine in professional journals. In January 1982, Air University Review published one of its most thought provoking articles, "Of Trees and Leaves: A New View of Doctrine," by Lt. Col. Dennis M. Drew.<sup>26</sup> Drew, Chief of the Warfare Studies Division at ACSC, based his article on the premise that much confusion existed in military writings on doctrine mostly because "airmen loathe to admit that history, especially 'pre-air power' history, contains lessons applicable to contemporary thinking."<sup>27</sup> He then offered a simple definition of doctrine (which he admittedly based on the lectures of Professor Holley) and a conceptual model for understanding different types of doctrine. Most importantly, Drew felt that ". . .the primary source of military doctrine is military history," and that "even a cursory examination of Air Force Manual 1-1 reveals that it does not fulfill doctrine's analytical function." Without this analytical dimension, Air Force basic doctrine could not perform the essential task of teaching the service's beliefs to its own members.<sup>28</sup>

Col. Drew followed this article with another in Air University Review in March. His award-winning "War, Politics, and Hostile Will" challenged traditional military "assumptions about the object of war."<sup>29</sup> He differentiated the hostile will of an enemy people from that of its leadership, and argued that the ACTS theorists had thought both

could be destroyed by military force. Unfortunately, "the evidence of relatively recent history indicates that military actions which compel policy compliance cannot by themselves effectively attack an enemy's hostile will." From this, Drew concluded that war required the use of military and non-military power to overcome enemy will.<sup>30</sup> As clearly seen in these two articles, Col. Drew had done much thinking about the two important subjects of doctrine and how to affect an enemy's will.

Professor Holley himself contributed to the discussion of history and doctrine with his 1983 Air University Review article "Of Saber Charges, Escort Fighters, and Spacecraft - The Search for Doctrine." In it he explained how bombers, and a doctrine focused on strategic bombing, came to dominate thinking in the Air Corps because ". . . officers too often seem to have been unaware of, or insensitive to, the need for developing rigorous standards of objectivity when assessing the meager shreds of available evidence."<sup>31</sup> The failure by some senior airmen in World War II to perform in-depth analysis led to severe losses during unescorted bombing missions. To prevent such mistakes from re-occurring, Professor Holley maintained that "we must have officers who insist on hard evidence based on experience or experiment in support of every inference they draw and every conclusion they reach." He ended his article by identifying a need within the Air Force for a "sound organization"

staffed by officers willing to challenge and contradict accepted, and unsubstantiated, beliefs.<sup>32</sup>

One of Professor Holley's colleagues helped meet this need. Dr. Williamson Murray of Ohio State, a major in the Air Force Reserve with a B.A., M.A., and Ph.D. in history from Yale, had begun to acquire a reputation as a leading doctrine scholar. Through the nascent ARI, Murray had published his brilliant analysis Strategy for Defeat: The Luftwaffe, 1933-1945 in January 1983.<sup>33</sup> He went on to publish an article comparing pre-World War II Luftwaffe doctrine with the 1979 edition of AFM 1-1 in The Journal of Strategic Studies in December 1983.<sup>34</sup>

In the article, Dr. Murray sharply criticized AFM 1-1 and its use of pictures, quotations, and graphics, since they ". . . hardly create a serious tone -- the type of tone necessary for a manual discussing matters which in the final analysis involve life and death."<sup>35</sup> Among other problems, Murray listed first the manual's "internal contradictions." Specifically, he felt that the manual reflected the early theorists' beliefs in the unparalleled ability of air power to attack any element of an enemy's military resources, while ignoring the difficulties air power had in Vietnam. In general, Dr. Murray found the manual lacking any frame of reference to guide the employment of air power in future conflicts, and written as if Vietnam "had never occurred."<sup>36</sup>

Since the mid-1970s Air Force officers had offered much in the way of constructive criticism, as seen in the aforementioned articles and studies. The lack of insightful analysis of history had emerged as a common target of criticism. However, the ideas put forth by these officers should not be viewed in isolation. Larger forces within the military and the Air Force had made self-examination and an increased awareness of history not just necessary, but also possible.

The American military of the 1970s and early 1980s suffered many problems and setbacks. Vietnam had severely shaken its confidence, and the confidence of the American people in it. Perceived "failures" and difficulties during the Mayaguez incident in 1975, at "Desert One" in 1980, and in Beirut, Grenada, and Lebanon in 1983 did little to restore confidence.<sup>37</sup>

The services responded by vastly increasing their training and planning, significantly aided by an equally vast increase in the military budget under the administration of President Reagan. During the early 1980s, all of the services established training centers for large-scale operations, entered into joint agreements on combat operations such as the Army and Air Force "AirLand Battle," and spent money to improve personnel and equipment. All of these measures would help restore military capability and confidence.<sup>38</sup>

Within the Air Force, changes also abounded. Former bomber pilots and SAC officers began to lose their dominance in the Air Force hierarchy, as fighter pilots rose to the senior levels of leadership.<sup>39</sup> In 1982 and 1983 Air Force Chief of Staff Gen. Charles A. Gabriel signed several agreements with the Army and Navy to enhance joint operations and the development of joint doctrine.<sup>40</sup> According to the Chief of the Air Force Office of History at that time, Dr. Richard H. Kohn, the increase in funding for the Air Force reduced interservice rivalry. This led to the biggest change of all. The Air Force "came out of the defensive crouch" it had assumed since the 1940s and 1950s.<sup>41</sup>

This renewed confidence, and the efforts of Gen. Gabriel, spurred an interest in history. The Chief of Staff had the assistance of his new Deputy Director for Plans and Operations (USAF/XO), Gen. John T. Chain, a former fighter pilot. Dr. Kohn has praised Gen. Chain as "a very ethical man who emphasized honesty and speaking frankly within and outside the Air Force." Together, the generals fostered programs and organizations specifically designed to increase awareness of air power history. For example, the Air Force sent some of their most senior and thoughtful people to AU (such as Gen. Cleveland), it established AU as a separate major command in 1983, and completed plans to make ARI part of a larger Center for Aerospace Doctrine, Research and

Education (CADRE) in January 1983 (with Col. Drew holding one of the senior positions).<sup>42</sup>

As a part of this renaissance, the Air Force extensively revised AFM 1-1 during 1983, releasing it as Basic Aerospace Doctrine of the United States Air Force on 16 March 1984. This edition was primarily the work of one man, Maj. Clayton R. Frishkorn, of the Doctrine and Concepts Division (XOXID) of the Air Staff. Maj. Ehrhart served in the same office at the time.<sup>43</sup> To what degree Maj. Frishkorn agreed with the ideas Maj. Ehrhart had espoused in his 1980 article, or was aware of some of the previously discussed works, has proven difficult to discover. However, the merits and detractions of the 1984 AFM 1-1 are easily discernible.

The manual represented a tremendous improvement over the 1979 edition. The cartoon-like graphics had been eliminated, with only three figures illustrating command structures remaining. Four concise chapters covered the subjects "Military Instrument of National Power," "Employing Aerospace Forces," "Missions and Specialized Tasks," and "Organizing, Training, Equipping, and Sustaining Aerospace Forces," all in forty-three pages of text. Handsomely bound in a dark blue plastic-covered three-ring binder approximately seven inches by ten inches, it had the look and feel of an important document.<sup>44</sup>

It also contained two informative "annexes," indicative of the attempts to increase historical awareness within the Air Force. The first annex provided a six-page history of the "Evolution of Basic Doctrine." Although this section described in very flattering terms the evolution of thinking in previous AFM 1-1s, it did acknowledge that "both the 1953 version and its 1954 successor focused almost completely on the World War II experience, leaving out experiences learned in the Korean War," and that the 1955 and 1959 versions did little to change this.<sup>45</sup> The second annex contained a "Selected Bibliography and Reading List." While this section included a variety of important works on war, strategy, doctrine, and decision making, it sorely lacked critical evaluations of the Vietnam War.\*<sup>46</sup>

Doctrine was now considered to be "an accumulation of knowledge which is gained primarily from the study and analysis of experience" [emphasis added].<sup>47</sup> Yet, in keeping with "tradition," the manual made a selective use of history in formulating its doctrinal statements. In an obvious and carefully worded reflection on the divisive effects of the Vietnam conflict, the manual contained the statement that

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\*Furthermore, the Annex listed Robin Higham, ed., A Guide to the Sources of United States Military History (1975), and Robin Higham and Donald J. Mrozek, eds., A Guide to the Sources of United States Military History: Supplement I (1981), but not Higham's book Air Power: A Concise History (1972). This latter book is rather critical of strategic bombing, and its exclusion serves as another example of the selective use of history and historical works by the Air Force.

"the fabric of our society and the character of our national values suggest that the decision to employ U.S. military forces depends on a clear declaration of objectives and the support of the American people."<sup>48</sup>

In defining "objective," it held the destruction of an enemy's military forces and will to fight as "the ultimate military objective of war." The manual added the Clausewitzian warning that "war is a means to achieving a political objective and must never be considered apart from the political end."<sup>49</sup> The manual's explicit recognition of some important lessons from air power history and Vietnam, however, did not go much further than these subtle reminders of the limits of military power in general.

"Strategic Aerospace Offense" headed the list of Air Force missions.<sup>50</sup> In an almost verbatim return to the language of the 1953 and 1954 editions, this manual stated that "successful strategic attacks directed against the heartland will normally produce direct effects on an enemy nation or alliance."<sup>51</sup> An even more bizarre combination of long-held beliefs could be seen in the following section found under the title "Exploit the Psychological Impact of Aerospace Power":

The effect and influence of air actions can produce emotional responses in the armed forces and the people of a nation or alliance. These responses, depending upon how a commander employs aerospace forces, can be of a positive or negative nature. By carefully considering the social structure of a nation or alliance, commanders can exploit those elements of the enemy's structure that may divide or undermine unity of pur-

pose, generate internal strife, or force a political or military change in objectives.<sup>52</sup>

This paragraph repeated almost exactly the words of the 1953 manual (see pages 16-17 of this thesis). It also echoed Douhet's claim that "a complete breakdown of social structure cannot but take place in a country subject to. . ." strategic bombing.<sup>53</sup> Finally, it evidenced the continuing dogmatic practice by the Air Force of making claims of strategic bombing not fully borne out by history.

The writers at AU of the 1953 manual had only the experience gained from World War II and the ongoing war in Korea on which to base their conclusions. This provided some excuse for their limited analysis. By 1984, however, the Air Force could draw on a far greater body of historical knowledge for hard evidence to support the inferences it drew, as Professor Holley and others suggested it should. As previously discussed, no war had proven that air power, independent of other considerations, could completely destroy an enemy nation's will to fight. The claim that strategic attack could "generate internal strife" even stretched the Air Force's mythical belief that "Linebacker II" had won the Vietnam War; the only country that had experienced internal strife as a result of the campaign was the United States of America, as thousands protested the "Christmas Bombings."

In some ways, the 1984 edition of AFM 1-1 served as one of the most professional attempts to articulate Air Force

doctrine. Its sections on employment patterns, missions and tasks, and operational command structures provided real, and much needed, guidance.<sup>54</sup> But, the manual's failure to address the limitations and checkered history of air power, lack of evidence to support pivotal statements, and propensity to extoll the broad range of capabilities afforded by air power prevented it from serving as a good example of a truly rigorous, broad-minded, or even new analysis of experience. Many of the criticisms offered by officers in the previous years had not been answered.

As might be expected, the new AFM 1-1 became an important topic in Air University Review. The September 1984 editorial praised the new manual as a significant improvement over the "cartoon doctrine" of 1979.

"Doubtless," it added, "there will be ideas in the manual that will elicit disagreement," illustrating the "enduring challenge" posed by doctrine.<sup>55</sup> Appropriately, two articles on Air Force doctrine immediately followed the editorial.

The first one, written by Col. Clifford R. Krieger, Chief of the Doctrine and Concepts Division (XOXID) (the office responsible for the development of AFM 1-1, and Maj. Frishkorn's boss), rightly praised the new manual's concept of aerospace force employment and its explanation of Air Force missions.<sup>56</sup> Looking ahead, Krieger identified a need to refine thinking on theater- and operational-level warfare, topics that would receive a great deal of attention

in the years ahead.<sup>57</sup> He optimistically concluded that the Air Force would always work to improve its doctrine.<sup>58</sup>

Col. Krieger also explained why the manual did not provide supporting historical evidence. "First, it would have run the volume to approximately 250 pages. Second, the detailed historical basis for concepts is not of much interest to a large number of airmen, who are looking for distilled doctrine."<sup>59</sup> This latter contention raises the questions of whether professional airmen inherently should be interested in air power history, and whether doctrine should foster such an interest. It also suggests that XOIX had resigned itself to the dearth of intellectual thinking many had found within the Air Force.<sup>60</sup> Ironically (and of central concern to this thesis), the search for "distilled doctrine" stimulated the unique approach to doctrine soon to be developed at CADRE.<sup>61</sup>

The other article on doctrine in Air University Review that month strongly argued that the Air Force had so entangled itself in abstract definitions of doctrine and roles and missions that ". . .since 1947, the keepers of U.S. air power doctrine have viewed their inheritance as holy writ more in need of protection than of evolution or change."<sup>62</sup> The authors, Lt. Col. Barry D. Watts and Maj. James O. Hale, both of whom served on the Air Staff and had flown fighters in Vietnam, adamantly felt that "any attempt to develop concepts, doctrines, and principles for the actual practice

of war that fails to ground itself squarely in concrete battle experience risks outright disaster." Finally, they encouraged other officers to question the new 1-1 because "however one elects to think about basic air power doctrine, it must be firmly grounded on hard evidence."<sup>63</sup>

Other officers were indeed questioning the new manual, and the lack of hard evidence used to support certain assertions. Col. Fabyanic, the first ARI director, now retired, reviewed the manual for the Air Force Assistant Vice Chief of Staff. In his reply in October 1984, Fabyanic complimented the manual and its discussion of employment concepts as ". . .a serious effort to grapple with the essence of doctrine. . . ." He added that the manual needed to go much further in discussing "the nature of war," "its attendant notions of friction, chance, and uncertainty," and the "limitations of aerospace power at various levels of conflict."<sup>64</sup>

In general, Col. Fabyanic considered Air Force doctrine an attempt to deal with current military problems and ideas while ". . .working at the margins of a doctrine articulated at the Air Corps Tactical School during the 1930s." More specifically, he complained that ". . .this manual, like its predecessor, is written as if Vietnam never occurred. As professional officers we should find that omission inexcusable." To remedy these deficiencies, Col. Fabyanic suggested that hand-picked groups of officers with "demon-

strated ability to think creatively about doctrine" work in competition with XOXID on the next revision.<sup>65</sup> Given the course of events from 1985 to 1988 (explored in the next chapter), his proposal seems to have generated little interest.

Dr. Williamson Murray also offered his comments on the new manual. In a November 1984 letter to Col. Alan Gropman, now serving as the head of XOXIO, an Air Staff agency co-equal with XOXID, Murray echoed Fabyanic's praise for the manual as a "serious" improvement over "the pervious [sic] sorry edition." He also felt that "the manual by oversimplifying the case for airpower downplays the frictions of combat operations as well as minimizing what the enemy can do in return."<sup>66</sup> More importantly, Murray found numerous statements in the manual to have no basis whatsoever in historical fact, and many to actually contradict the historical record. In many places, he found the manual attempting to restore to prominence the unsubstantiated and ". . .extravagant claims of Donhet [sic], Trenchard, Mitchell and the Air Corps Tactical School."<sup>67</sup>

Fabyanic and Murray were not the only officers faulting Air Force doctrine for failing to take into account the Clausewitzian concept of "friction" in war. In December 1984, Lt. Col. Watts published, through CADRE, his provocative study The Foundations of U.S. Air Doctrine: The Problem of Friction in War. In it, he relied on his degrees

in philosophy and mathematics, and his combat experiences in Vietnam, to explain how air campaign planners from the 1930s through the present had developed a mechanistic approach to war that overlooked its uncertain nature.<sup>68</sup> He also asserted that the belief that World War II vindicated the ACTS theory of strategic bombing distorted history.<sup>69</sup> Finally, Lt. Col. Watts questioned the ability of the Air Force to meet future demands of national security ". . . unless we manage to attain some measure of objectivity, of informed historical perspective regarding our more deeply held beliefs about the air weapon. . . ." <sup>70</sup>

Clearly, Fabyanic, Murray, and Watts believed in the need for a strong relationship between the objective study of military history and Air Force doctrine. In this, their comments differed little from those of Ehrhart, Drew, and Holley. Together, they represented a group of officers who since the early 1970s had criticized doctrine in the hopes of improving it. As already discussed, the Air Force in the 1980s became more interested in the study of doctrine and history, and in some of the ideas and criticisms of these men. This increased organizational awareness manifested itself, in part, in the formation of ARI, and then CADRE.

As previously mentioned, the formation of CADRE had been under negotiation since 1981. According to Dr. Kohn, several members of the Air Staff, especially officers in XOVID, opposed its creation. They felt that moving the

responsibility for doctrine away from Washington, D.C., would make it less responsive to Air Force planning needs.<sup>71</sup> To overcome these objections, CADRE specifically worded its mission statement as "conduct basic and applied aerospace power research; to assist in the development, analysis, and testing of concepts, doctrine, and strategy" [emphasis added].<sup>72</sup> The Center, consisting of ARI, the Aerospace Wargaming Institute, and the Air University Press, officially opened on 3 January 1983. Col. Drew held one of top three positions within ARI, now CADRE's main organization.<sup>73</sup>

With the publication of the books by Murray and Watts, and articles by Drew and other personnel, CADRE quickly established itself as a producer of critical historical works. Much of this had to do with the organization's atmosphere. While working on his two-volume edition of Ideas, Concepts, Doctrine from 1981 to 1985, Dr. Futrell found that "the successive AUCADRE directors. . . maintained the strong climate of intellectual honesty necessary for the history."<sup>74</sup> Indeed, the spacious, quiet, modern offices of CADRE sharply contrasted with the water-stained walls that surrounded the cramped, noisy, old Pentagon room inhabited by the doctrine division of the Air Staff.<sup>75</sup>

In summary, during the 1970s and early 1980s, numerous Air Force officers authored studies, articles, and books criticizing doctrine and suggesting remedies. Although a

significant improvement over its predecessor, the 1984 edition of AFM 1-1 still revealed a limited degree of objective, critical analysis of history in Air Force basic doctrine. The Air Force, however, had begun to increase its interest in military history. Renewed confidence in itself as a secure branch of the service allowed for more rigorous self-criticism.

As part of this increased interest in history, CADRE had begun operations. The Air Force now had an organization specifically devoted to the study of doctrine and military history. Officers at CADRE had the time and resources for critical analysis of experience officers at the Air Staff lacked. In the jargon of organizational theorists, the problem had been "diagnosed," the time was right for "change," and an "outsider" organization was in place. The eventual "paradigm shift" required only the necessary people, and their ideas, to make it happen.<sup>76</sup>

## Notes to Chapter 2

- <sup>1</sup>Drew, "Two Decades in the Air Power Wilderness," p. 12.
- <sup>2</sup>Tilford, Setup, p. 286. See also Richard P. Hallion, Storm Over Iraq: Air Power and the Gulf War (Washington, D.C.: Smithsonian Institution Press, 1992), p. 15.
- <sup>3</sup>Lt. Col. Jackie E. Moothart, "Air Power Doctrine, The Forgotten Element in the Bombing Controversy -- North Vietnam" (Washington, D.C.: Essay for the National War College, March 1973), p. ii.
- <sup>4</sup>Ibid., p. iii.
- <sup>5</sup>Ibid., p. 2.
- <sup>6</sup>Lt. Col. Donald L. Cromer, et al., "A Critical Analysis of USAF Basic Doctrine" (Maxwell AFB, AL: Research Study for ACSC, May 1973).
- <sup>7</sup>The author was stationed at Sheppard AFB, TX, during 1991, while Maj. Gen. Tabor commanded the technical training center there.
- <sup>8</sup>Cromer et al., Section II, Part A, p. 7.
- <sup>9</sup>Futrell, Vol. II, p. 729.
- <sup>10</sup>Maj. Dennis W. Stiles, "Air Power: A New Look From an Old Rooftop," AUR 27 (November-December 1975): 50-53.
- <sup>11</sup>Maj. Byron R. Hooten, "United States Air Force Basic Doctrine -- Whatever That Is" (Maxwell AFB, AL: Research Study for ACSC, May 1976), p. 3.
- <sup>12</sup>Ibid., p. 22.
- <sup>13</sup>See AFM 1-1 (1992), Vol. I, p. vii.
- <sup>14</sup>Maj. Leland W.C. Conner, "The USAF Doctrinal Process: An Analysis" (Maxwell AFB, AL: Report for ACSC, May 1977), pp. 2-4, 30, "Abstract," 33, 71-72.
- <sup>15</sup>Ibid., p. 75.
- <sup>16</sup>Maj. Gene E. Townsend, "The Dynamic Role of Air Force Doctrine," Air Force Magazine 62 (October 1979): 58.
- <sup>17</sup>Futrell, Vol. II, pp. 730-31. See article cited in fn. 18 for biographical data.

<sup>18</sup>Maj. Robert C. Ehrhart, "Some Thoughts on Air Force Doctrine," AUR 31 (March-April 1980): 31.

<sup>19</sup>Ibid., pp. 33-35.

<sup>20</sup>Ibid., pp. 36-37.

<sup>21</sup>Ibid., p. 38.

<sup>22</sup>Futrell, Vol. II, p. 741.

<sup>23</sup>Ibid., pp. 741-42. Biographical data from Fabyanic's dissertation (1973) and article (1986).

<sup>24</sup>Futrell, Vol. II, p. 742.

<sup>25</sup>Biographical data from Lt. Col. Harry R. Borowski, ed., Military Planning in the Twentieth Century: The Proceedings of the Eleventh Military History Symposium, 10-12 October 1984 (Washington, D.C.: Office of Air Force History, 1986), p. 437.

<sup>26</sup>AUR would publish many other articles that used, or took exception to, Drew's model. For example, see the article by Myers and Tockston (1988). Drew himself remarked in the 19 January 1993 interview with the author that he found the continual references to his model rather exasperating.

<sup>27</sup>Drew, "Of Trees and Leaves," pp. 40-41.

<sup>28</sup>Ibid., pp. 41-47.

<sup>29</sup>Drew, "War, Politics, and Hostile Will," AUR 33 (March 1982): 33-39. Quotation from p. 33. This article received second prize in the Review's first annual Ira C. Eaker Essay Competition, announced in the same issue.

<sup>30</sup>Ibid., p. 35-39.

<sup>31</sup>Holley, "Of Saber Charges, Escort Fighters, and Spacecraft," p. 7.

<sup>32</sup>Ibid., p. 10.

<sup>33</sup>Williamson Murray, Strategy for Defeat: The Luftwaffe, 1933-45 (Maxwell AFB, AL: AUP, January 1983), p. v, xix.

<sup>34</sup>Williamson Murray, "A Tale of Two Doctrines: The Luftwaffe's 'Conduct of the Air War' and the USAF's Manual

1-1," The Journal of Strategic Studies 6 (December 1983): 84-93.

<sup>35</sup>Ibid., p. 89.

<sup>36</sup>Ibid., pp. 89-91.

<sup>37</sup>For conflicting views of the "failures" of the military in the 1970s and 1980s, see the books by Luttwak (1984) and Hallion (1992).

<sup>38</sup>Hallion, pp. 27-120. See also Col. Harry G. Summers, USA (Ret.), "Military Doctrine: Blueprint for Force Planning," Strategic Review 20 (Spring 1992): 9-22.

<sup>39</sup>Meilinger, pp. 25-29, and Julie Bird, "Fighter Mafia," Air Force Times, 1 February 1993.

<sup>40</sup>Futrell, Vol. II, pp. 743-44.

<sup>41</sup>Telephone interview with Dr. Richard H. Kohn, 15 January 1993.

<sup>42</sup>Ibid.

<sup>43</sup>Futrell, Vol. II, p. 744. Interviews with Col. David Tretler and Lt. Col. Price T. Bingham.

<sup>44</sup>AFM 1-1 (1984).

<sup>45</sup>Ibid, p. A-3.

<sup>46</sup>Ibid., pp. B-1-B-5. The main works on Vietnam listed [Leslie H. Gelb and Richard K. Betts, The Irony of Vietnam: The System Worked (1979); Guenter Lewy, America in Vietnam (1978); William W. Momyer, Airpower In Three Wars (1978); and Sir Robert G.K. Thompson, No Exit From Vietnam (1969)] were not the most critical ones available at the time.

<sup>47</sup>AFM 1-1 (1984), p. v.

<sup>48</sup>Ibid., p. 1-1.

<sup>49</sup>Ibid., p. 2-5.

<sup>50</sup>Ibid., p. 3-2.

<sup>51</sup>Ibid., p. 2-13.

<sup>52</sup>Ibid., p. 2-17.

<sup>53</sup>Douhet, p. 58.

<sup>54</sup>AFM 1-1 (1984), pp. 2-6-4-3.

<sup>55</sup>Lt. Col. Donald R. Baucom, "Unfinished Business," AUR 35 (September 1984): 2-3.

<sup>56</sup>Col. Clifford R. Krieger, "USAF Doctrine: An Enduring Challenge," AUR 35 (September 1984): 17.

<sup>57</sup>*Ibid.*, p. 18. For examples of works on theater- and operational-level war see the JFACC Primer or any of the reports for ARI and CADRE by Col. Price T. Bingham, all listed in the Bibliography. See Chapter 5 of this thesis for a more in-depth discussion of operational-level war.

<sup>58</sup>*Ibid.*, pp. 22-24.

<sup>59</sup>*Ibid.*, p. 18.

<sup>60</sup>See Col. Price T. Bingham, "Professionalism in the Air Force," AUR 32 (May-June 1981): 95-101; William S. Lind, "Reading, Writing, and Policy Review: The Air Force's Unilateral Disarmament in the War of Ideas," AUR 36 (November-December 1984): 66-70; and Tilford, "Finis."

<sup>61</sup>See Chapters 3 and 4 of this thesis.

<sup>62</sup>Lt. Col. Barry D. Watts, and Maj. James O. Hale, "Doctrine: Mere Words or a Key to Warfighting Competence," AUR 35 (September 1984): 4-8, 10.

<sup>63</sup>*Ibid.*, p. 8, 5, 13.

<sup>64</sup>Letter to HQ USAF/CVA, from Col. Thomas A. Fabyanic, USAF (Ret.), 3 October 1984. This letter is contained in the AFM 1-1 Historical Files for 1984 at the Airpower Research Institute, Maxwell AFB, AL. Hereafter, material from these files will be cited with the author of the document (if known), title, and date, and "in ARI HF 19##."

<sup>65</sup>*Ibid.*

<sup>66</sup>Letter to Col. Alan Gropman, HQ USAF/XOXIO, from Maj. Williamson Murray, 19 November 1984; in ARI HF 1984.

<sup>67</sup>*Ibid.*, pp. 2-5.

<sup>68</sup>Lt. Col. Barry D. Watts, The Foundations of U.S. Air Doctrine: The Problem of Friction in War (Maxwell AFB, AL: AUP, 1991).

<sup>69</sup>*Ibid.*, p. 85.

<sup>70</sup>Ibid., p. 1.

<sup>71</sup>Kohn interview, 1 March 1993. See also Hugh O. Richardson, "History of Air University, Center for Aerospace Doctrine, Research, and Education (CADRE): 3 January-31 December 1983" (Maxwell AFB, AL: Air University), p. 3.

<sup>72</sup>Richardson, p. 5.

<sup>73</sup>Ibid., p. 9.

<sup>74</sup>Futrell, Vol. II, p. xiii.

<sup>75</sup>The author has relied on personal recollections from visits to both locations. At the Pentagon, Mrs. Sylvia Branch, secretary for the Doctrine Division (XOXD), XOXID's heir, remarked that the successive Air Staff agencies responsible for AFM 1-1 had used that same office at least since the early 1970s.

<sup>76</sup>For example, see the books by Beer (1980), Kuhn (1970), and Hersey and Blanchard (1977).

### Chapter 3

"However, those seeking a more effective force realize that the intellectual ferment must be encouraged and the dialectic process must continue." -- Col. Dennis M. Drew, 1986.<sup>1</sup>

As seen in the previous chapter, many different Air Force officers had offered various criticisms and suggestions for the improvement of AFM 1-1. The Doctrine and Concepts Division of the Air Staff certainly had many ideas it could incorporate into its next manual. XOXID lost little time in its attempt to meet the "enduring challenge" of refining and improving doctrine.

Revision of the 1984 edition seems to have begun almost as soon as the Air Force published it. By the end of August 1985, XOXID had finished a draft of a new and greatly expanded AFM 1-1. This draft contained twice as many chapters as the 1984 edition, discussing "The Nature of War" (a topic Col. Fabyanic had recommended in his 1984 letter), "The Principles of War," "Aerospace Power and the Levels of War," and "Characteristics and Qualities of Aerospace Forces." It proclaimed that "our doctrine dervies [sic] from the study and analysis of past experience interpreted in the light of

current and developing technology and an ever-changing world."<sup>2</sup> The draft also retained the 1984 manual's recognition of the importance of "the support of the people" in employing military forces, with only a slight rewording of the first chapter. In other areas, though, the proposed revision tried to encompass much more than its predecessor.

To its credit, the 30 August 1985 draft seemed both to recognize some of the lessons of the past and envision the needs of future air campaigns. In discussing strategic operations against important enemy targets, one statement warned commanders that "such attacks may be limited, however, by overriding political concerns, the intensity of enemy defenses, or more pressing operational requirements,"<sup>3</sup> a clear reference to the environment faced in Vietnam. The increased historical awareness of the Air Force in the 1980s seemed to be having some effect on doctrinal statements.

Additionally, the revision made reference to the important and growing trend in inter-service planning. Regarding the employment of air power it stressed the importance of ". . .the strongest cooperation of the separate services. Therefore, the joint employment of aerospace forces with land and naval forces is the underlying premise of Air Force Doctrine."<sup>4</sup>

XOXID quickly solicited comments on its draft, sending a copy to ARI in early September 1985. In a memo to the thirteen ARI reviewers (which included Col. Drew, Lt. Col.

Price T. Bingham and Dr. Stanley Spangler), Lt. Col. Keith W. Geiger, Chief of ARI's Current Doctrine Division, exhorted the men by writing that "time is short; everyone is swamped, but this is a chance to make your impact!"<sup>5</sup> ARI made the most of the opportunity, with the reviewers making copious comments, criticisms, and suggestions on nearly every page of their copies of the draft. CADRE then sent a formal compilation of the comments to XOXID in early October 1985.<sup>6</sup>

While the draft had deleted claims of air power's ability to "generate internal strife," certain other statements disturbed the ARI reviewers. In its chapter on the principles of war, the draft stated that "the ultimate objective of war is to neutralize or destroy the enemy's armed forces and thus his will to fight."<sup>7</sup> ARI responded with the following:

There is very little hard evidence that military action can destroy the will to fight or resist. What military actions can do is destroy the ability to fight. On the other hand, there is considerable evidence that non-military political policies play a significant role in overcoming an enemy's hostile will. Additionally, some military actions can actually increase the will to resist (Pearl Harbor comes to mind).<sup>8</sup>

The ARI comments also noted the same criticism of the draft's assertion that strategic offensive operations can be ". . .conducted against the decision-making processes, war-making capability, and will of an enemy."<sup>9</sup> Despite its comprehensive image and new statements, the XOXID draft obviously clung to old, and still unsubstantiated, beliefs.

The ARI reviewers considered the XOXID draft to have two other significant problems in common with past manuals. First, they felt that "the new draft suffers from the same malady as the present manual in that it clearly is focused on a large scale theater war against a modern industrialized enemy." They again referred to lessons drawn from history by adding that "we have ample evidence that being prepared for the 'worst case' does not necessarily prepare one for the 'least case.'" Second, the ARI commentators stated that ". . .the new draft suffers from another malady carried over from previous editions, i.e., much of it is not doctrine." They disapproved of the XOXID tendency to "describe" aerospace capabilities and the merits of doctrine, rather than to actually provide the "guidance" needed by commanders.<sup>10</sup>

The unsubstantiated assertions contained in the draft bothered the men at ARI. They felt the problem severe enough to warrant a radical departure in the format of AFM 1-1, as seen in the following:

If we allow our doctrine to contain assertions without evidence, we run the risk of creating dogma rather than doctrine. We suggest that AFM 1-1 and all doctrinal manuals be published in two volumes. The first would be the manual as it now stands, but with the addition of footnotes. The second volume would contain the footnote citations, hopefully in expanded form. Putting ourselves through such a rigorous process would both give us more confidence that our doctrine is correct and make our doctrine easier to defend to our critics.<sup>11</sup>

Such a new format would contrast sharply with the manner in which air power doctrine had been formulated and presented

since at least 1953. The ARI suggestion revealed a desire to produce sound doctrine based on the evaluation of historical evidence. Hopefully, doctrine actually distilled from an honest analysis of experience would prove less vulnerable to criticisms of the kind levelled against past manuals.

The genesis of the two-volume approach had, in fact, come from an historian, Dr. Futrell. While revising his Ideas, Concepts, Doctrine at ARI in 1984, Dr. Futrell had found it quite frustrating to document the source of many doctrinal ideas, remarking to Col. Drew that "doctrine should be written with footnotes." Col. Drew kept the notion alive, and during discussions within ARI over the next year hit upon the way to provide both busy officers and critical scholars with a useful doctrine: a concise, direct, "users" volume, and an expanded volume that allowed both scholars and interested professional officers to understand the reasoning behind Air Force doctrine.<sup>12</sup>

A few other points raised by the ARI reviewers are also worth noting as examples of the kind of intense scrutiny the XOXID draft underwent. ARI seemed more aware of current issues as well as the past when they mentioned that "the manual should be purged of male gender references" [referring to commanders and personnel as "men," for example].<sup>13</sup> More importantly, the reviewers raised two final issues that would remain a source of contention throughout the development of the 1992 edition.

ARI did not understand the XOXID draft's listing of "special operations" as a "mission" of the Air Force instead of as an "operation." They felt that such a narrow definition slighted the broad capabilities of special operations forces. Similarly, ARI found contradictions in the draft's discussion of "space operations." In some places XOXID implied that the aerospace environment inherently included space and space operations, while in others it claimed that their location made space operations unique.<sup>14</sup> While doctrinal manuals and statements often evolve from debates over roles and missions, the ARI comments revealed a belief that the final product should not itself contain conflicting points of view.

The men on the Air Staff again worked quickly, producing another draft by 27 November 1985. On 2 December XOXID sent a copy of the draft with an explanatory cover letter to all Air Force major commands, including the Air University.<sup>15</sup> The cover letter explained that this draft sought to clarify the assertions made in the 1984 version, and admitted that "the reader will see that the fundamental tenets of our doctrine have not changed, only the manner of presenting them." XOXID further maintained that while the draft offered a major reorientation towards the operational level of war, its "emphasis on theater-wide employment" remained consistent with the way the Air Force had always thought.<sup>16</sup> They did not feel it necessary to challenge the

conceptual focus of Air Force doctrine. The more academically oriented officers at the Air University did.

By 2 January 1986, Col. Drew, now Director of ARI, had compiled comments on the second draft from members of CADRE, the Air War College, the Air Command and Staff College, and the Squadron Officer School. He returned these comments and the draft to XOXID. The draft itself had again been marked with numerous notes, edits, and favorable and unfavorable criticisms, indicating a rigorous examination. The AU response further proclaimed its commitment to the task by remarking that "we believe that one of our most important missions is to assist in the doctrine development process."<sup>17</sup>

AU also acknowledged that 70 percent of ARI comments on the 30 August 1985 draft had been incorporated into the new draft. Yet, XOXID had not addressed any of the major problems previously mentioned. The "General Comments" from AU reiterated that much of the material presented did not constitute doctrine, and complained that the chapter entitled "The Nature of War" ". . . says very little about the nature of war." The critics noted that the discussion of conflicts on the lower end of the spectrum needed to be expanded. Once again, they found fault with the draft's use of "gender exclusive language." ARI also reiterated its belief that XOXID conceptually misunderstood the relation-

ships between special operations and unconventional warfare, and between "air" and "space" missions.<sup>18</sup>

More importantly, they wrote that "the Air University reviewers are in unanimous agreement that it is a mistake for the manual to narrowly focus on fighting a large-scale, theater war against a modern, industrialized enemy." They displayed an understanding of past experiences in Korea and Vietnam, and the importance of these conflicts to the future, by adding that "our doctrine should address not only the most demanding war, but also the most likely wars." Regarding the subject of attacking an enemy's will, AU stated that "we continue to stand by our original critique. . . . The evidence indicates this a difficult if not impossible task to accomplish with military means."<sup>19</sup>

XOXID's earlier work also received more criticism from the retired Col. Thomas Fabyanic. In a January 1986 article in Air University Review, Fabyanic sharply condemned the 1984 AFM 1-1 as "inadequate," and rooted in the abstract principles of Jomini rather than in the operational-based views of Clausewitz.<sup>20</sup> In his lengthy critique, he argued that AFM 1-1 ignored the various forms of low-intensity conflict, and the lessons of the Vietnam War. He strongly felt that the manual's "assertion that we can penetrate to the heart of an enemy without neutralizing defending forces, particularly when viewed in the context of World War I, World War II, and Linebacker II, is both bad history and

faulty doctrine."<sup>21</sup> The successive XOXID drafts revealed that much of Fabyanic's criticisms of the 1984 AFM 1-1 still applied to the Air Staff work.

Between the official replies and Col. Fabyanic's article, XOXID had much to think about. Meanwhile, many individuals at ARI and CADRE who would play key roles in the development of the new AFM 1-1 were exercising the kind of rigorous thinking that Professor Holley had called for in 1974. The people and ideas that would form much of the impetus behind the 1992 edition of AFM 1-1 had begun to coalesce.

In October 1986 CADRE published a report on behalf of ARI written by Col. Drew. This report critically analyzed the first year of the air war over Vietnam. Entitled "Rolling Thunder 1965: Anatomy of a Failure," it illustrated ". . .how American air power doctrine developed in a manner incompatible with the employment required over North Vietnam and how even the best military advice can be ignored if it does not conform to the objectives of the civilian leadership."<sup>22</sup> The report was one of many attempts by ARI to offer insightful interpretations of the history of air power in order to enhance the Air Force's understanding ". . .of the art and science of aerospace power application."<sup>23</sup>

Also in October, the Air University Review published Col. Drew's article "Two Decades in the Air Power Wilderness: Do We Know Where We Are?" In it Drew argued that

since the 1920s the Air Force had based its doctrine on the assumption that strategic bombing would defeat any enemy, and that any enemy would be an industrialized nation. Vietnam challenged both of these assumptions, leaving airmen unsure of their doctrine, and wandering in a "doctrinal wilderness" since 1965.<sup>24</sup>

Col. Drew also noticed that after 1979 professional journals contained more, and more thoughtful, articles on doctrine. "Younger officers began challenging the current dogma, calling into question not only what the doctrine espoused but also how the doctrine was formulated." Most significantly, "not all of the 'young Turks' agreed with one another but they created in the professional journals, particularly the Air University Review, a climate of intellectual ferment."<sup>25</sup> An extremely perceptive individual, Drew had noticed the trend that he himself belonged to.

Historian, and former Air Force pilot, Kenneth P. Werrell helped continue the ferment with his article "Linebacker II: The Decisive Use of Air Power?" in the spring edition of Air University Review. Like Drew, he doubted the efficacy of strategic bombing. The article disputed the belief, held by many senior Air Force officers, that had airpower been used in Vietnam in the late 1960s the way it was used in 1972, the war's outcome would have been vastly different. It bluntly stated that strategic bombing

". . .was not and could not be, decisive in the Vietnam War."<sup>26</sup>

None of these ideas would come as surprises to Drew. Werrell, who had received his Ph.D. from Duke like Professor Holley, had been a visiting fellow at ARI from 1981 to 1983, a visiting professor at CADRE in 1987, and a senior research fellow at ARI by 1988.<sup>27</sup> While there he had shared many ideas with Drew.<sup>28</sup>

Although the Air University Review had provided the Air Force with provocative articles such as those by Drew and Werrell since 1947, it did not survive budget cuts. Coincidentally, Dr. Werrell's article appeared in the last edition. Maj. Earl Tilford, the journal's editor, expressed some hope in the final editorial, noting that CADRE intended to fund a publication entitled Air Power Journal [since published as the Airpower Journal, the professional journal of the Air Force]. He also made the scathing assertion that "the Air Power Journal will need our support if it is to overcome what I perceive to be the prevailing anti-intellectualism that dominates our service and which, in my opinion, played a large role in the demise of the Review."<sup>29</sup>

Maj. Tilford's candidness, knowledge of history (he held a B.A. and M.A. in history and a Ph.D. in American military history), and the fact that Col. Drew had once been a graduate student of his, all served him well as he remained at CADRE as a research fellow immediately after the

demise of the Air University Review. While there he began writing Setup: What the Air Force Did and Why?, which he finally published in June 1991. Having served as an intelligence officer in Vietnam as a young lieutenant, Tilford had seen much that disturbed him about the way the Air Force conducted its bombing operations.<sup>30</sup>

Setup would argue that "in Vietnam the Air Force fell victim to its own brief history and to the unswerving commitment of its leadership to the dubious doctrine of strategic bombing,"<sup>31</sup> greatly expanding on some of the ideas expressed in Col. Drew's article "Two Decades in the Air Power Wilderness." While working at CADRE, Tilford solicited comments and suggestions about the book from Dr. Stanley Spangler, an ARI distinguished Visiting Professor from 1986 to 1989, and one of the original thirteen ARI reviewers of the 30 August 1985 XOXID draft. Tilford also shared an office with Lt. Col. Frank P. Donnini, who soon would become one of the CADRE personnel who helped write the 1992 edition of AFM 1-1.<sup>32</sup>

During 1987, Tilford, Drew, and Bingham, another of the original ARI reviewers, also critiqued chapters of a book being written by Dr. Mark Clodfelter, an Air Force officer and associate professor of history at the USAF Academy.<sup>33</sup> Dr. Clodfelter's 1989 book The Limits of Air Power: The American Bombing of Vietnam examined, like Drew and Werrell before him, the role of Air Force doctrine in the air war

over Vietnam. He specifically sought to demonstrate to Air Force leaders that the Linebacker II campaign did not prove that bombing campaigns unhampered by political controls can always win limited wars.<sup>34</sup>

Futhermore, Dr. Clodfelter believed that "because most air chiefs think political limitations prevented air power from gaining a victory in Vietnam, they have not revamped the fundamentals of strategic bombing doctrine."<sup>35</sup>

Clodfelter's work garnered so much critical acclaim that the Air War College made it required reading within a year of its publication.<sup>36</sup> Together with Watt's The Foundation of U.S. Air Doctrine, it would become a major source for many of the essays found in Volume II of the 1992 AFM 1-1.

While the aforementioned material seems a confusing mass of names and titles, it confirms the forming of intimate connections and the exchanging of new ideas. Members of ARI and CADRE were being exposed to and professing views of air power history that contradicted some fundamental Air Force beliefs espoused in past AFM 1-1s and the latest drafts. They had suggested to XOXID that changes be made, to include a two-volume format, in the hopes that Air Force doctrine would more accurately reflect lessons drawn from Vietnam. Seeing few positive changes ARI and CADRE grew bolder.

In December 1987 ARI requested that they be allowed to research and write a new basic doctrine manual that included

historical and authoritative supporting material. The Air Staff rejected the proposal, preferring that CADRE and ARI continue in their roles as assistants and consultants.<sup>37</sup> In January 1988 ARI, together with CADRE, decided to begin research on a new manual regardless of the Air Staff.<sup>38</sup>

Col. Drew and others at ARI felt that current doctrine contained nothing more than assertions lacking documentation and, therefore, difficult to defend. They planned to produce one volume of doctrinal statements accompanied by one volume of footnotes providing ". . .expansive discussions citing historical sources, published analyses, and detailing the logic flow from these sources to the doctrinal statement in volume one."<sup>39</sup> CADRE felt that the project could at least serve as an educational exercise for the Air University and its students. At best, they felt, according to CADRE documents, that the "project has great promise to solve our basic doctrinal impasse. . . ." and would be an important "first step in getting AU back into basic doctrine development."<sup>40</sup>

A momentous event then took place on 17 February 1988. The Air University commander, Lt. Gen. Truman Spangrud, proposed to the Air Force Chief of Staff, Gen. Larry D. Welch, that CADRE assume the responsibility of producing the new AFM 1-1.<sup>41</sup> Col. Drew had convinced Lt. Gen. Spangrud of the value of the ARI approach to doctrine. Lt. Gen. Spangrud, who had been a classmate of Gen. Welch's at the

National War College a few years before, was able to win the support of the most senior airman for the project the Air Staff had refused.<sup>42</sup> As a result, CADRE gained approval for a new approach to doctrine.

In March 1988 on behalf of CADRE, Colonel Drew and the Long Range Planning and Doctrine Division (XOXFP, an Air Staff agency equal to XOXID and also involved in doctrinal development) agreed that CADRE's role in the making of doctrine only extended to the proposed two-volume manual, and that final approval for adoption of their work as AFM 1-1 remained with the Air Staff.<sup>43</sup> CADRE now faced the task of actually having to formulate and write doctrine, something not done at Maxwell AFB since the Air Staff had assumed full responsibility for basic doctrine in 1958.

CADRE quickly realized two potential problems. First, they lacked personnel with recent and extensive expertise in the application of tactical air power. Second, they felt that they should not undertake any work on doctrine projects beyond the new manual due to the "danger of becoming just an extension of [the] Air Staff and thus killing our basic research function just as it is bearing fruit."<sup>44</sup> They pressed on despite these problems, tentatively planning to begin work on the project in July 1988 and to submit a final draft for comment to XOXFP by July 1990.<sup>45</sup>

On 25 April 1988 the new Air Force Deputy Chief of Staff for Plans and Operations, Lt. Gen. Michael J. Dugan

(HQ USAF/XO), gave formal approval to the CADRE project. In a letter to General Spangrud, he also noted that his staff (which included both XOXID and XOXFP) would continue its own work on a revision to the 1984 edition of AFM 1-1, and possibly publish it as an interim manual. With more truth than he perhaps realized, General Dugan told General Spangrud "good luck with your effort; it should be an exciting and rewarding endeavor."<sup>46</sup>

After almost exactly three decades, AU again had the opportunity to develop Air Force doctrine. Successive attempts by the Air Staff had failed to produce a manual based on a truly objective analysis of air power history. The intellectual climate of the Air Force in the 1980s, the establishment of ARI and CADRE, and the research, work, and spreading of ideas by several intellectual officers, had combined to give CADRE the chance to approach doctrine in unique ways. For the first time in its history, AFM 1-1 would consist of two volumes. And for the first time in its history, the Air Force would have a doctrine rooted in the study of military history. Yet, CADRE still had to produce, and win approval for, the new manual.

## Notes to Chapter 3

- <sup>1</sup>Drew, "Two Decades in the Air Power Wilderness," 13.
- <sup>2</sup>Basic Aerospace Doctrine of the United States Air Force (Draft: 30 August 1985), p. 3. Memo dated 17 September 1985 attached as a coversheet; in ARI HF 1984-85-86.
- <sup>3</sup>Ibid., p. 30.
- <sup>4</sup>Ibid., p. 26.
- <sup>5</sup>Ibid., 17 September 1985 coversheet.
- <sup>6</sup>Letter from CADRE to HQ USAF/XOXID, "Draft AFM 1-1," 11 October 1985; in ARI HF 1984-85-86.
- <sup>7</sup>30 August 1985 draft.
- <sup>8</sup>11 October 1985 letter, Chapter 3 of attached comments.
- <sup>9</sup>11 October 1985 letter, Chapter 7 of attached comments; 30 August 1985 draft, p. 42.
- <sup>10</sup>11 October 1985 letter, "General Comments" of attached comments.
- <sup>11</sup>Ibid.
- <sup>12</sup>Col. Dennis M. Drew, "The Reformation of Air Force Doctrine," Tab 1 of "Item of Interest: AFM 1-1 Publicity Efforts," 6 May 1992; in ARI HF 1992.
- <sup>13</sup>11 October 1985 letter, "General Comments" of attached comments.
- <sup>14</sup>Ibid., Chapter 7 of attached comments.
- <sup>15</sup>2 December 1985 letter, "Draft AFM 1-1, Basic Aerospace Doctrine." This letter has attached to it the 27 November 1985 draft and coverletter; in ARI HF 1984-85-86.
- <sup>16</sup>27 November 1985 coverletter.
- <sup>17</sup>2 January 1985 Staff Summary Sheet, "AFM 1-1 Critique"; in ARI HF 1984-85-86.
- <sup>18</sup>Ibid., "General Comments" of attached comments.
- <sup>19</sup>Ibid.

<sup>20</sup>Col. Thomas A. Fabyanic, "War, Doctrine, and the Air War College: Some Relationships and Implications for the U.S. Air Force." AUR 37 (January 1986): 15.

<sup>21</sup>Ibid., pp. 16-18.

<sup>22</sup>Drew, "Rolling Thunder 1965," p. vi.

<sup>23</sup>Ibid., p. iii.

<sup>24</sup>Drew, "Two Decades in the Air Power Wilderness," p. 3.

<sup>25</sup>Ibid., p. 12.

<sup>26</sup>Kenneth P. Werrell, "Linebacker II: The Decisive Use of Air Power?" AUR 38 (January-March 1987): 59.

<sup>27</sup>Kenneth P. Werrell, Archie, Flak, AAA, and SAM: A Short Operational History of Ground-Based Air Defense (Maxwell AFB, AL: AUP, December 1988), p. xiii, xvii.

<sup>28</sup>Interview with Col. Drew, 14 January 1993.

<sup>29</sup>Tilford, "Finis," 12.

<sup>30</sup>Tilford, Setup, p. xiii; interview with Col. Drew, 14 January 1993.

<sup>31</sup>Ibid., p. xvii.

<sup>32</sup>Ibid., xix.

<sup>33</sup>Clodfelter, p. xiv.

<sup>34</sup>The author suggested this sentence to Maj. Clodfelter, who felt it accurate provided the word "always" was inserted. Telephone interview with Maj. Clodfelter, 8 January 1993.

<sup>35</sup>Clodfelter, p. 208.

<sup>36</sup>Telephone interview with Maj. Clodfelter, 8 January 1993.

<sup>37</sup>"Bullet Background Paper on ARI and Air Force Doctrine, 15 January 1988; in ARI HF 1988.

<sup>38</sup>"Bullet Background Paper on New AF Basic Doctrine Manual (AFM 1-1)," 1 February 1988; in ARI HF 1988.

<sup>39</sup>Ibid.

<sup>40</sup>Ibid.

<sup>41</sup>"Talking Paper for AU/CC's Meeting with AF/XO on CADRE's Responsibility for Doctrine," 4 March 1988. See also "Point Paper on New Air Force Basic Doctrine Manual (AFM 1-1), 7 June 1988; both in ARI HF 1988.

<sup>42</sup>Interview with Col. Drew, 14 January 1993.

<sup>43</sup>"Talking Paper for AU/CC's Meeting with AF/XO on Cadre's Responsibility for Doctrine," 4 March 1988, p. 2.

<sup>44</sup>Ibid.

<sup>45</sup>"Tentative Scedule for AFM 1-1 Research and Writing," 8 March 1988; in ARI HF 1988.

<sup>46</sup>Letter from Lt. Gen. Michael J. Dugan to Lt. Gen. Truman Spangrud, 25 April 1988; in ARI HF 1988.

## Chapter 4

"We must guard against traditionalism and rigidity of thought. . . . Since Air Power is global, thinking must be on a global scale. . . ." -- Maj. Gen. David M. Schlatter, 1946.<sup>1</sup>

After receiving approval from the Chief of Staff and Gen. Dugan (AF/XO) in the spring of 1988, CADRE began to develop a plan of work and a team. Col. Drew, as the Director of ARI, would head the project. From the beginning, he felt that CADRE's two-volume approach would provide "short, readable doctrine [with] complete justification for use in interservice battles," that would also contain "proof" for its assertions and serve as an educational tool. He planned the research and writing to take two years, beginning in July 1988.<sup>2</sup>

On 1 July 1988 the team held its first meeting.<sup>3</sup> Consisting of six officers, with two civilian advisors from ARI, the initial team represented a collection of men with a broad range of experiences, as well as some important similarities. Indeed, a brief sketch of the officers' backgrounds aids in understanding why they would be so

interested in rooting Air Force doctrine in an objective analysis of its history.

As discussed in earlier chapters, Col. Drew had involved himself in the study of air power and doctrine for many years. He had served as a personnel officer for a fighter wing and an air commando wing in Vietnam from 1966 to 1967, before becoming a missile officer. His B.A. in history, M.B.A., and M.A. in military history evidenced his intellectual abilities and interest in history. Col. Drew continued to think and write critically even as he worked on the AFM 1-1 project, publishing a paper for CADRE in March 1988 and then, later in 1988, two books on the making of national strategy and security policy and American military history, co-authored with political scientist Dr. Donald M. Snow.<sup>4</sup> During the next three and one-half years Col. Drew would emerge as the driving force behind the doctrine project and the manual.

Lt. Col. Price T. Bingham, the second-ranking officer on the team, would also stay with the project from its inception to its fruition in 1992. Like Col. Drew, Bingham had served in Vietnam, but first as a fighter-bomber pilot from 1969 to 1970, and then as a command-post chief responsible for directing air interdiction strikes in Laos and Cambodia in 1972 and 1973. This experience, coupled with his B.S. in history from the Air Force Academy, and an incisive mind, resulted in Bingham's numerous publications

during the 1980s on operational-level warfare and air interdiction, as well as his extensive work on Chapter 3 "Employing Aerospace Forces: The Operational Art" of the 1992 AFM 1-1.<sup>5</sup>

Four other officers, more recently assigned to ARI, completed the original team. During the previous year Lt. Cols. Jeffrey C. Benton, Frank P. Donnini, Richard B. Clark, Jr., and Major (Lt. Col. Selectee) Richard L. Davis had all taken part in two projects that had increased their professional military knowledge and historical awareness. First, upon coming to ARI, they had all undergone an education program with Dr. David MacIsaac (Lt. Col. USAF Ret.), the Associate Director for Research and a respected air power historian (as well as a former doctoral student of Professor Holley's at Duke University). Dr. MacIsaac required all new ARI officers to read an extensive selection of well-known military and historical writings by Michael Howard, Theodore Ropp, Bernard Brodie, Carl Von Clausewitz, Sun Tzu, Liddell Hart, Martin Van Creveld, Mao Tse-Tung, Stanley Karnow, Harry Summers, Giulio Douhet, Lt. Col. Watts, and others.<sup>6</sup>

The four had also all worked on a CADRE report entitled "Officer Professional Military Education Study," completed in June 1988. This lengthy critique of AU and the officer PME system concluded that "the scarcity of contributions from Air Force officers in these areas [strategy and operational art] indicates that many may lack appreciation

and understanding of the art of war." Furthermore, it maintained that "the Air Force has a responsibility to foster a professional atmosphere where true military education is perceived as a valuable asset. . . ." <sup>7</sup> The study had also used a two-volume format, with one volume providing a brief presentation of its key findings, and a second containing an expanded review of the research and conclusions. According to Col. Benton, the work on the study and with Dr. MacIsaac enhanced the officers' belief in the importance of military history, and subtly, but significantly, influenced their thinking and writing during the work on AFM 1-1. <sup>8</sup>

Like Drew and Bingham, all the officers had excellent educations and brought with them different operational experiences. Col. Benton held a B.A. and M.A. in English and an M.A. in political science. He had served as a navigator on KC-135 aircraft in Southeast Asia and had worked in Europe on the planning for and deployment of cruise missiles. <sup>9</sup> Lt. Col. Donnini, a career intelligence officer, had a B.A. in history and M.A.'s in public administration and international relations. He had served in Thailand, been an exchange officer with the Royal Australian Air Force, and been a research associate at the University of Pittsburgh's Graduate School of Public and International Affairs. <sup>10</sup>

Lt. Col. Davis, a former B-52 pilot and politico-military affairs officer, had, like Donnini, authored several articles and books and held a B.A. in history and an M.A. in international affairs.<sup>11</sup> Lt. Col. Clark, a former C-141 pilot and contingency planner for Pacific Air Forces, held a B.A. in industrial education and an M.A. in human relations.<sup>12</sup> For the next two years, all of these men would help research and write AFM 1-1.

The civilian advisors also had excellent qualifications for their roles in the project. Dr. MacIsaac served as one of the initial advisors, while Mr. Jerome Klingaman, also a retired lieutenant colonel, ARI senior research fellow, and expert on low-intensity conflict, served as the other. By August 1988, the project would gain the help of Duke University's Professor Holley as a third advisor.<sup>13</sup>

In November 1988, CADRE also secured the addition of Lt. Col. Charles M. Westenhoff, in response to its need for personnel with experience with tactical air power (see page 81 of this thesis). Lt. Col. Westenhoff, a graduate of West Point, had spent over ten years as a pilot and forward air controller, and the previous five months as an air attache in Iraq. As a new member of ARI he also would take part in Dr. MacIsaac's education program.<sup>14</sup>

Clearly, all the officers involved had varied operational experiences to draw on in formulating doctrine. Either through a degree in history or their work with Dr.

MacIsaac, they also had gained an appreciation for critical historical analysis. Through this combination, the officers fulfilled many of the prescriptions for successful doctrinal development articulated in writings by others such as Maj. Ehrhart, Professor Holley, and Lt. Col. Watts (see Chapter 2 of this thesis).

The period during which these officers had done much of their professional service also seemed to influence their thinking. They all came from a different generation of officers than those who had written manuals during the 1950s, 1960s, and 1970s. According to Col. Drew, they had all witnessed ". . .the catharsis and crisis in confidence experienced by the military after Vietnam." Aware of the shortcomings of the military apparent during the 1970s and 1980s, they belonged to the "generation of officers who after the [Vietnam] war were involved with in one way or another the first balanced critiques that came out of the military."<sup>15</sup>

Col. Drew also helped to strengthen the knowledge and abilities of the team. During July 1988 he had everyone read all Air Force basic doctrine manuals written from 1917 to 1984, the equivalent U.S. Army manuals, and published critiques of doctrine such as those by Dr. Futrell, Maj. Ehrhart, Col. Fabyanic, Lt. Col. Watts and Maj. Hale. In continuing to publish articles and books, Drew also hoped to set the example for the others. The many articles and book

reviews the other members published while also working on AFM 1-1 attest to Drew's efforts, and the men's abilities.<sup>16</sup>

This work paid off over the next several months as a "collegial atmosphere" developed. Col. Drew has since commented that the group never suffered from "group-think," although everyone agreed that a mere revision of the 1984 edition of AFM 1-1 would not suffice. "Give and take" arguments and shouting matches occasionally arose as the officers took part in what Col. Drew termed "the ultimate group effort."<sup>17</sup> Lt. Col. Clark has also stressed the importance of the "collegial atmosphere." He added that no one came to ARI with "any personal axes to grind," and in group discussions ideas became more important than rank.<sup>18</sup>

Col. Benton has since made remarks very similar to those by Lt. Col. Clark. He further stated that the men were not scholars or historians attempting to write history, but professional officers trying to write useful doctrine. The atmosphere at CADRE left him feeling free to write anything without fear of having to undergo strict scrutiny from superiors. He maintained that the atmosphere, and time and policy constraints of the Air Staff would have prevented them from producing the same kind of work.<sup>19</sup>

During the next several months, the team did extensive research and thinking. They wrestled with the questions of what aspects of the 1984 manual needed complete revision, what audience the CADRE manual should be written for, how to

incorporate doctrine for operations in space, and what to include in the new manual and how to organize it.<sup>20</sup> By late November 1988, some of these questions had been answered, and CADRE officially informed all Air Force major commands of the project. In the message, CADRE requested comments on their intention to produce a manual that contained "tenets 'provable' with historical evidence/examples," that covered "the entire spectrum of conflict," that considered "the limitations as well as the capabilities of aerospace power," that was "written in terms of what should be rather than what is," and that proceeded "from the general to the specific (i.e., deductively)."<sup>21</sup>

While awaiting replies, CADRE continued its work on the manual. By December 1988 the team had developed detailed outlines of the four chapters that would constitute Volume I. Lt. Col. Benton worked on Chapter 1, "The Nature of Modern Warfare." Lt. Col. Clark examined "The Nature of Aerospace Power" in Chapter 2. Lt. Col. Bingham and Maj. Davis discussed "Employing Aerospace Power" in the third chapter. Lt. Col. Donnini worked on Chapter 4, "Developing Aerospace Forces: Preparing for War."<sup>22</sup> This initial division of labor, and the planned chapter arrangement and scope would remain remarkably consistent throughout the work on the manual.<sup>23</sup>

On 5 January 1989 CADRE received a memorandum from Chief of Staff Gen. Welch and Secretary of the Air Force

E.C. Aldridge directing major commands to "rewrite Air Force doctrine to integrate space operations into the basic missions and tasks of the Air Force."<sup>24</sup> This memorandum provided support for ARI's belief that space involved only a different medium in which the Air Force performed its traditional missions.<sup>25</sup> It also insulated CADRE's work on the new AFM 1-1 from what had, and continues to be, a significant debate over whether or not space doctrine should remain separate from air power doctrine.<sup>26</sup>

By March 1989 CADRE had received several responses to its November 1988 message from different major commands. Alaskan Air Command (AAC), U.S. Air Forces in Europe (USAFE), and Military Airlift Command (MAC) all supported the two-volume approach. Even Strategic Air Command supported the incorporation of historical evidence, suggesting several historical examples useful for illustrating different principles and missions. Tactical Air Command (TAC), however, felt that the documented essays did not constitute doctrine and should not be a part of the manual, preferring the current format. TAC did recommend that the revision of Chapter 3 focus on the employment of aerospace power at the operational-level of war and that its guidance apply across the spectrum of conflict.<sup>27</sup>

CADRE continued work on its project, planning to have a completed draft of both volumes to the Doctrine and Concepts Division (XOXWD, the successor to XOXID) in July 1990.<sup>28</sup> By

May 1989 work on Volume II had commenced, with the officers developing essays to support their respective chapters in Volume I.<sup>29</sup> As a lesson for future doctrine projects, they found that "Volume 1 must be based on the research appropriate for Volume 2, but Volume 2 cannot be written until Volume 1 is complete."<sup>30</sup>

In May CADRE also invited all major commands to attend a July working conference on their revision of AFM 1-1. CADRE sent all the invitees a copy of their draft of Volume I in June to give them time to prepare for the conference.<sup>31</sup> Aside from a few sections subsequently added or deleted, and a substantial number of reworded sentences to tighten the prose, this draft differed little in content and structure from the final version (see Chapter 5 for a more in-depth analysis of AFM 1-1 as finally published).<sup>32</sup>

XOXWD quickly sent to CADRE a three-page compilation of its comments on the draft. One of the more interesting XOXWD comments indicated that CADRE, now that it actually had to write a doctrine manual, was experiencing some of the same difficulties that XOXID had in 1985 (see pages 67-75 of this thesis). XOXWD considered CADRE's attempts to integrate air and space operations "awkward." They noted that despite the use of different craft and methods, ". . .space operations remain essentially air operations; thus space doctrine is simply air doctrine. AFM 1-1 should

state this point unequivocally and then focus on discussing air (i.e., space) doctrine."<sup>33</sup>

The following paragraph from the CADRE draft also caught XOXWD's attention:

Strategic strikes should be executed to achieve maximum psychological effect. Conducted at the right time and place, the shock of accurate and massive strategic strikes can demoralize the enemy's leadership, military forces, and population. However, a demoralizing psychological impact can be an elusive objective. Thus, the primary target of strategic strikes should be enemy warmaking capabilities rather than the enemy's will to resist.<sup>34</sup>

XOXWD maintained that the first sentence suggested strategic strikes aim primarily at the enemy's will, contradicting the last sentence's injunction that "warmaking capabilities" take precedence. "The discussion should focus on one or the other of the points," advised XOXWD, "and experience argues emphasizing the latter."<sup>35</sup> The Air Staff accepted the argument that strategic bombing could not completely destroy an enemy's will.

CADRE's approach to doctrine had resulted in sound concepts. Their first effort, though, did contain many technical inconsistencies and flaws. XOXWD helped to illuminate some of them. The conference with the major commands ensured that the draft received even more rigorous criticism.

The 18-19 July 1989 conference elicited many comments, criticisms, and suggestions from all the participants. In general, CADRE realized that it needed to make the manual

very clear and readable, to identify its target audience and speak to it, and to encourage senior and junior officers to study it. The conference minutes also noted that doctrine should ". . .divide the enemy's will from his ability to resist: the military concentrates on attacking the ability to resist, while the whole of national strategy is aimed at achieving decisive changes in the enemy's will."<sup>36</sup> Indeed, the conference was proving immeasurably helpful in spreading important doctrinal concepts.

During the closing remarks, the AU commander thanked the participants for demonstrating their "commitment to rigorous doctrine."<sup>37</sup> More importantly, the conference demonstrated the level of support CADRE had enlisted for its project. The Air Staff, specifically XOXWD, remained as the office of primary responsibility for doctrine. The CADRE project would still have to meet with their approval before final publication. In hosting the conference, though, CADRE had gained valuable insight into what different commands desired, thus making it possible to gain their support. Indeed, Col. Geiger, ARI's Deputy Director, wrote shortly after the conference that Volume I ". . .is currently being revised to reflect the ideas gained in the conference."<sup>38</sup>

The Air Staff had not accepted the CADRE project, and the challenge to its authority CADRE represented, meekly. Nor did it seem a foregone conclusion that the CADRE manual would be the next AFM 1-1. As Lt. Gen. Dugan (USAF/XO) had

told Lt. Gen. Spangrud in 1988 (see page 82 of this thesis), his staff would attempt its own revision of AFM 1-1 for possible publication as an interim manual. By 1989, his staff had gained some outstanding officers, and produced a creditable draft.

Shortly after Lt. Gen. Dugan had assumed his job on the Air Staff, Maj. Gen. Charles G. Boyd became his Deputy Director for Plans (XOX). A decorated fighter pilot and former P.O.W. for seven years in North Vietnam, Maj. Gen. Boyd greatly appreciated the importance of studying military history.<sup>39</sup> Yet, he did not support the CADRE effort to write doctrine, believing that the responsibility for it should remain with the Air Staff.<sup>40</sup>

Col. John A. Warden served underneath Maj. Gen. Boyd as Director of the Warfighting Concepts and Doctrine Division (XOXW). Col. Warden, another pilot who had flown numerous combat mission in Vietnam, held strong convictions about air power, its history, and its ability to apply decisive force in a modern war.<sup>41</sup> While a student at the National War College, he had written a brilliant conceptual work entitled The Air Campaign: Planning For Combat, drawing heavily from air power history to illustrate his ideas. This work would gain great acclaim, and Col. Warden would eventually earn credit for his key role in planning the air campaign employed against Iraq during Operation "Desert Storm."<sup>42</sup>

With the support of both Boyd and Warden, XOXWD (the division immediately below Warden's) began work on a completely new revision of AFM 1-1 in 1988. Col. David Tretler, chief of XOXWD, did a majority of the research and writing. Like Warden and Boyd, Col. Tretler had flown combat missions in Vietnam in F-4 fighters. He also held a B.A., M.A., and Ph.D. in history and had taught military history at the Air Force Academy during two separate three-year assignments. Col. Tretler's assignment to the Air Staff had resulted indirectly from the work by Col. Gropman in the early- and mid-1980s to funnel officers with history backgrounds to the Pentagon.<sup>43</sup>

Col. Tretler made excellent use of his extensive historical knowledge in writing the XOXWD revision. In doing so, his work on successive drafts from 1988 to 1990 reflected an awareness of past criticisms of previous editions of AFM 1-1. It also reflected the influence of Col. Warden's thinking on air power.<sup>44</sup>

The first draft appeared in March 1989 entitled Air Force Basic Doctrine: Employing Air Power, indicating a new focus to AFM 1-1's content. The first chapter discussed "The Nature of War" and the different forms it could take, while other chapters provided guidance for employing air power. In structure, it resembled the 1984 edition, but in its inclusion of historical examples to illustrate different points, and narrative style, it far surpassed earlier Air

Staff work.<sup>45</sup> Most importantly, it recognized that "strategic air offense should focus on enemy war-making capacity rather than popular will. Popular will repeatedly has proven an elusive and resilient target."<sup>46</sup>

Recognizing, as had CADRE, the value of feedback from the different Air Force commands, Lt. Gen. Dugan in April 1989 requested comments on the draft from all major commands.<sup>47</sup> He received some interesting responses in May and June. Perhaps unexpectedly, CADRE and AU found the draft thought-provoking and worthy of publication as the proposed interim AFM 1-1.<sup>48</sup>

Air Force Space Command, however, did not agree, disapproving of the way XOXWD had reduced the importance of space operations. Space Command wrote to Lt. Gen. Dugan that they had been working with CADRE, and strongly recommended "that your proposed AFM 1-1 revision effort be terminated pending the outcome of the Air University initiative."<sup>49</sup> USAFE Headquarters also found the Air Staff draft inappropriate for publication, citing the change in focus and "'weak' historical examples" as major problems. USAFE recommended that the Air Staff hold a conference on the draft that included representatives from AU and all the major commands.<sup>50</sup>

Instead of hosting a conference, however, XOXWD produced another draft by August 1989. This version had six chapters ("Nature of War," "Nature of Aerospace Power,"

"Employing Aerospace Power," "Nuclear Warfare," "Preparing Aerospace Forces," and "Conclusion") spanning 58 pages of text. It retained its stated focus as a guide for the employment of air power rather than a statement of basic doctrine. Its list of Air Force missions placed "Strategic Air Offense" first. Yet, in continuing to recognize the difficulties involved in trying to use strategic bombing to affect the popular will, the draft stated that strategic air offense "aims to attack the will of the enemy leadership, as well as the enemy's physical capability to fight" [emphasis added].<sup>51</sup>

Through their attempts to combine an analysis of experience with doctrine, XOXWD and Col. Tretler had produced a readable and informative draft. However, other agencies within the Air Staff's XOX- chain of command found the draft too long, "excessively pedantic and at times patronizing" in its use of history, and flawed in its discussion of Air Force roles and missions, including the concepts of space operations and special operations.<sup>52</sup> Apparently, the draft's length and often "forced" use of historical examples hindered the reader's ability to distill the doctrinal guidance the manual intended to relate, thus providing more credibility to CADRE's two-volume approach.

XOXWD edited and refined the draft, eliminating three pages, and published another version in November 1989.<sup>53</sup> In retrospect, this work made little difference. Lt. Gen.

Jimmie V. Adams had replaced Lt. Gen. Dugan as AF/XO during the summer of 1989. He reportedly believed that Gen. Welch's 1988 agreement with Lt. Gen. Spangrud established the CADRE draft as the next edition of AFM 1-1. Therefore, Lt. Gen. Adams cancelled the XOXWD project in late November 1989. The cancellation greatly disappointed Col. Warden and Col. Tretler, both of whom honestly felt that their draft provided a better presentation of Air Force doctrine than the CADRE manual.<sup>54</sup>

Meanwhile, by the end of 1989, the seven officers at CADRE had completed over 7,000 hours of research and writing. They had another draft of Volume I and had almost finished the twenty-four essays that would comprise Volume II. CADRE planned to send a draft of both volumes to all major commands in January 1990, hoping that such an action would elicit "valuable suggestions" and "ease [the] formal coordination process." CADRE would then send a final draft to the Air Staff by 1 April, ironically the date of publication of the first three AFM 1-1s, written at the Air University (see pages 15-19 of this thesis).<sup>55</sup>

Then in January 1990, the recently promoted Lt. Gen. Boyd gained a new command, and with it the power to end the CADRE project. Lt. Gen. Boyd became the new commander of Air University, thus making CADRE subordinate to his authority. Because Boyd had not welcomed CADRE's efforts to

write the next AFM 1-1 when he was XO, many officers expected that he would cancel the project.<sup>56</sup>

Coincidentally, despite Lt. Gen. Adams' cancellation of the Air Staff revision effort, XO had continued work on its draft in the hopes of having it published.<sup>57</sup> By May 1990, it had further refined the draft, reducing the "pedantic" tone and number of historical examples used in the text. Nonetheless, it still demonstrated a recognition of the capabilities and limitations of air power that can come only from an objective analysis.

The draft contained paragraphs discussing the importance of secure air bases, and the strains that geography and climate can place on air operations, topics that had received little, if any, discussion in earlier manuals. The May 1990 XO draft had also re-ordered its list of basic missions, placing strategic air offense second, behind counter air operations. Furthermore, it offered the following warning:

But attacking the enemy's economic system does not always produce expected results. Identifying and destroying key economic elements can be difficult; and even if that challenge is overcome, enemy leaders may not make the major concessions that seem warranted by the losses.<sup>58</sup>

After producing doctrine for more than three decades, the Air Staff finally seemed to recognize that history had not fully and conclusively proven the beliefs espoused at the Air Corps Tactical School. Men with a keen interest in the study of military history, like Col. Tretler and Col.

Warden, and others on their staffs, deserve a large share of the credit for this.

Recognizing that it would take CADRE at best another twelve to eighteen months to prepare its draft for publication (if, indeed, it would be published at all), XOXWD continued to push during the summer of 1990 for the publication of its own version. In correspondence with higher agencies (e.g., XOXW and XOX), they repeatedly argued that CADRE's Volume I had gone too far in attempting to provide a "bare-bones" outline.\* Specifically, XOXWD asserted that Space Command would reject CADRE's downplaying of the "uniqueness and importance of space," and that the special operations community would disapprove of the failure of CADRE to discuss special operations in Volume I. XOXWD noted that the Air Force desperately needed a "new, up-to-date AFM 1-1," and recommended that their version be published in 1990 while the CADRE version underwent major revisions.<sup>59</sup>

During the previous two years key individuals had emerged as one of the major reasons behind the increased use of objective historical analysis in the development of Air Force doctrine. At CADRE, Col. Drew and his staff worked to

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\*Lt. Col. Dan Kuehl had been the "action officer" for the XOXWD correspondence. In 1986 and 1987, he had done his doctoral studies under Professor Holley at Duke (as related to the author during his interview with Professor Holley), adding both credibility to Kuehl's criticisms and another ironic twist to the interplay between people, organizations, and time, that drove the development of AFM 1-1.

create a "collegial atmosphere" conducive to the intense research and writing they conducted. Despite the more frenetic atmosphere of the Pentagon, XOXWD had also produced an honest examination of the principles for employing air power, but they lacked the support necessary to publish it. With the CADRE draft nearing completion in mid-1990, and Lt. Gen. Boyd now in command of AU, the only remaining problem was how to win final approval for the work that had resulted from the combination of dedicated officers, a proper research organization, and beneficial timing.

## Notes to Chapter 4

<sup>1</sup>Maj. Gen. David M. Schlatter, Welcoming address to the initial classes of AWC and ACSC, 3 September 1946, as quoted in Lt. Col. Harvey J. Crawford, et al., "Officer Professional Military Education Study" (Maxwell AFB, AL: ARI/CADRE Report, June 1988), p. 1-5.

<sup>2</sup>Col. Drew, "Point Paper on CADRE and Air Force Basic Doctrine," 19 May 1988; in ARI HF 1988.

<sup>3</sup>Col. Drew, ARI Memo, 9 June 1988; in ARI HF 1988.

<sup>4</sup>Interview with Col. Drew, 19 January 1993. See also the paper and books from 1988 fully cited in bibliography.

<sup>5</sup>Interview with Col. Bingham, 19 January 1993. See also bibliography for a partial list of Bingham's publications.

<sup>6</sup>Interview with Col. Benton, 20 January 1993. Col. Benton also gave the author a copy of the "ARI Education Program Required Reading List."

<sup>7</sup>Crawford et al., pp. 8-1, 8-6.

<sup>8</sup>Benton interview.

<sup>9</sup>Ibid.

<sup>10</sup>Telephone interview with Col. Donnini, 10 February 1993.

<sup>11</sup>Lt. Cols. Richard L. Davis and Frank P. Donnini, Professional Military Education for Air Force Officers: Comments and Criticisms (Maxwell AFB, AL: AUP, June 1991), p. xi.

<sup>12</sup>Interview with Lt. Col. Clark, 20 January 1993.

<sup>13</sup>Col. Drew, "Project Personnel," 25 August 1988; in ARI HF 1988.

<sup>14</sup>Interview with Lt. Col. Westenhoff, 24 February 1993.

<sup>15</sup>Telephone interview with Col. Drew, 8 January 1993.

<sup>16</sup>Interview with Col. Drew, 10 October 1992. See also Col. Drew, "Schedule for Producing New AFM 1-1," 25 August 1988; in ARI HF 1988. See Airpower Journal 3 (Spring 1989) for book reviews written by Col. Drew, and Lt. Cols. Benton, Bingham, and Donnini.

- <sup>17</sup>Drew interview, 10 October 1992.
- <sup>18</sup>Clark interview.
- <sup>19</sup>Benton interview.
- <sup>20</sup>See various "Talking Papers" and notes from meetings held in July-September; in ARI HF 1988.
- <sup>21</sup>Message from AUCADRE, Maxwell AFB, AL//RI// to all major commands, 25 November 1988; in ARI HF 1988.
- <sup>22</sup>"AFM 1-1 Project Quarterly Update, 19 December 1988"; in ARI HF 1988.
- <sup>23</sup>See AFM 1-1 (1992), Vol. I. for similarities.
- <sup>24</sup>Letter from Maj. Gen. Harold W. Todd to AU Commanders/Commandants, "Air Force Memorandum-Space Policy," 5 January 1989; in ARI HF 1989.
- <sup>25</sup>Drew interview, 14 January 1993.
- <sup>26</sup>See the book by Myers (1986), and the articles by Friedentstein (1985), Myers (1986), Myers and Tockston (1988), Parrington (1989), and Temple (1986) for examples of the many differing views on space doctrine.
- <sup>27</sup>See messages and letters from respective commands in ARI HF 1989.
- <sup>28</sup>Col. Drew, "Point Paper on New Air Force Basic Doctrine Manual (AFM 1-1)," 9 March 1989; in ARI HF 1989.
- <sup>29</sup>Lt. Col. Davis, "Alphabetical Listing of Volume II Essays," 19 May 1989; in ARI HF 1989.
- <sup>30</sup>"Memorandum on the Research/Writing of AFM 1-1 Strawman," 31 May 1989; in ARI HF 1989.
- <sup>31</sup>Message from AUCADRE, Maxwell AFB, AL//RI// to all major commands, 25 May 1989; in ARI HF 1989.
- <sup>32</sup>Based on author's comparison of AFM 1-1 (1992) and Basic Aerospace Doctrine of the United States Air Force, AFM 1-1, Vol. I (June 1989, CADRE Draft); in ARI HF 1989.
- <sup>33</sup>Letter from Headquarters USAF to AUCADRE/RI, 17 July 1989, with "AF/XOXWD Comments on AUCADRE Draft AFM 1-1, Vol. I (June 1989)" attached; in ARI HF 1989.

<sup>34</sup>AFM 1-1, Vol. I (June 1989, CADRE Draft), p. 3-3.

<sup>35</sup>"AF/XOXWD Comments on AUCADRE Draft."

<sup>36</sup>"Minutes of the Working Conference on the CADRE Draft of Air Force Manual 1-1, 18-19 July 1989"; in ARI HF 1989, with coverletter, "CADRE Doctrine Conference Minutes," 15 August 1989.

<sup>37</sup>Ibid.

<sup>38</sup>"CADRE Doctrine Conference Minutes" coverletter.

<sup>39</sup>Drew interview, 10 October 1992. Also interview with Col. David Tretler, 25 February 1993.

<sup>40</sup>Ibid. Also, Drew, "The Reformation of Air Force Doctrine," p. 8.

<sup>41</sup>Tretler interview, 25 February 1993.

<sup>42</sup>Col. John A. Warden, The Air Campaign: Planning for Combat (Washington, D.C.: National Defense University Press, 1988), see p. 193 for biographical information. See also Hallion's book for a discussion of Col. Warden, his book, and work during "Desert Shield/Storm."

<sup>43</sup>Tretler interview, 25 February 1993.

<sup>44</sup>Tretler telephone interview, 12 March 1992.

<sup>45</sup>AFM 1-1, March 1989 (Draft), Air Force Basic Doctrine: Employing Air Power; in ARI HF 1989.

<sup>46</sup>Ibid., p. 35.

<sup>47</sup>Staff Summary Sheet, 10 May 1989, Tab 2; in ARI HF 1989.

<sup>48</sup>Ibid., Tab 1.

<sup>49</sup>Letter from Maj. Gen. Ralph E. Spraker to HQ USAF/XO, 9 May 1989; in ARI HF 1989.

<sup>50</sup>Message from HQ USAFE, Ramstein AB, GE//XPX// to HQ USAF, Washington, D.C.//XOXWD//, 5 June 1989; in ARI HF 1989.

<sup>51</sup>AFM 1-1, August 1989 (Draft), p. 25; in ARI HF 1989.

<sup>52</sup>Letters from Col. William E. Jones to AF/XOXW, 15 September 1989 and 3 October 1989. Both contained in the

AFM 1-1 files of the Doctrine Division (XOXD), Headquarters, USAF, Washington, D.C.

<sup>53</sup>AFM 1-1, November 1989 (Draft); also in XOXD files.

<sup>54</sup>Tretler telephone interview, 12 March 1993.

<sup>55</sup>Col. Drew, "Talking Paper on CADRE Basic Doctrine Project," 22 September 1989; in ARI HF 1989.

<sup>56</sup>Tretler interview, 25 February 1993.

<sup>57</sup>Ibid. See also AFM 1-1, May 1990 (Draft), in XOXD files.

<sup>58</sup>May 1990 (Draft), p. 41.

<sup>59</sup>Lt. Col. Dan Kuehl, "Issue Paper on Status of AFM 1-1," 24 September 1990. See also Kuehl's "Point Paper on Status of AFM 1-1," 29 August 1990, both in XOXD files on AFM 1-1. Col. Tretler, in the 12 March 1993 interview, remarked that these kinds of papers would be sent up the chain of command, eliciting little or no response.

## Chapter 5

"Doctrine should shape the way we fight. The new doctrine did, even as a work in progress." -- Secretary of the Air Force, Donald B. Rice, 1992.<sup>1</sup>

During 1988 and 1989 both CADRE and XOXWD had worked on their own versions of AFM 1-1. Lt. Gen. Adams' cancellation of the XOXWD project seemed to ensure that CADRE would write the next Air Force basic doctrine manual. But, the 1990 assignment of Lt. Gen. Boyd as the AU commander had the potential to reverse that. CADRE now faced the difficult task of actually winning approval for, and publishing, its work.

In late January 1990, CADRE had given Lt. Gen. Boyd a completed draft of AFM 1-1. During the next six months, Boyd, and AU vice commander Brigadier General Link, rigorously, and somewhat slowly, scrutinized it. Not all of the officers on the CADRE team agreed with the generals' comments and suggestions, and weeks often elapsed before they reached a consensus and edited the draft.<sup>2</sup> This slow progress, though, allowed for two important changes.

First, Gen. Welch, who had originally authorized the CADRE project, retired as Air Force Chief of Staff in June. Gen. Dugan, Boyd's former commander at the Air Staff, became the new Chief on 1 July.<sup>3</sup> Lt. Gen. Boyd now had the perfect opportunity to recommend that the XOXWD version replace the CADRE version as the next AFM 1-1.

The second important change involved Lt. Gen. Boyd's opinion of CADRE and their work. Apparently, he grew to believe in the advantages CADRE had over the Air Staff. According to Col. Drew, sometime in the summer of 1990 Boyd told Gen. Dugan "that doctrine could only be produced at a place such as the Air University, away from the political buffeting of the Pentagon, in a place conducive to the 'contemplative life,' a favorite Boyd phrase."<sup>4</sup> With the support of both Boyd and Dugan, CADRE's authorship of the next doctrine manual seemed assured.

By September, CADRE felt confident enough in its work to send copies of its latest draft to all major commands, including the Air Staff, for comment.<sup>5</sup> Before the commands could respond, though, Gen. Dugan was unceremoniously "fired" as Chief of Staff for remarks he had made to newspaper reporters. His removal astonished the Air Force.<sup>6</sup> Obviously, it also meant that CADRE had lost his support.

During October and November 1990, CADRE received responses from twenty of the twenty-seven organizations it had contacted.<sup>7</sup> Of fifteen responses still on file, none

objected to the two-volume format or the manual's general content. In addition, nine organizations praised CADRE's work, recommending publication of the draft with either little or no further editing.<sup>8</sup>

Yet, the most encouraging response came not from these fifteen, but from the new Chief of Staff Gen. Merrill A. McPeak. In a hand-written note to Lt. Gen. Boyd on 9 November, Gen. McPeak remarked that "I read the draft of AFM 1-1. [I] Am very impressed. Good on you! Do I get to sign the 'Foreword'?"<sup>9</sup> Despite a number of rapid changes within the Air Force, the quality of CADRE's work had impressed many of its senior commanders.

CADRE still had several helpful hurdles to overcome before final acceptance of its draft for publication. Of the fifteen aforementioned responses from Air Force commands, nine argued that the manual needed greater discussion of their respective area of expertise. For example, Air Force Logistics Command recommended that the manual include "logistics" in its list of the "Principles of War." Similarly, Military Airlift Command recommended the addition of several sentences and paragraphs regarding airlift capabilities.<sup>10</sup> Clearly, the support CADRE had received from the different commands had its price. Intra-service parochialism, while understandable, posed a problem.\*

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\*Professor Holley, in discussing this same issue in his 1974 lecture, added that "if the instinct for self-preservation in holding on to roles and missions is acute even within the Air Force, one can readily understand how much

Lt. Gen. Boyd quickly realized that "Vol. I would soon be the size of Vol. II if we adopted every one's [additions]." <sup>11</sup> The CADRE officers did their best to incorporate the many worthwhile suggestions. By early 1991, they had revised their draft to include seventy percent of those comments the responses had deemed "critical," and ninety percent of those comments the responses had deemed "major." <sup>12</sup>

Dr. Williamson Murray, a vocal critic of the 1979 and 1984 editions of AFM 1-1 (see Chapter 2 of this thesis), proved equally critical of the CADRE draft. In a November 1990 letter to Lt. Gen. Boyd, Murray expressed his dissatisfaction with the quality of writing found in much of Volume I and nearly all of Volume II. He suggested that Volume II have four essays corresponding to the four chapters in Volume I, and volunteered to write the first one. <sup>13</sup>

Col. Drew did not agree with many of Murray's charges. <sup>14</sup> Despite this, Murray submitted his essay. Dr. MacIsaac, one of the civilian advisors to CADRE, reviewed it in January 1991. Dr. MacIsaac found the essay thoroughly inadequate as a substitute for the existing essays. <sup>15</sup> After significant revision by Col. Drew, CADRE felt parts of the essay useful for Volume II. <sup>16</sup>

During January and March 1991, CADRE also finally received comments from XOXID on the draft sent out in

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more intense the struggle becomes at the level of inter-service competition." See "An Enduring Challenge," p. 8.

September 1990. The Air Staff provided numerous suggestions to enhance the clarity and logic of the doctrinal assertions in Volume I and the supporting essays in Volume II.<sup>17</sup>

CADRE's efforts to incorporate these suggestions, and all the others they had received, helped improve the manual, but also delayed its completion.

Operation "Desert Storm" from 16 January to 28 February 1991 provided experience and "historical" evidence to strengthen the manual, requiring further time and effort to incorporate into Volume II.<sup>18</sup> In effect, "Desert Storm" offered a test of many of the doctrinal beliefs CADRE had expressed in the manual. Information on the effects of air power in Iraq did not lead to any editing of the doctrinal tenets in Volume I, but did confirm in the minds of the CADRE officers the validity of much of their work.<sup>19</sup> Numerous articles analyzing the war in the Gulf have since agreed that "Desert Storm" provided proof that CADRE espoused sound doctrine, particularly in its emphasis on operational-level warfare.<sup>20</sup>

With the major revisions completed by late spring 1991, CADRE presented the manual to Lt. Gen. Boyd. For the next several months, little work on the manual took place as Lt. Gen. Boyd, occupied with other duties as AU commander, reviewed it, and added a few thought-provoking sections of his own.<sup>21</sup> This delay allowed for two final developments that

enhanced awareness and acceptance of the manual throughout the Air Force.

First, in September 1991 CADRE began a promotional and educational campaign for its version of AFM 1-1. Earlier critics of Air Force doctrine had called attention to the dearth of officers who seemed to fully understand and appreciate the importance of doctrine (see Chapter 2 of this thesis). To help redress this, Col. Drew directed CADRE's Lt. Col. Micheal A. Kirtland to oversee publicity efforts. As part of this campaign, during the next several months many CADRE officers, including Lt. Gen. Boyd, wrote and submitted articles on doctrine and the new manual to different Air Force journals and magazines.<sup>22</sup>

The second development stemmed from the continuing debate over the listing of "special operations" as an Air Force mission (see Chapter 3 of this thesis). Col. Drew felt that competition over the definition of and funding for different missions had little relevance to doctrinal guidance for commanders in the field. Such discussions and debates, in his opinion, should remain the province of policy- and decision-makers at the Pentagon. Above all, he did not want a basic doctrine manual that, by attempting to provide a finite list of missions, could "compartmentalize" thinking about the employment of air power.<sup>23</sup>

Therefore, in the draft sent to all major commands in September 1990, CADRE broke with the AFM 1-1 tradition of

specifically listing "all" Air Force "missions." The draft contained a discussion of and chart listing four Air Force "roles" ("Aerospace Control," "Force Application," "Force Enhancement," and "Force Support"). Under each role, the chart listed a few "typical missions" (e.g., "Counterair," "Strategic Attack," "Air Refueling," and "Logistics").<sup>24</sup>

As noted, after reviewing this draft several commands pressed for a greater discussion of their command's mission. Special Operations Command (AFSOC), while not in disagreement with the two-volume approach, refused to ". . . endorse this final draft of AFM 1-1 because of the deletion of special operations as an Air Force mission."<sup>25</sup> So adamant about the importance of including special operations as a mission was AFSOC, that they pleaded their case to the national U.S. Special Operations Command (USSCOM). USSCOM took the matter up with the Joint Chiefs of Staff, which included Air Force Chief of Staff Gen. McPeak.<sup>26</sup>

Gen. McPeak effectively ended the debate on 6 January 1992 by directing CADRE to include "special operations" as a "typical mission" under the role of "Force Enhancement." He also ordered the insertion of three brief paragraphs on special operations into Chapter 3 of Volume I.<sup>27</sup> Because of this late addition, these three paragraphs would be the only ones in Volume I without a supporting essay in Volume II.<sup>28</sup>

Despite the direct input of the Chief of Staff, Col. Drew felt that the CADRE manual would continue to meet sig-

nificant resistance if sent to XOXWD for final approval. Lt. Gen. Boyd, now a strong advocate of the new manual, took it straight to Gen. McPeak, by-passing the Air Staff. Col. Drew has since remarked that Lt. Gen. Boyd "will be remembered" for this bold move.<sup>29</sup> It proved fortuitous, since in the second week of February Gen. McPeak authorized the CADRE manual for publication as the new AFM 1-1.<sup>30</sup>

Over the next few weeks preparations were made to begin printing the official manual. Lt. Gen. Boyd offered to have CADRE listed as the "OPR" [Office of Primary Responsibility] in the "supersession block" of the manual's first page. Doing so would have deviated from Air Force regulations assigning responsibility to the Air Staff, which had relieved AU of the responsibility in 1958 (see page 19 of this thesis). Vice Chief of Staff Gen. Michael P.C. Carns decided the matter on 21 February 1992. XOXWD would retain its role as the "OPR." In recognition of the work done at CADRE, two additional lines in the "supersession block" would credit Col. Drew as the "writer" and Mr. John Jordan, another member of CADRE, as the "editor."<sup>31</sup>

With this decision, the Air Force finally had a new basic doctrine manual, officially published in March 1992. After eight years of work, the 1984 edition had been replaced. It had required persistent efforts and long hours of research and writing by Col. Drew and the many other

officers involved in the project, culminating with the efforts of Lt. Gen. Boyd to assure publication.

But none of this work could have taken place had ARI and CADRE not existed. As Dr. Futrell, Lt. Col. Benton, and Lt. Gen. Boyd all commented, CADRE had an atmosphere conducive to objective historical analysis. CADRE had also benefitted from a period in Air Force history that recognized the merits of the close scrutiny of past successes and failures, and a period that saw the publication of numerous articles and books critical of air power and doctrine. Finally, the dedication of the officers involved, especially Lt. Gen. Boyd and Col. Drew, reveal that individual personalities had as much, if not more, to do with guiding the manual's development as did organization and timing.

The combination of key people, the right organization, and a moment in time conducive to change, made a remarkable difference. For the first time in over thirty years, the Air University had authored AFM 1-1. For the first time ever, AFM 1-1 consisted of two volumes. But beyond these obvious differences, what separated the 1992 edition from previous editions?

Volume I of this new manual provides a concise, twenty-page presentation of Air Force basic doctrine. Its four chapters logically flow from discussing "War and the American Military," to "The Nature of Aerospace Power" and "Employing Aerospace Forces: The Operational Art," and

finally to "Preparing the Air Force for War."<sup>32</sup> This "building block" approach seems to provide the kind of "frame of reference" for understanding doctrine that Dr. Murray referred to in his earlier criticism of the 1979 edition of AFM 1-1 (see page 48 of this thesis).

In addition, several new sections challenge airmen to re-evaluate many traditional air power concepts. The aforementioned four "roles" allow personnel to understand better just how their daily duties relate to the broader role of the Air Force in national security.<sup>33</sup> Another section highlights "important ways aerospace forces differ from surface forces" by listing seven "Tenets of Aerospace Power."<sup>34</sup> Lt. Gen. Boyd's personal addition, a section entitled "Airmindedness," presents his reassessment of the venerable principles of war from an airman's perspective in an attempt to challenge the two-dimensional nature of military thinking based on surface warfare.<sup>35</sup>

The results of critical analysis of military theory and history by CADRE are also evident throughout the manual. Chapter 1 describes the nature of war, its role as "an instrument of political policy," and its inherent uncertainty due to "fog, friction, and chance."<sup>36</sup> According to Col. Bingham, "previous manuals never even acknowledged the existence of danger, exertion, and chance and the 1984 manual made only a single passing mention of uncertainty."<sup>37</sup>

In addressing these topics, the 1992 manual responds to many of the criticisms Col. Fabyanic raised in his 1984 letter to the Assistant Vice Chief of Staff, as well as criticisms raised in Lt. Col. Watts' book The Foundations of U.S. Air Doctrine (see Chapter 2 of this thesis).

The new manual further reflects a broader view of conflict than that found in previous manuals by noting that "a significant domain of military activities exists below the level of war." Such remarks help dispel questionable beliefs that preparation for general war will always deter limited war. The statement "American military forces may be called on to perform specific peacekeeping functions in resolving regional conflicts" recognizes the different levels of conflict the Air Force often responds to in support of national security objectives.<sup>38</sup>

For the first time, basic doctrine also includes a discussion of war at the operational-level, the level where a commander must link strategic goals with tactical actions to achieve campaign objectives.<sup>39</sup> Chapter 3, the longest in Volume 1, emphasizes this by providing commanders with guidance for the "orchestration of aerospace missions into an effective campaign in the face of peculiar and often rapidly changing situations. . . ."<sup>40</sup> By providing a "campaign perspective," the new manual enhances a commander's understanding of the synergy that should exist between air, land, and sea forces in a theater of operations.<sup>41</sup> It

also answers the call for operational-level thinking raised by Col. Krieger in 1984 (see page of 55 of this thesis).

The newest, and perhaps, most important aspect of the manual, though, remains its recognition of the limitations of military operations in general, and air power in particular. Chapter 1 notes that "overcoming hostile will can involve military operations but primarily relies on other instruments of policy." The military is the instrument of power (policy) best suited to attack the ability to resist" [emphasis added].<sup>42</sup> More specifically, unlike previous manuals, this one acknowledges that close air support can lead to casualties among "friendly" forces.<sup>43</sup> By discussing what air power can do, as well as what it cannot, CADRE has responded to criticisms raised by Maj. Ehrhart in 1980 and Col. Fabyanic in 1984 (see Chapter 2 of this thesis).

Certainly the clearest example of a recognition of air power's limitations, and the one most often focused upon in this thesis, appears during the paragraphs describing "strategic attacks." The manual provides an honest appraisal of the difficulties involved in, and merits of, attacks against "less-developed states" where "transportation and communication nets may be primitive or extremely resilient, and enemy command elements may be very difficult to target." "In such cases," AFM 1-1 advises, "strategic attacks may not be as effective as against industrialized

nations, but nonetheless will have an impact on war sustaining capabilities."<sup>44</sup>

The list of typical targets for strategic attack includes "command elements, war production assets, and supporting infrastructure (for example, energy, transportation, and communication assets)." Yet, instead of expressing the belief that attacks against such targets "generate internal strife," the manual states that such attacks should ". . . affect the enemy's capability and possibly his will to wage war"[emphasis added].<sup>45</sup> Instead of directing commanders to seek ways to "exploit the psychological impact," Air Force doctrine now warns that "a demoralizing psychological impact can be an elusive objective."<sup>46</sup>

This recognition of the limits of air power, and strategic bombing, across the spectrum of conflict stems from an objective analysis of available historical evidence. Critics of doctrine can now review both the evidence used and the analysis performed in deriving doctrine. Indeed, the fundamental difference between this manual and all previous ones rests in the twenty-five essays in Volume II, specifically ". . .written to support, expand, or illustrate doctrinal assertions found in Volume I."<sup>47</sup>

These essays, averaging only ten pages in length, provide short, readable explanations of doctrinal beliefs and their sources. Some 600 footnotes reveal the variety

and quality of sources used.\* Cited works on military theory range from Clausewitz's classic On War (cited 42 times), to works by Sun Tzu, Col. Harry Summers (USA, Ret.), Morris Janowitz, Edward Luttwak, Bernard Brodie, Herman Kahn, Alfred Thayer Mahan, and Ardant du Picq. Books by Graham T. Allison, Barry Buzan, Morton Halperin, K.J. Holsti, Sam C. Sarkesian, Thomas Schelling, and W.W. Rostow provide information from the field of political science. A wide array of general works of military history are also cited, including works by Thucydides, Paul Kennedy, John Keegan, Barabara Tuchman, Michael Howard, Martin van Creveld, Guenter Lewy, J.F.C. Fuller, B.H. Liddell-Hart, Theodore Ropp, Russell Weigley, Col. Drew and Donald Snow.<sup>48</sup>

Well known works on air power frequently cited include those by Dr. Futrell, Professor Holley, Dr. Clodfelter (cited nine times, mostly in the essay on strategic attack), Dr. Murray, Lt. Col. Watts, Col. Warden (cited 13 times, mostly in the discussion of operational art), Lee Kennett, Maj. Gen. Haywood S. Hansell, Max Hastings, Kenneth Werrell, Gen. George Kenney, Richard Hallion, R.J. Overy, Guilio Douhet, Billy Mitchell, Alexander de Seversky, Wesley Craven and James Cate. Numerous military publications, joint doctrine manuals, doctrine manuals from the U.S. Army, and

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\*Several of the works cited in the manual had also been part of Dr. MacIsaac's ARI required reading list (see page 88 of this thesis). The inclusion of these works provides further evidence of the role of historical study in the development of the manual.

the USSBS are also frequently cited. In addition, several essays rely on a variety of works on low-intensity conflict, logistics in different military campaigns throughout history, and military operations in space. Finally, historical examples used in the text reflect a broad review of military history, and draw evidence from the Roman Empire, World War I, World War II, the German General Staff, Korea, Vietnam, the Yom Kippur War, the Iran-Iraq War, and Operation "Desert Storm."<sup>49</sup>

The essay written specifically to support Volume I's sections on "strategic attack" provides a frank assesment of the history of strategic bombing. The results of objective, critical analysis of history can be seen in the following:

Thus, mere destruction of a series of targets, especially when such destruction requires great amounts of time, has not prevented an enemy from waging war or compelled surrender. Also, strategic attack has rarely affected enemy morale to the degree anticipated by early air power enthusiasts. The absence of a developed industry to target, the presence of sanctuaries, enemy acces to remote sources of supply, or an enemy commitment to total war can greatly degrade the effectiveness of strategic attacks.<sup>50</sup>

The footnote for this paragraph bluntly adds that "strategic attack just does not reliably break enemy will," citing the continued resistance of Germany and Japan during World War II as evidence.<sup>51</sup> After forty years, Air Force basic doctrine has completely reversed its appraisal of strategic bombing, and placed its experience in World War II and other conflicts into the broader context allowed by rigorous historical analysis.

This essay, and the others in Volume II, reveal a new approach to the formulation and articulation of doctrine. Together, the two volumes provide a direct response to the many published criticisms of Air Force doctrine and repeated calls for objective historical analysis and "hard evidence" in support of doctrinal assertions (see Chapter 2 of this thesis). In rigorously analyzing the past, as many suggested, CADRE has produced a manual that reflects, rather than contradicts, air power history.

Two aspects of Operation "Desert Storm" also reveal how the 1992 edition of AFM 1-1 reflects recent experience more accurately than previous manuals would have done. The first involves the military objectives of "Desert Storm." The second stems from the air and ground campaigns that achieved those objectives.

On 5 August 1990, President George Bush established the following military objectives for U.S. forces sent to the Persian Gulf: 1) The "neutralization" of Iraq's national command structure; 2) The expulsion of Iraqi forces from Kuwait and the destruction of Iraq's regional offensive capabilities; 3) The destruction of nuclear, biological, and chemical weapons; and 4) The restoration of the Kuwaiti government.<sup>52</sup> As Lt. Col. Cichowski remarked in his thesis for SAAS, "notice that all deal with Iraq's capability to resist and not its will."<sup>53</sup> Military force has proven most

successful when used to destroy an enemy's capabilities, a fact acknowledged by both President Bush and AFM 1-1.

The new manual's more objective discussion of the effectiveness of strategic bombing also helps place the importance of the "Desert Storm" air and ground campaigns into perspective. Military historian, Dr. Michael A. Palmer convincingly argues that ". . .the Desert Storm theater campaign plan inevitably led to the development of a plan that sought the defeat of Saddam through the application of air power"<sup>54</sup> He also maintains that Hussein's certain awareness of ". . . the impending Allied ground campaign more than likely was a factor in [his] calculations. Thus, even if he had yielded unconditionally before the start of the ground war, one could not attribute the victory entirely to air power."<sup>55</sup>

The facts that Hussein did not surrender and that a ground campaign did take place mean that air power, independent of other considerations, did not defeat him. The facts that he retains power and that Iraq retains its hatred of the U.S. mean that air power did not destroy the enemy's will. Had AFM 1-1 clung to its traditional unsubstantiated assertions that strategic attack could independently and completely destroy an enemy's will or "generate internal strife," "Desert Storm" would have stood as yet another example of air power's failure to fulfill that specific doctrinal assertion.

Sound doctrine derived from objective historical analysis of experience should have obvious importance to the future of the Air Force. A clear understanding of the capabilities and limits of air power will help commanders decide how best to employ aerospace forces to achieve national security objectives. It will also provide justification for increased appropriations to find ways to overcome those limits. With such guidance, the Air Force should avoid the "setup" Dr. Tilford described as having occurred during the 1950s and 1960s, and avoid the criticisms levelled against past manuals, thus allowing the service to concentrate on more demanding, future problems.

CADRE's work establishes a precedent that future manuals should emulate. Since irrelevant and outdated doctrine holds little value to Air Force officers, CADRE has already developed a plan to continually, and consistently, revise both volumes. In December 1992 CADRE asked all major commands to recommend essays they felt needed revising first. By January 1993 work had begun on revising four essays, with four more planned for each year thereafter. CADRE has scheduled the revision of Volume I for March 1995, and every three years after that.<sup>56</sup> Such a review process sharply contrasts with the erratic manner in which the Air Force published previous manuals (see Chapter 1 of this thesis), and should insure that the merits of this manual remain a part of Air Force doctrine.

Clearly, the Air Force has struggled with doctrine throughout its history. The flaws in previous editions of AFM 1-1 attest to this struggle. However, the new AFM 1-1 redresses many of these flaws, and should continue to do so. The work on the manual by the officers at CADRE during the 1980s and 1990s stands as an excellent example of how to meet the "enduring challenge."

## Notes to Chapter 5

<sup>1</sup>Donald B. Rice, "Air Power Ascendancy Based on 3 Post-Cold War Factors," Air Force Times, 12 October 1992.

<sup>2</sup>See various notes on drafts in ARI HF 1990. The ARI files also have copies of Brig. Gen. Link's comments, and CADRE's reactions. Also, Drew interview, 14 January 1993.

<sup>3</sup>"USAF Leaders Through the Years," Air Force Magazine 75 (May 1992): 43.

<sup>4</sup>Drew, "The Reformation of Air Force Doctrine," p. 8.

<sup>5</sup>Kuehl, "Issue Paper on Status of AFM 1-1."

<sup>6</sup>Hallion, pp. 144-46.

<sup>7</sup>"Register of Inputs to AFM 1-1," December 1990; in ARI HF 1990.

<sup>8</sup>Author's interpretation of various official letters and messages from different major commands and organizations to CADRE; all in ARI HF 1990.

<sup>9</sup>Note from Gen. McPeak to AU/CC, 9 November 1990; in ARI HF 1990.

<sup>10</sup>Lt. Col. Bingham, "Summary of Critical and Major Comments on Draft of AFM 1-1 with Proposed Responses," 25 February 1991; in ARI HF 1991. See also various official letters and messages from different major commands and organizations to CADRE; all in ARI HF 1990.

<sup>11</sup>Note from Lt. Gen. Boyd to CADRE. Attached to letter from Headquarters Military Airlift Command to AU/CC, 5 November 1990; in ARI HF 1990.

<sup>12</sup>Author's calculation based on Col. Bingham's "Summary" cited in fn. #10.

<sup>13</sup>Letter from Williamson Murray to Lt. Gen. Boyd, 5 November 1990; in ARI HF 1990.

<sup>14</sup>Col. Drew, "Memo For the Record: Dr. Williamson Murray's AFM 1-1 Inputs," 17 December 1990; in ARI HF 1990.

<sup>15</sup>Dr. MacIsaac, "Thots [sic] on Wick's 'Nature of War' Essay," 22 January 1991; in ARI HF 1991.

<sup>16</sup>Col. Drew, "Item of Interest: Murray's Essay for Vol. II," 23 May 1991; in ARI HF 1991.

<sup>17</sup>Lt. Col. Robert D. Coffman, "Memo for Colonel Sams and Col. Drew," 11 January 1991. Also, Lt. Col. Kuehl, "Air Staff Comments on Draft AFM 1-1," 13 March 1991, Fax transmission to Col. Drew; both in ARI HF 1991.

<sup>18</sup>Drew, "The Reformation of Air Force Doctrine," p. 9. See Hallion, pp. 163-237, for a discussion of air power in Operation "Desert Storm."

<sup>19</sup>Ibid. Also, Drew interviews, 10 October 1992 and 14 January 1993.

<sup>20</sup>See the articles by Bingham (1991), Clodfelter (1991), Drew ("Desert Storm as a Symbol," 1992), Gropman (1991), New (1991), Rice (1992), Summers (1992), and Sweetman (1991), and Hallion's book.

<sup>21</sup>Drew, "The Reformation of Air Force Doctrine," p. 9.

<sup>22</sup>Memo for Lt. Col. Bingham from Lt. Col. Kirtland, "AFM 1-1 Education Program," 13 January 1992; in ARI HF 1992.

<sup>23</sup>Drew interviews, 10 October 1992 and 14 January 1993.

<sup>24</sup>AFM 1-1 (Draft, August 1990), pp. 6-7; in ARI HF 1990.

<sup>25</sup>Letter from Headquarters Air Force Special Operations Command to AUCADRE/RI, 5 November 1990; in ARI HF 1990.

<sup>26</sup>All Drew, Furr, and Tretler interviews.

<sup>27</sup>Letter from Brig. Gen. Patrick K. Gamble to Lt. Gen. Boyd, 6 January 1992, with Gen. McPeak's changes attached; in ARI HF 1992.

<sup>28</sup>See AFM 1-1 (1992), Vol. I, p. 14. This excludes the short introductory paragraph at the beginning of each chapter.

<sup>29</sup>Drew interview, 10 October 1992.

<sup>30</sup>Memo for Col. Sharpe, 13 February 1992; in ARI HF 1992.

<sup>31</sup>Letter from Gen. Michael P.C. Carns to Lt. Gen. Boyd, 21 February 1992; in ARI HF 1992. Ironically, Lt. Col. Westenhoff is listed as the XOXWD POC [point of contact] since he was assigned there after CADRE.

<sup>32</sup>AFM 1-1 (1992), Vol. I, p. 1.

<sup>33</sup>Author's interpretation of the utility of the new list. The author had benefitted from his interview with Lt. Col. Westenhoff. See AFM 1-1 (1992), Vol. I, pp. 6-7, for discussion and chart.

<sup>34</sup>AFM 1-1 (1992), Vol. I, p. 5.

<sup>35</sup>Drew, "The Reformation of Air Force Doctrine," p. 9. Also, AFM 1-1 (1992), Vol. I, p. 15.

<sup>36</sup>AFM 1-1 (1992), Vol. I, pp. 1-2.

<sup>37</sup>Col. Price T. Bingham, "A New Doctrine for a New World Order," 21 February 1992, p. 2; Tab 3 of "Item of Interest: AFM 1-1 Publicity Efforts."

<sup>38</sup>AFM 1-1 (1992), Vol. I, p. 3. This section bears particular relevance to the present-day operations in Somalia and Bosnia.

<sup>39</sup>Bingham, "A New Doctrine for a New World Order," p. 3. Also AFM 1-1 (1992), Vol. I, pp. 2-3, and Vol. II, pp. 296-97; and Cichowski, p. 27 and fn. #115.

<sup>40</sup>AFM 1-1 (1992), Vol. I, p. 9.

<sup>41</sup>Bingham, "A New Doctrine for a New World Order," pp. 5-6. Also, Cichowski, pp. 27-35.

<sup>42</sup>AFM 1-1 (1992), Vol. I, p. 1.

<sup>43</sup>Ibid., p. 13. Judging by the incidents of "friendly fire" during Operation "Desert Storm," this is a continuing problem; see Hallion, pp. 222-23.

<sup>44</sup>Ibid., p. 12.

<sup>45</sup>Ibid.

<sup>46</sup>Ibid., p. 13.

<sup>47</sup>AFM 1-1 (1992), Vol. II, p. v. The author recognizes the importance of the "Overview" to understanding better Air Force doctrine. However, the author has not included it in the total number of essays since it does not support a specific doctrinal assertion.

<sup>48</sup>Author's review of footnotes in AFM 1-1 (1992), Vol. II.

<sup>49</sup>Ibid.

<sup>50</sup>Ibid., p. 148.

<sup>51</sup>Ibid., p. 154, fn. #7.

<sup>52</sup>Dick Cheney, Conduct of the Persian Gulf Conflict: An Interim Report to Congress (Washington, D.C.: Department of Defense, July 1991), pp. 3-1-3-3; as quoted in Cichowski, p. 33.

<sup>53</sup>Cichowski, p. 33.

<sup>54</sup>Michael A. Palmer, "The Storm in the Air: One Plan, Two Air Wars?" Air Power History 39 (Winter 1992): 24.

<sup>55</sup>Ibid., p. 31.

<sup>56</sup>Lt. Col. Furr, "Staff Summary Sheet: AFM 1-1 Revision Plan," 16 December 1992; in ARI HF 1992. Also, Furr interview, 20 January 1993.

### Conclusion

"If our tasks in the U.S. Air Force are to prepare for war, deter it if possible, and fight it successfully across a spectrum of conflict, then we must understand war, make war the basis for our doctrine, and teach war to our officers. That we have not done so in the past is abundantly clear, prompting us to recall again Bernard Brodie's comment that 'Soldiers usually are close students of tactics, but only rarely are they students of strategy and practically never of war!' Brodie is right, of course, but we have an opportunity to prove him wrong." -- Col. Thomas A. Fabyanic, 1986.<sup>1</sup>

The first part of this thesis reviewed successive basic doctrine manuals in order to demonstrate the predominance in Air Force thinking, doctrine, and planning of the idea that strategic bombing could independently and completely destroy an enemy's will. Lt. Col. Cichowski has provided an excellent summary of many of the ideas expressed by this thesis in the following:

The capabilities of strategic bombing were overrated and the limitations underestimated. While a significant factor, airpower was not the dominant force in World War II, and a doctrine emphasizing that airpower alone could win wars was incorrect. Despite these facts, Air Force doctrine remained unchanged. Post-war doctrinal manuals merely replaced bombing with the massive damage brought about by air and space delivered atomic weapons. The U.S. concentrated on strategic nuclear attacks and all but denied the possibilities of war below this threshold.<sup>2</sup>

The primacy of strategic bombing and atomic weapons did not foster an atmosphere conducive to an objective analysis of experience. Air power history only had value if it could be interpreted to support dogma ingrained into airmen since the days of the Air Corps Tactical School.

Lacking appropriate officers and organizations for the study of air power history, the Air Force based its doctrine for decades on a narrow interpretation of past experiences. As an organization, it did not seem to realize that while history does not mandate solutions, it can provide some guidelines.<sup>3</sup> Consequently, doctrine failed to incorporate many important air power lessons, lessons that revealed limits to the capabilities of strategic bombing.

After Vietnam, many officers and historians questioned and criticized Air Force doctrine. The kind of self-criticism that so often results from a traumatic experience led to many insightful research studies and articles. The 1984 edition of AFM 1-1, however, did not respond to all of the doctrinal criticisms, espousing many "traditional" and unsubstantiated beliefs.

As the influence of SAC waned during the 1980s, a variety of factors combined to make the service more accepting of challenges to its traditional beliefs. Several senior officers realized the benefits of studying military history. The creation of ARI, and then CADRE, provided the Air Force with formal organizations devoted to air power and

doctrinal research and study. ARI and CADRE also provided a forum for the circulation of new ideas and new interpretations of the history of air power. Officers who recognized the importance of the critical analysis of history shared, and published, their ideas.

With the new organizations and new ideas came the impetus for change. As Oxford historian James Burke has argued, innovation often requires someone to come along at the right time and put all the "bits and pieces" together.<sup>4</sup> Col. Drew, and CADRE, did just that, requesting and winning approval to try a new approach to doctrine. After several years of research, writing, and re-writing, CADRE produced an Air Force basic doctrine manual that articulated doctrine derived from historical evidence rather than unsubstantiated dogma. This new manual, and new approach to doctrine, required the passage of enough time to allow a renaissance in the Air Force view of the value of historical study, the creation of organizations appropriate for such study, and the work of numerous officers willing to challenge institutional beliefs.

Lt. Col. Cichowski has also stated that "this first documented Air Force doctrine should stir debates and force a reexamination of aerospace power's role in all of warfare's mediums."<sup>5</sup> Indeed, several sources of criticism have already emerged. Col. Drew himself would welcome criticism of what he considers an inadequate amount of material on

low-intensity conflict.<sup>6</sup> Lt. Col. William F. Furr, the present Chief of the Current Doctrine Division at CADRE, has voiced criticism of several sections in the manual that he feels need improvement.<sup>7</sup> An article and a letter in the winter 1992 edition of Airpower Journal further indicate that the new manual has quickly received the attention it deserves, and has stirred debate necessary for continued criticism and improvement.<sup>8</sup>

Col. Tretler, who did exemplary work on the Air Staff version of AFM 1-1, also considers the new manual to have significant flaws. He maintains that Volume I, in trying to provide a concise presentation of doctrine, inadequately addresses important topics. Such a format reinforces "checklist" thinking rather than in-depth study. He finds the manual's attempt to re-conceptualize Air Force missions as four roles "more confusing rather than clarifying." Volume II's length, according to Col. Tretler, will deter many officers from reading it, thus limiting its value. Furthermore, the uneven quality of the writing from essay to essay mars the volume as a whole.<sup>9</sup>

These criticisms arguably contain a great deal of validity. The essays and footnotes in Volume II of AFM 1-1 imply that CADRE made a broader, more scholarly study of history in writing its manual than XOXID did in writing its version. Yet, there seems little impetus for officers who

lack the time or inclination to study history to actually read beyond Volume I.

Col. Tretler's more narrative style and incorporation of historical examples directly into the text might have alleviated this problem. This question deserves careful study and consideration. The Air Force, at some future time, might decide that a one-volume format has greater merit than the current format. The CADRE format and the return of doctrine to AU might serve only as examples of short-lived paradigms, stillborn innovations within a larger conservative organization.

"The pertinent observation here," as Dr. Futrell has written, "is that sound military planning must be based on a study and appreciation of war in its broadest aspects, not only in modern times but throughout history."<sup>10</sup> Similarly, the pertinent observation of this thesis is that doctrine must stem from objective and critical analysis of history. Those who develop doctrine should not rely solely on perceived lessons from a narrow base of experience. If the Air Force desires to prepare for war, deter it, and, if necessary, fight across the spectrum of conflict, to paraphrase Col. Fabyanic, then those who formulate its doctrine need to study the spectrum of history. Ensuring that such study continues should be the basis for any decision on the number of volumes that should comprise AFM 1-1.

Obstacles to the formulation of sound doctrine, though, remain. Dr. Tilford feels that some degree of anti-intellectualism still exists within the Air Force.<sup>11</sup> Col. Westenhoff has experienced this first-hand. Upon his return to the United States in August 1988, after five months as an air attache in Iraq, he offered to teach a course on the Iran-Iraq war. Both AWC and ACSC at AU declined his offer, citing lack of interest as the reason.<sup>12</sup> Scores of potential students undoubtedly took part in Operations "Desert Shield" and "Desert Storm" within two and one-half years. Lack of interest in the study of the military campaigns of a potential adversary seems inexcusable, and could prove costly in future military operations.

Even if the Air Force can foster a greater interest in military history and doctrine, it will still have to find the combination of organizations and personnel that best contributes to the development of sound doctrine. "As the past amply demonstrated," asserts a recent AWC study, "the Air Force never found the 'right' organization, the 'right' people, and the 'right' location permanently."<sup>13</sup> For the 1990s, the problem seems to stem from the existence of too many "right" organizations.

The review of the history of Air Force doctrine in the first part of this thesis revealed that the Air Staff had considerable difficulty developing sound doctrine. Efforts by Col. Gropman, and more recently by Professor Holley

himself,<sup>14</sup> have provided the Air Staff with many exceptional officers. Col. Tretler's version of AFM 1-1 proves that doctrine based on an objective analysis of history can be written despite the difficulties of introducing change within the "Washington milieu."

Within a year of Lt. Gen. Adams' cancellation of the XOXWD version, however, the Air Force officially designated CADRE as the Primary Review Authority for AFM 1-1. XOXWD now has the responsibility to "manage the Air Force doctrine program." CADRE now has the responsibility to "develop and maintain" AFM 1-1, a task they are presently performing (see page 127 of this thesis).<sup>15</sup>

CADRE has demonstrated its ability to foster creative thinking and rigorous analysis. It has also shown that it responds to input and criticism from the major commands responsible for Air Force operations. CADRE, along with the other organizations and research facilities at Maxwell AFB, provide the Air University with excellent qualifications to serve as a center for all Air Force doctrine. Yet, like the Air Staff, AU has a checkered past. According to Professor Holley, AU's forerunner, the Air Corps Tactical School, ". . . was perhaps too much of an academic mountain top. . . ." <sup>16</sup> The faulty doctrine developed at ACTS cost many lives, perhaps making some airmen leary of giving AU too much responsibility for doctrine.

Professor Holley had the foresight to suggest a compromise during his 1974 lecture, remarking that:

Undoubtedly some sort of arrangement can be worked out with the schools at the Air University to foster the creativity and detachment of the mountain top while at the same time retaining the undeniable stimulation of the marketplace afforded by the daily battles on the Air Staff.<sup>17</sup>

After twenty years the Air Force seems to have finally heeded his suggestion. In 1993 the Air Force officially established a doctrine center at Langley AFB, VA. Its proximity to the organizations responsible for the development of Army, Navy, and joint U.S. military doctrine affords it obvious advantages.<sup>18</sup> Exactly how the Air Force will develop its doctrine in the future, though, and integrate the efforts of three separate organizations associated with doctrine, remains to be seen.

What should already be apparent, though, are the qualifications necessary for officers responsible for doctrine. Sociologist Morris Janowitz has discussed the characteristics and merits of "intellectual officers."<sup>19</sup> Such officers, adds one Air Force lieutenant colonel, "can critically analyze things such as air campaign plans or doctrine."<sup>20</sup> An AWC study further asserts that successful doctrine requires three types of individuals working closely together: "those who understand military history, those who know military systems, and those who represent each major air command."<sup>21</sup>

The team of officers at CADRE responsible for the 1992 edition of AFM 1-1 had all these qualifications. Their work will stand as an excellent example of how to meet the "enduring challenge." If the Air Force can improve on it, and continue to derive its doctrine from rigorous analysis of experience, then, to paraphrase Professor Holley, the whole service will benefit.

Hopefully. . .

"Officers no longer look upon history as a kind of dust heap. . . . They go to it as a mine of experience where alone the gold is to be found, from which right doctrine -- the soul of war -- can be built up." -- Sir Julian Corbett, early twentieth century naval historian and theorist.<sup>22</sup>

## Notes to Conclusion

<sup>1</sup>Fabyanic, "War, Doctrine, and the Air War College," p. 26.

<sup>2</sup>Cichowski, pp. 57-58.

<sup>3</sup>Comments by Professor Joseph Patrick Hobbs on draft of this thesis, 2 April 1993.

<sup>4</sup>James Burke, "Connections," BBC Television Productions, 1978.

<sup>5</sup>Cichowski, p. 59.

<sup>6</sup>Drew interview, 10 October 1992.

<sup>7</sup>Furr interview, 9 October 1992.

<sup>8</sup>See Lt. Col. Robert N. Boudreau, "The New AFM 1-1: Shortfall in Doctrine?" (pp. 37-45) and Lt. Col. Jeff Kohler, "Where is Our Doctrine Going" (pp. 74-75), both in Airpower Journal 6 (Winter 1992).

<sup>9</sup>Tretler interview, 25 February 1992.

<sup>10</sup>Robert F. Futrell, "The Influence of the Air Power Concept on Air Force Planning, 1945-1962," in Borowski, p. 269.

<sup>11</sup>Interview with Dr. Tilford, 22 January 1993.

<sup>12</sup>Westenhoff interview.

<sup>13</sup>Col. James E. Andrews, et al., "U.S. Air Force Doctrine: A Perspective" (Maxwell AFB, AL: Research Study for AWC, May 1990), p. 91.

<sup>14</sup>In the early 1980s, Professor Holley established an informal program whereby selected officers from the Air Force Academy's Department of History would do doctoral work under Holley, followed by assignment to the Air Staff. To date, four officers have participated. Holley interview.

<sup>15</sup>Headquarters, Department of the Air Force, Air Force Regulation 1-2, "Air Force Basic Doctrine: Assignment of Responsibilities for Development of Aerospace Doctrine," 10 September 1990, pp. 1-6.

<sup>16</sup>Holley, "An Enduring Challenge," p. 11.

<sup>17</sup>Ibid.

<sup>18</sup>Maj. Jason B. Barlow, "The 'D' Word: Doctrine Simply Is How Best to Use Power," Air Force Times, 22 March 1993.

<sup>19</sup>See Morris Janowitz, The Professional Soldier: A Social and Political Portrait (New York: The Free Press, 1971), especially last chapter.

<sup>20</sup>Kohler, p. 75.

<sup>21</sup>Andrews, et al., p. 94.

<sup>22</sup>Military Air Power: The CADRE Digest of Air Power Opinions and Thoughts (Maxwell AFB, AL: Air University Press, 1990), p. 11.

### Select Bibliography

Numerous interviews and material in ARI and XOXD files provided the bulk of the primary source material used in the completion of this thesis, particularly Chapters 3, 4, and 5. USAF basic doctrine manuals also served as primary sources. The many books and articles cited in Chapters 2 and 3 were used both as primary sources (to evidence the evolution of doctrinal criticism within the Air Force) and as secondary sources (to provide analysis and information). Therefore, these have been categorized as "books" and "articles" rather than as "primary" and "secondary" source material. The research reports and studies, many of which were written for the different AU schools, have been separately listed for the same reason.

#### Primary Source Material:

Airpower Research Institute. AFM 1-1 Historical Files, 1984-1992. Maxwell AFB, AL.

Benton, Jeffrey C., Colonel, USAF. Air War College, Maxwell AFB, AL. Interview, 20 January 1993.

Bingham, Price T., Lieutenant Colonel, USAF (Ret.). Maxwell AFB, AL. Telephone Interview, 8 December 1992. Interview, 19 January 1993.

Clark, Richard B., Lieutenant Colonel, USAF. Editor, Airpower Journal, Center for Aerospace Doctrine Research and Education, Maxwell AFB, AL. Interview, 20 January 1993.

Clodfelter, Mark, Major, USAF. School of Advanced Airpower Studies, Maxwell AFB, AL. Telephone Interview, 8 January 1993.

Doctrine Division (XOXD). Headquarters, USAF. Pentagon, D.C. AFM 1-1 Files.

Donnini, Frank P., Lieutenant Colonel, USAF. Headquarters, Air Combat Command, Langley AFB, VA. Telephone Interview, 10 February 1993.

Drew, Dennis M., Colonel, USAF (Ret.). School of Advanced Airpower Studies, Maxwell AFB, AL. Interview, 10 October 1992; Telephone Interview, 8 January 1993; Interview, 19 January 1993.

Furr, William F., Lieutenant Colonel, USAF. Airpower Research Institute, Maxwell AFB, AL. Interview, 9 October 1992; Interview, 20 January 1993.

Holley, I.B., Jr. "An Enduring Challenge: The Problem of Air Force Doctrine." Sixteenth Harmon Memorial Lecture. USAF Academy, CO: 1974.

-----. Duke University, Durham, NC. Interview, 24 March 1993.

Kohn, Richard H. University of North Carolina, Chapel Hill, NC. Telephone Interviews, 15 January 1993, and 1 March 1993.

Richardson, Hugh O. "History of Air University, Center for Aerospace Doctrine, Research, and Education (CADRE): 3 January-31 December 1983." Maxwell AFB, AL: Air University.

Tilford, Earl H., Major, USAF (Ret.). Air Command and Staff College, Maxwell AFB, AL. Interview, 22 January 1993.

Tretler, David, Colonel, USAF. National War College, Fort McNair, D.C. Interview, 25 February 1993; telephone interview, 12 March 1993.

Westenhoff, Charles M., Lieutenant Colonel, USAF. Doctrine Division, USAF Headquarters (HQ USAF/XOXD), Pentagon, D.C. Interview, 24 February 1993.

#### USAF Manuals and Regulations:

Department of the Air Force, Headquarters. Air Force Manual 1-1. Basic Aerospace Doctrine of the United States Air Force. 2 vols. March 1992.

Department of the Air Force, Headquarters. Air Force Manual 1-1. Basic Aerospace Doctrine of the United States Air Force. 16 March 1984.

Department of the Air Force, Headquarters. Air Force Manual 1-1. Functions and Basic Doctrine of the United States Air Force. 14 February 1979.

Department of the Air Force, Headquarters. Air Force Manual 1-1. United States Air Force Basic Doctrine. 15 January 1975.

Department of the Air Force, Headquarters. Air Force Manual 1-1. United States Air Force Basic Doctrine. 28 September 1971.

Department of the Air Force, Headquarters. Air Force Manual  
1-1. United States Air Force Basic Doctrine.  
14 August 1964.

Department of the Air Force, Headquarters. Air Force Manual  
1-2. United States Air Force Basic Doctrine.  
1 December 1959.

Department of the Air Force, Headquarters. Air Force Manual  
1-2. United States Air Force Basic Doctrine.  
1 April 1955.

Department of the Air Force, Headquarters. Air Force Manual  
1-2. United States Air Force Basic Doctrine.  
1 April 1954.

Department of the Air Force, Headquarters. Air Force Manual  
1-2. United States Air Force Basic Doctrine.  
1 April 1953.

Department of the Air Force, Headquarters, Air Force  
Regulation 1-2. "Air Force Basic Doctrine: Assignment  
of Responsibilities for the Development of Aerospace  
Doctrine." 10 September 1990.

Department of the Air Force, Headquarters, Deputy Chief of  
Staff, Plans and Operations. JFACC Primer.  
August 1992.

#### Books:

Armitage, M.J., and Mason, R.A., eds. Air Power in the  
Nuclear Age. 2d. ed. Urbana, IL: University of  
Illinois Press, 1985.

Beer, Michael. Organization Change and Development.  
Glenview, IL: Scott, Foresman and Company, 1980.

Borowski, Harry R., Lieutenant Colonel, USAF., ed. Military  
Planning in the Twentieth Century: The Proceedings of  
the Eleventh Military History Symposium, 10-12 October  
1984. Washington, D.C.: Office of Air Force History,  
1986.

Clodfelter, Mark. The Limits of Air Power: The American  
Bombing of North Vietnam. New York: The Free Press,  
1989.

Davis, Richard L., and Donninni, Frank P., Lieutenant  
Colonels, USAF, eds. Professional Military Education

for Air Force Officers: Comments and Criticisms.  
Maxwell AFB, AL: Air University Press, June 1991.

Douhet, Giulio. The Command of the Air. Edited by  
Richard H. Kohn and Joseph P. Harahan. Washington,  
D.C.: Office of Air Force History, 1983.

Drew, Dennis M., Colonel, USAF, and Snow, Donald M., Dr.  
The Eagle's Talons: The American Experience at War.  
Maxwell AFB, AL: Air University Press, December 1988.

-----. Making Strategy: An Introduction to National  
Security Processes and Problems. Maxwell AFB, AL:  
Air University Press, August 1988.

Emme, Eugene M. The Impact of Air Power. New York: D.  
Van Nostrand Co., Inc., 1959.

Finney, Robert T. History of the Air Corps Tactical School:  
1920-1940. Maxwell AFB, AL: Air University Press,  
March 1955.

Frankland, Noble. The Bombing Offensive Against Germany.  
London: Faber and Faber, 1965.

Futrell, Robert F. Ideas, Concepts, Doctrine: Basic  
Thinking in the United States Air Force, 1907-1984.  
2 Vols. Maxwell AFB, AL: Air University Press, 1989.

-----. The United States Air Force in Korea, 1950-1953.  
Rev. ed. Washington, D.C.: Office of Air Force  
History, 1983.

Greer, Thomas H. The Development of Air Doctrine in the  
Army Air Arm, 1917-1941. Maxwell AFB, AL: Air  
University Press, September 1955.

Hallion, Richard P. Storm Over Iraq: Air Power and the  
Gulf War. Washington, D.C.: Smithsonian Institution  
Press, 1992.

Hansell, Haywood S., Major General, USAF (Ret.). The Air  
Plan That Defeated Hitler. Atlanta: Higgins-  
McArthur/Logino and Porter, 1972.

Hastings, Max. Bomber Command: The Myths and Reality of  
the Strategic Bomber Offensive, 1939-1945. New  
York: The Dial Press, 1979.

Hersey, Paul, and Blanchard, Kenneth H. Management of

- Organizational Behavior: Utilizing Human Resources. 3rd. ed. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1977.
- Higham, Robin. Air Power: A Concise History. New York: St. Martin's Press, 1972.
- Holley, I.B., Jr. Ideas and Weapons. Reprint. Washington, D.C.: Office of Air Force History, 1983.
- Huntington, Samuel P. The Common Defense: Strategic Programs in National Politics. New York: Columbia University Press, 1961.
- Hurley, Alfred F., and Ehrhart, Robert C., eds. Air Power and Warfare: The Proceedings of the 8th Military History Symposium, United States Air Force Academy, 18-20 October 1978. Colorado Springs: USAF Academy, 1979.
- Kennett, Lee. A History of Strategic Bombing. New York: Charles Scribner's Sons, 1982.
- Kuhn, Thomas. The Structure of Scientific Revolutions. 2d. ed. Chicago: University of Chicago Press, 1970.
- Janowitz, Morris. The Professional Soldier: A Social and Political Portrait. New York: The Free Press, 1971.
- Littauer, Raphael, and Uphoff, Norman, eds. The Air War in Indochina. rev. ed. Boston: Beacon Press, 1972.
- Luttwak, Edward N. The Pentagon and the Art of War. New York: Simon and Schuster, 1984.
- Maurer, Maurer. Aviation in the U.S. Army: 1919-1939. Washington, D.C.: Office of Air Force History, 1987.
- McFarland, Stephen L., and Newton, Wesley Phillips. To Command the Sky: The Battle for Air Superiority, 1942-1944. Washington, D.C.: Smithsonian Institution Press, 1991.
- Military Air Power: The CADRE Digest of Air Power Opinions and Thoughts. Maxwell AFB, AL: Air University Press, 1990.
- Millis, Walter. Arms and Men: A Study in American Military History. New Brunswick, NJ: Rutgers University Press, 1986.
- Moss, George Donelson. Vietnam: An American Ordeal. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1990.

- Mrozek, Donald J. Air Power and the Ground War in Vietnam. Maxwell AFB, AL: Air University Press, January 1988.
- Myers, Grover E., Major, USAF. Aerospace Power: The Case for Indivisible Application. Maxwell AFB, AL: Air University Press, September 1986.
- Sherry, Michael S. The Rise of American Air Power: The Creation of Armageddon. New Haven: The Dial Press, 1987.
- Smith, Perry McCoy. The Air Force Plans for Peace, 1943-1945. Baltimore: Johns Hopkins University Press, 1970.
- Smoke, Richard. National Security and the Nuclear Dilemma. 2d. ed. New York: Random House, 1987.
- Snow, Donald M. National Security: Enduring Problems in a Changing Defense Environment. New York: St. Martin's Press, Inc., 1991.
- Szulc, Tad. The Illusion of Peace: Foreign Policy in the Nixon-Kissinger Years. New York: The Viking Press, 1979.
- Thompson, James Clay. Rolling Thunder: Understanding Policy and Program Failure. Chapel Hill, NC: University of North Carolina Press, 1980.
- Tilford, Earl H., Jr. Setup: What the Air Force Did in Vietnam and Why. Maxwell AFB, AL: Air University Press, 1991.
- Warden, John A., Colonel, USAF. The Air Campaign: Planning for Combat. Washington, D.C.: National Defense University Press, 1988.
- Watts, Barry D., Lieutenant Colonel, USAF. The Foundations of U.S. Air Doctrine: The Problems of Friction in War. Maxwell AFB, AL: Air University Press, 1984.
- Werrell, Kenneth P., Archie, Flak, AAA, and SAM: A Short Operational History of Ground-Based Air Defense. Maxwell AFB, AL: Air University Press, December 1988.
- United States Strategic Bombing Surveys. Reprint of Summary Reports, European War and Pacific War. Maxwell AFB, AL: Air University Press, October 1987.

## Articles:

Anderson, Casey. "War Planner: Civilians Didn't Change Target List." Air Force Times, 8 July 1991.

Barlow, Jason B., Major, USAF. "The 'D' Word: Doctrine Simply Is How Best to Use Power." Air Force Times, 22 March 1993.

Baucom, Donald R., Lieutenant Colonel, USAF. "Unfinished Business." Air University Review 35 (September 1984): 2-3.

Berry, F. Clifton. "USAF Doctrine Comes Alive." Air Force Magazine 66 (July 1983): 34-36.

Bingham, Price T., Lieutenant Colonel, USAF. "Air Base Survivability and V/STOL Aircraft: A Gap in Air Force Doctrine?" Air University Review 37 (January-February 1986): 51-57.

-----. "Air Interdiction and the Need for Doctrinal Change." Strategic Review 20 (Fall 1992): 24- 33.

-----. "Air Power in Desert Storm and the Need for Doctrinal Change." Airpower Journal 5 (Winter 1991): 33-46.

-----. "Professionalism in the Air Force." Air University Review 35 (May-June 1981): 95-101.

Bird, Julie. "Fighter Mafia." Air Force Times, 1 February 1993.

Boudreau, Robert N., Lieutenant Colonel, USAF. "The New AFM 1-1: Shortfall in Doctrine?" Airpower Journal 6 (Winter 1992): 37-45.

Boyd, Charles G., Lieutenant General, and Westenhoff, Charles M., Lieutenant Colonel, USAF. "Air Power Thinking: 'Request Unrestricted Climb.'" Airpower Journal 5 (Fall 1991): 4-15.

Clodfelter, Mark, Major, USAF. "Of Demons, Storms, and Thunder: A Preliminary Look at Vietnam's Impact on the Persian Gulf Air Campaign." Airpower Journal 5 (Winter 1991): 17-32.

Drew, Dennis M., Colonel, USAF (Ret.). "Desert Storm as a Symbol: Implications of the Air War in the Desert." Airpower Journal 6 (Fall 1992): 4-13.

- . "4 Air-power Lessons Obvious From Gulf War." Air Force Times, 30 September 1991.
- . "Informal Doctrine and the Doctrinal Process: A Response." Air University Review 35 (September 1984): 96-98.
- . "Joint Operations: The World Looks Different From 10,000 Feet." Airpower Journal 2 (Fall 1988): 4-16.
- . "Of Trees and Leaves: A New View of Doctrine." Air University Review 33 (January 1982): 40-48.
- . "Perspective Ensures Right War Lessons Are Learned." Air Force Times, 3 June 1991.
- . "Two Decades in the Air Power Wilderness: Do We Know Where We Are?" Air University Review 37 (September-October 1986): 2-13.
- Ehrhart, Robert C., Major, USAF. "Some Thoughts on Air Force Doctrine." Air University Review 31 (March-April 1980): 29-38.
- Fabyanic, Thomas A., Colonel, USAF. "War, Doctrine, and the Air War College." Air University Review 37 (January 1986): 2-29.
- Friedenstein, Charles D., Lieutenant Colonel, USAF. "The Uniqueness of Space Doctrine." Air University Review 37 (November-December 1985): 13-23.
- Furr, William F., Lieutenant Colonel, USAF. "Joint Doctrine: Progress, Prospects, and Problems." Airpower Journal 5 (Fall 1991): 36-45.
- Gropman, Alan. "Success in Persian Gulf Validates Air Force Doctrine." Air Force Times, 18 March 1991.
- Hallion, Richard P. "Doctrine, Technology, and Air Warfare -- A Late 20th Century Perspective." Airpower Journal 1 (Fall 1987): 16-27.
- Holley, I.B., Jr., Major General, USAFR (Ret.). "Concepts, Doctrines, Principles: Are You Sure You Understand These Terms?" Air University Review 35 (July-August 1984): 90-93.
- . "The Doctrinal Process: Some Suggested Steps." Military Review 59 (April 1979): 2-13.

----- . "Of Saber Charges, Escort Fighters, and Spacecraft--  
The Search for Doctrine." Air University Review 34  
(September-October 1983): 2-11.

Hutchinson, D.L., Lieutenant Colonel, USAF. "A New Look at  
an Old Problem." Air University Review 30 (January-  
February 1979): 69-73.

Kirtland, Micheal A., Lieutenant Colonel, USAF. "Aerospace  
Doctrine Guiding Needed Change." Air Force Times,  
31 August 1992.

Krieger, Clifford R., Colonel, USAF. "USAF Doctrine: An  
Enduring Challenge." Air University Review 35  
(September 1984): 16-25.

Lind, William S. "Reading, Writing, and Policy Review: The  
Air Force's Unilateral Disarmament in the War of  
Ideas." Air University Review 36 (November-December  
1984): 66-70.

Mann, Edward C., Lieutenant Colonel, USAF. "Operation  
Desert Storm? It Wasn't AirLand Battle." Air Force  
Times, 30 September 1991.

Meilinger, Phillip S., Lieutenant Colonel, USAF. "The  
Air Force in the Twenty-first Century: Challenge and  
Response." Airpower Journal 4 (Winter 1990): 24-51.

----- . "The Problem With Our Air Power Doctrine."  
Airpower Journal 6 (Spring 1992): 24-31.

Morrocco, John D. "War Will Reshape Doctrine, But Lessons  
Are Limited." Aviation Week and Space Technology 134  
(22 April 1991): 38-39.

Murray, Williamson. "A Tale of Two Doctrines." Journal  
of Strategic Studies. September 1983.

Myers, Grover E., Major, USAF. "Aerospace Doctrine: We're  
Not There Yet." Air University Review 37 (September-  
October 1986): 91-93.

Myers, Kenneth A., Colonel, and Tockston, John G.,  
Lieutenant Colonel, USAF. "Real Tenets of Military  
Space Doctrine." Airpower Journal 2 (Winter 1988):  
54-68.

New, Terry L., Major, USAF. "Air Power Indeed Is Decisive  
Instrument of War." Air Force Times, 13 May 1991.

- Newton, Richard D., Major, USAF. "A Question of Doctrine?" Airpower Journal 2 (Fall 1988): 17-22.
- Palmer, Michael A. "The Storm in the Air: One Plan, Two Air Wars?" Air Power History 39 (Winter 1992): 24-31.
- Parrington, Alan J., Lieutenant Colonel, USAF. "U.S. Space Doctrine: Time for a Change?" Airpower Journal 3 (Fall 1989): 50-61.
- Record, Jeffrey. "Why the Air War Worked." Armed Forces Journal International 128 (April 1991): 44-45.
- Rice, Donald B., Secretary of the Air Force. "Air Power Ascendancy Based On 3 Post-Cold War Factors." Air Force Times, 12 October 1992.
- Stiles, Dennis W., Major, USAF. "Air Power: A New Look From an Old Rooftop." Air University Review 27 (November-December 1975): 49-50.
- Summers, Harry G., Colonel, USA (Ret.). "Military Doctrine: Blueprint for Force Planning." Strategic Review 20 (Spring 1992): 9-22.
- . "Strategic Bombing: Terrorist Act or Necessary Force?" The World & I 6 (September 1991): 72-79.
- . "U.S. Victory in Gulf War Exorcises the Ghost of Vietnam." Air Force Times, 18 March 1991.
- Sweetman, Bill. "Catching Up With Doctrine." Jane's Defence Weekly 15 (29 June 1991): 1174-75.
- Temple, L. Parker, III, Major, USAF. "How Dare They Tamper With the Sacred Functions of the Horse Cavalry?" Air University Review 37 (March-April 1986): 24-30.
- Terry, Michael R., Major, USAF. "Formulation of Aerospace Doctrine From 1955 to 1959." Air Power History 38 (Spring 1991): 47-54.
- Tilford, Earl H., Jr., Major, USAF. "Finis." Air University Review 38 (January-March 1987): 11-12.
- Townsend, Gene E., Major, USAF. "The Dynamic Role of Air Force Doctrine." Air Force Magazine 62 (October 1979): 53-55.
- "USAF Leaders Through the Years." Air Force Magazine 75 (May 1992): 43-45.

Watts, Barry D., Lieutenant Colonel, USAF, and Hale, James O., Major, USAF. "Doctrine: Mere Words or a Key to War-Fighting Competence?" Air University Review 35 (September 1984): 4-15.

Werrell, Kenneth P. "Linebacker II: The Decisive Use of Air Power?" Air University Review 38 (January-March 1987): 48-61.

Westenhoff, Charles M., Major, USAF. "Agressive Vision." Airpower Journal 3 (Fall 1989): 34-49.

#### Reports, Research Studies, and Dissertations:

Andrews, James E., Colonel; Bowser, Allen B.; Johnson, William R.; Redmann, Steven J.; Zeimet, Richard H., Lieutenant Colonels, USAF. "U.S. Air Force Doctrine: A Perspective." Maxwell AFB, AL: Research Study for Air War College, May 1990.

Bingham, Price T., Lieutenant Colonel, USAF. "Air Power and the Close-In-Battle: The Need for Doctrinal Change." Maxwell AFB, AL: Report for CADRE, 8 May 1987.

-----". "Battlefield Air Interdiction and the Evolution of Doctrine." Maxwell AFB, AL: Report for CADRE, 1986.

-----". "Ground Maneuver and Air Interdiction in the Operational Art." Report No. AU-ARI-CP-89-2. Maxwell AFB, AL: Air University Press, September 1989.

-----". "Operational Level Warfare and its Implications for the U.S. Armed Forces." Maxwell AFB, AL: Report for CADRE, June 1986.

Cichowski, Kurt A., Lieutenant Colonel, USAF. "Doctrine Matures Through a Storm: An Analysis of the New AFM 1-1." Maxwell AFB, AL: Thesis for School of Advanced Airpower Studies, Air University, May 1992.

Conner, Leland, W. C., Major, USAF. "The USAF Doctrinal Process: An Analysis." Maxwell AFB, AL: Report for Air Command and Staff College, May 1977.

Crawford, Harvey J.; Benton, Jeffrey C.; Claxton, Bernard D.; Donnini, Frank P.; Clark, Richard B., Jr., Lieutenant Colonels; Davis, Richard L.; Blow, Thomas C., II, Majors, USAF. "Officer Professional Military Education Study." Maxwell AFB, AL: ARI/CADRE report, June 1988.

Cromer, Donald L., Lieutenant Colonel; Greene, Joseph S., Jr.; Nickel, George H.; Tabor, Dale C.; Wambough, John H., Majors, USAF. "A Critical Analysis of USAF Basic Doctrine." Maxwell AFB, AL: Research Study for Air Command and Staff College, May 1973.

Crotty, Patrick H.; Hensz, Robert L.; Meyer, James A.; Miatech, Gerald J., Jr.; Reid, Robert V., Majors, USAF. "A New Environmental Military Space Doctrine: For Today and Tomorrow." Maxwell AFB, AL: Report for Air Command and Staff College, April 1985.

Drew, Dennis M., Colonel, USAF. "Insurgency and Counterinsurgency: American Military Dilemmas and Doctrinal Proposals." Report No. AU-ARI-CP-88-1. Maxwell AFB, AL: Air University Press, March 1988.

----- . "Rolling Thunder 1965: Anatomy of a Failure." Report No. AU-ARI-CP-86-3. Maxwell AFB, AL: Air University Press, October 1986.

Fabyanic, Thomas Allen. "A Critique of United States Air War Planning, 1941-1944." Ph.D. dissertation, Saint Louis University, 1973.

Felker, Edward J., Major, USAF. "Does the Air Force Practice Its Doctrine: A Limited and Focused Air Campaign Concept." Fort Leavenworth, KS: Thesis for U.S. Army Command and General Staff College, 1991.

Flugel, Raymond R. "United States Air Power Doctrine: A Study of the Influence of William Mitchell and Giulio Douhet at the Air Corps Tactical School, 1921-1935." Ph.D. dissertation, University of Oklahoma, 1965.

Hooten, Byron. R. Major, USAF. "United States Air Force Basic Doctrine -- Whatever That Is." Maxwell AFB, AL: Research Study for Air Command and Staff College, May 1976.

Moothart, Jackie E., Lieutenant Colonel, USAF. "Air Power Doctrine, the Forgotten Element in the Bombing Controversy -- North Vietnam." Washington, D.C.: Essay for The National War College, March 1973.

#### Other:

Burke, James. "Connections." BBC Television Productions, 1978.