

REPC

AD-A283 031

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information, including the gathering and maintaining the data collection of information, including Davis Highway, Suite 1204, Arlington



ding the time for reviewing instructions, searching existing data sources, and comments regarding this burden estimate or any other aspect of this ices, Directorate for Information Operations and Reports, 1215 Jefferson work Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)

2. REPORT DATE

April 1993

3. REPORT TYPE AND DATES COVERED

FINAL

4. TITLE AND SUBTITLE

Airlift Doctrine : Out of Step for the Times

5. FUNDING NUMBERS

6. AUTHOR(S)

William W. Hodges
Lt Col , USAF

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

AIR WAR COLLEGE
325 CHENNAULT CIRCLE
MAXWELL AFB AL 36112-64278. PERFORMING ORGANIZATION
REPORT NUMBERUnnumbered AWC research
paper

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)

N/A

DTIC
ELECTE
AUG 11 1994
S G D

10. SPONSORING/MONITORING
AGENCY REPORT NUMBER

N/A

11. SUPPLEMENTARY NOTES

PAPER IS WRITTEN TO FULFILL ACADEMIC RESEARCH REQUIREMENTS FOR AN IN-RESIDENCE
SENIOR SERVICE PROFESSIONAL MILITARY SCHOOL.

12a. DISTRIBUTION / AVAILABILITY STATEMENT

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED

12b. DISTRIBUTION CODE

13. ABSTRACT (Maximum 200 words)

See page iii

Accession For

NTIS CRA&I

DTIC TAB

Unannounced

Justification

☒
☐
☐

By

Distribution /

Availability Codes

Dist

Avail and/or
Special

A-1

14. SUBJECT TERMS

Airlift, Out, Step, Times

15. NUMBER OF PAGES

30

16. PRICE CODE

17. SECURITY CLASSIFICATION
OF REPORT
UNCLAS18. SECURITY CLASSIFICATION
OF THIS PAGE
UNCLAS19. SECURITY CLASSIFICATION
OF ABSTRACT
UNCLAS20. LIMITATION OF ABSTRACT
UL

AIR WAR COLLEGE

AIR UNIVERSITY

**AIRLIFT DOCTRINE:
OUT OF STEP FOR THE TIMES?**

by

**William W. Hodges
Lieutenant Colonel, USAF**

A RESEARCH REPORT SUBMITTED TO THE FACULTY

IN

FULFILLMENT OF THE CURRICULUM

REQUIREMENT

Advisor: Colonel Louis S. Taylor

MAXWELL AIR FORCE BASE, ALABAMA

April 1993

94-25279



5096

94 8 10 066

DISCLAIMER

This study represents the views of the author and does not necessarily reflect the official opinion of the Air War College or the Department of the Air Force. In accordance with Air Force Regulation 110-8, it is not copyrighted, but is the property of the United States government.

Loan copies of this document may be obtained through the interlibrary loan desk of Air University Library, Maxwell Air Force Base, Alabama 36112-5564 (telephone [205] 953-7223 or DSN 493-7223).

ABSTRACT

TITLE: Airlift Doctrine: Out of Step for the Times?

AUTHOR: William W. Hodges, Lieutenant Colonel, USAF

When the Air Mobility Command (AMC) was activated on 1 June 1992 to become the mobility component of a newly restructured Air Force, it inherited a command that had not updated its most basic doctrinal manuals in over twenty years. As such, airlift doctrine has become so outdated that it is totally inadequate to support AMC's mission. The doctrine, as written, simply does not reflect the way the command does things, nor does it reflect the way it will do its job in the future. Charged with providing *Global Reach* to America's armed forces, AMC is first challenged to update and translate its doctrine into a working blueprint that depicts a total airlift system of worldwide deployability. Airlift doctrine still reflects the original split between strategic and tactical airlift, yet the command will employ its resources across a spectrum that has faded the lines that once divided these resources. Joint airlift doctrine is virtually nonexistent at a time when support for joint operations is paramount.

We have a continuing need to express doctrine, review it, and revise it, when necessary, for it has a significant impact on the budget process, force structure, procurement, and training. In essence, it has an exceptional impact on the strategy process. As AMC takes on the challenge to review the lessons of experience and translate the doctrinal changes that have occurred, the command's doctrine must reflect its role in the *Global Reach--Global Power* framework: to provide speed and flexibility in support of the President's National Security Strategy. In essence, AMC must formalize and articulate what we think of as the role of airlift--to deliver what is needed, where it is needed, and when it is needed-- ". . . anytime, anywhere!"

BIOGRAPHICAL SKETCH

Lieutenant Colonel (Colonel Selectee) William W. Hodges (BA Florida State University; MA University of Northern Colorado) has spent the majority of his career in airlift operations and acquisition. He has commanded a military airlift squadron and served as the chief of the airlift branch of the airlift and training division on the staff of the assistant secretary of the Air Force for acquisition. In this capacity he also served as the C-17 and C-5B program element monitor. Colonel Hodges is a command pilot with over 3300 flying hours. He has completed overseas tours in England and Korea and is a qualified joint service officer. He is a distinguished graduate of the Officer Training School and Squadron Officers School; a graduate of Air Command and Staff College, and the Armed Forces Staff College, where he was honored for his major writing effort on the Philippines. Colonel Hodges is a graduate of the Air War College, class of 1993.

TABLE OF CONTENTS

DISCLAIMER	ii
ABSTRACT	iii
BIOGRAPHICAL SKETCH	iv
Chapter	
I. INTRODUCTION	1
II. THE AIR FORCE AND US NATIONAL SECURITY:	
GLOBAL REACH--GLOBAL POWER	<i>X²</i>
Planning Framework for National Security Strategy	<i>X²</i>
Air Mobility Command's Mission.	5
Air Mobility Command Vector	6
III. AIRLIFT DOCTRINE	8
Doctrinal Expression	8
Historical Perspective	8
The Importance of Doctrine	11
Current Airlift Doctrine	12
Joint Airlift Doctrine.	14
AMC's Challenge	15
IV. AIRLIFT DOCTRINE AND US NATIONAL SECURITY	
THE CASE FOR THE C-17	18
The Right Airlift Aircraft	18
Mission Need.	18
Acquisition Background Highlights	19
Mobility Requirements Study.	20
AMC Requires More Airlift Capability	21
V. CONCLUSION	23
NOTES	25
BIBLIOGRAPHY	28

CHAPTER I

INTRODUCTION

Under the largest restructuring of the Air Force since its creation in 1947, the Air Mobility Command emerged as Military Airlift Command's replacement to be the mobility component of the "new" Air Force on 1 June 1992.¹ According to its first commander, General H.T. Johnson, its primary mission is to provide global reach to America's armed forces.² But what is *Global Reach* and how does Air Mobility Command's mission contribute to it? Is the current doctrine adequate to support the new command, its procurement of the C-17, and the command's operations in support of Global Reach? *Really there's just one question - "Is the current doctrine adequate?"* These are the questions this paper will answer.

By examining the current airlift doctrine Air Mobility Command (AMC) inherited from the Military Airlift Command (MAC), this paper will show the formal airlift doctrine to be so outdated that it has become far too inadequate to support the new command's mission and its procurement of the C-17. This paper will also stress the importance of doctrine and emphasize AMC's immediate need to formally update and articulate its airlift doctrine in order to perform its mission under the new Air Force framework of *Global Reach—Global Power*. *Good! (Hearts)*

CHAPTER II

THE AIR FORCE AND US NATIONAL SECURITY: GLOBAL REACH--GLOBAL POWER

Planning Framework for National Security Strategy

In June 1990, the Secretary of the Air Force, Donald B. Rice, published a white paper entitled, "The Air Force and U.S. National Security: Global Reach--Global Power."³ This brief document, only fifteen pages in length, provides "... a perspective on how the unique characteristics of the Air Force--speed, range, flexibility, precision, and lethality--can contribute to underwriting U.S. national security needs in the evolving world order."⁴ The secretary lists the objective, "Supply Rapid Global Mobility ..." ^{with} (with airlift and tankers listed as the associated resources) as one of five objectives that provide the planning framework to support our Nation's new defense strategy. The term *Global Reach* is derived from this objective.

Airlift will be in even more demand as forward forces decline, but global interests remain. "Increased instability and uncertainty," the secretary says, "will heighten the importance of the ability to respond quickly." He goes on to say, "In the more likely contingency scenarios, airlift provides vital speed and flexibility. When an operation needs to be carried out quickly, airlift will be the key player."⁶ This is the objective that provides the foundation for the reorganization of the MAC as the Air Mobility Command.

with this as an objective that should be emphasized as "airlift doctrine" rather than "mobility doctrine"?

In December 1992, Secretary Rice published a new white paper entitled, "Global Reach, Global Power--The Evolving Air Force Contribution to National Security."⁷ This white paper reviews the principles of Global Reach--Global Power and shows how the Air Force has applied them to every aspect of how it does business. The paper also details the unique contributions the Air Force brings to joint warfare and the Nation's defense.

The secretary chose the Air Force Association's National Convention in Washington, DC, in September 1991 to announce the plans to create a new Air Force with the new Air Mobility Command to replace MAC.⁸ Its mission: to supply "global reach" to the US Air Force and other armed forces.⁹ According to the secretary, the integration of airlift resources with the tanker force puts us in a better position to respond rapidly. According to the President's National Security Strategy:¹⁰

"We must be able to deploy substantial forces and sustain them in parts of the world where prepositioning of equipment may not always be feasible, where adequate bases may not be available, and where there is a less-developed industrial base and infrastructure to support our forces once they have arrived."¹¹

With reduced overseas presence, mobility forces preserve the ability to operate from the United States and move rapidly to any spot on the globe, whether providing support for forces already on the scene or building an air bridge for ground forces. The new National Security Strategy, as updated in January 1993, reasserts the mandate to maintain an adequate ability to project power in response to crises. It states:

"The very existence of a robust crisis response capability strengthens deterrence. Our force structure must be flexible enough to ensure we can fulfill both traditional and nontraditional requirements. In addition, the capability to generate decisive combat power, if and when needed, strengthens our ability to terminate a given conflict swiftly on terms favorable to us, with minimum loss of life."¹²

As the secretary puts it, "Mobility is the sinew of global reach . . ."¹³ However, the need for global reach and global power is not always in support of conflict.

Part of global reach means the capability to accomplish national security objectives by building influence abroad--to extend a helping hand by using airpower for diplomatic and humanitarian purposes. During a single week in the fall of 1992, AMC supported fire-fighting operations in California and Idaho, humanitarian relief efforts in Somalia, Turkey and Yugoslavia, and peacekeeping efforts in Angola. The winter of 1992 brought AMC airlifters in support of Russia and countries of the former Soviet Union. The same airlifters that supported Operation DESERT STORM quickly shifted to providing relief supplies to Kurdish refugees in northern Iraq during Operation PROVIDE COMFORT.¹⁴ This is not a new role for AMC, but it is one that will receive greater emphasis. Yet, the primary mission and central aspect of AMC's readiness remains mobility in support of warfighting forces. With mobility, readiness includes deployability--that capability to project forces sized and equipped to deal with regional conflicts that threaten the vital strategic interests of the United States.

Deployability, rather than transporting cargo or refueling aircraft, better defines the role of AMC, according to Chief of Staff, Gen. Merrill A. McPeak. "AMC's problem is one of worldwide deployability," he said in a speech to the Air Force Association's National Convention in Washington, DC, in September 1991. "How do you get combat capability from where it is, probably CONUS-located, out to some operating location."¹⁵ As more troops are brought back from overseas and more bases are closed, the chief emphasizes that the military will have fewer steppingstones around the world with prepositioned equipment and supplies. Instead, America will have to have the capability to deploy its forces and their equipment anywhere they are needed to deal with potential regional conflicts.¹⁶ Such a role requires AMC to bring together a total airlift system of deployment, employment, resupply, and redeployment--without the traditional

labels of "tactical" or "strategic."¹⁷ Deployability infers mission, rather than aircraft designation. As Secretary Rice summarizes, "The uniquely American capabilities to airlift anything, anywhere and to extend the range of our firepower are the foundation of global reach and global power."¹⁸

This is the challenge for the new Air Mobility Command--to ensure the Air Force and the nation have superior *Global Reach*--fast, dependable, airlift that will be there, "... anytime, anywhere."¹⁹

Air Mobility Command's Mission

The new command received its challenge from the secretary and the chief. Its resources, installations, and supporting infrastructure were allocated and on 1 June 1992 the Air Mobility Command was activated. A brochure, distributed by the AMC public affairs office, listed AMC's purpose and mission as follows:

"... Air Mobility Command will provide airlift, aerial refueling, aeromedical evacuation, and combat rescue for all of America's armed forces. Operational support aircraft will also be assigned to America's global reach team. As the air component of United States Transportation Command, AMC will serve many customers, and as the single manager for air mobility, AMC's customers will have only one number to call for global reach. When directed, AMC will provide its forces to the warfighting commanders in support of their missions."²⁰

The media releases, such as the public affairs brochure, coupled with all the pomp and circumstance surrounding the activation of the command, certainly focused attention on AMC's mission, informally as it may have been stated. The secretary and the chief had defined their challenge in terms what they expected the command to be able to do, however, AMC's purpose and mission had not been formally prescribed by regulation. Its full scope of responsibilities had not been formally established.

The regulation that specifically states the mission of MAC, AFR 23-17, was last updated on 1 April 1985.²¹ It changed then, after approximately fifteen years, to supersede its previous version of 9 December 1970. The 1985 version reflected MAC's role as a specified command, the fact that MAC had gained the tactical airlift mission from Tactical Air Command (TAC) (which occurred on 29 July 1974²²), and special operations gained also from TAC, US Air Forces, Europe (USAFE), and Pacific Air Forces (PACAF). However, MAC's role as a specified command, which was directed on 29 July 1974²³ and occurred on 1 February 1977,²⁴ ended on 1 October 1988 with the creation of the US Transportation Command (USTRANSCOM). Now, MAC was a major command and served as the air component command of USTRANSCOM, which was activated as an operational unified combatant command. Further, MAC's formal participation in special operations came to an end with the deactivation of Twenty-Third Air Force and the subsequent transfer of its resources to the Air Force Special Operations Command. In addition, command relationships involving the assumption and integration of new resources, primarily from Strategic Air Command (SAC), would have to be established and their mission as part of AMC would have to be defined. Thus, as AMC entered operation, it was severely lacking in formalized direction, both in terms of its purpose and mission.

Air Mobility Command Vector

In December 1992, AMC released a white paper entitled "Air Mobility Command Vector - Global Reach for America."²⁵ This paper provides the direction for meeting the command's challenges as translated from Secretary Rice's June 1990 white paper on Global Reach--Global Power. The paper describes how unique characteristics of air mobility, speed, flexibility, and responsiveness support US national security and military strategies. Although not a programming

Is Air Mobility a characteristic here? or are speed, flexibility and responsiveness characteristics of Air Mobility?

document, the command does consider the paper to be "overarching guidance for future program development."²⁶ Although the word "doctrine" is not found anywhere in the paper, it does introduce several new doctrinal concepts not previously mentioned in Air Force or AMC publications.

The first concept is what the paper describes as AMC's single focus--Air Mobility. Air mobility is defined as "the team of airlifters, tankers, and support. As a service component to USTRANSCOM we require the effective integration of platforms, people, bases, and all supporting infrastructure."²⁷ The paper also introduces a new command concept of command relationships.

The paper's section on "Customer Support" provides a new look at how AMC sees its future command relationship with other commands at the national (strategic) level and the theater level. The charts and text provide a concise, but thorough, look at the command's orientation for air mobility requests and taskings with a new functional description of the Director for Mobility Forces (DIRMOBFOR), Air Mobility Element (AME), and Theater Validator.²⁸

While this document is intended to provide a glimpse of AMC's "vision" for meeting its challenges and requirements in the future, it lays out a foundation of new airlift doctrine that should be captured and expanded in the appropriate joint and service manuals. As the next section will show, the articulation of such doctrine is long overdue.

You could delete "airlift" here.

CHAPTER III

AIRLIFT DOCTRINE

Doctrinal Expression

There are many ways to express airlift doctrine: formal manuals, budgets, force structure initiatives, testimony to Congress, procurement of aircraft, operational plans, and even war.²⁹ The Military Airlift Command, and now Air Mobility Command, is not the sole proprietor of airlift doctrinal expression. However, the Air Force's formal doctrine development process does require the command, in coordination with Headquarters, USAF, to formally express its doctrine.³⁰

Just as regulatory guidance directing the purpose and mission of the command had failed to keep pace with the changes that were occurring, so too had the evolving airlift doctrine failed to find its place in the appropriate manual. In essence, airlift doctrine, in the form of doctrinal manuals, has not been formally updated since the Vietnam war, in some cases, and even before the war in others. Yet, doctrine continued to evolve and become refined as new weapons systems were acquired and the technology became available to support even greater airlift capability.

Historical Perspective

Air Force Manual 1-1, United States Air Force Basic Doctrine, discussed airlift and its contribution to conventional warfare for the first time in 1964. It said that:

"... airlift contributes to rapid concentration of air and ground forces and resupply of tactical units in the field. In addition, long range or strategic airlift participates in the support of heavy logistics requirements. Air superiority is required for effective airlift, and close control is necessary for the efficient utilization of tactical airlift."³¹

The foundation for modern airlift doctrine was established, but the manual left it to each major command to provide the details of its specific mission.

The two primary missions were classified as strategic airlift or tactical airlift. Strategic airlift, tasked to the Military Air Transport Service (MATS) since the service began on 1 June 1948,³² is defined by the US Air Force as follows:

"The continuous or sustained movement of units, personnel, and materiel in support of all Department of Defense agencies between area commanders; between the continental United States (CONUS) and overseas area; and within an area of command when directed. Strategic airlift resources possess a capability to airland or airdrop troops, supplies, and equipment for augmentation of tactical forces when required. (Intertheater airlift.)"³³

Tactical airlift, assigned to TAC, is defined as follows:

"The airlift that provides the immediate and responsive air movement and delivery of combat troops and supplies directly into objective areas through landing, extraction, airdrop, or other delivery techniques; and the air logistic support of all theater forces, including those engaged in combat operations, to meet specific theater objectives and requirements. (Intratheater airlift.)"³⁴

In September 1965, MATS, MAC's predecessor, submitted a draft of AFM 2-21, *Airlift Doctrine*, to Headquarters, USAF, for approval. It proposed the consolidation of tactical and strategic airlift missions under one doctrinal manual, describing airlift as a *system* of deployment, assault, resupply, and redeployment. The MATS proposal supported the position that all deployment and redeployment missions could be performed under MATS control.³⁵

Headquarters, USAF, disapproved the MATS proposed draft of AFM 2-21 and directed each command to provide a doctrinal manual for airlift. The Tactical Air Command would write AFM 2-4, *Tactical Airlift*, and the newly renamed MAC would write AFM 2-21, *Strategic Airlift*.³⁶

The Tactical Air Command, in coordination with Headquarters, USAF (AFXOPFH), published Air Force Manual 2-4, *Aerospace Operational Doctrine, Tactical Air Force Operations, Tactical Airlift*, on 10 August 1966. It is still the most current version of the manual

and sets forth the fundamental principles for tactical airlift operations, although responsibility for the tactical airlift mission has passed from TAC to MAC and is now the responsibility of AMC. This manual had not been revised in almost twenty-six years when Air Mobility Command was activated.³⁷

One month after TAC published its doctrinal manual on tactical airlift in August 1966, MAC, in coordination with Headquarters, USAF (AFXOOSZ), published its manual on strategic airlift, AFM 2-21, *Aerospace Operational Doctrine, United States Air Force Strategic Airlift*.³⁸ The manual was updated on 13 July 1972, and as such provides the current guidance concerning strategic airlift doctrine--just over twenty years since its last revision as Air Mobility Command was activated. This manual's description, as stated in the overview, is as follows:

"This manual is an extension of United States Air Force basic doctrine embodying the doctrinal guidance for planning and executing strategic airlift operations. It describes the mission, force composition, organization, command, and control of strategic airlift operations. Additionally, it provides guidance for other armed forces which are supported by these airlift forces, and for those who support strategic airlift operations, including Air National Guard and Air Force Reserve. This manual explains the broad principles which experience has shown are the most effective in the application of modern airlift forces. The same principles form the basis for organizing and employing the force."³⁹

As the "basis for organizing and employing the force," and in virtually every other area from organization to command and control, AMC had many revisions to make.

Yet, MAC certainly had sufficient time and opportunity to revise the regulations and was finally tasked in September 1990 to consolidate AFMs 2-4 and 2-21 into one new manual with a proposed designation of AFM 2-40, entitled "*Airlift Doctrine*." This tasking came in the form of AFR 1-2, *Air Force Basic Doctrine, Assignment of Responsibilities for Development of Aerospace Doctrine*, which "assigns responsibilities for the development of specific doctrinal

manuals and describes procedures for developing and coordinating doctrine publications."⁴⁰ To date, AFM 2-40, *Airlift Doctrine*, has not been published.

The Importance of Doctrine

Why such concern over doctrine? In essence, doctrine has, or should have an extraordinary impact on the strategy process. It also has an impact on military budgets, force structures, equipment procurement, and training.⁴¹ If we are not able to articulate that doctrine, we are most likely not able to conduct our mission, for doctrine is--most simply defined--what we believe about the best way to do things. "*Military doctrine is what we believe about the best way to conduct military affairs.*"⁴² Then, the logical progression would imply that *airlift doctrine is what we believe about the best way to conduct airlift*. But, such doctrine has little meaning or influence if we fail to articulate or communicate our beliefs or position.

Joint Chiefs of Staff (JCS) Publication 1-02, *DOD Dictionary of Military and Associated Terms*, puts a similar stress on the need for doctrine and defines it as the "fundamental principles by which the military forces or elements thereof guide their actions in support of national objectives. It is authoritative but requires judgment in application."⁴³ Similarly, the Air Force stresses the importance of doctrine in AFR 1-2, mentioned earlier, as follows:

"... a statement of officially sanctioned beliefs and warfighting principles which guide the proper use of aerospace forces in military action. The Air Force promulgates and teaches this doctrine as a common frame of reference of the best way to prepare and employ aerospace forces. Accordingly, doctrine establishes guidance on how Air Force personnel plan, employ, organize, train, equip, and sustain Air Force forces."⁴⁴

As Colonel Dennis Drew, then director for research, Air University Center for Aerospace Doctrine, Research and Education, writes,

"Perhaps the most ubiquitous doctrinal problem is the tendency to let doctrine stagnate. Changing circumstances (for example, technological developments) must be constantly evaluated because they can modify beliefs about the

important lessons of experience. If current and projected circumstances do not affect the analysis of history's lessons, doctrine rapidly becomes irrelevant."⁴⁵

Airlift doctrine, as stated in MAC's formal manuals, has become so "stagnate" that it is totally inadequate to support AMC's mission. Air Force Manual 2-4, *Tactical Airlift*, has not been updated in twenty-six years. Air Force Manual 2-21, *Strategic Airlift*, has not been updated in twenty years. Air Force Manual 2-40, *Airlift Doctrine*, has not been written. The AMC office of primary responsibility for these manuals indicates there are no plans to update AFM 2-4 or AFM 2-21, nor do they have any plans to publish AFM 2-40 in the immediate future.⁴⁶

Since the guidance is to consolidate AFM 2-4 + AFM 2-21 into AFM 2-40 there is no need to update the first two!

The principal source of doctrine is experience. It is a compilation of those things that have been successful in the past.⁴⁷ Just as MAC's recent success in Operation DESERT STORM is certainly indicative of the strength of the airlift doctrine, then too is the need for articulating the details of that doctrine. Regardless of the label or level of the doctrine--fundamental, environmental, organizational, or operational--it must be a coherent whole to be valuable.⁴⁸ For doctrine provides a standard against which to measure our efforts--a yardstick which measures both success and failure. If the doctrine were followed to a substantial degree and success was not achieved, this would indicate that changes to the doctrine were in order. At the same time, if, under the influence of doctrine, the strategy decisions led to success, then the experience of the success would feed the continued development of the doctrine.⁴⁹ But to have any meaning or significance whatsoever, the doctrine must be articulated. The doctrinal manuals provide the forum for that need and current Air Force doctrine provides the framework.

Current Airlift Doctrine

Fortunately, the communication of Air Force doctrine has not remained quite as dormant as the articulation of command-level doctrine and a new Air Force doctrine manual was published

in March 1992. With this doctrinal umbrella, perhaps the new AMC will have a fresh starting point for the codification of airlift doctrine. Now in two volumes, Volume I of AFM 1-1, the "bare bones" of Air Force Doctrine in quick-reference form, places the airlift mission in support of the role of "force enhancement," which both enables and improves operations of aerospace and surface forces. Strategic and theater airlift, in sufficient quantities, must be available to respond quickly. For when time is a critical factor, airlift is often the only means of transporting forces rapidly enough. "Airlift's key enhancement of the campaign," according to volume I, "is its ability to place properly concentrated combat forces where and when needed." Finally, because airlift capabilities are a finite resource, the air component commander must recommend priorities for their use.⁵⁰ While this has an obvious ring of Carl Von Clausewitz's "concentration of forces at the decisive point" from *On War*,⁵¹ the reader is not left to interpret the meaning of such platitudes in isolation.

The "Airlift" essay in volume II brings the quick-reference points of volume I into perspective. This brief essay highlights airlift's ability to quickly transport surface forces and their equipment to remote locations and provide the sustenance required for staying power. "Airlift provides global reach for military forces, a capability of particular importance given the worldwide commitments and interests of the United States."⁵² The essay then defines and breaks down the specific contributions of strategic and tactical airlift. After a caution on the need for centralized control of airlift operations, the essay discusses the need for striking an appropriate balance between capacity and flexibility in designing airlift forces. Finally, the essay concludes with a paragraph stressing "jointness" in terms of ". . . planning and coordination in everything from peacetime procurement to wartime operations."⁵³ What amounts to barely eight lines of

doctrinal guidance on joint airlift concerns in AFM 1-1, Volume II, can hardly be considered sufficient guidance for joint airlift doctrine. Yet, this is the only formal guidance on joint airlift doctrine in any Air Force publication.⁵⁴

Joint Airlift Doctrine

Joint operations will become increasingly more important for the remainder of this decade as the US military becomes smaller. The US military's ability to employ joint forces is founded on its beliefs about joint warfighting and the joint doctrine that supports it. As such, joint doctrine provides the planning framework that emphasizes the unique contributions made by each branch of the military. This planning framework is supported by the joint publication system that provides a series of publications which link joint doctrine to agencies and alliances. The cornerstone of joint doctrine, Joint Pub 1, *Joint Warfare of the U.S. Armed Forces*, which was intended to provide an overall philosophy for other joint publications, was published in November 1991. It defines doctrine as follows:

"Military doctrine presents fundamental principles that guide the employment of forces. Doctrine is authoritative but not directive. It provides distilled insights and wisdom gained from our collective experience with warfare. However, doctrine cannot replace clear thinking or alter a commander's obligation to determine the course of action under the circumstances prevailing at the time of decision."⁵⁵

Although Joint Pub 1 stresses that doctrine is "authoritative but not directive," the supporting service doctrine should be consistent with approved joint doctrine.

As outlined in Joint Pub 1-01, *Joint Publication System*, joint airlift doctrine is to be articulated in the Joint Pub 4 Series, *Doctrine for Unified and Joint Operations*. Publications in this series establish joint doctrine, techniques, and procedures for directing, planning, and carrying out logistic support for joint operations. Specifically, joint airlift doctrine is to be published in

Joint Pub 4-01.1, *Airlift Support*.⁵⁶ To date, Joint Pub 4.01.1 has not been published. Although efforts were previously underway to finalize the initial draft and circulate it for coordination and comment, the AMC office of primary responsibility indicates the draft has been put "on the shelf" pending further organizational changes among the coordinating agencies. The command does not have an estimate when the publication may re-enter the coordination cycle, but once it does it will take another 12 to 14 months to complete coordination, revision, and publication.⁵⁷ However, the command does expect Joint Pub 3-17, *Joint Tactics, Techniques, and Procedures for Theater Operations*, to be released in the near future. Although not a doctrinal publication, it does provide tactical-level requirements for theater airlift support.⁵⁸

AMC's Challenge

With the AFM 1-1 and Joint Pub 1 doctrine as its baseline, AMC's challenge becomes the chore of updating its doctrinal inheritance to capture the lessons of experience since its manuals were last updated in 1966 and 1972. As one of its first priorities, AMC must consolidate AFMs 2-4 and 2-21 into the new AFM 2-40, *Airlift Doctrine*. This requirement, as levied by AFM 1-2 in 1990 is long overdue. In addition, Joint Pub 4-01.1, *Airlift Support*, should be completed and published quickly. Certainly, a lot has happened in the world since the last time airlift doctrine was updated and the Air Force has learned many lessons that affect the way it does things. The new command must review the lessons of experience and compile the doctrinal changes that have occurred.

There are also many unresolved doctrinal issues that need immediate attention. These include complex areas where it will be difficult to reach joint consensus:⁵⁹

- Mobility triad of airlift, sealift, and prepositioning;

- Special operations missions still retained by AMC;
- Large-scale airborne insertion operations and heavy equipment airdrops;
- Direct delivery.

In addition, AMC must assess current airlift doctrine in light of the numerous technological advancements that have occurred. There is an extensive list of new capabilities the command has acquired since its progenitors last tackled their formal doctrine manuals. These include: aerial refueling, outsize cargo capability, short takeoff and landing capability (STOL), inertial and ring-laser gyro navigation systems, global positioning systems, heavyweight airdrop and outsize airdrop capabilities, enhanced materiel handling equipment, improved night vision capability, laptop and notebook-size computer systems, and more refined aircraft technology such as redundant digital data bus systems, which enable other advances such as "fly-by-wire" electronic flight control systems.

Also, a number of major studies have been conducted that have significantly affected airlift doctrine. Such studies include the Congressionally Mandated Mobility Study,⁶⁰ the USAF Airlift Master Plan,⁶¹ the Air Force 2000 study,⁶² the Mobility Requirements Study,⁶³ and most recently, a JCS/J-8 study, currently completing final coordination, which responds to Congressional direction to examine future airlift requirements. These studies and reports must be examined and the resulting doctrine must be articulated if there is any effort made to bring airlift doctrine up to date.

For any progress to be made in the way we think about airlift, there must be a seemingly endless series of meetings, conferences, staff communication, and the like to get the doctrine written, agreed upon, and coordinated.⁶⁴ As stressed by Charles Miller, in his book, *Airlift Doctrine*,

"Once an idea is fairly well articulated and defended, there must follow the same process in order to make the idea an official position, and even more work to change the doctrine into tactics, training, hardware, and operational plans. For it is only when these are accomplished that doctrine has utility. It is important to visualize, debate, and write about a direct delivery concept, for example. It is equally important to make that concept a reality."⁶⁵

Obviously, doctrine does not have to be written down and formalized to be valid.

However, if we are to support and espouse that doctrine, train to it, buy hardware that supports it, and operationally plan to employ the capability it provides, then we have to make the doctrine available for all to read, weigh, evaluate, and study. We must formally articulate *what we believe is the best way to conduct airlift* in our doctrine manuals, and keep it current, for doctrine is continuously evolving. Doctrine can become irrelevant if the assumptions that support it are not frequently reexamined for their continuing validity.⁶⁶ This argument is particularly pressing in light of AMC's need to support its most notable acquisition program, the C-17 airlift aircraft.

CHAPTER IV

AIRLIFT DOCTRINE AND US NATIONAL SECURITY: THE CASE FOR THE C-17

The Right Airlift Aircraft

As outlined earlier, the Air Force's strategic planning framework for the 1990s, *Global Reach—Global Power*, identifies rapid global mobility as one of its critical objectives in supporting US national security. The C-17 can carry outsize cargo directly into C-130 type airfields (3000ft x 90ft). This capability provides a 12-fold increase in the number of available runways worldwide over the C-5 and C-141.⁶⁷ With theater outsize airdrop capability and the lowest maintenance man-hour per flying hour of any airlifter, the Air Force is convinced that the C-17 is the right airlift aircraft for the future.⁶⁸

Mission Need

The system operational requirements document (SORD) for the C-17 airlift aircraft describes its mission as the "worldwide airlift of US combat forces, equipment, and supplies."⁶⁹

The SORD goes on to describe the C-17 mission as follows:

"The C-17 will transport its payload over intercontinental distances; provide strategic and theater airlift via airland, airdrop, or Low Altitude Parachute Extraction System (LAPES) delivery; and augment aeromedical evacuation, nuclear weapon transport, and special capabilities missions. It will provide the flexibility to easily transition between delivery modes by allowing inflight reconfiguration. Its major contribution to the present airlift system will be long-range direct delivery."⁷⁰

This description does not appear very different from what one might expect to read for the C-141 or the C-5. However, the inclusion of the concept of "direct delivery" adds a new and unique requirement for airlift aircraft.

Called a revolutionary capability by some, the primary benefit of direct delivery is the reduction of time required to deliver combat units to battle. Outsize cargo and personnel can be flown over intercontinental distances, with or without aerial refueling, *directly* to where they are needed. As such, the C-17 combines the advantages of a strategic airlifter like the C-5 with those of a tactical airlifter like the C-130.⁷¹ It is this kind of shift in technological capability that requires AMC to reexamine its doctrine as the distinction between "strategic" and "tactical" airlift doctrine disappears.

Acquisition Background Highlights

The current C-17 acquisition program calls for the total procurement of 120 aircraft at a total program acquisition cost of \$35.4 billion (program acquisition unit cost of \$294 million per aircraft). The production buy profile extends through Fiscal Year (FY) 1999 with the final aircraft delivery scheduled for FY 2001. To date, five aircraft have been delivered and are all part of the flight test program. The first production delivery to the Air Force is scheduled for this summer and the aircraft will be stationed at Charleston AFB, SC.⁷²

The initial program management directive for the next generation airlift aircraft (then know as the C-X) was signed by the assistant secretary of the Air Force for acquisition on December 10, 1979. In August of 1982, the secretary announced McDonnell Douglas as the winner of C-X source selection with a full-scale development contract awarded on July 23,

1982.⁷³ Since then, numerous program reviews and extensive studies have supported the C-17 as the right airlift aircraft for the Air Force. Some of the key studies which supported the need for the capabilities the C-17 will provide include: C-X Task Force Requirements Analysis (1980: USAF/Army); The Congressionally Mandated Mobility Study (1981: OSD); Airlift Master Plan (1983: USAF); The World-Wide Intra-Theater Mobility Study (1988: OSD); The Revised Inter-Theater Mobility Study (1989: OSD) and the Major Aircraft Review (1990: OSD).⁷⁴ Most recently, JCS and the services completed the first part of a massive effort with a new look at mobility requirements. The secretary of defense approved the first volume of the Mobility Requirements Study (MRS) and forwarded it to Congress on January 23, 1992.⁷⁵ This document is important doctrinally because it examines the support required both in terms of joint theater operations as well as the specific contributions made by the components of the mobility triad. As such, it further refines the doctrinal basis for AMC to build and refine its service doctrine in support of joint operations in the future.

Mobility Requirements Study

Section 909 of the National Defense Authorization Act for FY 1991 directed the Department of Defense to conduct a study to determine future mobility requirements for the Armed Forces and to develop an integrated plan to meet those requirements.⁷⁶ The Mobility Requirements Study (MRS) examined sealift, airlift, amphibious lift, surface transportation and prepositioning in the evaluation of major regional contingencies and lesser regional contingencies in lieu of a global scenario evaluated by previous mobility studies. Unlike previous studies that defined the requirement and then considered cost, the MRS considered cost as an integral part of

the study and balances requirements, risk of not achieving the objectives, and the confidence of meeting the required delivery schedule with cost. The MRS methodology consisted of mobility analysis, wargaming, and cost comparisons. The selected MRS option is based on a Persian Gulf scenario and recommends procuring sufficient assets to provide moderate confidence at reasonable cost. This option delivers four and two-thirds Army divisions in approximately six weeks.⁷⁷

The MRS recommends the acquisition of additional shipping, improving heavy rail and seaport infrastructure in the United States, and the continuation of the C-17 program as currently structured. Of particular concern to AMC, the MRS cites the following concerns: a need to address airlift capability in the mid-1990s as the C-141 fleet retires; the importance of maintaining en route basing as US overseas presence is reduced; and, the need for separate recovery and reception airfields to minimize ground times and increased demands for fuel storage.⁷⁸

AMC Requires More Airlift Capability

As indicated earlier, US national security strategy dictates the capability to deploy a decisive force and sustain it in parts of the world where prepositioned equipment or bases may not be available and where the capability to support the force once it has arrived is limited. As stressed by the MRS, the uncertain and dangerous world in the future will require more capability than the United States possesses today to project force quickly to an overseas crisis area.⁷⁹ With such shortfalls, AMC faces a significant challenge in maintaining its readiness and capability in support of its mission under the Air Force framework of *Global Reach—Global Power*. If AMC is to capitalize on the increased capability provided by the C-17 and ensure its continued acquisition,

Too Passive!
the command must ~~continue its support for the program with the articulation of formal airlift~~
doctrine that supports the mission need and maximizes the capabilities the C-17 will provide.

CHAPTER V

CONCLUSION

As the heir to airlift and the mobility component of a newly restructured Air Force, AMC inherited a command that had not updated its most basic doctrinal manuals in over twenty years. As such, airlift doctrine has become so antiquated that it is totally inadequate to support AMC's mission. The doctrine, as written, simply does not reflect the way the command does things, nor does it reflect the way it will do its job in the future. Air Force Manual 2-4, *Tactical Airlift*, has not been updated in twenty-six years. Air Force Manual 2-21, *Strategic Airlift*, has not been updated in twenty years. Its new doctrine manual, as directed by Headquarters, Air Force, Air Force Manual 2-40, *Airlift Doctrine*, has not been written. Charged with providing *Global Reach* to America's armed forces, AMC is first faced with a more basic task of cleaning the skeletons from MAC's closets and updating the command's doctrine and its contribution to joint airlift doctrine, JCS Pub 4-01.1, *Airlift Support*.

The new command's first challenge is to update and translate its doctrine into a working blueprint that depicts a total airlift system of worldwide deployability without the labels of tactical, strategic, intratheater, or intertheater airlift. Airlift doctrine still reflects the original split between strategic and tactical, yet the command will employ its resources across a spectrum that has faded the lines that divide the resources. Deployability infers mission, rather than aircraft designation.

Here I feel "mobility" is more appropriate!

We have a continuing need to express doctrine, review it, and revise it, when necessary, for it has a significant impact on the budget process, force structure, procurement, and training. In essence, it has an exceptional impact on the strategy process. As reflected in the Mobility Requirement Study, the command needs the capabilities provided by the C-17. But, to help ensure the continuation of the acquisition program AMC must refine and articulate its doctrine on the concept of direct delivery, which is a primary design capability of the aircraft.

As AMC takes on the challenge to review the lessons of experience and translate the doctrinal changes that have occurred, the command's doctrine must reflect their role in the *Global Reach—Global Power* framework: to support the President's National Security Strategy, as emphasized by Secretary Rice, by supplying speed and flexibility in its ability to deploy substantial forces and sustain them in parts of the world where prepositioning of equipment may not always be feasible, where adequate bases may not be available, and where there is a less-developed industrial base and infrastructure to support our forces once they have arrived. In essence, it's what we think of as the role of airlift--to deliver what is needed, where it is needed, and when it is needed; airlift, "...anytime, anywhere!"

Overall an outstanding paper.
You stated your thesis right up front.
Researched it, developed it, and
documented what needs to be done.
But perhaps we should look even
beyond just "airlift" -- that may be
one of the ²⁴ old paradigms we
need to change and move
to "Air mobility".

- ¹ Janet D'Agostino, "Global Reach, AMC Will Emphasize Mobility." *Air Force Times*, May 25, 1992, 12-13.
- ² TSgt Dave Nolan, "Airlift: Casting the New Mold." *Airman*, January, 1992, 26-27.
- ³ Donald B. Rice, "The Air Force and U.S Security: Global Reach--Global Power." US Air Force, A White Paper. June 1990, unpublished.
- ⁴ Ibid., 1.
- ⁵ Ibid., 5.
- ⁶ Ibid., 11.
- ⁷ Donald B. Rice, "Global Reach, Global Power--The Evolving Air Contribution to National Security." US Air Force, A White Paper. December 1992, unpublished.
- ⁸ "Air Mobility Command." *Air Force Magazine*, May 1992, 57-58.
- ⁹ Ibid., 57.
- ¹⁰ Donald B. Rice, "Reshaping for the Future." 1992, 1-31, reprinted in "Air War College, Department of Military Studies, *Readings: Book 3*. Military Studies Course - MS610," August 1992, 235.
- ¹¹ Ibid.
- ¹² National Security Strategy of the United States. The White House. (Washington, DC: U.S. Government Printing Office, January 1993), 14.
- ¹³ Rice, "Global Reach, Global Power--The Evolving Air Contribution to National Security," 7.
- ¹⁴ Ibid., 9.
- ¹⁵ D'Agostino, "Global Reach, AMC Will Emphasize Mobility." 12.
- ¹⁶ Ibid.
- ¹⁷ Thomas E. Eichhorst, *Military Airlift, Turbulence, Evolution, and Promise for the Future* (Maxwell AFB, Ala.: Air University Press, May 1991), 86.
- ¹⁸ Rice, "Global Reach, Global Power--The Evolving Air Contribution to National Security," 14.
- ¹⁹ "Anytime, Anywhere" is the squadron logo of the 31st Airlift Squadron, Dover AFB, Delaware. As AMC's newest airlift squadron, it prides itself on being the command's model squadron. Its mission is the command's mission--that is, to deliver "... anytime, anywhere."
- ²⁰ "Air Mobility Command: Its Purpose and Mission." AMC/PA brochure, 31 March 1992, unpublished.
- ²¹ Air Force Regulation 23-17, *Organization and Mission--Field, Military Airlift Command*. 1 April 1985.
- ²² Secretary of Defense, *Program Decision Memorandum (PDM)*, Consolidation of Airlift Forces, 29 July 1974, unpublished.
- ²³ Ibid.
- ²⁴ Eichhorst, *Military Airlift, Turbulence, Evolution, and Promise for the Future*, 32.
- ²⁵ "Air Mobility Command Vector - Global Reach for America." Air Mobility Command, A White Paper. December 1992, unpublished.
- ²⁶ Ibid., Executive Summary, page not numbered.
- ²⁷ Ibid.
- ²⁸ Ibid., 8-11.
- ²⁹ Lt Col Charles E. Miller, USAF, *Airlift Doctrine* (Maxwell AFB, Ala.: Air University Press, 1988), 426.

- ³⁰ Air Force Regulation 1-2, *Air Force Basic Doctrine, Assignment of Responsibilities for Development of Aerospace Doctrine*, 10 September 1990, 2.
- ³¹ Air Force Manual 1-1, *United States Air Force Basic Doctrine*, 14 August 1964, 4-3.
- ³² Stanley M. Ulanoff, *MATS: The Story of the Military Air Transport Service*, (New York, N.Y.: Franklin Watts, Inc., 1964) 113.
- ³³ Air Force Manual 11-1, *Administrative Practices, US Air Force Glossary of Standardized Terms*, 29 September 1989, 1.
- ³⁴ Ibid.
- ³⁵ Miller, *Airlift Doctrine*, 299.
- ³⁶ Ibid., 302-3.
- ³⁷ Air Force Manual 2-4, *Aerospace Operational Doctrine, Tactical Air Force Operations, Tactical Airlift* 10 August 1966, i.
- ³⁸ Air Force Manual 2-21, *Aerospace Operational Doctrine, United States Air Force Strategic Airlift*, 26 September 1966.
- ³⁹ Air Force Manual 2-21, *Aerospace Operational Doctrine, United States Air Force Strategic Airlift*, 13 July 1972, i.
- ⁴⁰ Air Force Regulation 1-2, *Air Force Basic Doctrine, Assignment of Responsibilities for Development of Aerospace Doctrine*, 10 September 1990, 1.
- ⁴¹ Colonel Dennis M. Drew and Dr. Donald M Snow, *Making Strategy, An Introduction to National Security Processes and Problems* (Maxwell AFB, Ala.: Air University Press, August 1988), 163-167.
- ⁴² Ibid.
- ⁴³ Quoted in Air Force Regulation 1-2, *Air Force Basic Doctrine, Assignment of Responsibilities for Development of Aerospace Doctrine*, 10 September 1990, 1.
- ⁴⁴ Air Force Regulation 1-2, *Air Force Basic Doctrine, Assignment of Responsibilities for Development of Aerospace Doctrine*, 10 September 1990, 1.
- ⁴⁵ Drew and Snow, *Making Strategy, An Introduction to National Security Processes and Problems*, 163.
- ⁴⁶ Interview with Maj Jay Reid, action officer, HQ AMC/XPD, 13 April 1993.
- ⁴⁷ Drew and Snow, *Making Strategy, An Introduction to National Security Processes and Problems*, 164.
- ⁴⁸ Ibid., 171.
- ⁴⁹ Ibid., 173.
- ⁵⁰ Air Force Manual 1-1, *Basic Aerospace Doctrine of the United States Armed Forces*, Volume I, March 1992, 13-14.
- ⁵¹ Carl Von Clausewitz, *On War*, ed. and trans. Michael E. Howard and Peter Paret (Princeton, N.J.: Princeton University Press, 1984), 204.
- ⁵² Air Force Manual 1-1, *Basic Aerospace Doctrine of the United States Armed Forces*, Volume II, March 1992, 186-189.
- ⁵³ Ibid., 189.
- ⁵⁴ AFM 2-50, January 1985, *USA/USAF Doctrine for Joint Airborne and Tactical Airlift Operations* (the USAF version of USA's FM 100-7), does provide multi-service guidance for requesting and controlling airland, airdrop, and extraction missions used by the Army. It, however, stops short of providing definitive guidance on the doctrine, tactics, techniques, and procedures used in the employment of airlift in joint operations.

- ⁵⁵ Joint Chiefs of Staff, Joint Pub 1, *Joint Warfare of the U.S. Armed Forces*, (Washington, DC: 1991), 5.
- ⁵⁶ Joint Chiefs of Staff, Joint Pub 1-01, *Joint Publication System, Joint Doctrine and Joint Tactics, Techniques, and procedures Development Program*, (Washington, DC: 1992).
- ⁵⁷ Interview with LTC John Quinones, US Army, action officer, Airlift Concepts and Requirements Agency, HQ AMC/XP-ACRA, 24 March 1993.
- ⁵⁸ Interview with Maj Jay Reid, action officer, HQ AMC/XPD, 13 April 1993.
- ⁵⁹ Miller, *Airlift Doctrine*, 427-433.
- ⁶⁰ Department of Defense, *Congressionally Mandated Mobility Study*, Volume I, Summary (Washington, DC: Government Printing Office, 1981).
- ⁶¹ Department of the Air Force, *USAF Airlift Master Plan*, (Washington, DC: 1983).
- ⁶² Department of the Air Force, *Air Force 2000: Air Power Entering the 21st Century*, (Washington, DC: 1982)
- ⁶³ Quoted in Department of the Air Force, *Air Forces Issues Book 1992*, (Washington, DC: 1992), 20.
- ⁶⁴ Miller, *Airlift Doctrine*, 426.
- ⁶⁵ Ibid.
- ⁶⁶ Drew and Snow, *Making Strategy*, 167.
- ⁶⁷ Background Paper, SAF/AQQU, Pentagon, Washington, DC, SAF/AQ Program Summary: C-17, October 22, 1992, 1.
- ⁶⁸ Department of the Air Force, *Airlift and U.S. National Security: The Case for the C-17*, (Washington DC: 1991), i.
- ⁶⁹ System Operational Requirements Document (SORD), SORD 002-91-IIIB (C-17), HQ MAC/XRSC, May 23, 1991, 1.
- ⁷⁰ Ibid.
- ⁷¹ *Airlift and U.S. National Security: The Case for the C-17*, 13.
- ⁷² Background Paper, SAF/AQ Program Summary: C-17, 5.
- ⁷³ Point Paper, SAF/AQQU, Pentagon, Washington, DC, Chronology on C-17 Program, October 26, 1992.
- ⁷⁴ *Airlift and U.S. National Security: The Case for the C-17*, 8.
- ⁷⁵ Point Paper, HQ AMC/XPDII, Scott AFB, IL, Mobility Requirements Study (MRS), February 22, 1993.
- ⁷⁶ Joint Chiefs of Staff, *Mobility Requirements Study*, Volume I (Washington, DC: 1992), I-1.
- ⁷⁷ Point Paper, HQ AMC/XPDII, Scott AFB, IL, Mobility Requirements Study (MRS), January 22, 1993.
- ⁷⁸ Ibid.
- ⁷⁹ *Mobility Requirements Study*, ES-2.

BIBLIOGRAPHY

"Air Mobility Command." *Air Force Magazine*, May 1992.

"Air Mobility Command: Its Purpose and Mission." AMC/PA brochure, 31 March 1992, unpublished.

"Air Mobility Command Vector - Global Reach for America." HQ AMC, A White Paper. December 1992, unpublished

Background Paper, SAF/AQQU, Pentagon, Washington, DC, SAF/AQ Program Summary: C-17, October 22, 1992.

Clausewitz, Carl Von *On War*, ed. and trans. Michael E. Howard and Peter Paret (Princeton, N.J.: Princeton University Press, 1984).

D'Agostino, Janet "Global Reach, AMC Will Emphasize Mobility." *Air Force Times*, May 25, 1992.

D'Agostino, Janet "New Control Center to be Hub of AMC." *Air Force Times*, 25 May 1992.

D'Agostino, Janet "Tenants: 12 Tanker Units Won't Move Yet." *Air Force Times*, 25 May 1992.

Department of the Air Force, *Air Force 2000: Air Power Entering the 21st Century*, (Washington, DC: 1982).

Department of the Air Force, *Air Forces Issues Book 1992*, (Washington, DC: 1992).

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.

Department of the Air Force, Air Force Regulation 23-17, *Organization and Mission--Field, Military Airlift Command*. 1 April 1985.

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

Department of the Air Force, Air Force Manual 1-1, *Basic Aerospace Doctrine of the United States Armed Forces*, Volume I, March 1992.

Department of the Air Force, Air Force Manual 1-1, *Basic Aerospace Doctrine of the United States Armed Forces*, Volume II, March 1992.

Department of the Air Force, Air Force Manual 2-4, *Aerospace Operational Doctrine, Tactical Air Force Operations, Tactical Airlift*. 10 August 1966.

Department of the Air Force, Air Force Manual 2-21, *Aerospace Operational Doctrine, United States Air Force Strategic Airlift*, 26 September 1966.

Department of the Air Force, Air Force Manual 2-21, *Aerospace Operational Doctrine, United States Air Force Strategic Airlift*, 13 July 1972.

Department of the Air Force, Air Force Manual 11-1, *Administrative Practices, US Air Force Glossary of Standardized Terms*, 29 September 1989.

Department of the Air Force, *Airlift and U.S. National Security: The Case for the C-17*, (Washington DC: 1991).

Department of the Air Force, *USAF Airlift Master Plan*, (Washington, DC: 1983).

Department of Defense, *Congressionally Mandated Mobility Study*, Volume I, Summary, (Washington, DC: Government Printing Office, 1981).

Department of Defense, Secretary of Defense, *Program Decision Memorandum (PDM)*, Consolidation of Airlift Forces, 29 July 1974, unpublished.

Drew, Colonel Dennis M., USAF and Snow, Dr. Donald M. *Making Strategy, An Introduction to National Security Processes and Problems* (Maxwell AFB, Ala.: Air University Press, August 1988).

Eichhorst, Thomas E. *Military Airlift, Turbulence, Evolution, and Promise for the Future*. (Maxwell AFB, Ala.: Air University Press, May 1991).

"Gearing Up for June '92." *Airman*, January, 1992.

Joint Chiefs of Staff, Joint Pub 1, *Joint Warfare of the U.S. Armed Forces*, (Washington, DC: 1991).

Joint Chiefs of Staff, Joint Pub 1-01, *Joint Publication System, Joint Doctrine and Joint Tactics, Techniques, and Procedures Development Program*, (Washington, DC: 1992).

Joint Chiefs of Staff, *Mobility Requirements Study*, Volume I (Washington, DC: 1992).

McPeak, Gen. Merrill A. from a speech delivered Jun 19, 1992 at Maxwell AFB, Alabama, and published as "McPeak: No Clear Mission Statement Until Now." *Air Force Times*, August 3, 1992.

Miller, Lt Col Charles E., USAF, *Airlift Doctrine* (Maxwell AFB, Ala.: Air University Press, 1988).

National Security Strategy of the United States. The White House. (Washington, DC: U.S. Government Printing Office, January 1993).

Nolan, TSgt Dave, USAF "Airlift: Casting the New Mold." *Airman*, January, 1992.

Point Paper, SAF/AQQU, Pentagon, Washington, DC, Chronology on C-17 Program, October 26, 1992.

Point Paper, HQ AMC/XPDJ, Scott AFB, IL, Mobility Requirements Study (MRS), January 22, 1993.

Point Paper, HQ AMC/XPDJ, Scott AFB, IL, Mobility Requirements Study (MRS), February 22, 1993.

"Rice on Restructuring." *Airman*, January, 1992.

Rice, Donald B. "The Air Force and U.S Security: Global Reach--Global Power." US Air Force, A White Paper. June 1990, unpublished.

Rice, Donald B. "Reshaping for the Future." 1992, 1-31, reprinted in "Air War College, Department of Military Studies, *Readings: Book 3*. Military Studies Course - MS610," August 1992.

Rice, Donald B. "Global Reach, Global Power--The Evolving Air Contribution to National Security." US Air Force, A White Paper. December 1992, unpublished.

System Operational Requirements Document (SORD), SORD 002-91-IIIB (C-17), HQ MAC/XRSC, May 23, 1991, 1.

Ulanoff, Stanley M. *MATS: The Story of the Military Air Transport Service*, (New York, N.Y.: Franklin Watts, Inc., 1964).