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NEGLECTED U.S. MILITARY MISSIONS: CONTENDING THEORIES OF BUREAUCRATIC POLITICS AND ORGANIZATIONAL CULTURE AND THE CASE OF AIRLIFT MOBILITY

John Douglas Harrington
Major, U.S. Air Force

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MILITARY ABSTRACT

This dissertation uses the comparative case study method to address the twin puzzles raised by the evolution of U.S. airlift. First, why has airlift been generally neglected? Second, how can we explain the shorter periods of intense interest in U.S. airlift? In other words, this study attempts to account both for the U.S. Air Force's relative *neglect* of its airlift mobility mission (compared to its combat bomber and fighter missions) and for the *innovations* that have occurred in the airlift arena despite a continuing condition of neglect. Using the competing independent variables drawn from the literatures on bureaucratic politics and organizational cultures, this study tests ten contradictory hypotheses to explain variation in the dependent variable, the U.S. Air Force airlift mobility mission. To do so, the thesis employs longitudinal research on the U.S. airlift mission in five chronically-ordered case studies spanning fifty years, from 1942 to 1992, including World War II, Berlin, Korea, Vietnam and the Persian Gulf. Change is measured in terms of U.S. Air Force organization, force structure and basic doctrine. Based on the empirical evidence of the case studies, implications are drawn for the theories' wider applications to the generalized phenomenon of neglected U.S. military

missions. In the final analysis, although this study finds little use for the bureaucratic politics paradigm, it finds that a counter theory, organizational culture, *does* matter. The findings of this study should shed new light on how certain military missions come to be neglected and their prospects for innovation.

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NEGLECTED U.S. MILITARY MISSIONS: CONTENDING THEORIES OF BUREAUCRATIC POLITICS AND ORGANIZATIONAL CULTURE AND THE CASE OF AIRLIFT MOBILITY

VOLUME ONE OF TWO

A Dissertation
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Graduate School of Arts and Sciences
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By

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Washington, D.C.
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NEGLECTED U.S. MILITARY MISSIONS: CONTENDING THEORIES OF BUREAUCRATIC POLITICS AND ORGANIZATIONAL CULTURE AND THE CASE OF AIRLIFT MOBILITY

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ABSTRACT

"The nation's highest unfilled priority is airlift" states Chairman of the Joint Chiefs of Staff, General David C. Jones, in a 1982 speech before the Council of Foreign Relations. Yet outside analysts and ample evidence suggest that airlift has been a chronically neglected mission, both before and after Jones' pronouncement, though airlift has at times been the focus of intense interest, ample funding, and significant change in missions and technologies. This dissertation uses the comparative case study method to address the twin puzzles raised by the evolution of U.S. airlift. First, why has airlift been generally neglected? Second, how can we explain the shorter periods of intense interest in U.S. airlift? In other words, this study attempts to account both for the U.S. Air Force's relative *neglect* of its airlift mobility mission (compared to its combat bomber and fighter missions) and for the *innovations* that have occurred in the airlift arena despite a continuing condition of neglect. Using the competing independent variables drawn from the literatures on bureaucratic politics and organizational cultures, this study tests ten contradictory hypotheses to explain variation in the dependent variable, the U.S. Air Force airlift mobility mission. To do so, the thesis employs longitudinal research on the U.S. airlift mission in five chronically-ordered case studies spanning fifty years, from 1942 to

1992, including World War II, Berlin, Korea, Vietnam and the Persian Gulf. Change is measured in terms of U.S. Air Force organization, force structure and basic doctrine. In the final analysis, although this study finds little use for the bureaucratic politics paradigm, it finds that a counter theory, organizational culture, *does* matter. Based on the empirical evidence of the case studies, implications are drawn for the theories' wider applications to the generalized phenomenon of neglected U.S. military missions. A likely related candidate includes the U.S. Navy's sealift mission, while unrelated candidates include minesweeping and the U.S. Army's special operations mission. The findings of this study should shed some new light on how these missions have come to be neglected and the prospects for innovation in these areas.

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Finally, to Colonel Douglas Murray and my colleagues at the U.S. Air Force Academy Department of Political Science: thank you for providing me with this once-in-a-lifetime opportunity.

DEDICATION

This dissertation is dedicated to my father, who served valiantly in China during World War II as a fighter pilot in the 14th Air Force "Flying Tigers."

In Memory of

ROBERT EDWARD HARRINGTON

Colonel, United States Air Force

1918 - 1985

TABLE OF CONTENTS

VOLUME ONE

THE TUNNER YEARS

Chapter

I. INTRODUCTION 1

The Problem 1
The Study 6
The Contents 11

II. THEORY AND METHODOLOGY 13

The Bureaucratic Politics Pardigm 15
Critiques of the Bureaucratic Politics Paradigm 23
Organizational Culture Theory 35
The Comparative Case Study Method 52
Propositions and Testable Hypotheses 72

III. AIR TRANSPORT COMMAND 90

W.W.II: CBI Hump Airlift 104
Tenth Air Force 108
India-China Wing, ATC 117
India-China Division 136
Analysis 149

IV. MILITARY AIR TRANSPORT SERVICE 165

The Berlin Airlift 172
USAFE European Air Transport Service 173
First Airlift Task Force 193
Combined Airlift Task Force 197
The Korean Airlift 216
Fifth Air Force 217
Combat Cargo Command 227
315th Air Division 247
Analysis 261

CHAPTER I

INTRODUCTION

The Problem

"The nation's highest unfilled priority is airlift" proclaimed Chairman of the Joint Chiefs of Staff, General David C. Jones, in a 1982 speech before the Council on Foreign Relations.[1] Yet outside analysts and ample evidence suggest that airlift has been a chronically neglected mission, both before and after Jones' pronouncement, though airlift has at times been the focus of intense interest, ample funding, and significant change in missions and technologies. This dissertation uses the comparative case study method to address the twin puzzles raised by the evolution of U.S. airlift. First, why has airlift been generally neglected? Second, how can we explain the shorter periods of intense interest in U.S. airlift?[2] In other words, this study attempts to account both for the U.S. Air Force's relative *neglect* (compared to its bomber and fighter combat missions) of its airlift mobility mission and for the *innovations* that have occurred in the airlift arena despite a continuing condition of neglect. Using the competing independent variables drawn from the literatures on bureaucratic politics and organizational cultures, this study tests ten

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[1] Benjamin F. Scheimner, "Budget Cutters Are Only Ones Likely to Win Battle Over C-5B/747F/C-17 Airlift Alternatives," *Armed Forces Journal International* (July 1982): 42.

[2] The distinction between political risk and policy risk can help explain the general neglect of missions as organizations avoid short-term political risks (the risk of political opposition) at the cost of assuming long-term policy risks (the risk that a policy will fail). However, this does not explain why some missions are neglected rather than others, or why even neglected missions occasionally become the focus of intense attention. See Alan Lamborn, "Risk and Foreign Policy Choice," *International Studies Quarterly* 29 (1985) 385 - 410.

contradictory hypotheses to explain variation in the dependent variable, the U.S. Air Force airlift mobility mission. To do so, the thesis employs longitudinal research on the U.S. airlift mission in five chronologically-ordered case studies spanning fifty years, from 1942 to 1992, including World War II, Berlin, Korea, Vietnam and the Persian Gulf. Change is measured in terms of U.S. Air Force basic doctrine, organization and force structure. Based on the empirical evidence of the case studies, implications are drawn for the theories' wider applications to the generalized phenomenon of neglected U.S. military missions. In the final analysis, although this study finds little use for the bureaucratic politics paradigm, it does find that a counter theory, organizational culture, *does* matter. Airlift certainly isn't the only mission that tends to be neglected by the U.S. Armed Forces. Other likely related candidates include the logistics transportation arms of the U.S. Navy and U.S. Army, sealift and ground transport, respectively. Other unrelated missions that have a tendency to be neglected are the Air Force close air support mission, the Army's special operations mission, and the Navy's minesweeping mission. The findings of this study should shed some new light on how these missions have come to be neglected and the prospects for innovation in these areas.

Observers have for many years commented that airlift is a neglected mission within the Air Force. A 1990 RAND Corporation study conducted by Kevin Lewis lends support to General Jones' assertion, revealing three disturbing airlift trends between 1946 and 1990.[3] First, since the 1950s there has been a precipitous decline in the rate of airlift

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[3] Kevin Lewis, *The U.S. Air Force Budget and Posture Over Time* (Santa Monica: RAND Corp., February 1990) 36.

aircraft acquisitions. This is dramatically illustrated by the fact that the Air Force procured more airlift aircraft between FY 52 and FY 56 than it has from FY 57 to the present. In the FY 52 - 56 time period the Air Force acquired 12,373 total aircraft, including 8,671 fighters, 1,787 bombers and 1,238 transports. By comparison, from FY 57 - 61 total acquisitions amounted to just 2,667 airframes,[4] of which only 52 were transports,[5] and Lewis observes "there is generally a downward pattern until the present time."[6] Today the Air Force owns 4,688 aircraft, including 1,878 mainline fighters (e.g., A-10, F-4, F-15, F-16, F-111, F-117) and 183 bombers (e.g., B-1, B-2, B-52) but only 289 strategic (e.g., C-5, C-17, C-141) and 317 tactical (e.g., C-130) transports.[7]

Second, airlift procurement during the FY 62 - 86 time frame did not fulfill planned replacement objectives and therefore has led to a steadily aging airlift fleet. The age of transport aircraft has averaged 13.3 years over the past 17 years, ranging from a low of 10.4 years in FY 70 to a high of 16.8 years in FY 83. In contrast, the age of fighter aircraft has averaged just half this amount at 7.8 years, ranging from a low of 5.9 years in FY 72 to a high of 9.2 years in FY 84. Air Force-wide, the average aircraft age over this same period has been 11.8 years, ranging from a low of 8.9 years in FY 70 to a high of 14.7 years in FY 85.[8] Today, the average age of the airlift fleet is 23 years old, while the average age of the bomber fleet is 19.7 and the fighter fleet is just 9.8 years old.[9]

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[4] Ibid., 38.

[5] Richard J. Burkard, *Military Airlift Command: Historical Handbook 1941 - 1984* (Scott AFB, IL: MAC Command Historical Office, 1984) 99.

[6] Lewis, *The U.S. Air Force Budget and Posture Over Time*, 38.

[7] "The Air Force in Facts and Figures," *Air Force*, May 1996, 60.

[8] Lewis, *The U.S. Air Force Budget and Posture Over Time*, 44.

[9] Since June 1992, USAF aircraft have been generally divided into mobility assets, which include airlifters and tankers, and combat assets, which include fighters and bombers. Using this categorization, the

Third, the portion of the Air Force budget allocated to airlift has averaged approximately 5% from FY 62 - 86, ranging from a low of just 3% in FY 74 to a high of only 7% in FY 85. In contrast, the Air Force has traditionally allocated the lion's share of its budget to strategic nuclear forces, devoting four times the amount allocated to airlift. During the same time period, these forces accounted for an average share of 21% of the Air Force budget, ranging from a high of 40% in FY 62 to a low of 14% in FY 78.[10]

Douglas Menarchik claims that "the Gulf War reaffirmed [the] finding [that] historically, transportation has been the most common limiting factor in American logistics systems from the Revolution to the Korean War." He contends that "strategic surge airlift was the real problem of Desert Storm."[11] Force structure limitations were apparent as "America was short of strategic transportation to move rapidly the military forces of the Persian Gulf." As a consequence, "American forces were at risk in August and September 1990," before the shield could be erected. The U.S. strategic airlift utilization rate rose to over 90% compared to just 33% for combat fighter and bomber aircraft, implying that "the United States could handle [only] one Desert Shield-type airlift at a time," not two and a half as advertised.[12] More recently, a senior defense official was quoted as saying "we can't [even] do two simultaneous wars, and airlift is why." Jeffrey

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age disparity is even more pronounced, as the mobility fleet is an average of 25 years old, while the combat fleet is just 10.7 years old. See "The Air Force in Facts and Figures," 60.

[10] Lewis, *The U.S. Air Force Budget and Posture Over Time*, 26.

[11] Douglas Menarchik, *Powerlift - Getting to Desert Storm - Strategic Transportation and Strategy in the New World Order* (Westport: Praeger, 1993) 175.

[12] Ibid., 146.

Record contends that "the U.S. has not had the capability to fight two near-simultaneous wars since 1945."[13] Menarchik concludes that:

> given the centrality of logistics to strategy, national leaders and military commanders should take it to heart intellectually and substantively. They do not. Civilian and military leaders tend to undervalue logistics.[14]

Nevertheless, within the context of airlift's chronically neglected status, significant changes have occurred. For example, the organization of airlift has evolved from the U.S. Army's Air Transport Command, to a U.S Air Force support service (Military Air Transport Service), to an Air Force major command and U.S. specified command (Military Airlift Command), and most recently to a U.S. unified command (U.S. Transportation Command). Furthermore, the airlift force structure has developed from small propeller-driven commercial airliners converted to transport use to wide-bodied jet aircraft designed specifically for the military airlift mission. This case study should offer insights into the possibilities for innovation within a neglected mission area.

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[13] "Airlift Studies Examine Need For More C-17s," *Aviation Week*, 24 April 1995, 20.
[14] Menarchik, *Powerlift*, 172.

The Study

Theory

Harry Eckstein has defined a most-likely case as one in which the independent variable is at a level that strongly predicts a particular outcome. For such a case, the outcome variable must occur or the theory is suspect.[15] Policy-making for the airlift mobility mission is an Ecksteinian "most-likely" case for bureaucratic politics in that it deals with a policy realm that players, witnesses, and academics frequently describe as being strongly affected by "self-interested pulling and hauling."[16] If a researcher fails to discover a bureaucratic political influence on the airlift force structure procured by the Air Force, then it raises some fundamental doubts about the utility and rigor of the bureaucratic politics paradigm.[17]

Policy-making for airlift should be especially susceptible to the dynamics of bureaucratic political factors because it concerns an issue which is not considered salient but at the same time is heavily focused on budget and procurement decisions. Because airlift policy is not a hot item on the national agenda, it rarely gets the attention of the President of the United States. There have been exceptions, such as Kennedy's campaign pledge to improve the nation's strategic airlift capabilities as part of his new strategic doctrine of flexible response. However, Air Force budget and procurement decisions are usually relegated to the lower rungs of the executive branch, which should make them susceptible to the gamesmanship of bureaucratic politics.[18] In particular, theories of

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[15] See Harry Eckstein, "Case Study and Theory in Political Science," in Fred Greenstein and Nelson Polsby, eds., *The Handbook of Political Science* (Reading: Addison-Wesley, 1975) 79 - 138.

[16] Edward Rhodes, "Do Bureaucratic Politics Matter?" *World Politics* 47:1 (October 1994) 3.

[17] Ibid., 6.

bureaucratic politics suggest that the Air Force would use the airlift mobility mission as a way of expanding its empire. As Allison and Morton Halperin write:

> the health of the organization ... is seen to depend on maintaining influence, fulfilling its mission, and securing the necessary capabilities. The latter two interests lead to concern for ... *maintaining or expanding roles and missions, and maintaining or increasing budgets* [emphasis added].[19]

Nevertheless, relative to the bomber and fighter combat missions, airlift mobility has been chronically neglected. Even in absolute terms, the Air Force has not made an attempt to amass an airlift empire. With the exception of periodic fixes that are made following crises, turf expansion has not been the normal condition of the airlift mission. Halperin himself, despite his assertion of the institutional imperative to empire expansion, cited MAC as an example of a organization that does not fit the bureaucratic politics mold.:

> the part of the Air Force that has been least effective in challenging the dominant role of [Strategic Air Command] SAC is the Military Airlift Command [MAC], charged with the movement of men and materiel primarily for the Army.[20]

J.Q. Wilson elaborates further:

> Subordinate has been the Military Airlift Command, a unit that suffers not only from having to fly transport planes instead of bombers but transport planes designed to carry *Army* personnel to distant battlefields. (By an interservice agreement, ... the Army was denied the right to have its own fleet of troop

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[18] See Graham T. Allison, *Essence of Decision* (Boston: Little, Brown and Company, 1971) 176. Allison, the architect of the bureaucratic politics paradigm, confidently asserts that "for large classes of issues - *e.g., budget and procurement decisions* - the stance of a particular player can be predicted with high reliability from information about his seat."

[19] Graham T. Allison and Morton H. Halperin, "Bureaucratic Politics: A Paradigm and Some Policy Implications," eds. Raymond Tanter and Richard H. Ullman, *Theory and Policy in International Relations* (Princeton: Princeton University Press, 1972) 48.

[20] Morton H. Halperin, *Bureaucratic Politics and Foreign Policy* (Washington D.C.: The Brookings Institution, 1974) 31.

> transports). Operating a 'bus service' for the Army is not a highly rewarded task in the USAF.[21]

This trend of neglect runs counter to the proposition that all healthy organizations attempt to expand their turf, thus suggesting that an independent variable other than bureaucratic politics may be at work in the case of airlift, and neglected missions more generally.

Organizational culture, in the term used by J.Q. Wilson and others (or essence, in Halperin's parlance), may provide a more satisfactory answer as to why certain military missions tend to be chronically neglected. Much like the personality of an individual, Wilson defines the culture of an organization as "those patterned and enduring differences among systems of coordinated action that lead those systems to respond in different ways to the same stimuli." Organizational culture is primarily the byproduct of:

> the predispositions of members, the technology of the organization, and the situational imperatives with which the agency must cope [which] tend to give the organization a distinctive way of seeing and responding to the world.[22]

Finally, Wilson notes that "when, ... these factors produce different definitions of core tasks for different people, the organization will have several cultures."[23] In fact, he uses the U.S. Air Force as his primary example of an organization with "multiple, competing cultures:

> The culture of the United States Air Force for a long time expressed the primacy of flying combat aircraft capable of carrying nuclear weapons. The Second World War brought glory and power to bomber pilots; after the war, the USAF became culturally a fraternity of bomber pilots. Bomber pilots rose to most of the top jobs in the service. This meant that *officers who flew* other kinds of aircraft - fighters, *transport planes,* or infantry-support tactical aircraft - *discovered that they were not part of the dominant culture* [emphasis added].[24]

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[21] James Q. Wilson, *Bureaucracy* (Basic Books, 1989) 105.
[22] Ibid., 93.
[23] Ibid.

Organizational culture not only accounts for the neglect of the airlift mobility mission, but it also accounts for both core and peripheral learning that has transpired over the course of this fifty-year chronology. Wilson acknowledges that "innovation is rare," because it requires "qualities that are rare among government executives" such as "exercise of judgment, personal skill and misdirection." Nevertheless, his theory does allow for learning to take place. Wilson defines innovation as "any new program or technology ... that involve[s] the performance of new tasks or a significant alteration in the way in which existing tasks are performed."[25] Theories of bureaucratic politics, on the other hand, contend that organizations tend to be stagnant and resistant to change. Halperin elaborates that "the bureaucratic system is basically inert; it moves only when pushed hard and persistently. The majority of bureaucrats prefer to maintain the status quo."[26] Barry Posen argues that "military" organizations in particular:

> seldom innovate autonomously, particularly in matters of doctrine. This should be true because organizations abhor uncertainty, and changes in traditional patterns always involves uncertainty. It should also be true because military organizations are very hierarchical, restricting the flow of ideas from the lower levels to the higher levels.[27]

Because military organizations are so resistant to change, Posen contends that "innovation should occur mainly when the organization registers a large failure, or when civilians with legitimate authority intervene to promote innovation."[28] As we will see, deficiencies in performance during great crises and outside intervention have, in different measures at

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[24] Ibid., 105.
[25] Ibid., 222.
[26] Halperin, *Bureaucratic Politics and Foreign Policy*, 99.
[27] Barry Posen, *The Sources of Military Doctrine* (Ithaca: Cornell University Press, 1984) 224.
[28] Ibid.

different times, helped to shape the innovation which has occurred in the airlift mobility mission.

Methodology

Methodologically, this case conforms to Allison's "organizing concepts" for studying bureaucratic politics and organizational processes by answering the following four questions about policy-making for airlift:

> Who plays? What determines each player's stand? What determines each player's relative influence? How does the game combine players' stands, influence, and moves to yield governmental decisions and actions?[29]

This study incorporates three broad classes of participants: (1) elected federal officials (i.e., President, Members of Congress); (2) appointed federal officials (e.g., Secretary of Defense, Secretary of the Air Force); and (3) professional military officers (e.g., Chairman of the Joint Chiefs of Staff, Chief of Staff of the Air Force, Commander in Chief of Air Mobility Command). The concept of civilian control of the military combined with the hierarchical arrangement of the Air Force facilitates the ability to construct testable bureaucratic political hypotheses for each of the players' stances on various issues.

During the fifty-year period of concern, both the independent and dependent variables have experienced change. Concerning the independent variables, the roles of several critical players have changed throughout the course of this study. For instance, the authority of both the Secretary of Defense and Chairman of the Joint Chiefs of Staff has increased over time, primarily through the measures of the Department of Defense

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[29] Allison, *Essence of Decision*, 164.

Reorganization Acts of 1958 and 1986. Moreover, the role of the commander-in-chief of airlift forces has grown as a result of reorganizations in the command structure for airlift. Driven by crises (i.e., WW2, Berlin, Korea, Vietnam, Persian Gulf), each of the measures of the dependent variables has also experienced change throughout the past half century. Though trends are identifiable, budgetary allocations and the composition of the airlift force structure fluctuate on an annual basis. Roles and missions, doctrines and organizations also continue to evolve to reflect changing international and domestic political circumstances. Objective comparative measures include official documentation (i.e. roles and missions, doctrine), monetary resources (i.e., budget), tangible resources (i.e., force structure), and organizational composition (i.e., ATC, MATS, MAC, AMC).

The Contents

Chapter Two, entitled "Theory and Methodology," begins with a literature review of the relevant bureaucratic politics and organizational culture theoretical material. From these two models, ten competing testable hypotheses are derived. Measures of the dependent variable include changes in airlift doctrine, organization and force structure.

Chapters Three through Six cover the individual crises which illustrate in detail the extent of airlift's neglect throughout its history. Each chapter begins with an introductory section which explains the organizational, force structure and doctrinal status of airlift prior to the onset of each conflict or crisis. Chapter Three, "Air Transport Command," (ATC) charts the historic proving ground of the China-India-Burma (CBI) theater in which the converted airliners of the ATC overflew the Himalayan (Hump) mountains to

supply the famous "Flying Tigers" of 14th Air Force, the Chinese Army and XX Bomber Command. Chapter Four, "Military Air Transport Service," (MATS) chronicles airlift's leading role in the first major crises of the Cold War, supplying the entire city of West Berlin, which was held hostage by the Soviets for nearly a year, followed shortly thereafter by the Korean War, in which tactical airlift played an important role in the first limited war of the Cold War era. Chapter Five, "Military Airlift Command," (MAC) chronicles the interservice rivalry between the Army and Air Force concerning tactical airlift responsibilities during the Vietnam War as well as the introduction of the first jet-powered strategic airlifters, Lockheed's C-141 and C-5. Finally, Chapter Six, "United States Transportation Command," (USTRANSCOM) examines the Gulf War, demonstrating TRANSCOM's organizational ineffectiveness as well as the dire need for a C-141 replacement aircraft. Each chapter ends with an analysis of the changes that were made to airlift doctrine, organization and force structure in the aftermath of each of the case studies.

Chapter Seven, "Findings and Conclusion," brings together the evidence from the case studies to test each of the ten competing organizational culture and bureaucratic politics hypotheses to determine which better account for airlift's neglect as well as its episodic innovations. In conclusion, possible areas of related research are suggested in order to shed more light upon the wider phenomenon of neglected U.S. military missions.

CHAPTER II

THEORY AND METHODOLOGY

Introduction

This chapter begins by examining the primary assumptions underlying Graham Allison and Morton Halperin's bureaucratic politics theory.[1] This is followed by the major critiques of bureaucratic politics offered by Stephen Krasner, Robert Art, Jonathan Bendor and Thomas Hammond, David Welch and Edward Rhodes.[2] Having explored the inadequacies of the bureaucratic politics paradigm, Morton Halperin, Barry Posen and James Q. Wilson's organizational culture (or essence) theories[3] incorporated with Jack Levy, Andrew Bennett, and Stephen Rosen's learning theories are offered as a counter-explanation for the neglected condition of the airlift mobility mission.[4]

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[1] See Graham T. Allison, *Essence of Decision* (Boston: Little, Brown and Company, 1971); Morton H. Halperin, *Bureaucratic Politics and Foreign Policy* (Washington D.C.: The Brookings Institution, 1974); and Allison and Halperin, "Bureaucratic Politics: A Paradigm and Some Policy Implications," in *Theory and Policy in International Relations,* eds. Raymond Tanter and Richard H. Ullman (Princeton: Princeton University Press, 1972) 40 - 79.

[2] See Stephen D. Krasner, "Are Bureaucracies Important? (Or Allison Wonderland)," *Foreign Policy* 7 (Summer 1971), reprinted in G. John Ikenberry, *American Foreign Policy* (HarperCollins Publishers, 1989) 419 - 432; Robert J. Art, "Bureaucratic Politics and American Foreign Policy," *Policy Sciences* (December 1973): 467 - 490, reprinted in Ikenberry, 433 - 458; Jonathan Bendor and Thomas H. Hammond, "Rethinking Allison's Models," *American Political Science Review* 86: 2 (June 1992): 301- 322; David A. Welch, "The Organizational Process and Bureaucratic Politics Paradigms: Retrospect and Prospect," *International Security* 17: 2 (Fall 1992): 112-146; and Edward Rhodes, "Do Bureaucratic Politics Matter? Some Disconfirming Findings from the Case of the U.S. Navy," *World Politics* 47:1 (October 1994): 1 - 41.

[3] See Halperin, *Bureaucratic Politics and Foreign Policy*; Barry R. Posen, *The Sources of Military Doctrine* (Ithaca: Cornell University Press, 1984); James Q. Wilson, *Bureaucracy* (Basic Books, 1989).

[4] See Jack S. Levy, "Learning and Foreign Policy: Sweeping a Conceptual Minefield," *International Organization* 48: 2 (Spring 1994); Andrew O. Bennett, "Theories of Individual, Organizational, and Governmental Learning and the Rise and Fall of Soviet Military Interventionism 1973 - 1983," Ph.D. Dissertation, Harvard University, 1990; Stephen P. Rosen, "New Ways of War: Understanding Military Innovation," *International Security* 13:1 (Summer 1988): 134 - 168.

Next, borrowing from Harry Eckstein's "most likely case" construction[5] and Alexander George and Timothy McKeown's "process tracing" research method,[6] a three-part model consisting of players, measures, and hypotheses is developed to test how the airlift mobility mission has come to be neglected. First, there are three classes of players which include: (1) *elected politicians* at the Presidential and Congressional level; (2) *political appointees* including the Secretary of Defense (SECDEF) and the Secretary of the Air Force (SECAF); and (3) *professional military officers* including the Chairman of the Joint Chiefs of Staff (CJCS), the Chief of Staff of the Air Force (CSAF), and the Commander in Chief of the Air Mobility Command (CINCAMC).

Second, the measures include *strategic doctrine*, articulated by the Presidential administration and *U.S. Air Force basic doctrine*, which should be a reflection of strategic doctrine. Interservice agreements designate each of the services' primary and secondary *roles and missions*, including airlift mobility. Air Force *budget* allocations to airlift forces lead to the resultant *force structure*. Finally, airlift *organization* determines how these forces are to be employed.

Third, ten contradictory propositions are derived from the theories of bureaucratic politics and organizational culture to form the basis for testable hypotheses contending to explain the U.S. Air Force treatment of the U.S. strategic airlift mission over time. In abbreviated form, these include: (1) organizational *stagnation* (BP) versus *learning* (OC);

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[5] See Harry Eckstein, "Case Study and Theory in Political Science," in *Handbook of Political Science*, eds. Fred Greenstein and Nelson Polsby (Reading: Addison-Wesley, 1975).

[6] See Alexander L. George and Timothy J. McKeown, "Case Studies and Theories of Organizational Decision Making," in *Advances in Information Processing in Organizations*, vol. 2 , eds. Robert Coulam and Richard Smith (Greenwich: JAI Press, Inc., 1985) 21 - 58.

(2) interservice roles and missions disputes during *calm* (BP) versus *crisis* (OC); (3) organizational *turf*-building (BP) versus sticking to the *knitting* (OC); (4) individual stands equal *seats* (BP) versus *baggage* (OC); and (5) leaders are *captured* by (BP) or *capture* their organizations (OC).

The Bureaucratic Politics Paradigm

Graham T. Allison introduced the notion of three conceptual models: Model I (Rational Actor); Model II (Organizational Process); and Model III (Bureaucratic Politics), to explain social scientific phenomena in his 1971 landmark book, *Essence of Decision.*[7] Using a metaphor to illustrate the differences between them, he states that "foreign policy has often been compared to moves and sequences of moves in the game of chess:

> Imagine a chess game in which the observer could see only a screen upon which moves in the game were projected, with no information about how the pieces came to be moved. Initially, most observers would assume - as Model I does - that an individual chess player was moving the pieces with reference to plans and tactics toward the goal of winning the game. ... Model II assum[es] the chess player might not be a single individual but rather a loose alliance of semi-independent organizations, each of which moved its set of pieces according to standard operating procedures. ... Model III assum[es] a number of distinct players, with distinct objectives but shared power over the pieces, could be determining the moves as the resultant of collegial bargaining.[8]

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[7] Allison traces the roots of his Model III bureaucratic politics paradigm to seven primary sources: Richard E. Neustadt, *Presidential Power: The Politics of Leadership*; Gabriel Almond, *American People and Foreign Policy*; Charles Lindblom, "Bargaining: The Hidden Hand in Government," "The Science of Muddling Through," *The Intelligence of Democracy* and *The Policy Making Process;* Warner Schilling, "The Politics of National Defense: Fiscal 1950"; Samuel P. Huntington, *The Common Defense;* Roger Hilsman, *To Move a Nation;* and Paul Hammond, "Directives for the Occupation of Germany," "Super Carriers and B-36 Bombers," and "NSC-68." See Allison, *Essence of Decision*, 147 - 162.

[8] Allison, *Essence of Decision*, 7.

Allison noted at the time of his writing that "most analysts explain (and predict) the behavior of national governments in terms of one basic conceptual model, here entitled Rational Actor or "Classical" Model (Model I)." In particular, for the purposes of this study, "theorists of international relations focus on problems between nations in accounting for the choices of unitary rational actors." In this process, "predictions about what a nation will do or would have done are generated by calculating the rational thing to do in a certain situation, given specific objectives."[9]

In the case of airlift, this would mean that a strategic need for the ability to rapidly deploy forces abroad would rationally result in the research, development and full-scale production of the requisite force structure to successfully implement the given strategy. However, in the face of the contrary evidence already revealed, other forces must be at work which have the political power to disrupt the unitary rational actor.

Allison notes that "although the Rational Actor model has proved useful for many purposes, there is powerful evidence that it must be supplemented, if not supplanted, by frames of reference that focus on the governmental machine - the organizations and political actors involved in the policy process:

> Model I's implication that important events have important causes, i.e., that monoliths perform large actions for large reasons, must be balanced by the appreciation that (1) monoliths are black boxes covering various gears and levers in a highly differentiated decision-making structure and (2) large acts result from innumerable and often conflicting smaller actions by individuals at various levels of bureaucratic organizations in the service of a variety of only partially compatible conceptions of national goals, organizational goals, and political objectives.[10]

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[9] Ibid., 4 - 5.
[10] Ibid., 5 - 6.

He introduces the organizational theories of Models II and III to "provide a base for improved explanations and predictions" because "Model I's grasp of national purposes and of the pressures created by problems in *inter*-national relations must confront the *intra*-national mechanisms for which governmental actions emerge."[11] Model II, the Organizational Process Model, "emphasizes the processes and procedures of the large organizations that constitute a government." Phenomena which are characterized as "acts" and "choices" by Model I are treated as "*outputs* of large organizations functioning according to regular patterns of behavior" (i.e., standard operating procedures; SOPs) by Model II. As a further organizational refinement, Model III "focuses on the politics of a government:

> Events in foreign affairs are understood, according to this model, neither as choices nor as outputs. Rather, what happens is characterized as a *resultant* of various bargaining games among players in the national government.[12]

Model III adherents attempt to explain events by uncovering "who did what to whom that yielded the action in question." Furthermore, they make predictions based upon "identifying the game in which an issue will arise, the relevant players, and their relative power and skill."[13] To Allison's credit, "many readers have found the general argument a suggestive contribution ... to general thought about governmental behavior, especially in foreign and military affairs."[14]

In 1972, Graham Allison and Morton Halperin drew the blueprint for the modern

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[11] Ibid., 6.
[12] Ibid.
[13] Ibid., 7.
[14] Ibid., 8.

bureaucratic politics paradigm, which primarily explains specific governmental policy decisions as the byproduct of "pulling and hauling" between hierarchically-ranked government officials. Their stated purpose was to develop a new hybrid theory of first and second images broad enough to account for the actions of the majority of advanced western societies, that focuses upon the bureaucratic politics within nation-states as a way to explain international relations.[15]

In collapsing Allison's original Model II organizational process paradigm into Model III, the authors identify "standard operating procedures" (SOPs) as "constraints" that can slant the result of a bureaucratic political game. They argue that because these games are played primarily within the context of mammoth, immutable bureaucracies, the information available to the central players, the options that the senior players consider and implementation effectiveness of governmental operations can be adversely impacted. They point out that because information is usually gathered and analyzed by large organizations (i.e., CIA or USAF), options are inherently finite. Because these options are a byproduct of organizations with established cultures, the "repertoire" ultimately selected usually reflects these organizations' biased aims and measures. Because these repertoires are formed by relatively autonomous organizations with their narrow parochial interests in mind, the "standard scenarios" that the organization adheres to and the resultant courses of action are often inadequate to accomplish the task. Finally, and most importantly, they argue that because implementation is governed by SOPs of large

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[15] Allison and Halperin, "Bureaucratic Politics," 43.

organizations, the resultant action may distort the intent of the decisions made by the senior players. [16]

Articulating their paradigm, the authors state that the model's basic "units of analysis" are "actions of a government" which they describe as the varied observable actions of governmental officials exercising their lawful authority. First, it is essential to identify the hierarchical "action channels" (i.e., regularized sets of procedures for producing particular classes of actions) to be able to explain, predict, or plan governmental acts. Then they identify three types of "games" which are played in these action channels: (1) "decision games" are political bargaining which lead to decisions by senior players; (2) "policy games" are routinized activities leading to policy selection from among standard scenarios; and (3) "action games" influence the way the resultant policy is implemented through standard operating procedures.[17] Action channels determine what "advantages and handicaps" participants have in the various games. Senior players normally dominate decision games. In the same contest the organization's more junior players, responsible for implementing the decision, may play the more prominent role in action games.[18] The authors assert that an individual player's success hinges on three components: "(1) bargaining advantages; (2) skill and will in using bargaining advantages; and (3) other player's perceptions of the first two ingredients." The result is either "a policy, a decision, or the avoidance of a decision." Outcomes are determined by the

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[16] Ibid., 48.
[17] Ibid., 46.
[18] Ibid., 48.

aggregated effects of these decision, policy and action games. Bargaining advantages come from:

> formal authority, control over resources necessary to carry out the action, responsibility for carrying out the action, control over information that enables one to determine the feasibility of the action and its consequences, control over information that enables senior players to determine whether the decision is being implemented, and persuasiveness with other players, particularly those responsible for implementation. [19]

In sum, Allison and Halperin characterize decision and action games as "capturing the thrust of the bureaucratic politics approach." The authors specify that each player's stand is determined by the following:

> Members of an organization, particularly career officials, come to believe that the health of their organization is vital to the national interest. *The health of the organization*, in turn, *is seen to depend on maintaining influence, fulfilling its mission, and securing the necessary capabilities*. The latter two interests lead to concern for *maintaining autonomy and organizational morale, protecting the organization's essence, maintaining or expanding roles and missions, and maintaining or increasing budgets*. [20]

The airlift organization does not conform to this generic behavior of healthy organizations because in the process of "protecting [its dominant air combat] essence," the Air Force tends to neglect, rather than "expand [the] roles and missions, ... or increase [the] budget" of the air mobility mission. There is an inherent contradiction within the bureaucratic politics paradigm, because in the process of protecting its dominant combat culture, in a relative sense, the Air Force comes to neglect its subordinate mobility culture. There is a fundamental tension between these competing cultures, which bureaucratic politics fails to address.

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[19] Ibid., 52.
[20] Ibid., 48.

Donald MacKenzie points out that in principle the "theory" of the military-industrial complex it is a "similar relative" to bureaucratic politics:

> in an analytic sense, all that this theory does is to shift the emphasis to another set of organizations, the producers of weapons technology, and to their intimate relations with the armed services. The theory of the military-industrial complex is of course subject to precisely the same empirical criticism as bureaucratic politics - that it grants too much importance to the particular set of organizations it chooses to focus on.[21]

During his farewell address to the nation which was televised nationwide on January 17, 1961, outgoing President Eisenhower warned the country to beware of the encroaching power of what he termed the "military-industrial complex":

> In the councils of government we must guard against the acquisition of unwarranted influence, whether sought or unsought, by the *military-industrial complex* [emphasis added].[22]

In a 1986 *Washington Post* article entitled "Profit, Patriotism Produce a Ubiquitous Alliance," Michael Weisskopf wrote that since Eisenhower's address, the phrase military industrial complex has come to connote the "merger of three main partners with a vested interest in the production of weapons:

> the *armed services* that use them; the *defense industry* that profits from building them, and *Members of Congress* who gain constituent favor by landing military installations and defense factories for their districts [emphases added].[23]

Defense Analyst Gordon Adams coined the popular term "iron triangle" to describe this mutually reinforcing relationship whereby "the military and its civilian managers readily join forces with industry and key lawmakers ... [in a] powerful alliance that perpetuates

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[21] Donald MacKenzie, "Technology and the Arms Race," *International Security* 14:1 (Fall 1987): 165.

[22] Dwight D. Eisenhower. "Farewell Address to the Nation, 17 January 1961," in *Bureaucratic Politics and National Security,* eds. David Kozak and James Keagle (Boulder: Lynne Rienner, 1988) 280.

[23] Michael Weisskopf. "Profit, Patriotism Produce a Ubiquitous Alliance," in Kozak and Keagle, 283.

itself and grows by advancing the common interest," particularly in the procurement of major weapon systems.[24] Randall Ripley and Grace Franklin have a similar theory of "procurement subgovernments," which consist of mutually beneficial ties between acquisition officers from the Department of Defense (DOD), private corporations and members of Congress whose constituents benefit from the economic stimulus of a lucrative contract. Ripley and Franklin describe the process whereby:

> Contractors are approached by defense procurement officials, and they jointly work out the specifications to be met when specific weapon systems are planned. Members of Congress who are interested in a weapons system - usually because pieces of it are manufactured in their states or districts - are kept abreast of such discussions and negotiations. They are given the privilege of announcing awards of contracts in their states and districts.[25]

In such an environment, costs are diffused among the general taxpayers and concentrated benefits are accrued by the members of the triangular relationship. The chummy relations among these three parties result in "*a great deal of momentum for an expanded arsenal.*"[26] Thus, like the classical bureaucratic politics model, this theory predicts that the airlift arsenal should continue to grow and thrive, yet it has not [emphasis added].

In sum, the theory of the military-industrial complex sheds some light on noticeable trends within the weapons systems acquisition process *as a whole* such as:

> why some weapon systems are bought rather than others, why a particular contractor is chosen rather than another, why a weapons system is bought at a particular time rather than another, and why it is so difficult to control the costs of weapons systems.[27]

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[24] Ibid., 284.

[25] Randall B. Ripley and Grace A. Franklin, *Congress, the Bureaucracy and Public Policy* (Pacific Grove: Brooks / Cole Publishing Company, 1991) 155.

[26] Ibid.

[27] Ibid., 199.

Although these are noteworthy trends, they do not account for the fact that transport aircraft are procured at a noticeably slower rate and in smaller quantities than bomber and fighter aircraft. Therefore, the theory of the Military-Industrial Complex has limited applicability for the purposes of this study.

Critiques of the Bureaucratic Politics Paradigm[28]

As early as 1971, Stephen Krasner hailed Allison's *Essence of Decision* as the "definitive statement" of the bureaucratic-politics paradigm. Moreover, he conceded that "the bureaucratic interpretation of foreign policy [had] become the conventional wisdom." [29] Krasner attributes strength of the "bureaucratic web" to two factors:

> (1) Organizational Necessity: the costs of coordination and search procedures are so high that complex organizations *must* settle for satisfactory rather than optimal solutions; (2) Bureaucratic Interest: bureaucracies have interests defined in terms of budget allocation, autonomy, morale, and scope which they defend in a game of political bargaining and compromise within the executive branch.[30]

Although Krasner acknowledges that the bureaucratic politics paradigm is useful for qualifying the assumption that states are self-interested utility maximizers with perfect information, nevertheless, he cautions that "this vision is misleading, dangerous, and compelling:

> misleading because it obscures the power of the President; dangerous because it undermines the assumptions of democratic politics by relieving high officials of responsibility; and compelling because it offers leaders an excuse for their failures and scholars and opportunity for innumerable reinterpretations and publications. [31]

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[28] See Krasner, "Are Bureaucracies Important?"; Art, "Bureaucratic Politics and American Foreign Policy"; Bendor and Hammond, "Rethinking Allison's Models"; Welch, "The Organizational Process and Bureaucratic Politics Paradigms"; and Edward Rhodes, "Do Bureaucratic Politics Matter?."

[29] Krasner, "Are Bureaucracies Important?," 419.

[30] Ibid., 422.

Because he believes that ultimately "the behavior of states is still determined by values," Krasner is concerned that Model III excludes assumptions of values or rationality from its analysis.[32] He argues that Presidents' personal values heavily influence bureaucracies' capacities to enact independent policies and he charges the bureaucratic politics school with overlooking the crucial impact of the President in choosing his advisors, specifying who has access to Cabinet meetings, and influencing bureaucratic interests.:

> Neither organizational necessity nor bureaucratic interests are the fundamental determinants of policy. The limits imposed by standard operating procedures as well as the direction of policy are a function of the values of decision makers. The President creates much of the bureaucratic environment which surrounds him through his selection of bureau chiefs, determination of 'action channels,' and statutory powers.[33]

Krasner is especially concerned that this paradigm has the practical effect of relieving public officials of responsibility to their constituents. He believes that in focusing exclusively upon administrative skills in their bureaucratic analyses, Model III adherents "paradox[ically] imply political nonresponsibility." Because:

> political leaders can only with great difficulty overcome the inertia and self-serving interests of the permanent government ... administrative feasibility, not substance, becomes the central concern.[34]

In the final analysis, Krasner concludes that *Allison's portrayal of a U.S. "intragovernmental balance of power" is inaccurate.* He contends that *at a minimum it is "a loose hierarch[y]."* [35] Moreover, he believes that *attempting to explain policy*

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[31] Ibid.
[32] Ibid., 423.
[33] Ibid., 426.
[34] Ibid., 421.

determinants solely on the requirements determined by complex bureaucratic interactions suffices only during relatively stable times when policies largely remain in tact.[36] Even then, he asserts that *Model III is more useful for identifying policy "implementation" rather than "formulation"* characteristics with the qualification that [emphases added]:

> before the niceties of bureaucratic implementation are investigated, it is necessary to know what objectives are being sought. Objectives are ultimately a reflection of values, or beliefs concerning what man and society ought to be. [37]

Krasner's critique addresses two concerns which are relevant to the case of airlift. First, rather than co-existing as one sovereign organization among many in an ever-changing intergovernmental balance of power, the airlift organizational apparatus is embedded within a hierarchical arrangement with a clearly delineated military chain of command. MAC, like SAC and TAC, is a major command which is beneath the pecking order of the Air Staff, the Joint Chiefs of Staff, the Office of the Secretary of Defense and the President. Second, as Krasner indicates, bureaucratic politics tends to account for a static condition which exists during periods of relative calm. However, it fails to account for the changes which have transpired in the airlift organization in the aftermath of five major crises which have occurred during its fifty-year history.

Two years later, in 1973, Robert Art denounced the second wave theorists for ambiguously stating their propositions and backtracking in many instances. According to Art, these theorists had "waffled" on the very propositions that supposedly distinguished their approach from the first wave. He argues that only by "tightening up" their

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[35] Ibid., 432.
[36] Ibid., 423.
[37] Ibid.

propositions as follows can the second wave's bureaucratic politics theory be a useful, accurate and distinct paradigm:

> (1) Organizational position determines policy stance; (2) In foreign policy governmental decisions and actions do not represent the intent of any one figure, but are rather the unintended resultant of bargaining, pulling and hauling among the principal participants.; (3) Organizational routine, standard operating procedures, and vested interests can affect the presidential implementation of policy much more than they can its formulation.[38]

Even with these propositions, Art maintains that *the bureaucratic politics paradigm inaccurately explains the formulation of U.S. foreign policy because it erroneously assumes that Presidents do not constrain senior executive behavior.* On the other hand, the paradigm would explain very little by itself if it correctly assumed that Presidential preferences constrain bureaucratic behavior. Therefore, by default, the second wave theorists should be compelled to accept two corollaries that cast doubt on the accuracy of the first proposition above. Art's corollaries specify that:

> (1) When senior executive players are split on their policy stances, the President, by virtue of the division, has considerable leeway to choose that which he wishes to do, or that which he thinks he ought to do, or that which he reasons he must do.; (2) When senior executive players are split on their policy stances, the President, to the extent that he reasons he must take account of bureaucrat's pressures, will respond to those demands that he thinks will damage him politically if he does not respond [emphasis added]. [39]

Art's corollaries shift Model III away from the exclusive focus on the infighting among executive officials into an examination of the entire governmental apparatus. Moreover, he intends for his corollaries to elevate the "nation-state-as-unitary-actor" paradigm above bureaucratic politics, as he sees foreign policy not as the byproduct of

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[38] Art, "Bureaucratic Politics and American Foreign Policy," 439 - 443.
[39] Ibid.

bureaucratic political maneuvering, but of "presidents, mind-sets, and domestic politics." To Art, *Presidential intent is the key component for ascertaining the relevance of the bureaucratic politics model.* The President anticipates both the Congressional and public reactions to determine which of the bureaucrats' position to choose.[40] Bottom line, Art concludes that the bureaucratic politics model has two fundamental weaknesses:

> (1) it undervalues the influence (weight) of both generational mind-sets and domestic politics on the manner in which top decision makers approach foreign policy; and (2) it is too sloppy, vague, and imprecise as presently constituted to make its use worthwhile [emphasis added]. [41]

Art's critique touches upon the important role which the Office of the President has played in airlift innovation. In particular, the Kennedy Administration's transition from a strategic doctrine of massive retaliation to flexible response boded well for the conventional airlift mission. As will be shown in the Vietnam case study, flexible response's emphasis on conventional capabilities provided the impetus for Air Force Manual 1-1 *Basic Aerospace Doctrine* to first acknowledge that airlift was one of the service's primary mission elements. Moreover, it was the vehicle during the 1960s which drove the major acquisition of the jet-powered C-141 and C-5 fleets as well as the establishment the Military Airlift Command as a major Air Force command.

Nearly 20 years later, in 1992, Jonathan Bendor and Thomas Hammond critiqued Graham Allison's Model III on four points.[42] First, they claim that Model III misportrays the policy making process as primarily negotiations and reciprocal bargains among

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[40] Ibid., 443.
[41] Ibid., 454.
[42] Bender and Hammond, "Rethinking Allison's Models," 301 - 322.

executive branch officials. They argue that because the President personally hires many of his players and sets most of his administration's goals, *a more accurate model should depict few fundamental differences of opinion within the executive branch.* Most differences should tend to be minor, usually involving goal implementation rather than formulation. Borrowing from Thompson and Tuden, they assert that when there is "agreement on goals but disagreement on beliefs, ... collegial judgment will prevail." They differentiate collegial decision making from bargaining by pointing out that it entails determining the rationale for and attempting to alter others' contradictory opinions rather than logrolling [emphasis added].[43]

In other words, they contend that ideas matter. Policy is not necessarily always the byproduct of power and interest, but sometimes reflects the best or most efficient and effective thing to do. In the case of airlift, this would allow for improvements to be made to the airlift mission as a way to address recognized shortfalls in mobility capabilities that may have become apparent during crises, rather than purely as a byproduct of empire building.

Second, like Krasner, they argue that Allison's model overlooks the impact of the hierarchical organizational structure of the government and its impact on policy-making. Borrowing their ideas from Shilling, *the authors contend that the fundamental ideas surrounding hierarchical decision-making are that it entails comparing detailed*

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[43] Ibid., 314.

information and implementation options, and that the organizational chart determines "who compares what with what [emphasis added]." [44]

In the case of airlift, this translates into having to work within a clearly defined military command chain. For example, it would be a violation of protocol for the CINC of the Air Mobility Command to lobby the Secretary of the Air Force or Defense without first having consulted with the Chief of Staff of the Air Force.

Third, they argue that the basic assumptions of Allison's Model III are unclear and that a large proportion of its propositions appear to be "ad hoc observations not derived in any rigorous sense from the assumptions." They point out that a scientific proposition should be "an empirically testable hypothesis" that can help establish the validity of a purported theory. However, *pointing to Allison's famous quote "where you stand depends upon where you sit," they note that Allison himself includes many other factors besides organizational status (i.e., baggage and/or personality) to help determine the likely stand of various actors* [emphasis added].[45]

In the case of the Chief of Staff of the Air Force, though he is supposed to represent the interest of the service as a whole, more than likely, his view of what is in the best interest of the service is colored by the formative experiences he has had in his career development, whether it be bombers or fighters. In either case, he will have had little, if any, operational experience with the airlift mobility mission by the time he reaches the

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[44] Ibid.
[45] Ibid.

top. Thus, he will be more likely to advocate continued emphasis upon the aerial combat missions rather than mobility.

Finally, the authors argue that Model III is "simply too complex, ... [so] that virtually no propositions can be rigorously derived from it at all." [46] They complain that the model embodies so many variables that it is an "analytical kitchen sink." They acknowledge that trade-offs must be made between theories with "explanatory richness" and their ability to explain one case in depth and theories of "theoretical generalizability" and their ability to broadly explain various different cases. However, *they contend that in the case of Model III*, "the nature of the tradeoff has been oversimplified: *it is possible to include so many variables that the theory does not even explain one case well* [emphasis added]." [47]

Also in 1992, David Welch noted that when Allison wrote *Essence of Decision* he intended for it to be an "evolving paper" of Harvard University's Institute of Politics Research Seminar on Bureaucracy, Politics, and Policy.[48] In other words, Allison's book was meant to be "experimental, exploratory, and preliminary; his purpose was to chart a course for others to follow." Seminar co-participants included Morton Halperin and James Q. Wilson and others.[49]

Welch tests to determine whether the bureaucratic politics paradigm is superior to the unitary rational actor model by providing a "rigorously-formulated ... basis for

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[46] Ibid.
[47] Ibid., 318.
[48] Welch, "The Organizational Process and Bureaucratic Politics Paradigms," 112 - 146.
[49] Ibid., 112.

improved explanations and predictions," as Allison had claimed. Based upon his findings, Welch concludes:

> (1) Students of international politics have largely failed to take up Allison's challenge to build and to test theory at the intra-governmental level of analysis; (2) Despite the dearth of rigorous tests, there are convincing reasons to believe that ... Model III is as useful as, let alone analytically superior to Model I; (3) Allison's motivating intuition that bureaucracies are important may yet be vindicated since there are strong *prima facie* grounds to believe *some* paradigm concentrating the analyst's attention on organizational characteristics or processes other than those on which Model III's focus might yield significant analytical gains [emphases added].[50]

Welch claims that Model III is "neither testable nor falsifiable," because it is not a "fully-specified causal model relating dependent and independent variables." In other words, Welch believes Model III "cannot be judged by direct empirical test" because it does not make explicit predictions.[51] Instead, Welch attempts to delineate under what circumstances bureaucratic outcomes deviate from Model I predictions. He does this by examining players' stances and impact on the policy making process.

First, concerning stances, although Welch finds that Model III's political maneuverings can account for some departures from pure rationality, he points out that Allison's contention that "where you stand depends on where you sit," is much more complicated than it sounds. Allison complicates this seemingly simple concept with the qualification that each participant "pulls and hauls" with his vested power in the pursuit of policies to advance his concept of "national, organizational, group, and personal interests." He confuses matters further by stipulating that government officials bring their

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[50] Ibid., 114.
[51] Ibid., 115 - 116.

own personal "baggage" to their positions. He defines bags as "sensitivities to certain issues, commitments to various projects, and personal standing with and debts to groups in society." Finally, noting that "individuals perceptions of the issue will differ radically" Allison introduces the notion of personality. He claims to be able to predict these differences based upon "the pressure of their position plus their personality." Welch finds no definitive evidence pointing to every player's bureaucratic position as the theoretical outcomes of Model III are "far [from] clear, far [from] plausible, and difficult to test."[52]

Second, Welch examines Model III players' impact on policy. In constructing Model III Allison poses the question: "What determines each player's impact on results?" He finds that the key is "power," composed of three intangible elements:

> (1) bargaining advantages; (2) skill and will in using bargaining advantages; and (3) other players' perceptions of the first two ingredients.[53]

However, Welch contends that "bargaining skills and advantages, and the will to use them, are idiosyncratic." Therefore, there is no direct connection to one's organizational role "per se." As Allison himself admits, "the hard core of the bureaucratic politics mix is personality."[54] Welch concludes by observing that :

> the extent to which a decision-making process may be understood as a bargaining situation in which players 'pull' and 'haul' to promote their organizational interests ... would seem to be quite small, except in those few cases where authority structures do not define a priori who will have the final say.[55]

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[52] Ibid., 121.
[53] Ibid., 122.
[54] Ibid.
[55] Ibid., 132.

Because airlift is subsumed within the Air Force hierarchy, the final arbitrator is no mystery. Given this is the case, according to Welch, the pulling and hauling of bureaucratic politics should be extremely rare or nonexistent in the realm of making airlift policy.

In the final analysis, Welch concedes that the bureaucratic politics paradigm does have some usefulness in that it enables one to better understand the events leading to particular governmental policies. However, he concludes that in and of themselves, "concrete descriptions do not constitute theoretical progress:

> To date it would appear that the bureaucratic politics paradigm, which more than twenty years ago promised to bring order and insight to an untidy field, has not lived up to expectations, because the project it heralded never got off the ground.[56]

Most recently, in 1994 Edward Rhodes revives the point that the bureaucratic politics paradigm has often been criticized for being "too complex," and "too thick" to generate specific hypotheses to be tested for validity.:

> Intragovernmental games can be so intricate and have rules so difficult to predict a priori that virtually any outcome can, ex post, be rationalized in Model III terms. Much of the criticism of Model III over the years has been limited to its logic, rather than empirical verification, for precisely this reason.[57]

Rhodes performs what he calls an Ecksteinian "critical" test on the bureaucratic politics paradigm by examining naval budgets, acquisition, and force structure composition, a subject that he contends actors, spectators, and academics usually portray as being strongly affected by the self-regarding bureaucratic political pulling and hauling.

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[56] Ibid., 137.

[57] Rhodes, "Do Bureaucratic Politics Matter?," 7.

Specifically, he tests whether results can be accurately predicted strictly by taking into account the comparative authority of players driven by their selfish ambitions and viewpoints predicated on their bureaucratic roles.[58] Rhodes expects this case to be an "easy" one for Model III because it has a high likelihood of portraying state action as the result of a clash between selfish bureaucratic rivals.:

> The issue - what kinds of military capability the U.S. Navy will possess - strikes not only at the heart of the Navy's essence by defining what kinds of missions the organization can perform but determines what and how resources will be distributed within the Navy, which Navy unions and bureaus will flourish or wither, and which naval careers will survive or perish. At the same time, the issue is not a politically salient one and, except for occasional debates over the acquisition of new aircraft carriers, rarely even makes it to the President's desk or troubles his relations with Congress. Thus, it is exactly the sort of issue that the literature suggests should be heavily influenced by bureaucratic politics.[59]

Because Allison had earlier identified budgets and acquisition decisions as being conducive to predicting one's stance based upon a player's seat, Rhodes contends that the overall significance of Model III should be seriously questioned if there is no observable imprint of bureaucratic politics on the force mix procured by the Navy.[60] At the conclusion of Rhodes' test he finds that:

> In sum, an examination of the Navy procurement budget, the Navy ship construction program, and annual shifts in fleet composition fails to reveal any statistically significant impact of the type predicted by Model III. Surface sailors do not shift force posture in favor of the surface fleet; aviators do not shift it toward naval air forces; and, to the extent we can tell, submariners do not shift it toward the undersea fleet. Insight into the Navy's well-known bureaucratic politics does not seen to permit us to explain the variations in naval force posture we observe.[61]

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[58] Ibid., 2 - 3.
[59] Ibid., 4 - 5.
[60] Ibid., 6.
[61] Ibid., 30 - 31.

Rhodes concludes that the inability of Model III predictions to account for what is supposedly an "easy case" leads him to question the general consensus that divergences from unitary rational behavior witnessed in foreign policies are generally the byproduct of bureaucratic politics.[62] Instead, Rhodes finds that "*where decision makers stand depends not on where they sit or whom they represent, but on what they think - and what they think is independent of where they sit* [emphasis added]."[63]

Similar to Rhodes' study, the case of airlift mobility deals with budget and procurement decisions regarding the acquisition of an airlift force structure, an issue that should be heavily influenced by bureaucratic politics. However, whereas Rhodes attempts to account for the allocation of resources among the three dominant, offensively-oriented missions within the U.S. Navy (e.g., carriers, submarines, surface line), this case attempts to account for the relative neglect of the Air Force's defensively-oriented mission of airlift.

Organizational Culture Theory

The concept of an organizational culture has its roots imbedded within the early bureaucratic politics paradigm articulated by Graham Allison and Morton Halperin in their 1972 article "Bureaucratic Politics: A Paradigm and Some Policy Implications." Allison and Halperin originally coin the phrase "organizational essence," contending that "in pursuing what its members view as the essence of the organization's activity, e.g.,

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[62] Ibid.
[63] Rhodes, "Do Bureaucratic Politics Matter?," 32.

flying for the Air Force, ... organizational interests are often dominated by the desire to maintain the autonomy of the organization."[64]

Halperin later expounds upon this concept in *Bureaucratic Politics and Foreign Policy* in 1974, when he defines the term "essence" as "the view held by the dominant group in the organization of what the missions and capabilities should be." He elaborates that:

> career officials generally have a clear notion of what the essence of their organization is or should be. In some organizations the same view of the essence is shared by all those in the same promotion and career structure. In other cases there will be differences of view. The differences may concern the particulars of a broader agreed essence or may reflect struggles for dominance. In either case there are often conflicts among subgroups within a single career structure to define the essence of the organization.[65]

Halperin specifically identifies "the Military Airlift Command [MAC], charged with the movement of men and materiel primarily for the Army [as] the part of the Air Force that has been least effective in challenging the dominant role of SAC [Strategic Air Command]."[66] Organizational enhancement of essence can manifest itself in several ways:

> (1) An organization favors policies and strategies which its members believe will make the organization as they define it more important; (2) An organization struggles hardest for the capabilities which it views as necessary to the essence of the organization. It seeks autonomy and funds to pursue the necessary capabilities and missions; (3) An organization resists efforts to take away from those functions viewed as part of its essence. It will seek to protect these functions by taking on additional functions if it believes that foregoing these added functions may ultimately jeopardize its sole control over the essence of its activities. *The Air Force, for instance, insists on performing the troop transport role for the Army*; (4) An organization is often indifferent to functions not seen as part of its essence

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[64] Allison and Halperin, "Bureaucratic Politics," 49.
[65] Halperin, *Bureaucratic Politics and Foreign Policy*, 28.
[66] Ibid., 31.

> or necessary to protect its essence. It tends not to initiate new activities or seek new capabilities even when technology makes them feasible. *For example, the Air Force has devoted limited resources to airlift techniques while insisting on performing the transport function*; (5) Sometimes an organization attempts to push a growing function out of its domain entirely. It is chary of new personnel with new skills and interests which may seek to dilute or change the organization's essence [emphases added].[67]

In 1984 Barry Posen attempted to the explain the doctrines, or "operational preferences," of military organizations through the use of organization theory in *The Sources of Military Doctrine*. Posen posits that organization theory predicts that military doctrines tend to be offensively-oriented, disjointed, and resistant to change.[68] Operational preferences translate into mission orientation, and in the case of military organizations, Posen suggests there is a bias toward offensive orientation. He asserts that military organizations promulgate offensive doctrines because such doctrines "reduce uncertainty and increase organizational size, wealth, and autonomy." [69]

Posen argues that when it comes to doctrine, "military organizations will seldom innovate" on their own. He attributes this to the fact that most organizations seek to minimize uncertainty, and change always involves some degree of uncertainty. It should also be the case because, being the prototypical hierarchies, military organizations restrict the upward flow of ideas. Furthermore, he contends that those at the apex of the pyramid, having achieved their status by adhering to the old doctrine, should have a vested interest in keeping it in tact. Thus, Posen concludes that innovations should occur primarily when organizations "register a large failure, or when civilians with legitimate

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[67] Ibid., 40.
[68] Posen, *The Sources of Military Doctrine*, 239.
[69] Ibid., 223.

authority intervene to promote innovation." [70] In the case of airlift mobility, Posen's theory holds out the possibility for innovation either to address inadequacies brought to light during major crises and / or because civilian officials forced airlift improvements upon the Air Force.

James Q. Wilson, who twenty years earlier had been one of Allison's co-participants in the Harvard bureaucratic politics seminar, in 1989 attempted to "explain why government agencies - bureaucracies - behave as they do," in *Bureaucracy.* Although he wishes that his book "could be set forth in a way that proved, or at least illustrated, a simple, elegant, comprehensive theory of bureaucratic behavior," after three decades of grappling with the topic, he now has "grave doubts that anything worth calling 'organization theory' will ever exist.:

> Theories will exist, but they will usually be so abstract or general as to explain rather little. Interesting explanations will exist, some even supported with facts, but these will be partial, place- and time-bound insights.[71]

Building upon Halperin's notion of essence, Wilson develops the concept of culture, which he defines as being "to an organization what personality is to an individual." Specifically, he defines culture as consisting of "those patterned and enduring differences among systems of coordinated action that lead those systems to respond in different ways to the same stimuli." Adding to the construct of culture, Wilson states that an organization has a sense of mission when its culture is broadly shared and keenly endorsed by both the operators and managers. Missions, if they are formed,

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[70] Ibid., 224.
[71] Wilson, *Bureaucracy,* ix - xii.

usually develop during the genesis of the organization. Although the harmonious benefits of a shared sense of mission are obvious, nevertheless, they are not cost free. Wilson points out three potential shortcomings of mission-oriented organizations:

> (1) tasks that are not part of the culture will not be attended to with the same resources as are devoted to tasks that are part of it; (2) organizations in which two or more cultures struggle for supremacy will experience serious conflict as defenders of one seek to dominate representatives of the others; (3) organizations will resist taking on new tasks that seem incompatible with its dominant culture. [72]

As already illustrated, Wilson specifically uses the Military Airlift Command as an example of "a unit that suffers not only from having to fly transport planes instead of bombers but transport planes designed to carry *Army* personnel to distant airfields. Operating a 'bus service' for the Army is not a highly rewarded task in the USAF." This is because:

> after the [Second World] War, the USAF became culturally a fraternity of bomber pilots. Bomber pilots rose to most of the top jobs in the service. This meant that officers who flew other kinds of aircraft - fighters, *transports*, or infantry-support tactical aircraft - discovered that they were not part of the dominant culture.[73]

Wilson attacks the bureaucratic politics' "turf" hypothesis that government bureaus are "imperialistic" as a gross "oversimplification." He argues that "autonomy is valued at least as much as resources," because it enables government executives to minimize operating costs while at the same time maximizing mission orientation.[74] Wilson posits that the most opportune time to establish a mission - jurisdiction match is during the formative stages of organizational development. He notes that, in the case of

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[72] Ibid., 101.
[73] Ibid., 105.
[74] Ibid., 195.

governmental bureaucracies, external political support is at its highest when a bureau's "goals are popular, its tasks simple, its rivals nonexistent, and the constraints minimal."[75]

Although airlift has not amassed an empire, it has nonetheless been able to gradually achieve more autonomy. MAC first attained specified command status on 1 February 1977, whereby the Commander was designated a CINC so that "during periods of crisis or war, [he was made] ... directly responsible to the Chairman of the Joint Chiefs of Staff for airlift operations."[76]

Addressing innovation, Wilson asserts that "organizations resist innovation [and] are supposed to resist it." He describes "standard operating procedures" (SOPs) as being the "essence of organization" because they are formed to supplant the uncertainty and randomness of unstructured activities with the predictable actions of structured relationships.[77] Despite this general tendency for all organizations to resist innovation, Wilson posits that nevertheless organizational "changes that are consistent with task definitions will be accepted; those that require a redefinition of those tasks will be resisted."[78] In other words, changes to "peripheral" tasks tend not to threaten organizational essence, and therefore receive only minimal, if any, resistance. Whereas "real innovations," defined as "new programs or technology ... that involve the performance of new tasks or a significant alteration in the way in which existing tasks are performed," are strongly resisted because they tend to threaten the "core" of an

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[75] Ibid., 181.

[76] Richard J. Burkhard, *Military Airlift Command: Historical Handbook 1941 - 1984* (Scott AFB, IL: MAC Command Historical Office, 1984) 13.

[77] Wilson, *Bureaucracy*, 221.

[78] Ibid., 222.

organization's essence. Because organizations resist core task alterations, real innovations tend by necessity to be engineered by "outside forces:

> academic scientists, industrial engineers, civilian theorists, members of Congress, and presidential aides - all helped induce the military to embrace programs that initially seemed irrelevant to (or at odds with) their core tasks.[79]

Wilson notes that most changes, whether "core or peripheral, externally imposed or internally generated," usually occur because of the behavior of the agency executives. Moreover, he suggests that "it is for this reason, I think, that little progress has been made in developing theories of innovation" (i.e., they are so heavily dependent on executive interests and beliefs). For all these reasons, although he concedes the possibility exists, Wilson concludes that organizational "innovations are rare."[80]

Though the airlift mobility mission has experienced change, it has been sporadic. Besides it's initial establishment in World War II, core changes have occurred only twice. The first transpired during the midst of the Vietnam War with the Kennedy and Johnson Administrations' implementation of the flexible response strategic doctrine. The second core change occurred in 1992 as part of Secretary of the Air Force Donald Rice's "Global Reach - Global Power" strategy. During both of these episodes major changes occurred in the doctrine, force structure and organization of airlift forces. Other changes have been more peripheral in nature, usually only affecting one of the measures at a time.

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[79] Ibid., 225.
[80] Ibid., 232.

Learning

Jack Levy admits that "the concept of learning is difficult to define, isolate, measure, and apply empirically, and scholars have only recently begun to investigate these questions in a rigorous and systematic way."[81] However, he cites the 1970s publications by Ernest May, Robert Jervis and Lloyd Etheridge as "path-breaking work on foreign policy learning."[82] Moreover, Peter Hall argues that "the notion of social learning is on the verge of becoming a key element in contemporary theories of the state and of policy-making more generally."[83] Andrew Bennett, for example, completed a dissertation in 1990 which explains changes in Soviet military adventurism from 1973 - 83 in terms of individual, organizational and governmental learning.[84]

Learning occurs when an actor changes its behavior as the result of evaluating past events, so that when faced with similar circumstances or types of predicaments, it will respond in a different manner.[85] Bennett defines learning generically to include individuals, organizations and governments, as "changes in cognitive structures as the result of experience or study."[86] In addition, he distinguishes between incremental learning which comes about "as small and not-too-unexpected bits of information are received," as opposed to discontinuous or "lumpy" learning which is "more rapid and

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[81] Levy, "Learning and Foreign Policy," 280.

[82] May, "Lessons of the Past"; Jervis, "Perceptions and Misperceptions in International Politics"; Etheridge "Government Learning" in *The Handbook of Political Behavior,* vol. 2, ed. Samuel L. Long (New York: Plenum, 1981) 73 - 161, cited in Levy, 280.

[83] Hall, "Policy Paradigms, Social Learning, and the State," *Comparative Politics* 25 (April 1993): 276, cited in Levy, 280.

[84] Bennett, *Theories of Individual, Organizational and Governmental Learning.*

[85] Ibid., 14.

[86] Ibid., 29.

fundamental," and usually comes about as the result of a "crisis or major event." Furthermore, learning can either be "dialectical" (cyclical pendulum effect) or "linear" (irreversible and unidirectional). He attributes cyclical learning to three potential causes: (1) advocates of lessons learned overstate their case; (2) there may be a prevalence of "uncommitted thinking" among high government officials; and (3) the uncommitted are greatly influenced by competing views among advisors or organizations which leads to "an oscillation between competing belief patterns."[87] On the other hand, learning is more irreversible and unidirectional:

> to the extent that it involves changes in central beliefs, is expressed in behavior ... and is institutionalized by changes in organizational missions, operating procedures, and personnel, i.e., *changes in organizational culture* or structure, or patterns of promotion, or power of organizational factions and leaders [emphasis added].[88]

In the case of the Air Force, the fighter community has replaced the bomber community as the dominate culture in the aftermath of the Cold War and Desert Storm. This is reflected by the fact that since 1990, the Chief of Staff of the Air Force has been a fighter pilot, whereas before this decade, this position was held nearly exclusively by bomber pilots. In fact, Wilson notes that "from the creation of the Air Force until 1982, no fighter pilot ever had become Air Force Chief of Staff."[89] An airlift pilot has yet to hold the post of Chief of Staff of the Air Force. More tellingly, airlift pilots rarely ever serve as the CINC of the airlift command (e.g., MAC, AMC).

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[87] Ibid., 26.
[88] Ibid., 20.
[89] Wilson, *Bureaucracy*, 105.

Levy defines organizational learning as "the institutionalization of individually learned lessons into organizational routines and procedures." [90] John Lovell posits that "organizations learn from experience to the extent that policy experiences become assimilated into organizational doctrine, structures, decision-making procedures, personnel systems, and organizational commitments."[91] Levy qualifies Lovell's definition by specifying that not all organizational changes come about as a result of learning. On the contrary, organizational learning occurs only when individual learning experiences become a part of an organization's institutional memory as standard operating procedures.

> Thus organizational learning involves a multistage process in which environmental feedback leads to individual learning, which leads to individual action to change organizational procedures, which leads to a change in organizational behavior, which leads to further feedback. [92]

This study primarily utilizes the subcategory of organizational learning, as it is "more important in ... issues relating to force structure and strategic doctrine than in decisions to use military force," and therefore will be most useful for explaining military airlift organizational changes.[93] Levy points out that the literature on general organizational learning is extensive.[94]

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[90] Levy, "Learning and Foreign Policy," 311.

[91] John P. Lovell, "Lessons of U.S. Military Involvement: Preliminary Conceptualization," in *Foreign Policy Decisionmaking,* eds. Sylan and Chan (New York: Praeger, 1984) 135, cited in Levy, 289.

[92] Levy, "Learning and Foreign Policy," 289.

[93] Ibid.

[94] Levy cites "an extensive literature on organizational learning" in "Learning and Foreign Policy," 287. See James G. March and Johan P. Olsen, "The Uncertainty of the Past: Organizational Learning Under Ambiguity," in James G. March, *Decisions and Organizations* (New York: Basil Blackwell, 1988), pp. 335 - 58.; Levitt and March, "Organizational Learning"; Bo Hedberg, "How Organizations Learn and Unlearn," in Paul C. Nystrom and William H. Starbuck, eds., *Handbook of Organizational Design,* vol. 1 (Oxford: Oxford University Press, 1981), pp. 3 - 27; George P. Huber, "Organizational Learning: The Contributing Processes and the Literatures," *Organization Science* 2 (February 1991), pp. 88 - 115. Levy notes that "the literature on learning in foreign policy has been slow to incorporate the insights of organizational theorists,

Organizational learning turns the bureaucratic politics model upside-down, so that seats often reflect stands rather than the reverse. In other words, individuals may be appointed to particular seats because their stand, known in advance, including opposition to or new ideas about the existing organizational culture, mission, structure, etc. Furthermore, organizational structures evolve through a learning process rather than merely building empires. As Bennett points out, this is particularly the case in two instances: (1) when organizations act in ways that reduce their turf or resources; (2) when changes are imposed on organizations from the outside.[95]

Although individual learning is a necessary condition for organizational learning to occur, it is not sufficient in and of itself, because individual attempts to teach an organization may become "blocked" for any number of reasons. For instance:

> Individuals ... may learn but be deterred from attempting to institutionalize their new ideas. They may try but politically fail to change organizational procedures. They may effect organizational change but (in rare cases) such changes might not lead to a change in organizational behavior if those procedures are circumvented by organizational leaders.[96]

Because this frequently occurs, Levy calls for researchers to try to determine the political forces which block individual learning from becoming institutionalized as organizational learning.

> if we study only learning that is followed by policy change, we cannot understand when individual learning gets translated into policy and when learning gets blocked by institutional or political constraints. This is important for normative or policy purposes as well as for the scientific study of foreign policy. [97]

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but that is beginning to change."

[95] Bennett, *Theories of Individual, Organizational and Governmental Learning,* 34.

[96] Levy, "Learning and Foreign Policy," 290.

[97] Ibid.

This case traces in detail the many attempts that General William Tunner made to call attention to the neglect of the airlift mission during his reigns as the commander of the CBI Hump airlift during the Second World War, the Berlin Airlift and the Korean airlift. Despite his early failures to convince the Air Force hierarchy otherwise, nevertheless, his persistence and proven mission successes were able to overcome cultural indifference and eventually led to tangible improvements to the airlift mission.

Joseph Nye argues that ultimately "shifts in social structure and political power determine whose learning matters."[98] In other words, organizational learning is most of all a political, rather than an intellectual, process. Levy agrees that unless the learners are in a seat that enables them to directly or indirectly enact their policy preferences, their individual learning will most likely have little impact on an organization's ability to learn. As a result, Levy poses that the "key question is how intellectual and political processes interact to shape policy."

> Changes in political conditions that facilitate the implementation of policies are not exogenous. Political leaders actively promote their ideas among key governmental elites and social groups to create a coalition around those ideas, so that policy entrepreneurship plays a key link between learning and policy change. this involves political maneuvering as well as persuasion.[99]

This case illustrates how General Tunner was able to obtain the political sponsorship of Congressional Representative Mendel Rivers, who ultimately sponsored the legislation that led to the establishment of the Military Airlift Command.

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[98] Joseph S. Nye, Jr. "Nuclear Learning and U.S. - Soviet Security Regimes," *International Organization* 41 (Summer 1987): 371 - 402, cited in Levy, 300.

[99] Levy, "Learning and Foreign Policy," 300.

Although learning is primarily an endogenous phenomenon, Levy contends that there may be a significant correlation with external variables, which accounts for the fact that "external events are the primary source of learning about international politics:

> The success or failure of past policy is particularly important. *One hypothesis that emerges from the literature in ... organizational theory is that people learn more from failure than from success*. A corollary, framed in terms of policy impact, is that past success contributes to polity continuity whereas failure leads to policy change [emphasis added]. [100]

This becomes readily apparent in this case, as the most pronounced changes occur to the airlift mobility mission in the aftermath of the five major crises under consideration. In each of these cases, airlift is shown to have been neglected, thus leading to temporary improvements after the cessation of hostilities. However, once the quick fix is made and things are left unattended, neglect again becomes the norm.

Levy warns of a possible pitfall every researcher should attempt to avoid when constructing a foreign policy organizational learning research project. A potential shortcoming of the learning approach is the failure to consider other causes as an explanation for empirical evidence that tends to link policy failures with organizational changes. Just because a country's foreign policy changes, does not necessarily mean that learning has occurred. To the contrary, it could be a manifestation of the interplay between international and domestic politics.:

> Policy failure might lead to a regime change. It might also lead to a determination of political leaders in power to recover past strategic, economic, or reputational losses or to regain domestic support through diversionary behavior. Each of these processes can lead to policy change, but the primary causal explanation would

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[100] Ibid., 304.

> derive from turnover or changes in the international or domestic political situation rather than from learning.[101]

Levy indorses Alexander George's process-tracing method as a hedge against such a potential shortcoming, because such "small-*n* intensive case studies ... may be better able to explore the nature of the intervening learning process."[102] However, he cautions the prospective researcher that learning theory by itself cannot completely account for foreign policy changes because it does not adequately explain the link between individual learning and policy change. Therefore, he concludes that:

> our understanding of the role of learning in foreign policy and of policy change more generally will be best served if we abandon the attempt to construct an analytically distinct 'learning model' and focus instead on integrating learning processes into more comprehensive theories of foreign policy. [103]

Stephen Rosen does just that by constructing a theory that challenges the long-held "detailed theories of innovation specific to military organizations."[104] Citing John Mitchell from 1838, he notes that "it has long been the conventional wisdom that only catastrophic military defeat can prod a military organization into innovation."[105] Moreover, quoting Kurt Lang, he states that "military innovations are largely promoted by civilians."[106] Finally, he cites Andrew Krepinevich's theory that "civilians intervene to induce innovation directly, or by utilizing military mavericks."[107] Mavericks are:

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[101] Ibid., 310.

[102] Alexander L. George, "Case Studies and Theory Development," paper presented at the Second Annual Symposium on Information Processing in Organizations, Carnegie Mellon University, 15-16 October 1982, cited in Levy, 310.

[103] Levy, "Learning and Foreign Policy," 310.

[104] Rosen, "New Ways of War," 134 -168.

[105] John Mitchell, *Thoughts on Tactics and Military Organization,* cited in Jay Luvaas, *The Education of an Army: British Military Thought 1815 - 1940* (Chicago: University of Chicago Press, 1964) 43, cited in Rosen, 138.

[106] Kurt Lang, "Military Organizations," in James G. March, *Handbook of Organizations* (Chicago:

> military leaders who did not obey their organizational masters when their innovations were blocked, and took their cases outside the chain of command to highly placed civilians in the war ministries, or in the case of Billy Mitchell, directly to the public.[108]

Rosen challenges the basic assumption about the nature of military organizations that has led to the general perception that they are inherently stagnant. The prevailing assumption is that military organizations are self-interested unitary rational actors seeking to maximize "bureaucratic turf, autonomy, positions of power within a hierarchy, or material resources." Rosen contends that such a description is unwarranted in the case of the armed forces of the United States, pointing out that "each service is far from monolithic and is not composed simply of sub-units pursuing their organizational self-interests." The warfighting Air Force, for instance, is composed primarily of fighter, bomber and airlift pilots, and missile launch officers. Rosen points out that "each branch has its own culture and distinct way of thinking about the way war should be conducted, not only by itself, but by all the other branches with which it would have to interact in combat." Moreover, this perception is dynamic in that "there is no permanent norm defining what is or is not the dominant professional activity. Many theories concerning the relative priority of roles and missions compete."[109]

From this perspective, Rosen believes that military organizations should be regarded as "complex political communities in which the central concerns are those of any political community: who should rule, and how should the 'citizens' live." Moreover,

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Rand McNally, 1965) 857, cited in Rosen, 139.

[107] Andrew Krepinevich, Jr., "The Revolution That Failed," in *The Army and Vietnam* (Baltimore: Johns Hopkins University Press, 1986), cited in Rosen, 135.

[108] Rosen, "New Ways of War," 139.

[109] Ibid., 141.

unlike a civilian community, military organizations determine "who will live, who will die, and how; who will be honored and who will sit on the sidelines when the war occurs." Therefore, far from being more stagnant than civilian society, Rosen contends that "military organizations have this political character to a greater degree than other bureaucratic organizations because they govern almost every aspect of the lives of members of the community." Four theoretical implications emerge:

> (1) innovation requires an "ideological" struggle that redefines ... a new theory of victory, an explanation of what the war will look like and how it will be won; (2) this new theory of victory must be translated into concrete new tasks that are performed everyday in peacetime and in war; (3) the new theory of victory must be reflected in a change in the distribution of power within the governing class of the community; (4) these new career paths can only be created by senior military officers who have political power within the service.[110]

He concludes that "in short, innovation occurs when respected senior military officers formulate and implement a successful strategy for gaining political control over their service on behalf of the new way of war." Although implementing change proceeds from the top of the military hierarchy down the chain of command, the key ideas may have reached the senior officers from below. Civilian intervention is effective only to the extent it can support or protect these respected senior military officers.[111] Rosen concludes that military innovation differs from the paradigm of civilian intervention on behalf of mavericks in two ways:

> (1) the initiative for reform [comes] from within the military, not from an external civilian source; (2) civilian intervention [comes] in support of senior officers who [do] not see themselves as hostile to the dominant values of their service, and who [are] not, in fact, mavericks.[112]

[110] Ibid., 142.
[111] Ibid., 143.
[112] Ibid., 137.

In sum, Rosen finds that mavericks tend to be less successful in fostering innovation, even with powerful civilian allies, because they kindle the rancor of the entrenched military establishment, which becomes more resistant to change.[113]

Rosen defines a "major innovation" as a "change that forces one of the primary combat arms of a service to change its concepts of operation and its relation to other combat arms, and to abandon or downgrade traditional missions."[114] He differentiates between peacetime innovation as opposed to lessons learned from wartime failures. The four theoretical propositions drawn from his theory are that:

> (1) defeat in wartime is not necessary to produce innovation in a military organization; (2) civilian intervention to assist military "mavericks," [is] not the means that produce[s] innovation; (3) *U.S. military organizations ... generate innovation internally when senior military officers* who support the values of the establishment to which they belong consciously *adopt a two-part strategy to* produce innovation over a period of a generation: first, ... to *effect an intellectual redefinition of the way the entire military organization conceives of the tasks it will have to perform in the next war*; second, a political struggle to *create a new, stable career path for younger officers not committed to the old way of war*; (4) civilian intervention has been effective in promoting innovation when it has been in support of the senior officers pursuing the two-part strategy [emphasis added].[115]

As was alluded to before, General Tunner can genuinely be called the father of U.S. military airlift. Beginning with an organization without a doctrine that was patched together with converted airliners in the heat of the Second World War, he managed to convince the Secretary of the Air Force of the need for an aircraft designed from the ground up to be an airlifter (e.g., the C-124 Globemaster). He was later the driving force

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[113] Ibid.
[114] Ibid., 134.
[115] Ibid., 136.

behind what was to become the first jet-powered transport, the C-141. Moreover, in alliance with U.S. Representative Mendel Rivers, he successfully pushed for legislation to create the Military Airlift Command, commanded by a four-star general.

The Comparative Case Study Method

The Most Likely Case

Harry Eckstein introduced the notion of a "crucial-case study"[116] in 1975, postulating that "case studies ... are valuable at all stages of the theory-building process, but most valuable at ... the stage at which candidate theories are tested."[117] He explains that testing entails taking measures to refute a theory by discovering phenomena that "must fit a theory, but have a good chance of not doing so." This is qualified by the fact that "nothing that suggests a theory ... can also test it" because "anything giving rise to a theory will certainly not falsify it."[118] Therefore, the distinct trait of a crucial case is that it is:

> a case that must closely fit a theory if one is to have confidence in the theory's validity, or, conversely, must not fit equally well any rule contrary to that proposed. The same point can be put thus: in a crucial case it must be extremely difficult, or clearly petulant, to dismiss any finding contrary to theory as simply 'deviant,' and equally difficult to hold that any finding confirming theory might just as well express quite different regularities. [119]

Important for the purposes of this study, Eckstein emphasizes that "must-fit cases... will not commonly occur" because they must have the attributes of a "well-designed

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[116] Eckstein, "Case Study and Theory in Political Science," 113.
[117] Ibid., 80.
[118] Ibid., 116.
[119] Ibid., 118.

experiment," in that their outcomes must be as precise and measurable as experimental observations. Therefore, given their rarity, another option is to probe "most likely" or "least likely" cases - "cases that ought, or ought not, to invalidate or confirm theories if any cases can be expected to do so."[120]

Eckstein explains that these least-likely and most-likely cases should be "extreme on pertinent measures," with the least-likely cases validating, and the most-likely cases nullifying the theory being tested. Furthermore, he specifies that "any most-likely case for one theory becomes a least-likely case for its antithesis, and vice versa," so that what distinguishes them are the objectives of the research project instead of the built-in features of a case. Eckstein notes that in constructing a most-likely case study examining "counter-theories (i.e., likely alternative solutions if a theory is invalid, or a theory's 'antithesis,' if one is available)" serves as a potent alternative to testing the "null hypothesis."[121] In other words:

> a crucial case study can readily be designed not only to determine whether a case lies off a predicted point on one curve but also whether it lies on, or nearer, a predicted point on a crucial counter-curve. Since only one case is involved, the cost of doing both will not be much greater than that of performing one operation alone. Several advantages accrue: We may not merely establish that a theory is false but also why, at bottom, it is false, and what sort of theory would serve better.[122]

Eckstein concludes that "case study obviously proceeds best when a case is treated in both senses and confronted with both theory and counter-theory."[123] Moreover, he posits that

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[120] Ibid.
[121] Ibid., 125.
[122] Ibid., 126.
[123] Ibid., 119.

"several [most-likely] case studies are always better than one." In fact, it is possible that the strongest way to construct a theory is through the study of "comparative [most likely] case studies," rather than the more usual type of comparative study (i.e., cases studied randomly, or intuitively selected, or simply studied because they seem readily available or accessible) or a single most-likely case.[124]

Imre Lakatos cautions that "the problem fever of science is raised by the proliferation of rival theories rather than counterexamples or anomalies.:

> The slogan of *proliferation of theories* is much more important for sophisticated than for naive falsification. ... For the naive falsificationist a 'refutation' is an experimental result which, by force of his decisions, is made to conflict with the theory under test. But according to sophisticated falsification one must not take such decisions before the alleged 'refuting instance' has become the confirming instance of a new, better theory.[125]

Thus, according to Lakatos, "the honesty of sophisticated falsification demand[s] that one should try to look at things from different points of view, to put forward new theories which anticipate novel facts, and to reject theories which have been superseded by more powerful ones."[126]

Conforming to Lakatos' sophisticated falsification criteria, this case not only exposes the inability of the bureaucratic politics paradigm to adequately explain the neglect of the airlift mission, but it also demonstrates that organizational culture theory is better able to account for airlift neglect and potentially other neglected missions as well.

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[124] Ibid., 127.

[125] Imre Lakatos, "Falsification and the Methodology of Scientific Research Programmes," in *Criticism and the Growth of Knowledge*, eds. Imre Lakatos and Alan Musgrave (Cambridge: Cambridge University Press, 1970) 118 - 119.

[126] Ibid.

Process Tracing

In 1985 Alexander George and Timothy McKeown argue that research of individual and group decision making often employs a procedure of "process tracing."[127] Incorporating Eckstein's "most likely" case into their process tracing method, they argue that any competing theories should make contradictory forecasts about the case, so that despite the actual findings, they should contradict at least one of the theories.[128] Furthermore, they elaborate that "prediction success is a relative concept," in that a researcher can deem one theory stronger than its alternative if the actual results more nearly fit its predictions than the other's. This finding is enhanced by a measured comparison of processes, rather than mere inputs and outputs.[129] Finally, "where predictions and outcomes are qualitative:

> it is also desirable to have multiple theories that predict mutually exclusive outcomes. In such a situation, prediction 'success' has a much clearer meaning than it does when only one theory is being considered, or when multiple theories are being considered, but the theories are complementary rather than competing explanations. [130]

In case studies particularly, researchers are often concerned with in a pattern of actions over a period of time.:

> The process tracing approach attempts to uncover what stimuli the actors attend to; the decision process that makes use of these stimuli to arrive at decisions; the actual behavior that then occurs, the effect of various institutional arrangements on attention, processing, and behavior; and the effect of other variables of interest on attention, processing , and behavior. [131]

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[127] George and McKeown, "Case Studies and Theories of Organizational Decision Making, "21 - 58.
[128] Ibid., 50.
[129] Ibid., 51.
[130] Ibid.
[131] Ibid., 35.

In other words, as George and McKeown explain it, process tracing consists of an effort to reconstitute players' understandings of their own predicaments and then try to establish a theory based on their actions.[132]

In 1991, David Collier hails the process tracing method for providing a logically constructed rationale for what he calls "one of the most important approaches to case study analysis:

> that which supplements hypothesis testing based on the overall evaluation of the case with a close processual analysis of the unfolding of events over time within the case. The scholar thus assesses whether the dynamics of change within each case plausibly reflect the same causal pattern suggested by the broader appraisal of the case in relation to other cases.[133]

George and McKeown develop a three-phase process for designing and implementing case studies: (1) Design; (2) Case Studies; (3) Drawing the Implications for Theory.[134] The Design Phase entails four specific tasks:

> (1) A clear specification of the research problem and the research objectives of the study; (2) Specification of the elements that will be employed in analyzing the historical case or controlled comparison; (3) Selection of a historical case or cases guided by a typology developed from the work in Tasks 1 and 2; (4) Consideration of the way in which variance of variables can be described to further the assessment or refinement of existing theory.[135]

This dissertation employs the use of George and McKeown's process tracing method. This chapter constitutes phase one, the four-task design. The first task is to specify the problem to be researched and the objective of the study.[136] In an effort to

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[132] Ibid.

[133] David Collier, "The Comparative Method: Two Decades of Change," in *Comparative Political Dynamics,* eds. Rustow and Erickson (New York: Harper-Collins, 1991) 7 - 31.

[134] George and McKeown, "Case Studies and Theories of Organizational Decision Making," 43 - 44.

[135] Ibid., 44 - 46.

[136] Ibid., 44.

determine how certain U.S. military missions tend to be consistently neglected over time, this study attempts to explain the underlying causes of the problems that have afflicted the U.S. strategic airlift mobility mission since its inception in 1941. The independent variables of this study are bureaucratic politics and organizational culture. The competing propositions of these contending theories make contradictory predictions so that their relative usefulness may be gauged from the aftermath of five case studies which include: (1) World War II; (2) Berlin; (3) Korea; (4) Vietnam; and (5) the Persian Gulf. Specifically, the U.S. Air Force mobility mission of strategic airlift is compared to the combat missions of the fighter and bomber communities. Neglect, the dependent variable of this study, is measured in terms of doctrinal emphasis, organizational pecking order, and relative allocation of fiscal resources to force structure. Although airlift is shown to be in a continual condition of relative neglect, it nevertheless experiences episodic changes and continues to survive and sometimes even thrive. Based upon the case results, the theories are evaluated in terms of John Ikenberry's standards of empirical, aesthetic and analytic criteria.[137] Finally, the tested propositions are refined in a way to more fully explain the wider phenomena of neglected U.S. military missions.

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[137] G. John Ikenberry, ed., *American Foreign Policy* (Harper Collins, 1989) 8.

Independent Variables

In constructing Model III, Allison asserted that political behavior can be predicted based upon the response to just four questions: "(1) Who plays?; (2) What are players' interests?; (3) What determines players' relative influence?; (4) What are the rules under which the players interact?"[138]

Who Plays?

First, the criteria for an individual to count as a "player in the national security policy game" is to "occupy a position that is hooked on to the major channels for producing action on national security issues."[139] For the purposes of this study, the major players are divided into three categories which include elected officials, appointed officials and career military officers. Within the category of elected officials are the President and Members of Congress. Political appointees include the Secretary of Defense and Secretary of the Air Force. Professional military officers include the Chairman of the Joint Chiefs of Staff, the Chief of Staff of the Air Force and the Commander in Chief of the Air Mobility Command.

Players' Interest?

The second step entails identifying the players' individual interests, "principally dictated by parochial priorities and perceptions associated with the position the player occupies. However, these propensities are filtered through the baggage that players bring to positions."[140] This equates to the "where you stand depends on where you sit" analogy,

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[138] Rhodes, "Do Bureaucratic Politics Matter?," 7 - 10.
[139] Ibid.
[140] Ibid.

qualified by the "baggage" one brings to his seat. This study seeks to determine which has more influence over the airlift mobility mission, seats or baggage. Bureaucratic politics reflects seats, whereas organizational culture reflects baggage.

The President is uniquely qualified to reflect the national interest. His concerns encompass the entire spectrum of national and international political, military, economic and social issues. His primary driving force is re-election during his first term and a respectable place in history during his second term. More than likely, he is able to devote little, if any, attention to the matter of the airlift mobility mission during his time in office. However, if he does, change is most likely to occur.

The Secretary of Defense is the sole cabinet member directly responsible to the President for Department of Defense matters. He is a political appointee, subject to Senate confirmation, with an eye on furthering the administration's agenda. Most likely, he is an in-and-outer who has recently come from the private sector, having previously established a distinguished record of public service as one of the assistant secretaries of Defense and/or a service secretary or agency head in a previous administration. Service as Secretary of Defense is his crowning achievement in the public sector. Matters concerning the strategic airlift mobility mission rarely reach his desk. If they do, more than likely they will come from the Chairman of the Joint Chiefs of Staff, his principal military advisor.

The Secretary of the Air Force, like the Secretary of Defense, is an outside political appointee, subject to Senate confirmation, who will usually have just a two-to-three-year

stint at the helm.[141] Given his or her short time horizon, limited experience, and the political nature of his or her position, he or she tends to enact the wishes of the President and Secretary of Defense. Some see this as a stepping-stone to an eventual cabinet-level position. For instance, Harold Brown served in the Johnson Administration as Secretary of the Air Force from 1965 until 1969, and later served as Secretary of Defense for the Carter Administration. Whatever the case may be, all service secretaries are the President's men and therefore are players on the same team. Nevertheless, they all have an incentive to out-shine the others if they have aspirations to higher office in the future. Therefore, each should want to be perceived as a go-getter with a vision for the future.[142]

The Chairman of the Joint Chiefs of Staff is the senior-ranking military officer in the U.S. Armed Forces. In his "purple-colored suit," he does not formally represent the interests of any individual service, but all the services as a whole. Given his unique perspective, he is designated as the principal military advisor to the President, Secretary of Defense and National Security Council. Although he is supposed to be totally objective in his advice, to protect against any cultural tendencies, his position was counter-balanced in 1986 by the position of Vice Chairman to be held by an officer from another service.[143] In practice, this has usually meant a split between maritime and

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[141] Tenure in this position has ranged from less than a year to a high of just four years. See "USAF Leaders Through the Years," *Air Force Magazine*, May 1995, 58.

[142] For a deeper understanding of the nature of sub-Cabinet level political appointees, see Hugh Heclo, *A Government of Strangers* (Washington, D.C.: The Brookings Institution, 1977). Heclo contends that even as political leadership has become increasingly bureaucratized, the bureaucracy has become more politicized. Political executives are usually ill-prepared to deal effectively with the bureaucracy. Statecraft consists of getting the changes they want without losing the bureaucratic services they need.

[143] See the Goldwater-Nichols DOD Reorganization Act (Public Law 99 - 433, 1 October 1986) in the *Congressional Record*, vol. 132, no. 119, proceedings of the 99th Cong., 2d sess, p. H 6856. Title II, Part A, 17. states "requires the JCS Chairman and Vice Chairman to be from different services."

continental interests (e.g., if the Chairman is from the Navy or Marines, the Vice will be from the Army or Air Force, and vice versa). Moreover, these positions are supposed to rotate, if the President concurs, from one service to another, although this does not always happen. The tenure for the position is normally two two-year terms (with a third term allowable), beginning 1 October of odd-numbered years. The position is usually followed by retirement from the service.

The Chief of Staff of the Air Force is the embodiment of the reigning culture within the Air Force officer corps. Unlike the Secretary, the Chief of Staff is a careerist whose loyalty is tied most closely to his service. He will have served approximately thirty years climbing the rungs of power before finally reaching the pinnacle of Air Force command, his most recent command having been one of the Major Commands in the Air Force (i.e., ACC, AMC, USAFE, PACAF, etc.). From the position of Chief, he plays a dual-hatted role as both the blue-suited head of the service as well as the purple-suited member of the Joint Chiefs of Staff. In his seat, the only position to which he can still aspire to climb as an active duty military officer is to the Vice or Chairmanship of the Joint Chiefs of Staff. Otherwise, this four-year position is usually followed by retirement from the service.

The Commander in Chief of Air Mobility Command is usually a newly pinned four-star general officer who has served approximately twenty-eight years by the time he becomes a CINC. Not unlike the CSAF, he most likely embodies the dominate culture of the Air Force. However, unlike the CSAF, in most cases he can still aspire to command

another position in the Air Force after this assignment if he leaves within two years, including the Chief of Staff position itself. Otherwise, the CINC would retire after a four-year tenure at the helm of the Air Mobility Command.

Players' Relative Influence?

The third question surrounds the relative influence of each of these players. As Allison notes, "power is a function of resources associated with position, the player's effectiveness in exploiting these positional resources, and the player's reputation for doing so."[144] Given the strict American tradition of civilian control of the military, the President is the Commander in Chief of all the armed forces and first in the chain of command. As second in the chain of command, the Secretary of Defense reports directly to the President. The Secretary of the Air Force is the "head of the Department of the Air Force." As such, with the exception of operations, he or she is vested with virtually unlimited authority within the department.[145] The Chairman of the Joint Chiefs of Staff is the principal military advisor to the President, Secretary of Defense and National Security Council. The Chief of Staff of the Air Force is dual-hatted. In one capacity, he is vested with the blue-suit responsibility of ensuring that the Air Force is organized, trained and equipped for prompt and sustained combat operations in the air. In the other capacity, he serves as a member of the JCS, filling the purple-suited role of providing objective professional advice on behalf of the national interest. The Commander in Chief

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[144] Rhodes, "Do Bureaucratic Politics Matter?," 7 - 10.

[145] See the Goldwater-Nichols DOD Reorganization Act, H6849, Part C, (b) (1-11): "the Secretary of the Air Force has the authority necessary to conduct , all affairs of the Department of the Air Force, including the following functions: recruiting, organizing, supplying, equipping (incld. R&D), training, servicing, mobilizing, demobilizing, administering, maintaining, construction."

of Air Mobility Command is also dual-hatted as the Commander in Chief of the United States Transportation Command (USCINCTRANS). As CINCAMC, he is concerned primarily with ensuring that Air Mobility Command is organized, trained and equipped for prompt and sustained global reach of strategic airlifters. As USCINCTRANS, he is vested with the wartime responsibilities of a unified combatant commander in charge of the U.S. Air Force Air Mobility Command, the U.S. Navy Military Sealift Command and the U.S. Army Military Traffic Management Command. Given that he is solely responsible for commanding airlift aircraft, third in the chain of command answerable only to the Secretary of Defense, he is the chief lobbyist concerning airlift matters. However, of the three major Air Force players, he is vested with the least amount of influence over how the budget pie is to be cut among the competing missions within the Air Force. That responsibility is vested in the Secretary of the Air Force, who is heavily influenced by the advice of his most senior military advisor, the Air Force Chief of Staff.

Players' Rules of Interaction?

The fourth and final question concerns the "rules" of interaction among the designated players. Again, according to Allison, "action channels structure the game by preselecting the major players, determining their usual points of entrance into the game, and distributing particular advantages and disadvantages for each game."[146] A President rarely, if ever, is directly involved with strategic airlift mobility issues. Rather, he normally establishes, with the advice of the Secretary of Defense, the strategic doctrine

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[146] Rhodes, "Do Bureaucratic Politics Matter?," 7 - 10.

for his administration, which has an indirect, but substantial effect on U.S. Air Force doctrinal treatment of the strategic airlift mobility mission. The Secretary of the Air Force is not in the formal chain of command as part of the National Command Authority, which stretches from the President to the Secretary of Defense directly to the commander-in- chief of the applicable unified or specified command.[147] For that matter, neither is the Chief of Staff of the Air Force a part of the National Command Authority. However, his expertise is heavily counted on as the sitting member of the Joint Chiefs of Staff, where he has the direct ear of the Chairman, who in-turn is the designated principal military advisor to the President, National Security Council and Secretary of Defense.[148] However, the Commander in Chief of the U.S. Transportation Command, a unified combatant command,[149] is in the formal chain of command as part of the National Command Authority in time of military conflict. In this capacity, since 1986 the CINC has had a formal input into the budgeting process for his own strategic airlift assets.[150]

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[147] For elaboration on the National Command Authority, see the Goldwater-Nichols DOD Reorganization Act, p. H 6836. It states in Ch. 6, Sec. 162, "(b) Chain of Command. - Unless otherwise directed by the President, the chain of command to a unified or specified combatant command runs - (1) from the President to the SECDEF; and (2) from the SECDEF to the commander of the combatant command."

[148] Ibid., p. H 6834. It states in Ch. 5, Sec. 151, "(d) Advice and Opinions of Members Other than the Chairman. - (1) A member of the JCS may submit to the Chairman advice or an opinion in disagreement with advice or an opinion in addition to advice presented by the Chairman to the President, NSC, or the SECDEF. If a member submits such advice or opinion, the Chairman shall present the advice or opinion of such member at the same time he presents his own advice to the President, NSC or SECDEF, as the case may be."

[149] Ibid., the terms "unified command," "specified command" and "combatant command" are defined in Ch. 6, Sec. 161, (c) definitions (1) The term 'unified command' means a military command which has broad, continuing missions and which is composed of forces from two or more military departments; (2) The term 'specified command' means a military command which has broad, continuing missions and which is normally composed of forces from a single military department; (3) the term 'combatant command' means a unified command or a specified command."

[150] Ibid., p. H 6866. It states in Ch. 6, Sec. 166, "(2) combatant commanders should (a) contribute, as appropriate, to net assessments performed by the Joint Staff."

Measures of the Dependent Variable

Having identified the major players, the second task is to specify the "elements," (i.e. dependent variables) to be used to investigate this case study.[151] Airlift mobility neglect is the dependent variable of this study and it is operationalized in terms of interservice roles and missions, strategic and U.S. Air Force doctrine, budget, force structure and organization. The process-tracing method is used to determine whether the theory of bureaucratic politics or organizational culture more adequately explains the organizational dynamics that lead to the relative neglect of the U.S. airlift mobility mission, which is the one parameter that remains constant over time. Based on the case studies, the contending hypotheses of bureaucratic politics and organizational culture are tested to delineate more clearly which factors account best for the interservice allocation of airlift mobility roles and missions, the intra-Air Force relative neglect of the airlift mobility mission's doctrine, budget, force structure and organization, and changes in the airlift mission within the constant context of neglect. We will examine each operationalized aspect of the dependent variable in more detail.

Doctrine

U.S. Air Force basic doctrine is the official statement as to how the Air Force plans to organize, train and equip its forces for the conduct of prompt and sustained combat operations in the air, its primary mission. As a result, doctrine strongly influences the budgetary allocation, the type of force mix that evolves through the weapon systems

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[151] George and McKeown, "Case Studies and Theories of Organizational Decisionmaking," 45.

acquisition process as well as how these forces are organized hierarchically within the overall structure of the chain of command. This study examines each of the nine versions of Air Force Manual 1-1 (AFM 1-1), *Basic Aerospace Doctrine* since its initial publication in 1953 and analyzes whether and/or how its treatment of airlift has changed following the five most likely cases examined. In particular, this study compares the relative emphasis placed upon the combat, as opposed to the mobility, mission in each of the nine versions of AFM 1-1. A recent edition of AFM 1-1, formally defines aerospace doctrine as:

> a statement of officially sanctioned beliefs and warfighting principles which describe and guide proper use of aerospace forces in military action. The Air Force promulgates and teaches this doctrine as a common frame of reference on the best way to prepare and employ aerospace forces. Accordingly, *aerospace doctrine drives how the Air Force organizes, trains, equips, and sustains its forces* [emphasis added].[152]

Air Force doctrine is an important measure because, according to Perry Smith, it is the "life blood" of the Air Force and gives the service a justification for its existence.[153] I.B. Holley believes that Air Force doctrine is "the point of departure for virtually every activity in the air arm ... [and] like a compass bearing; it gives ... the general direction of [its] course." According to Holley, AFM 1-1:

> defines the roles and mission of the service, the scope and potential capabilities of its weapon systems ... it lies behind the decisions as to what weapon will be developed and gives guidance as to the relative importance of several competing roles or weapon systems when the time arrives to apportion the invariably inadequate supply of dollars.[154]

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[152] U.S., Department of the Air Force, *Basic Aerospace Doctrine of the United States Air Force,* Air Force Manual 1-1 (1984) 5.

[153] Perry M. Smith, "The Role of Doctrine," in *American Defense Policy,* eds. John E. Endicott and Roy W. Stafford, Jr., 4th ed. (Baltimore: Johns Hopkins University Press, 1978) 403.

[154] I. B. Holley, Jr., *Ideas and Weapons* (New Haven: Yale University Press, 1953) iii.

Thomas Greer adds that "doctrines governing the employment of the particular branches of aviation have been affected to some extent by national strategic policies and the state of technological development."[155] Throughout the years, doctrine which has proven to be irrelevant or ineffective has been discarded and replaced with new doctrine which may have recently proven itself to be relevant and effective in combat employment. Besides combat experiences, doctrine has been subject to change due to new technologies or national security policies. The postwar planners neglected airlift in their postwar force structure because of their doctrinal focus upon strategic bombing, which had been used to justify the U.S. Army Air Corps' case for autonomy.

Roles and Missions

Roles and missions are determined by formal interservice agreements, approved by the Secretary of Defense. These agreements specify the primary warfighting responsibilities of each individual service. In addition, the services may be assigned combat support missions to assist another service in performing its role.

Mission neglect tends to arise when one military service is held responsible for providing a combat support function for another militarily service. Pointing to the Key West agreement in 1948, Morton and David Halperin argue that it has "contributed to some of the most glaring failures and shortcomings of American military policy in the postwar era," including strategic airlift.[156] Institutional preferences for particular roles and

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[155] Thomas H. Greer, *The Development of Air Doctrine in the Army Air Arm 1917 - 1941* (Washington, D.C.: Office of Air Force History, 1985) 129.

[156] Morton H. Halperin and David Halperin, "The Key West Key," *Foreign Policy* 53 (Winter 1983-84): 114.

missions are key elements in organizational culture. J.Q. Wilson points out that a hierarchy of missions tends to develop in the early stages of an organization's development because organizations "often have more than one goal and thus engage in more than one kind of task, they will have many competing cultures that cannot easily be fused into a shared sense of mission."[157] The Halperins argue that the fundamental shortcoming of the Key West agreement is that "since each service had its own programs and doctrines to protect, none of the three wanted to waste valuable budget money and resources on programs designed to aid its Pentagon rivals."[158] Such is the case with the airlift mobility mission within the Air Force.

Budget

Comparing the annual budgetary outlays for airlifters, fighters, and bombers is a tangible measure of the emphasis placed upon air mobility, relative to air combat missions. As Lawrence Korb and George Brown point out, "the outcome of the budgetary process ultimately shapes the character of American military forces. Its importance cannot be overstated."[159] Although theoretically the budgetary process should shape the airlift force structure to reflect the nation's security requirements, "in practice the fit between the threat, the policy and force structure is quite loose."[160] This is because, "in the final analysis the size and distribution of the defense budget are affected strongly by

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[157] Wilson, *Bureaucracy*, 95 - 101.

[158] Halperin and Halperin, "The Key West Key," 117.

[159] George F. Brown, Jr., and Lawrence Korb, "The Economic and Political Restraints on Force Planning, *Naval War College Review* 32:4 (June-July 1979): 51-63, reprinted in *American Defense Policy*, eds. John F. Reichart and Steven R. Sturm, 5th ed. (Baltimore: Johns Hopkins University Press, 1983) 578.

[160] Ibid., 581.

the positions and relative influence of the players involved in the process."[161] In other words, it is characterized by the pulling and hauling normally associated with bureaucratic politics. Although in theory the Secretary of Defense and Joint Chiefs of Staff are supposed to "ensure that all of the separate inputs are molded into a coherent, balanced, and responsible force structure," in reality "the Secretary has neither the time nor the staff to accomplish such a Herculean task." As a result, "each of the military services tries to buy a force structure that will permit it to carry out its functions independently and that emphasizes its glamorous missions."[162]

In the limited Air Force budget, decisions have to be made as to the allocation of scarce resources among competing interests from the bomber, fighter and airlift communities. The deliberations that lead to these decisions are traced through Congressional testimony for annual defense budget authorizations and appropriations. The trend as to whether or not more resources are being devoted to airlift is deduced by measuring the portion of the Air Force budget allocated to airlift procurement over time.

Force Structure

Graham Allison and Frederic Morris depict the weapons system development process as rife with bureaucratic politics. They posit that "no single authority can make all the important [procurement] decisions" because of the large number of complicated decisions that must be made during the long duration required in the development of any new weapons system. Because of the complexity involved, "organizations play a major

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[161] Ibid., 584.
[162] Ibid., 583.

role in weapons development." In particular, they identify the "services and their subunits [as] the primary actors" in the weapons system developmental process. The resultant force structure is determined by the "goals and procedures and especially the missions and weapons systems to which services (and subunits) are committed." Finally, although politicians may "disturb this process; only rarely do they control it."[163]

As a result of these factors, the authors contend that "weapons systems not in the main-line mission of a service or service subunit tend to develop slowly." Not only do they tend to develop more slowly, but "missions to which a service assigns low priority (or which is not the primary mission of a service subunit) tend to be poorly developed," particularly if "the mission is essential not to the service performing it but to a sister service." Allison and Morris cite airlift as an example of such a mission. They note that weapon systems which must be developed through the coordination between "services and missions will be poor and will develop slowly." Finally, they conclude that "organizational interests and missions are better predictors of weapon characteristics and uses than are appointed officials' pronouncements."[164]

Force structure is the most tangible measurement of relative neglect among the various Air Force flying commands. It is measured in terms of force levels and technological advances. Moreover, a direct comparison is made of the total number of airframes (i.e., bomber, fighter and transport aircraft) devoted to each mission. Finally,

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[163] Graham T. Allison and Frederic A. Morris, "Armaments and Arms Control: Exploring the Determinants of Military Weapons," in *Arms, Defense Policy and Arms Control,* eds. Franklin A. Long and George W. Rathjens (New York: W.W. Norton & Co., 1976) 123.

[164] Ibid., 125.

the average age of the weapons systems, and resultant technological sophistication is directly compared between the bomber, fighter and transport fleets. Technological development is measured by the number of new weapon systems researched, developed and deployed. In addition to new aircraft, technology includes any modifications made to existing airframes to enhance their capabilities to handle more complex tasks.

Organization

Throughout airlift's short history, its relative importance to the Air Force has always been manifest by its placement within the hierarchy of major flying commands. The overall organization of the Air Force is continually evolving, but generally speaking, it is composed of combatant commands and supporting commands, including air mobility. The organization of military airlift forces has evolved from a non-combatant transport service to its new plateau as an ostensibly co-equal major combatant command which is a key component of the unified command structure. This study reveals, however, that due to culturally induced personnel constraints, airlift's organizational stature has never attained the status of its sister bomber and fighter commands. The relative emphasis placed in each of these commands is measured in terms of the rank of their commanders (i.e., four-star versus three-star) as well as the background of the various commanders (i.e., fighters and bombers versus transports).

Propositions

The following propositions are derived from the theories of bureaucratic politics and organizational culture (B = Bureaucratic Politics, C = Organizational Culture):

B1: Organizations resist change and therefore tend to be *stagnant*.

C1: Organizations are able to experience dramatic change through *learning*.

B2: Inter-organizational parochial disputes tend to intensify during times of relative *calm*.

C2: Inter-organizational parochial disputes tend to intensify during times of *crises*.

B3: Organizations tend to amass empires in their quest for more *turf*.

C3: Organizations tend to forego opportunities to expand in order to stick to the *knitting*.

B4: Individuals' stands on issues tend to reflect their organizational positions or *seats*.

C4: Individuals' stands on issues tend to reflect their personal *baggage*.

B5: Leaders tend to become *captured* and wedded to their organizations' perspectives.

C5: Leaders tend to *capture* their organizations and subject them to their personal values.

CONTENDING THEORETICAL PROPOSITIONS[165]

BUREAUCRATIC POLITICS	vs.	ORGANIZATIONAL CULTURE
***B1**: Organizational Stagnation	vs.	****C1**: Organizational Learning
B2: Parochialism in Calm	vs.	**C2**: Parochialism in Crisis
B3: Turf Building	vs.	**C3**: Stick to the Knitting
B4: Stands reflect Seats	vs.	**C4**: Stands reflect Baggage
B5: Leaders Captured	vs.	**C5**: Leaders Capture

***B** = Bureaucratic Politics
****C** = Organizational Culture

[165] I am grateful to Andrew O. Bennett for this formulation.

Testable Hypotheses

First, the two theories offer different possibilities for organizational learning. Bureaucratic politics posits that organizations are stagnant and resistant to attempts at innovation and change because it increases organizational uncertainty. Halperin contends:

> the bureaucratic system is basically inert; it moves only when pushed hard and persistently. The majority of bureaucrats prefer to maintain the status quo, and only a small group is, at any one time, advocating change. Time and resources or any one person in the bureaucracy are limited, and when a participant does desire change, he must choose carefully the issues on which to do battle.[166]

The bureaucratic politics proposition posits that: (B1) *airlift doctrine should remain stagnant and unchanging over time.*

Wilson agrees that "organizations resist innovation." In fact, he contends that "they are supposed to resist it:

> The reason an organization is created is in large part to replace the uncertain expectations and haphazard activities of voluntary endeavors with the stability and routine of organized relationships. The standard operating procedure (SOP) is not the enemy of organization; it is the essence of organization.[167]

Although organizational culture theory acknowledges that innovation is rare, it nonetheless leaves open the possibility for dramatic learning. Wilson states:

> real innovations are those that alter core tasks; most changes add to or alter peripheral tasks. These peripheral changes often are a response to a demand in the agency's environment. ... Many important changes in the military were reactions to political demands: some key Air Force generals were at first reluctant to develop the intercontinental missile. ... Outside forces - academic scientists, industrial engineers, civilian theorists, members of Congress, and presidential aides - all helped induce the military to embrace programs that initially seemed irrelevant to (or at odds with) their core tasks.[168]

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[166] Halperin, *Bureaucratic Politics and Foreign Policy,* 99.
[167] Wilson, *Bureaucracy,* 221.
[168] Ibid., 225.

Wilson contends that older agencies are more likely to have defined their bread and butter duties in ways that keep their expenses to a minimum and thereby magnify the costs of change. Therefore, he posits that the most interesting and enlightening tales of governmental learning have been discovered in bureaus that have developed "settled habits and comfortable routines.:

> Innovation in these cases requires an exercise of judgment, personal skill, and misdirection, qualities that are rare among government executives. And so, innovation is rare.[169]

The organizational culture proposition predicts that: (C1) *airlift doctrine should experience evolutionary peripheral changes as it adapts to an ever-changing environment, while core changes should seldom occur.*

Second, these theories make different predictions concerning organizational behavior during crisis situations. Allison uses the Cuban missile crisis to illustrate his models because he observes that in a situation of "ultimate danger to the nation," a closed circle of advisors considered all the possible courses of action and made a decision, independent from their bureaucratic seats. :

> Such central, high-level, crisis decisions would seem to be the type of outcome for which Model I analysis is most suited. Model II and Model III are forced to compete on Model I's home ground. The dimensions and factors uncovered by Model II and Model II in this case will therefore by particularly suggestive.[170]

In other words, because crisis brings out the presumed rationality of Model I, the effects of Model III should be mitigated.[171] The bureaucratic politics proposition suggests that:

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[169] Ibid., 232.

[170] Allison, *Essence of Decision,* 8 - 9.

[171] I have adopted Glenn Snyder and Paul Diesing's definition of the term "international crisis" as "a sequence of interactions between the governments of two or more sovereign states in severe conflict, short of

(B2) *the Secretary of Defense usually has to resolve interservice parochial disputes over airlift roles and missions during times of relative calm, and rarely following the use of force.*

On the other hand, organizational culture predicts that a crisis situation should intensify parochial competition because it enables each service to exhibit its effectiveness at the expense of the others. Halperin observes that:

> in periods of crisis, career officials calculate how alternative policies and patterns of action will affect future definitions of roles and missions. Participants have learned over time that changes in roles and missions frequently occur during crises. Thus an organization concerned about its mission and desiring either to expand it or prevent other from expanding theirs at its cost will be particularly alert to both challenges and opportunities during a crisis.[172]

The organizational culture proposition, on the other hand, holds that: (C2) *because interservice parochialism intensifies during crises, the Secretary of Defense tends to have to resolve disputes over airlift roles and missions following the use of force.*

The third set of propositions tests the tendency of organizations to expand their turf, as opposed to shunning opportunities at expansion in order to maintain autonomy by sticking to the knitting they know best. In their 1972 article, "Bureaucratic Politics: A Paradigm and Some Policy Implications," Allison and Halperin contend that:

> members of an organization ... come to believe that the health of their organization is vital to the national interest. The health of the organization ... is seen to depend on ... securing the necessary capabilities [which include] maintaining or expanding roles and missions, and maintaining or increasing budgets.[173]

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actual war, but involving the perception of a dangerously high probability of war." See Glenn H. Snyder and Paul Diesing, *Conflict Among Nations: Bargaining, Decision-Making and System-Structure in International Crises* (Princeton: Princeton University Press, 1977) 6. Note that the first case study, World War II, transcends the crisis stage and escalates to a state of actual war.

[172] Halperin, *Bureaucratic Politics and Foreign Policy*, 50.

[173] Allison and Halperin, "Bureaucratic Politics," 48.

The bureaucratic politics proposition posits that: (B3) *the Secretary of the Air Force should seek to protect and/or expand the turf of the airlift fleet by branching out into other functions that require more diverse aircraft (i.e., helicopters for special ops).*

By 1974, Halperin is the first to submit that "organizations are often prepared to accept less money with greater control rather than more money with less control." This is because "even with the smaller funds they are able to protect the essence of their activities."[174] Fifteen years later, J.Q. Wilson agrees that the apparent "imperialistic" nature of governmental bureaus is a naive simplification and he expands upon this notion to propose that "budget increases that threaten to reduce agency autonomy are often but not always resisted."[175] Instead of empires, organizations strive for autonomy, or "relatively undisputed jurisdiction," because:

> to a government executive an increase in the autonomy of his or her agency lowers the cost of organizational maintenance by minimizing the number of external stakeholders and bureaucratic rivals and maximizing the opportunity for agency operators to develop a cohesive sense of mission. Foregoing certain new tasks and their associated budget increases seems like a reasonable price to pay for these benefits.[176]

He points to the fact that "military turf wars" are often erroneously depicted as examples of "organizational imperialism," when in fact what the military services are trying to do is equate their "mission[s] and jurisdiction[s]:

> a strong sense of mission implies an organizational jurisdiction coterminous with the tasks that must be performed and the resources with which to perform them.[177]

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[174] Halperin, *Bureaucratic Politics and Foreign Policy*, 51.
[175] Wilson, *Bureaucracy*, 182.
[176] Ibid., 183.
[177] Ibid., 187.

Nevertheless, Wilson qualifies this phenomenon with the stipulation that "if autonomy can reasonably be assured, then the agency of course will seek more resources or an enlarged jurisdiction.[178] The organizational culture proposition counters that: (C3) *even if faced with strong evidence of a need to expand the airlift fleet, the Secretary of the Air Force should forego the opportunity and stick to the knitting rather than risk a commensurate reduction of budget allocations for fighter and bomber forces.*

Fourth, bureaucratic politics contends that players' stands tend to reflect the positions they hold in the bureaucratic structure. In *Essence of Decision*, Allison borrows the saying originally used by Don K. Price that "where you stand depends on where you sit:

> For large classes of issues - e.g., budgets and procurement decisions - the stance of a particular player can be predicted with high reliability from information about his seat.[179]

For this study, the bureaucratic politics proposition contends that: (B4) *the stand that the Chief of Staff of the Air Force takes towards increasing the airlift procurement budget should be positive, regardless of his operational experience, by virtue of his seat as the head of the service.*

Organizational culture, on the other hand, holds that sometimes people are given certain seats based upon the viewpoints they already espouse, or the baggage that they hold. Allison himself admits that "each person comes to his position with baggage in tow."[180] Therefore, although "propensities and priorities stemming from position are

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[178] Ibid., 195.
[179] Allison, *Essence of Decision*, 176.
[180] Ibid., 166.

sufficient to allow analysts to make reliable predictions about a player's stand in many cases," nevertheless he concedes that:

> these propensities are filtered through the baggage that players bring to positions. Some knowledge of both the pressures and the baggage is thus required for sound predictions.[181]

Baggage consists of "sensitivities to certain issues, commitments to various projects, and personal standing with and debts to groups in the society."[182] The organizational culture hypothesis contends that: (C4) *the stand that the Chief of Staff of the Air Force takes towards the airlift budget should be conditioned by the baggage that he brings to his seat.* In other words, if his formative experiences were in the fighter or bomber communities, then he should be more likely to favor the acquisition of fighter and bomber aircraft rather than airlift aircraft.[183]

The last pair of competing propositions are the capture versus captured scenario. Halperin asserts in *Bureaucratic Politics and Foreign Policy* that:

> the civilian heads of the three military services, ... especially if they have had little previous personal involvement in a particular issue, are likely to come to reflect the interests of their organization. ... The pressures on Cabinet officers from their subordinates, as well as from outside pressure groups, is so great that they often come to see themselves as their department's representative to the President. For example, James Forrestal when Secretary of the Navy explicitly saw his job as maintaining the autonomy of the Navy.[184]

According to bureaucratic politics: (B5) *The Commander in Chief of Air Mobility Command should be captured by his organization.* Regardless of his operational

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[181] Ibid., 167.

[182] Ibid., 166.

[183] Rhodes would call this dynamic an indicator of bureaucratic politics. I contend that it is more properly defined as an element of organizational culture.

[184] Halperin, *Bureaucratic Politics and Foreign Policy,* 95 - 96.

experience, he should become an ardent proponent of airlift organizational improvements, even if they encroach upon the fighter and bomber organizations. In other words, even though a Commander in Chief of the Air Mobility Command may have spent the formative years of his career in the Strategic Air Command, he should nevertheless become more sympathetic to the Military Airlift Command once he takes the reigns of command.

On the other hand, James Q. Wilson's organizational culture theory in *Bureaucracy* depicts a totally different incentive structure of organizational leaders:

> Often they are drawn from outside the agency to serve for a brief period. Their rewards come not from the agency but from what outsiders (peers, the media, Congress) think of them. A 'go-getter' who 'makes a difference' and does not 'go native' usually wins more praise than someone who is cautious and slow-moving.[185]

The organizational culture proposition posits that: (C5) *The Commander in Chief of the Air Mobility Command should capture his organization.* If he spent the formative years of his career in an operational combat unit, he should still be inclined to believe that the combat organization is more important than the mobility organization. Therefore, he should be willing to allow the airlift command to continue to play a supporting role. On the other hand, if he spent the formative years of his career in an operational airlift unit, he should be inclined to believe that the mobility organization is just as important as the combat organization. Therefore, he should be more apt to advocate organizational improvements to the airlift command, even to the detriment of the combat commands.

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[185] Wilson, *Bureaucracy*, 229.

Taken together, these ten competing hypotheses can be depicted as follows:

NEGLECTED MISSIONS MODEL

PLAYER	HYPOTHESES	MEASURE
President	Stagnation vs. Learning	Doctrine
Secretary of Defense	Calm vs. Crisis	Roles and Missions
Secretary of Air Force	Turf vs. Knitting	Force Structure
Chief of Staff of USAF	Stands = Seats vs. Baggage	Budget
CINC of Air Mobility	Capture vs. Captured	Organization

Put together in abbreviated form, this model of neglected missions briefly works somewhat as follows: (1) Each edition of *Air Force basic doctrine* is examined in the context of the *strategic doctrine* articulated by the reigning *Presidential* administration at the time of publication to see whether organizational *learning* or *stagnation* has occurred. (2) Close attention is paid to the role of the *Secretary of Defense*, who tends to be the major player in the arbitration of disputes over interservice *roles and missions* in times of *crises* or periods of relative *calm*. (3) Special emphasis is placed on the role of the *Secretary of the Air Force* to see whether he or she attempts to add to the *turf* of the airlift *force structure* or else prefers to *stick to the knitting*. (4) In the case of *budget*, particular attention is paid to the Congressional testimony of the *Chief of Staff of the Air Force* to determine whether his *stands* tend to reflect more closely his official *seat* or his personal

baggage. (5) Congressional testimony as well as publicly available DOD memoranda are scrutinized to determine the driving political forces behind various airlift reorganizations, with particular focus upon the *Commander in Chief of Air Mobility Command* to see whether he appears to have been *captured by* or whether he *captures* his *organization*.

It is important to note that these testable hypotheses are not meant to be all-encompassing. On the contrary, they are supposed to be illustrative in nature. In other words, although this chart may depict the President as being the major determinant of strategic doctrine, this does not necessarily mean that other players do not come into play, such as the Secretary of Defense and Chairman of the Joint Chiefs of Staff, for instance. Likewise, though the Secretary of Defense may be the final arbitrator in questions over interservice roles and missions, this fact does not exclude the service secretaries and chiefs from participating in the debate. Accordingly, even though the Secretary of the Air Force may have the most influence over intra-Air Force budget allocations, this does not isolate him from inputs from his chief of staff as well as the various commanders in chief of the Air Force major commands. Similarly, despite the fact that the Chief of Staff of the Air Force may have the single-most influence over the selection of various weapons systems for his service, this does not make him immune from dealings with Members of Congress, the Secretary of the Air Force and his various commanders in chief. Finally, even if the Commander in Chief of Air Mobility Command may have the greatest direct influence over organizational adjustments to his command, this does not mean that other players do not either assist or resist in his efforts, such as the Chief of Staff of the Air

Force or his counterparts in the various other Air Force major commands, as well as Members of Congress and the Secretary of the Air Force.

Case Studies

The third task is to select the historical case studies to be used to measure the influence of these two disparate theoretical frameworks.[186] According to George and McKeown:

> the most distinctive feature of case studies is what we have termed a *process-tracing approach* to analyzing behavior. Such an approach represents a break from orthodox quasi-experimental logic, both in its emphasis on the hypothesis-formation process and in its approach to supporting claims for the existence of some causal process in a given situation.[187]

In keeping with the most likely case criteria, these studies illustrate cases where the magnitude and strategic importance of the airlift shortfall should portend corrective action on the part of the government to rectify airlift neglect. The five cases include (1) the "Hump" airlift over the Himalayan mountains to resupply the China-Burma-India theater of operations during the Second World War; (2) the Berlin Airlift which presaged the onslaught of the Cold War; (3) the Korean War; (4) the Vietnam Conflict; and (5) the most recent post-Cold War conflict in the Persian Gulf, Desert Shield / Desert Storm.

Each of these cases has crucial characteristics that separate it from other classes of military experiences. First, they were all major crisis conflicts that broke out without the benefit of prepositioned military forces and eventually involved a large contingent of forces (i.e. approximately 500,000). Second, they were all remote operations in which

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[186] George and McKeown, "Case Studies and Organizational Decisionmaking," 45.
[187] Ibid.

airlift provided their either sole and/or most critical, line of supply. Third, though successful, they all demonstrated the limits of U.S airlift capabilities.

This longitudinal comparative case study method conforms to an important analytical criterion that Alistair Johnston uses for his study of "strategic culture":

> The content analysis of strategic cultural objects begins at the earliest point in history that is accessible to the researcher, where initial strategic culture - derived preference rankings may reasonably be expected to have emerged. From this point one moves systematically forward. This way one can determine whether later strategic culture is a direct descendent of a formative strategic culture, a return to earlier patterns, a break from more recent ones, a reflection of a particular subculture, or non-existent. [188]

Johnston defines culture as "shared assumptions and decision rules that impose a degree of order on individual and group conceptions of their relationship to their social, organizational or political climate." More specifically, Johnston defines strategic culture as:

> an integrated system of symbols (e.g., argumentation structures, languages, analogies, metaphors) which acts to establish pervasive and long-lasting strategic preferences by formulating concepts of the role and efficacy of military force in interstate political affairs, and by clothing these conceptions with such and aura of factuality that the strategic preferences seem uniquely realistic and efficacious.[189]

Furthermore, he highlights the fact that "*multiple cultures can exist within one ... organization, ... but there is a generally dominant culture whose holders are interested in preserving the status quo* [emphasis added]."[190]

In the case of the Air Force, during the Cold War era, the argumentation process

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[188] Alastair I. Johnston, "Thinking About Strategic Culture," *International Security* 19:4 (Spring 1995): 49 - 50.

[189] Ibid., 45.

[190] Ibid.

used to justify the supremacy of the strategic bombing mission was the theory of mutual assured destruction (MAD). Nuclear strategy was couched in various symbolic terms during the 1960s and 1970s, such as "counterforce," "first-strike / second-strike," "nuclear war-fighting," "systems analysis," "thinking about the unthinkable," "shot across the bow," "limited nuclear options." All these terms were developed by the "strategists of the [Air Force's] RAND Corporation in the 1950s." These "defense intellectuals," or as Fred Kaplan calls them, "Wizards of Armageddon:

> move[d] freely through the corridors of the Pentagon and the State Department rather as the Jesuits through the courts of Madrid and Vienna, three centuries ago, ... by the 1970s and especially into the eighties, the ideas of these thermonuclear Jesuits would have so thoroughly percolated through the corridors of power - and through their annexes in academia - that, at least among fellow members of the congregation, *their wisdom would be taken almost for granted, their assumptions worshipped as gospel truth, their insight elevated to an almost mystical level and accepted as dogma* [emphasis added].[191]

Analysis

The fourth phase concerns the presentation of the case study results. George and McKeown note that many studies tend to neglect a discussion of any problems with methodology that may have been experienced during the course of the investigation. Another trend is to resort too often to an unscientific chronological description as a framework for organizing the case study narrative:

> We see no reason why presentation of the case must always follow a chronological narrative. As theory becomes better developed and as research focuses on more tightly defined targets, there will be less point in presenting long narratives. [192]

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[191] Fred Kaplan, *The Wizards of Armageddon* (New York: Simon & Schuster, Inc., 1983) 11.
[192] George and McKeown, "Case Studies and Organizational Decisionmaking," 54.

What is most important for the purposes of this study is what happened in the *aftermath* of each of these cases of near-crisis airlift shortfalls. Simply stated, on the one hand, the bureaucratic politics hypotheses are tested to see whether the various policy players (taking into account who stands where, etc.) institute sustained processes which lead to an outcome of strengthened U.S. strategic airlift capabilities. On the other hand, the organizational culture hypotheses are tested to see whether the strategic airlift mobility mission continues to be neglected, relative to the U.S. Air Force combat flying missions. Again, following Johnston's criteria:

> to analyze the content of a sample of objects from the period under study, compare these with a sample from a past period, and *assume that if there is congruence in preference rankings, a strategic culture exists* and has persisted across this historical time. *The longer the period across which this congruence stretches, the more powerful and persistent the strategic culture* [emphasis added].[193]

Johnston espouses a three-step process to "link strategic culture to behavior." The first step is to "test for the presence of and congruence between the strategic preference rankings across the objects of analysis in the presumed formative time period." In the case of the Air Force, this would entail a relative comparison of bomber, fighter and airlift doctrine, force structure and organization following the Second World War compared to their relative standings following each of the other cases (e.g., Berlin, Korea, Vietnam and Persian Gulf).

The second step entails testing "for the presence of and congruence between preference rankings found in a sample of say, policy documents taken from the decision

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[193] Johnston, "Thinking About Strategic Culture," 49.

process in the period of interest, and between these documents and the original objects of analysis." Moreover, "these documents should be taken from different times, across different strategic contexts." If organizational behavior is influenced by strategic culture, "it must at least appear to have an effect on the action-oriented perceptions of key decision-makers." For the purposes of this study, the Air Force preference for the strategic bombing mission will be shown to be the case in both the context of massive retaliation and flexible response.

Third, one must "test for the effects of decision-makers' preferences rankings on politicio-military behavior." This may be done in three different ways. First of all, "strategic culture may provide a limited range of choices or tendencies, but an intervening variable (e.g., *leadership change*, elite transformation, *bureaucratic politics*, *technology cycles*, internal debate or *external crisis*) determines which tendency kicks in and when." In this case, the period following each of the crises case studies is shown to spawn doctrinal, force structure and organizational adjustments to airlift capabilities in order to compensate for the neglect that became evident during the preceding conflict. Secondly, "strategic culture ... may appear as a consistent set of ranked preferences which persist across time and across strategic contexts." In this case, although airlift may experience improvements after each of the crises, it nevertheless remains on the lower rung of the Air Force pecking order. Third, "strategic culture may mediate or moderate the effects of another independent variable." In this case, the Air Force's organizational culture of

strategic bombing may dampen the effects of airlift bureaucratic politics, so that it never achieves parity with the offensively-oriented fighter and bomber missions. In summation:

> The key issue is how to measure the separate effects of a potentially constant or slow-to-change variable like strategic culture, on an outcome that is supposed to vary like strategic choice.[194]

Refinement of Theory

The fifth and final task is to consider the way that differences in the hypotheses can be explained to "further the assessment or refinement of existing theory."[195] George and McKeown believe that the "critical" goal is to glean valid lessons from the case results. As they point out, a researcher may succeed at predicting, yet in the process determine that the paradigm must be reconstructed or modified so that it can predict with greater precision and specificity:

> This can occur when the case study uncovers causal processes hitherto undetected or leads to a reformulation of previously postulated causal processes likely to be more intensive in situations where existing modes seem to be performing poorly.[196]

This task strikes at the heart of the study in that it is an attempt to bring some understanding as to *how* and *why* one theory better explains neglected missions than the other using John Ikenberry's "empirical, aesthetic and analytic" criteria to judge.[197] Moreover, as part of this process, an attempt is made to more clearly specify under what general conditions one theory tends to explain more than the other. Thus, the overriding goal of this "Lakatosian" progressive scientific research program is to introduce new

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[194] Ibid., 52 - 54.
[195] George and McKeown, "Case Studies and Organizational Decisionmaking," 54.
[196] Ibid.
[197] Ikenberry, *American Foreign Policy,* 8.

organizational hypotheses of neglected military missions which offer "novel, excess information compared with [their] predecessor[s]."[198] As this cannot be specified until the outcome of the research, "a judgment on this matter often is subject to revision as the empirical work proceeds." In fact, George and McKeown caution that "basing design decisions on a priori judgments may be risky and unproductive." Therefore, they recommend an "iterative procedure for determining how best to describe variance."[199]

Finally, this study promises to go beyond the empirical fruitfulness of the illumination of the neglected U.S. Air Force strategic airlift mobility mission. Specifically, it suggests that the organizational cultures of the other services have led to the neglect of other military missions, such as the U.S. Navy's treatment of its sealift and minesweeping missions.

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[198] Lakatos, "Falsification and the Methodology of Scientific Research Programmes," 117.
[199] George and McKeown, "Case Studies and Organizational Decisionmaking," 45.

CHAPTER III

AIR TRANSPORT COMMAND

Introduction

When the Second World War began, airlift mobility was not a military mission. In other words, doctrinally and organizationally, airlift was not only neglected, it was nonexistent. As far as force structure, most of the transport aircraft in existence were owned by the commercial airline industry. Airlift first proved itself as a viable military mission by providing the sole means of logistical support to the Chinese Army, 14th Air Force and XX Bomber Command in the China-Burma-India theater of the Second World War. By the war's end, the U.S. Army Air Corps' newly established Air Transport Command owned literally thousands of transport aircraft and the seeds of future airlift doctrine had been planted.

Airlift Organization: Pre-W.W.II

The day the United States became embroiled in the war "the men in what was then *the Combat Air Force (and those on the Air Staff agreed) thought that there was now little more need for the Ferrying Command* other than as operator of a sort of courier service with a handful of transports." Because of the overriding needs of the U.S. inventory, deliveries of combat aircraft were cut off to Britain and pilots previously assigned to ferrying duties were to be reassigned to combat operations. On 9 December all pilots

engaged in ferrying missions were ordered to abort their missions and leave their aircraft at the closest airdrome and report to the nearest U.S. Army Air Force facility. However, within a few days "the Combat Air Force awoke to the fact that while it had obtained a number of pilots, it had stopped the flow of planes. The Ferrying Command was hastily restored to full vigor." On 12 December 1941, the authority of Colonel Olds, the head of Ferrying Command, was expanded to oversee all of the War Department's airline contracts, thereby consolidating all transport functions, with the exception of the Air Service Command, under one command.[1]

Reorganization was prevalent throughout the Army's ground forces, air forces and services and supply forces during the first months of the war. Included within the Air Force reforms was the Ferrying Command, which had to "build and reorganize itself, and conduct operations, all at the same time."[2] Says LaFarge, by the spring of 1942, "*long-range military air transportation was a plum that many people desired.*" The two major organizations vying for this function were the Air Service Command (ASC) and the Air Corps Ferrying Command (ACFC).[3]

On 20 to 21 March 1942 General Arnold was involved in several discussions concerning the organization of strategic airlift functions. As part of a wider Army Air Force reorganization conducted on 26 March 1942, General Arnold put the Ferrying Command in charge of "all ferrying operations, regardless of geography" while the Air

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[1] Oliver LaFarge, *The Eagle in the Egg* (Boston, Houghton, 1949) 30.

[2] Ibid., 46.

[3] Colonel Olds made the case that "all air transportation other than tactical should be in a unit devoted solely to that activity, [therefore] not only should ASC not expand, it should give over the domestic services it was then running." See LaFarge, 58.

Service Command's mission was transformed to exclusively "build up transport squadrons capable of carrying out missions with airborne infantry, glider troops and parachute troops."[4] In the same month, the Army Adjutant General transmitted an "immediate action directive" message to all the theater commanders "clarifying the nonavailability of Ferrying Command assets for theater use," a concept that still applies today.[5]

In June 1942, the Chairman of the Civil Aeronautics Agency, L. Welch Pogue, issued a "Memorandum Concerning War Aviation Transport Services" severely criticizing "the state of the air transport system."[6] Emphasizing that this was the first war in which aircraft were being used to transport significant amounts of Army and Navy material and personnel, Pogue posed that "the speed and mobility of aircraft as a transportation medium has rendered the entire world to one theater of operations so far as vital supply

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[4] Samuel Moore explains that these mission statements effectively "separated troop carrier units from the ferrying and transport service end of the business. One part of air transport - the GHQ Air Force - was associated with tactical transport. Another part - the Materiel Division - was associated with scheduled air logistics. The logistics planes were called upon to augment the tactical mission during deployments and maneuvers. There came to be a clear distinction, at least organizationally, between air transport for support combat forces and a logistical mission meant to implement worldwide strategy." See Colonel Samuel Moore, Historical Office, HQ USAAF, historical study, *Tactical Employment in the U.S. Army of Transport Aircraft and Gliders in World War II*, ca. 1946, 69, cited in Charles E. Miller, *Airlift Doctrine* (Maxwell AFB, AL: Air University Press, 1988) 31- 32.

[5] John Carter points out that "in the early months of the war, the theater commanders, whose powers, traditionally, were almost without limits within the established boundaries of their own commands, frequently diverted scheduled transport aircraft and crews operating under the control of the Ferrying Command to their own immediate tactical needs. In other instances, ferrying crews, upon completion of deliveries to a theater, were held for a time by local authorities instead of being returned promptly to the U.S. ... If carried too far, they would have led inevitably to a complete breakdown of the developing system of strategic air supply." A centrally directed Ferrying Command was justified on the basis of a need for a "War Department service agency engaged in the delivery of high priority personnel and material to ultimate destinations specified and prioritized by the War Department, with the commanding general AAF acting as agent for the War Department." See Administrative History, Ferrying Command, 29 May 1941 - 30 June 1942, 3, cited in Miller, 32 - 33.

[6] His complaint centered primarily on the fact that the March attempt to delineate the specific responsibilities of the ASC and ACFC had been "incomplete staff action that created a situation General Arnold came to describe as substantial duplication and confusing dual responsibility." See Miller, 33.

lines by aircraft are concerned." He therefore recommended the establishment of an "Air Force Transport Command to handle all air transportation for the Army."[7]

Heeding Pogue's advice, General Arnold issued General Order Number 8 on 20 June 1942 to establish the Air Transport Command (ATC), charged with "air transportation for all War Department agencies," effective 1 July 1942.[8] ATC was tasked with the following responsibilities:

> (1) Ferrying all aircraft within the United States and to destinations outside the United States, as directed by the Commanding General, U.S. Army Air Force. (2) The transportation by air of personnel, material, and mail for all War Department agencies, except those served by Troop Carrier units. (3) The control, operation, and maintenance of establishments and facilities on air routes outside of the United States which are, or which may be made, the responsibility of the Commanding General, Army Air Forces.[9]

This also had the effect of putting ATC in command of bases and air routes where its primary overseas operations were conducted. Moreover, the Army's Services and Supply command transferred its entire domestic aviation scheduling function to ATC.[10] Intra-theater airlift was to be handled by "attaching troop carrier units to the theater Air

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[7] Pogue originally posed that "the sound solution is to place all war air transport operations, ... in the hands of one command which will herein be referred to as 'War Transport Command,' independent of both the Army and Navy, responsible directly to the Commander in Chief." Later in the memo, he recognized the futility of attempting to construct a unified Army - Navy air transport command, so that "the alternative solution was to "unify in a similar way all of the air transport services now being conducted ... within the Army so that there will be but one centralized Army demand upon this limited facility to our nation." See Miller, 33.

[8] General Arnold explained his rationale for the establishment of ATC in a 12 June 1942 Memo. The general states that "the existing division of responsibility for air transport operations of the Army Air Forces must be reconsidered for the accomplishment of the following purposes: (a) To permit the most efficient utilization of aircraft, facilities and personnel by the elimination of dual responsibility and duplication of services; (b) To provide transport operations by military personnel, rather than by civilians under contract, on routes that enter combat areas or areas likely to become combat areas; (c) Reorganizing the air transport services of the two commands so that the AAF may plan for and prepare to meet the growing demands of the Army for general air transport services. See History, Ferrying Command, 142 - 143, cited in Miller, 34.

[9] William H. Tunner, *Over the Hump,* (New York: Duell, Sloan and Pearce, 1964) 14.

[10] LaFarge, *The Eagle in the Egg,* 60.

Service commands."[11] According to LaFarge, the establishment of the Air Transport Command transcended the mere expansion of the Ferrying Command. Instead:

> It was the establishment of a powerful concentration of related functions in a single body, and for the first time brought the whole process of moving supplies by air, which had grown up experimentally and haphazardly, into line with proven doctrines. The function thereby ceased to be an interesting airmen's experiment and became a solid part of the Army's logistical equipment.[12]

Harold L. George was promoted to major general and given command of ATC. LaFarge points out that "his appointment is an indication of the importance of the Commanding General of the Army Air Forces ascribed to the command:

> An airman through and through, General George was an important member of the "Billy Mitchell group" who risked their careers to win a true air force for the country.[13]

A former bomber pilot, he had been serving as the Assistant Chief of Air Staff for Plans, and he had played a large role in the early planning stages of the strategic bombing campaign against Germany, later put into practice by Eighth Air Force. General George was more cognizant of the strategic possibilities for air transport than his predecessor at the Ferrying Command had been. According to LaFarge:

> he himself would say that this came of his close relationship with General Arnold. *Under his command, emphasis on the development of air transportation increased, and the move towards regular, scheduled service was strengthened* [emphasis added].[14]

General George, "chose his associates carefully, and looked to the air lines for experienced transport men to fill many gaps."[15] He chose as his executive officer Colonel

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[11] Miller, *Airlift Doctrine*, 35.
[12] LaFarge, *The Eagle in the Egg*, 61.
[13] Ibid., 51.
[14] Ibid., 52.

Cyrus Smith, the former President of American Airlines. Colonel William Tunner, the original personnel officer of Ferrying Command as a major, was hand-picked to command the Ferrying Division and promoted to brigadier general. He would soon go on to command the Hump airlift, and later the Berlin and Korean airlift operations after the war.[16] According to LaFarge:

> Air Transport Command Headquarters came to look upon him with a mixture of exasperation, admiration and reliance. They wished he would mend his ways, be less independent, more willing to conform. Action to realize this wish was baffled by the frequency with which the non-conformist proved to be in the right.[17]

By the war's end, seventeen officers would rise to general officer rank within the Air Transport Command.[18]

Airlift Force Structure: Pre-W.W.II

When the Japanese attacked Pearl Harbor on 7 December 1941, "not a single airplane specifically designed for cargo transport was in use in the country."[19] The converted airline-type aircraft the military owned totaled just 124 aircraft assigned to six different transport groups. This was primarily due to the Baker Board's earlier recommendation that "civilian airliners could be requisitioned for a war emergency," coupled with the fact that procurement funding for transports was extremely limited throughout the decade of the 1930s.[20]

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[15] Hugh B. Cave, *Wings Across the World: The Story of the Air Transport Command* (New York: Dodd, 1945) 3.

[16] Tunner, *Over the Hump,* 8.

[17] LaFarge, *The Eagle in the Egg*, 47.

[18] Of those, twelve were regular Army and five were former airline executives. Three of these individuals were reduced in grade and finished the war as colonels. See LaFarge, 164.

[19] Cave, *Wings Across the World,* 17.

[20] Robert F. Futrell, *Ideas, Concepts and Doctrine: Basic Thinking in the U.S. Air Force, Vol. 1: 1907 - 1960* (Maxwell AFB, AL: Air University Press, 1989) 178.

President Roosevelt signed an executive order to the Secretary of War on 13 December 1941 which empowered him to "take over ... the entire air transportation system of the nation and completely militarize the airlines operating under the United States flag."[21] However, General H.H. Arnold, Chief of Staff of the Army Air Forces, and Edgar Gorrell, President of the Air Transport Association, strongly recommended, and the President agreed, not exercise this prerogative, but instead "enlist the trained services of the airlines rather than commandeer them."[22]

The entire airline fleet was composed of just 434 aircraft, primarily Douglas DC-3s, with a crew of three, capable of carrying up to 24 passengers.[23] Although the airlines were not commandeered, approximately 100 of their aircraft were taken out of civilian use and put into service by the U.S. Army. The other aircraft were modified for military use and operated under U.S. Army contract. Surprisingly, "*ATC had not received the majority of the planes requisitioned from the air lines.* Many had gone to other branches of the Air Forces [emphasis added]."[24]

The U.S. Army Air Corps had placed transport aircraft orders shortly after the fall of France in 1940. All of these aircraft had originally been designed for commercial air

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[21] Reginald M. Cleveland, *Air Transport at War* (New York: Harper & Brothers Publishers, 1946) 1.

[22] The airlines were not commandeered for two reasons: "(1) Insofar as it was possible, the normal commercial activities of the lines should be maintained, enabling the various agencies of war to make the fullest use of a going, efficient system of transportation. (2) Rather than call up all reserve officers in these companies, draft others, commandeer planes, and incorporate all into the armed services, they should be called upon to fly, as lines, under contract and with aircraft supplied by the government." See LaFarge, 31. The first contracts were with Pan American Airways, Transcontinental, and Western Air, Inc. Before the war's end, "eventually every major civil air carrier provided some type of contract service." See Miller, 31.

[23] The airlines were dispersed as follows: six in Hawaii, seven in Alaska, ten trans-Atlantic, fifty-three to the South and Central America hemisphere and 358 in the Continental United States. See Cave, 17.

[24] Cave, *Wings Across the World,* 17.

carriers, and as a result, "*the transport fleet thus obtained was far from impressive.*"[25] Moreover, the production of transport aircraft had to compete with the overriding priority granted to bomber and fighter aircraft. Needless to say, few military cargo aircraft were produced during the war. Instead, the transport command had to rely primarily upon converted passenger and bomber aircraft. Because of these shortcomings, there were several points of contention between the airlines and ATC. Among the most notable for the purposes of this study were the following:

> 1. Air lines men contend that *the military was negligent in not foreseeing the need for a planned air transport system.* They point out that production of transport planes, even of Douglas DC-3s, was ordered discontinued in January, 1942, *after* Pearl Harbor, when the need for tremendous numbers of such planes should have been obvious. *Army officials insist that priority had to be given the production of fighters and bombers* [emphasis added].[26]

In this instance, the Army Air Force, including the Air Transport Command, concurred with the opinion of the War Production Board to terminate production of the Douglas DC-3, the reason being that it was "too slow, too limited in range, too small and too low in its ratio of ton-mileage to gasoline consumed." LaFarge calls this decision "*an understandable, but erroneous, emphasis on combat aircraft in preference to anything else.*" Understandably, "*combat airmen naturally wanted transport production stopped ...* until they grasped the idea that one heavy transport shuttling between San Francisco and

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[25] Cave, *Wings Across the World*, 6. Besides the DC-3, other aircraft types included TWA's 4-engined Boeing Stratoliners, first put into use in 1940; Pan Am's Boeing 314 Clippers, used for trans-Atlantic operations; Lockheed Lodestars, which were smaller, but faster than the DC-3; Sikorsky Flying Boats; Boeing 247s; Douglas DC-2s; Lockheed 10s; and Martin Flying Boats. See *Statistical History of the Air Transport Command*, 6.

[26] LaFarge, *The Eagle in the Egg*, 74.

Brisbane might mean a dozen B-24s in action that otherwise would be grounded for lack of parts."[27]

> 2. Air lines officials believe that *with the resumption of the manufacture of transport planes, the Army lacked foresight in the selection of planes to be given priority*. Production was resumed on the DC-3, then a ten-year-old model which, though excellent in the past, was neither large enough nor fast enough for the transport schedules of the foreseeable future. *Better planes*, even then in the testing stage, *were ignored*.[28]

Even after production was resumed, twice in 1942 the War Production Board again recommended a halt to DC-3 production. However, in both instances the Troop Carrier Command "insisted on having a large supply of proven aircraft."[29]

During the 1930s, the civil airline industry had grown into a major transportation service. The transport planes in use by the airlines were more advanced than the Air Corps. They were using the long-range two-engine DC-3 (C-47) and the four-engine DC-4 (C-54).[30] With 2,600 pilots at their disposal, the airlines also held the greatest single source of pilots. Yet, due to the Army Air Force's dependence on contracted services, they could not recruit them all.[31] In answering their "call to arms," the airlines gave "more than half of their equipment in the form of planes, all their ground services and airway developments," and managerial and technical experience. Says Cleveland:

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[27] Ibid., 75.

[28] "Planes which it knew could stand up under varied conditions, give steady performance, and take off from and land on primitive, front-line air strips." See Cave, *Wings Across the World*, 14.

[29] LaFarge, *The Eagle in the Egg*, 75.

[30] Welsley F. Craven and James L. Cate, *The Army Air Forces in World War II: Services Around the World*, vol. 7 (Washington, D.C.: Office of Air Force History, 1983) 3.

[31] Northwest Airlines built routes in the Aleutians; American and TWA flew the North Atlantic to Great Britain; Pan Am and American Export crossed the central Atlantic to Africa; United and Pan Am flew the Pacific routes to Guam, New Guinea, and Australia; and Panagra (Pan Am - Grace Airways) and Eastern flew to Central and South America. See Craven and Cate, *Services Around the World*, 32.

> It was these men who became the seed corn for the development of the huge services of the Air Transport Command and the Naval Air Transport Service, which, before the day of final enemy collapse, was the largest operation by air ever to fly.[32]

When ATC was established on 1 July 1942, it had at its disposal a grand total of just 24 long-range airlifters, all out-of-date. The C-75 Boeing Stratoliners carried only 4,300 pounds. Clippers could carry a heavy load, but with a cruise speed of just 140 knots, were too slow. Moreover, as seaplanes they were of little utility to the Army. In terms of performance, the best aircraft at ATC's disposal were the converted bombers. However, with their makeshift design, they had limited cargo capacity. Bottom line, "all types were regarded as temporary until the real transports came along."[33]

According to LaFarge, "*not one of the aircraft types with which they planned to develop a great transport system had yet come off a production line.*[34] During this period, the major producers of airlifters were Douglas, which produced the two-engine C-47 (DC-3) and later the four-engine C-54 (DC-4); Curtiss-Wright, which produced the C-46; and Consolidated Aircraft, which converted its four-engine B-24 design to transport use and renamed it the C-87; and Lockheed, was to produce the C-69, a four-engine aircraft supposedly faster, more maneuverable and able to carry more than anything else.[35]

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[32] Cleveland, *Air Transport at War*, 3. The airlines provided the following percentage of ATC airlift during the war years: 1942 - 88%, 1943 - 68%, 1944 - 33% and 1945 - 19%. By the war's end, the airlines had contributed a total of half of the airlift services provided by ATC. ATC and NATS were the pioneers in establishing most of the air routes which were later used by the airline industry in the postwar era. Without doubt, the war mobilization effort accelerated the development of this system, perhaps by decades. See Craven and Cate, *Services Around the World,* 32.

[33] LaFarge, *The Eagle in the Egg,* 76.

[34] Ibid., 74.

[35] Ibid., 76-77.

According to Craven and Cate, "the planes which formed the backbone of AAF's transport fleets were the C-47, C-46 and C-54."[36]

Airlift Doctrine: Pre-W.W.II

Although at the start of the Second World War the USAAF was materially ill-equipped to undertake a major airlift operation, it was not at a loss of dynamic leadership which ultimately was responsible for "the beginning of the air transport system:

> It was America's good fortune that in the years immediately before Pearl Harbor the key positions of our Air Staff were filled by a remarkable group of men, of whom General H.H. Arnold is the archetype. They were airmen, ... they knew aviation through and through, they fully foresaw its possibilities, they were courageous thinkers and daring planners. ... As America began to rearm they came into their own. They gave us the nucleus of the Air Force.[37]

According to LaFarge, "airmen in those days had a special quality" in that they were almost like "frontiersmen ... ready for new conquests and strange developments [because] ... the progress of their craft had been such that they had never lost the habit of doing things which had until recently been known to be impossible.".[38]

> The men at the top, as well as the men in the aircraft and on the bases, had no time for doctrine. They were too busy making airplanes fly usefully and batting down new emergencies as they cropped up. They went by trial and error, inevitably, until sound practice was evolved. ... The men who established the theory had no time to formulate it.[39]

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[36] Welsley F. Craven and James L. Cate, *The Army Air Forces in World War II: Men and Planes*, vol. 6 (Washington, D.C.: USAF Historical Division, 1955) 223.

[37] "Many of them risked their military careers in supporting the great prophet, Billy Mitchell, some had been kept long in obscurity because of the force with which they fought for real air power against the ground-minded brass hats of the 1920s and early 1930s." See LaFarge, 7.

[38] LaFarge, *Eagle in the Egg*, 8.

[39] "So far as I know, the first formal statement of the underlying doctrine, evolved from a study of the evolution of tested practices, was put forth by the Historical Section of the Air Transport Command well on in 1944." See LaFarge, 34.

Another ATC historian from an earlier period, John D. Carter adds to LaFarge's argument that "the concept of air transportation was not a foremost consideration during these early days:

> In 1941, ... the concept of air transport as one of the principal channels of supply for the military forces in the field had not been fully grasped. Probably no one then foresaw that the network of long-range transport routes, supporting the daily movement of hundreds of tons of supplies and thousands of passengers, would spread over the world and that daily flights to such remote areas as ... India, and China would become commonplace.[40]

During the war, the primary mission of Air Transport Command (ATC) was to provide regularly scheduled long-range airlift from the United States to the battle zone. In so doing, ATC established the nation's first strategic airlift system. To accomplish this feat, a centralized command structure was developed which considered the prevailing national strategy when issuing operational orders. Except in the case of "specific emergencies," local commanders were not supposed to interfere with ATC missions. [41]

Nevertheless, during the course of the war, individual theaters tended to construct their own intra-theater airlift support services, which Miller states "did not necessarily contribute to the whole."[42] Futrell notes that although "the control and employment of troop carrier organizations was hardly the same in any two theaters,"[43] typically, theater air forces and bomber commands would assign crews and assets from ATC to provide "dedicated airlift services,"[44] both logistical and combatant. He points out that "logistical

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[40] "Indeed, a limited view of the role of long-range air transportation in the war persisted for some months after the United States became an active belligerent. Not until the late spring and summer of 1942 did the idea of air transport as a major instrument of logistics begin to take shape." See John D. Carter, ATC Historian, cited in Miller, 30.

[41] LaFarge, *The Eagle in the Egg*, 16 - 17.

[42] Miller, *Airlift Doctrine*, 65.

[43] Futrell, *Ideas, Concepts, Doctrine*, 179.

services found continuing demands for the employment of troop carrier planes for intratheater movement of essential personnel and freight, but *the combat employment of troop carrier planes ... always was given a higher priority.*"[45] To counteract this tendency, ATC requested that the War Department issue an official memorandum to:

> (1) Discourage the establishment of miscellaneous transport units; (2) Advise theater commanders that efficient use of air transport requires their relying on the ATC for air transport from the U.S. to the theater and between theaters; (3) Define or redefine the transport function of Troop Carrier units within the theater, their relationship to theater air service commands and the Transportation Corps; (4) Authorize the ATC to undertake such intra-theater services outside of forward areas as may be deemed necessary by the theater [emphasis added].[46]

The Air Staff was receptive to this request and furthermore, had its own concerns about redundancy created by ATC, TCC (Troop Carrier Command) and the ASC (Air Service Command) Transport Service all conducting like missions, and therefore tasked the AAF Board to "undertake a study concerning the achievement of maximum efficiency in the accomplishment of the various tasks undertaken by the air transport system."[47] Operating under severe time constraints, the AAF Board managed to come up with workable recommendations in just eleven days. The board recommended that:

> (1) Intertheater airlift continue under ATC; (2) The theater Air Force commander have a theater air transport command (as a separate unit); (3) Troop carrier units retain at least 35% of their forces on a full-time basis for airborne training; (4) There was no requirement for assignment of transport aircraft to tactical combat units (except under most unusual circumstances).[48]

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[44] Miller, *Airlift Doctrine*, 65.

[45] Futrell, *Ideas, Concepts, Doctrine*, 179.

[46] Memorandum, Col. James Douglas, Jr., Acting Chief of Staff, Headquarters Air Transport Command, to Colonel Mason, Assistant Chief of Staff, Plans, subject: Air Transport Services in Theaters of Operations, 4 March 1944, cited in Miller, 65.

[47] Brig. Gen. H.A. Craig, Assistant Chief of Air Staff, Operations, Commitments, and Requirements, to Executive Director, AAF Board, letter, subject: Staff Study of the Air Transport System, 29 February 1944, cited in Miller, 65. As Miller points out, "this recognition of a 'system' was, in and of itself, a doctrinal step forward of rather grand proportions."

Based largely upon the recommendations of the AAF Board, in August of 1942 the Air Staff issued AAF Regulation (20 - 44) to replace General Orders Number 8, which had been in effect since June of 1942. The principal changes included:

> (1) A broader ATC mission statement, officially recognizing ATC responsibilities for control and operation of aerial ports of embarkation, and full operational control by ATC of tactical or other aircraft engaged in movements between the U.S. and theaters of operations over established routes controlled by ATC; (2) It granted ATC the authority to provide scheduled intratheater air transport services at the request of the theater commanders; and (3) It formally directed the ATC to utilize civil air carriers to the fullest extent possible.[49]

Although AAF Regulation 20-44 was intended to prevent theater commanders from using airlift resources in their theaters as they saw fit, later in August General George reported to General Arnold that "there had been frequent and serious interruptions in scheduled operations based on the erroneous assumption by other commands that transport operations that traverse their areas are under their complete control."[50] General George requested that General Arnold issue a "strong War Department letter," given that the problem would most likely get progressively worse as the size of the operation continued to grow. The letter, issued on 21 September 1942, made it clear that ATC resources were commanded by the Commander of the USAAF, and not the theater CINCs.[51] Moreover, because of the numerous transgressions of the new regulation, it was amended three months later, in November, with much stronger wording.[52]

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[48] Report of the Army Air Forces Board, Project No. (U) 6, subject: Staff Study of the Air Transport System, 10 March 1944, cited in Miller, 66.

[49] AAF Regulation No. 20-44, *Responsibilities for Air Transportation*, 17 August 1944, cited in Miller, 66.

[50] History, Air Transport Command, 1942 - 1943, 136, cited in Miller, 37.

[51] General Arnold wrote that "the ATC, AAF, is the War Department agency for the transportation by air of personnel, material, and mail. Aircraft and crews engaged in the operation of air transportation and ferrying services will not be diverted from such operation by commanders concerned except in cases requiring

The new policy effectively limited the theater commanders from forming any subsidiary airlift units without the authorization of ATC. This centralization of the command and control functions over all AAF scheduled airlift curtailed the formation and growth of such entities.[53] Yet, Futrell notes that "resolution of competing demands of the logisticians and the airborne commanders was never accomplished completely."[54]

World War II: The China-India-Burma Airlift Over the Hump

Throughout World War II, the "Hump" operation was the most noteworthy demonstration of the military capabilities of air transport, keeping the Chinese Army, 14th Air Force and XX Bomber Command supplied and equipped solely by airlift. James Huston says of the operation that "the long and often seemingly futile effort to fly supplies into China received more public attention than any other ATC operation."[55] Clayton Knight says that being "the most distant theater from the nerve center in Washington, this action of the war has still, for most of us, as it had for those fliers, more the quality of

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that such operations be delayed until security will permit resumption of operations." See Memorandum No. W 95-18-42, Brig. Gen. H.B. Lewis, acting Adjutant General, War Department, to distribution A, subject: Air Transport Operations, 21 September 1942, cited in Miller, 37.

[52] "The assignment of cargo transport aircraft to agencies other than the Air Transport Command and I Troop Carrier Command will be limited to those essential for staff administrative purposes, training, maintenance of flying proficiency, and for local transport services operated for emergency maintenance, reclamation, and emergency delivery of supplies and equipment. In no case will these local services duplicate the services of Air Transport Command, which command is primarily responsible for the operation of all military air transport conducted under the jurisdiction of the Commanding General, Army Air Forces." See AAF Regulation No. 20-44A, *Responsibilities for Air Transportation*, 11 November 1944, cited in Miller, 66 - 67.

[53] Given that by the war's end "the theater air forces were so strongly recognized as 'in charge' of air matters," Miller posits that "the fact that an AAF regulation had such a limiting influence on the theaters was something of a doctrinal coup in itself." See Miller, 67.

[54] Futrell, *Ideas, Concepts, Doctrine*, 179.

[55] James A. Huston, *The Sinews of War: Army Logistics 1775 - 1953* (Washington, D.C.: Office of the Chief of Military History, 1966) 513.

myth than reality."[56] Stanley Ulanoff states more glowingly that "together with Hannibal's crossing of the Alps, the Hump operation will go down in the annals of military history as one of the most difficult logistic missions accomplished by any military force.[57] Finally, Alfred Goldberg claims that "from the first, the air transport operations from India to China were as important as the Army Air Force's (AAF) combat mission in the theater. *Without air transport, China could not stay in the war* [emphasis added]."[58]

The mountain range to which the name "Hump" applied was the Santsung, reaching a height of 15,000 feet between the Salween and Mekong Rivers.[59] The supply line, which stretched over 10,000 nautical miles, began by ship from Newport News, Virginia, across the Atlantic to Dakar, Senegal. Then it was routed overland via rail across northern Africa to Karachi, Pakistan and on to Calcutta, India. From there, the supplies were put onto river boats where they were transported from the Bay of Bengal to Assam. Finally, the equipment was loaded onto transport aircraft whereupon it was flown over the Hump to Kunming, China.[60] President Roosevelt expressed his views on the importance of this mission on 25 February 1942 by stating that "it is obviously of the utmost urgency ... that the pathway to China be kept open."[61] In fact, the mission to support China by an air bridge was personally ordered by President Roosevelt.[62]

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[56] Clayton Knight, *Lifeline in the Sky: The Story of MATS* (New York: William Morrow & Co., 1957) 29.

[57] Stanley M. Ulanoff, *MATS: The Story of the Military Air Transport Service* (New York: Franklin Watts, Inc., 1964) 19.

[58] Alfred Goldberg, ed., *A History of the United States Air Force 1907 - 1957* (Princeton: Nostrand Co., Inc., 1957) 82.

[59] Craven and Cate, *AAF in W.W.II: Services Around the World,* 115.

[60] Huston, *The Sinews of War*, 513.

[61] Tunner, *Over the Hump,* 58.

[62] LaFarge, *The Eagle in the Egg* , 87. The President announced in a February 1942 speech: "The

Kenneth Macksey maintains that "virtually all the campaigning in Burma was about logistics." To the U.S., it was imperative to keep China afloat through a resupply effort in order to keep a large segment of the Japanese Army isolated on the mainland.[63] Because of the Hump airlift, the Chinese were able to put up enough of a fight to occupy a two-million man Japanese Army on Chinese soil. This, in turn, reduced the Japanese forces available to combat the American forces in the Pacific islands.[64]

In February 1942 Claire Lee Chennault, the Commander of the AVG, was recalled to active duty as a Colonel in the U.S. Army Air Force and that July was promoted to Brigadier General and made Commander of the China Air Task Force (CATF), which consisted of AAF fighter and bomber squadrons flying in China under the 10th Air Force.[65] Chennault's CATF was tasked, in order of priority, with "*protecting the Hump route*, the Chinese Air Force, Chungking and the Yangtze Valley [emphases added]."[66]

The United States linked the China, Burma and India (CBI) region together into a single wartime strategy beginning in February 1942, when it appointed Lieutenant General Joseph Stilwell as Commander of the CBI Theater of Operations.[67] One of his

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Japanese may have cut the Burma Road, but I want to say to the gallant people of China that no matter what advances the Japanese may make, ways will be found to deliver airplanes and munitions to the armies of China." See Roger D. Launius, "The Hump Airlift Operation," in David C. Rutenberg and Jane S. Allen, eds., *The Logistics of Waging War: American Logistics, 1774 - 1985, Emphasizing the Development of Airpower* (Gunter AFS, AL: Air Force Logistics Management Center, 1988) 125.

[63] Kenneth Macksey, *For Want of a Nail: The Impact of War on Logistics and Communications* (London: Brassey's Ltd., 1989) 141.

[64] Welsley F. Craven and James L. Cate, eds., *The Army Air Forces in World War II: The Pacific, Guadalcanal to Saipan*, vol. 4 (Washington, D.C.: USAF Historical Division, 1950) vii.

[65] Herbert Weaver, "CBI: The Tenth Air Force," in Craven and Cate, *AAF in W.W.II: The Pacific, Guadalcanal to Saipan*, 407.

[66] Thomas E. Griess, *The West Point Military History of The Second World War: Asia and the Pacific* (Wayne: Avery Publishing Group, Inc., 1989) 213.

[67] In this capacity, he also served as Chief of Staff of the Combined Staff under Generalissimo Chiang Kai-shek, who was the Supreme Commander of the inter-Allied China Theater. See Weaver, 406.

responsibilities was "to operate a supply line to China through these countries."[68] Stilwell wrote in his diary of his meeting with Roosevelt prior to departing for China "events are forcing all concerned to see the vital importance of Burma. *We must get the airline over the Hump going at once* [emphasis added]."[69]

According to the terms of the January 1942 Stimson-Soong Agreement, General Stilwell was also vested with the "supervision and control over lend-lease to China." In exercising this responsibility, Stilwell was able to charter cargo space on CNAC (China National Aviation Corporation) aircraft. In this manner, Leighton and Coakley observe, "*Stilwell was ... able, for the most part, to control what moved over the Hump air lines.*"[70] Stilwell had no prior aviation experience whatsoever, yet the military command he inherited consisted almost entirely of 10th Air Force. Moreover, throughout the course of the war, the CBI campaign would remain primarily an air operation [emphasis added].[71]

The Hump airlift can best be understood when seen as going through three-stages of organizational development. In its earliest beginnings, it was the India-China Ferrying Command of the10th Air Force, an air combat organization. After proving its ineffectiveness at conducting air transport operations, 10th AF relinquished the airlift operation to the Air Transport Command, as the India-China Wing (ICW). As the airlift operation continued to improve and grow under ATC, the ICW was upgraded to the

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[68] Richard M. Leighton and Robert W. Coakley, United *States Army in World War II: Global Logistics and Strategy 1940 - 1943* (Washington, D.C.: Office of the Chief of Military History, 1955) 526.

[69] Griess, *The Second World War: Asia and the Pacific*, 211.

[70] Leighton and Coakley, *U.S. Army in W.W.II: Global Logistics and Strategy 1940 - 1943,* 533.

[71] To illustrate, "when General Stilwell reached India in May 1942, air personnel in CBI numbered 3,000 officers and men against a grand total for ground forces of 94. In October 1944, when Stilwell was relieved of command, air force personnel in the theater had reached a total of 78,037 and ground forces 24,995. See Weaver, 406.

India-China Division (ICD) in time for Brigadier General William Tunner to help lead in the final assault to drive the Japanese out of Burma and finally off the Chinese mainland.

Tenth Air Force: India-China Ferrying Command

At the beginning of the war, 10th Air Force, headquartered in India and commanded by Major General Lewis Brereton, was given the responsibility for the Chinese airlift operation.[72] Tenth Air Force was composed of five component units as follows: (1) China Air Task Force (CATF); (2) Indian Air Task Force (IATC); (3) 10th Air Service Command; (4) *the India-China Ferrying Command*; and (5) the Karachi American Air Base Command [emphasis added].[73] As one might expect, with such a command arrangement, Goldberg points out that:

> until very late in the war, Allied operations in China, Burma, and India were muddled and impeded as nowhere else by a tangled chain of command, conflicts of national policy, and personal feuds among the commanders. ... In addition, the theater had a very low priority. ... The primary purpose of the Allied effort in CBI was not to win the war but to hold the enemy in check while victory was achieved elsewhere.[74]

When Malaya fell in February of 1942, the Indian Ocean and Bay of Bengal became vulnerable to Japanese encroachment.[75] After capturing Singapore, the Japanese onslaught continued into Burma beginning in the spring of 1942.[76] The Japanese next resorted to a ground offensive across the Tenasserim region in order to capture Rangoon, which fell in March 1942, and almost all of Burma, thus "cut[ting] completely the flow of

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[72] Tenth AF was also responsible for "defense of the air route against the Japanese, for weather reporting, for communications and for the command and control of the entire operation," including General Chennault's Flying Tigers. See Craven and Cate, *Services Around the World,* 117.

[73] Weaver, "CBI: The Tenth Air Force," 414.

[74] Goldberg, *History of the U.S. Air Force*, 83.

[75] Griess, *The Second World War: Asia and the Pacific*, 211.

[76] Weaver, "CBI: The Tenth Air Force," 406.

supplies to China."[77] Tenth Air Force had originally planned to use the airfield in Myitkyina, Burma, as a primary hub for Chinese air supply operation,[78] but after it fell on 8 May 1942, "only an unproved air route across the Himalayas, at elevations up to 18,000 feet [the highest in the world], remained to join China to her Western allies."[79]

The China National Aviation Corporation (CNAC) had set out to prove the concept of overflying the Hump in the 1930s, before the Japanese had captured Rangoon and cut off the Burma Road.[80] Harold Chin, a Chinese-American pilot, flew the first mission over the Himalayas in a Douglas DC-3.[81] Given that its feasibility had been previously demonstrated, U.S. Army planners decided that 20-to-25 DC-3s should be dedicated to the mission of "maintain[ing] essential communications between Calcutta and Chungking."[82] Eventually, the airlift force was to be composed of 75 U.S. Army transports and 25 from CNAC. However, delivery of the aircraft took longer than expected, as "transport *planes were one of the most critical shortages of 1942.*"[83]

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[77] Cave, *Wings Across the World*, 82.

[78] Miller, *Airlift Doctrine*, 49.

[79] Weaver, "CBI: The Tenth Air Force," 406.

[80] Cave, Wings *Across the World*, 84. Established in 1933, CNAC was a joint enterprise between Pan American (49% ownership) and the Chinese national government which provided the equipment and personnel to run the operation. See LaFarge, 9.

[81] Cleveland, *Air Transport at War*, 212.

[82] Craven and Cate, *AAF in W.W.II: Services Around the World,* 114. The preliminary plan entailed diverting 25 commercial aircraft from U.S. domestic carriers and 10 more from Pan Am's trans-Africa route to India to begin the effort and assigning a total of 100 aircraft to the Hump airlift by the end of 1942. See Leighton and Coakley, *Global Logistics and Strategy 1940 - 1943,* 530.

[83] "The British had already been promised a sizable number, the Soviet Union was clamoring for an allocation, and the U.S. Army was hard pressed to meet its requirements for other theaters. Even the dispatch of the commercial transports was delayed, none arriving in Karachi until 5 April 1942. The need for air transport across India itself made it impossible to place many of the arriving Army transports on the Hump air line" See Leighton and Coakley, *Global Logistics and Strategy 1940 - 1943,* 530.

The first U.S. Army Air Force Hump mission was flown on 8 April 1942 by Lieutenant Colonel William Old with a Pan Am DC-3 loaded with thousands of pounds of 100-octane fuel to refuel Brigadier General Jimmy Doolittle's "Tokyo Raiders" after their heroic bombing mission over Tokyo.[84] By the end of the month, several more U.S. Army transport aircraft were added to the operation and Colonel Caleb Haynes assumed command.[85] Besides aviation gasoline, these aircraft began transporting "munitions of all sorts, trucks, jeeps, and war material were flown across the 'Hump' in ever mounting quantities."[86] Despite the operation's increased tempo, throughout April and May only 308 total tons of supplies were airlifted to China,[87] 196 tons delivered by the USAAF 10th Air Force and 112 tons delivered by CNAC.[88] As Leighton and Coakley point out:

> The competition of theaters with higher strategic priority severely limited the build-up even of U.S. air and service forces in India and China, and, ... of the Hump airlift, the highest priority in CBI.[89]

During the summer of 1942 command of the 1st Ferrying Group was transferred from General Olds to General Brereton, who was also put in charge of the entire scope of Indian-Chinese airlift operations. Together with General Naiden, Brereton established both the Trans-India and the Assam-Burma-China (ABC) Ferrying Commands. Colonel Caleb Haynes, who was originally on orders to command a bomber group, was given

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[84] Most of the fuel ended up being used by search and rescue aircraft which scouted for and rescued the pilots who had bailed out or crash-landed in China after the daring raid. See Leighton and Coakley, *Global Logistics and Strategy 1940 - 1943*, 530.

[85] Cave, *Wings Across the World*, 84.

[86] Cleveland, *Air Transport at War*, 212.

[87] Tunner, *Over the Hump*, 58.

[88] Launius, "The Hump Airlift Operation," 125.

[89] Leighton and Coakley, *U.S. Army in W.W.II: Global Logistics and Strategy 1940 - 1943*, 538.

command of the ABC Ferrying Command, with an inventory of "four Douglas transports and ten Pan American-Africa planes and crews borrowed from the trans-African route."[90] By mid-June 1942, thirty-nine DC-3s had been delivered to the air base in Assam. Of these, only nine were mission capable.[91]

Problems with morale began to surface among the CBI forces. Living conditions in Assam were "by far the worst in the theater." Furthermore, as the following description attests, no relief was in sight:

> Inadequacy of quarters, rations, mail service, hospital care, and recreational facilities were sufficient causes for discontent, but when it was learned that *personnel and material intended for the 1st Ferrying Group were being diverted to combat units*, the esprit de corps built up during the first weeks of ferrying operations died, morale dropping to a dangerous point [emphasis added].[92]

As part of the U.S. response to Field Marshal Rommel's major offensive in northern Africa this crisis, on 23 June 1942, Major General Brereton, Commander of 10th Air Force, received orders to "move to the Middle East with all available heavy bombers, personnel necessary for staffing a headquarters, and such *cargo planes as were required for his transportation.*[93] Responding rapidly, Brereton "left India hardly so much as the *skeleton of an air force*," taking 13 of the 10th AF's transports with him, leaving a total force of 43 aircraft to conduct both the Hump airlift and trans-India air operations.[94] All told, "the monsoon, lack of spare parts and maintenance facilities, loss of transport bases

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[90] Ibid.

[91] Launius, "The Hump Airlift Operation," 115.

[92] Conditions became so poor that it was not uncommon for pilots to "crack under the strain of long hours of hazardous flying without relief." See Weaver, 412 - 413.

[93] Weaver, "CBI: The Tenth Air Force," 409.

[94] Although eight of these aircraft returned a month and a half later, 15 more had either been destroyed by the enemy or crashed for other reasons. See Miller, 50.

in Burma, and transfer of cargo planes to the Middle East combined to prevent even an approximation of the desired 800 tons a month to China."[95] Leighton and Coakley note:

> *air supply was a relatively new thing in the logistics of war*, and it would take time and experience to develop it under the conditions prevailing in India and China. Lack of spare parts and inadequate maintenance facilities kept many transports on the ground [emphasis added].[96]

Given the lack of U.S. progress during the summer of 1942, planners in Washington gave serious consideration to granting the CNAC complete responsibility for operating the Hump airlift. However, General Stilwell was vigorously opposed to such an idea. As an alternative to CNAC control, Stilwell proposed the following plan:

> Make an arrangement with the Chinese for lease of all CNAC planes to the AAF to assure that they would be used only in furthering the war effort. If the Chinese refused, he advocated that no more transport aircraft be allocated to them.[97]

Stilwell's proposal was accepted in Washington and in August of 1942 he announced that Chiang Kai-shek had "agreed in principal" to lease the CNAC fleet.[98]

In June of 1942, Chinese Foreign Minister Dr. T.V. Soong had pressured Washington for more military assistance, including airlift.[99] He made three demands as "the minimum requirements for maintenance of the China theater of war," otherwise he threatened to seek a separate peace with Japan:

> (1) three American divisions in India to cooperate with Chinese forces in restoring the line of communications through Burma; (2) an Allied air force in China of 500 planes continuously fighting at the front; (3) *monthly transport over the Hump of 5,000 tons of Chinese supplies* [emphasis added].[100]

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[95] Weaver, "CBI: The Tenth Air Force," 414 - 415.

[96] Leighton and Coakley, *U.S. Army in W.W.II: Global Logistics and Strategy 1940 - 1943,* 530.

[97] Weaver, "CBI: The Tenth Air Force," 413.

[98] Ibid. In September a contract was drawn up and signed whereby the CNAC would contribute solely to the U.S. war effort throughout the remainder of the war. See Cleveland, 215.

[99] Craven and Cate, *AAF in W.W.II: Services Around the World,* 118.

Chiang originally set the August - September time frame as a deadline to meeting his demands. American planners realized that, given the overriding demands of the European campaign, Chiang's requirements were unrealistic as "three U.S. divisions were not available, plane production lagged behind commitments, and *the Hump route had all the C-47 transport aircraft the U.S. could provide.*"[101] Following General Marshall's advice, President Roosevelt announced in October 1942 that he had:

> rejected entirely the demand for U.S. combat troops because of lack of shipping, but promised to build the air force in China and India as rapidly as possible, and to *make transports available for the [Hump] airline in regular monthly increments until the goal of 100 in regular operation was reached* [emphasis added].[102]

Leighton and Coakley point out that "despite the promises, the build-up of the U.S. air force and of the airlift continued slow and far below the Generalissimo's demands,"[103] as the small force of C-47s were averaging only 700 tons per month by August.[104]

At the recommendation of Stilwell, Brigadier General Clayton Bissell assumed command of 10th Air Force on 18 August 1942, whereupon he appointed Colonel Robert Tate to command the India-China Ferrying operation. Tate expeditiously "did everything possible to speed up the construction of airdromes."[105] He and Bissell's efforts began

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[100] Leighton and Coakley, *U.S. Army in W.W.II: Global Logistics and Strategy 1940 - 1943,* 539.

[101] Griess, *The Second World War: Asia and the Pacific,* 213.

[102] Leighton and Coakley, *U.S. Army in W.W.II: Global Logistics and Strategy 1940 - 1943,* 539.

[103] Ibid. In July a "handful" of USAAF C-47s airlifted some passengers and 85 tons of U.S. and Chinese Army defense supplies to China, while CNAC aircraft delivered 221 tons. See Craven and Cate, *Services Around the World,* 117.

[104] Tunner, *Over the Hump,* 58.

[105] It was the failure of the airlift to China which had lead Stilwell to replace Brereton with Bissell. Having served as Stilwell's advisor, Bissell understood completely the importance of maintaining a continuous flow of equipment and supplies to Chennault's CATF. Furthermore, he was thoroughly familiar with the dire conditions of the airfields in Assam and the problems they presented to the Hump operation. Tate "transferred service troops to Assam, gave highest priority to maintenance of transport planes, placed every available craft on the Assam-Kunming flight." See Weaver, 415.

paying off by September as tonnage figures began to show an increase over the previous months.[106] By November 1942, the 10th Air Force and CNAC were together delivering 1,000 tons per month.[107]

Realizing that Bissell's measures, while positive, were not providing nearly enough airlift to keep China in the war, an investigation team, led by Frank D. Sinclair, Aviation Technical Advisor of China Defense Supplies, Inc., was sent to observe and report on the operation.[108] Sinclair's report basically points out "how not to run an airlift."[109] In September 1942, China Defense Supplies, Inc., delivered a copy of Sinclair's report to ATC headquarters in Washington, D.C. This study was important in that "it served as the basis for a subsequent ATC initiative to take over the Hump operation."[110]

In part, the reason for the airlift shortfall was due to a violation of a tenet of basic doctrine, in that "the maintenance of strategic supplies to [14th] Air Force was made the responsibility the commanding general of [10th Air Force], who was preoccupied with his own grave problems, including tactical supply."[111] Fundamentally, *as a combat command, 10th AF devoted more effort toward generating bomber and fighter sorties, rather than*

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[106] Bissell announced on 6 October 1942 that 1st Ferrying Group would soon be able to continuously operate a total of 75 airlifters out of the newly constructed fields in Monhanbari, Sookerating and Chabua. See Weaver, 415.

[107] Launius, "The Hump Airlift Operation," 125.

[108] Tunner, *Over the Hump*, 61.

[109] Sinclair's report pointed out the following problems: "(1) A general defeatist attitude by the 10th Air Force over the likelihood of carrying 10,000 tons per month to China; (2) Practically no spare engines; (3) No available engine overhaul bases; (4) Poor ground facilities for handling aircraft; (5) Lack of spare parts; (6) Lack of an effective training program for Hump pilots; (7) A poor communications system; (8) Lack of accurate weather forecasting; (9) Poor living conditions." See Frank Sinclair, Aviation Technical Advisor, China Defense Supplies, Inc., Memorandum re Air Transport System, Dinjan-Kunming, China, n.d., 51-52, attached to Willauer to Harris, letter, 23 September 1942, cited in Miller, 50 - 51.

[110] Miller, *Airlift Doctrine*, 50 - 51.

[111] LaFarge, *The Eagle in the Egg*, 89.

managing the airlift support effort.[112] Based upon the findings of Sinclair's investigation, the ATC Plans Division recommended to Headquarters ATC on 9 October 1942 that "responsibility for the India-China air supply route should be transferred to ATC."[113] On 13 October, Colonel Cyrus R. Smith, Chief of Staff of Air Transport Command, proposed that ATC takeover the Hump operation, sending General H.H. Arnold a memorandum, which served as a "statement of general doctrine in respect to a specific situation," stating:

> the India-China service was failing for 'lack of singleness of purpose' on the part of those in charge of it. Further, those in charge were not familiar with this type of operation. In every way *the efficiency of the undertaking would be increased if it were placed under the existing air transport organization*, with its single line of command, special experience, and wide resources [emphasis added].[114]

Smith did agree "to work in close harmony with the theater commander but not to be under his control," the reason being that:

> the *principal experience of the Air Transport Command is in air transportation*, as contrasted with *the experience of the Theater Commander being principally in combat and in preparation for combat* [emphasis added].[115]

General Arnold forwarded the ATC proposal to the Air Staff, which was approved on 21 October 1942.[116] Toward the end of October, Stilwell was informed by Washington that ATC would be taking command of the Hump operation, effective 1 December 1942. Under the new arrangement, the 10th AF would still maintain responsibility of protecting

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[112] Ibid.

[113] Craven and Cate, *AAF in W.W.II: Services Around the World,* 120.

[114] LaFarge, *The Eagle in the Egg*, 90. Colonel Smith's only stipulation was that all the personnel, aircraft, maintenance, and supplies must fall under the jurisdiction of ATC. Moreover, ATC would act strictly as an agent of the Chief of the Army Air Force, rather than to the various theater commanders. See Tunner, 61.

[115] Craven and Cate, *AAF in W.W.II: Services Around the World,* 120.

[116] LaFarge, *The Eagle in the Egg*, 90.

the Hump airlift operation.[117] The inference of this decision was that *10th Air Force "had not made the best possible use of the available resources."* The expectation was that *ATC would be better able to "handle the job much more successfully if given a large measure of independence* from theater control." Craven and Cate point out that:

> Responsible officers in the theater would have been less than human had they not opposed the transfer. They could hardly be blamed for *suspecting ATC of imperialistic ambitions* [emphases added].[118]

In a memo to Stilwell, General Marshall explained the organizational change was made because of "accumulating evidence that the transports in India were not being used as well as were those of the ATC in other parts of the world." Moreover, he attributed this partially to a "diversion of aircraft from the Hump for intra-India transport." Finally, he emphasized to Stilwell that *there was "heavy pressure from the White House to increase deliveries to China."* The OPD (Overall Plan of Defeat) pointed out that "various activities had pre-empted supplies from the ATC on their way across the Atlantic and Africa to the Hump airfields." Logistical support had gotten so bad that "*half of the Hump transports ... were grounded for lack of spares.*" However, given that the Hump was now to be an ATC operation, Washington's expectation was that the airlift may be given more priority. Although Stilwell acknowledged these negative trends, nevertheless he still he protested the reorganization [emphases added].[119]

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[117] Weaver, "CBI: The Tenth Air Force," 415.

[118] Craven and Cate, *AAF in W.W.II: Services Around the World,* 121.

[119] To Stilwell "any lack of efficiency simply reflected a lack of spares, which could not be remedied by simply adding another agency to the already complex CBI picture." See Charles F. Romanus and Riley Sunderland, *United States Army in World War II: China-Burma-India Theater, Stilwell's Mission to China,* vol. 9, pt. 1 (Washington, D.C.: Office of the Chief of Military History, 1956) 268.

India-China Wing of ATC

The Air Transport Command was given responsibility for the Hump operation on 1 December 1942, when it was designated the "India-China Wing of ATC," (ICWATC) located in Chabua, in the Assam region of India, under the command of Colonel Edward Alexander, who had most recently been serving as General Stilwell's air officer.[120] Romanus and Sunderland describe this India-China Wing of the ATC, which had just 44 aircraft and 866 personnel when it was activated, as being *"semiautonomous"* because "it seems to approach the realities of the situation more closely than to say ATC in CBI was actually independent of theater headquarters."[121]

When Colonel Alexander assumed command of ICWATC, he pledged to deliver 2,500 tons a month by February 1943 and to increase that number to 5,000 tons, soon thereafter.[122] However, when he first arrived at Assam he discovered that the Commander of the 10th Air Service Command had taken six DC-3s as well as supplies which were supposed to have been assigned to his India-China ATC Wing.[123] Furthermore, often the aircraft assigned to ICWATC were taken off their assigned Hump missions in order to

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[120] Cave, *Wings Across the World,* 87. As a major, Alexander had previously served as the Executive Officer for the Ferrying Command from May through December, 1941. See LaFarge, 90.

[121] Several factors made for this: "Stilwell was theater commander; if he expressed a wish, would ATC be politic to refuse? ATC depended on Stilwell for its logistical support, and any wise commander stays on good terms with those from whom he draws his beans and bullets." See Romanus and Sunderland, 267.

[122] LaFarge, *The Eagle in the Egg*, 109. The previous October, Stilwell had established a goal of 5,000 tons for the month of February 1943, based upon the logistical requirements that Alexander had drawn up in July 1942. To achieve such a figure, Washington had authorized a fleet of 75 airlifters. See Romanus and Sunderland, *Stilwell's Mission to China*, 268.

[123] LaFarge, *The Eagle in the Egg*, 109. Besides these six DC-3s, Alexander was still awaiting the initial delivery of 75 C-47s he had been promised. Moreover, ATC indicated that it would soon deliver 12 C-87s and, later in 1943, 50 C-46s. The first three C-87s arrived at the beginning of January 1943, followed by the rest in mid-March. Also by March, 76 DC-3s had been assigned to the Wing. See Craven and Cate, *Services Around the World,* 121.

provide emergency combat support or to service the trans-India air route connecting Karachi to Assam.[124] As a result, Alexander failed to meet his pledge.[125]

When the Combined Chiefs of Staff met at Casablanca in January 1943, the CBI was one of the most contentious items on the agenda. Fundamentally, General Stilwell argued for a ground campaign to recapture Burma in order to reestablish a land line of communication to China, while General Chennault argued for an air campaign to destroy the Japanese air bases in China.[126] General Stilwell's master plan, "ANAKIM," endorsed by General Marshall, was to launch a ground offensive to free Burma from Japan's grasp.[127] Stilwell proposed to train and lead an army of 60 Chinese divisions to launch his assault. Once this forces was established, his plan was to launch a combined pincer movement to expel the Japanese Army from northern Burma. However, despite his endorsement from the Joint Chiefs of Staff, Stilwell still had to contend with the popular USAAF Major General Chennault.[128] Chennault countered that Stilwell's plan would only

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[124] Craven and Cate, *AAF in W.W.II: Services Around the World,* 119. Backed by Generals Stilwell and Bissell, Alexander held that a minimum of 140 C-47s with 234 aircrews would be necessary during the dry season, and 300 C-47s with 280 aircrews during the monsoon. See LaFarge, 109.

[125] As of 16 December 1942, 15 of the of the 62 C-47s delivered to India had been destroyed, and four had been assigned to the Middle East under Brereton's command, leaving 43 transports assigned to the CBI theater, most of which were not mission capable due to a shortage of spare engines and parts. See Craven and Cate, 119.

[126] Herbert Weaver and Lee Bowen, "CBI: Problems of Command," in *The Army Air Forces in World War II: The Pacific, Guadalcanal to Saipan,* vol. 4, eds. Wesley F. Craven and James L. Cate (Washington, D.C.: USAF Historical Division, 1950) 435 - 436.

[127] Griess, *The Second World War: Asia and the Pacific,* 213. The ANAKIM plan called for British forces to initiate an amphibious assault on Rangoon and a ground assault in central Burma, and for Chinese forces to launch two converging thrusts into northern Burma from the provinces of Yunnan in China by the "Yoke or Y-Force" and from Assam by the "X-Ray Force." The goal of this combined U.S.-U.K.-Chinese plan was to "retake all of Burma and reopen the major land route through Rangoon and along the Burma Road for substantial quantities of U.S. aid." See Robert W. Coakley and Richard M. Leighton, *United States Army in World War II: Global Logistics and Strategy 1943 - 1945* (Washington, D.C.: Office of the Chief of Military History, 1968) 501.

[128] Stilwell had already established a five-division force of some 45,000 soldiers in Ramgarh, India, known as force X-ray. Moreover, he was building a force Yoke in the Yunnan Province which was to be 25

serve to lengthen the war by diverting manpower and materiel resources away from the construction of airfields in Assam and China, thus preventing a formidable Chinese air force from being established. Chennault proposed that with a force of just 500 total combat aircraft operating out of Chinese bases, he could destroy the Chinese-based Japanese Air Force. Bottom line, Weaver and Bowen suggest:

> *Chennault's proposal necessarily rested upon the assumption that an expanded airlift from India to China could solve the problems of logistics*. Stilwell, strongly supported by Marshall, had no such faith [emphasis added].[129]

Although none of the parties believed that Chennault could necessarily accomplish all of his objectives with such a small force, nevertheless "he offered the tempting prospect of more immediate results at small cost."[130] Thus, Chennault, "winning the support of President Roosevelt and of the Generalissimo, received priority on supplies flown into China by the Air Transport Command."[131] The conference participants were agreed that Stilwell's plan would have to be postponed until November 1943 at the earliest and that "*the recently established India-China Wing of the Air Transport Command should be reinforced.*" Although Chennault's Flying Tigers made out well, the overall

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divisions strong. See Romanus and Sunderland, *U.S. Army in W.W.II: Time Runs Out in CBI*, 4.

[129] Chennault argued that being situated along the coastline, the Japanese were particularly vulnerable as the "occupied areas ... not only lacked depth, but were at all points virtually equidistant from central China, where American air units could be advantageously deployed." Thus, "with a small but properly equipped air force," he could attack virtually any point along the enemy's periphery and "piecemeal destroy Japanese air strength." Ultimately, he argued, this would serve to accelerate the advance of U.S. Pacific forces by allowing their movement toward China's coast without a threat from Japanese land-based air attacks. On the other hand, if Japan decided to commit additional forces to the Chinese mainland theater to combat his air campaign, it would surely detract from its forces on the surrounding islands, making them more vulnerable to an American assault. See Weaver and Bowen, 435 - 436.

[130] Leighton and Coakley, *U.S. Army in W.W.II: Global Logistics and Strategy 1940 - 1943*, 542.

[131] Romanus and Sunderland, *U.S. Army in W.W.II: Time Runs Out in CBI*, 4.

outcome of the Casablanca Conference did not bode well for the China-India- Burma theater in general [emphasis added].[132]

Following Casablanca, General Arnold and Somervell and Field Marshal Sir John Dill flew to Chungking to confer with Generals Stilwell and Chennault to develop specific plans to implement the Conference guidelines.[133] Chennault argued that his CATF should become independent of 10th Air Force. However, Arnold cabled to Marshall on 5 February that he was opposed to Chennault's proposal because:

> *The controlling factor ... in all air operations from China bases was the supply of fuel, which had to come by airlift from India.* The lack of needed services in China and the delay which had been imposed on logistical support from the United States made air operations in China so dependent upon the base in India that complete independence of the CATF was impossible [emphasis added].[134]

Although Arnold resisted the creation of an independent numbered air force, he did recommend substantially reinforcing the airlift operation being conducted over the Hump. After Roosevelt concurred, Arnold promised Chiang increased airlift support.[135]

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[132] Casablanca confirmed "an over-all strategic plan to give first call on Allied resources to operations against Germany, plus the tentative conclusion that operations against Japan in the Pacific Ocean areas might be prosecuted on a larger scale than heretofore had been considered possible, left very little indeed for the CBI." See Weaver and Bowen, 437. Roosevelt had the CCS attach an addendum concerning air power which promised "additional aircraft for the Hump, build-up of the U.S air force in China to the maximum extent that logistical limitations and other important claims will permit, and more sustained air operations beginning in the spring of 1943. See Leighton and Coakley, *Global Logistics and Strategy 1940 - 1943,* 543.

[133] Romanus and Sunderland, *U.S. Army in W.W.II: Stilwell's Mission to China,* 272.

[134] Chennault's rationale was that 10th AF's location in New Delhi, India, was too far from Kunming, China, to effectively oversee Chinese air operations. Moreover, given his pass successes and the increased importance his group was to be given in the Chinese war strategy, Chennault maintained that CATF should become a separate air force. See Weaver and Bowen, 438.

[135] Leighton and Coakley, *U.S. Army in W.W.II: Global Logistics and Strategy 1940 - 1943,* 543. The 62 transports currently operating with the ICWATC would be increased to 137 by 15 March; furthermore, C-47s would be replaced by the larger C-46s as rapidly as possible. Since twelve of the new planes would be four-engine C-87s, Arnold believed that by April the ATC lift into China could be raised from the 1,263 tons of January 1943 to a monthly rate of 4,000 tons, of which Chennault should get 1,500 tons. See Weaver and Bowen, 438.

Arnold hand-carried a personal letter from Chiang to Roosevelt dated 7 February 1943. Calling Chennault "a man of genius" and one who had his full confidence, Chiang recommended that CATF should become an independent air force under Chennault's command.[136] In March of 1943, 14th Air Force was inaugurated under the command of Chennault, who was also made the Chief of Staff of the Chinese Air Force, "thus formally obtaining direct access to the Generalissimo,"[137] enabling him to bypass both Stilwell and the U.S. Army General Staff in Washington.[138]

On 19 February 1943 General Marshall notified General Stilwell that a new air force was to be established in the CBI theater and that it would be under his jurisdiction, similar to the arrangement with 10th Air Force. Moreover, Stilwell was told to promote both Bissell and Chennault to major general. In his letter to Chiang, "Roosevelt *expressed the belief that other aircraft could be provided eventually to bring the [air]lift up to a goal of 10,000 tons per month*."[139] Unlike earlier assurances, after Casablanca, "transports were rushed to India as promised [emphasis added].[140]

Despite experiencing a short-term relief in airframes, the Hump's constraining factor now hinged on qualified aircrews. The pilots on-hand were being worked to the

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[136] Chiang was adamant that a 10,000 ton minimum would need to be maintained if the allies planned to successfully execute the November offensive, tentatively scheduled at Casablanca. Moreover, he insisted that Chennault would not be able to accomplish his objective against the Japanese Air Force without a minimum of 500 fighters. See Weaver and Bowen, 439.

[137] Griess, *The Second World War: Asia and the Pacific*, 217.

[138] Chiang believed in Chennault's plan because he was convinced that China held the key to future air assaults against the Japanese homeland. See Weaver and Bowen, 439.

[139] Weaver and Bowen, "CBI: Problems of Command," 439 - 440.

[140] By 27 March 1943, 133 were either on hand or en route, and a considerable number of older types were replaced by more modern ones. See Leighton and Coakley, *Global Logistics and Strategy 1940 - 1943*, 543.

maximum of 100 flying hours per month.[141] Airfields were another limiting factor. The British engineers had failed to finish construction of facilities at Sookerating and Mohanbari, "in spite of reminders by Bissell and Stilwell."[142] Craven and Cate point out that "given all the handicaps which existed, it is perhaps not surprising that the Hump lift fell far short of even the 4,000-ton objective during the first eight months of ATC control."[143] Nevertheless, ICWATC managed to improve upon 10th AF's performance.[144] In February 1943, Chiang Kai-shek sent his wife, Madame Chiang, as an emissary to Washington to make a personal plea to President Roosevelt, who "promised an increase in deliveries" of more airlift.[145] Appearing before Congress, she "appealed for cargo planes to increase the efficiency of the aerial Burma Road."[146] Colonel Alexander had requested relief as well, writing on 20 January 1943 that the *DC-3s assigned to his Wing were "entirely unsuitable for operations on this route."* As a result of these separate appeals, on 4 March 1943, Arnold wrote to Alexander that his airlift operation would soon be "pushed aggressively."[147]

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[141] On 13 February Colonel Alexander wrote the Commander of ATC, General George, to "dispatch to this Wing by the most rapid means up to 308 complete aircraft crews to keep your transports in the air." See Leighton and Coakley, *Global Logistics and Strategy 1940 - 1943,* 543.

[142] In a letter to Arnold, Alexander proposed that: "in view of the potential political repercussions which may result from non-delivery of promised supplies to China and possible annoyance and embarrassment to you, representations be made to Mr. Churchill, if necessary, to build a fire under General Wavell and get some action on ATC airdromes in Assam." See Craven and Cate, *Services Around the World,* 123.

[143] The following figures attest to the fact that there was "a substantial though fluctuating increase in gross tonnage hauled to China by ATC planes: Dec 42: 1227; Jan 43: 1263; Feb: 2855; Mar: 2278; Apr: 1910; May: 2334; Jun: 2382; Jul: 3451. See Craven and Cate, *Services Around the World,* 123.

[144] Whereas the 10th AF had managed to airlift 819.7 tons to China in November 1942, by February 1943, ATC had exceeded its 2,500-ton goal by airlifting 2,855 (3,200 total with CNAC) tons that month. However, during the ensuing monsoon season, ATC tonnage inevitably decreased to 1,910 (2,500 total with CNAC) tons in April, and 1,683 tons in May. See LaFarge, 112.

[145] Craven and Cate, *AAF in W.W.II: Services Around the World,* 125.

[146] LaFarge, *The Eagle in the Egg,* 89.

The U.S. War Department sent Major General George Stratemeyer, Chief of the Air Staff, and Edward Rickenbacker, an airline executive, on a fact-finding mission to uncover the weaknesses in the Hump operation in the spring of 1943. Their report indicated that "the situation in Assam was serious." Rickenbacker recommended that ICW should be reassigned to the 10th Air Force. However, as this flew in the face of the basic doctrine of "centralized control" from ATC, General Stratemeyer did not support Rickenbacker's recommendation and it was not implemented.[148]

General Stilwell had requested in March of 1943, and Generals Marshall and Arnold both agreed, that a senior airman should be assigned to his CBI staff to oversee the operations of both the 10th and 14th Air Forces. Given his familiarity with the CBI theater, Stratemeyer was the logical choice. This move led to the breakup of CBI into a separate India-Burma Sector (IBS) and a China Sector.[149] On 18 July 1943 General Stratemeyer assumed command of Headquarters, USAAF IBS, CBI.[150] In another senior

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[147] Alexander requested that they be replaced either by C-87s and/or C-46s, fifty of which had previously been promised. The first C-46s were to start at once for India to replace an equal number of C-47s. Thirty were to move out by 15 April, then 10 more each month until the total of 50 was attained. Beginning 15 June, 10 C-87s were to be sent out each month until 50 of these craft, too, were in service. Thereafter, 24 C-54s would be dispatched. The first aircraft began arriving in Karachi on 21 April, whereupon the crews and planes were sent through a 10-day training program at Gaya. By May, C-46s based in Jorhat began flying the Hump. See Craven and Cate, *Services Around the World,* 123. As of 8 June, 46 of the 50 C-46s were on-station. See Weaver and Bowen, 441.

[148] Weaver and Bowen, "CBI: Problems of Command," 447 - 448.

[149] On 28 June 1943 President Roosevelt sent a message to Chiang assuring him that "the new commander would be instructed not to interfere with the special relations between Chennault and [himself]." Thus, over the objections of Stilwell, Stratemeyer would only have "advisory authority" over 14th Air Force. See Weaver and Bowen, 450.

[150] General Stratemeyer's responsibilities included "direct control" of 10th Air Force and the CBI Air Service Command, the supply and maintenance of 14th Air Force. Moreover, he served as the liaison between ATC's India-China Wing and theater operations, he advised Stilwell on the theater's aerial warfare plans, and supervised the Karachi Chinese air training facility. See Weaver and Bowen, 452.

staff move, General Davison replaced Bissell as Commander of 10th AF on 19 August 1943.[151]

At the TRIDENT Conference, held at the end of April 1943,[152] Stilwell argued, as he had before, that the Hump airlift was incapable of ever substituting for a land resupply route to China. Therefore, until the Ledo Road was finished, he advocated that Chinese Army forces in Yunnan should be given the majority of the airlift freight in order to assist in the Chinese efforts to erect a ground force capable of launching a major assault into northern Burma. Again, Chennault countered that a Burmese campaign would become such a long, drawn-out affair that China could collapse before it was over. Therefore, he argued that 14th AF should get the top billing for airlift freight allocation, since it was strategically positioned to immediately "make extensive inroads into enemy merchant shipping and to do great damage to land supply, aerial installations, and troop concentrations." Bottom line, Chennault proposed that "development of air bases in Assam should be given priority over the Ledo Road."[153]

Although neither Stilwell nor Chennault's plans were completely endorsed by the CCS, both plans called for a substantial increase of airlift to China. The Conference participants agreed that "*development of the air cargo route should be given the highest*

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[151] Because of the friction that existed between Chennault and Bissell, Chiang had asked the President to relieve General Bissell of his command of 10th Air Force. See Weaver and Bowen, 450 - 451. Essentially, the mission 10th Air Force's was to "protect the Hump air route" and to "aid in clearing a trace for the Ledo Road" while the basic mission of the 14th Air Force was to "guard the Hump route, aid Chinese ground operations, and attack Japanese air forces and shipping." See Craven and Cate, *The Pacific, Guadalcanal to Saipan*, viii.

[152] While TRIDENT's primary purpose was "the determination of the time place for the invasion of Europe" President Roosevelt also used the opportunity to "formulate a unified policy for Asia," and thus it became a "pivotal event in the history of the Hump airlift." See Launius, 126.

[153] Romanus and Sunderland, *U.S. Army in W.W.II: Stilwell's Mission to China*, 326.

priority," with Chennault receiving the majority of the cargo.[154] Soon thereafter, significant changes occurred as the U.S. and U.K forces combined their resources to build the infrastructure required for airlifting 10,000 tons a month over the Hump. The added resources were diverted from the construction efforts on the Ledo Road.[155] However, it soon became evident that the timeline for the original goals was unrealistic as such a massive undertaking would require a huge injection of men and equipment to the CBI theater in a short space of time.[156] By the end of July, the minimum number of pilots, planes and fields considered necessary by ATC to accomplish the month's 7,000-ton objective were still unavailable.[157] In August, the OPD reported that "the 10,000-ton goal would not be met ... before December 1943."[158]

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[154] During the course of TRIDENT, "President [Roosevelt] ordered ATC to: raise its Hump airlift to at least 7,000 tons in July, 10,000 tons in September, and the same tonnage in each month thereafter. Of these totals, 14th Air Force was given first priority on 4,700 tons a month for the initial phase of a projected air offensive, while Stilwell received second priority on 2,000 tons a month, to be used in equipping Chinese armies in Yunnan for a campaign along the Salween River. Any tonnage in excess of 6,700 a month was to be split between air and ground forces at General Stilwell's discretion. See Craven and Cate, *Services Around the World,* 125. On 20 May 1943 the Combined Chiefs of Staff went into closed-session, and approved the Strategic Plan for the Defeat of Japan, CCS-220, which included the following provisions for the Hump: "a. The concentration of available resources as first priority with the Assam-Burma theater on the building up and increasing the air route to China to a capacity of 10,000 tons a month by early fall, and the development of air facilities in Assam with a view to (1) Intensifying air operations against the Japanese in Burma; (2) Maintaining increased American air forces in China; (3) Maintaining the flow of airborne supplies to China." See Romanus and Sunderland, *Stilwell's Mission to China*, 327.

[155] Although the airfields were completed behind schedule, it is quite understandable if one considers that the Chinese "workers chipped large rocks into gravel by hand, carried them to the runway site in baskets or by oxcart, and often graded the airstrip manually using hand operated rollers." See Launius, 126.

[156] In India alone, eight new airdromes needed to be completed and 9,918 tons of equipment needed to be delivered as soon as possible. During July alone, the operation would require 7,000 tons of petroleum, 7,000 tons of cargo, and 200 tons of aircraft parts and base supplies. See Craven and Cate, *Services Around the World,* 126. In June 1943, with a total force of 140 airlifters, including 12 C-87s and 46 C-46s, Alexander was able to deliver just 2,200 tons, less than half of the target objective. See Weaver and Bowen, 443.

[157] On 22 June, General Wheeler estimated that by 1 July progress would be 25% behind schedule, with 60 out of a projected 80 hardstands (aircraft parking spot) having been erected. At the beginning of July, Alexander had projected a total lift of 5,100 tons, which he was forced to reduce by 1,900 tons on 11 July. Although the achievement of 3,451 tons was the highest yet delivered in a single month, it was still less than 50% of the 7,500 objective for the month of July. See Romanus and Sunderland, *Stilwell's Mission to China,*

It was determined at the Quebec QUADRANT Conference, held in August 1943, that unless major changes were implemented in CBI, the situation would not improve.[159] The QUADRANT Conference shifted the emphasis "back from Chennault's immediate air effort to the limited ground offensive in Burma," with a target date set for 15 February 1944.[160] A new organizational apparatus, the Southeast Asia Command (SEAC), under the command of Vice Admiral Lord Louis Mountbatten, was put into place to carryout this new objective.[161] The President was so concerned with this matter that he corresponded directly with Prime Minister Churchill, asking that he personally "intervene in the Assam line of communications and the ATC airfield program."[162] SEAC soon had orders to "take the necessary action to bring the Assam LOC to the target figures."[163]

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[158] The Hump operation still needed "ground facilities, including third and fourth echelon maintenance, and all [the] air transport groups [needed to be] manned and trained." See Romanus and Sunderland, *Stilwell's Mission to China*, 344 - 345. "The lack of proper airdrome facilities in Assam was, in all probability, the greatest single factor which doomed the program to failure, especially during its first few months." See Weaver and Bowen, 444.

[159] The British Commander in Chief, India, General Sir Claude J.E. Auchinleck, reported that only 1,750 tons were being delivered to Assam and Manipore on a daily basis, while 3,400 tons had been deemed necessary to construct airfields and the Ledo Road to support the U.S. airlift and the British and Chinese ground movements from Imphal and Ledo, respectively. See Coakley and Leighton, *Global Logistics and Strategy 1943 - 1945*, 506.

[160] Coakley and Leighton, *U.S. Army in W.W.II: Global Logistics and Strategy 1943 - 1945*, 509. QUADRANT provisions included "(1) an increase in the amount of air cargo being flown to China by ATC to 20,000 tons a month by mid-1944; (2) a road from India to China (Lebo Road) with an initial (January 1945) capacity of 30,000 tons per month." See Charles F. Romanus and Riley Sunderland, *United States Army in World War II: China-Burma-India Theater, Stilwell's Command Problems*, vol. 9, pt. 2 (Washington, D.C.: Office of the Chief of Military History, 1956) 11.

[161] Instead of Headquarters, India, "which was always more oriented toward the Middle East." See Griess, 218. Shortly after QUADRANT, Roosevelt forwarded the following cable to Marshall: "I am still pretty thoroughly disgusted with the India-China matter. .... Everything seems to go wrong. But the worst thing is that we are falling down on our promises every single time. We have not fulfilled one of them." See Romanus and Sunderland, *Stilwell's Mission to China*, 382. In response to the President's personal concern, the JCS established a policy that "any decision by SEAC or the India Company affecting the airlift must be presented to the CCS for approval in light of 'political implications' of Roosevelt's promises to Chiang." See Griess, 510.

[162] Roosevelt emphasized that "the ATC had been a great disappointment which was regrettable because the 14th Air Force was the only specific contribution the U.S. could make in China in the coming

To get the root of the problem, the President sent General Somervell to the CBI on a fact-finding expedition. On 20 October 1943 Somervell reported back that he had found a "*lack of proper organization, [in]adequately trained pilots*, [and insufficient]radios, and motor transport."[164] Based upon Somervell's findings, Marshall reported to the President that "*deficiencies in the operation of the Hump* and the Assam line of communication were hobbling Chennault."[165] Despite the problems he unveiled, Somervell was optimistic that Brigadier General Earl Hoag, who had recently replaced Alexander on 15 October, was "attacking his problems with vigor [emphasis added]."[166]

The tonnage continued to rise after Hoag took command of the ICWATC. In November, the airlift operation was divided into an eastern sector, overseeing all Hump traffic, and a western sector, in charge of all intra-India air traffic. Colonel Thomas Hardin took command of the eastern sector and introduced nighttime aerial operations.[167]

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months. See Griess, 510.

[163] Coakley and Leighton, *U.S. Army in W.W.II: Global Logistics and Strategy 1943 - 1945*, 509.

[164] Somervell notified Lord Mountbatten and Generalissimo Chiang Kai-shek that "neither Auchinleck nor the Government of India was pursuing the goal of increasing the capacity of the Assam LOC with anything like enthusiasm." Furthermore, Somervell wrote in his final report that "(1) The difficulty of properly maintaining aircraft because of the shortage of spare parts, equipment, and personnel was a major handicap; (2) Bad weather and the inherent difficulties of the route across Burma were serious problems (3) Pilots lacked confidence in the C-46; (4) Motor transportation to the Assam terminals was inadequate; (5) Radio aids to navigation were insufficient; (6) The inner organization of ATC was incomplete; and (7) Untrained pilots had been assigned to the ATC." Before submitting his report to Marshall on 23 October 1943, Somervell shared his findings with the "senior ATC and SOS commanders in CBI, all of whom concurred." See Romanus and Sunderland, *Stilwell's Mission to China*, 380.

[165] "While the number of aircraft assigned to the ICWATC had increased from 100 in April to 230 in September, only 50% of them were operational, because of mechanical troubles with the new C-46 type aircraft, lack of spares and mechanics, bad working conditions, inexperienced flight personnel, and bad weather." See Romanus and Sunderland, *Stilwell's Mission to China*, 381.

[166] General Alexander had "literally wore himself out [and had become] weary and sick." See LaFarge, 124. During Hoag's first month in command, the ICWATC airlifted 7,240 tons over the Hump. Supplemented by CNAC and others, it reached a combined total of 8,632 tons. Although this was an improvement, it could not mask the fact that the "Hump backlog of tonnage accumulated in Assam was 48,410 tons, of which 40,998 tons was ordnance." See Romanus and Sunderland, *Stilwell's Mission to China*, 382.

By December his airlifters delivered a staggering 12,594 tons, not only reaching the President's announced 10,000 ton goal, but exceeding it by 2,500 tons by launching an aircraft every eleven minutes, twenty-four hours a day. Chennault wrote a personal letter to Hoag, thanking him for the invaluable contributions that the airlift's "gasoline, ammunition, bombs, and other supplies" were making toward the 14th AF war effort.[168]

On 27 December 1943, General Stratemeyer nominated the India-China Wing to be "cited in War Department General Orders."[169] However, the U.S. Army Adjutant's Office protested this measure on the grounds that a Presidential Unit Citation could only be given to a combat unit. Nevertheless, President Roosevelt felt that "the Wing was as good as in combat, and overruled the Office." As a result:

> *for the first and only time in our military history, the Unit Citation was issued to an organization which had not actually engaged in battle* - that is to say, which although often shot at, was not equipped to shoot back [emphasis added].[170]

Colonel Thomas Hardin "received chief credit from General George," and was recalled to Washington and summarily promoted to Brigadier General.[171] On 15 March 1944, Hardin assumed command of the India-China Wing from Hoag, who had been reassigned to command the European [airlift] Wing.[172]

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[167] As a result, "the volume of cargo delivered to China promptly rose to an all-time high, and records were broken daily." See LaFarge, 104.

[168] His first month's total of 7,240 tons was followed by a slight dip to 6,490 tons in November. Chennault wrote that "I am particularly anxious that your pilots and crews know that only through their efforts can we accomplish these important missions." See Craven and Cate, *Services Around the World,* 125.

[169] Craven and Cate, *USAAF in W.W.II: Services Around the World,* 125.

[170] LaFarge, *The Eagle in the Egg*, 125.

[171] On behalf of the India-China Wing, Hardin "accepted the presidential citation, formally presented to him ... by General Arnold" on 29 January, 1944. See LaFarge 125.

[172] LaFarge, *The Eagle in the Egg*, 126.

Although ATC Headquarters only measured the India-China Wing's accomplishments in terms of tonnage delivered over the Hump, beginning in the fall of 1943, a significant portion of the Wing's airlift operations had been "devoted to building up General Stilwell's Yoke Force in Yunnan for the offensive."[173] The "new techniques of air supply" (i.e., night flying) also enabled 14th AF to stockpile enough ammunition to conduct more offensive operations against the Japanese stronghold in Burma.[174]

Early in the conflict, estimating the U.S. could airlift a maximum of 1,000 tons per month, Japanese forces had not made a concerted effort to attack the airlifters. However, after enduring a growing number of bombing raids, during the last half of 1943 they changed their tactics as eleven airlifters were "known to have been shot down" flying over the Hump,[175] mostly C-46s and C-87s.[176] Brigadier General C.R. Smith said of the situation, "we are paying for it (increased tonnage over the Hump) in men and planes."[177] A Hump pilot was quoted as complaining about the "*lack of respect they received from fighter pilots.*"[178] However, says Ulanoff, "during those bleak days of the war, any ATC

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[173] Craven and Cate, *AAF in W.W.II: Services Around the World*, 135.

[174] Coakley and Leighton, *U.S. Army in W.W.II: Global Logistics and Strategy 1943 - 1945*, 516.

[175] The actual number of aircraft shot down may have been much higher, because "many aircraft simply disappeared in flight without having a chance to communicate." See LaFarge, 113 - 118. Rutenberg and Allen describe the route as being "well marked by the aluminum graves of those aircraft and crews that did not make it," Rutenberg and Allen, 98.

[176] From June through December 1943 the India-China Wing had 155 total "major aircraft accidents," 135 (87%) of which were while flying the Hump, resulting in 168 fatalities. Partly because of the introduction of night operations in October, the November accident rate rose suddenly to 38 Hump accidents. Surprisingly, the accident rate actually fell off to 28 during the following record month of December. The accident figures for January 1944 was one crash per every 218 sorties, which equated to a death-rate of one American life for every 340 tons delivered over the Hump. In other words, for every 1000 tons delivered, it cost the U.S. nearly three lives (2.94 to be exact). See Craven and Cate, *Services Around the World*, 128 - 132.

[177] C.R. Smith, "The kids here are flying over their heads ... we are asking boys to do what would be most difficult for men to accomplish; with the experience level here we are going to pay dearly for the tonnage moved across the Hump ... with the men available, there is nothing else to do." See Launius, 127.

crewmen who had flown the Hump could hold their heads high in the face of the friendly *jibes from fighter and bomber combat crews* [emphasis added]."[179]

In spite of heavy losses, the Hump fleet continued to expand until it had reached a peak force structure of 229 major transports in October 1943.[180] Moreover, the ICWATC manpower quadrupled, so that *"for the first time, the India-China Wing had a large fleet in actual operation* [emphasis added]."[181]

At the SEXTANT Conference, held in Cairo during November and December of 1943, President Roosevelt and Prime Minister Churchill presided over a CCS decision to adopt the "Pacific Plan" as its "over-all plan for the defeat of Japan (OPD)."[182] Concerning the CBI, the decision was made that:

> the American effort should be concentrated on *building up the air supply route to China* and air bases in China, using the airlift entirely for the latter purpose. The effort should be continued to seize and hold Myitkyina in order to shorten the air route and to place forces in a position to exploit a road to China should the opportunity develop [emphasis added].[183]

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[178] "A pursuit plane has six 50-caliber guns in front of him and 400 mph in his engine. We fly the same country with a pistol and a Tommy gun." See Launius, 127.

[179] "In fun, their tormentors swore that the initials ATC stood for Allergic To Combat and in good humor they sang, 'Take down your service flag, Mother. Your son's in the ATC." See Ulanoff, *MATS*, 19.

[180] By the next month the number had fallen to 207 aircraft, as the delivery of C-46s was temporarily delayed in order to allow necessary structural modifications to be made. The gap was partially compensated for with the delivery of extra C-87s and the temporary assignment of 25 retired B-24D bombers from the CBI theater. See Craven and Cate, *Services Around the World,* 128. In December, a considerable number of newly modified C-46s and C-87s, along with spare parts, arrived from the United States. By year's end there were 93 C-46s, 25 C-47s and 24 C-87s assigned to the Hump. See Launius, 127.

[181] ICWATC manpower grew from 2,759 in June to 10,851 by December 1943. See Craven and Cate, *Services Around the World,* 128.

[182] The OPD incorporated the strengthening U.S. sentiment that a rapid assault against selected islands in the Pacific presented the quickest and least costly method of defeating the Japanese, thus "relegat[ing] the campaigns in China and SEAC to a secondary position in support of the main line of advance." See Julian Thompson, *The Lifeblood of War: Logistics in Armed Conflict* (London: Brassey's Ltd., 1991) 78.

[183] According to a policy paper written by Brigadier General Frank Roberts, Chief of the OPD Strategy and Policy Group, "air support of the Pacific advance from bases in territory already under Chiang's control would be the probable limit of the CBI's contribution." See Coakley and Leighton, *Global Logistics and Strategy 1943 - 1945,* 516 - 517. After SEXTANT, President Roosevelt changed his outlook toward the role of China. From thenceforth he pressured Chiang to attack the Japanese forces in Burma with his (Yoke)

Marshall relayed to Stilwell that his overriding concern should still be to:

> increase the combat efficiency of the Chinese Army in accordance with current plans for equipping 33 divisions and that, while *primary emphasis 'for the present' should go to the Hump airlift* and its security and to the development of maximum effectiveness of the 14th Air Force, he should be prepared to 'exploit the development of overland communications to China [emphasis added].[184]

On 26 March 1944 the XX Bomber Command began deploying its B-29 fleet to the CBI theater, thereby escalating the demands upon the ICW Wing.[185] The MATTERHORN B-29 missions commenced on 5 June 1944 and continued until they relocated to India in January 1945. Missions included "strategic bombing ... and tactical ... support of Chinese, SEAC, and SWPA forces."[186]

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forces in the Yunnan Province. Roosevelt assured Chiang that if he committed his troops to the Burmese assault, the U.S. would commit itself to reopen the Burma Road. Roosevelt indirectly suggested to Chiang that he might be inclined to cutoff China's Lend-Lease supplies and equipment if he was unwilling to comply. See Coakley and Leighton, 516.

[184] Coakley and Leighton, *U.S. Army in W.W.II: Global Logistics and Strategy 1943 - 1945*, 519.

[185] ICWATC had twenty C-87s dedicated to the XX Bomber Command specifically for the MATTERHORN project. According to the provisions of this MATTERHORN project, "the ICW was to allocate no less than 1,650 tons and no more than 2,275 tons to the Command that month. By the end of the year nearly 30,000 tons, according to ATC figures, had been hauled to XX Bomber Command units, and another 4,573 tons to the 312th Fighter Wing, a 14th Air Force unit assigned to defend the four large B-29 bases in China. A very large portion of the total, over 13,000 tons, was delivered under great pressure in October and November in connection with missions against Formosa." See LaFarge, 137. One of ATC's initiatives was the development of "an express airlift system to get high-priority items, such as R-3350 engines for the B-29, in the theater from the United States within 70 hours." ATC flew a ferry service direct from the U.S. "Pilots would change at every stop, but the plane would continue on to the final destination. By 1944, using the air route, planes could deliver parts from stateside to Calcutta in under 70 hours, an air distance of some 11,000 miles." See Rutenberg and Allen, 98.

[186] According to an Air Force historian: "the results obtained in the strategic missions did little to justify the lavish expenditures poured out in their behalf. The tactical missions were of more value but of hardly enough to justify the drain. MATTERHORN inevitably imposed on the limited logistical facilities of the CBI. MATTERHORN logistics proved to be a nightmare. It was impossible to make the force self-sustaining as originally visualized, for the B-29 could not, in their shuttle runs between Calcutta and Cheng-tu, bring in enough fuel, bombs and other supplies to support more than a minimum of missions. ... The B-29s were soon competing with Chennault's 14th Air Force and Chinese ground forces for the capacity of the Hump airlift. See Coakley and Leighton, *Global Logistics and Strategy 1943 - 1945*, 521.

As was soon evident, "the presence of the B-29's in China stirred the Japanese in mid-1944, to launch a campaign to overrun the airfields in east China to which they feared the bombers would ultimately be deployed."[187] The Japanese waged the "most crucial battle of the campaign" in March 1944 when they initiated a major offensive with a 100,000-man force across the central front. Proceeding rapidly, they were able to cut off the Manipur Road.[188] Japanese forces attempted to cut the logistics flow by launching an attack on Imphal. ATC aircraft quickly flew ammunition and equipment to the defending allied forces, successfully halting the Japanese onslaught.[189]

In April, the Japanese overcame a meager defense made up of 3,500 soldiers, and seized the Kohimen bases. By encircling Imphal, they were able to trap the Indian Army's 17th and 20th Divisions.[190] During the course of the following three months, two divisions, composed of 150,000 soldiers, were delivered 20,000 tons of supplies entirely by air[191] and the British 5th Division was airlifted, in its entirety, from the Arakan to reinforce the area.[192]

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[187] The organizational arrangement for the XX Bomber Command further complicated matters. It bypassed the theater commander altogether and reported directly to 20th Air Force Headquarters, based in Washington. Even the theater commander could not use supplies allocated to MATTERHORN without approval from Washington. Despite the fact that General Stilwell continued to maintain nominal control over Hump allocation prioritization, nevertheless "he was under constant pressure to be as generous as possible with the XX Bomber Command." See Coakley and Leighton, *Global Logistics and Strategy 1943 - 1945*, 521.

[188] John Sutton and John Walker, *From Horse to Helicopter* (London: Leo Cooper, 1990) 157.

[189] Craven and Cate, *AAF in W.W.II: Services Around the World,* 134. Given that airlift was a relatively new form of combat support, it was a "logistic surprise" to the Japanese. See Macksey, 143.

[190] Sutton and Walker, *From Horse to Helicopter,* 157.

[191] Goldberg, *History of the U.S. Air Force*, 83.

[192] During the three-month Japanese siege of Imphal, from 1 April to 23 June 1944, allied transports delivered 18,300 tons of supplies and over 12,000 men before the road was fully reopened. Moreover, approximately 300 airlifters landed daily with critical supplies and managed to evacuate a total of 30,000 wounded fighters. See Sutton and Walker, 157.

Despite airlift's apparent success, by the end of March of 1944 the Japanese forces had managed to cross the Assam border in a northward movement toward the Imphal region. At their farthest advance, these forces moved to within thirty miles of the Assam-Bengal railroad, a "key artery of movement of Hump cargo and fuel to the Assam bases of ATC." In April, General Hardin employed twenty C-46s in "direct support of the Allied defense of the region, ... fear[ing] for a time that the Japanese might succeed in cutting off the flow of supplies to the Assam airports." Due in part to their efforts, "the enemy did not succeed in cutting the rail connection supporting the Hump operation."[193] Beginning in May and throughout June, the U.K. 14th Army pierced through the siege and repelled the Japanese forces into retreat.[194]

After continuous prodding from President Roosevelt, on 10 April 1944 Generalissimo Chiang Kai-Shek finally agreed to launch his Yunnan Force into Burma. General Stilwell made provisions to support this effort with an increased allocation of Hump deliveries.[195] In late April, General Stilwell began a "two-pronged offensive, pushing southward across the ranges from Ledo toward Myitkyina and westward from Yunnan across the Salween." To assist in his effort, the India-China Wing transported "approximately 18,000 Chinese troops from Yunnan to Sookerating, whence ground transport and troop-carrier aircraft moved them into position in North Burma."[196]

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[193] During this operation, the ICW delivered more than 2,100 tons of petroleum, munitions, equipment and supplies to Allied forces. See Craven and Cate, *AAF in W.W.II: Services Around the World,* 134.

[194] Goldberg, *History of the U.S. Air Force*, 83.

[195] Because of this airlift diversion, Hump tonnage dropped below 10,000 tons in March, but by April it had risen back to 11,000 tons and it continued to grow to 16,000 by June. See Coakley and Leighton, *U.S. Army in W.W.II: Global Logistics and Strategy 1943 - 1945,* 524 - 526.

[196] Craven and Cate, *AAF in W.W.II: Services Around the World,* 134 - 135.

Almost simultaneously, the Japanese assault extended to eastern and southern China and appeared to be aimed directly at the airfields of 14th Air Force and the ICWATC Kunming airdrome. In response, Chennault was forced to refocus his efforts on the defense of his airfields. Stilwell agreed to allocate "the lion's share" of Hump capacity to Chennault.[197] Meanwhile, due to various logistical problems, Arnold's bold airlift augmentation effort was drastically scaled back to only one combat cargo group with one hundred C-47s, which were deployed in May 1944.[198] *Because of these increased demands, Headquarters AAF and ATC were "compelled ... to face the problem of further augmenting the Hump lift* [emphasis added]."[199]

Stilwell's forces had continued to advance, and in May 1944 Brigadier General Frank Merrill managed to take back the airfield near Myitkyina. On 17 May, the 5307th Composite Unit (Provisional), a U.S.-trained Chinese corps and a U.S. regiment known as "Merrill's Marauders," counterattacked and took Myitkyina after fighting the Japanese for 11 weeks.[200] This combined task force, "sustained mainly by airdrops," managed to thrust from Ledo through the jungle all the way to Myitkyina.[201]

The strategy of retaking Myitkyina and enough of the surrounding area to protect it was seen as a key component of strengthening air power in China.[202] Stilwell's primary

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[197] Coakley and Leighton, *U.S. Army in W.W.II: Global Logistics and Strategy 1943 - 1945*, 526.

[198] "There were not enough personnel available at the time to organize more than two air commando groups, and insufficient supporting service troops to enable either these or the four combat cargo groups to operate in the theater." See Coakley and Leighton, *Global Logistics and Strategy 1943 - 1945*, 525

[199] Due to enhancements, ICD was now able to expand its deliveries to the much expanded 14th Air Force as follows: Jan, 7,439 tons; Mar, 4,988 tons; Jun, 12,448 tons; Nov, 16,985; and Dec, 14,688 tons. See Craven and Cate, *Services Around the World*, 139.

[200] Griess, *The Second World War: Asia and the Pacific*, 220.

[201] Goldberg, *History of the U.S. Air Force*, 83.

[202] "From May to October 1944, about 14,000 transport flights into Myitkyina were logged, carrying

objective of the Myitkyina assault was to "*increase Hump tonnage.*" [203] Having established an aerial port[204] in Myitkyina, Burma, the Combined Chiefs of Staff issued Lord Mountbatten orders on 3 June 1944, directing him to "*develop, maintain, broaden and protect the air link to China.*"[205] As soon as Myitkyina was up and running, "the India-China Wing of ATC began to reap the benefits of better maintenance and a steadily increasing allotment of aircraft [emphases added].[206]

In July of 1944 General Arnold proposed to dramatically augment the Hump fleet in order to increase its monthly tonnage rate to 31,000 tons by that December.[207] The Hump operation aided Chennault more than anyone,[208] yet it was a reciprocal relationship in that Chennault's top priority from Wedemeyer had been to defend the Hump airlift.[209]

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over 40,000 tons of cargo. ... As the weeks went on more and more troops, food, ammunition, artillery, and construction equipment were flown in to carry on operations against the town of Myitkyina to build the line of communications across north Burma, and to support the transport that made Myitkyina a base on the way to China." See Romanus and Sunderland, *Stilwell's Command Problems,* 205.

[203] Romanus and Sunderland, *U.S. Army in W.W.II: Stilwell's Command Problems,* 205. A CCS directive to SEAC, transmitted on 2 June 1944, reinforced Stilwell's mission by giving "first priority to building up the Hump operation in order to provide the maximum flow of supplies to the air force in China for support of Pacific operations." See Romanus and Sunderland, 229.

[204] During late May and into early June the India-China Wing airlifted 2,500 combat reinforcements from southern India to the Myitkyina region. "Not only men and unit equipment but also such cumbersome items as bulldozers, tractors, graders, and rollers were included in the movement. Called the GALAHAD diversion, this whole movement had a direct bearing upon the India-China Wing's primary mission. This equipment would be used to construct the airdrome facilities necessary to conduct airlift operations by way of the lower, more southerly route across the Hump." See Craven and Cate, *Services Around the World,* 135.

[205] In order to provide the maximum and timely stock of petrol and stores to China in support of Pacific operations. See Coakley and Leighton, *Global Logistics and Strategy 1943 - 1945,* 519.

[206] "The combination of more and better transports, better maintained, flying a shorter, lower, safer route was reflected in the Hump tonnage deliveries, which rose from 13,686 tons in May to 18,235 tons in June and 25,454 tons in July. See Romanus and Sunderland, *Stilwell's Command Problems,* 254.

[207] The number one priority had become the "supply of 14th Air Force (including the Chinese-American Wing) to develop the maximum effectiveness consistent with minimum requirement for support of other activities in China and Burma." See Coakley and Leighton, *Global Logistics and Strategy 1943 - 1945,* 527.

[208] Chennault "paid warm tribute to the ATC for its job of moving vital materials for his operation." See Cleveland, 213.

[209] Wedemeyer's 1944 directive stipulated that "defense of the airline to China (the Hump) [was] Chennault's first task. Then came, in order, air support for the troops protecting the ground line of communications to China; air cover for the SOS and air installations; air support for troops defending

MATTERHORN was designated the second priority and the third priorities were Chinese air and ground force requirements.[210]

India-China Division

Effective 1 July 1944 the entire contingent of ATC Wings was elevated to Division status (ICD).[211] At ATC Headquarters, Brigadier General William Tunner, Commander of Ferrying Division, and Colonel James Douglas, ATC Deputy Chief of Staff, drew up an augmentation plan for the Hump airlift. It was rapidly accepted by the War Department and implemented as soon as conditions would permit.[212]

The opening of the Myitkyina airfield as a hub for Hump departures enabled aircraft to operate more efficiently, loaded with more cargo and less fuel, because of the lower altitude and shorter distance required on the flight to Kunming. As new fields were constructed in the Myitkyina area and the fleet continued to expand, the Hump tonnage continued to grow.[213] Despite the immense expansion of the Hump operation,

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Kunming, including interdiction of Japanese communications; support of U.S. operations in the Pacific; air cover for the B-29s; reconnaissance; attacks on Japanese communications and supply installations; and prompt dissemination of intelligence to adjacent and higher headquarters." See Romanus and Sunderland, *Time Runs Out in CBI,* 156.

[210] Coakley and Leighton, *U.S. Army in W.W.II: Global Logistics and Strategy 1943 - 1945,* 527.

[211] Craven and Cate, *AAF in W.W.II: Services Around the World,* 136.

[212] The plan was accepted by the ATC Commander, General George, and was forwarded to General Arnold for approval on 3 July 1944. According to Tunner's plan, "(1) the theater [must] make available three suitable airfields in eastern Bengal, one each by 15 August, 15 September and 15 October. (2) AAF should provide at least 1,500 experienced mechanics for shipment overseas before 1 September. (3) transport aircraft already allocated to ATC must be delivered on schedule. (4) by 1 October the CBI should provide service and repair units capable of furnishing both supply and third- and fourth- echelon maintenance for the enlarged fleet. (5) landing facilities and gasoline were to be made available in the Myitkyina area." See Craven and Cate, *Services Around the World,* 136 - 138.

[213] The tonnage was allocated as follows: "Chennault's share was maintained at a steady 12,000 - 14,000 tons from June onward; the increases largely went to the XX Bomber Command and to the growing numbers of U.S. troops in China engaged in operating a theater headquarters and a supply line to the eastern air fields, and in training Chinese troops in the use of American materials." See Coakley and Leighton, *Global Logistics and Strategy 1943 - 1945,* 527. During the month of August 1944, the Wing delivered a record high of 23,000 tons of cargo. See LaFarge, 126.

nevertheless the airlift was never able to grow at a rate which could satisfy the demands of all of its customers. The Japanese onslaught through east China could not be halted and it forced Chennault to relocate his operations further westward, out of range from coastal China. Moreover, his supplies had depleted to the point where only tactical strafing missions could be flown.[214]

On 3 September 1944, Brigadier General William H. Tunner assumed command of the India-China Division (ICD) from Hardin,[215] who was reassigned to command ATC's Central Pacific region. General Tunner was the original architect of ATC's Ferrying Division and was now tasked to "increase tonnage while decreasing accidents" on the Hump operation.[216] Tunner's operational experience was in the "tactical service" (e.g., fighter aircraft). In 1939 he was assigned to the Chief of the U.S. Army Air Force Personnel Division, where he served for four months before becoming the Personnel Officer for the Ferrying Command. From there, he took over the operation of ATC's South Atlantic Ferrying Division, after which he assumed command of the India-China Wing of ATC, where he would serve until December, 1945.[217] LaFarge describes Tunner as being "as hard a driver as any of his predecessors, but he approached his assignment from a different point of view:

> His whole career with the Ferrying Division tended to make him especially aware of safety. The period of urgency was over. The deliveries to China should still

[214] Most significantly, this retrenchment disallowed the possibility of using Chinese coastal bases as a platform for waging strategic attacks in support of the allied Pacific advance toward Japan. See Coakley and Leighton, *Global Logistics and Strategy 1943 - 1945*, 527.

[215] Because of his popularity, General Hardin's flyers declared his last day in command "Tom Hardin Day," delivering a single-day record of 1,300 tons in 569 sorties. See LaFarge, 126.

[216] Launius, "The Hump Airlift Operation," 128.

[217] Knight, *Lifeline in the Sky*, 44 - 45.

> increase, but they should do so in a soberer manner. He had the advantages of a well-developed route and organization which had matured. He laid great stress on bringing down the accident rate.[218]

Tunner brought with him "several key officers from his old staff," who brought the ICD into "the age of big business."[219] Led by Tunner, they introduced three initiatives to accomplish his twofold task of producing more tonnage with less accidents:

> (1) increase the number of aircraft and personnel assigned; (2) a comprehensive safety program; and (3) Production Line Maintenance (PLM).[220]

First, throughout his tenure as the Commander of the ICD, Tunner managed to increase the number of personnel and aircraft assigned to his command from 249 aircraft and 17,032 men in December 1944 to 332 aircraft and 22,359 men by the end of the war. Second, he developed a comprehensive safety program whereby a "statistical tracking program" was used to determine the most common reasons behind aircraft accidents, the airdromes where most of the accidents occurred, the weather conditions involved, and the types of accidents the various aircraft were most apt to experience due to common maintenance deficiencies. This information, together with more stringent flight evaluations, pilot physicals, and an efficient safety awareness program proved most useful in combating accidents. Third, by introducing PLM, Tunner was able to generate "greater aircraft reliability while decreasing maintenance time." PLM required aircraft to be towed through a series of seven maintenance stands where specialists executed detailed maintenance procedures. Because each base in Assam repaired only one aircraft type, in

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[218] LaFarge, *The Eagle in the Egg*, 127.
[219] Ibid.
[220] Launius, "The Hump Airlift Operation," 128.

order to implement PLM, it was necessary to reassign the ICD fleet so that only one variety of aircraft was assigned to each base. [221] By early 1945, the number of aircraft and crews assigned to the Hump operation had grown significantly, and continued growing throughout the spring months.[222] Tunner's three initiatives of building his manpower and force structure, introducing a comprehensive safety program and implementing PLM, "accomplished [his] goals of increasing tonnage while decreasing accidents."[223]

As for the wider CBI campaign, the Japanese assault on east China "was the main influence shaping American strategy on the Asiatic mainland in the last year of the war." Due to the dire circumstances, on 19 September 1944 Roosevelt wrote a note to persuade Chiang to give Stilwell command of the Chinese Army.[224] Chiang was insulted by the request, which he believed had been instigated by Stilwell and, on 2 October 1944, demanded that he be relieved of his command.[225] Roosevelt upheld Chiang's request on

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[221] "By March 1945 each of four Assam bases (Chabua, Sookerating, Mohanbari, and Misamari) had at least forty-eight C-46s; three (Tezpur, Jorhat, and Shamshernagar) had at least 30 C-87s and / or C-109s; while Tezgaon had an average for the month of 39 assigned C-54s." See Craven and Cate, *Services Around the World,* 140 - 141.

[222] "The average number [of aircraft] in commission for the Hump service in December 1944 was 249.6; in January 1945, 287.4; in February, 336.8; in April, 325.9; in July, 332. Personnel assigned to the Hump bases, likewise, increased ... from a total of 17,032 military personnel in December, ... to 19,025 in January and reached a peak of 22,359 in April." See Craven and Cate, *Services Around the World,* 141.

[223] "The Hump operation delivered 44,098 tons in January 1945; by July this had been increased to 71,042 tons. All the while the accident rate dropped, from 23 accidents and 36 fatalities in January to only eight accidents and 11 fatalities in the last full month of the war." See Launius, 128. General Tunner reported that in the CBI, PLM was an "overall success, largely responsible for the rise in the average percentage of assigned aircraft in operation from 78% in January to 85% in July. PLM was responsible for a 25% reduction in the time required for 100-hour inspections and increasing the daily utilization of "C-54 aircraft at Tezgaon from an average of 5.51 hours in April to 11.65 hours in July." See Craven and Cate, *Services Around the World,* 141.

[224] The note stated "The only thing you can now do in an attempt to prevent the Jap from achieving his objectives in China is to reinforce your Salween armies immediately and press their offensive, while at once placing General Stilwell in unrestricted command of all your forces." Griess, 225.

[225] Stilwell had been promoted to the rank of four-star general on 1 August 1944, a rank shared at the time by only Marshall, MacArthur, Eisenhower and Arnold. See Griess, 225.

18 October.[226] However, he did not replace Stilwell with a commander of the same stature, and Chiang was notified that "there would be no American sent to command the Chinese Army in China."[227] On 24 October 1944 the Joint Chiefs of Staff ordered Major General Albert Wedemeyer to "carry out air operations from China and assist Chinese air and ground forces in operations, training, and logistics."[228] As part of the October 1944 CBI shake-up, the theater was subdivided into two separate theaters of operations: China, under General Wedemeyer and India-Burma, under Lieutenant General Daniel Sultan.[229]

In September of 1944, Japan launched its most powerful offensive in the CBI campaign to date, linking a passage between its foothold in Manchuria and North China with its holdings in French Indo-China. Moving to the south from the Yellow River, and south-southwest from Hankow, and westward up the Hungshui River from Canton, Japanese forces took-over the main railways of eastern and southern China, and incrementally captured 14th AF's major airfields in the region.[230] Until the U.S., U.K. and

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[226] Coakley and Leighton, *U.S. Army in W.W.II: Global Logistics and Strategy 1943 - 1945*, 528.

[227] To make matters worse for Chiang, "Roosevelt's attitude toward Chiang grew less accommodating," indicating that "Stilwell had not been recalled in disgrace. Not three months after Chiang forced Stilwell's recall, the President met with Churchill and Stalin at Yalta. There the attitude of the President adopted toward Chinese territory and interests suggests that the Generalissimo's triumph of October 1944 was one of the steps that led to the Manchurian partition of February 1945." See Griess, 225.

[228] By mutual consent, Wedemeyer also served as Chiang's Chief of Staff. See Coakley and Leighton, *Global Logistics and Strategy 1943 - 1945*, 529. The specific mission tasking from the JCS was as follows: "(A) Your primary mission with respect to Chinese Forces is to advise and assist the Generalissimo in the conduct of military operations against the Japanese. (B) Your primary mission as to U.S. Combat Forces under your command is to carry out air operations from China. In addition you will continue to assist the Chinese air and ground forces in operations, training and in logistical support. (C) You will not employ U.S. resources for suppression of civil strife except insofar as necessary to protect U.S. lives and property." See Romanus and Sunderland, *Time Runs out in CBI*, 15.

[229] Major General Gilbert Cheves was in charge of coordinating all of Wedemeyer's logistics and administration, including "presid[ing] over the mechanism of Hump tonnage allocation" to both U.S. and Chinese divisions. See Romanus and Sunderland, *Time Runs Out in CBI*, 156.

[230] In succession, the following bases fell: 4 September, Lingling; 11 November, Kweilan; followed shortly by Liuchow and Nanning. It got to the point where "it looked as if the Japanese might take Chungking and Kunming." The winter weather and Chinese defenses finally halted the advance. See Craven

Chinese could combine their forces to drive the Japanese Army from North Borneo and reopen the Burma Road, the single method of delivering supplies to Kunming was via air transport over the Hump. However, this combined campaign had to be delayed due to the "logistic poverty ... [caused by] the *universal transport aircraft shortage* and interception by Japanese fighters [emphasis added]."[231]

On 4 December 1944, Wedemeyer, having found that *the bombers put "prohibitive limitations" on Hump capacity,* proposed that the tonnage could be better utilized by "equipping the Chinese forces and supporting 14th Air Force." On 16 January 1945, the JCS announced that XX Bomber Command would be moved with dispatch to their former Indian bases.[232] Another of Wedemeyer's initiatives was the Hump Allocation and Control Office (HUMPALCO), which he established on 17 December 1944.[233] Every month ATC sent HUMPALCO an estimation of its available capacity for the next four months. Each of the users would send an estimate of its requirements for the same time frame. Having

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and Cate, *Services Around the World,* 135 - 136.

[231] Macksey, *For Want of a Nail,* 143. Although 10th AF was in charge of this entire effort, the ATC India-China Division's C-46 fleet flew more than half (approximately 14,000) of the 25,354 men evacuated. During the early part of November, ICD flew 44 sorties to Liuchow, which was on the verge of collapse, evacuating 298 refugees and 138 tons of cargo. In December, more than 18,000 soldiers of the 57th Chinese Army were airlifted from Hsian to Chanyi. Moreover, ICD evacuated the 14th and 22d Chinese Divisions and elements of China's 6th Army from Burma. See Craven and Cate, *Services Around the World,* 136.

[232] Coakley and Leighton, *U.S. Army in W.W.II: Global Logistics and Strategy 1943 - 1945,* 521. In the latter part of October 1944, Patrick Hurley, the U.S. Ambassador to China, had recommended to the JCS that the XX Bomber Command should be relocated from China to various bases in the Pacific islands given that "14th Air Force was sorely handicapped because the B-29 Hump allocations were consuming its proper share of Hump tonnage." The bombers eventually relocated to Saipan, one of the Mariana Islands, as a base for conducting strategic bombing operations against the Japanese homeland. See Romanus and Sunderland, *Time Runs Out in CBI,* 161.

[233] As it evolved, HUMPALCO "was able to work out detailed data on Hump support, what tonnage would be needed to equip and support the ALPHA forces, and what was the ceiling on U.S. personnel strength in China." See Romanus and Sunderland, *Time Runs Out in CBI,* 162.

received the projected capacities and loads, the HUMPALCO membership recommended allocations to Wedemeyer, who would sign off on the final figures.[234]

General Sultan's forces, consisting of a U.S. brigade (Merrills' Marauders), the MARS Task Force, a U.K. Division and five Chinese Divisions, moved south into northern Burma on 15 October 1944. By 15 December this force had taken Bhamo and subsequently joined with the Y-force on the original Burma Road on 20 January 1945.[235] By 27 January the Chinese (X-Ray and Yoke) forces were finally able to link up, thus recapturing the remnants of the Ledo Road and "secur[ing] the land route to China."[236]

The Japanese occupation of Burma had originally compelled the airlift to be flown over the highest segment of the Himalayan range. Now that Burma was back in allied hands, the Hump airlift could once again be conducted in a more direct route over the lower portion of the range. Most significantly, the availability of a lower altitude routing finally made it feasible to employ the C-54, which had been unable to fly the northern route fully loaded due to its limited ceiling, but which at lower altitudes could transport more than seven tons, 70% more than the C-46 was able to carry.[237]

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[234] HUMPALCO membership included "representatives of the China Theater air, service, and ground force commands, and India-Burma Theater." See Romanus and Sunderland, *Time Runs Out in CBI*, 162.

[235] Griess, *The Second World War: Asia and the Pacific*, 227.

[236] Coakley and Leighton, *U.S. Army in W.W.II: Global Logistics and Strategy 1943 - 1945*, 621. Although the Burma Road was now open to China, the tonnage it provided through the end of the war did not equal a single month's worth of Hump airlift. See Goldberg, 83.

[237] As a result, "it was now most natural to fly increasing amounts of cargo directly from Bengal to China." Moreover, "even planes based in Assam could fly farther south and at lower altitudes than in previous years." On 1 January 1945, a direct C-54 air route was established from the Barrackpore Base in Calcutta to Kunming. During the course of the year, the Tezgaon and Kurmitola bases in Bengal expanded their assistance to the ICD effort. Primarily due to this allied victory in Burma, the single-largest monthly increase of tonnage flown over the Hump occurred in January 1945, when a record of 44,098 tons was airlifted as opposed to 31,935 tons the previous month. See Craven and Cate, 141 - 142.

Sultan's force continued its southern advance and on 7 March 1945 was able to free Lashio.[238] While this counter-offensive was transpiring, ATC was able to double its monthly tonnage over the Hump using Myitkyina as its new hub of operations.[239] By the end of the month there was general agreement between the U.S. and Great Britain that "nourishing the air forces in China" was to become the overriding purpose of SEAC, so that the ground assault would be carried out with this intention. On 10 March 1945, the JCS published a strategy paper on the Pacific to this effect.[240]

Early in May 1945 the British Army conquered central Burma and took Rangoon. The Japanese Air Force was ineffective as "the enemy could muster barely 50 planes for the defense of Burma." For its part, the Anglo-American Combat Cargo Task Force was able to provide adequate supplies to a massive force of 356,000 troops. *This campaign was remarkable because most of the supply of the Army was by air.*[241] The final offensive to retake Rangoon was conducted by a combined airborne-amphibious assault by the XV Corps. As the Japanese had left Rangoon virtually undefended, it fell in on 3 May 1945 after less than a day of fighting. The JCS had correctly assumed that the Allies would be

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[238] Truck convoys from India began arriving in Kunming on 4 February, now that the Ledo Road was open. Moreover, work was begun to extend the oil pipeline from Myitkyina to Kunming. See Griess, 227.

[239] In sum, Griess says that "with an increased air supply and a road and pipeline from India, the blockade of China was over." See Griess, 228.

[240] The JCS paper stated: "It now appears that the Pacific advance to the Formosa-Luzon-China Coast area cannot, except for air support, be materially aided by the SEAC and CBI theaters. ... It would seem logical then, that all efforts in that area should be directed toward nourishing the air forces in China so that they, by an all-out effort, can support our assault from the Pacific." See Coakley and Leighton, *Global Logistics and Strategy 1943 - 1945,* 516 - 517.

[241] The British 14th Army, with air support provided by both the 10th AF and the RAF, "captured Mandalay in March 1945, Rangoon in May, and drove the remnants of the Japanese forces out of Burma." The B-24 Liberators "pounded Japanese depots and installations" as "the tactical air forces were deadly in close support, harrying the enemy and slaughtering thousands of Japanese soldiers." See Goldberg, 83.

facing a Japanese retreat, making the Chinese movement possible. At the end of May, the Japanese Army initiated its retreat from its recently conquered territory in east China, thus allowing for a quick and decisive allied advance. [242] According to Greiss, "there were no more major operations in Burma prior to the Japanese capitulation on 15 August 1945.[243]

Shortly after the reconquest of Rangoon in May of 1945, General Stratemeyer augmented the ICD with several tactical units whose primary combat roles were no longer needed. According to Craven and Cate, fitting tactical combat units into an airlift command fomented a clash of cultures, as:

> their rated personnel, *accustomed to looking down on the ATC as a non-combat outfit*, at first tended to count their assignment to a non-tactical mission a degrading anticlimax. They were bitterly indignant when they learned that they were to be given a week of special training flights in preparation for flying the Hump. *Personal friction between the tactical units and ICD personnel continued and mutual fault-finding was widespread* [emphasis added].[244]

Though they did not begin flying Hump missions until the end of June, the tactical units did contribute to the final tally of the CBI Hump airlift.[245]

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[242] The Japanese leadership, facing the dire need to fortify a "citadel defense" of its homeland, was compelled to cut its forces in China. See Goldberg, 83.

[243] "The campaign for the reoccupation of Burma was now over, except for mopping-up operations, as those Japanese isolated in western Burma tried to break out. " See Griess, 229. Goldberg notes that "the 14th Air Force and the transport pilots of the Hump route kept China in the war. A high-ranking Japanese officer stated after the war that 'had it not been for the 14th Air Force we could have gone anywhere we wished in China.' See Goldberg, 83. The mopping up operations were directly supported by the ICD airlift of 1945. ATC was able to support the move of Chinese troops beyond the periphery and into more distant areas, such as Shanghai. See Craven and Cate, *Services Around the World,* 149.

[244] These units were the 7th Bombardment Group, the 308th Bombardment Group, the 443 Troop Carrier Group, and the 3rd and 4th Combat Cargo Groups, plus two combat cargo squadrons of the 1st Combat Cargo Group, with the support of the twelve airdrome squadrons (468 additional aircraft). See Craven and Cate, *Services Around the World,* 145 - 146.

[245] These groups airlifted 6,488 tons towards a record 55,387-ton airlift. In July, the first full month of tactical airlift operations, their 20,000 tons contributed to the highest monthly total of the war, 71,418-tons. See Craven and Cate, *Services Around the World,* 146.

During the last phase of the war, in executing the "Pacific strategy the U.S. Navy decisively defeated the Imperial Japanese Navy in the Battle of Leyte Gulf, and General Douglas MacArthur firmly re-established U.S. power in the Philippines."[246] The U.S. dropped the atomic bomb on Hiroshima on 6 August, and on Nagasaki on 9 August. Japan made known its intentions to surrender on 15 August and the documents were signed on board the U.S.S. Missouri on 2 September, 1945.[247] Shortly thereafter, the Hump airlift came to an end.[248]

Conclusion

Even though it never became routine, by August of 1945 the Hump airlift at least was more "normal" in that air superiority had been firmly established so that the Japanese forces were no longer a threat.[249] Fourteenth Air Force had established air superiority so that the Japanese "tactic of encirclement was devastatingly countered." After the war, a Japanese participant in this campaign noted that:

> The Allies were able to carry out their operations freely and unhindered whereas Japanese without air supplies and with their only means of supply - ground supply - cut off, were in a paralyzed state. ... *The difference in ground-air cooperation between the Japanese Army and the Allies was the difference between victory and defeat* [emphasis added].[250]

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[246] Romanus and Sunderland, *U.S. Army in W.W.II: Time Runs Out in CBI*, 4.

[247] Coakley and Leighton, *U.S. Army in W.W.II: Global Logistics and Strategy 1943 - 1945*, 624.

[248] Craven and Cate, *AAF in W.W.II: Services Around the World*, 150.

[249] As a result of these improvements, in just eight months time, the accident rate had been decreased to one crash per every 2,309 sorties, so that .189 lives were lost for every 1,000 tons delivered. In other words, one American life would be lost for every 5,291 tons delivered. See Craven and Cate, *Services Around the World*, 125.

[250] Griess explains that "Anglo-American control of the air denied the Japanese strategic mobility, isolating a crippling their offensives against the British. The Allies, on the other hand, could fly a division to the scene of action. Perhaps more important, the Japanese tactic of encirclement was no longer the menace it had once been. Development of effective air-ground coordination made possible resupply of forward units entirely by air." See Griess, 222 - 223.

General Tunner orchestrated this masterful performance by increasing the number of aircraft assigned to the ICD from 108 in June to 250 by December 1944. In conjunction, he increased the average monthly sortie rate from 3,702 in June to 7,612 in December,[251] necessitating a tempo of one airlifter crossing the Hump every three minutes.[252]

In summation, until near the end of the war, the primary aircraft used by the India-China Division remained the reliable Douglas C-47, which carried 2 1/2 tons, supplemented by the undependable Curtiss C-46, which carried 4 tons. Later in the operation ATC also received the new Douglas C-54, which had four engines and could carry three times as much as the C-47. ATC increased the number of air bases in India from just two to seven. It also increased the number of planes, maintenance troops and equipment, parts and personnel.[253] The extent of this airlift operation was unprecedented, providing 100% of the fuel, ammunition, weapons, administrative supplies and C-rations (virtually everything) to the American and Chinese forces stationed in China. This feat was a milestone in the history of transportation, never before had a community been supplied virtually all of its needs by airlift. To further dramatize this accomplishment, it was conducted in the face of hostile conditions, adverse weather, and treacherous terrain. Over the course of the war, 180,000 airlift missions were flown over the Hump, delivering

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[251] Craven and Cate, *AAF in W.W.II: Services Around the World,* 138 - 139.

[252] Launius, "The Hump Airlift Operation," 128.

[253] By the last year of the war, ATC was airlifting an average of 45,833 tons of supplies per month. Each day an average of 650 sorties were flown, with one airlifter taking off every 2 1/2 minutes, 24 hours a day. These "official figures" depict the precipitous decline of Hump airlift operations during the first three months of the post-War era: September, 39,775 tons; October, 8,646 tons; November, 1,429 tons. At the end of November, the Hump airlift was officially terminated. During the months of August and September, the ICD accomplished the rewarding "westward" mission across the Hump, airlifting approximately 47,000 U.S. soldiers across the Indian landmass to Karachi, the embarkation port back to America. See Tunner, 71.

650,000 tons[254] of food, ammunition and petroleum, keeping 60,000 American soldiers and 19 Chinese Armies supplied in order to keep a one-and-a-half million man Japanese army at bay,[255] which most likely impacted the conduct of the overall war in the Pacific.[256] To put the operation in perspective, what do all these numbers equate to? Craven and Cate contend:

> The tonnage could have been hauled in approximately 70 Liberty ships, if the requisite ports had only been available, or in 6,500 American freight cars, if only a railroad had existed. *The Hump airlift was born of an emergency*, though in the end its size made it difficult for the men who operated it to remember that it was still properly an emergency communication system [emphasis added].[257]

The Hump airlift was not only a great military success. In addition, it was, in the words of General Tunner, "*directly responsible for scores of capable junior officers going on to serve the Air Force well in the technical and demanding field of air transport.*"[258] In other words, "*the operation had critical importance for the development of airlift doctrine.*" In sum, the members of the renowned Strategic Bombing Survey wrote that "air transport operations expanded beyond the wildest prediction of 1942 - *expanded because it was the one agency which could succeed* [emphasis added]."[259]

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[254] Launius, "The Hump Airlift Operation," 125.

[255] Tunner, *Over the Hump*, 8.

[256] Launius contends that "had it achieved a quick victory [in China], Japan could have left a small occupation force in China and moved the remainder of its force to oppose the Americans in the Pacific, perhaps making the island-hopping campaigns more costly than they were. See Launius, 125. CNAC also made a valuable contribution to the Hump airlift throughout the war. By early 1945, this group of Chinese flyers had flown 35,000 total sorties. During 1944 alone the CNAC airlifted 41, 454 tons. See Cleveland, 215.

[257] Craven and Cate, *AAF in W.W.II: Services Around the World*, 151.

[258] The Hump operation had demonstrated that only men who were trained to be specialists in airlift could run another operation of the same magnitude with any measure of success. In essence, the Hump set the standard for all future airlift missions to follow. Airlift had proven itself as a viable, if not superior method of transport. See Tunner, 135.

[259] According to the Strategic Survey, "The major significance, for the future, of all air operations in CBI was the development of air transport operations. ... The terrain of Burma and China and the absence of

Although there were other strategic airlift operations conducted in the many campaigns fought throughout the Second World War, what truly separated the Hump operation as unique was that it was "the *sole* means by which a combat theater was nourished."[260] In conclusion, Craven and Cate put the significance of the Hump airlift operation into historical perspective:

> Most important in the long run, no doubt, the Air Transport Command's crowded airways to China were the proving ground, if not *the birthplace, of mass strategic airlift. ... In military and civilian circles alike men were forced to modify their thinking regarding the potential for airlift* [emphasis added].[261]

Representative of their efforts, 900 of ATC's 1,200 total World War II decorations were awarded to Hump participants.[262] In addition, in June of 1945 Generalissimo Chiang Kai-shek signed a Certificate of Merit, on behalf of the National Military Commission of the Chinese National Government.[263]

Launius makes the case that "*the India-China experience made it possible to conceive the Berlin airlift of 1948-49* and to operate it successfully. When the Korean

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land lines of communication forced all agencies in the theater to turn to the airplane - initially as an afterthought and an emergency last-chance measure. The inherent flexibility of air power permitted it, without adequate preplanning, to the exigencies of the various situations." See Launius, 129.

[260] In contrast to the other campaigns "every vehicle, every gallon of fuel, every weapon, every round of ammunition, every typewriter, and every ream of paper which found its way to Free China for either the Chinese or the American forces during nearly three years of war was flown in by air from India. See Craven and Cate, *Services Around the World*, 116.

[261] "The AAF demonstrated conclusively that a vast quantity of cargo could be delivered by air, even under the most unfavorable circumstances, if only the men who controlled the aircraft, the terminals, and the needed material were willing to pay the price in money and in men." See Craven and Cate, 151.

[262] Roosevelt wrote, "I have directed the citation of the Wing and desire that my personal thanks be communicated to every officer and man concerned." The narrative read: "The goal has been high, the air route exceedingly dangerous, both as to mountains and enemy action, and the weather treacherous. Only teamwork and outstanding devotion to duty by the entire personnel could have made this accomplishment possible." See Cave, 108.

[263] The citation read: "In appreciation of the services rendered by the United States Air Transport Command stationed in India in transporting military materials and supplies to our armed forces and its close cooperation with the Chinese authorities in the prosecution of the war." See Cleveland, 214.

War in 1950 required the emergency delivery of large numbers of men and equipment to the Far East, the precedents and the techniques for doing so were at hand."[264] As the following case illustrates, "Tunner's splendid achievement ... led logically to his later post in charge of the airlift to Berlin."[265]

Analysis

As this analysis demonstrates, during the course of World War II, airlift developed on all three fronts: organizationally, structurally and doctrinally. Organizationally, it evolved from a ferrying service to an air cargo and passenger operation. Structurally, beginning literally from scratch, thousands of airline frames were converted to military use. Doctrinally, a new aerial mission was introduced to the profession of arms.

Airlift Organization: Post-W.W.II

As the war was dying down in the middle of 1945, ATC was sending fifty-two flights per day across the Atlantic to destinations in Paris, Frankfurt and Berlin. On the Pacific side, twenty-one flights per day departed from west coast bases.[266] When ATC was activated in June of 1942, it had only 11,000 military personnel. When hostilities ceased in 1945, the command had grown to over 200,000 strong.[267] As rapid as the

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[264] "Large-scale air supply has remained a critical part of American military planning until the present. Its use in the Berlin Airlift of 1948-49; the Korean War, 1950-53; the Vietnam War, 1963-73; and the [Persian Gulf War of 1990-91] have amply demonstrated its effectiveness. While procedures have been refined and equipment made more efficient, the basic air supply techniques used in the Hump remain in operation today." See Launius, 129.

[265] Knight, *Lifeline in the Sky,* 126.

[266] At its peak, ATC had 205,000 officers and enlisted members and 108,000 civilians assigned. ATC crews pioneered over 35,000 miles of domestic routes and 148,900 miles of foreign routes. The peak month for aircraft ferries stood at 2589 foreign and 9205 domestic deliveries. Tonnage transported peaked in July of 1945, when 124,637 tons were airlifted (more than half over the Hump alone), along with 274,934 passengers, resulting in the astonishing figure of 174 million ton-miles and 619 million passenger miles flown in one single month. See Knight, 264.

buildup was, the demobilization transpired even more quickly. LaFarge noted after the war that there was "a danger that the desire for conformity for its own sake and the absence of men who remember *why the Command had to be so ornery and so different* may lead to a loss of essential flexibilities."[268] Within one-year of V-J Day, "consolidations and inactivations had cut the number of transport divisions [from nine] to three - Pacific, Atlantic and Europe." Goldberg points out that "*demobilization at this rate threatened complete disruption of the ATC organization* [emphasis added]." [269] General Arnold wrote the following in a letter to General George early in December 1945, shortly before his retirement:

> the technique, knowledge of procedure, and experience that has been acquired by the Air Transport Command must never be lost to the AAF. ... From my knowledge of ATC operations and my experience on the JCS and CCS, *I, probably more than anyone else, fully appreciate the job the Air Transport Command had done and, because of its world wide activities, the vital necessity for its continuation as a command, not under any of the air forces, and operating independently* [emphasis added].[270]

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[267] By the end of the first year ATC had grown to over 60,000 members. By July of 1944 that number had increased to 125,000, with 80,000 stationed overseas. See Craven and Cate, *Services Around the World,* 19.

[268] LaFarge, *The Eagle in the Egg*, 36.

[269] The military personnel assigned to ATC dropped from 209,201 to a total of just 42,000 officer and enlisted members shortly after the war. In order to continue providing needed operations and services, the command was forced to resort to contractual arrangements with civil air carriers, which were able to provide "airlift as well as civilian technicians for maintenance, communications, and weather services." See Goldberg, 147.

[270] "The size of the ATC should be such that, together with its reserve in the airlines themselves, it can pick up and carry one Army Corps to either Alaska or Iceland. With this concept of airpower, the Air Force must, at all times, be ready to utilize civil aviation - personnel, aircraft and facilities. This, therefore, requires that civil aviation be kept as strong as possible and coordinated with the Air Forces." See General Arnold to Lt. Gen. Harold George, letter, 5 December 1945, cited in Miller, 70.

Goldberg points out that although "Arnold's thinking set the pattern for the future development of ATC," budgetary limitations did not initially permit the realization of his program.[271]

On 19 January 1946 General George, the Commander of ATC, wrote that "*the transport plane has earned a spot on the runway alongside the fighter and bomber* as an implement of offensive warfare:

> To my mind, this is one of the important aeronautical lessons we have learned in World War II. Fighters, at 400 miles an hour, and bombers, even the gigantic B-29s, are not enough. It is a certainty, however, that *the Army Air Forces will maintain within its own structure a small but efficient Air Transport Command.* The wisdom of such a course, in my opinion, is obvious since air transport is an important component of air power [emphasis added].[272]

According to Craven and Cate, during the course of the war it had become increasingly evident that:

> the ideal shaping the whole development of ATC was that of a strategic air transport service. To the achievement of that ideal nothing was more important than a centralized control exercised in conformity with the highest considerations of national strategy.[273]

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[271] Instead, no major changes in the command structure were to take place until the provisions of the National Security Act of 1947 called for combining redundant military missions being performed by the various service branches, such as the air transport services of the Navy and newly established Air Force. See Goldberg, 147.

[272] George writes that "it remains for the transport plane to fulfill the task of split-second military supply; ... to evacuate the sick and wounded; to carry the mail, that indispensable builder of morale; to transport regiments of troops with all their equipment, as was done on more than one occasion in the case of Chinese forces. The commercial airlines, heavy contributors to the Command through their contract carrier operations, are now prepared to take over many a war-pioneered route for peacetime flying. This is right and proper." In March of 1946, "for greater efficiency and economy," the following support services were subsumed within the ATC organizational structure: The Army Airways Communications System, AAF Weather Service, AAF Flight Service, AAF Rescue Service, AAF Aeronautical Chart Service, and the Office of Flying Safety. See Lt. Gen. Harold L. George, "The ATC, Here to Stay," *Army Navy Journal,* 83:1 (19 January 1946): 679, 682.

[273] Craven and Cate, *AAF in W.W.II: Services Around the World,* 16.

Airlift Force Structure: Post-W.W.II

As previously shown, every airlifter used in the Second World War by U.S. forces was either a modified bomber or passenger aircraft. LaFarge notes that "in a sense all of our military transports were makeshifts."[274] He contends that:

> We paid dearly for the comfortable fallacy that a well-developed merchant air industry would answer our needs in time of war. We might well have failed to produce the ocean-spanning fleet which was so important a factor in victory.[275]

During the course of the war, aviation technological advances accrued at an alarming rate. Under normal circumstances, experimental versions of aircraft are thoroughly tested on a reduced scale before being accepted on the line. However, during the war, this usual practice was inverted as experimentation on strategic airlifters were conducted on a higher scale than projected peacetime utilization rates.[276] LaFarge asserts:

> the change which has taken place could not have occurred in three and a half years of peace. The imperatives of war forced, twenty years, at least, into three. *The egg hatched, and it was an eagle*.[277]

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[274] They were all airliners, except the C-87, which had been a bomber. See LaFarge, 79. During the course of the war, there was just one aircraft designed from start to finish to be an airlifter, however this C-82 did not join the ATC fleet until after the war. See Craven and Cate, *Men and Planes*, 223.

[275] LaFarge notes that "not until the fighting was over did we possess transports such as the Germans had, designed from the beginning for the uses to which they were put." See LaFarge, 81.

[276] "Under ordinary circumstances, if there were foreseen a possible need for using twin-engine aircraft to carry payloads of several tons at altitudes of 20,000 feet or higher, one or two planes would be set aside for experimental use until the many problems involved could be learned and solved. In the war, several hundred DC-3s and C-46s were kept doing just that for all they were worth, over the Himalayas. The result was a mass knowledge about performance and efficient air lift under extremely unfavorable conditions which ordinarily it would have taken a decade or more to gather." See LaFarge, 6.

[277] LaFarge, *The Eggle in the Egg*, 76. The transport command had the following number of aircraft assigned after each year of the war: 782 in 1943; 2,292 in 1944; and 3,090 in 1945. See Craven and Cate, *Services Around the World*, 40. The AAF accepted delivery of over 10,000 "DC-3 type" aircraft, "which was nearly half the transport planes it received between 1940 and 1945. By comparison, the AAF accepted delivery of a grand total of 3,144 C-46s by August 1945, the majority coming into service after 1944. See Craven and Cate, *Men and Planes*, 224. The number of aircraft ferried was 30,000 in 1942, 72,000 in 1943, 108,000 in 1944 and 57,000 in 1945. See Craven and Cate, *Services Around the World*, 19.

At its zenith in February of 1945, the AAF had "nine air transport divisions and 32 troop carrier groups with a total of 10,138 aircraft."[278] The following data vividly portrays the comparative numbers of weapons systems procured, by category, during the course of World War II by the U.S. Army Air Force. This table[279] depicts the actual number of aircraft deliveries to the USAAF during the years 1941 - 45:

Year	Transports	Fighters	Bombers
1941	133	1,727	880
1942	1,264	5,213	5,827
1943	5,072	11,766	15,022
1944	6,430	18,291	20,116
1945	3,043	10,591	9,490
Total	15,942	47,588	51,335
114,865	(13.9%)	(41.4%)	(44.7%)

The following table[280] further delineates, by type, nine front-line aircraft procured which are representative of their respective categories, whether transport, fighter or bomber, by the USAAF during the course of the war:

Type	1941	1942	1943	1944	1945
Total					
C-46	1	46	353	1,321	1,459
3,180					
C-47	165	1,057	2,595	4,900	1,536
10,368					
C-54	0	26	72	356	708
1,162					

[278] Knight, *Lifeline in the Sky,* 178.
[279] Holley, *U.S. Army in W.W.II: Materiel Procurement for the Army Air Forces,* 554.
[280] Ibid., 550 - 551.

P-38	205	1,265	2,213	4,186	1,666
9,536					
P-40	2,246	4,454	4,258	2,002	0
12,960					
P-47	1	532	4,428	7,065	3,657
15,683					
B-17	144	1,412	4,179	5,352	1,552
12,639					
B-24	169	1,164	5,214	9,519	2,117
18,183					
B-25	171	1,554	2,954	3,677	1,460
9,816					

The following table[281] illustrates the average per unit cost (in 1000's of dollars) of the three representative front line transports, fighters and bombers during each year of the war. As is readily apparent, substantial savings were realized through economies of scale:

Model	1941	1942	1943	1944	1945
C-46	341.8	314.7	259.2	233.3	221.5
C-47	128.7	109.6	92.4	88.5	85.0
C-54	516.5	370.4	400.8	285.1	259.8
P-38	134.2	120.4	105.5	97.1	0.0
P-40	60.5	59.4	49.4	44.8	0.0
P-47	113.2	105.5	104.2	85.5	83.0
B-17	301.2	258.9	0.0	204.3	187.7
B-24	379.1	304.3	0.0	215.5	0.0
B-25	180.0	153.3	151.8	142.1	116.7

By multiplying the purchase price times the number of units procured, this table depicts the amount of budgetary resources (in millions of dollars) allocated to each of the three front line transports, fighters and bombers during the course of the Second World War:

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[281] Ibid., 560.

Model	1941	1942	1943	1944	1945
C-46	0.3	14.5	91.5	308.3	323.2
C-47	21.2	115.9	239.8	434.0	130.6
C-54	0.0	9.6	28.9	101.5	183.9
	21.6	140.0	360.2	843.8	637.7
P-38	27.5	152.3	233.6	406.7	156.9
P-40	136.0	264.8	210.6	89.9	0.0
P-47	0.1	56.2	461.7	604.6	303.5
	163.6	473.3	905.9	1101.2	460.4
B-17	67.4	365.6	1071.5	1093.8	291.4
B-24	64.1	354.3	1571.5	2051.5	374.6
B-25	30.8	238.4	448.7	522.9	170.5
	162.3	958.3	3091.7	3668.2	836.5

Although these numbers do support the thesis that relatively more resources were devoted to the acquisition of bombers and fighters than to transports, it does not portray the shear magnitude of the greater varieties and numbers of combat, as compared to transport aircraft. The following chart[282] gives a breakdown of each type of transport, fighter and bomber procured during the entire course of the war:

Transports	Fighters	Bombers
C-43: 345	P-38: 9535	B-19: 1
C-45: 1752	P-39: 9575	B-29: 3898
C-46: 3180	P-40: 12,960	B-17: 12,639
C-47: 10,253	P-47: 15,683	B-24: 18,183
C-54: 1162	P-51: 14,686	B-25: 9816
C-60: 575	P-59: 66	B-26: 5157
C-61: 998	P-61: 702	B-42: 1
C-64: 756	P-63: 3292	A-20: 7088
C-69: 15	P-70: 60	A-24: 615
C-78: 3206	P-80: 243	A-25: 900
C-87: 291	TOTAL: 66,802	A-26: 2450
C-117: 17		A-28 & A-29: 2019
TOTAL: 22,550		A-30: 1575
		A-31 & A-35: 1931
		A-36: 500
		TOTAL: 66,773

[282] Ibid., 550 - 551.

Based upon these figures, one can determine that out of the a total* of 156,125 aircraft procured by the U.S. Army Air Corps from the years 1941 - 1945, 133,575 (85.6%) were combat aircraft and 22,550 (14.4%) were transports. This relative neglect is exacerbated by the fact that the airlift fleet was virtually non-existent at the war's beginning, whereas there was already a small, but organized force of bomber and fighter aircraft in existence. In other words, whereas the bomber and fighter fleets had something to build upon, the airlift fleet had to begin from scratch. However, not to overstate this point, it was only after the attack on Pearl Harbor that the United States began to build its strategic bomber fleet in earnest.[283]

The following chart[284] depicts the actual inventory of bombers (includes very heavy B-29, heavy B-17 & B-24, medium B-25 & B-26 and light A-20 & A-26), fighters (includes single-engine P-40, P-47 & P-51, twin-engine P-38 & night capable P-61 & P70), and transports (includes (C-46 & C-47):

CATEGORY	1941	1942	1943	1944	1945
Very Heavy Bombers	0	0	2	445	2,374
Heavy Bombers	120	846	1,421	11,720	12,221
Medium Bombers	611	1,047	4,242	5,427	5,576
Light Bombers	292	696	1,689	2,914	3,063
Total Bombers	(47%)1,023	(41%)2,589	(37%)7,354	(45%)20,506	(46%)23,234
Total Fighters	(47%)1,018	(46%) 2,950	(41%)8,010	(34%)15,644	(35%)17,703
Total Transports	(6%) 144	(13%)824	(22%)4,268	(21%)9,433	(19%)9,473

[283] I.B. Holley points out that "the figures make it quite clear that the whole idea of strategic air power was little more than a paper doctrine, insofar as the AAF was concerned, until late 1942 or early 1943." See Holley, 553.

[284] *U.S. Army Air Forces Statistical Digest, World War II* (Washington, D.C.: Office of Statistical Control, 1945), reprinted in "A Statistical Portrait of USAAF in World War II," *Air Force Magazine*, June 1995, 30.

These statistics verify that the U.S. Army Air Force's transport fleet was vastly outnumbered by the fighter, and especially the bomber fleets. This disparity was most pronounced at the beginning of the conflict, when the airlift fleet constituted a paltry 6% of the force. As a percentage of the total fleet, the bomber force stayed the most stable, whereas the drop-off in the percentage of fighter was compensated for by a corresponding increase in the number of transports. Most telling is the fact that by the end of the war, the transport fleet had grown 65 times its original strength, as compare to 23 times for the bomber fleet and just 17 times for the fighter fleet. Therefore, in terms of relative neglect, it is indeed evident that the airlift fleet had been the most neglected of the three U.S. Army Air Force flying missions prior to U.S. direct involvement in the Second World War. Moreover, although its strength grew at a higher rate than the other two missions throughout the course of the conflict, its end strength never approached those of the bomber and fighter forces. Please note that these numbers do not include the specialty aircraft such as reconnaissance, communications and trainers. In sum, Craven and Cate claim that:

> the importance of the transport plane to the operations of the AAF, whether as a carrier, troop transport, or long-range cargo carrier, is illustrated by the growing inventory of these planes. In July 1939 the AAF had only 118 transports, and on the eve of Pearl Harbor it had only 216. Thereafter the inventory rose steadily; by August 1944 the AAF had more than 10,000 transports on hand.[285]

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[285] Craven and Cate, *AAF in W.W.II: Men and Planes*, 225.

Airlift Doctrine: Post-W.W.II

According to LaFarge, the Air Transport Command was "something unusual in American military history, a major subordinate command based in the Zone of the Interior, operating and establishing its personnel and bases in all theaters under its own, direct command." He elaborates that:

> The Air Transport Command was now truly the War Department's agency. In fact, although it was *a lower echelon of a major subdivision of the Army,* it was an agency of the whole government as oriented towards waging war, excepting always the area reserved for the sovereign Navy [emphasis added].[286]

ATC was founded as a "strategic air transport system" based on the principle of "centralized control in conformity with the highest considerations of national strategy."[287]

Towards the tail-end of the war, AAF issued a post-war policy statement that "a strong air transport system together with its aircraft, air bases, and airway facilities is vital to the nation's airpower."[288] Doctrinally, this meant:

> that *a significant amount of air transport power would reside in the civilian sector*, theoretically available when needed. It also meant *a continuation of the 20-year trend of relying on airplanes designed for civil airlines rather than military purposes* [emphasis added].[289]

Miller traces a series of letters exchanged between General's Cyrus Smith and Harold George of ATC, and Generals H.H. Arnold and Tooey Spaatz of the AAF approaching the war's end and soon afterwards. Based upon these correspondences, he is

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[286] LaFarge, *The Eagle in the Egg*, 66.

[287] Miller, *Airlift Doctrine*, 36.

[288] Lt. Gen. Barney Giles, Chief of the Air Staff, Headquarters Army Air Forces, to distribution list, letter, subject: Policy of the War Department in Regard to Post-War International Civil Aviation, 23 May 1944, cited in Miller, 67.

[289] Miller, *Airlift Doctrine*, 69 - 70.

able to discern what he calls a "nexus of [airlift] policy and doctrine." The first letter was from Colonel C.R. Smith, ATC Chief of Staff, to Lt. General George. Smith writes that:

> the objective of the peacetime ATC is to be an organization that can expand rapidly without bringing in a new organization. All personnel must be trained to be the executives of the future wartime ATC.[290]

At the close of the war, Lt. General George, Commander of ATC, writes:

> Out of World War II have come many lessons. None, I think, is more urgently in need of attention than the demonstrated importance of air transportation as an essential arm of our national defense. ... In short, *no military effort can hope to succeed without adequate air transport, organized and equipped in advance*. Our *military air-transport service must be maintained on a strong, global basis*; an experienced, going concern which can be rapidly expanded in time of national emergency, one unified command to serve the entire military establishment the world over [emphases added].[291]

General George emphasized to LaFarge, the ATC Historian, that "General Arnold was the first to foresee the possibilities of strategic air transportation."[292] General of the Army H.H. Arnold writes about ATC at the close of World War II that:

> *We of the Army Air Forces found ourselves faced with the necessity of creating an air transport organization* that, overnight, could, and would, be expanded to extend to the four corners of the globe, ... in many instances, over routes of which no man had heretofore dreamed. ... How the Air Transport Command, and the

[290] Smith elaborates that: " (1) ATC should remain as an AAF command, reporting directly to the Commanding General, AAF; (2) ATC should be a self-contained organization, with its own maintenance, communications and weather [reporting] system; (3) ATC should be the preeminent airline operator in the world, better than any airline organization; but it should maintain very close coordination with the U.S. airlines, with ATC as the point of contact with civil aviation; (4) ATC should plan to move 36,000 troops and equipment promptly, with civil airlines contributing three fourths of the airlift capability; (5) ATC should keep its strength to the minimum consistent with getting the job done." See C.R. Smith to Lt. Gen. Harold George, Commanding General, ATC, 26 November 1945, cited in Miller, 69.

[291] George elaborates that "we know too, that any new war of the atomic age will come upon us with stunning swiftness. Then, more than ever before, there will be an immediate demand for airlift, large-scale airlift, in sustained support of our striking forces. See LaFarge, viii.

[292] Arnold elaborates that "simultaneously with our entry into World War II, overwhelming demands came pouring in to Washington from the four corners of the earth, for U.S. military aircraft. Everybody, everywhere wanted our planes, and wanted them NOW. Since neither ground nor sea transportation could be expected to cope successfully with the time element of these demands, there remained but one other alternative: air transportation." See LaFarge, 34f.

> organizations encompassed within that title, met this challenge, is an everlasting glory to its personnel, and to the country that fathered a breed of their kind.[293]

In a letter written to General "Tooey" Spaatz, who was to succeed him as the Chief of the U.S. Army Air Force, "more than in any other official document, General Arnold linked ATC with the fundamental issues facing the postwar Air Force:

> *We must not forget the great difficulty now almost forgotten, of deploying* and establishing our Air Force in the areas in which they are to fight. *During times of peace, we are apt to retain our combat units and sacrifice the essentials to their successful deployment* and immediate operation. *We must retain* our bases and *our means of deployment* [emphasis added].[294]

General Arnold then went on to elaborate about the importance of ATC:

> I have long felt that the *Air Transport Command has a unique value which had never been fully appreciated throughout the Air Forces*. The contribution which it has made and can make to national security, and to the autonomy of the Air Forces is little understood but of vital importance. As a result of my experience as a member of the U.S. Joint Chiefs of Staff and the Combined Chiefs of Staff, *I firmly believe that an essential component of American airpower is an integrated autonomous single Air Transport Command,* reporting *directly* to the Commanding General, Army Air Forces [emphases added].[295]

Miller detects that Arnold is somehow "pleading for recognition of the importance of strategic airlift."[296] Arnold also introduces the notion of a diplomatic role for the ATC:

> *It is necessary also that the War Department as a whole be educated* to the Air Force's and the ATC's greatly broadened responsibilities and functions, and *to the ATC's need for support and assistance from the working members of the higher echelons* [emphasis added].[297]

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[293] LaFarge, *The Eggle in the Egg*, v.

[294] General Arnold to General Spaatz, letter, 6 December 1945, cited in Miller, 70.

[295] Arnold continues.: "I believe that [ATC] is an essential instrument to the Commanding General, Army Air Forces, in the accomplishment of his mission, in the execution of national aviation policy, and in the fostering and retention of an autonomous Air Force. I believe it offers a means of insuring our capacity to support the immediate worldwide deployment of our Armed Forces; of contributing materially to autonomy of the Air Forces; giving essential unity to the Air Forces command. This latter aspect had been invaluable to me, and will be no less valuable to you. ATC is *the* Air Forces and *the* War Department's high speed physical connecting link between headquarters and the field commands." See Miller, 71.

[296] Miller, *Airlift Doctrine*, 71.

[297] Arnold begins: "American foreign policy is naturally not the primary responsibility of the air forces.

Finally, General Arnold addresses the sensitive issue of ATC's independence from theater commanders' command authority:

> Finally, I want to reemphasize a strong personal conviction. In time of war the authority of the theater commander in his area is paramount. This is as it should be. ... The ATC has always been an exempted agency operating into and through the various theaters. This principle should be retained.[298]

According to Miller, "ideas, concepts, and (to an extent) doctrines about strategic airlift existed in many forms at the end of World War II. In a summary form they said:

> (1) Strategic airlift is a function of airpower that supports the entire defense establishment, not just the air component. Its scope is also broad enough to serve as an agent of diplomatic and economic policies of the nation in its own right.
>
> (2) Strategic airlift is a vital element of airpower and the national military strategy. Its potential contributions are so important as to justify exemption of these forces from day-to-day control of the theater commanders and concentration of their control at the highest possible level of strategic decision making.
>
> (3) Strategic airlift is separate from troop carrier aviation, but has such flexibility as to be available for scheduled airlift services within the theaters upon common agreement of all concerned. In unique circumstances, strategic airlift may perform combat supply by air, both air landing and air dropping, but again only upon agreement of all concerned.
>
> (4) Strategic airlift will exist in peacetime at a militarily acceptable minimum strength to be prepared for extensive expansion during wartime. Strategic airlift will rely overwhelmingly on civil aviation for its initial wartime capabilities. In

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However, aviation matters are of growing importance in our foreign policy. Since the ATC will always enjoy free entry into foreign circles, and particularly since that Command will exercise military authority in the territories of several foreign countries, it is mandatory that maximum cooperation and assistance to the State Department for the furtherance of our American objectives be firmly charged to the ATC as the field agent of the Air Forces and the War Department. This will require understanding and strong support within our own Air Force Headquarters." See Miller, 71.

[298] Arnold elaborates: "These [airlift] operations have had a great effect on maintaining the unity of all Air Forces organization, control, and perspective. They have given me an opportunity to keep my fingers on the pulse of Air Force's activities in the various theaters and to observe firsthand the part the Air Force is playing in the logistical and tactical support of the combat units. Of equal importance, it gives one an opportunity to preserve a worldwide viewpoint so essential in present military philosophy. I believe it essential that you have such a means at your disposal." See Miller, 72.

> peacetime, the Air Force will encourage, to the maximum extent possible, the development and success of national and international U.S. civil aviation.
>
> (5) Strategic airlift is a complex logistical operation that depends on an extensive system of bases, intensive management by air transportation experts, and a tightly controlled program of user priorities. While aircraft specifically designed for military air transportation may be desirable, they are not required for effective mission accomplishment.
>
> (6) Strategic airlift can be routinely relied upon to execute extremely demanding missions on a sustained basis, once it is given sufficient resources.[299]

Miller concludes that General Arnold's "vision in the field of air transportation was surpassed by no one" in the World War II era.[300] In his final communiqué to the Secretary of War on 12 November 1945, General Arnold advised him to guard against organizational, structural and doctrinal stagnation and to ensure that he is never held back by strict adherence to outmoded traditions:

> The basic planning, development, organization and training of the Air Force must be well rounded, covering every modern means of waging air war, and the techniques of employing such means must be continually developed and kept up to date. The Air Force doctrines likewise must be flexible at all times and entirely uninhibited by tradition.[301]

In the ensuing years following World War II, military planners did not give serious consideration to developing a strategy for fighting the next war. U.S. intelligence services estimated that the Soviet Union would need several years to recover from the massive damage inflicted on their economy.[302] It did not seem necessary to formulate a

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[299] Miller, *Airlift Doctrine*, 73 - 74.

[300] Ibid.

[301] Arnold begins: "National safety would be endangered if an Air Force whose doctrines and techniques are tied solely to the equipment and processes of the moment. Present equipment is but a step in progress, and any Air Force which does not keep its doctrines ahead of its equipment, and its vision far into the future, can only delude the nation into a false sense of security." See Arnold, *Third Report to the Secretary of War*, 62, 63, cited in Futrell, 170.

[302] Alexander L. George and Richard Smoke, *Deterrence in American Foreign Policy: Theory and*

warfighting strategy when the U.S. held a nuclear monopoly and no power was capable of launching a surprise attack to destroy that capability. As a result, U.S. conventional forces were demobilized. The Joint Chiefs of Staff understood that the atomic bomb had secured a measure of deterrence for the United States. Deterrence was seen as a unique function to be served by strategic bombers carrying nuclear weapons.[303] On 5 December 1945, General Arnold accepted the recommendations of HQ AAF Operations, Commitments and Requirements and the AAF Board and retained ATC to "*support the strategic air forces*," and kept troop carrier aviation as "a part of the tactical air forces," although there had been "considerable sentiment that the two functions should be combined [emphasis added]."[304]

In February, 1947, looking back on his war time experience as a commander of both fighter and transport commands in Europe, Major General Robert Webster remarked in a National War College lecture:

> I would say that we went into the last war with only two basic types of military aircraft, the bomber and the fighter. I feel that we have come out of that war with an additional type, the transport plane, and that *we should think in terms of bomber-fighter-transport since they are all equally important - and they must be properly balanced to each other if we are to conduct successful war operations.* [emphasis added][305]

Practice (New York: Columbia University Press, 1974) 11 - 34, reprinted in *American Defense Policy,* eds. John E. Endicott and Roy W. Stafford, Jr., 4th ed. (Baltimore: Johns Hopkins University Press, 1978) 55.

[303] Ibid.

[304] Gen. H.H. Arnold to Lt. Gen. H.L. George, Commanding General, Air Transport Command, letter, 5 December 1945; Lt. Gen. I.C. Eaker, Deputy Commanding General, AAF, to Assistant Chief of Staff, Operations, Commitments and Requirements (ACAS-4) and Assistant Chief of Air Staff, Plans (ACAS-5), R&R sheet, subject: Future Plans for Air Transport Command, 10 December 1945, cited in Futrell, 179.

[305] Maj. Gen. Robert M. Webster, "Planning War Use of Air Transportation," lecture, National War College, Washington, D.C., 10 February 1947, cited in Futrell, 178.

Conclusion

As the case of the Air Transport Command has shown, the U.S. entered the Second World War with an absence of organization, force structure or doctrine to conduct military airlift operations. Thus, it had been totally neglected.

Yet, as the wartime experience in the CBI also illustrated, there was a need to supply and equip the Chinese Army as well as Chennault's 14th Air Force, which could only be satisfied by air transport. The U.S. Army Air Force went through three organizational iterations (10th AF, ICWATC, ICD) while trying to accomplish this difficult mission in the most efficient manner. The force structure in CBI grew as well and doctrine, though not written, developed through trial and error.

By the end of the war the U.S. Army Air Force had an established organization, Air Transport Command, with an inventory of several thousand transports. Furthermore, aviation pioneers such as Hap Arnold, wrote of the importance that ATC, in partnership with the airline industry, would play in providing for the country's future national security. In closing, General Arnold wrote the following to Secretary of War Stimson:

> we have learned and must not forget that from now on air transport is an essential of air power, in fact, of all national power. ... We must have an air transport organization in being, capable of tremendous expansion.[306]

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[306] Arnold, *Second Report to the Secretary of War* (27 February 1945), 94-95, cited in Futrell, 179.

CHAPTER IV

MILITARY AIR TRANSPORT SERVICE

Introduction

After the Second World War, given that airlift had proven itself to be a viable military instrument, the Air Transport Command remained intact with a small fleet of aircraft leftover from the war. In 1948, a year after the U.S. Air Force was formed, ATC was joined with the Naval Air Transport Service (NATS) to form the Military Air Transport Service (MATS), thereby consolidating all the nation's strategic airlift resources into one unified command. The tactical airlift aircraft assigned to the Navy, TAC and the various overseas commands remained exclusively under their own jurisdictions. What few technological improvements there were came in the form of the tactical transport, the C-119 and the strategic transport, the C-124. Rather than being designated as a major combatant command, such as TAC, SAC and ADC, MATS was designated as a support service and was commanded by a two-star, rather than a four-star general. This was a direct result of the comparatively low priority the Air Force put on its airlift fleet and was commensurate with its paltry budget and stagnant doctrine.[1]

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[1] Tunner writes in 1964: "It will probably strike the present reader as incredible, now that the value of MATS has been recognized by Congress, the administration and the public in general, that in the years 1958 - 1961 a handful of us were fighting for its life. Exactly how near the nation came to losing this mighty force I could not venture to say, but it was certainly dangerously close. Because of this neglect of our airlift forces during the 1950s America is weaker today than it should be, and further, this weakness, though ameliorated by the emergency purchase of some "off-the-shelf" planes, will continue at least through 1966." See William H. Tunner, *Over the Hump*, (Duell, Sloan and Pearce, 1964) 283.

Airlift Organization: Pre-Berlin and Korea

In the aftermath of the establishment of an independent Air Force in 1947, Secretary of Defense Forrestal issued a directive on 3 March 1948 directing that a unified Military Air Transport Service (MATS) be established.[2] As the Key West agreement had relegated the strategic airlift mission to the Air Force, Secretary of Defense Forrestal directed the Navy and Air Force to merge NATS with ATC to form a unified Military Air Transport Service (MATS). His rationale was to demonstrate that the Defense Department was concerned with Eisenhower's call to strengthen the economy. Additionally, it showed that rival services could indeed work together.[3] In compliance with the Secretary's directive, on 1 June 1948[4] the Department of Defense merged NATS and ATC to form MATS, the first time in the history of the United States that the forces of two services were combined under a single unified command structure.[5] In sum, Oliver LaFarge contends that MATS was not as unified as the Department of Defense claimed:

> The Navy has to some extent surrendered command control over its long-range transports to the Air Force, but it has done so in such form that if the opportunity should arise, the Navy could take them back. The personnel from the Navy remain Navy personnel, in Navy uniform. Their aircraft remain Navy property, and can be serviced and maintained only by Navy crews. So little has the old NATS been 'unified' into MATS that it was headline news when Navy transports joined the Air Force ones on the Berlin air lift![6]

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[2] Richard J. Burkard, *Military Airlift Command: Historical Handbook, 1941 - 1984* (Scott AFB, IL: MAC Command Historical Office, December, 1984) 3.

[3] Herman S. Wolk, *Planning and Organizing the Postwar Air Force 1943 - 1947* (Washington, D.C.: Office of Air Force History, 1984) 221.

[4] Stanley M. Ulanoff, *MATS: The Story of the Military Air Transport Service* (New York: Franklin Watts, Incorporated, 1964), p. 12.

[5] Wolk, *Planning and Organizing the Postwar Air Force*, 221. Although MATS was technically a unified command, the ratio of the force composition was overwhelmingly in favor of the Air Force, which contributed 80,000 personnel as compared to the Navy, with just 4000 personnel. See Tunner, 156.

[6] Oliver LaFarge, *The Eagle in the Egg* (Boston: Houghton, 1949) 272.

Secretary Forrestal ordered that MATS be held responsible to, and its commander be appointed by, the Chief of Staff of the Air Force. Major General Kuter was appointed as the first commander. The vice commander came from the Navy. So, rather than having a four-star general in command of the entire DOD strategic airlift force composition, the position was filled by a two-star general. In comparison, the Strategic Air Command (SAC) was commanded by a four-star general. This was indicative of the relative priority given to airlift during this time frame. According to General Tunner:

> MATS' mission, by direction of the JCS, is to provide airlift for the Department of Defense, both on a routine and emergency basis. In order to do this, its planes, crews and ground personnel must be in a constant state of readiness. In accordance with U.S. national strategy, MATS moves men, weapons and material within the United States and from one continent to another. *It must be able to furnish immediate resupply of both bomber and missile bases of SAC* [emphasis added].[7]

Airlift Force Structure: Pre-Berlin and Korea

Soon after the Second World War, Fairchild Corporation took unilateral measures to modify the C-82 to bolster its performance so that it could transport heavier loads. The result of this modification program was the C-119 Flying Boxcar, which made its first flight toward the end of 1947.[8] In addition to Fairchild's independent efforts, during the course of the Berlin airlift, the newly founded U.S. Air Force contracted with the Douglas Corporation to make significant modifications to the C-74 so that it would be able to

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[7] By its very mission statement, it is evident that MATS was considered a support service for SAC. See Tunner, 283.

[8] Alfred Goldberg, ed., *A History of the United States Air Force: 1907 - 1957* (Princeton: D. Van Nostrand Company, Inc., 1957) 212. This aircraft had a wider fuselage, stronger wings and more powerful engines than the C-82. Used primarily by troop carrier wings, this aircraft had large, rear-mounted "clamshell" cargo doors which were conducive to airdrop operations and simplified loading and unloading operations on the ground. The C-119G model was able to transport 62 soldiers, 40 paratroopers or 30,000 (15 tons) pounds of cargo. See Eichhorst, 91.

accommodate larger and heavier Army equipment than was yet possible. The result of this modification effort was the totally revamped C-124 Globemaster II, which flew its maiden test flight in November of 1949, just a half year before hostilities erupted in Korea.[9] Secretary of Defense Louis Johnson began slashing the Defense budget in the fall of 1949. As a result of his efforts, MATS' utilization rate per aircraft was reduced to just 2.8 hours per day, with just one crew assigned per aircraft.[10]

Airlift Doctrine: Pre-Berlin and Korea

Since its beginnings, Air Force leaders have agreed that airpower should be "developed and controlled by airmen, independent of restraints by the older services."[11] ATC historical accounts note that "considering the divorce from the Army in 1947 had been a difficult one, the Air Force has sought to prove it has a mission and a significance beyond that of supporting ground operations." Although airlift had been recognized as one of the primary Air Force missions, its "ties to the Army ... probably affected the standing the larger Air Force ... g[a]ve the airlift mission." It was largely viewed as an "auxiliary capability, not contributing directly to the quest for air superiority or strategic bombardment."[12]

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[9] Goldberg, *History of the U.S. Air Force*, 212. The C-124 was much larger than any previous airlifter, able to carry 74,000 pounds (37 tons), which was more than twice as much as any other transport aircraft of its era. In a passenger configuration, it could carry 200 troops or in an aeromedical configuration, 127 patients on stretchers. It was a unique design in that it had large front-mounted clamshell doors, which allowed for the loading of "over 90% of the U.S. Army's Field Force vehicles ... fully assembled." See Eichhorst, 93.

[10] In comparison, commercial airlines had an 8-to 12-hour utilization rate, and had a 3-to-1 ratio of crews per aircraft. See Tunner, 227.

[11] Thomas H. Greer, *The Development of Air Doctrine in the Army Air Arm 1917 - 1941* (Washington, D.C.: Office of Air Force History, 1985) 128.

[12] *Anything, Anywhere, Anytime: An Illustrated History of the Military Airlift Command: 1941 - 1991* (Scott AFB, IL: MAC Office of History, 1991) 203.

The seeds of American Cold War policy were planted in a 16-page cable from the U.S. Embassy in Moscow to the Department of State written by George Kennan in February of 1946. Kennan's argument provided the catalyst for the U.S. policy of "containment," which called for the need to "imprison communism, politically, economically, and socially, within its existing boundaries."[13]

Containment provided the intellectual foundation for the Truman Doctrine. The international situation by the 1947 time-frame was such that the Soviet Union had established hegemony over Eastern Europe and was now trying to do the same in Greece. To counteract this threat, on 12 March 1947, President Truman proclaimed that "it must be the policy of the United States to support free peoples who are resisting attempted subjugation by armed minorities or by outside pressures." Furthermore, he stated the support should be in the form of "economic and financial aid, which is essential to economic stability and orderly political process."[14]

Further expanding upon the Truman Doctrine, Secretary of State George Marshall announced a European Recovery Program, later known as the "Marshall Plan," at the Harvard University commencement in June of 1947. He stated that the goal of American policy "should be the revival of a working economy in the world so as to permit the emergence of political and social conditions in which free institutions can exist."[15] In the

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[13] The purpose of the telegram was to explain to U.S. policy-makers his understanding of Soviet foreign policy and to suggest how the United States should respond. His memorandum was distributed throughout the tiers of government and later printed as the well known "Mr. X" article in the July 1947 edition of *Foreign Affairs*. See Alexander George and Richard Smoke, *Deterrence in American Foreign Policy*, 11 - 34, in John E. Endicott and Roy W. Stafford, Jr., eds., *American Defense Policy*, 4th ed. (Baltimore: Johns Hopkins University Press, 1978) 55.

[14] Morton H. Halperin, *Defense Strategies for the Seventies*, (New York: Little, Brown, and Company, 1971) 87 - 98 in Endicott and Stafford, 160.

professional opinions of James Nathan and James Oliver, the forces of containment, the Truman Doctrine, and the Marshall Plan together moved the Soviet-American relationship "from the crumbling edge of a tenuous wartime alliance into a crevice of distrust, fear, and ultimately, terror" of the Cold War.[16]

The Truman Doctrine had proclaimed an over-arching commitment on the part of the United States to "intervene everywhere in the world where governments might be threatened by communism." However, at first this doctrine was only observed in Europe.[17] Nevertheless, this strictly Eurocentric focus of the Truman Doctrine was short-lived when in 1949 Nationalist China first fell to the forces of communism and then in December consummated the *Sino-Soviet Treaty of Friendship, Alliance and Mutual Cooperation* with the Soviet Union. This new turn of events, "propelled the administration logically toward the extension of the containment principle to include the Far East."[18] Moreover, given that several months before, the Soviets had detonated an atomic device on 22 September 1949, this new Sino-Soviet partnership threatened the very core of America's nuclear-based defense policy.[19]

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[15] James A. Nathan and James K. Oliver, *United States Foreign Policy and World Order* (Boston: Little, Brown and Company, 1976) 86.

[16] In essence, the Marshall Plan defined the extent to which the Truman Doctrine's foreign assistance plan would be in the form of European economic revitalization. See Nathan and Oliver, 92.

[17] In 1948 Secretary of State Marshall "pointedly refused ... to extend it to China," and until 1950 it had only been applied to the European states of Greece and Turkey. See Norman A. Graebner, "The Extension of the Cold War to Asia," in *The Origins of the Cold War*, ed. Thomas G. Paterson, 2d ed. (Lexington: D.C. Heath & Co., 1974) 186. Shortly after Nationalist China fell to the forces of communism, the *State Department's White Paper on China* had viewed the Chinese capitulation as a "legitimate expression of popular approval and thus [constituted] no real challenge to Asian stability." See Graebner, 188.

[18] This benign viewpoint of the Chinese Revolution was challenged when George Kennan responded in a radio interview that perhaps China had been "induced to accept a disguised form of foreign rule." According to the treaty's provisions, China was guaranteed "considerable financial and technical aid." See Graebner, 188.

Throughout the months of February and March 1950, Paul Nitze headed the State Department's Policy Planning Office that devised Policy Paper Number 68 (NSC-68). Concluding that the United States and its allies must maintain military superiority over the Soviet Union, NSC-68 basically called for the U.S. to "greatly increase its strategic capabilities, and simultaneously increase NATO conventional forces in Europe to deter the Red Army."[20] In essence, NSC-68 was an extension of the Truman Doctrine.[21] The immediate problem of NSC-68 was that it would be too costly to implement under normal circumstances. Therefore, when he received the final draft in early June 1950, Truman decided to keep NSC-68 under wraps, at least until after the November mid-term elections.[22]

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[19] The combination of the Soviet bomb, China's submission to communism and the Berlin blockade, led Truman to reassess America's strategic doctrine. On 30 January 1950 Truman tasked the Departments of State and Defense to: "make an overall review and reassessment of American foreign and defense policy in light of the loss of China, the Soviet mastery of atomic energy and the prospect of the fusion bomb." See Stephen Ambrose, "The Military Dimension: Berlin, NATO and NSC-68," in *The Origins of the Cold War*, ed. Thomas G. Paterson, 2d ed. (Lexington: D.C. Heath & Co., 1974) 181.

[20] NSC-68 was first published in draft form on 12 April 1950 by the National Security Council. See Alexander George and Richard Smoke, *Deterrence in American Foreign Policy*, 11 - 34, in John E. Endicott and Roy W. Stafford, Jr., eds., *American Defense Policy*, 4th ed. (Baltimore: Johns Hopkins University Press, 1978) 56.

[21] NSC-68 justified America's assumption of the role of the "world's policeman" based upon a comprehensive analysis by the State Department Policy Planning Office that the Soviet Union was driven to "expand and consolidate power by absorbing new satellites and weakening any competing system of power." See Ambrose, 182.

[22] Given that it would have necessitated tripling the defense budget, NSC-68 would have imposed a much higher tax burden on the American public. Although no definitive price tag was attached to this open-ended project, it did assume that the U.S. was wealthy enough to dedicate "20% of its GNP for arms without suffering national bankruptcy," which equated to $50 billion in 1950. Truman believed that "without a major crisis, there was little chance of selling the program to Congress or the public." See Ambrose, 183 - 184.

The Berlin Airlift

Introduction

Not surprisingly, at the beginning of the Berlin Airlift USAFE, rather than MATS, was called into action. Only at the urgent request of Army General Wedemeyer and others would an airlift task force be formed under the command of General Tunner. Tunner's combined operation would be able to accomplish its mission more effectively than USAFE had done, and with less support. Probably the most important outcome of that airlift operation would be the realization of the military importance of airlift, especially in the Cold War era. With this new importance would come the impetus, led by Secretary of the Air Force Symington, to develop the C-124 Globemaster, the first four-engine, long-range airlifter designed to specifications and able to deliver outsized cargo. It was to serve as the backbone of the strategic airlift fleet until the 1960s.

Avi Shlaim views *"crisis* as a situation which involves change in the normal interaction patterns between states or in the international system as a whole."[23] Glenn Snyder and Paul Diesing define an "international crisis," in particular, as "a sequence of interactions between the governments of two or more sovereign states in severe conflict, short of actual war, but involving the perception of a dangerously high probability of war."[24] Shlaim finds specifically "that the imposition of the Soviet blockade on the

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[23] Avi Shlaim, *The United States and the Berlin Blockade, 1948 - 1949: A Study in Crisis Decision-Making* (Berkeley: University of California Press, 1983) 4.

[24] Glenn H. Snyder and Paul Diesing, *Conflict Among Nations: Bargaining, Decision-Making and System-Structure in International Crises* (Princeton: Princeton University Press, 1977) 6.

western sectors of Berlin on 24 June 1948 constituted a 'crisis' for the United States as defined ... there can be no doubt [emphasis added]."[25]

The case of Berlin is different from the others in that it takes place during a crisis short of armed conflict. Moreover, in this case, airlift plays the primary, rather than a supporting, role. The only conceivable way to keep the city thriving short of armed conflict was to attempt an airlift supply operation. Although the Hump operation had proven the capability of airlift to support a major combat operation, throughout history no attempt had ever been made to support a major city solely through an airlift.

USAFE's Ad Hoc Airlift

On 30 March 1948, the Soviet Deputy Military Governor for Germany, Lt. General Dratvin, notified U.S. military officials in Berlin that effective 1 April, "supplementary provisions regarding communications between the Soviet and U.S. zones of occupation in Germany would go into effect." According to the terms of these provisions, U.S. military personnel were to be granted restricted access to the Soviet Sector of Germany, which was "contrary to practice established since the quadripartite occupation."[26] General Lucius Clay, the U.S. Military Governor in Germany, immediately recommended to Washington that Allied forces should not comply to these unwarranted Soviet demands. Instead, Clay

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[25] Shlaim, *The U.S. and the Berlin Blockade*, 11.

[26] According to the Soviet restrictions: "(1) U.S. personnel traveling through the Soviet zone by rail and highway must present documentary evidence of identity and affiliation with the U.S. Military Administration of Germany; (2) Military freight shipments from Berlin to the Western zones must be cleared through Soviet check points by means of a Soviet permit; (3) All baggage must be inspected at Soviet check points, with the exception of personal belongings of U.S. personnel carried in a passenger railway car or a passenger automobile." See U.S. Department of State, *The Berlin Crisis: A Report on the Moscow Discussions 1948*, Pub. 3298, European and British Commonwealth Series 1 (Washington, D.C.: U.S. Government Printing Office, 1948) 1 - 2.

suggested that the U.S. should respond in kind by sending a "test train with a few armed guards ... across the zonal border." The administration went along with Clay's suggestion.[27]

The test train was launched on 1 April 1948, and the Soviets diverted it to a holding station, where it sat for a few days before "withdr[awing] under its own power." The Department of Army next urged Clay to evacuate the military dependents from Berlin. Clay held to the view that the dependents should stay, as "*we could support the Americans in Berlin indefinitely with a very small airlift.*"[28] Therefore, rather than capitulate, the "U.S. occupation authorities organized the *Little Airlift*," in which "goods and personnel" were flown between Wiesbaden and the western garrison in Berlin.[29] Beyond supplying the U.S. Army garrison in West Berlin with military supplies, "the exercise was intended to demonstrate the intention of the Americans not to yield."[30] Shlaim claims that "the imposition by the U.S.S.R. of the partial blockade ... on April 1 transformed Berlin from a problem of occupation policy into the subject of a major international crisis [emphasis added]."[31]

The next day, on 2 April 1948, the Soviets blocked civil freight train access to Berlin from both Hamburg and Nuremberg. On 9 April, the U.S.S.R. made an official

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[27] Clay contended that the restrictions were clearly "inconsistent with the free and unrestricted right of access in Berlin." See Jean E. Smith, *The Defense of Berlin* (Baltimore: Johns Hopkins University Press, 1963) 104.

[28] Smith, *The Defense of Berlin*, 104.

[29] Jean E. Smith, "Berlin Confrontation," *Military Review* 46:7 (July 1966): 28.

[30] This operation consisted of 30 C-47 sorties flown by USAFE's 53rd Troop Carrier Squadron. The C-47s flew 275 miles from Rhein-Main "along the southernmost air corridor to Berlin." See David W. Wragg, *Airlift: A History of Military Air Transport* (Novato: Presidio Press, 1986) 75 - 76.

[31] Shlaim, *The U.S. and the Berlin Blockade*, 35.

announcement that "all German freight trains on the Berlin-Helmstedt line (the one remaining line) would require individual clearances from the Soviet Military Authority." Again, the Secretary of the Army sought Clay's advice, who remained firm in his convictions not to yield to the Soviets.[32] The Secretary followed Clay's advice for the time being. Meanwhile, during the next two months of April and May, Clay's "*Little Airlift continued to bring in supplies for the American personnel*" stationed in Berlin.[33] As Clay describes the events:

> Our remaining in Berlin, dependent on air supply and cut off from the rest of the world by land and water, was soon taken for granted. The small airlift we started to meet our needs did not have the dramatic appeal of the great airlift that later supplied all the civilian population of western Berlin [emphasis added].[34]

Not long afterwards, the Soviets evicted the U.S. Army Signal Corps. On 13 April the German police in the Soviet zone were integrated with the Soviet police force. A week later Allied barge traffic was restricted and barely two weeks after that "additional documentation requirements were placed on all freight shipments." On 10 June, as Soviet soldiers were trying to take locomotives and rolling stock from the U.S. sector, they were forcefully stopped by U.S. Army military police. In response, the U.S.S.R. stopped all rail movement between Berlin and the Allied sectors in Germany for the next two days. Moreover, this same day the Soviets shut down the Berlin-Helmstedt

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[32] Clays wrote: "Why are we in Europe? We have lost Czechoslovakia. We have lost Finland. Norway is threatened. We retreat from Berlin. ... After Berlin, will come western Germany and our strength there relatively is no greater and our position no more tenable than Berlin. If we mean that we are to hold Europe against Communism, we must not budge." See Top Secret Teleconference TT-9341, General Lucius Clay and General Omar Bradley, 10 April 1948, reprinted in Jean Edward Smith, ed., *The Papers of General Lucius D. Clay: Germany 1945 - 1949*, vol. 2 (Bloomington: Indiana University Press, 1974) 623.

[33] Smith, *The Defense of Berlin*, 105.

[34] Lucius D. Clay, *Decision in Germany* (Garden City: Double Day, 1950) 361.

autobahn, allegedly to "repair the Elbe River bridge." Four days later, the Soviet Commandant withdrew his membership from the Kommandatura, thus as Smith explains, "the split of the quadripartite control machinery was now complete."[35]

As all of these events had been transpiring, the Soviets were printing counterfeit U.S. dollars and circulating them in the Berlin market, thus artificially inflating U.S. currency in Germany. To guard against inflation, on the 18th of June, the Kommandatura (minus the Soviet Commandant who had walked out) announced that the Western sectors in Germany would be undergoing currency reform, but that Berlin would be unaffected. In response, the Soviets severed all passenger movement to Berlin and stopped all freight transport leaving Berlin, except for the return of empty boxcars. Shortly thereafter, on 23 June, the Soviets announced that they would be implementing their own currency reform, which would apply to the Soviet-occupied territory of Germany, including all sectors of Berlin. Generals Clay and Sir Robertson jointly responded that the previously announced currency reform would now apply to the Allied sector of Berlin as well.[36] According to Clay, he was given the discretion to make a final decision either way he saw fit.[37]

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[35] The U.S. Army Signal Corps had been responsible for running the communications network between Berlin and the U.S. sector of Germany. The Kommandatura was the four-power military governing body Berlin, composed of representatives from the U.S., U.K., France and U.S.S.R. See Smith, *The Defense of Berlin*, 105.

[36] The U.S.S.R. had been given the duplicate U.S. monetary plates three years prior, when they were Allies in the war effort. According to the provisions of the Western currency reform: "the Western sectors of Berlin would convert to their own currency (i.e., the new West German currency with a 'B' superimposed) simultaneously with the conversion in the Soviet sector. The two currencies would then circulate together throughout the city and would be interchangeable at par." They justified their actions by stating that "to have allowed the new Soviet currency to be introduced into all of Berlin would mean turning the city over to the Russians," meaning, according to Clay, that they would be "guests in Berlin." See Smith, *The Defense of Berlin*, 106 - 114.

[37] Clay had previously been advised by Washington on 29 April that: "if we failed to obtain agreement for the use of a common currency in Berlin, separate from that used either in west or east Germany, our government did not view the use of the Soviet currency as acceptable politically. Our acceptance would mean

Also on 23 June, the City Assembly attempted to convene at City Hall to take action to resolve the conflict over the two competing currency reform measures. However, given that City Hall was located in the Soviet sector, the police had allowed thousands of Communist demonstrators to gather in front of the entrance, blocking the Assembly from convening. This situation continued until the demonstrators were signaled to leave by members of the Communist SED delegation. Finally able to convene, the Assembly voted to restrict the Soviet currency reform measures only to the Eastern sector of Berlin.[38] The showdown had begun.

At 6:00 AM on 24 June 1948 the Soviet Military Administration instituted a full blockade on West Berlin. All surface access to Berlin was frozen due to what the Soviets only described as "technical difficulties."[39] General Howley, the U.S. Commandant in Berlin, notes that militarily "we had only two battalions of troops, which would have been powerless against the Soviet panzer divisions."[40] For its part, the Soviets had "30 full-strength divisions in the Eastern zone."[41] Because of its drastic demobilization measures, "the Allied camp was much like that of England and France in 1940."[42]

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a recognition of Soviet sovereignty in Berlin." See Clay, *Decision in Germany*, 364.

[38] The Assembly members from the West were literally attacked by the Communists when they left City Hall, and Jeanette Wolff, an SPD Assembly-woman, was critically injured. As Smith relates, "the courageous behavior of the members of the city assembly in the face of the Communist mob did much to rally the people of the Western sectors to resistance." See Smith, *The Defense of Berlin*, 115.

[39] Clay, *Decision in Germany*, 362 - 365. Furthermore, they announced that electricity would only be supplied to the Western sector of Berlin during the hours of 11:00 PM and 1:00 AM. See Smith, *The Defense of Berlin*, 115. Clay notes that "later, the Soviet representatives claimed that the blockade had been imposed to prevent the currency reform undertaken in western Germany from having an adverse effect on the economy of the Soviet zone." Clay, *Decision in Germany*, 362.

[40] "But our men had orders to shoot if the Russians came over. ... Such an encounter would have meant war with the United States, and eventuality that the Communists wished to avoid. So the Kremlin took the more ruthless way - conquest by starvation." See Frank L. Howley, *Berlin Command* (New Yok: Putnam, 1950) 10.

[41] Thomas E. Eichhorst, *Military Airlift: Turbulence, Evolution and Promise for the Future* (Maxwell

As far as bare essentials, Clay notes that at the time of the initial imposition of the blockade, "our food stocks on hand were sufficient to last for thirty-six days and our coal stocks for forty-five."[43] As he had foreseen the possibility of a total blockade approaching for several months, he had been able to at least build up this meager inventory, however it was done "with considerable difficulty as *our transportation into Berlin was never adequate.*" Clay's staff calculated that a "minimum economy" could be sustained with "4,000 tons for the German population" and "500 tons for the Allied occupation forces."[44] Nevertheless, he was not overly concerned, because popular opinion was that the blockade was going to be a temporary measure. The original purpose of the airlift was to help replenish the rations in Berlin as the negotiations came to a swift end [emphasis added].[45]

Given the success of the "Little Airlift," it was already known that the military personnel in Berlin could be supplied solely by air. Moreover, the U.S. Air Forces Europe Headquarters staff at Wiesbaden was "already working on plans for increasing the number of cargo flights to Berlin." Nevertheless, two critical questions remained:

AFB, AL: Air University Press, 1991) 13.

[42] "The U.S. was unable to send more than one additional division overseas without ordering a partial mobilization. Even then there was a serious question of where the transportation would come from. The atomic bomb remained the bulwark of Western defense but few gave serious consideration to its employment" See Smith, *The Defense of Berlin*, 102.

[43] Clay, *Decision in Germany*, 365. He reported at the time to Under Secretary of the Army Draper that "as matters now stand, the German population will begin to suffer in a few days and this suffering will become serious in two or three weeks." See Top Secret Memorandum CC 4875, General Clay to Secretary Draper, 25 June 1948, reprinted in Smith, *Papers of General Clay*, 697.

[44] Clay describes a "minimum economy" as follows: "This minimum would not maintain industrial output or provide for domestic heating and normal consumer requirements. ... The [electrical] capacity which remained could provide electricity for essential purposes only a few hours each day, and even these hours of use had to be staggered for the various parts of western Berlin." See Clay, *Decision in Germany*, 365.

[45] Prior to the blockade, Berlin had imported 15,500 tons daily and General Clay calculated that 700 tons per day was all that his forces would be capable of handling. See Tunner, *Over the Hump*, 159.

> Would the German population be able to hold out in view of the very limited supplies which at best could be made available; and *was a greatly expanded airlift technically feasible* [emphasis added]?[46]

As the Military Governor of U.S. sector and the de facto leader of the Western Alliance, General Clay bore the primary burden of decision. As his staff was divided in opinion, the decision genuinely was his alone to make. He first met with Mayor Reuter to get his assurance that the Germans in the Western sector of Berlin would be willing to make extreme personal sacrifices for their freedom. Reuter responded unhesitatingly that "the Berliners were prepared to fight for their liberties and would not give in."[47]

Having been assured of popular support, General Clay phoned Lt. General Curtis LeMay, the Commander of U.S. Air Forces in Europe (USAFE), to order him to "mobilize all the aircraft at his disposal and prepare to lift supplies into Berlin the following day."[48] LeMay estimated that 225 tons per day was the best his two groups would be able to provide. In order to meet the 500 tons per day required for the U.S. military occupation forces, he would require an additional thirty 10-ton capacity C-54s.[49]

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[46] W. Phillips Davison, *The Berlin Blockade: A (RAND) Study in Cold War Politics* (Princeton: Princeton University Press, 1958) 105.

[47] Smith, *The Defense of Berlin*, 107. As a show of resolve, the day the blockade was imposed 80,000 Berliners attended a rally where both Reuter and the SPD Party Chairman, Franz Neumann, spoke. Reuter jeered the Soviets for "trying to use the look of hunger and the specter of economic blockade to achieve that which they were not able to attain with raw violence in front of City Hall." To a cheering crowd, Neumann vowed that: "More than ever the eyes of the world are focused on Berlin. Yesterday the Communists Grotewohl and Pieck, following the model of Hitler and the example of Prague, tried to seize power in Berlin by terror. But they miscalculated ... Berlin will remain free, it will never become Communist. " See Smith, *The Defense of Berlin*, 115.

[48] Smith, *The Defense of Berlin*, 107. The only airlift assets stationed in Europe were 100 3-ton capacity C-47s, most of them assigned to the 60th and 61st Troop Carrier Commands. See "A Special Study of Operation Vittles, "Aviation *Operations* 11:5 (April 1949): 6. The units were part of the USAFE Operations Directorate's European Air Transport Service (EATS). See Laurence S. Kuter, "Vittles - The Air Supply of Berlin: On Every Count, the Greatest Air Transport Operation the World Has Seen, "U.S. *Air Services* 34:2 (February 1949): 9.

[49] Miller, *Airlift Doctrine*, 177.

General LeMay immediately ordered his maintenance personnel to ensure that all of his assigned aircraft (including B-17 bombers) were preflighted for the next day's mission. Given that the airlift force in USAFE consisted almost exclusively of the 3-ton capacity C-47s, both Clay and LeMay knew that "*an adequate airlift would require bigger planes.*" Therefore, if they could at least demonstrate with the C-47 that it was possible to operate 400 sorties per day into Berlin, with a fleet of 10-ton capacity C-54s deployed to Germany, it would be possible to airlift 4,000 tons per day [emphasis added].[50]

U.S. participation in the Berlin airlift officially began on 26 June 1948 when USAFE conducted 32 C-47 sorties, delivering 80 tons of goods into Tempelhof Airport.[51] Smith asserts that "by so doing, [Clay] set in motion one of the great victories which the West was to achieve over communism."[52] Although a historical precedent had been set by the U.S. Army Air Force flying the Hump in the China-Burma-India theater during the Second World War, nevertheless, Berlin was a much different situation in that "British and American air transport services had been wound down rapidly at the end of the war, *aircraft had been scrapped* and replacements built for small peacetime needs."[53] Clay

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[50] Davison notes that "since many of these aircraft did not have assigned crews, pilots were detailed from desk jobs and other types of duty." See Davison, *The Berlin Blockade*, 105.

[51] Gerald A. Harty, "Operation Vittles - The Berlin Lifeline," *Army Information Digest* 3:11 (November 1948): 9. The C-47s of the 61st Transport Group, based at Wiesbaden Air Base, each carried approximately three tons of "milk, flour and medical supplies" on the first day of the airlift. See Wragg, *Airlift*, 76 - 77.

[52] "Significantly, the decision to act in Berlin had been made by the commander on the spot. His staff had been divided, Washington had offered no encouragement, and the Allies, Great Britain, and France, were still pondering what to do." See Smith, *The Defense of Berlin*, 108.

[53] The Tusas point out that the Hump was "only possible because of detailed forward planning and the use of the immense resources released in wartime." See Ann Tusa and John Tusa, *The Berlin Blockade* (London: Hodder & Stoughton, 1988) 145 - 146.

reflects that at the point of the airlift's inception "*the resources which we had within the theater to defeat the blockade were limited* [emphasis added]."[54]

The type of flying conditions would be much different. Whereas in China the airlifters had flown in corridors fifty to two-hundred miles wide, the Berlin corridors were only 20 miles wide and closely monitored by the Soviets for any violations. Moreover, the airfields in China and India had been custom built to accommodate airlift operations. In Germany, on the other hand, the field at U.S. Air Force base at Rhein Main had been constructed as a Zeppelin base and later converted by the Luftwaffe to a fighter base. Given that the runway was built of Marston matting (steel mesh), it would be very tough on tire wear. The fields in Berlin, on the other hand, were much better designed for transport operations, especially the American sector's Tempelhof, which had been designed to be the major passenger terminal in Berlin and was supposedly one of the largest buildings in world.[55]

On 26 June General LeMay asked the Air Staff to send a C-54 group to augment his C-47s.[56] The next day, LeMay delegated the responsibility of managing the airlift to

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[54] "Our transport and troop carrier planes, although more than 100 in number, were C-47s, twin-engine planes of about two and a half tons cargo capacity, and many of them had seen hard war service. The British resources were even more limited. There were no French transport planes to be made available." See Clay, 365.

[55] The British RAF Base at Wunstof had originally been built as a grass field for bomber operations and was later converted by the Luftwaffe to a fighter base. Although the British laid concrete on the 2000-foot runway and covered it with tarmacadam, it had few hardstands for loading aircraft and it did not have a paved taxiway. The British sector's Gatow, on the other hand, had been originally designed to be a Luftwaffe flight training base and was later converted to a fighter base. As it was not intended for transport operations, the hard stands were nothing more than bricks placed in sand, so that they could not accommodate too much weight. See Tusa and Tusa, *The Berlin Blockade*, 146 - 147.

[56] LeMay also asked to accelerate the process of converting his C-47 groups to C-54s. See Miller, 177. Davison asserts that "according to later press reports, additional aircraft took off and headed for Germany within two hours after this cable was received." See Davison, 108.

Brigadier General Joseph Smith, the Commander of Wiesbaden Air Base. As of 29 June, the only transport aircraft at the disposal of the U.S. were 102 C-47s, and two C-54s, while the British had a few C-47s.[57] On the 29th, the American C-47s could only manage to deliver a total of 384 tons to Berlin.[58] General Kuter, the Commander of MATS, points out that *EATS "was physically incapable of getting more than a trickle of the necessary food and other supplies through to a population the size of Western Berlin's."*[59] Meanwhile, General Clay sent a Top Secret Memorandum to Under Secretary of the Army Draper pleading for additional transport aircraft. Clay also addressed the need for the immediate dispatch of tactical fighters and strategic bombers to Europe as a deterrent force [emphasis added].[60]

The reaction in Washington to Clay's response was mixed. The newly formed Department of Defense was concerned that a direct confrontation with the Soviets in Berlin could lead to war. To press their case, Secretary of Defense James Forrestal,

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[57] Tunner, *Over the Hump*, 159. These aircraft were assigned to the USAFE's 60th and 61st Air Transport Groups, and the RAF's 24th and 30th Squadrons, respectively. See Wragg, 77.

[58] Wragg, *Airlift*, 77.

[59] Kuter, "Vittles - The Air Supply of Berlin," 9.

[60] 1. "I have already arranged for our maximum airlift to start on Monday. For a sustained effort, we can use 70 Dakotas. Our two Berlin airports can handle in the neighborhood of fifty additional airplanes per day. These would have to be C-47s, C-54s, or planes with similar landing characteristics as our airports cannot take larger planes. LeMay is urging two C-54 groups. With this airlift, we should be able to bring in 600 or 700 tons a day. While 2000 tons a day is required in normal foods, 600 tons a day will substantially increase the morale of the German people and will unquestionably seriously disturb the Soviet blockade. To accomplish this, it is urgent that we be given approximately 50 additional transport planes to arrive in Germany at the earliest practicable date, and each day's delay will of course decrease our ability to sustain our position in Berlin. Crews would be needed to permit maximum operation of these planes." 2. "With respect to the augmentation of air forces, I am quite sure that this too is urgent. ... They [the Soviets] are definitely afraid of our air might. Moreover, arrival of aircraft will be deciding factor in sustaining Allied firmness. I would like to urge as strongly as possible that: (A) The movement of the fighter group scheduled to take place in August be made immediately; (B) That the squadron of B-29s now maintained in Germany be increased to a group immediately where they will be welcomed. ... If these actions are to be effective, speed in decisions and in dispatch of aircraft is essential." See Top Secret Memorandum CC 4910, General Clay to Secretary Draper, 27 June 1948, reprinted in Smith, *Papers of General Clay*, 708.

Secretary of the Army Royall and Under Secretary of State Robert Lovett stayed behind following the Cabinet meeting held on Friday, 25 June, to urge President Truman to exercise "caution and restraint" in this crisis. However, the next day, Truman came down decidedly on Clay's side, so that "*at the President's personal order*, every available plane in the European Command was pressed into service and the airlift to Berlin put on a full-scale basis."[61] Lovett reflects on the decision that the NSC was "confident that we could do the job ultimately by *the same techniques that we had used in lifting approximately 70,000 tons in one month over the Hump* from India to China at very high altitudes.[62] However, even if strict conservation measures were able to curtail Berlin's imports by 75%, "it would still require more lift than the Hump operation ever achieved." In addition to the higher demands posed by Berlin, *the U.S. Air Force's airlift force structure of "the same C-47s and C-54s" had been drastically reduced from "3,088 aircraft in 1945 to 511 aircraft in 1946* [emphasis added]."[63]

That Sunday, Secretary of the Army Royall held a meeting of "the various Secretaries and service chiefs" to construct a comprehensive Monday morning briefing for the President.[64] Mills highlights the fact that although "the Berlin crisis had been long in

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[61] Smith, *The Defense of Berlin*, 108. During this preliminary stage, the President thought of the airlift "as a means of stretching existing rations and gaining more time for diplomatic negotiations," as "few believed it could supply Berlin very long." See Davison, *The Berlin Blockade*, 108. According to David Wragg, "the necessary impetus for organization and the provision of all the resources required came from the President." See Wragg, 77.

[62] Lovett elaborates: "After discussion with the military services ... and ... throughout the National Security Council and finally with the President and the appropriate committees of Congress to whom I reported, we decided to stand firm in Berlin." See Eichhorst, *Military Airlift*, 13 - 14.

[63] Eichhorst points out that Lovett had made a faulty comparison between Berlin and Burma given that "the 70,000-ton figure ... was never sustained and ... Berlin imported 465,000 tons per month *before* the blockade!" See Eichhorst, *Military Airlift*, 14.

[64] Smith, *The Defense of Berlin*, 109. Those in attendance included Secretary of Defense Forrestal,

the making, ... when it finally broke, the response was this *ad hoc* meeting at 4:00 PM on a Sunday afternoon in the Pentagon, which ... incidentally *overlooked the potentialities of the airlift.*"[65] Davison confirms that "as far as one can determine, the meeting in Secretary Royall's office was the first time Washington had faced squarely the question of counteraction to the Soviet blockade attempt.:

> Even then, *relatively little attention was given the airlift, whose potentialities were still not appreciated.* But this was not surprising, in view of the skepticism that still prevailed *even in U.S. Air Force headquarters in Europe* about the degree to which the airlift could be expanded [emphases added].[66]

With a 30-to-60 day scenario in mind, the policy makers considered three alternative courses of action:

> (1) to decide now to withdraw from Berlin at some appropriate time; (2) to decide to defend the U.S. position in Berlin by all possible means; or (3) to maintain a firm stand in Berlin while postponing the ultimate decision. [67]

At the conclusion of the meeting it was decided that Forrestal, Royall and Lovett were to brief the President the next morning.[68]

Under Secretary of State Lovett, Navy Secretary Sullivan, Army Chief of Staff General Bradley, and Air Force General Norstad. See Davison, *The Berlin Blockade*, 109.

[65] Smith notes that Secretary Forrestal "paints a grim picture of bureaucratic indecision" in his diary. Walter Mills, who edited *The Forrestal Diaries*, remarks: "This entry is striking in a number of ways. Where, one is forced to ask, was all the elaborate machinery which had been set up to deal with such situations - the CIA, which was supposed to foresee and report the approach of the crisis; the National Security Council (NSC), which was supposed to establish a governing policy?" See Smith, *The Defense of Berlin*, 109.

[66] Davison, *The Berlin Blockade*, 110.

[67] The assumption of all the participants was that, with the airlift, the present inventory of food should last for thirty days. It was thought that the city's endurance could be extended to sixty days with the introduction of dehydrated foods. See Davison, 109.

[68] Meanwhile, they agreed to get General Clay's opinion concerning the deployment of two more B-29 squadrons to Germany and ask Ambassador Douglas to get permission to base two B-29 groups in England. See Davison, 110.

The following Monday 12:30 PM meeting at the White House left no doubt where the President stood on this issue when asked to consider whether the U.S. should remain in Berlin. Truman replied that "the United States is going to stay. Period."[69] General Clay concurred with the decision via telecon from Berlin.[70] After being informed of the President's decision by Clay, General LeMay announced that same day that USAFE would "expand the airlift to include the civilian inhabitants of Berlin with a 24-hour per day, no-holidays effort."[71]

On 30 June, Marshall announced the President's decision to stay in Berlin. Concerning the airlift, Marshall stated that "it has been found that the tonnage of foodstuffs and supplies which can be lifted by air is greater than had first been assumed." The entire concept of an airlift was now perceived in a different light than it had been just a week prior. The Tusas point out that "the whole concept of air supply had been transformed, *the main limitation on the American effort now seemed to be shortage of trained men for servicing and flying* [emphasis added].[72]

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[69] Following the President's remark, Secretary Royall queried whether the President had "thought through" the potential consequences if it should become necessary to "fight our way through to Berlin." The President replied in no uncertain terms that: "We are in Berlin by terms of an agreement and the Russians have no right to get us out by either direct or indirect pressures." See Smith, *The Defense of Berlin*, 109.

[70] Also during this meeting, the President gave the approval to deploy the two squadrons of B-29s to Germany. Because of the massive postwar demobilization policy of the U.S., "there was nothing else available with which General Clay could be reinforced." See Davison, *The Berlin Blockade*, 111.

[71] Miller, *Airlift Doctrine*, 177.

[72] Marshall's statement hid the fact that he had "no idea of how nearly [the airlift] could meet Berlin's requirements nor for how long." The U.S. would soon be able to airlift 1,000 tons a day - C-54s with a capacity [more than triple] that of the C-47 were on their way from Panama, Hawaii, and Alaska; Rhein Main and Wiesbaden were expanding to house them, Tempelhof was priming to receive them. See Tusa and Tusa, 157.

On 27 June 1948, three days prior to the vote of the House of Commons, General Clay had been informed by Major General N.C.D. Brownjohn that the U.K Government had "agreed to furnish all possible additional airlift.[73] On the diplomatic front, in an attempt to secure an early resolution to the crisis, U.K. General Robertson contacted Marshal Sokolovsky to arrange a meeting concerning the possibility of "lifting the blockade in return for the acceptance of Soviet currency in the Western sectors." At the meeting, Marshal Sokolovsky indicated emphatically that "the technical difficulties would continue until the West gave up its plans for a West German government."[74] Suddenly the terms of the debate had shifted from currency reform to the larger issue of the future status of Germany.[75]

Meanwhile, on 2 July 1948, General Smith publicly predicted that "American planes would carry substantially more than 1,000 tons daily."[76] By 6 July, it had become apparent that the Soviets may try to "cripple the airlift," as a large number of Soviet

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[73] It believes further that prior to negotiations [with the Soviets] at governmental level this increased airlift should be laid on and working effectively. In addition, his Government strongly urges the dispatch of bombers from the U.S. to selected airdromes in France and England prior to the start of negotiations at governmental level. See Top Secret Memorandum CC 4910, General Clay to Secretary Draper, 27 June 1948, reprinted in Smith, *Papers of General Clay,* 707.

[74] Although Clay and his French counterpart, General Koenig, were not in favor of acquiescing to the Soviet demands, they "reluctantly agreed" to attend the meeting at the Soviet Potsdam headquarters on 3 July. See Smith, *The Defense of Berlin*, 116.

[75] Clay reports of the meeting: "Sokolovsky ... did not even discuss the currency issue which was later given as the reason for the blockade by his government. It was evident that he was confident we would be forced to leave Berlin." See Clay, *Decision in Germany,* 367. Three days later, an Ambassadorial delegation made up of the U.S., U.K. and French Ambassadors to Moscow, together went to the Kremlin to demand that the blockade on Berlin be rescinded. But, to no avail, "Moscow was in no mood for compromise and the Western demand was ignored." See Smith, *The Defense of Berlin*, 117.

[76] General Smith announced the establishment of a new target of "450 daily flights to Berlin by a fleet of 52 four-engine [C-54] Skymasters and 100 twin-engine [C-47] Dakotas." See Davision, 120.

fighters had been spotted flying within the air corridor.[77] On the 5th of July, an article on the airlift appeared in a Berlin newspaper, the *Telegrapf,* which praised the U.S. aircraft.[78]

On 8 July, Generals Clay and Robertson instituted a "counter-blockade" against the Soviets whereby "all shipments of goods between West Berlin and the Soviet zone halted."[79] By the 9th of July, after two weeks of airlift operations, "the results had begun to convince the more optimistic elements in the U.S. Air Force that the blockade could be overcome with air supply."[80] However, by the middle of the month, U.S. and U.K. pilots were beginning to feel the stress of the airlift, caused by a shortage of aircrews.[81]

Meanwhile, a detectable change in atmosphere had occurred in Berlin. The residents became more accustomed to their plight as U.S. Army forces were quick to quell any local disturbances the Soviets had attempted to incite. As Clay began to detect that

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[77] The Soviet action prompted Allied officials to remind their pilots not to exceed 5,000 feet altitude and to navigate carefully so as to remain well within the 20-mile corridor width. Although the Soviets protested at the Berlin Air Safety Center that the U.S. had given them insufficient notice of their increased air traffic, they did not take any forceful measures to restrict the airlift. The only exception was that they would not permit the British to operate their flying boats out of Havel Lake, because it fell within the Soviet sector. See Davison, 124.

[78] "They are no longer a cause for anxiety. No, quite the contrary. Their roar is deep, good, and has a quieting effect, when one knows that from the bellies of these aircraft there come raisins, canned goods, and white flour. Only a few years ago the sound of aircraft engines had a distinctly unpleasant undertone, and it was advisable to rapidly take cover." *The Telegraf,* 5 July 1948, cited in Davison, 330. Morris points out that "until [the airlift] the Germans in general had regarded the Western governments as merely conquerors bent upon humiliating their nation and exacting reparations for past misdeeds." See Eric Morris, *Blockade: Berlin and the Cold War* (New York: Stein and Day Publishers, 1973) 121.

[79] This blockade also precluded the delivery of wartime reparations to the Soviets. As Smith describes the situation: "since most of East Germany's manufactured goods at this time came from the West, the counter-blockade now began to hurt the Soviet Union more than the blockade of Berlin was hurting the Allies." See Smith, *The Defense of Berlin*, 128. Clay points out that the counter-blockade "led to protest by some of the governments of Western Europe, which appeared more anxious to continue trade than to create the conditions that would break up the blockade of Berlin." As a consequence, the U.K. rescinded the counter-blockade on truck traffic in its zone. See Clay, 389.

[80] Davison, *The Berlin Blockade*, 125.

[81] Most flyers averaged no more than seven hours sleep every 32 hours. In addition to flying time, they had to put in a great many hours of ground duty. A not unusual schedule would be nine hours of flying and eighteen of ground duty, followed by eight hours of sleep. See Davison, 129.

the Soviets were growing more cautious, on 10 July he suggested to Washington that now was the time to act:[82]

Despite the confidence that Clay exuded in his plan, Washington disapproved because it had decided that "it was not justifiable to run the risk of armed conflict until the Berlin issue had been placed before the newly formed United Nations.[83] The same day, General Clay updated General Bradley on the situation in a memorandum in which he also appealed for the delivery of more C-54s to the theater.[84] Two days later, General Clay sent an urgent request to the Department of the Army, reiterating his dire need for additional airlift resources to be delivered as soon as possible.[85]

By 11 July the Air Force had deployed four C-54 troop carrier squadrons from Texas, Panama and Alaska and Hawaii, adding an additional 45 C-54s to the airlift operation.[86] Two days later, the remaining 9 C-54s of a MATS Atlantic Division squadron arrived to complement the other three which were already augmenting the

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[82] "The care with which the Russians avoided measures which would have been resisted with force had convinced me that the Soviet Government did not want war. ... I reported this conviction ... suggesting that we advise the Soviet representatives in Germany that under our rights to be in Berlin we proposed on a specific date to move an armed convoy which would be equipped with the engineering material to overcome the technical difficulties which the Soviet representatives appeared unable to solve." See Clay, 374.

[83] Davison, *The Berlin Blockade*, 126.

[84] "Present American airlift into Berlin had a peak delivery of about 1,000 tons in a 24-hour period, utilizing however more C-47s flights than C-54 flights. Since the C-54 carries approximately nine tons to the three tons carried by the C-47, it is obvious that lift can be greatly increased by additional C-54s. LeMay has asked for fifty additional C-54s. I urge that this request be approved and the additional C-54s dispatched immediately. With the additional C-54s, in good weather we should come very close to 2,000 tons a day with the American lift. However, each day's delay in building up a maximum airlift does mean the depletion in our reserves which can be avoided with maximum airlift." See Top Secret Memorandum CC 5109, General Clay to General Bradley, 10 July 1948, reprinted in Smith, *Papers of General Clay*, 730.

[85] "While I know you are doing everything possible, would appreciate answer soonest to request for additional C-54s. With present airlift, we can only hold our own in food. ... Each day of delay will make our position more difficult. Hence, I urge prompt dispatch of additional C-54s soonest." See Top Secret Memorandum CC 5131, General Clay to Department of the Army, 12 July 1948, reprinted in Smith, *Papers of General Clay*, 736.

[86] Miller, *Airlift Doctrine*, 177.

airlift. Meanwhile, the National Security Council approved the deployment of sixty B-29s to Great Britain, which ultimately lead to the first SAC base in the U.K.[87]

As of 19 July 1948, the Department of State had developed three alternative courses of action for the resolution of the Berlin crisis. Following is an extract of a cable from the U.S. Ambassador to the U.K., Douglas to Under Secretary of State Lovett on 17 July:

> We are now faced with three alternatives: (A) to abandon Berlin at the risk of losing Europe; (B) to abandon Berlin but under strong commitments to western European nations which would serve to salvage some prestige; and (C) to attempt through the employment of all devices at our command to remain in Berlin.[88]

Less than two weeks after his first proposal, on 19 July Clay again proposed that an armored column be sent to Berlin.[89] In an effort to demonstrate his commitment to Berlin, Truman summoned Clay to Washington to personally brief him on the Berlin situation. Once Clay arrived, he confidently asserted that "*given the planes*, we could remain in Berlin indefinitely without war [emphasis added]."[90]

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[87] In his diary, Forrestal explains the reasons for the bomber deployment as follows: "(1) the action would show the American people how seriously the government viewed the Berlin crisis; (2) it would give the U.S. Air Force experience in this type of operation, and would also accustom the British to accommodating Allied forces; (3) once the planes were in Britain, they would become something of an accepted fixture. If the present opportunity for sending them were missed, and the situation in Europe deteriorated thereafter, the British might not be willing to accept the planes later." See *The Forrestal Diaries*, 457, cited in Davison, 130. The sixty bombers were in place by 17 July 1948, with another thirty to follow in August. Meanwhile, "additional U.S. jet [fighter] aircraft were dispatched to Germany, and started making familiarization flights over the countryside." See Davison, 155.

[88] Top Secret Memorandum CC 5222, General Clay to Secretary Draper, 19 July 1948, reprinted in Smith, *Papers of General Clay*, 743.

[89] "It is only by a showing of force which is in the nature of an armed reconnaissance that we can determine the real intent of the Soviet Government. Our right to move an armed force for garrison purposes into and out of Berlin, as far as I know, has not been questioned. The movement of such a force could be stopped only by attack. This attack would not occur unless the Soviet Government is determined upon a war course. ... The choice before us is a hard choice." See Top Secret Memorandum CC 5222, General Clay to Secretary Draper, 19 July 1948, reprinted in Smith, *Papers of General Clay*, 745.

[90] Soon after he arrived, on 20 July, Clay briefed the National Security Council in a meeting attended

Surprisingly, *the Chief of Staff of the Air Force, General Hoyt Vandenberg "demurred from a further concentration of aircraft in Europe."* Smith notes that "*the Air Staff in the Pentagon was ... dubious and resisted for almost a month all efforts to increase the number of transport planes in Europe* on the grounds that so great a concentration of Allied aircraft would be militarily unwise."[91] Moreover, Assistant Secretary of the Air Force Cornelius Whitney was quoted as telling the NSC that *the Air Staff felt that "the air operation is doomed to failure."*[92] The argument went along the lines that "*nearly all the available American and British transport planes were being committed to the airlift*, and that, in the event of war, the Soviets could shoot down these slow aircraft with the greatest of ease, thereby crippling the entire air transport capacity of the Western democracies."[93] General Vandenberg, the Chief of Staff of the Air Force, argued that:

> *a maximum airlift would require planes which were intended for emergency use elsewhere*. In the event of hostilities, many of these might be destroyed, and the ability of the United States to wage strategic warfare reduced, since it would then be difficult to supply forces at distant bases [emphases added].[94]

Even the President's Chief of Staff, Admiral Leahy, warned Truman that "an airlift was a dangerous enterprise and could spark off military conflict." Finally, there was a general

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by Truman, Marshall, Forrestal, Royall, Symington, Sullivan, Lovett and the Joint Chiefs of Staff. Clay recounts that "I asked for 160 C-54s, a plane which would carry ten tons of cargo as compared to the two and a half tons carried by the C-47." See Clay, 368.

[91] Smith, *The Defense of Berlin*, 110.

[92] Eichhorst, *Military Airlift*, 14.

[93] Davison, *The Berlin Blockade*, 150.

[94] Ibid., 154.

concern that the limited facilities in Germany would be unable to accommodate the more sizable C-54 aircraft in large quantities.[95]

President Truman overruled his White House Chief of Staff and the Chief of Staff of the Air Force at this NSC meeting, ordering the Air Force "to furnish the fullest support possible to the problem of supplying Berlin."[96] When Clay returned to Germany in late July, he announced to the press that he had been assured his forces would receive "a considerable increase" in C-54 aircraft, so that the airlift could be expanded to handle 4,000 tons per day. In this way, he said, the West would have more time to "approach the problem through all diplomatic means."[97]

As these events had been transpiring, Brigadier General William Tunner, the Deputy Commander of MATS for Air Transport, soon recommended to his commander, Major General Lawrence Kuter, that MATS take charge of the airlift operation. He felt that the operation could stand improvement, as none of the airmen in the European theater had any prior airlift experience. Moreover, he realized that the capabilities of airlift were largely unknown throughout the military and the men running the operation were combat,

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[95] The Tusa's reflect that "Americans ... had to weigh the needs of Berlin and the city's political and strategic importance against their commitment to supply bases in the rest of the world and the danger that the Russians might strike somewhere other than Germany. Putting everything they had into the Berlin effort could well cause even worse problems." See Tusa and Tusa, 151.

[96] Smith, *The Defense of Berlin*, 110. The problem was that this would necessitate taking C-54 "planes from posts all over the world, including two squadrons of Navy Type C-54s." Ideally, the much larger C-74 Globemaster would have been utilized for the airlift, "but only 12 of these aircraft had been built." See "A Special Study of Operation Vittles," 6.

[97] Davison, *The Berlin Blockade*, 154. The Tusas reflect that: "So far the operation had been improvised in the heat of crisis and offered only a few days' hope to Berlin. ... It must now both make a quantitative leap and develop sophistication of planning never previously imagined. If it could mature into a more complex, longer-term affair, ... the western Powers would have a chance to set up diplomatic negotiations and look for a way to persuade the Soviet Union to lift the blockade which did not entail sacrificing western rights in Berlin and objectives in west Germany and Europe." See Tusa and Tusa, 158 - 159.

not airlift, officers.[98] In Tunner's support, Lt. General Wedemeyer, now Director of Plans and Operations of the Army General Staff, sent a memorandum to General Vandenburg urging him to let General Tunner take command of the airlift operation.[99]

However, the proposal to turn the airlift operation over to MATS met with stiff resistance in Europe. General Clay was pleased with the fact the airlift seemed to be working and the tonnage was increasing nearly every day. General LeMay was gaining worldwide notoriety for his "LeMay Coal and Feed Delivery Service" and wanted to remain in charge. Nevertheless, Vandenberg gave in to Kuter and Wedemeyers' recommendations and ordered General Tunner to assemble a twenty-man staff and take charge of the airlift operation.[100] Tunner brought with him "a substantial segment of the transport staff from MATS headquarters."[101]

Upon his initial arrival in Europe, General Tunner was not allowed to meet with General Clay, who took Tunner's new role as a personal affront. The MATS contingent was given substandard housing and a war-torn apartment building as their headquarters. There was confusion everywhere Tunner looked. No one knew what they were doing from one day to the next. It was entirely a "line-of-sight" operation.[102] From Clay's perspective, on the other hand, "the airlift was no makeshift operation."[103]

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[98] Tunner, *Over the Hump*, 161.

[99] Because Wedemeyer had been in command of the China Theater during part of the war, he had seen Tunner's results firsthand in the Hump operation. In addition, he had just returned from Germany where he observed that the airlift operation was not running as smoothly as it had in China. See Tunner, 161.

[100] According to General Tunner, the fact still remained that "airlift experts run airlifts better than combat experts." See Tunner, 162.

[101] Kuter, "Vittles - Air Supply of Berlin," 9. "many of whom had served under him in the Hump operation." See "A Special Study of Operation Vittles," 6. Moreover, MATS contributed approximately "4,000 personnel, including the bulk of the air crews. See Kuter, "Vittles - Air Supply of Berlin," 9.

[102] According to General Tunner, his first inspection of the airlift operation revealed that it was "a real

First Airlift Task Force

On 23 July, Tunner, now a Major General, assumed command of the newly formed First Airlift Task Force, which had representatives from the Army, Navy and Air Force and reported directly to General LeMay at USAFE Headquarters.[104] Deemed responsible for "the simple mission of providing airlift to Berlin or elsewhere as directed by USAFE," LeMay allowed Tunner to communicate directly with both the unified U.S. European Command (EUCOM) and MATS.[105]

Serving in this new capacity, the first thing General Tunner did was to introduce three-minute intervals for takeoffs. Even though there were not yet enough airframes on hand for an around-the-clock operation, he wanted to ensure that when they went to that, the "cadence" would already be established.[106] By 26 July, the end of the first month of Berlin airlift operations, the U.S. Air Force was conducting nearly 400 sorties per day.[107]

The American and British combined operation was capable of air delivering a total of 2,250 tons per day, 41% short of the 3,800-ton summer requirement, and 50% short of

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cowboy operation." See Tunner, 167.

[103] "From the beginning it was a carefully planned split-second operation. It started with the determination of priority requirements in Berlin. The next steps were the requisition of supplies by the Bizonal Administration in Frankfurt then the coordinated movement of these supplies by ship, rail, and truck to planes at five airports in the western zones, the airlift delivery to the three Berlin airports, and the transfer of cargo from these airports to the German authorities." See Clay, 382.

[104] Monro MacClosky, *The U.S. Air Force* (New York: Frederick and Praeger Publishers, 1967) 70.

[105] When the First Airlift Task Force was activated, it had a force structure of 54 C-54s, and 105 C-47s, capable of airlifting 1,500 tons per day. See Miller, 177.

[106] Tunner figured that with 1,440 minutes in a day, with three-minute takeoff intervals, his planes could realize 480 landings per day; enough to keep Berlin afloat. According to his plan, an aircraft would either takeoff or land every 90 seconds. See Tunner, 174.

[107] Over the course of the month they had flown a total of 6,482 sorties delivering 32,136 total tons, consisting of "24,908 tons of food, 6,814 tons of coal, and 414 tons of other supplies." See Harty, 9. Moreover, MATS had "trebled its frequency on its transatlantic routes to increase the supply support for Vittles from the States." See Kuter, "Vittles - Air Supply of Berlin," 9.

the 4,500-ton winter requirement. To compensate for this shortfall, Generals Clay and LeMay requested that Washington send 71 more C-54s, together with their own maintenance support. Subsequently, *at the direction of the National Security Council*, the Air Force ordered MATS to deploy a total of 72 C-54s. As of 10 August, the U.S. and U.K. combined forces had attained the capability to meet the city's 3,800-ton daily summer requirements. However, they still fell 700 tons short of the daily winter requirement.[108]

On 9 September, a mass demonstration of over 300,000 Berliners was held in front of the war-damaged ruins of the Reichstag. After the rally, several teenagers climbed the Brandenberg Gate and retrieved the Soviet flag and set it on fire. Soviet guards subsequently fired upon the crowd that was gathered around the flag, killing two and wounding several others. Smith observes that "the action of the Russian soldiers ... ended any hope of compromise in Berlin."[109]

Firmly, the Soviets began to take measures to "incorporate East Berlin into the Soviet zone." Concurrently, the West Berliners busily relocated their various departmental functions from the Eastern to the Western sector of Berlin. The Soviets made no attempt to obstruct the relocation and by mid-November nearly all of the city government offices had been relocated.[110]

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[108] At the time Tunner assumed command of the First Airlift Task Force, the British were running a parallel operation with 40 Yorks and 50 C-47s, capable of airlifting 750 tons per day. The C-54s came with three flight crews per aircraft, from eight different squadrons throughout the continental U.S. and Hawaii to arrive in Germany within a month. See Miller, 177. At the two-month mark, on 24 August, the American airlift had accomplished a peak single day delivery of 3,028 tons in 394 sorties arriving at an average of every three minutes and thirty-nine seconds at Tempelhof. See Harty, 9.

[109] British military police were able to eventually restore order. See Smith, *The Defense of Berlin*, 123.

[110] Smith, *The Defense of Berlin*, 123.

On 8 September 1948, General Clay and Secretary of the Army Royall addressed the deployment of airlift resources to Germany.[111] Despite the President's demonstrated resolve, many others in Washington gave little hope to the ultimate success of the airlift. Smith observes that during the early fall, "the Western planners ... *grossly underestimated the effectiveness of the airlift.*"[112] In fact, Davison points out that "even after a week of operation, estimates of the maximum that could be brought into Berlin by air were only for about one-fifth of the supplies that were ultimately flown in."[113] On the other hand, Davison points out that "the strongest factor in convincing Berliners that successful resistance was possible was the airlift.[114]

On 10 September, General Clay sent a memorandum to Generals Bradley and LeMay concerning the details of the airlift.[115] In General Bradley's reply, he indicated that

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[111] "Clay: We must increase airlift very soon to hold our position; Royall: As to the airlift, I suggested this to National Security Council and it was approved unless Joint Chiefs of Staff see some military objection. I believe Joint Chiefs will approve. Please let us know how many additional planes you need and can take; Clay: Have LeMay's study on my desk but believe it allows too much for British capability. Should be able to send firm figures as to additional planes in day or two. It will be between 50 to 75 planes (C-54s)." See Top Secret Teleconference TT-1182, General Clay and Secretary of the Army Royall, 8 September 1948, reprinted in Smith, *Papers of General Clay,* 847.

[112] At a 9 Sep 48 NSC meeting, Sec. of State Marshall states "in spite of the airlift, time was on the side of the Russians in Berlin." The U.S. Amb. to Moscow, Bedell Smith, states as "Berlin [is] in an indefensible position [it] should be disposed of as soon as possible." See Smith, *The Defense of Berlin*, 121.

[113] Davison posits that this glaring deficiency in "estimating air transport capacity came close to leading the Western powers into a major diplomatic defeat." See Davison, 150 - 151.

[114] "The mere inception of the airlift, long before it became clear that the planes actually could bring in sufficient supplies for the city, convinced many people that the Western powers were serious about remaining in Berlin." Early on, the airlift served to dispel German anxieties that their Western Allies might desert and leave them starving. Moreover, given that the airlift was a nonviolent way of circumventing the Soviets, it also helped to quell the fear of war. See Davison, 139.

[115] "Our original airlift studies were based on British performance of 1,500 tons a day. However, they cannot add to present lift and winter operations will cut their lift to 950 tons per day under winter conditions. This will require U.S. to lift an average of approximately 3,515 tons per day. This will require 69 additional C-54s. Fifty operating from Fassberg will average 26 tons each, giving daily lift of 1,300. One hundred thirty-nine C-54s operating from Rhein/Main will average 16 tons each giving daily total of 2,215 tons. Total both airports will be 3,515 tons and with British lift added about 4,500 tons per day. This is absolute minimum and provides no coal for space heating. The desired level which would absorb our maximum

"50 additional C-54s were being made available from Japan."[116] As of the 90-day mark, on 23 September, the airlift had been achieving loads as high as 5,000 tons in a single day.[117] Despite the demonstrated feasibility of air-supplying Berlin, Clay had to report to Bradley that "unfortunately our average airlift capacity to date has not sufficed to stockpile for the winter months and in fact we are not quite holding our own." Clay continued, "it would appear certain that the airlift must be continued for an indefinite period. In view thereof *it is urgent to obtain the 50 additional C-54s now promised as quickly as possible*; (B) *the additional 19 C-54s requested to make the 69 needed by 1 October to meet minimum needs* [emphasis added]."[118]

General Bradley replied to General Clay's memorandum on 30 September, indicating that "request for additional airlift has been referred to the Joint Chiefs of

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capacity would increase lift from Rhein/Main to 2,969 tons per day utilizing 186 aircraft. Adding Fassberg and British lift gives us about 5,200 tons a day which should be our target. British lift will hold up for several months depending on weather. Therefore, I recommend we make available by 1 October 60 additional C-54s to ensure minimum needs and that we plan to make 47 additional C-54s available by 1 December if lift is still continuing at that time." See Top Secret Memorandum CC 5895, General Clay to Generals Bradley and LeMay, 10 September 1948, reprinted in Smith, *Papers of General Clay,* 852.

[116] Top Secret Memorandum CC 5895, General Clay to Generals Bradley and LeMay, 10 September 1948, reprinted in Smith, *Papers of General Clay,* 852. That same day, the Air Force ordered the deployment of the 317th Troop Carrier Group's 36 C-54s and 72 crews to Germany. See Miller, 177.

[117] The peak day was Air Force Day (the first anniversary of the establishment of the USAF), 18 September, when 5,583 tons were airlifted to Berlin. All totaled, over the 90-day period 201,735 tons were air delivered on 28,658 sorties flown principally by C-54s, five C-82s and one C-74, which together accounted for 162,548 tons. C-47s, which were phased out a week later, had accounted for 39,147 tons. See Harty, 10. *Air Force Magazine* wrote in its September 1948 edition that "for the first time in history, the United States is employing its Air Force as a diplomatic weapon. ... The first chapters of the 'role of air diplomacy' are being written here." See Harty, 15.

[118] "As soon as possible thereafter the additional 47 C-54s which can be accommodated with the airports available to us. It is my understanding that [the number of C-54s] require[s] a decision from the NSC. We must augment the airlift as outlined herein to successfully meet the present situation. It is desirable that we be informed as to the date that these airplanes can be made available so that we may not only plan for their best utilization, but also advise the British of our maximum capabilities. Moreover, now is the time to build up winter reserves. ... This information is requested soonest." See Top Secret Memorandum CC 6050, General Clay to General Bradley, 23 September 1948, reprinted in Smith, *Papers of General Clay*, 878 - 879.

Staff."[119] *The JCS was opposed to sending any additional C-54s* to Clay. Marshall explained to Bevin that the JCS had decided to devote "*no more than 30% of their military transport to this one theater.*"[120] Less than a week later, General Clay again pressed General Bradley for a decision concerning an augmentation of the airlift forces at his disposal in Europe.[121]

The Tusas make the point that when the airlift first began, even it there had been more aircraft available, "*the organization could not make effective use of them.*" However, by October the newly instituted CALTF would be able to employ these assets effectively [emphases added].[122]

Combined Airlift Task Force

On 14 October 1948, General LeMay and Air Marshal Sir Arthur Saunders, Commander in Chief of the British Air Forces of Occupation (BAFO), signed an agreement to create a Combined Airlift Task Force (CALTF).[123] General Tunner was

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[119] Smith, *Papers of General Clay*, 879.

[120] Record of conversation between Bevin and Marshall, 29 September 1948: *The Bevin Papers*, FO 800/467, cited in Tusa and Tusa, 238.

[121] 1. "While I hesitate to bother you again, I am seriously disturbed over delay in decision to send additional C-54s with corresponding delay in their arrival. Bad weather is almost upon us and our present lift is only slighting exceeding our minimum needs. ... Additional flight personnel is also needed. 2. I am completely confident that given the airplanes we can do the job. Psychologically they are needed now to prove that we can do the job in bad weather. ... Also, I believe the Soviets may yield if we prove now we can meet winter demands." See Top Secret Memorandum CC 6184, General Clay to General Bradley, 4 October 1948, reprinted in Smith, *Papers of General Clay*, 890 - 891. The First Airlift Task Force Plans Division estimated that with a force of 162 C-54s in place, that force alone would be able to uphold the daily 4,500-ton requirement. Effective 1 October 1948, the C-47s were withdrawn from Berlin airlift service, primarily because they "took up valuable airspace at less productivity and because managing an airstream with aircraft at different cruising speeds [was] more difficult." See Miller, 177 - 178.

[122] Tusa and Tusa, *The Berlin Blockade*, 245.

[123] The directive stated: "The purpose of this organization is to merge the heretofore coordinated, but independent, USAF-RAF airlift efforts in order that the resources of each participation service may be utilized in the most advantageous manner. Its primary mission was to deliver to Berlin, in a safe and efficient manner, the maximum tonnage possible, consistent with combined resources of equipment and personnel available." See Tunner, 187. The two components maintained their earlier designations, the U.S. Air Force

designated as the Commander of the CALTF and Air Commodore J.W.F. Merer was his deputy.[124] Before this formal agreement, there had already been an "ad hoc liaison" to coordinate their operations. However, this new "overall system of command" became necessary to "supervise the new traffic flow, co-ordinate the increasing number and variety of aircraft and maximize their deployment."[125] The CALTF agreement effectively put "the entire system of bases, air traffic control facilities, and services assigned to support the airlift under the operational control of one commander."[126] As Commander, General Tunner instituted five initiatives to get the most out of his airlift assets:

> (1) A firm three-minute interval for all takeoffs and landings; (2) Set speeds and routes; (3) A special maintenance operation that included German mechanics; (4) Special ground handling procedures that cut turn around time in Berlin to 30 minutes; and (5) A special newspaper for the airlifters and a competition on tons delivered, both designed to help the morale of crews.[127]

Personnel on loan from MATS made up the vast majority of flyers in the Berlin, constituting 457 aircrews made up of pilots, co-pilots and aerial engineers. Moreover, MATS was directly responsible for the trans-Atlantic airlift from the U.S. to Germany.[128]

First Airlift Task Force, and the Royal Air Force Number 46 Group. See Miller, 178.

[124] Tunner, *Over the Hump*, 187.

[125] In addition to formally combining our efforts with the British, the emphasis on the airlift was changed from utilization of planes to maximum tonnage per mission through "the new block system of dispatch and other modifications to flying discipline." See Tusa and Tusa, 250.

[126] Miller, *Airlift Doctrine*, 178.

[127] Eichhorst, *Military Airlift*, 14.

[128] To bolster its capabilities, MATS transferred its Naval Squadron VR-3 from domestic operations to Westover, Massachusetts, to fly the scheduled Frankfurt resupply route. Furthermore, early in 1949 it assigned seven newly-delivered Lockheed C-121 Constellations to Westover as well. In addition, a trans-Atlantic aerial port was established at Brookley AFB, in Mobile, Alabama, where the Douglas C-74 (DC-6) Globemaster was stationed. The C-74 flew to Frankfurt three times a week by way of Bermuda and the Azores. See "A Special Study of Operation Vittles," 4.

In addition to the British Royal Air Force, the CALTF included units from the Royal Australian Air Force, Royal New Zealand Air Force, and the South African Air Force. There were also representatives from the U.S. Navy.[129] This equated to a force of 154 assorted British aircraft and 225 American C-54s, not including an additional 75 in the maintenance pipeline and 19 at the C-54 flight training base.[130]

On 20 October the Office of Military Government in Berlin increased the winter daily minimum airlift requirement from 4,000 to 5,620 tons.[131] In order to meet the increased winter requirement, two days later, General Clay, accompanied by Murphy, made a return visit to Washington to present his case for 64 additional C-54s to the National Security Council. While briefing the NSC, he assured the Council that "even bad weather would not prevent the supply of Berlin *as long as there were enough aircraft*."[132] Clay recounts that after his briefing, "the NSC approved my recommendation

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[129] The total number of squadrons assigned were 20 from the U.S. Air Force, 10 from the Royal Air Force (and Commonwealth Countries). See Tunner, 187. Two U.S. Navy Squadrons, VR-6 and VR-8, equipped with 24 R5Ds (Navy designation for Air Force C-54), which had been ordered into action by the Joint Chiefs of Staff from the MATS Pacific Division. See "A Special Study of Operation Vittles," 4. The Air Force had deployed the 39 C-54s of the 10th Troop Carrier Squadron, what had been the last remaining troop carrier squadron in the Caribbean. Miller, 178.

[130] Of the 225 C-54s stationed in Germany, 200 were flown on a daily basis. See Tunner, 207.

[131] Tunner, *Over the Hump*, 207. The tonnage consisted primarily of food and fuel. Flour alone constituted over 50% of the cargo capacity. Together with cereals and dehydrated potatoes, it made up over 80% of the cubic volume airlifted. The target figure for food transport was enough to provide 2.1 million inhabitants 1,800 calories per day, which was increased to 2,020 calories per day in November, 1948. See Morris, 114. Fuels included coal, petrol, diesel oil, kerosene and "other petroleum products." "Some of the machines were genuine tankers, with fuel carried in the wings, but most were ordinary aircraft, either civilian airliners with hastily-constructed tanks inside the hull replacing the passenger accommodation, or conversions of wartime bombers." See Morris, 114. A third category designated "special freight," consisted of a variety of things such as "electric generators, iron girders for power stations, steam-rollers, fire-engines, [live-stock], medical supplies, boots, shoes, clothing, hot water bottles, and tobacco." See Morris, 114 - 115. Finally, on the return mission to western Germany, the aircraft carried such things as mail, passengers (50,000 by the end of March 1949), and locally produced commercial optical and electrical products (averaged 1,500 tons per week). See Morris, 117.

[132] Clay emphasized that this 33% expansion of the C-54 fleet was vital to the airlift, which was "no longer an experiment." See Morris, 117.

and shortly after the meeting, when I reported to President Truman, he advised me directly that the additional planes would be forthcoming."[133]

The open-ended commitment to the "maximum tonnage possible" was a "major turning point" in the airlift to Berlin. Heretofore, 4,500 tons had stood as a "fixed, if unattainable, target."[134] As part of his effort to enhance the airlift, Tunner instituted a process of "standardized maintenance control."[135] Tunner introduced a "production-line" maintenance (PLM) process at Burtonwood Air Base, in Lancashire, England.[136] All MATS aircraft continued flying Berlin missions until they accumulated 1,000 hours of flying time, whereupon they were cycled back to the U.S. for a "thorough overhaul."[137] At the plant, each aircraft was given a 44-day "1,000-hour check." After an aircraft had been reconditioned, it would "pick up a cargo of parts and engines and replacement crews and then return for duty in Germany."[138]

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[133] "On my arrival in Washington, I reported to the JCS and secured their approval to request the NSC to provide us with 64 more C-54s, which would enable us to withdraw the C-47s from the airlift. This would give us 224 C-54s for the American lift, and with the British contribution would successfully carry us through the winter. See Clay, *Decision in Germany*, 384 - 385. Upon his return to Germany, Clay proclaimed that "the airlift will be continued until the blockade is lifted, ... winter supply [is] guaranteed." See *Stars and Stripes*, 23 October 1948, cited in Tusa and Tusa, 245.

[134] Tusa and Tusa, *The Berlin Blockade*, 251.

[135] Standardized maintenance control included "regular reports on the state of each aircraft, color coding to indicate its condition, and a form with its complete record." The Air Force attempted to foster an atmosphere of teamwork between the maintenance and operations personnel as "air and ground crews worked as a team with the same aircraft; they built up trust in each other and pride in their work." Beyond the day-to-day routine of minor repairs, the aircraft were sent to a depot in Oberfallenhofen for a 200-hour inspection which included "oil change, spark plug replacement and a brake check." See Tusa and Tusa, 314.

[136] PLM had been used in Burma during the war. See "A Special Study of Operation Vittles," 7.

[137] At first, Burtonwood was only capable of servicing two aircraft per day. However, Tunner fought "red tape and bureaucratic inertia until the place was brightened up, the food improved, the staff enthused and equipment brought up to scratch." As a result, by March, Burtonwood was "turning six aircraft per day." The Navy was "not impressed" by the Burtonwood operation, so decided to accomplish their own 200-hour inspections, which, with a 24-hour turn around time, were quite effective. Tusa and Tusa, *The Berlin Blockade*, 314.

[138] All of the C-54s initially flew to Westover Field, the designated "control point," and after being inspected were sent to "one of three cycled reconditioning plants operated for the Air Force by civilian

Of the aircraft not directly assigned to airlift missions, 19 were assigned to a Replacement Training Unit (RTU) at Great Falls, Montana. The RTU trained 122 new flight crews (including 18 Navy crews) each month. This enabled MATS to periodically "rotate and replace" its overworked aircrews.[139] Seventy-five aircraft were in the "maintenance pipeline." Given that there were only 400 C-54s in the entire U.S. Air Force fleet,[140] *the 319 C-54s dedicated to Berlin constituted an 80% utilization rate.* As a result, MATS was only able to provide "42% of requested lift in the Pacific and 60% in the Caribbean and Alaska."[141]

In order to accommodate this dramatic increase in traffic, Clay had ordered the construction of "two new and heavier runways at Tempelhof and one at Gatow in the British Sector." Furthermore, in September he ordered "an additional modern, well-equipped airport ... at Tegal in the French Sector." Although the engineers had originally estimated a completion date in March, Clay insisted on an accelerated schedule

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contractors." MATS was responsible for ensuring that this "continuous maintenance pipeline" kept flowing to keep the fleet of 225 C-54s operating at full capacity. Due to Tunner's efficiency measures, the C-54 in-commission rate for the 225 C-54s dedicated to the Berlin operation grew from 117 in January, to 137 in July 1949. See Kuter, 10.

[139] Through January 1949, most of these crews came from the Reserve forces. However, beginning in February, active duty crews trained from the "major Air Force commands." Aircrews were averaging 90 flying hours per month in an airlift that could go on indefinitely. See Kuter, 10.

[140] This included aircraft "en route to the U.S. for 1,000-hour checks and replacements en route to Europe to replace those in the U.S." It was MATS' responsibility to fill "the U.S.-to-Europe portion of the pipeline and with replacing any losses due to accidents." See Miller, 180 - 181.

[141] While the airlift was being conducted, MATS still had its other worldwide commitments to uphold. Yet, because of the fact most of its resources were being devoted to Berlin it had to "fulfill its assigned transport mission - the provision of scheduled air transport service to the National Military Establishment - ... on a necessarily curtailed basis." The areas primarily affected included the Pacific, Alaska and Caribbean regions. " Although MATS was unable to fulfill its lateral commitments during the course of the Berlin Airlift, nevertheless, in the month of October 1948 it had been able to produce "56% more airlift than had been generated by ATC and NATS combined in the best pre-merger month." Moreover, MATS accomplished this with just "two percent more transport aircraft and personnel." See "A Special Study of Operation Vittles," 5.

with a December completion date.[142] In addition to these new airdromes, Clay ensured that the other facilities already in use within Western Germany were enlarged to accommodate the increased traffic volume caused by the Berlin airlift.[143]

There were three main corridors connecting Berlin to the free world, two for entry (one north, one south) and one for exit (in the middle running east to west).[144] Operating from these various airfields, within the first month of operations, the air corridors were filled with 40 to 50 aircraft at a time.[145] At first, night operations were almost nonexistent due to inadequately lighted facilities. This limitation was overcome to allow for an increased operations tempo.[146]

The system of allocation was systematic and effective.[147] To efficiently load and unload the airlifters, EUCOM established the Airlift Support Command, whose support

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[142] Says Clay: "I had visited China in 1943 on an inspection trip to negotiate for payment of the construction costs of the airports built there for our use in bombing Japan. I had seen the work that could be done with hand labor. I knew that workers were available in Berlin and was confident that they would respond to our call. ... The construction of Tegel airport was largely a hand job, accomplished by more than 20,000 Berlin men and women work three shifts a day." See Clay, 384.

[143] By the end of 1948, six new fields had been completed in the British sector to reduce the distance to Berlin: Finkenwerde, Fassberg, Lubeck, Fuhlsbuttel, Schleswigland and Celle. See Tusa and Tusa, 251 - 255.

[144] The South entrance originated in the American sector, where USAF and USN crews flew 563 miles to Berlin from their fields at Wiesbaden and Rhein Main. The North entrance originated in the British sector, where RAF crews flew 274 miles from Wunsdorf, Finkenwarder and Lubeck and USAF crews flew from the British fields of Fassberg and Celle. See Kuter, 9.

[145] Harty, "Operation Vittles," 9.

[146] Each of the new RAF fields was designed with the "best lighting" available. See Tusa and Tusa, 255.

[147] Every month the Air Staff Committee of the Kommandatura would receive a projected capacity from the HQ CALTF Plans Division. It was the responsibility of the Air Staff Committee to devise an allocation plan. The Allied Commandants, usually acting upon the recommendations of the Magistrat, held the final authority to decide what would be airlifted to Berlin. The Plans Division based its assessment on "probable numbers of aircraft and personnel available together with the assumed serviceability and weather conditions." The Air Staff solicited inputs from the Bipartite Control Office in Frankfurt (BICO), which "organized imports, German production and zonal transport"; and the Berlin Airlift Co-ordination Committee (BEALCOM), which had inputs from BICO, CALTF, the British Army and U.S. Airlift Support Command, which were all the agencies responsible for "sorting out the air transport." See Tusa and Tusa, 259.

units assured the "maximum payload utilization of each aircraft, to include marrying up as much heavy cargo with light, bulky cargo as possible."[148]

As the CALTF Commander, General Tunner operated under a letter of authority from the Commander of USAFE, General Curtis LeMay.[149] This letter permitted Tunner to coordinate with LeMay's staff and individual base commanders, but not General Clay.[150] Tunner's autonomous relationship with CINCUSAFE came to an end later in the fall when General LeMay was replaced by General John Cannon. Cannon specifically instructed General Tunner not to coordinate with MATS or AMC. From then on, all requests were made through USAFE Headquarters.[151]

As a result of these newly-imposed administrative procedures, most requisition requests were either canceled or delayed. Generally speaking, First Airlift Task Force transactions with USAFE had become more cumbersome. Tunner writes that "*General Cannon seemed to dislike MATS and didn't want to have anything to do with it.*" He believed that Cannon's attitude was a carry-over from World War II. Apparently, many fighter and bomber pilots resented the transport pilots of the old ATC because most of them were not professional military officers and they had a reputation of breaking many

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[148] Airlift Support Command modeled the British Army Air Transport Organization. See Miller, 180.

[149] LeMay allowed Tunner a great deal of autonomy to accomplish his mission. He was willing to "tolerate the independence of Tunner's specialized airlift team and his introduction of hand-picked [associates] to run it." See Tusa and Tusa, 250.

[150] The letter made no mention of his relationship with MATS or the Air Materiel Command (AMC), and General Tunner routinely put requests through to both commands concerning supply or engineering matters to which they were always quick to respond. See Tunner, 191.

[151] General LeMay departed to become the CINC of Strategic Air Command. See Tunner, 191. According to Tunner's Chief of Staff, Brigadier General Ross Milton, Cannon possessed a "love of detail, even trivia, and a desire to know everything that was going on." Tunner, on the other hand, had "a proprietary attitude toward the airlift and having built up his own empire intended to keep running it." See Tusa and Tusa, 251.

rules and regulations. To make matters worse, "*Cannon was a former instructor at Kelly Field, Tunner his quondam pupil; Cannon was a combat officer and Tunner a transport expert. The heat between them only lessened when they could keep out of each other's way.*"[152] General Tunner took his instructions not to deal with MATS as a personal affront, one that he felt "had no place in a military operation of the scope of the Berlin Airlift." In essence, General Tunner felt that the Airlift Task Force was not being given the authority by USAFE to accomplish its task. The General, voicing his opposition to the arrangement, stated that:

> *an airlift command, as a command in any other large and vital operation, should always have some control of replacements, promotions, awarding of medals, and selection of its key officers. It should have, if it is to last more than a few weeks, administrative and logistical control as well as operational control.*[153]

Despite these obstacles, General Tunner was able to get the CALTF to perform its mission because "of goodwill and common sense *not because its institutions were perfect, ... like so many other features of the airlift* [emphasis added]."[154]

On 27 October 1948, General Clay informed Washington that "the airlift was capable of supplying Berlin indefinitely."[155] Throughout the months of September through November, the Soviets intensified their efforts to disrupt the airlift to Berlin. Airlift pilots were confronted with such obstacles as "buzzing by Soviet aircraft, bombing

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[152] It took just as much time to get the request through the bureaucracy of USAFE Headquarters as it used to take to have the entire transaction completed under the previous system. See Ross Milton, *Air Force Magazine*, June 1978, cited in Tusa and Tusa, 251.

[153] Tunner, *Over the Hump*, 191 - 192.

[154] Tusa and Tusa, *The Berlin Blockade*, 251.

[155] President Truman recounts in his memoirs: "General Clay placed before us an account not only of the technical achievement of the airlift but also of the effect our action in Berlin had had on the German people. They had closed ranks and applied themselves to the task of reconstruction with new vigor. It had turned them sharply against communism. See Tusa and Tusa, 127.

or air gunnery practice in or near the corridors and antiaircraft practice." Despite this harassment, U.S. and U.K. personnel continued to operate normally, so as to avoid a disruption of the airlift daily tonnage rate. Davison points out that the Soviets "did not need to stop the airlift altogether ... to bring about a critical situation in the west sectors." However, the Soviets were not even successful in curtailing the airlift operation.[156]

On 30 November, an "extraordinary session of the city assembly" was conducted in East Berlin by the 1,500 Soviet-picked office holders. These assembly members elected Fritz Elbert, Jr., son of the first President of the Weimar Republic, the *"Oberburgermeister* of Greater Berlin," who in turn, appointed the city's new executive staff.[157] Five days later, the western sector of Berlin held free elections. Ernst Reuter was elected Lord Mayor by a 45% margin. Two weeks later, the U.S., U.K. and France reorganized the Kommandatura as a tripartite organization without Soviet representation.[158]

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[156] The Soviets would sometimes "protest alleged violations of the corridors and of air safety rules." They warned that any aircraft caught flying outside the corridor or flying anywhere without proper markings, would be "forced down" by their fighter interceptors. Davison estimates that if they had succeeded in curtailing air deliveries by just 10% to 15%, "it is likely that essential services and the minimum rations in West Berlin could not have been maintained throughout the winter." Of note, they never escalated their harassment to a point that would have led to war. See Davison, 198 - 199. For the record, there were 700 reported cases of Soviet harassment, which included "flares, balloons, bright lights, buzzing and ground fire (55 aircraft were hit)." See Eichhorst, 15.

[157] Smith points out that the significance of this action was that "Berlin now for the first time had two city governments: the one which had been duly elected by the people of Berlin and which continued to meet in the Western sectors, and the rump government installed by the Russians which assumed control in the East.: See Smith, *The Defense of Berlin*, 125.

[158] The Soviets did not allow residents of the Eastern sector to vote. Voter turnout, at 86.3%, was unusually high considering that the Communist Party (SED) attempted to pressure residents not to vote. Smith posits that, for the Soviets to allow the city to split, they must have believed that it would only be a temporary measure, as they believed that the airlift was certain to fail with the fast-approaching winter. See Smith, *The Defense of Berlin*, 125 - 126.

Airlift operations were dramatically curtailed during the month of November, when aircraft were socked in by dense fog and unable to fly missions for half of the month.[159] On 22 December General Clay granted an interview to a CBS News correspondent, who asked "how will winter affect the airlift? Is there any possibility of a crisis arising among the German population for want of food and heat?" To which Clay replied, "of course winter weather decreased the tonnage we can move by air. Nevertheless, our worst air weather based on the record comes in November and December. We have met this challenge by carrying our minimum essential tonnage in both months."[160] Nevertheless ,despite their best effort, "conditions did not improve materially in December," so that by January, Berlin was on the verge of a coal shortage, with an inventory of just one week's worth in stock. However, due to corrective measures taken by Generals Clay and Howley, a shortfall was averted.[161]

Despite this successful avoidance of disaster, the fact remained that "Berlin was still only receiving about a third of what it had consumed before the blockade." This was

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[159] Smith, *The Defense of Berlin*, 126 - 127.

[160] Clay elaborates: "We now have forty C-54s available with better weather prospects and we should, henceforth, exceed the minimum which means some coal for domestic heating and for industrial use. Our record during the very bad weather in November and December was due to an efficiently run operation which permitted transfer of airplanes from airports in a bad weather area to airports in a better weather area. It was due also to the improved techniques now available in radar control which make possible Ground Control Approach (GCA) landings under ceilings deemed impossible a few years ago. Since we will meet minimum tonnages, we can have no food crisis in Berlin. If the winter is unduly severe, there will be suffering from extreme cold. However, I am convinced that the people of Berlin have learned from their experience under one totalitarian government to withstand almost any hardship rather than to accept another totalitarian regime." See CBS Interview CC 7161, General Clay and Larry Leseuer, 22 December 1948, reprinted in Smith, *Papers of General Clay*, 964.

[161] Given that there was a month's inventory of food on hand, the delivery of food was temporarily stopped for a few days while only coal was carried until the inventories were approximately even with a three-week supply for both feed and coal. Fortunately, by the time this potential shortfall was resolved, the weather had broken for the remainder of the winter. See Smith, *The Defense of Berlin*, 126 - 127.

directly attributable to the fact that "*the airlift was not fulfilling its potential* [emphasis added]."[162]

As the holidays were approaching, Secretary of the Air Force Stuart Symington went to visit with the troops. He was appalled at the substandard living conditions of the airlift crews, and their lack of equipment and supplies, or even basic tools. Although General Tunner had sent out urgent requests for all these things, USAFE had suppressed the them and they had never reached the Secretary's Office, or the Air Staff. Symington wanted to know all the details so he could rectify the problems when he returned to the Pentagon. General Tunner's staff worked over the entire holiday to draft a memorandum entitled "Supply and Maintenance Problem - First Airlift Task Force."[163] As the Tusas' relate, "the task of maintenance [was] Herculean [given that] ... *virtually all the planes were doing a job they were not designed to for*: non-stop flying with maximum loads on short trips [emphasis added].[164]

To make matters worse, there was a massive shortfall of skilled mechanics to perform the repairs which were required after 80% of the sorties.[165] In a desperate attempt to rectify this maintenance shortfall, the U.S. decided to "read Potsdam differently

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[162] The Tusas explain that: "It now had effective organization and flying discipline, adequately equipped airfields, experienced ground and aircrews and even enough aircraft - the USAF had 225 C-54s by the end of January, the British assorted RAF and civil types. In theory, the Americans should have been lifting 6,487 tons a day and the British 1,481. In practice, both forces were struggling to reach the minimum target of 5,500 tons. Their cargo capacity was on paper, not in the air." See Tusa and Tusa, 309.

[163] The memorandum cited problems with periodic aircraft inspections becoming overdue, insufficient supplies, inadequate training for aircraft mechanics, and poor housing conditions. See Tunner, 197.

[164] Some of the aircraft, like the C-47s and their British cousins the Dakotas, were obsolete. Neither the old nor the new had adequate reserves of spare parts. See Tusa and Tusa, 310.

[165] "The Americans calculated that they had 160 C-54s before they had reasonable back-up for fifty and once they got 225 they could only really cope with 100." See Tusa and Tusa, 310.

and ... [break] their own non-fraternization rules" by allowing Germans to perform maintenance on U.S. aircraft. The end result was excellent routine maintenance support, thus enabling the U.S. Air Force to assigned its men to the more complex mechanical tasks.[166] Despite this injection of skilled manpower, "repairs were further complicated and delayed by a dearth of spare parts and tools."[167] Through time, the regularly scheduled delivery of parts from Westover to Rhein Main made by the huge C-74 Globemaster was able to rectify the massive shortfall in spare parts.[168]

General Tunner also took advantage of Symington's Christmas visit by demonstrating the need for a new transport aircraft. Although he had been able to replace his aging C-46 and C-47 fleet with the C-54 in October, the fact of the matter was that the C-54 was also becoming obsolete. Also, General Tunner later pointed out that *the C-54 had never been designed as an airlifter*. It was supposed to be used strictly for commercial passenger operations.[169] Douglas Aircraft Corporation had developed a new aircraft shortly after the war called the C-74. This aircraft, designed especially for

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[166] Each squadron hired 85 former Luftwaffe mechanics to conduct their routine maintenance functions. German-speaking officers were found to superintend them, U.S. technical manuals were translated to German. See Tusa and Tusa, 311.

[167] With a six-month inventory on hand, only the U.S. Naval squadrons had sufficient spare parts. However, they "resisted all blandishments and browbeating to pool them." The U.S. Air Force, on the other hand, began the operation "short of wrenches and screwdrivers." When the Air Force finally convinced the Navy to share its parts, they were found to be "booby-trapped: catalogued in a naval system incomprehensible to the USAF." See Tusa and Tusa, 311.

[168] Maintenance never quite came to terms with the complexity of so many aircraft." For instance, in the case of the C-54, it had gone through 11 different design modifications since it first rolled off the assembly line in 1933. Given the variety of models being utilized on the Berlin airlift, "not even their windscreen wipers let alone their flying instruments were transposable." In addition, the engine specifications were different, so that sometimes an aircraft may get a replacement engine with a lower horsepower than was designated in the pilot's technical manuals, making for a potentially hazardous situation. See Tusa and Tusa, 311.

[169] Tunner, *Over the Hump*, 174.

military use, could carry 25 tons. Only 13 had been built, and of those, 11 were assigned to MATS. When General Tunner pleaded with General Kuter to lend him these aircraft, Kuter only allowed one to go [emphasis added].[170]

General Tunner articulated the advantages of a big transport aircraft to Secretary Symington with the realization that the Berlin airlift would most likely be finished before such an aircraft could be manufactured and deployed. But Tunner was concerned with the long-term needs of airlift. This Berlin operation held the attention of the world and demonstrated the importance of the airlift mission. Therefore, he projected that it could be used as leverage to improve the airlift force structure of the future.[171] As soon as Secretary Symington returned to Washington he set out to obtain a fleet of the larger C-124 Globemaster transport aircraft for the Air Force.[172]

The last week of January 1949, the U.S. renounced the Moscow Agreement in its entirety and proclaimed that "the West mark would remain the currency in West Berlin until a unified government was restored on a workable basis." The uncompromising approach of Generals Clay and Howley had been repudiated by the success of the airlift.[173]

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[170] The advantages of the C-74 were obvious. It could carry two and a half times as much weight as the aircraft then in use. Tunner argued if the airlift forces had such an aircraft, all the other problems would be proportionately reduced. Only a third of the flight crews and maintenance crews would be needed, which would reduce the requirement for billeting. In addition, one third of the airframes would be needed, cutting down on the overwhelming three-minute interval air traffic in Berlin. See Tunner, 199. CALTF's planning staff called for "bigger and better aircraft: more tonnage lifted in fewer flights by fewer crews." Specifically, the planners wanted to phase out the C-54 in favor of the DC-6 (C-74). Moreover, they wanted production to be accelerated on the C-124, which was projected to have its first flight test in the middle of 1950. It was supposed to be capable of flying an incredible 35 tons. To accommodate such an aircraft, the runways at Tegel and Rhein Main would require lengthening and reinforcing. Tusa and Tusa, 337 - 338.

[171] Tunner, *Over the Hump*, 200.

[172] The C-124 was designed exclusively for military use, the front of the aircraft opened in a clamshell fashion, enabling any piece in the Army's inventory to be airlifted, including tanks. This aircraft would become the workhorse of the strategic airlift until the mid 1960s. Tunner, 200.

[173] The Soviets were now beginning to realize that the airlift was going to be successful and, to make

Clay recounts that he had "expected that a revived western economy would eventually force a lifting of the blockade.[174] Given the combination of these factors together with the fact that the West would accept nothing short of a complete lifting of the blockade, "the Russians began to seek a way out." [175]

By early spring, the combined U.S. - U.K. average daily tonnage had grown to 8,000 which, Clay points out, "was as much as we had been able to bring into Berlin by rail and water prior to the blockade."[176] After Easter, the airlift operation grew to a point where it was consistently transporting over nine tons a day .[177] Because the new transports being produced were capable of carrying much more than the older models, Clay asserts that "this tonnage could [have been] doubled, or, if maintained at the same figure, delivered in Berlin at from 25% to 35% less cost."[178] The airlift had a dramatic impact on the revitalization of Berlin's economy, as it began to carry increasing amounts of commercial export items. Whereas the transport aircraft carried slightly less than a half million marks worth of goods in January, by March the air exports had exceeded one million marks.[179]

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matters worse, they were feeling the effects of the West's counter-blockade. See Tunner, 127.

[174] Clay points out that East Germany was without coking coal and steel and was unable to get these essential materials behind the "iron curtain," because the inventories were too low. "We were certain in the spring of 1949 that this pressure was being felt. While we could not obtain accurate statistical information, we did know that the economy of Eastern Germany was at a standstill during a period in which the productive output of West Germany was increasing at a more rapid rate than anywhere else in Europe." See Clay, *Decision in Germany*, 389.

[175] Smith, *The Defense of Berlin*, 127.

[176] Clay, *Decision in Germany*, 386. In March, the tonnage grew to 200,000, while in April it climbed still higher to 235,000 tons and the single-day record of 12,490 tons was set on 16 April. See Davison, 261.

[177] Tunner, *over the Hump*, 222.

[178] Clay contends that: "We were gaining invaluable experience in the use of air transport to support military operations and for civil use. The cost of the airlift could well be justified in its contribution to national defense." See Clay, *Decision in Germany*, 386.

[179] Dr. Landsberg, the leader of the city's CDU faction, claimed that: "The expansion of the airlift as

On 4 April 1949 the North Atlantic Treaty Organization (NATO) came into being with the signing of the Atlantic Pact in Washington. With this signing, these countries "pledged themselves to mutual assistance in case of aggression against any of the signatories."[180] This "process of organizing Western defense was hastened as a result" of the Berlin blockade.[181]

On 27 April the Soviet Union announced its willingness to lift the blockade provided that the Allies agreed to a meeting of the Council of Ministers in Paris on 23 May to discuss the "reunification of Germany." Although the Allies agreed to the meeting, this placed great pressure upon the West Germans to ratify their new constitution expeditiously, since "they were not prepared to have the creation of the West German State made into a bargaining point."[182]

On 4 May, the U.S. demonstrated its future airlift capabilities to the Soviets as it landed a huge C-97 Stratocruiser at Tempelhof.[183] Coincidentally, the next day an

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planned by the Western powers would provide Berlin with enough raw materials to enable the city to exploit its full economic potential and would thus enable it to become self-supporting." See Davison., 261.

[180] The twelve original signatories included the U.S., U.K., France, Belgium, Canada, Denmark, Iceland, Italy, Luxembourg, the Netherlands, Norway, and Portugal. See Stephen E. Ambrose, "The Military Dimension: Berlin, NATO and NSC-68," in *The Origins of the Cold War*, Thomas G. Paterson, ed. (Lexington: D.C. Heath & Co., 1974) 177.

[181] *The North Atlantic Treaty Organization: Facts and Figures* (Brussels: NATO Information Service, 1989) 10

[182] Intricate negotiations continued throughout the entire month of April and were kept so secret that not even General Clay was made aware of them. Conrad Adenauer's political acumen paid off in overcoming delaying tactics instigated by the Moscow-inspired West German Communists so that the Basic Law was ratified on 8 May 1949 by "an overwhelming majority ... of the Parliamentary Council." On 12 May 1949 the Military Governors presented Adenauer with a formal letter of acceptance of the new constitution. See Morris, 135.

[183] Already in regular production, this aircraft could carry 25 tons and "the word was put out that it was being tested for thirty days before deciding whether to bring it into service." See Tusa and Tusa, 338.

agreement was reached and an announcement was made that the blockade would be lifted effective 12 May.[184]

Conclusion

For all intents and purposes, the Soviet Union had lifted the blockade without being able to extract any major concessions from the West. Smith recounts the words that were spoken in recognition of the men who had flown the heroic airlift during the ceremony which took place in Berlin the day the blockade was lifted:

> Franz Neumann, Chairman of the SPD, then read the names of the airmen who had been killed and introduced a resolution that the plaza in front of Tempelhof airfield be renamed *Platz der Luftbrucke* (Plaza of the Airlift) in honor of them. The resolution was passed unanimously.[185]

General Tunner reflects that "the Airlift had done its job, and West Berlin was free. We had shown the world what the free nations could do."[186]

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[184] Following are the provisions: "(1) All the restrictions imposed since 1 March 1948 by the Government of the U.S.S.R. on communications, transportation, and trade between Berlin and the Western zones of Germany and between the Eastern zone and the Western zones will be removed on 12 May 1949; (2) All the restrictions imposed since 1 March 1948 by the Governments of France, the U.K. and U.S., or any one of them, on communications, transportation, and trade between Berlin and the Eastern zone and between the Western and Eastern zones of Germany will also be removed on 12 May 1949." See Smith, *The Defense of Berlin*, 129 - 130. General Clay was notified of these provisions by a teleconference message transmitted on 30 April 1949 from Assistant Secretary of the Army Voorhees. Clay says that "I cabled to the Department of the Army immediately that we should continue the airlift until Berlin had adequate reserves of coal and food to carry it through another winter if the blockade should be resumed." See Clay, *Decision in Germany*, 390. Clay's memo was worded as follows: "There is one important thing to remember. The blockade was broken by air power, and the air power should be maintained in full until the Council of Ministers has completed its deliberations. Subject to the continuation of the airlift, I would urge that the lifting of the blockade and counter-blockade be defined as just that and not elaborated into a minutiae of detail." See Top Secret Memorandum CC 8467, General Clay to Secretary Voorhees, 1 May 1949, reprinted in Smith, *Papers of General Clay,* 1138.

[185] "When Mayor Reuter rose to address the assembly he spoke of the 48 American and British pilots who had lost their lives in air crashes during the blockade. As he spoke, all those present rose to their feet in a moment of tribute." See Smith, *The Defense of Berlin*, , 130.

[186] The airlift continued to run at full pace for the next three months, coming to a complete halt on 1 September 1949. See Tunner, 223.

Clay later reflected that "the use of the airlift to sustain the city had proved the firmness of intent of the Western Powers."[187] As Clay had demanded, throughout the month of May, the airlift continued to be "the biggest transporter of goods for the city."[188] Although they began to take measures to reduce the pace of operations, the basic infrastructure was to be left intact as the Military Governors had recommended that "a nucleus be preserved from which to build up again in ninety days if need be."[189]

At the request of Assistant Secretary of the Army Tracy Voorhees, General Clay wrote a memorandum for Lieutenant General Alfred Gruenther, Secretary of the Joint Staff, concerning what to do if the Soviets reimposed the blockade on Berlin. After discounting the first two alternatives: (a) Abandonment of Berlin; and (b) Movement into Berlin by Surface Routes using Force if necessary, he decided upon a third option (c) Continue the Airlift.[190]

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[187] Clay, *Decision in Germany*, 392.

[188] That month alone, the airlift carried 250,834 tons, the "highest total yet." In comparison, during the last ten days of the month, "70,915 tons got in by rail, 12,484 by water and only 39,831 by road." See Tusa and Tusa, 360. According to statistics compiled by Wragg: "The USAF allocated a total of 441 aircraft to the airlift, of which no less than 309 were C-54s, in addition to the USN's 24 R-5D's, while there were also 105 C-47s, five C-82s, a single C-97 and the C-124. The RAF contributed a total of 147 aircraft, of which more than forty were C-47s, as well as 35 Avro Yorks and 26 Handley Page Hastings, in addition to the 10 Sunderlands and 104 civil contract aircraft. A total of 189,963 sorties were flown by USAFE aircraft, 65,857 by the RAF, including ... British Commonwealth aircrews, and 21,984 were by chartered British commercial aircraft." See Wragg, 81.

[189] The peak month of operations was July 1949, when 253,090 tons were airlifted to Berlin. As a result of a policy approved by the National Security Council on 27 July 1949, "two troop carrier groups of the USAF and two heavy transport squadrons of the RAF would be kept indefinitely in Germany and basic installations maintained." On 12 August the Berlin airlift began to operate on a five-day per week schedule. The August total was 79,310 tons and 14,897 tons were airlifted in the final month of September. See Tusa and Tusa, 374.

[190] Clay elaborates: "This seems to me to be the only acceptable alternative. It has been proved that Berlin can be supported by airlift; and, in fact, in recent months more tonnage has been carried in each day by air than by rail and water prior to the imposition of the blockade. Utilizing larger planes, the cost of the airlift and the personnel required for its operation can both be reduced materially." See Top Secret Memorandum, General Clay to Lt. General Gruenther, 25 May 1949, reprinted in Smith, *Papers of General Clay*, 1168 - 1170.

Much like the experience of the Hump crews in World War II, despite the fact that the Berlin Airlift had decisively disarmed a major international crisis, the U.S. Air Force was not originally going to submit its strategic air transport crews for a medal. The Tusas point out that "*it was only thanks to a campaign by the journalist Walter Winchell that members of the U.S. Air Force who had labored so valiantly were awarded a medal.*"[191]

General Clay forecasted that "volumes can be written, and perhaps will be written, to cover in detail the work of the airlift, though I doubt if they will do it justice."[192] To U.S. Army Brigadier General Howley, the Berlin Commandant, the greatest "military lesson of the airlift" was that "although it was conceived primarily as a humanitarian project to defeat a political purpose, it taught us the practical importance of supplying an army by air."[193] The Chief of Staff of the Air Force, General Hoyt Vandenberg, wrote that the Berlin airlift "has convinced us ...that *the future of military air transport is in big aircraft.*[194] Major General Kuter, the Commander of MATS, wrote that "in a military sense, Operation 'Vittles' [the nickname of the Berlin airlift] is graphically demonstrating two salient facts: (1) *the vital importance of strategic air transport*, the sustained, round-the-clock mass movement of cargo by air; and the importance and feasibility of unification such as MATS typifies.... [and] (2) *the desirability - rather, necessity - for*

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[191] Tusa and Tusa, *The Berlin Blockade*, 375.

[192] Clay, *Decision in Germany*, 386.

[193] "Air-phibious operations, if I may coin the term, will be the key strategy of future wars. The Army and Air Force have stepped up training of airborne troops, now confined to the 82nd and the 11th Divisions, and are heavily committed to the movement of men, material, and supplies by air." See Howley, 10 - 11.

[194] "As a supply mission, Operation Vittles exceeds in magnitude operations over the Hump during the war." See "A Special Study of Operation Vittles," 2.

large transport aircraft."[195] Finally, Brigadier General Tunner, the Commander of CALTF, believed that four major lessons could be drawn from the experience in Berlin:

> (1) This successful airlift was truly a *joint and combined operation*; (2) Military air transportation requirements and economic considerations demand a *large airlift aircraft designed for military operations*; (3) Airlift will be a *vital factor in future military operations*; and (4) For the most effective and efficient operation, *airlift must have a single commander* [emphases added].[196]

In the final analysis, Davison attributes the Berliners' "ability to hold out" for nearly an entire year to a combination of four factors: "the population's will to resist, strong political leadership and institutions and *a material basis for resistance was provided by airlifted supplies.*[197] John and Ann Tusa highlight the fact that *"for the first time, air forces had taken on the traditional roles of armies and navies*: they had relieved a siege and been a tool for diplomatic pressure. Air power, created for war, had become an instrument of peace."[198] Jerome Peppers adds that "the Berlin Airlift proved ... *the U.S. needed to devote special attention to development of large military air cargo equipment* [emphasis added]."[199]

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[195] Operationally speaking, and of likely interest to the air carrier industry, 'Vittles' has demonstrated and the added productivity and efficiency of cycled reconditioning in maintaining aircraft in a sustained mass operation. ... [The Berlin airlift] has conclusively proven a point of major concern to all American citizens: that American air power, in this instance the military air transport component of American air power, is an instrument of peace. In probably no other way short of war, could the U.S. so vividly make apparent its concern with maintaining the peace ... as through the medium of the unremitting aerial supply ... to the people of Berlin." See "A Special Study of Operation Vittles," 5.

[196] Tunner elaborates: "(1) It involved units from the USAF, USN, and the British, Australian, New Zealand and South African RAFs; (2) 68 C-74 aircraft would do the job of 178 C-54 aircraft at less expense for flying time, personnel and maintenance. (This helped MATS procure the C-124 in 1950. It had over twice the cargo capacity of the C-54 and was specifically designed for military air transportation); (3) It can carry personnel and cargo anywhere in the world, regardless of conditions; (General Tunner had operational command only; administratively, he was under USAFE command, a situation that caused numerous problems)." See Eichhorst, 15.

[197] Davison, *The Berlin Blockade*, xiv.

[198] Tusa and Tusa, *The Berlin Blockade*, 374 - 375.

[199] Jerome Peppers, "Operation Vittles," in David C. Rutenberg and Jane S. Allen, eds, *The Logistics of*

The Korean Airlift

Introduction

On 25 June 1950, North Korean Premier Kim Il Sung ordered "seven infantry divisions, an armored brigade, and additional support units" to launch an invasion across the 38th parallel into South Korea.[200] Based largely upon the logic of NSC-68 that the U.S. was the de facto leader of the free world, "President Truman decided that the United States had to act."[201]

The first measure taken was through the auspices of the United Nations, where the Security Council unanimously "called upon the North Koreans to cease their attack and to withdraw their armed forces to the 38th parallel."[202] Seoul fell shortly thereafter, prompting President Truman to address the nation and the world on radio.[203] The next day, the U.N. Security Council issued a resolution sanctioning U.S. armed intervention.[204]

Waging War (Gunter AFS, AL: Air Force Logistics Management Center, 1986) 142.

[200] Given that the Army of the Republic of Korea was "unable to defend itself against the Communist forces," President Syngman Rhee asked President Truman for military assistance. See Allen Guttmann, ed., *Korea and the Theory of Limited War* (Boston: D.C. Heath & Co., 1967) 1.

[201] Because the JCS had earlier decided in 1947 that "Korea was not vital to American security," the President had to weigh the alternatives. There was a strong case to be made for nonintervention, given that Secretary of State Acheson had "very pointedly excluded South Korea from our main perimeter of defense in the Far East," in a speech he had given the previous January. Furthermore, based upon the Euro-centric U.S. foreign policy of containment, it had been assumed that the next war would be a "total war waged largely with nuclear weapons," so that U.S. conventional forces had been dramatically downsized. See Guttmann, 1.

[202] The Soviet representative was boycotting in protest of Communist China's not having been allowed to take Nationalist China's seat. Kim Il Sung refused to abide by the Security Council edict, and continued his advance southward claiming that his country had been "attacked by the puppet Syngman Rhee." See Guttmann, 1.

[203] "The attack upon Korea makes it plain beyond all doubt that communism has passed beyond the use of subversion to conquer independent nations and will now use armed invasion and war. It has defied the orders of the Security Council of the United Nations issued to preserve peace and security. ... The Security Council ... called upon the invading troops to cease hostilities and to withdraw to the 38th parallel. This they have not done, but on the contrary have pressed the attack." See Harry S. Truman, "Statement on the Korean Conflict," 26 June 1950, cited in Guttmann, 2.

[204] "*The Security Council, Having determined* that the armed attack upon the Republic of Korea by the forces from North Korea constitutes a breach of the peace. ... *Having called upon* the authorities of North

Fifth Air Force's Ad Hoc Airlift

With U.N. backing, President Truman "ordered United States air and sea forces to give the Korean Government troops cover and support."[205] Ray Bowers points out that "on the eve of battle in Korea, American doctrine for theater airlift forces rested on two basic propositions:

> First, from World War II came the conviction that air transport could confer enormous advantages upon the commander able and willing to use it boldly; Second, from the Berlin Airlift ... the lesson was clear that strong and aggressive internal management could strengthen the productivity and responsiveness of the airlift force.[206]

Furthermore, Bowers contends that "in the fast-moving campaigns of Korea, both propositions were convincingly confirmed, thus *stamping the nation's future organization and doctrine for air transport* [emphasis added]."[207]

When the Korean War began, the U.S. airlift fleet consisted primarily of the World War II veteran Curtiss C-46 Commando, Douglas C-47 Skytrain, Douglas C-54 Skymaster as well as Fairchild's newly-modified variant of the C-82, the C-119 Flying Boxcar.[208]

Korea to withdraw forthwith their armed forces to the 38th parallel, and *Having noted* ... that the authorities in North Korea have neither ceased hostilities nor withdrawn their armed forces ... *Having noted* the appeal from the Republic of Korea to the U.N. for immediate and effective steps to secure peace and security, *Recommends* that the Members of the U.N. furnish such assistance to the Republic of Korea as may be necessary to repel the armed attack and to restore international peace and security in the area." See U.N. Security Council Resolution of 27 June 1950, cited in Guttmann, 2 - 3. The resolution passed by a vote of seven to one. Voting for the resolution were the U.S., U.K., France, China, Norway, Ecuador Cuba and two days later, India. The only country voting against the resolution was Yugoslavia, while the Soviet Union and Egypt abstained. See U.N. Security Council Resolution of 27 June 1950, cited in Guttmann, 3.

[205] Harry S. Truman, "Statement on the Korean Conflict," 26 June 1950, cited in Guttmann, 2.

[206] Ray L. Bowers, "Korea: Proving Ground in Combat Air Transportation," *Defense Management Journal* 12:3 (July 1976): 62.

[207] Ibid.

[208] The C-47 would again prove itself to be the most durable and flexible aircraft in the fleet. It was particularly suited to flying missions to the smaller Korean fighter fields. Most of these aircraft were assigned to the 21st Troop Carrier Squadron, nicknamed the "Kyushu Gypsy," as it deployed to five different operating locations during 1951: Ashiya, Itazuke, and Tachikawa in Japan, and Taegu and Kimpo in Korea.

The unified Far East Command, headquartered in Tokyo, was under the command of General Douglas MacArthur.[209] When it came time to surge for the Korean conflict in the summer of 1950, U.S. military airlift capabilities were insufficient due to post-World War II demobilization efforts.[210] The only airlift capability in the Pacific fell under the 374th Troop Carrier Wing (TCW), which was composed of two C-54 squadrons.[211] Twenty-five C-54s[212] based at Tachikawa Air Base were the *"only air transport[s] in the Far East."*[213]

Prior to the attack upon Korea, the majority of the wing's operations had been conducted between Japan and the Pacific islands.[214] Besides the C-54 wing, there were just 22 C-47s and 13 C-46s scattered at various bases throughout the entire Pacific

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Most of the C-46s were assigned to Ashiya's 314th Group. They primarily conducted airland missions transporting troops and cargo, but sometimes were needed to airdrop airborne forces supply bundles. As had been the case in Berlin, the C-54 again proved to be the most efficient aircraft in the operational inventory for conducting strategic airlift missions, and therefore proved to be the most widely used aircraft for personnel, patients and heavy cargo. These aircraft were based at two airfields in Japan; Tachikawa and Ashiya. From Tachikawa, the 374th Wing airlifted to Korea the troops and supplies which had arrived from the U.S. at Haneda International Airport and Yokohama harbor. From Ashiya, the 61st Group airlifted to Korea equipment and supplies from Kokura's general depot. The C-119s were stationed in Japan at Ashiya with the 314th Group, and Brady with the 437th Wing. See Robert F. Futrell, *The United States Air Force in Korea 1950 - 1953,* revised ed. (Washington, D.C.: Office of Air Force History, 1983) 561 - 562. Used primarily by troop carrier wings, the C-119 had large, rear-mounted "clamshell" cargo doors which were conducive to airdrop operations and simplified loading and unloading operations on the ground. See Eichhorst, 91.

[209] The Ground component was the 8th Army and the Air component was the Far East Air Force (FEAF), under the command of Lieutenant General George Stratemeyer. The operational combat component of the FEAF was 5th Air Force (AF), under Major General Earle Partridge. The 5th AF was responsible for providing air defense for the Japanese mainland and was later put in charge of all tactical air forces in the Korean theater. See Miller, 194.

[210] The Military Air Transport Service (MATS) had been operating according to an "ultra-economy" peacetime daily utilization rate of just 2.5 hours of flying time per aircraft. See Eichhorst, 16. As part of this peacetime effort to economize, only 70 tons of cargo were being airlifted to Japan each month. See Miller, 202.

[211] The squadrons were based at Tachikawa Air Base, close to Tokyo, Japan, and a one C-54 squadron based at Clark Air Base, Philippines. The Tachikawa squadron served 5th AF and the Clark squadron 13th AF requirements, respectively. See Eichhorst, 16.

[212] Bowers, "Korea: Proving Ground ," 62.

[213] Annis G. Thompson, *The Greatest Airlift: The Story of Combat Cargo* (Tokyo: Dai-Nippon Printing Company, 1954) 1.

[214] As U.S. forces had ended their post-war occupation of South Korea several years earlier, there was barely any U.S. military airlift movement to South Korea. See Thompson, 1.

theater. On 29 June, 5th AF was put in charge of all Pacific theater transport assets, and was authorized to "receive and control airlift requests."[215] Given the limited-capacity of the C-54s, "*large numbers of American troops were airlifted to Korea with too little equipment* [emphasis added]."[216]

Soon after the invasion by the North Koreans, Colonel Troy Crawford, Commander of the 374th TCW, "dispatched ... C-54s ... to [Seoul] Korea at once to evacuate civilians, diplomats, missionaries and military advisory personnel to Japan."[217] During this first week of action, the C-54s flew a 24-hour-a-day shuttle evacuating Western civilians from Seoul to Japan and transporting military supplies to the forces in South Korea.[218] Soon after Seoul collapsed, this operation was shifted to Taejon (near Suwon). After the South Korean Army evacuated Suwon, three small airstrips in a band of territory know as the "Pusan Perimeter" were the only fields available throughout all of noncommunist-occupied South Korea.[219] Over the course of the first few days, enemy aircraft destroyed a total of three C-54s on Korean airfields and crippled another while it was on its final approach to landing.[220]

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[215] Miller, *Airlift Doctrine*, 194.

[216] Arriving troops had to wait for sealift ships to arrive before they could be adequately equipped. See Eichhorst, 16.

[217] Thompson, *The Greatest Airlift*, 1. Just three days after the invasion, on 28 June 1950, the first airlift missions were flown in relief of South Korea when "10 C-47s, 7 C-54s, 4 C-46s, protected by 83 fighters, flew 748 people from Korea to Japan." See Miller, 195.

[218] Bowers, "Korea: Proving Ground ," 62.

[219] Many of these initial missions were flown with fighter escort, given that the C-54s were vulnerable targets to attacking Communist fighters. See Thompson, 1. The first U.S. aircraft destroyed in the Korean War was a MATS C-54, which was attacked by North Korean Yakovlev Yak-9 fighters during the initial assault as it was getting ready to takeoff from Seoul's Kimpo airfield. See Wragg, 83. The 374th TCW lost its first C-54 a few days later when it was strafed on the ramp at Suwon. See Thompson, 1.

[220] Bowers, "Korea: Proving Ground ," 62.

To augment this emergency airlift effort, Colonel Crawford called upon the C-54s of his wing's 21st Troop Carrier Squadron from Clark Air Base, Philippines. In addition, he recalled every C-47 in the Far East.[221] At the end of the month, General Stratemeyer transmitted an official request to Washington for 330 total aircraft reinforcements, of which *only 36 (10.9%) were transports;* 21 C-54s and 15 C-47s. In response, *Headquarters Air Force initially agreed to send* just 12 C-47s and only 4 C-54s, *less than half of the transports requested* [emphasis added].[222]

When the war began in Korea, "*MacArthur had no airborne troops, ... [and] now wanted airborne forces badly.*"[223] At the time, the only such outfit in the U.S. Army was assigned to the 82nd Airborne Division (AD), based at Fort Bragg, North Carolina. Although MacArthur intended to utilize the 82nd Airborne RCT unit, the Joint Chiefs of Staff (JCS) chose not to disrupt the Army's only complete infantry division left in the U.S., and instead the Chief of Staff of the Army decided to send an RCT from the 11th Airborne Division from Camp Campbell, Kentucky. At the time this decision was made, "*the 11th Airborne Division had so few men that only one RCT, at less than half its authorized infantry strength, could be formed* on 15 July [emphasis added]."[224]

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[221] Crawford integrated the aircraft and crews with two C-54 squadrons at Tachikawa. All two-engine pilots were reassigned from staff positions in other FEAF units to form a new 21st Squadron, which had been transferred to Ashiya Air Base. See Thompson, 1.

[222] Miller, *Airlift Doctrine*, 196. Two provisional C-46 squadrons, constituted from parts of various FEAF units, were joined together under the 1st Provisional Group, based at Tachikawa Air Base, Japan. See Thompson, 12. Near the end of August, 64 C-119s were finally deployed from the CONUS. See Bowers, 63.

[223] MacArthur believed the North Korean Army might be vulnerable to airborne forces, which had proven their worth during World War II by "drop[ping] behind enemy lines, ... sever[ing] lines of communications, and ... disrupt[ing] rear-area activities." See James F. Schnabel, *The United States Army in the Korean War: Policy and Direction the First Year* (Washington, D.C.: U.S. Army Office of Military History, 1972) 168.

[224] On 8 July, MacArthur made his first request for the air deployment of a paratroop regimental

As long as the other members of the JCS would concur, the Chief of Staff of the Air Force, General Hoyt Vandenberg, "offered to fly the regiment and its equipment to Japan in C-119 aircraft." The overriding problem was that "*this emergency aerial movement would have required the diversion of MATS carriers and commercial planes,*" which were presently airlifting massive amounts of men and equipment to the Far East Command. Because of the potential disruption to both the 82nd AD and MATS strategic airlift operations that an accelerated airlift of the RCT to Korea would cause, the JCS passed on Vandenberg's suggestion [emphasis added]."[225]

On the 1st of July, the C-47s of the 21st Squadron, augmented by the 374th Wing's C-54s,[226] began to airlift 24th Infantry Division (ID) elements from Itazuke, Japan, to the airfield at Pusan, South Korea. However, after only one C-46 mission and 16 C-54 missions had been flown, the Pusan airstrip had begun to disintegrate.[227] Given that they had taken the airfield at Suwon the day prior, the Communist forces had literally put a temporary hold on all C-54 operations in South Korea.[228] As the 5th Air Force had to call

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combat team (RCT) to his Far East Command. The Chief of Staff of the Army, General Lawton Collins, favored keeping the 82nd AD RCT unit intact and continuing to build the 11th AD with recent graduates of the Airborne training school at Fort Benning, Georgia. The Department of the Army informed General MacArthur on 18 July that "the 11th Airborne RCT would be ready at home station by about 20 September." See Schnabel, 169.

[225] In his rebuttal, MacArthur urged the Department of the Army that every effort should be made to have an RCT in the Far East theater by 10 September. However, given that the Army considered MacArthur's need for an RCT to be of secondary importance, it refused to yield. At this point in time, the Army was not yet sure that the Inchon assault would even take place because it was not known whether adequate amphibious forces would be provided by the Marine Corps. See Schnabel, 168 - 170.

[226] Thompson, *The Greatest Airlift*, 6.

[227] Miller, *Airlift Doctrine*, 195. The fields at Taegu and Pohang also disintegrated. Given that the airfields within the Pusan Perimeter were made primarily of dirt and gravel covered with a thin coat of tarmacadam, a series of deep pot holes had developed, restricted them to C-47 operations only. If C-46s and C-54s were going to be able to operate from these airfields anytime soon, it would take a combined repair effort by the South Koreans and the U.S. Army and Air Force. See Thompson, 6 - 10.

[228] Bowers, "Korea: Proving Ground ," 62.

off all C-54 operations into Korea, it had to rely solely upon C-47s and C-46s to pick up the slack.[229] Miller points out that because of this restriction on C-54s, *"the only troop carrier group in the theater could not airland forces in the combat zone* [ital. added]."[230]

Throughout the summer of 1950, a regular pattern developed whereby munitions would be flown in and the wounded would be flown out of the Korean airfields while the combination of terrain, weather, navigation aids and enemy fire made the airlift dangerous and difficult.[231] Another problem which had also occurred in Berlin was that "*many of the [transport] pilots had not flown for years, and were on desk jobs when the Korean War broke out* [emphasis added]."[232]

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[229] Miller, *Airlift Doctrine*, 195. These aircraft had to be taken from their logistics support roles throughout bases in the Pacific. See Bowers, 62.

[230] Miller, *Airlift Doctrine*, 195. Fortunately, the C-47s were able to successfully complete the airland deployment of two battalions and the headquarters of the 24th Infantry Division. See Bowers, 62. The C-54 operation was limited to a three-hour intra-Japan airlift from Tachikawa to Ashiya, which is located in the southwestern coastal region of Japan, just across the Sea of Japan from Korea. For their part, the C-47s flew one-and-a-half-hour sorties transporting the personnel, supplies and equipment from Ashiya to Pusan, Pohang and Taegu, Korea. On their return leg, the C-47s evacuated wounded soldiers to Itazuke Air Base, Japan, which was collocated with a major U.S. Army hospital in Fukuoka. The C-54s would transport most of the wounded back to Tokyo for short hospital stays. The seriously wounded were airlifted to the U.S. for extended hospitalization. See Thompson, 6.

[231] With 7,500-foot mountain ranges, Korea's terrain was quite jagged with considerable variations in field elevation. Moreover, with the moist climate, there tended to be a lot of cloud cover which many times hid potentially lethal mountain peaks from view. Furthermore, the flight from Japan to Korea was almost entirely over water, so that if an aircraft developed an emergency while en route, there were no readily accessible divert fields. There were no electronic aids to navigation, so that the pilots had to fly strictly by visual reference to the ground. This system worked quite well as long as there was sufficient sunlight and the visibility was clear. However, operations had to be severely curtailed during periods of darkness or instrument conditions. There was always the threat of being attacked by enemy fighters or ground sniper fire. Although most aircraft were damaged while on the ground, there were a few instances early in the airlift of aircraft being attacked: "A Skymaster was attacked in the air and badly shot up, landing at Ashiya with most of its controls inoperative. Some C-47s and C-46s picked up bullet holes flying in and out of Taegu and Pohang, particularly during the period when enemy troops were fighting on one end of the Pohang strip. See Thompson, 7.

[232] Given that they had to be "hastily restored to flying status, they were rusty on technique and had much to learn ... quickly, or perish in the process." See Thompson, 7 - 10.

When hostilities began in Korea, "*there was no logistical organization in the theater for the operation of aerial ports of embarkation.*"[233] To compensate for this neglect on the part of the U.S. Air Force, the Army assisted by providing much of the infrastructure for the Korean airlift operation [emphasis added].[234]

Because of the urgency of the ever-changing situation, "*quite frequently the program bore little or no relation to the general priorities allocation system.*"[235] Early in July, the 5th Air Force Advance, based at Itazuke, Japan, had nominally assumed the "control and allocat[ion] [of] airlift." However, in practice, most airlift requests were processed through 5th AF Rear, FEAF Operations, the 374th TCW, and even the flying squadrons themselves. In essence, this meant that "*5th Air Force judg[ed] the priority of its own airlift requirements* [emphasis added]."[236]

Because of these haphazard organizational arrangements, "not every facet of the Korean requirements system ran smoothly."[237] Nevertheless, eventually, "the problem of

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[233] William B. Bunker, "Organization for an Airlift," *Military Review* 31:1 (April 1951): 25.

[234] The Air Transportability Training Center, located at Matsushima, Japan, dispatched it's experienced instructors to Tachikawa and Ashiya to "organize and operate" the aerial ports of embarkation. This translated into "load[ing] and offload[ing] ... 374th Wing aircraft, manifest[ing] cargo and passengers, and r[unning] ... passenger and freight facilities." In addition, the 2348th Quarter Master Airborne Packing & Supply Company was relocated to Ashiya in order to load prepacked airdrop bundles onto the aircraft, and actually "kick" the bundles out of the aircraft over the drop zones. The 2348th also pre-packed munitions, petroleum, food, and medicine, among other things, so that when requests were made for essential cargo to be airdropped, the aircraft could be rapidly uploaded. See Thompson, 6.

[235] Bunker, "Organization for an Airlift," 29.

[236] To rectify this haphazard arrangement, measures were taken to enforce a process whereby requests for airlift would originate at the FEAF Transportation Office, then go on to the FEAF Director of Operations, and finally end up with the 5th AF Advance. The 8th Army relayed their requests to the FEAF Transportation Office through 8th Army's Logistics Directorate (G-4). However, 5th AF established a separate Troop Carrier Division as part of the FEAF's noncombat Directorate of Operational Services in order to "priorit[ize] ... monitor and coordinate" all airlift concerns between GHQ, FEAF, and CCC. Through an agreement between the FEAF and GHQ, "70% of the tonnage ... would go to the ground forces. In so doing, the Division "allocated [30% of the total airlift] capability as it thought best," issuing the 374th TCW fragmentary orders on a daily basis." See Miller, 196.

[237] Major General Blank points out: "more than half the requisitions received from Korea were listed as

stating realistic priorities was ... corrected."[238] Because of its skeleton airlift force, as in World War II, the U.S. military again had to turn to the airline industry for assistance.[239] By the end of August, 66 four-engine transports were under contract with MATS.[240]

Besides the commercial airlines, another American private company which contributed to the Korean airlift was Civil Air Transport (CAT), headed by retired Major General Claire Chennault. Formed in 1950, CAT, Inc., began flying in support of the Korean airlift in September 1950 and subsequently flew for the remainder of the war. CAT, Inc.'s, greatest contribution came in the early days of the airlift when the 374th TCW was flying most of the Korean airlift, and "*military aircraft and crews were still in extremely short supply* [emphasis added]."[241]

Given that "*all airlift in the theater combined could not provide even 500 tons a day to Kimpo,*" the 314th Troop Carrier Group (TCG) desperately needed more C-119s to

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top priority and designated for air transportation. Yet our air cargo capability could accommodate only a small fraction of that amount. Flooding the supply system with top priority requisitions was self-defeating. Cargo jammed aerial ports of embarkation and sat there for months, although it could have easily have been delivered in less time by surface transportation. See Jonas L. Blank, "Abusing the Priority System," in David C. Rutenberg and Jane S. Allen eds., *The Logistics of Waging War* (Gunter AFS, AL: Air Force Logistics Management Center, 1988) 137.

[238] Rutenberg and Allen, *The Logistics of Waging War*, 137. One of the key units that helped to expedite MATS' strategic airlift to Japan was the Provisional Airlift Task Force, based at Travis Air Force Base, California, until November of 1950. See Goldberg, 153.

[239] The first mission was flown on 3 July from the U.S. to Tokyo by a DC-4 (commercial equivalent of C-54). See Goldberg, 153. Contracts were made with Pan Am, Northwest, and United, along with fourteen other lesser known companies. They flew troops and supplies to the major staging area based in Japan. One route went via Seattle, Anchorage, and the Aleutians. The other went via Hawaii, Midway, and Wake Island. See Tunner, 228.

[240] Goldberg, *History of the U.S. Air Force*, 153.

[241] To "provide commercial airlift for U.S. military and government agencies in the Far East," CAT, Incorporated, was operated primarily by the aircrews who flew with Civil Air Transport Airlines. Moreover, the CAT, Inc., aircraft were leased from CAT's fleet of air carriers. Thompson explains that: "the additional capability represented by the CAT planes flying out of Tachikawa was extremely important in airlifting high priority cargo, mail and personnel to Korea, and in air evacuating the wounded south from the front in Korea, or from Korea to hospitals in Japan." See Thompson, 449.

conduct airdrops and to provide ongoing airland resupply operations after the Inchon assault. In August, the newly assigned C-119s were banned from all Korean airfields due to the damage that they were causing to the runway surfaces. As a consequence, as had been the case in Burma and Berlin, "*only the supposedly obsolete C-47 could be regularly used in Korea in the early months of battle* [emphasis added]."[242]

On the strategic side of the house, from his position as the Deputy Commander of MATS, General Tunner led the reinforcement of the crucial trans-Pacific lifeline between the United States and Japan.[243] These measures included establishing standardized routes, and increasing the number and utilization rate of aircraft assigned to the MATS Pacific Division. MATS utilized three primary routes to Japan, the great circle, the mid-Pacific and the southern route.[244]

At the onset of the war, the MATS Pacific Division consisted of 60 total aircraft. As this force was not capable of accommodating all of the "critically needed items" which

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[242] On 13 July the 314th TCG was informed that it would only be receiving 4 C-119s by the 3rd of August. From the time hostilities began through mid-September, C-47s accounted for 90% of the intra-Korean airlift sorties. See Miller, 196. The U.S. Army Corps of Engineers went to work on reinforcing the major runways in Korea. In the middle of September, Pusan's airfield was opened for C-54 operations and the airlift into Pusan soon rose to 300 tons per day. See Bowers, 63. Taegu's airfield also became usable, however it *could not be utilized by transport aircraft* except as an emergency diversion, as it was "crammed with 200 fighters." See Miller, 196.

[243] "The Moving Man," *Time*, 18 December 1950, 28.

[244] "(1) The Great Circle route, with flight from McChord AFB near Tacoma, via Anchorage and Shemya, in the Aleutians, to Tokyo, distance 5688 miles and flying time 30 to 33 hours; (2) The Mid-Pacific route from Travis AFB near San Francisco, via Honolulu and Wake Island to Tokyo, distance 6718 miles and flying time 34 hours; and (3) The Southern route from California via Honolulu, Johnston, Kwajalein, and Guam Islands to Tokyo, distance about 8000 miles and flying time 40 hours." See Roy Appleman, *The United States Army in the Korean War: South to the Naktong, North to the Yalu (June - November 1950)*, (Washington, D.C.: U.S. Army Office of Military History, 1961) 115. The Pacific routes were primarily used for passenger flights, whereas the Great Circle was the most prevalent route for cargo missions, as it was more hazardous. On their return flights, these aircraft transported the patients back to the United States. See Goldberg, 153.

needed to be rapidly transported from the United States to the Orient, the MATS Pacific Division was expanded soon after the war began.[245] Through various augmentation measures, MATS' Pacific Division had 250 aircraft by the third month of the war.[246]

In addition to more aircraft, the average daily utilization rate per aircraft was expanded from 2.5, to 6 hours per day. This had a direct bearing on air cargo deliveries to Japan increasing from an average of 2.5, to 106 tons daily.[247] Says Goldberg, "thus began the Pacific Airlift, *the longest aerial supply line in history*."[248] To put this operation in perspective, Thompson points out that "during the first months of the war, *the 374th Troop Carrier Group did a magnificent job of flying which achieved more utilization per plane than any previous airlift operation in history*."[249] Says Thompson, "the men from Tachikawa had successfully held the airlift fort alone until help arrived [emphasis added]."[250]

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[245] MATS was able to divert 40 C-54s from its Atlantic and Continental Divisions to the Pacific Division. In addition, the Air Staff reassigned 75 C-54s of the 61st and 62nd TCGs from the Tactical Air Command (TAC) to augment MATS. See Goldberg, 153. Over 60 four-engine commercial carriers were chartered to fly the trans-Pacific route. See Miller, 203. The Canadian Air Force lent a squadron of six transports and the Belgian Air Force lent a few DC-4s. See Appleman, 115.

[246] Goldberg, *History of the U.S. Air Force*, 153.

[247] Ibid. When the Korean War began, Kwajalein had only a tiny MATS contingent and there was nothing in place at Wake Island. MATS built up its infrastructure at Kwajalein and Wake, as well its smaller transient facilities, with "maintenance people, general facilities improvements overall, forward supply of parts, and better weather and communication services." See Miller, 202 - 203.

[248] Goldberg, *A History of the U.S. Air Force*, 153.

[249] "For flying under the wildest of combat conditions, over some of the most dangerous terrain in the world, in spite of some of the most changeable weather anywhere and on airstrips which were often little better than stateside cow pastures, the 374th Troop Carrier Group won the Presidential Citation." See Thompson, 10.

[250] Thompson, *The Greatest Airlift*, 10.

Combat Cargo Command

After the Inchon assault, the Korean airlift became more expansive and thus demanded a "prioritization of demands, expert judgments on aircraft utilization, and traffic control." To fulfill these needs, the Commander of the FEAF, General Stratemeyer, made an official request to the Air Staff for "a staff to form a provisional cargo command to centralize theater airlift."[251] As had been done in Burma and Berlin, the services of Major General William Tunner, who was serving as the Deputy Commander of MATS, were called upon again in late August, 1950.[252] This time the Chief of Staff of the Air Force, General Hoyt Vandenberg, appointed him as the temporary Commander of the newly established Combat Cargo Command (Provisional) (CCC), located in Ashiya Japan, reporting directly to Stratemeyer.[253] As he had done before, Tunner brought "several staff officers who had served with him in the earlier airlifts [so that] the imprint of Tunner and his staff soon became unmistakable."[254] *Time* noted that "publicity-shy Will Tunner has little in common with the legendary dashing airmen, the 'wild blue yonder' boys." Rather, the magazine compared his attributes to a "Detroit executive."[255]

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[251] Miller, *Airlift Doctrine*, 196 - 197.

[252] Bowers, "Korea: Proving Ground ," 63. *Time* magazine points out that "armed with the lessons of Berlin, Tunner [had] returned to the U.S. late in 1949 firmly established as the leading theorist and practitioner of air transport in the U.S. Air Force." See "The Moving Man," 28.

[253] Eichhorst, *Military Airlift*, 16.

[254] Bowers, "Korea: Proving Ground ," 63.

[255] Tunner was quoted as saying "when we start a new airlift, we start in a hell of a hurry. It is a whole lot easier to start with people you know." "A man who has heard relatively few shots fired in anger, Tunner is far more akin in outlook and operation to the Detroit executive, the industrial leader who makes mass production tick. Like most such executives, he is preoccupied with costs and time-study." Tunner reveals his executive mind-set with the following statement made during a *Time* interview: "The cost of an airlift compared with surface transport is really formidable on the face of it, but when you compare the cost of

Established on 26 August 1950, CCC was responsible for "airborne assault, airdropped resupply, and airland missions carrying cargo and personnel."[256] Futrell points out that having one fleet of aircraft responsible for such a flexible assortment of airlift missions (i.e., tactical and strategic) was "a new concept in transport aviation."[257] Australia, New Zealand, Canada and the U.K.'s Royal Air Force Transport Commands also contributed directly to the airlift effort.[258] Because of this massive influx of military air transport capability, there was less of a requirement for civil contract carriers.[259]

As soon as he assumed command, Tunner pointed out that one of the glaring "major weaknesses of the Korean airlift" was that the personnel which were responsible for palletizing the cargo and loading it on the aircraft were "not under command of, or

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cargo perhaps rotting in ships at harbors whose docks have been heavily bombed or on a month's trip at sea, the comparison gets progressively more favorable. ... An airlift permits an army to accelerate its tempo ... where a campaign supplied by surface might take months or years, an airlift may make it possible to finish it in weeks or even days. Who can assess the cost of months and years?" See "The Moving Man," 28 - 31.

[256] Eichhorst, *Military Airlift*, 16.

[257] Futrell, *U.S. Air Force in Korea*, 557. The mission of the CCC, which became operational on 10 September 1950, was to: "set up firm controls on the entire Airlift operation and to weld the newly arrived and newly organized units in to a tight organization with the 374th TCW. ... To furnish broad logistical support for a U.N. campaign calculated to [dislodge] the [Communists] and take [back] all of Korea." Operational airlift units reporting directly to CCC were the C-54s and C-47s of the 374th Troop Carrier Wing, stationed at Tachikawa Air Base, Japan; the C-119s of the 314th Troop Carrier Group, which had deployed from Sewart Air Force Base, Tennessee, to Ashiya Air Base, Japan; and the C-46s of the 1st Provisional Group, based at Tachikawa, which was composed of aircraft that had been assigned to various units throughout the Pacific theater; finally, the 437th Troop Carrier (Reserve) Wing from O'Hare International Airport, Chicago had been activated and was scheduled to arrive in November. See Thompson, 11 - 12. In December 1950, the C-47s of the Royal Hellenic Air Force Flight 13 were assigned to the 21st (Gypsy) Squadron of the 374th Wing for "operational control and logistic support." See Thompson, 337. A flight of three C-47s from the Royal Thailand Air Force joined the Gypsy Squadron in June of 1951. See Thompson, 345. Although not a part of CCC, some U.S. Navy and Marine Corps C-119s and Martin Mars flying-boats also participated in the Korean airlift. See Wragg, 84.

[258] The Royal Australian Air Force allocated C-47 squadron No. 30, which was later other squadrons of the RAAF No. 91 Wing. New Zealand Air Force's No. 41 Squadron deployed its Hastings aircraft as well. Finally, the Royal Canadian Air Force contributed its No. 426 Squadron, which flew Canadiar DC-4M North Stars (C-54s with Rolls Royce Merlin engines). See Wragg, 83 - 84.

[259] CAT, Inc., was kept under contract in case an unexpected emergency arose. See Thompson, 450.

directly responsible to, the Air Force unit which operated the aircraft."[260] Tunner sent a memo via official channels through the FEAF to General MacArthur recommending that the CCC be given responsibility for the Korean aerial ports. Eventually, General Tunner's recommendation was approved and on 14 January the U.S. Army finally agreed to turn over control of its aerial ports of embarkation to the 315th Air Division.[261]

Because units which had been moved during the war's early stages had been unprepared, their relocations did not go very smoothly. Military organizations had to be made "air transportable" so that they could be relocated rapidly and smoothly while maintaining their operational status. To address this problem, CCC established an Air Transportability Team (ATT).[262]

The factor that most adversely impacted the ability to efficiently utilize the existing air transport assets was "*a complete absence of an efficient method of determining priorities.*" In particular, the Army's requirements would "fluctuate violently," sometimes requesting "several times" its authorized allocation while other times requesting virtually nothing.[263] Because "*the supply of available aircraft was*

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[260] Tunner proposed that his command "must have full control over cargo loading, offloading, tiedown and terminal storage; passenger booking, loading and offloading; and other terminal phases of the Korean airlift operation." See Thompson, 93.

[261] This was accomplished on 2 February with the establishment of the 6127th Air Terminal Group. CCC's Korean support units located at Pusan, Pohang, Taegu, Chungju and Wonju were made detachments of the parent unit. See Thompson, 93 - 94. The aerial ports of embarkation in Japan were located at Ashiya, Brady, Itazuki and Tachikawa airfields. Tachikawa, located just outside of Tokyo, served as the primary strategic transshipment point between the U.S. and Japan. Ashiya, primarily due to its proximity to Korea, served as the major aerial port of debarkation from Japan to Korea. Brady airfield served as a base for C-47s used primarily for the smaller local lifts. Itazuki handled most of the aeromedical evacuation and air freight operations for 5th AF. See Bunker, 26.

[262] Under the jurisdiction of the 315th AD's Traffic Division, the ATT assisted all Air Force units based in Japan to draw up their individual unit mobility plans. In the course of its implementation, every FEAF unit formed a detailed emergency airlift mobility plan that prioritized the order in which various personnel and equipment should be moved so that the unit could continue to conduct its mission. See Thompson, 185.

sometimes drastically limited," CCC recommended to 8th Army and 5th Air Force that air transport be requested for "critical items only," and not as a way to compensate for inadequate logistical plans. Not only CCC, but its parent organization, the FEAF, was "determined that airlift was not to be abused, since *it was limited in capacity by the number of transport planes available*." Furthermore, "*there seemed no likelihood after December 1950 that there could be any augmentation in troop carrier strength* [emphases added]."[264]

Adopting Tunner's recommendation of how to address this allocation problem,[265] in August 1950 Stratemeyer established the FEC Joint Air Priorities Board,[266] in Tokyo to allot the weekly tonnage capacity on the basis of CCC estimates.[267] The Joint Airlift Control Office (JALCO), collocated with CCC at Ashiya, was tasked with prioritizing the weekly allocations.[268] Finally, as the organization in charge of all of the airlift assets in the theater of operations, CCC's responsibility was to deliver the cargo.[269] CCC's

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[263] Bunker explains that: "there seemed to be a general lack of appreciation, in Army supply agencies, of the necessity for maintaining the air transportation system at or near peak production in order to ensure its instant availability for high priority shipments in emergencies." See Bunker, 30.

[264] General Henebry later warned that: "if the airlift was committed to maximum capacity every day to accommodate Army and Air Force shippers, the aircraft would soon be worn out to the point where no further expansion could be achieved in the event of a real emergency. ... Airlift requirements [should] be held to a reasonable figure, with a possible expansion potential to a much higher daily emergency tonnage if need be." See Thompson, 213.

[265] Bowers, "Korea: Proving Ground ," 63.

[266] Futrell, *U.S. Air Force in Korea*, 557.

[267] Miller, *Airlift Doctrine*, 197. This Joint Air Transportation Board had representatives from the Air Force, Army, Marines and Navy. Based upon the airlift capacity available and the "relative needs of the services," this group specified tonnage parameters primarily to the 8th Army and 5th Air Force, and sometimes to the Navy or Marines. As a rule, 8th Army would receive the lion's share. See Thompson, 216.

[268] Tunner, *Over the Hump*, 231. The rationale for this elaborate arrangement was so that the FEAF, CCC, and 5th AF would be out of the allotment decision process, and thus be able to avoid the finger pointing that could occur if and when airlift requests exceeded delivery capabilities. Thus, the authority to decide how air transport assets should be utilized was vested with a theater-level joint apparatus. See Bowers, 63.

[269] Tunner, *Over the Hump*, 231.

Transport Movement Control Center (TMCC), located at Ashiya, dispatched all flight orders to the operational wings and groups.[270]

Similar to what he had done in the Berlin airlift, General Tunner set up a depot maintenance facility in the Far East so that his transports would not have to be periodically cycled to the U.S. after every 1,000 hours of flying time. For this capability, he turned to CAT, because it had a "fine reputation for keeping its own aircraft in perfect flying condition." Like Berlin and the Hump before it, inspections and repairs at Tainan were conducted on a "production line" maintenance basis. The supervision was done by American technicians.[271]

On paper, the CCC and 5th AF were designated as "parallel commands" under the FEAF. The CCC was vested with "operational control over all USAF theater airlift assets," whereas the 5th AF was in charge of "combat air roles."[272] As a "provisional" organization, the CCC headquarters was staffed by what amounted to a "skeleton" force which operated under a "temporary authorization" to conduct airlift missions.[273] As had been the case in Berlin, the transport operation was again dependent upon a tactical fighter operation, 5th AF, for maintenance, supply and housing. From his past experience,

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[270] TMCC's specific responsibilities included "schedul[ing] all flights, record[ing] all departures or reasons for late departures, record[ing] landings, and divert[ing] or cancel[ing] flights by radio if it was necessary to pick up air evacs or emergency cargo." See Thompson, 12. Bowers points out that a major logistical shortcoming of this otherwise elaborate system was the absence of a "formal link between the airlift and surface allocations processes." See Bowers, 63.

[271] Tainan, in southern Formosa, was the location of the CAT depot facility, which also served as a Nationalist Chinese air force installation. The first contract was for the "overhaul and repair" of the C-46s assigned to the 315th TCW, which had been in the Pacific theater longer than any other aircraft, and were beginning to show signs of excessive wear. See Thompson, 450.

[272] Bowers, "Korea: Proving Ground ," 63.

[273] Therefore, its constituent units, the 374 TCW, 6122 ABG and 437 TCW were subject to the "administrative direction" of, and were provided "logistical support" by the 5th AF Rear. See Thompson, 83.

Tunner believed that operational control by itself was not enough to be able to operate an airlift at peak efficiency. He argued that he also needed to be in charge of his own support functions.[274] On this point, Tunner lost.[275]

There were a number of interservice jurisdictional disputes over airlift resources during the Korean War. As soon as he took charge, Tunner successfully made the case "over Army, Navy, Marine Corps and 5th Air Force objections," that all the theater transport assets should come under one commander.[276] The Army's position was that aircraft used for airborne operations should be assigned to the individual airborne units. However, the Air Force stance was that this would be too inefficient, as airlift aircraft would spend the majority of time parked idle on the ramp rather than flying logistical support in-between airdrop missions.[277]

With the organizational apparatus in place, Tunner embarked upon establishing "Berlin Airlift-type" operating plans and processes. More stringent flight procedures were implemented whereby pilots were instructed to fly on designated air routes at specific

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[274] Tunner, Over *the Hump*, 248.

[275] CCC HQ remained a skeleton organization which lacked the authority to provide logistical and administrative support for its own airlift wings, groups and squadrons. See Thompson, 11 - 12.

[276] Eichhorst, *Military Airlift*, 16.

[277] The Navy, USMC and 5th AF all wanted independent airlift fleets as well. General Tunner was persistent and won a consolidation of all airlift assets, which consisted of roughly 250 aircraft. Most of these aircraft were C-119s, in addition to one group each of C-54s and C-46s and an indeterminate number of C-47s scattered among the various bases throughout the Pacific theater. See Tunner, 230. Tunner based his C-54 and C-119 fleets at Ashiya, Japan . Tunner made Kimpo the primary aerial port of debarkation in South Korea. Similar to what had been done while flying the Hump, his aircraft were forced to fly an "elongated route" around the Korean peninsula in order to elude interception by enemy fighters and to avoid disrupting U.S. combat operations. Each mission took approximately seven hours of flying time and approximately two hours of ground time. See Miller, 197.

altitudes. Various other measures were implemented to "increase efficiency and minimize accident possibilities."[278]

MacArthur planned to launch an amphibious assault against Inchon on the 15th of September. However, the sea port facilities at Inchon were only capable of handling 5,000 total tons per day, meaning the invasion force would need an additional 700-to-1,000 tons to be air-supplied. Given this was the case, the Marine amphibious landing was predicated on the Army being able to execute an airborne assault to capture Kimpo airfield, which was the only field in the vicinity of Inchon with the capacity to accommodate a major airlift operation.[279]

Not until the 16th of September did the 314th TCG finally have 77 C-119s parked on the ramp of Ashiya Air Base, Japan. Yet, "because the RCT could not arrive in time, MacArthur delayed the air assault." Because U.S. infantrymen captured Kimpo airfield on 17 September, this did not adversely affect the conquest of Inchon.[280] Once the airfield had been secured, CCC contributed to the Inchon assault with a massive airland operation into Kimpo.[281] Once it was adequately equipped, 1st Combat (Com-Car) Cargo Support

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[278] The C-119 flew missions to the newly-repaired Pusan Perimeter airstrips at Pusan and Taegu, delivering munitions, petroleum, food, trucks, trailers, steamrollers and other large equipment which the C-54s, C-46s and C-47s were incapable of handling. See Thompson, 12.

[279] Miller, *Airlift Doctrine*, 196.

[280] Communist forces retreated from the town the next day and began a general retreat to the north three days later. See Miller, 196.

[281] An "armada" of CCC aircraft had been loaded before the invasion and were standing by on short-notice alert at Ashiya, waiting for the order to fly to Kimpo. See Thompson, 16. Once alerted on 17 September, the first Korean airlift mission flown in support of the Inchon operation was composed of 9 C-54s and 24 C-119s. See Miller, 197. The 1st Com-Car and the flight nurses and medics of the 801st Squadron were flown in to Kimpo on this first mission. See Thompson, 16. Subsequent aircraft airlifted 208 tons of "base operating supplies" consisting of trucks, fork lifts, radio, jeeps, tents and cooking gear that 1st Com-Car could begin to manage the airlift. See Miller, 197.

Unit began offloading the combat cargo which continually arrived at the unimproved airstrip in a uninterrupted pattern of aircraft landing and taking off every few minutes.[282]

Because of an unexpected logjam at Inchon harbor, it was imperative that equipment and supplies be airlifted to the troops. Given that Inchon's Kimpo airfield was the largest in all of South Korea, it was able to compensate for the limitations of the seaport.[283] The 1st Marine Division became totally reliant upon airlifted supplies provided by the CCC aircraft, which delivered a continuous flow of food, petroleum, munitions and supplies.[284]

Meanwhile, MacArthur's X Corps had gained enough ground to retake Suwon airfield, whereupon the CCC transports began rushing combat supplies to the field units and evacuating casualties on the return flight.[285] Not surprisingly, "Tunner turned [the

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[282] Thompson provides a description of the scene: "Supplies were stockpiled and guarded carefully until they could be delivered to the units to which they were consigned. Most of the first supplies were ammunition, rations, gasoline, medicine and vehicles." See Thompson, 16.

[283] During the first six days of the operation, the 1st Com-Car "offloaded 1,500 tons of fuel, munitions, rations, medicine, and vehicles." See Bowers, 63 - 64. Because of the limited capacity of Inchon harbor: "At one point, there were 32 ships waiting for a chance to unload. Some were carrying pierced steel planks to build urgently needed runways; they had been waiting since the original invasion 35 days previous. At another time, there were 36 ships in line with an average time of 22 days at Inchon harbor. Kimpo runway was 6,200 feet long, ... and strong enough to handle C-54s. It also had 160,000 square feet of aprons and 750,000 square feet of concrete parking space - three times as much as any field in Korea." See Miller, 197. Too late to participate in the assault, the 4,400-strong 187th RCT did not arrive by sealift until 20 September. See Schnabel, 171. The 314th Group, however, was still able to contribute on 24, 26, and 30 September as C-119s and C-54s flew 440 sorties airlifting soldiers from Japan to Kimpo. See Miller, 196. During the last week of September, the CCC managed to fly 400 sorties into Kimpo transporting the 187th RCT. By the end of the month, CCC's C-54 Korean airlift exceeded 1,000 tons daily into Kimpo and Suwon airfields. Moreover, the C-46s and C-47s were flown into the smaller Korean fields, primarily to evacuate casualties. During the following month of October, CCC aircraft transported 2,800 patients within Korea and 3,000 patients to Japan." See Bowers, 64.

[284] The commanding general of the 1st Marine Division "formally commended the CCC for a magnificent air logistical job ... at this critical stage of the Korean War." See Thompson, 17.

[285] Thompson, *The Greatest Airlift*, 17. As of 30 September, CCC aircraft no longer had to fly a circuitous route around the southwestern corner of the Korean peninsula to avoid ground fire, but could fly directly between Pusan and Kimpo delivering an average of 850 tons daily. See Miller, 198. In sum, during the course of the Inchon invasion, CCC: "planes poured a constant stream of war material into Kimpo,

Kimpo operation] into another Berlin airlift." He halved the takeoff intervals from ten-to-five minutes, and *"if there had been sufficient crews*, Tunner likely would have ... set up ... round-the-clock operations." Furthermore, Kimpo had deficient refueling support and "*transports were often delayed by the operations of the 75 Marine fighters using the field* [emphases added]."[286]

On 19 October, South Korea's Pyongyang airfield was recaptured by the 1st Cavalry Division and subsequently Tunner "repeated the Kimpo pattern" with a massive 1,000-ton per day airland operation flown by C-54s and C-46s.[287] Setting up an "in-country [C-119] shuttle," the CCC was able to get "the most from its limited resources ... [and thereby] meet its tonnage goals." [288]

Korea was the first war to demonstrate that airdrop could be utilized as the sole means of sustenance for large military field detachments for an indefinite period of time.

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operating 24-hours a day. Most of the lift involved basis supplies like gasoline, rations and ammunition, but many trucks and other vehicles were also moved, in addition to Signal Corps equipment, medical supplies, barbed wire and pickets, bombs and rockets for the 5th Air Force, tents, water purification equipment, tools, cots, stoves and clothing." See Thompson, 20.

[286] Miller, *Airlift Doctrine*, 198. Tunner stated in a *Time* interview: "What we've got here is a small-scale Berlin airlift operating from and to many more bases than we had there. And we deliver a hell of a lot more tonnage than most people realize." Similar to what he had done in Berlin and Burma, "Tunner acquired more personnel and aircraft until he had at his disposal about 5,200 men and 214 planes." Within four months of his arrival, CCC had transported "100,000 passengers, 52,500 medical evacuees, and ... 90,000 tons" of cargo. See "The Moving Man," 31.

[287] The next day a combined force of over 100 C-119s and C-47s dropped the paratroopers of the 187th RCT over targets situated some 30 miles to the north of Pyongyang. See Bowers, 64.

[288] Pyongyang's nearest seaport was thirty miles away in Chanampo, and being able to accommodate just 1,500 tons per day, it was much more limited than Inchon. Given that rail and road shuttles between Pyongyang and Chanampo did not go into operation until 9 November, for the first three weeks, airlift was the sole means of supporting the 1,000-ton per day requirement for these 8th Army units. There were 24 flight crews temporarily assigned to Kimpo with 12 C-54s which were able to contribute to the shuttle's efforts on a 24-hour per day basis. During the 10 days between 24 October and 2 November, these C-119s and C-54s airlifted 9,434 tons to Pyongyang. Moreover, during the entire month of November, CCC flew 13,618 tons into Pyongyang as well as 3,331 into Kimpo, 705 into Pusan and 510 into Taegu. See Miller, 198.

At the time hostilities erupted in Korea, the Japanese-based C-54 374th Troop Carrier Wing "had *no capability for airdropping supplies.*"[289] As a result of this neglect, during the first twelve weeks of the Korean conflict no major airdrops were conducted [emphases added].[290]

On 15 October, GHQ designed an airborne mission to be executed 30 miles to the north of Pyongyang, in the Sukchon-Sunchon region to take possession of the region north of Pyongyang, capture the vital North Korean rail and communications nodes,[291] attempt to free U.N. POWs[292] as well as to capture thousands of retreating North Korean forces.[293] On 20 October, the plan was put into action as the 187th Airborne RCT was airdropped by formations totaling 40 C-47s and 76 C-119s.[294] After landing, this 3,000-man force found itself out numbered two-to-one by a force of 6,000 North Koreans. Despite the fact that many casualties were inflicted upon the 187th RCT, the North Koreans were not able to overcome the American airborne soldiers.[295]

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[289] Although airdrops had been proven to be technically feasible in World War II, there never was a requirement for a large sustained delivery of airdropped supplies. Following the victory in the Second World War, the U.S. Army and newly-established Air Force worked in close unison to overcome some of the issues surrounding airdrop supply operations. See Thompson, 69.

[290] In all, 20 minor airdrop missions, utilizing a total of 55 aircraft, had been launched primarily from Ashiya. Five of these missions were single-ship sorties which dropped propaganda leaflets. The remaining 50 missions, all flown by C-47s, dropped a total of 200 tons of supplies. See Thompson, 69.

[291] Thompson, *The Greatest Airlift*, 21.

[292] Miller, *Airlift Doctrine*, 197.

[293] Thompson, *The Greatest Airlift*, 21.

[294] 75 F-51s, 62 F-80s and five B-26s flew to protect the massive airdrop formation. See Eichhorst, 17. General MacArthur observed, and General Tunner directed the entire operation while flying alongside the huge armada in their separate aircraft. Thompson describes the operation as follows: "More than 3,000 paratroopers and 300 tons of vehicles, ammunition, weapons and supplies parachuted down the first day of the attack. Paratroopers and monorail supply bundles plummeted from the C-119s. Paratroopers and door bundles came out of the C-47s. ... At the tail end of the big formation came the heavy drop planes, C-119s loaded at Kimpo, carrying weapons carriers and jeeps, field artillery, antitank guns and heavy pallets of supplies. ... Most of the equipment was delivered in good condition and put into use immediately." See Thompson, 22.

[295] During this assault, the 187th RCT was able to defend the drop zones, capture critical points, close

The paratroopers continued fighting their way north from Sukchon to join forces with the main contingent of UN forces[296] and take control of the surrounding region. Following this initial assault, for the next three days C-119s continued to airdrop hundreds of tons of sorely needed supplies. When it was finally able to link-up with elements of the 8th Army, which had fought its way north from Pyongyang, the 187th RCT was no longer reliant solely upon airdropped supplies. Thompson points out that "*military authorities have rated the airborne attack at Sukchon and Sunchon one of the finest combat airdrop maneuvers in history* [emphasis added]."[297]

CCC and 5th AF came into a jurisdictional dispute on 7 November 1950. The fighter aircraft of the 5th AF had been deployed to numerous airfields which had been captured in North Korea. The dispute arose over the fact that the fighter units would not allow the CCC transports to use their airstrips, which were needed to support the Army's continued advance. Stratemeyer, Commanding General of the FEAF, informed Tunner:

> *It is my desire that priority be given to requirements of 5th Air Force for use of airfields in central and North Korea, and that occupancy and use of these airfields by CCC be limited.* CCC is directed to lend all possible assistance to the forward move of combat units of 5th AF [emphasis added].[298]

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roads and rail lines, rescue 15 POWs and inflict nearly 2,700 casualties. See Miller, 197. The following day, 1,000 more paratroopers were dropped at Sunchon. See Thompson, 22. On the 21st and 22nd, C-119s and C-47s dropped approximately 600 tons of munitions, petroleum, water, food, medical accessories and signal gear. See Thompson, 70.

[296] Miller, *Airlift Doctrine*, 197.

[297] Although the RCT was able to find the POW train, the North Koreans had massacred 57 of the 72 prisoners, and only 15 were able to return home alive. See Thompson, 22 - 26. Over the course of the first two days, 187 transports had airdropped 3,955 paratroopers and 592 tons of supplies. The C-119 proved to be very effective. It could carry 50% more tonnage than the C-47 and, by the using pallets and rollers, were capable of dropping their entire plane load of cargo in a single pass, cutting their exposure to enemy ground fire by a factor of five. See Eichhorst, 17.

[298] Bowers, "Korea: Proving Ground ," 64.

Two days later, the Commanding General of the G-4 (Logistics) Directorate of the 8th Army contacted Tunner directly to emphasize that "airlift had furnished practically all of the supplies used by 8th Army north of Pyongyang." Moreover, he stated that 8th Army, which had been forced to stop its advance at Sinanju, urgently "needed 1,000 tons of air resupply daily." These direct communications to Tunner had violated the rules of the system of allocation. Transgressions had occurred because "*in the crisis, the respective commanders of 8th Army and 5th Air Force personally tried to work out solutions.*" Although Tunner was able to get some units to cutback their requests, "*the airlift shortage was nevertheless irreconcilable.*:

> 5th Air Force needs remained high - on a few days tonnages airlifted for the 5th exceeded those lifted for 8th Army. The latter accordingly received far less than the requested 1,000 tons daily.[299]

On 21 November, General Stratemeyer sent a message concerning the airlift predicament to the Air Staff in which he stated "we are not panicky, but *we are desperate.*" The Air Staff responded immediately by dispatching more C-54s and additional crews for the aircraft already in the Pacific [emphases added].[300]

On 24 November 1950, General MacArthur launched a major assault across the 38th parallel into North Korea with the goal of liberating all of Korea before winter set in. Two days later the U.S. 8th Army encountered one of two major Chinese armies massed on North Korean soil.[301] By the 28th of November, the Chinese Army had forced the ROK II Corps to disperse on the right flank of the 8th Army, thereby wedging the 8th

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[299] Ibid., 64 - 65.
[300] Ibid., 65.
[301] Miller, *Airlift Doctrine*, 198.

Army and X Corps apart and preventing them fighting as a unified front. As a result, the 8th Army had been cut-off from its ground lines of communication and was forced to retreat south toward the Chongchon River, placing a high demand on CCC airdrop aircraft.[302]

While the 8th Army was in retreat, a 20,000-man force composed of elements from the 1st Marine and 7th Infantry Divisions managed to secure the Choshin hydroelectric plants and reservoir, which were situated in a mountainous area to the northwest of Hamhung. From this position, the 1st Marine Division launched a diversionary attack upon the advancing Chinese forces to take the pressure off of the 8th Army. However, the 1st MD had grossly underestimated the strength of the Chinese forces and was soon combating four Communist armies with a combined force of more than 80,000 soldiers. As a result, the Marines were forced to retreat to a more defensible position near the reservoir.[303] Emergency aerial resupply and evacuation missions were flown during late November and early December of 1950 to assist the 1st Marine Division, which had been separated from the main Allied force and stranded at the Choshin Reservoir.[304] The Chinese forces had erected 24 road blocks, thereby severing all the possible ground lines of communication to the Marines. Given that airlift was their

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[302] Initially, the 8th Army had planned to hold firm at the Chongchon River. However, within two days they had "dynamited the bridges, gave up the Sinanju airstrip and headed south." See Thompson, 39. To replenish 8th Army's rapidly depleting ammunition, the CCC flew airland missions from Ashiya to deliver reserve supplies at the Sinanju and Yonpo air bases. See Miller, 198.

[303] Thompson, *The Greatest Airlift*, 39.

[304] Eichhorst, *Military Airlift*, 16.

sole means of resupply, the C-119s of the 314th Troop Carrier Group were brought into the fray.[305]

During this operation, "air transport alone sustained some 20,000 Americans moving from the Choshin Reservoir area."[306] A makeshift 2,300-foot runway was carved out of the frozen rice paddies outside Hagaru-ri, a small village near the reservoir, and was used for bringing in combat cargo and evacuating wounded Marines.[307] Tunner proposed that his airlift force evacuate the entire Division, but the Marines declined as they were determined not to leave their equipment behind.[308] The C-47s flew the wounded soldiers to Yonpo, where they were transferred to the larger C-46s and C-54s, which flew them on to Tokyo for medical attention.[309]

In the course of this retreat, the 1st Marine Division became surrounded by enemy forces. Their only means of resupply was through an airdrop operation conducted by the

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[305] Thompson describes the scene at Ashiya: "Several acres of airstrip parking area at Ashiya were covered with gasoline drums, ammunition boxes, water cans, ration bundles, [etc.] ... all on 4x4 foot plywood pallets with parachutes attached." In addition to the Ashiya operation, three C-119s were deployed to Yonpo airfield on a sustained basis along with eleven members of the 2348th and a few Marine parachute packers. Each of these aircraft flew three to five sorties per day, airdropping a total of 338 tons of cargo. The 1215 tons dropped from Ashiya far exceeded this See Thompson, 39 - 40.

[306] Bowers describes how the operations worked: "Transports shuttled from Japan and Yonpo, often ferreting out units in need of airdrops by circling low over the battle area. Tunner's men guessed that the troops could use mixed loads of rations, winter clothing, small arms, and ammunition." See Bowers, 65. For nearly a two-week period, from 28 November to 9 December, 1,483 tons of cargo was airdropped by C-119s and 4,700 casualties were evacuated by C-47s. See Eichhorst, 16. During this low-altitude airdrop operation, the C-119s were subjected to enemy ground fire from Chinese guerrillas situated in the surrounding hills. Although many aircraft were hit, miraculously no aircraft went down and no crewmembers were wounded. See Thompson, 40.

[307] The CCC's C-47s as well as Marine R-4Ds (same aircraft, different designation) immediately began to conduct operations from the rudimentary Hagaru-ri airstrip. General Tunner requested and received command authority over the Marine transports, which subsequently operated under jurisdiction of the Ashiya Transport Movement Control Center. Thompson, 40.

[308] Bowers, "Korea: Proving Ground ," 65.

[309] The C-54s were assigned to the three squadrons of the 61st Troop Carrier Group which, in December, had been assigned to the CCC from its home base in Germany. See Thompson, 40.

CCC. By the 1st of December the situation had become so desperate that the FEAF allocated its entire C-119 fleet to this relief effort.[310] The C-119s dropped hundreds of tons of gasoline and ammunition over Hagaru-ri.[311]

While the Marines continued their retreat toward Hungham, farther to the east at Koto-ri another airstrip was carved out of the frozen turf. The Marines set up a defensive perimeter around the airfield, the only line of communication to friendly forces. C-47s operated out of the new airstrip, which was even shorter than the one at Hagaru-ri.[312] The C-47s used in the evacuation, though rugged and flexible enough to operate in these austere conditions, lacked the capacity to accommodate the vehicles and large munitions of a Marine Corps Division.

Combating heavy Chinese resistance and extremely frigid conditions, the Marines continued their eastward trek toward Hamhung. While traversing a mountain road, they became trapped in a column several miles long because Chinese forces had exploded a 20-foot section from of a bridge which had served as the only way to cross a deep gorge close to a hydroelectric plant. As their only chance to escape, "the Marines radioed an

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[310] On 28 November, 10 C-47s dropped 25 tons of ammunition. The following day, another 16 C-47s dropped 35 tons and 15 C-119s dropped 80 tons of ammunition. On the 30th, 113 tons of equipment and supplies were dropped on five different drop zones. See Miller, 199.

[311] Although much of the supplies and equipment was damaged in the process of airdropping, according to the Commander of the 1st Marine Division, "the drops [provided] an important margin, making possible the march to the sea." See Bowers, 65. By 6 December the C-47s had successfully flown through a chorus of enemy sniper fire in the process of evacuating over 4,000 wounded Marines from Hagaru-ri. See Thompson, 40.

[312] By the end of the first evening, the C-47s had managed to evacuate 700 soldiers which had either been wounded or were suffering from frostbite. See Thompson, 47. By the time they had accomplished this four-day mission, the C-47s had delivered 273 tons of munitions and evacuated more than 4,700 sick and wounded soldiers. These C-47s flew 221 sorties into Hagaru-ri and Koto-ri until 6 December. See Miller, 199.

urgent request for ... a feat never attempted before, ... an airdropped Bailey Treadway Bridge to span the gorge."[313]

After conducting one successful test drop at Yonpo, the next morning a formation of eight C-119s flew-in at 800 feet, ignoring the surrounding Chinese ground fire, and executed a successful airdrop over a zone set up by the Marines,[314] *the world's first airdrop of a bridge."*[315] Marine Corps engineers were able to transport the sections to the gorge and quickly assemble the bridge.[316] *Time* magazine claimed that "what had happened in northwest Korea was proof that even in disaster and defeat *the most significant element of U.S. power was mobility."* Furthermore, *Time* pointed out that:

> Most military men agreed that greater reliance on direct air supply would be a vital supplement to sea and land transport in any major future war. The most extreme advocates of air supply maintained that it was already possible to fly combat forces to any point in the world and keep them supplied. *No one had argued along these lines more persistently than Combat Cargo Command's General Tunner* [emphases added].[317]

Due to this heroic feat, the following week General Tunner made the cover of *Time*. The caption read: GENERAL TUNNER, AIRLIFTER "In the Midst of the Enemy, a Bridge from the Sky." This article stated that "the running fight of the Marines and two battalions of the Army's 7th Infantry Division from Hagaru-ri to Hamhung - 40 miles by

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[313] Thompson, *The Greatest Airlift*, 48.

[314] Ashiya's 2348th Army Unit calculated that it should be possible to airdrop a replacement bridge if it was divided into eight two-ton sections. Shortly after this finding had been made, a bridge was railroaded to Ashiya, where it was transferred to eight C-119s, which then flew on to Yonpo. See Thompson, 48. Eight C-119s of the 314th Troop Carrier Group each airdropped one span "measuring 5 by 16 feet and weighing 2,350 pounds." See Miller, 199.

[315] "The Moving Man," 27.

[316] Within a matter of hours, the miles-long column of trucks, tanks, weapons carriers and field artillery pieces resumed their eastward retreat to the sea, fending off heavy gun fire from the Chinese forces overlooking them from the surrounding mountains. See Thompson, 48.

[317] "The Moving Man," 27.

air but 60 miles over the icy, twisting, mountainous road - *was a battle unparalleled in U.S. military history.*:

> It had some aspects of Bataan, some of Anzio, some of Dunkirk, some of Valley Forge, some of the 'Retreat of the 10,000' (401 - 400 B.C.) as described in Xenophon's *Anabasis*.[318]

Most significantly, the article claims that "*the retreat of the 20,000 in Korea would not have been possible without General Tunner's ultramodern airlift*, which supplied them with the ammunition and food they could use, and even with bridging equipment [emphasis added]."[319]

After successfully negotiating the gorge, the Marines continued to fight their way southward while the CCC C-119s dropped another 40 tons of relief supplies on 8 and 9 December.[320] On 9 December, the 1st Marine Division managed to break free from the Communists' encirclement and link up with a reinforcements sent from Hamhung[321] by the 3rd Infantry Division, which was designated Army Task Force Dog.[322] Subsequently, the entire U.N. force retreated southward along the western coast of the peninsula[323] as the task force convoyed the battle-fatigued 1st Marine Division to the harbor where a fleet of 193 ships was awaiting their arrival.[324]

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[318] "Retreat of the 20,000," *Time*, 18 December 1950, 26.

[319] Ibid. Thompson puts the significance of this operation in perspective: "It was the first time airdrop had given complete logistic support to a major military unit for any length of time, a milestone in military history of which Combat Cargo crew members were very proud. This operation was very costly in terms of human life, as the 1st Marine Division and the 7th Infantry Division experienced close to 5,000 casualties and many more cases of frostbite and illnesses during the course of the retreat." See Thompson, 48.

[320] Thompson, *The Greatest Airlift*, 48.

[321] Miller, *Airlift Doctrine*, 199.

[322] Thompson, *The Greatest Airlift*, 48.

[323] Bowers, "Korea: Proving Ground ," 65.

[324] During the course of the airlift into Hagaru-ri, a detachment of C-47s from the Royal Hellenic Air Force arrived to augment the relief effort. After the rescue had been accomplished, the CCC's 21st Squadron

When X Corps commenced its retreat, all of the assets at CCC's disposal were needed, with the exception of the C-47s.[325] This was the most extensive airlift retreat operation of the war, consisting of hundreds of sorties within and between Korea and Japan.[326] In addition to X Corps, all of the 5th AF aircraft based north of the 38th parallel had to be evacuated to the south.[327]

Meanwhile, the C-46s of the 1st Provisional Group and the 437th Troop Carrier Wing (operating out of Brady Field, Japan) continued to deliver combat cargo to the two fields outside of Seoul. However, when the 8th Army crossed the Han River, the inevitability of Seoul's collapse became a certainty.[328] On New Years Eve, the Communists launched a major offensive which forced the 8th Army to complete its evacuation of Seoul by 4 January 1951.[329]

"Gypsies," the 801st Medical Air Evacuation Squadron and the Greek detachment "received the Presidential Citation for this outstanding air evacuation operation." See Thompson, 48.

[325] The entire force of C-119s and C-54s flew 3,891 passengers, 228 patients, and 2,089 tons of supplies out of Yonpo airfield between 11 - 17 December 1950. See Miller, 199.

[326] Aircraft were loaded to capacity and flown out on an even cadence of every 2-to-3 minutes. See Thompson, 61.

[327] Bowers, "Korea: Proving Ground ," 65. Thompson describes the 5th AF evacuation: "All Air Force equipment was airlifted out, including ammunition, gasoline, parts, supplies, tents and equipment. As the 5th AF fighters and fighter-bombers pulled out, air cover for Yonpo was provided by carrier-based Navy and Marine fighters. Off shore, the battleships of the U.S. fleet hurled big shells at the approaching Chinese. Field artillery pieces on the airstrip kept up a continual din and the crackling of small arms fire was heard intermittently close by. This mission was successfully accomplished by the C-46s of the 437th Troop Carrier Wing and C-54s of the 61st Troop Carrier Group and the C-47s of the Royal Hellenic Air Force detachment. See Thompson, 61.

[328] The Commander of 8th Army, General Walton Walker, was tragically killed in a jeep accident on 23 December 1950. General Matthew Ridgway assumed command of 8th Army on 26 December 1950, and soon thereafter inspected the various U.N. forces along the 38th parallel, which was outnumbered by the Chinese by a ratio of 2-to-1. See Thompson, 67 - 68.

[329] Ridgway's force consisted of 125,000 Americans; 100,000 Koreans; 25,000 other U.N. troops, including British, Turks, Australians, New Zealanders, Dutch, French, Greeks, Thailanders, Filipinos, and Canadians. In support of this four-day evacuation, CCC airlifted 2,297 patients, 4,757 tons, and flew 114 C-119 airdrop missions in support of allied troops as Kimpo, Seoul and Suwon fell in succession. See Thompson, 68.

This "airlift in reverse" had successfully evacuated the troops, vehicles, munitions, supplies and equipment necessary to allow the U.N. to regroup and prepare for an eventual counter-attack to retake Seoul and regain ground to the territorial boundary along the 38th parallel which existed before hostilities began.[330] Strong leadership and management skills, particularly on the part of General Tunner, led to the successful efforts of the Combat Cargo Command.[331] An efficient "system" of airlift entailed much more than just "transport aircraft and trained crews." The effective leadership provided by Tunner and his experienced staff enabled the CCC to avoid a variety of difficult circumstances which could have easily disrupted the ability of the airlift fleet to function. For example, the CCC Headquarters had to confront routine problems such as "aircraft maintenance, cargo handling, airfield repair, communications, load rigging, air traffic control, and living and work facilities."[332] Bowers argues that this system was "attained as a result of the *lessons learned from Berlin and China.*" Based upon his successful experiences in both of these formative operations, Tunner "created a centralized command able to devote full attention to the single mission of producing effective airlift [emphasis added]."[333]

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[330] Thompson suggests that: "without the supplies and equipment saved by Combat Cargo, the U.N. might have been pushed completely out of Korea. As it was, 8th Army troops still had the will to fight, and enough materiel with which to fight to hold off the Chinese until substantial reinforcements arrived." See Thompson, 68.

[331] Says Bowers: "Heroism in airlift generally lay in foreseeing problems rather than trying to overcome them by extraordinary efforts. Seldom did mission urgency justify gambles beyond reasonable margins of safety." As a case in point, "Tunner ... personally intervened against the practice of overloading the patient-evacuation C-47s in early December at Hagaru-ri." See Bowers, 65.

[332] The following statistics support the claim that CCC was a success: "Tonnage lifted per flying hour increased from .95 in September 1950 to 1.62 in the critical month of November; flying hours in the same months rose from 3.0 hours per aircraft to 3.35 [per day]. Yet the major accident rate remained half the FEAF average. See Bowers, 65.

The Korean airlift broke new ground in the fields of aeromedical evacuation and combating guerrilla forces. Korea was the first conflict where wounded soldiers were routinely evacuated by aircraft. As most of the airlift was directed towards delivering logistical support to Korea, the aircraft were usually lightly loaded or even empty on the return flight so that there was available capacity to accommodate the sick and wounded. It was estimated that thousands of lives were saved due to the utilization of airlift to transport patients.[334] The Korean war was the first modern conflict in which U.S. air forces employed guerrilla warfare tactics.[335] The 315th Air Division conducted "drops and airlandings of supplies, agents and guerrilla teams."[336]

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[333] Bowers, "Korea: Proving Ground ," 65.

[334] Medical technicians assigned to the 801st Medical Air Evacuation Squadron estimated that patients could be airlifted at an average cost of "two-cents per patient mile" compared to sealifting them at a cost that far exceeded this amount. Thompson explains that after this new concept had become widely accepted: "air evacuation went on around the clock, and ... regardless of weather. Nurses and medics ... assumed all the risks of the aircraft crew members, taking their chances with the rugged terrain, weather, inadequate landing strips, possible enemy air attack, frequent ground fire, and possible sabotage from the patients [i.e., North Korean POWs]." As of 30 December 1950, the 801st MAES had airlifted 68,873 patients, most of them wounded in combat. In the month of December 1950 alone, which was the single highest month for air evacuations, 28,140 patients were airlifted. See Thompson, 54.

[335] Thompson, *The Greatest Airlift*, 39.

[336] See Lawrence V. Schuetta, *Guerilla Warfare and Airpower in Korea, 1950 - 1953* (Maxwell AFB, AL: Aerospace Studies Institute, 1964) 162 - 163. On 8 December 1950 the first airlift mission was flown in support of the guerrillas by a C-47 assigned to the 21st Troop Carrier "Gypsy" Squadron. These flights continued to be conducted on an increasing basis until peaking in 1953. From January through April 1952 the C-46s assigned to the 437th Troop Carrier Wing took-over the airdrop operation. However, beginning in May, the 21st Squadron's C-47s reassumed the partisan air supply mission, conducting both airdrop and airland sorties. From July through December 1952 the 21st and 6421st Troop Carrier Squadrons conducted 55 airdrops to the various partisan islands. As the partisan support mission was given greater emphasis and expanded in 1953, airdrop sorties likewise increased during the first three months of the year as approximately 30 tons of equipment and supplies were dropped to the guerrillas from January through March of 1953. As the partisan support mission was given greater emphasis and expanded in 1953, airdrop sorties likewise increased during the first three months of the year as approximately 30 tons of equipment and supplies were dropped to the guerrillas from January through March of 1953. See Schuetta, 167 - 174.

315th Air Division

As it became apparent that this was to be a prolonged conflict rather than a "quick and decisive" campaign, various organizational changes were instituted in order to improve upon the provisional arrangements that had outlived their usefulness. As part of this overall change, General Stratemeyer recommended that the Provisional "CCC be replaced by a fully developed assigned organization."[337] This recommendation led to the establishment of a "permanent USAF unit," the 315th Air Division (AD), which replaced the Combat Cargo Command effective 25 January 1951.[338] Thompson points out that this redesignation included:

> full operational, administrative and logistical control, *clarifying many previous problems of jurisdiction and eliminating some of the administrative red tape and supply difficulties which had plagued the provisional CCC* [emphasis added].[339]

On 8 February 1951, Brigadier General John Henebry replaced Major General Tunner as the Commander of the 315th AD. As Tunner had only been temporarily assigned to command the Provisional CCC to get it into warfighting shape, he returned to

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[337] Miller, *Airlift Doctrine*, 200.

[338] Thompson, *The Greatest Airlift*, 83. Although "the basic organizational concept [of the CCC] ... did not change," the following airlift units which heretofore had been nothing more than "a heterogeneous collection," were brought under the common "command or control" of the 315th AD: (1) 374th Troop Carrier Wing, with two squadrons of C-54s at Tachikawa; (2) 61st Troop Carrier Group, with three squadrons of C-54s at Ashiya; (3) 437th Troop Carrier Wing, with four squadrons of C-46s at Brady Air Base; (4) 314th Troop Carrier Group, with four squadrons of C-119s at Ashiya Air Base; and (5) 374th Wing's 21st Squadron, which flew C-47s and was for the moment at Itazuke Air Base. In addition to these American airlift units, the Royal Hellenic Air Force Flight No. 13 and the Royal Thai Air Force Detachment were both attached to the 21st Squadron. See Futrell, 557 - 561.

[339] Along with the added responsibilities came a corresponding increase in the number of administrative personnel at 315 AD Headquarters, which more than doubled. On 2 February, the CCC Headquarters was relocated to the Tokyo suburb of Fuchu, which was near to Tachikawa, "in order to be closer to FEAF Headquarters and to relieve the overcrowding at Ashiya, See Thompson, 83. The HQ moved helped to solve "communication problems." Another of the major improvements which came with the establishment of the 315th AD was the creation of the 6127th Air Terminal Group, an "aerial port system which General Tunner had fought for since his arrival in Korea." See Miller, 200.

his position as the Deputy Commander of MATS shortly after CCC was inactivated.[340] Because they had been assigned to Japan on "temporary duty orders only," Tunner and the key members of his staff had "selected and trained understudies," [341] of which Henebry was one. Tunner and Henebry were both "dedicated to the principle that:

> given direct responsibility to the theater air commander and continuous centralized control over subordinate transport units, a single airlift command with one fleet of aircraft could successfully carry out all airlift missions. *Centralized control and responsibility and flexible airlift were the answer to reliable and adequate air transportation* [emphasis added].[342]

One problem that the 315th AD inherited from the CCC was a combination of Ashiya's "*deficient logistical support structure*," and "*insufficient USAF supply-support programming*" which resulted in a gradually declining C-119 in-commission capability rate. This, in-turn, adversely affected the 315th AD's ability to conduct airborne operations. [emphasis added]."[343]

In early March, the 315th AD recommended that its C-47s, "*which were in short supply in the Far East*," be replaced by the more numerous C-46s, which were assigned to the 437th TCW. The Commander of the 187th RCT, General Frank Bowen, concurred, so from this point on, the C-46s were joined with the C-119s to form the backbone of the "Combat Cargo - Airborne team."[344] Within a week, this newly-formed team was called upon to execute one of the most extensive airdrops of the Korean War. On 21 March, the

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[340] Miller, *Airlift Doctrine*, 200.

[341] Thompson, *The Greatest Airlift*, 83.

[342] Futrell, *U.S. Air Force in Korea*, 557.

[343] As a case in point, from the time the 314th Troop Carrier Group first deployed to Korea, it "never possessed strength enough in C-119s to launch the 187th RCT in one lift." See Futrell, 562 - 563.

[344] On 15 March these aircraft practiced their first airborne assault under simulated combat conditions near Taegu. See Thompson, 101.

187th RCT was given just two days notice that it was to execute an airborne attack upon Communist forces near Munsan-ni, a village situated northwest of Seoul.[345] The plan called for C-119s and C-46s to drop three battalions on a zone situated to the north, and one battalion to the south [emphasis added].[346]

On 23 March 1951, a four-day surge of emergency airdrop missions began over Munsan-ni in which 173 transports airdropped 3,487 soldiers and 483 tons of supporting equipment and supplies of the 187th RCT.[347] General Henebry, Commander of the 315th AD, piloted the C-54 command aircraft.[348] These supply drops continued for three more consecutive days as the 187th RCT fought its way northeastward against the relentless Chinese forces.[349] The drop on the north DZ basically went according to plan.[350]

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[345] The directive stated: "attack at 0900 on 23 March, seize the high ground north of Munsan-ni, block enemy movements between Seoul and Kaesong, and destroy or capture enemy troops south of the Imjin River." See Thompson, 102.

[346] The single battalion which landed to the south was to move north at once to join up with the rest of the 187th RCT, "capturing all the enemy troops and supplies they could." Meanwhile, an armored task force was to be sent from Seoul to link-up with the 187th RCT, "trapping all enemy troops in the area if possible." See Thompson, 102.

[347] Eichhorst, *Military Airlift*, 17.

[348] Prior to the drop, fighters and bombers of the 5th Air Force executed an air strike with "bombs, rockets, napalm and machine gun fire" upon both the north and south drop zones as well as the surrounding hills. Moreover, the fighter interceptors flew as cover for the transport aircraft as they penetrated enemy air space. Thompson describes the first day's drop on as follows: "One hundred and seventy four tons of supplies were dropped by C-119s to the 187th paratroopers. Over and above the vehicles, equipment and artillery dropped with the troopers. These included 27 jeeps and trailers, two weapons carriers, four 105 mm howitzers, twelve 75 mm howitzers, and 15 load bearing platforms each carrying 600 pounds of supplies." See Thompson, 102 - 110.

[349] The personnel drop was staged out of Korean fields, whereas the equipment was flown-in directly from Ashiya, Japan. See Thompson, 77.

[350] One hitch was that the 1st Battalion, which was to parachute on the south DZ, had to abort due to a mechanical malfunction and the backup aircraft inadvertently dropped overhead the north DZ with the rest of the 187th RCT. However, when the lead crew and troops loaded a spare aircraft, they did not realize that this mistake had been made, so they inadvertently became the only paratroopers to be dropped on the south DZ. Upon receiving word of this mistake, a company of the 1st Battalion was immediately directed to fight southward toward a crossroad where it could link up with the 1st Battalion's stranded command group. General Ridgway was flown-in to a gravel road near to the north drop zone so that he could personally oversee this rescue operation. Over the course of the first three days of the Munsan-ni air-assault, Combat Cargo airdropped approximately 550 tons of supplies and equipment. See Thompson, 109.

During the second day of the assault, the 187th RCT was directed to head eastward. In support, CCC C-119s dropped another 290 tons of cargo on the north drop zone. By 4:00 PM the 187th RCT started a 17-mile night advance eastward to block a potential Chinese escape route from Uijonbu. On the following day, the CCC dropped another 82 tons of supplies to the 187th RCT. By 29 March the 187th RCT had succeeded in trapping the Chinese forces just outside of Uijonbu."[351]

Air Force Historian, Robert Futrell, points out that at the time they were fought, "*the Korean battles of 1950 and 1951 required the greatest airdrop resupply operations in history.*" Moreover, the airborne attacks at Sukchon-Sunchon in October 1950 and at Munsan-ni in March 1951 had verified the "validity of the 315th AD's concept of flexible airlift."[352] Although the extent of the 315th AD's combat airdrop experience was with a single airborne regimental combat team, it was believed that the procedures that had been developed were flexible enough to enable it to drop "airborne units of army size [emphasis added]."[353] By the summer of 1951 the war had temporarily developed into a

By the summer of 1951 the war had temporarily developed into a stalemate, so that the 315th AD embarked upon a "sustained, high-volume haul" between Japan and Korea. Bowers observes that the "static nature of the war" had curtailed airlift operations

[351] Within three hours of the drop, the command element of 1st Battalion had linked-up with the rescue forces while concurrently an armor and motorized infantry task force was encountering little resistance from the enemy as it continued its northward advance from Seoul. By 6:00 PM that evening, the missing command element and the infantry task force had joined with the main force of the 187th RCT. See Thompson, 110.

[352] Prior to the success of these operations: "most airborne leaders believed that airborne operations required a joint airborne headquarters with operational control over attached airborne and troop carrier units. Such a concept - which visualized that air and airborne units should live, train, and operate together for long periods of time - was too expensive of a scarce air-transport effort to be followed in Korea. See Futrell, 560.

[353] Furtrell, *USAF in Korea*, 559 - 561.

to an "asset of convenience."[354] On 1 July 1951, the North Koreans agreed to begin negotiations for an armistice agreement, so that for the remainder of the war, airlift operations, though substantial, had become more "routine in nature."[355]

As the conflict continued, MATS had been able to increase its average aircraft utilization rate to six hours per day. This equated to an airlift of more than 100 tons per day to Japan, "*an increase of 3000%" over the peacetime pace of 70 tons per month.* Although this was a significant increase, it had been accomplished slowly and methodically by applying lessons that had been learned from the World War II Hump operation, "operating a good route structure, increasing the airplanes available, and managing the system efficiently [emphasis added]."[356]

Beginning in 1951, the demand for strategic airlift had declined to the point where a force of just "60 military airplanes, 60 charter aircraft and 15 U.N. transports" was able to accomplish the air transport mission from the U.S. to Japan.[357] Miller notes that "compared to the Hump and Berlin airlifts, [Korea] was an uninspiring operation." It *"proved a poorly manned MATS took more time than desired to surge* [ital. added].[358]

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[354] Bowers, "Korea: Proving Ground ," 65.

[355] Miller, *Airlift Doctrine*, 200. As the peace talks ensued, and the pace of the war slowed considerably, ground lines of communication became better able to provide most of the supplies that were required by Army forces. As a result, 315th AD aircraft were not called upon as much as the CCC aircraft had been during the early phase of the war, and ton-miles fell sharply. See Thompson, 125. The civil contract operation conducted by CAT, Inc., was also affected by the slow-down brought on by the truce talks. CAT, Inc., no longer flew into Korea, but instead flew a scheduled route around the islands of the Far East at a rate of two-to-three flights per day. However, the CAT, Inc., aircraft continued flying multiple-leg missions with near-capacity levels of diverse equipment and supplies. See Thompson, 450.

[356] Miller, *Airlift Doctrine*, 202.

[357] Ibid., 203. With this reduced force, between July 1951 and June of 1952, MATS could only manage to transport 16,766 tons and 53,904 passengers to Japan and return to the U.S. with 17,968 medical patients. Of this total, "civil airlines carried 67% of the passengers, 56% of the cargo and 70% of the mail to Japan." These low figures can be attributed to several factors, including "the long distances involved, *limited numbers of aircraft, and inadequate manning.*" See Eichhorst, 16.

Both Tunner and Henebry recommended that the new jumbo C-124 Globemaster should undergo an extensive evaluation to see whether it could be utilized "effectively and economically" on the Korean airlift's "long hauls between Japan and the islands, and between Tokyo and Seoul, mainly on the high density runs where every mission could be carried out at maximum or close to maximum capacity."[359] Based largely upon the generals' recommendations, on 27 September 1951, the new C-124 strategic airlifter began on-location testing for Korean airlift operations[360] by the Air Proving Ground Command. Doubting that its fragile combat airstrips would withstand testing, "*the 5th AF was not enthusiastic about the C-124 trials.*" However, if the tests proved successful, it would work to the advantage of 5th AF.[361] General Henebry said of the test results:

> The C-124 has performed brilliantly on the Korean airlift. It has proved its ability to land safely at all major Korean airstrips with loads as high as 50,000 pounds. *We would like to have a lot of them here. We can use them* [emphasis added].[362]

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[358] "It was an airlift made for the civil carriers - they had three crews per plane available and could respond immediately. Since the lift was into Japan, not Korea - the combat zone - the civil airlines had all the advantages. ... As the war wound down to a stalemate, sealift could and did carry the greatest percentage of cargo." See Miller, 203. On 1 May 1951 the 315th AD reacquired the Far East inter-island routes which MATS had been flying since July of 1950. Originating in Japan, this regularly-scheduled service included Iwo Jima, Guam, Okinawa, Formosa, and the Philippine islands. See Futrell, 557 - 559.

[359] Futrell, *USAF in Korea*, 557 - 559.

[360] In April 1951, General Henebry had made the case to the Air Staff that if he had C-124s assigned to his inventory, he would be able to "accomplish his mission with fewer planes, crews and less congestion." See Futrell, 563.

[361] With a maximum capacity of "200 passengers, 25 tons of cargo or 136 litter patients," one Globemaster mission would be able to transport the equivalent of four-to-five C-54, C-46, or C-119 missions, resulting in less congestion and reduced stress on the runways. See Thompson, 163. The September test entailed 26 separate flights into Korea by a single C-124, with an average payload of 34,400 tons, two times as much as the C-54 was capable of handling. See Miller, 200. Furthermore, it demonstrated the feasibility of airlifting "25 tons of payload cargo, 167 air evacs for a world's record, and more than 200 people in a single flight." See Thompson, 223.

[362] Miller, *Airlift Doctrine*, 200. According to Thompson, "[Henebry's] recommendation carried weight." See Thompson, 168. The general consensus of opinion was that more C-124s would be welcomed on Combat Cargo's highest density runs." Due to the successful outcome of the test, Henebry was able to convince the Air Force to expedite the conversion of his airland fleet from C-54s to C-124s, which had previously been scheduled to begin a year later in the fall of 1952. See Thompson, 223.

On 10 April 1952, Brigadier General Chester McCarty assumed command of the 315th AD from Henebry. The following month McCarty presided over the integration of the mammoth C-124 Globemaster into the Korean airlift fleet.[363] To guard against "reconversion shock," the Air Force planned to deliver the Globemasters incrementally and not relocate the C-54s until the C-124s were up-and-running.[364] On 3 July General McCarty flew the first operational Globemaster mission from Japan to Korea and by 27 August, the C-124s were flying a scheduled sortie to Korea on a daily basis.[365]

On 15 May, Colonel Maurice Casey had assumed command of the 403rd Troop Carrier Wing and almost immediately began to implement a plan to get his C-119s in warfighting shape. When he took over, "*only 28 out of 71 C-119s were in-commission.*" To address this issue, on 19 June General Weyland notified General Clark that "*the [C-119] Boxcars would have to be relieved from all routine airlift employments.*" In response to this airlift crisis, Headquarters Air Force had to direct some of its other commands to lend support.[366] On 2 September 1952, Colonel Casey subjected his

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[363] The C-124s were integrated into the 374th Troop Carrier Wing, based at Tachikawa, Japan. See Futrell, 566.

[364] A mobile training unit was temporarily assigned to Tachikawa from Chanute Field, Illinois, to oversee the conversion process. See Thompson, 223.

[365] The first six Globemasters, which arrived in May, were used strictly for "transition training" to get the initial cadre of aircrew, mechanics, maintenance people and supply personnel proficient before flying operational missions in a combat environment. Seven additional C-124s arrived in June and were assigned to the 6th Troop Carrier Squadron. By September, the 6th Squadron had become fully mission capable when it had acquired its 26th C-124, thus achieving "unit equipment plus combat support strength." In the process of converting to the C-124, four C-54 squadrons were either deactivated or reassigned to the United States. Beginning in March, prior to integrating the C-124s into the 374th Wing, two C-54 squadrons were "stood down." After the conversion was complete, the 61st Group's C-54s, assigned to the 15th and 53rd Squadrons, were "phase[d] ... out of the airlift on 1 November and were officially relieved for return to the United States on 21 November." During the first six months of operation, the C-124s flew a total of 1,500 missions transporting 92,000 passengers, 3,300 patients and 16,000 tons of cargo. This productivity rate exceeded that of the C-54 by a ratio of more than 3-to-1. In comparison, flying the same number of missions, the C-54s would carry an average of 30,000 passengers and 5,310 tons of cargo." See Futrell, 566.

newly-constituted C-119 fleet to a rigorous four-week test deemed "Operation Get Ready."[367] The C-119s "*continued to present problems*" especially with their landing gear and propellers [emphasis added].[368]

Kadena Air Base, in Okinawa, had the only airfield in the Pacific theater with a weight-bearing capacity able to accommodate a fully-loaded 175,000-pound Globemaster. Nevertheless the 315th AD calculated that even with a 160,000-pound weight restriction and a five hour per day utilization rate, the capability of the new C-124 fleet still far-exceeded that of the C-54s.[369] The 315th AD's estimates were soon proven to be overly optimistic as the "*USAF had provisioned supply support for Globemasters at less than one-hour-per-day utilization* [so that] the 315th AD soon ran into logistical difficulties." Although the Division was assured at an Air Force conference that it would

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[366] The 28 C-119s in-commission were not considered to be "safe for flying." Futrell points out that: "although FEAF and the 315th AD had long urged remedial action for the C-119 situation, the collapse of these aircraft finally brought strong logistical support." The Air Materiel Command spurred derelict manufacturers to accelerate the delivery of critically-needed spare parts to Japan. Also, the Tactical Air Command lent its own "serviceable and newer model C-119s," which enabled the 403rd to send its unrepairable aircraft to a refurbishment facility in Birmingham, Alabama. See Futrell, 565.

[367] Casey's goal was to obtain a 75% in-commission rate, the theater standard. Although it was not quite up to standard, the wing did manage to operate at a vastly improved rate of 60.2%. This enabled the 53rd C-54 Troop Carrier Squadron, which had been filling-in for the out-of-commission C-119s, to return to their stateside base on 12 September. See Futrell, 565.

[368] By April 1953, the 483d Wing had finally reached its authorized unit strength of 96 C-119s. The combination of newer airframes and sufficient replacement parts enabled the wing to improve its in-commission rate to 67.2% during the first half of 1953, and even surpass standards by achieving a 78.8% in-commission rate in June 1953. While the aircraft was technically designed to carry 15 tons, because of its defective landing gear, cargo loads to Korea were restricted by 60%, to just six tons. Furthermore, the propellers were prone to failure in flight, so that the aircraft was restricted from carrying passengers other than paratroopers, who could egress in an emergency situation. See Futrell, 565.

[369] Fifth AF airfield engineers oversaw the construction of a new runway, completed on 27 October 1952, at the Seoul Municipal Airport which would be able to withstand sustained operations by the heavy C-124 transport. Even with the airfield restrictions and the new re-inforced runway, C-124 operations were limited to a gross weight of 160,000 pounds, meaning that it could carry a 50,000 pound (25-ton) payload, which was three tons short of its design specifications. Fifth Air Force, "in order to keep the Globemasters off its more important tactical fields," restricted C-124 Korean operations to only Kimpo, Taegu, Suwon and Osan-ni. See Futrell, 566.

soon receive "increased supply support," as of November "*the C-124s were [still] not able to fly enough to make up for the lost C-54 capability* [emphasis added]."[370]

That December, the most recently delivered C-124s of the 22nd Squadron were found to have fuel leaking from their wing tanks, which meant that the entire squadron had to be grounded approximately two months while the leaks were sealed by maintenance.[371] On 17 February 1953 the C-124s of the 22nd Squadron went back into operation and for the next three months operations went smoothly. However, on 18 June a C-124 assigned to the 22nd Squadron developed an engine fire due to a generator failure shortly after takeoff from Tachikawa and crashed, killing all 129 passengers. At the time, this was the worst aviation accident in history.[372] As a result of this mishap, Colonel Chapman temporarily grounded the entire C-124 fleet for inspections until 8 July. In sum, by the war's end, "*because of maintenance and supply difficulties, the 315th AD was never able to obtain the utilization which it needed from its new Globemaster transports* [emphasis added]."[373]

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[370] In order to compensate for the shortfall, overflow cargo scheduled for air-delivery from Tachikawa was transported via rail-express to the southern Japanese aerial ports, where it was loaded onto C-119s and C-46s and airlifted to Korea. See Futrell, 567.

[371] As this would take approximately two months, the personnel and supplies of the 22nd Squadron were used to temporarily augment the efforts of the 6th Squadron, which flew its aircraft beyond the normal utilization rate in order to compensate for the grounding of its sister squadron. See Futrell, 567.

[372] However, starting on 29 May, a series of unexplained Globemaster engine fires began to occur. On 11 June General McCarty requested that an Air Materiel Command engineering team be sent from the U.S. to investigate the cause of the fires. Although the team was able to isolate the source of the problem to faulty generators, the worst disaster in aviation history occurred before any corrective measures were taken. See Futrell, 567.

[373] Subsequently, the Globemasters underwent rigorous inspections in which a significant portion of the fleet was found to have faulty generators which would not be able to be repaired until after the war had ended. Despite this setback, nevertheless, "most C-124s were released for flight on 8 July." See Futrell, 567.

The shortcomings of the C-124 fleet adversely impacted C-47 and C-46 operations as well. These smaller aircraft had to compensate for the failure of the C-124 to live up to its expectations, which in-turn disrupted the entire air transport system.[374] The venerable C-46s, based at Brady Air Base, Japan, provided a proven reserve of airlift potential which enabled the 315th Air Division to fulfill its commitments, even when the C-119s and C-124s were out-of-commission.[375]

At its peak, MATS' contribution to the strategic airlift to Japan consisted of a mixed military-civilian force of 250 aircraft.[376] At the war's end, MATS was still heavily reliant upon contracted civil air-carriers to maintain its support of the Korean war effort.[377] Eichhorst notes that this fact would "pose *problems for future command initiatives to create a more capable strategic airlift force* [emphasis added]."[378]

The doctrinal concept of a "flexible air transport" system had proven itself to be the most efficient and effective way to organize and employ theater airlift assets.[379]

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[374] Miller, *Airlift Doctrine*, 200. In its after-action report, the FEAF wrote the following concerning the C-124 Globemaster operations: "the C-124 proved itself a valuable addition to the fleet of transport aircraft. ... However, ... an airlift command employing Globemasters [in the future] would require a balanced capability of smaller transports which could feed air cargo from Globemaster terminals to tactical airfields." Because the Globemasters rarely operated into the fighter bases of the 5th Air Force, on 1 February 1953, the 315th AD had relocated the 6461st Troop Carrier Squadron and the Royal Hellenic Air Force Detachment to Seoul so they could operate as feeder carriers for the C-124 operation. See Futrell, 568.

[375] Despite the fact that the Commandos were themselves limited to a four-hour per day utilization rate, a combination of effective logistical support and a superior in-commission rate enabled the 315th AD to continually airlift a massive amount of tonnage, despite the limited number of aircrews and trained mechanics assigned to the task. Despite the proven capability of the C-46, the 314th Wing, which was the only remaining airlift wing in the entire USAF to which the Commando was assigned, was scheduled to convert to C-119s beginning in July 1953. When this plan was divulged in December of 1952, General McCarty requested, and Headquarters USAF approved a postponement of the conversion for half a year, until January 1954, which meant that the C-46 fleet would remain intact until after the armistice was signed. See Futrell, 559.

[376] The missions were allocated so that civil air transports carried "67% of the passengers and 56% of the cargo." See Eichhorst, 16.

[377] Goldberg, *History of the U.S. Air Force*, 153.

[378] Eichhorst, *Military Airlift*, 16.

Throughout the war, an average of 140 out of CCC's / 315th AD's 210 transports were mission-ready at any given time.[380] Nevertheless, there were three occasions when the 5th AF fighters nearly became critically short of needed supplies.[381] Despite the apparent success of the Korean theater airlift mission, MATS' strategic airlift fleet, "*due to years of funding neglect* and flying-time restrictions, *demonstrated an inability to surge to war.*" Eichhorst states that a major lesson to be taken from the war was "*the need for specially designed* [strategic] *airlift aircraft* [emphasis added].[382]

Conclusion

Although airlift forces contributed immensely to the Korean War effort, "*the amount of general and high priority cargo delivered was insignificant in terms of total tonnage moved.*" Even at the height of it operations, "*airlift represented less than 3/4 of 1% of the total cargo shipped in support of the war effort.*"[383]

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[379] Thompson, *The Greatest Airlift*, 185 - 187.

[380] By war's end, the Korean airlift fleet had flown: "210,343 sorties, carrying 391,763 tons of cargo, 2,605,591 passengers, and 307,804 patients. This 'greatest airlift' accumulated 15,836,400 ton-miles and 128,336,700 passenger miles. See Futrell, 557 - 559. These numbers do not include the accomplishments of Civil Air Transport, Inc., which flew over 15,000 CCC Korean airlift missions, transporting 27,000 tons of cargo, 80,000 passengers, and many patients over three years time. In the course of achieving these statistics, five CAT, Inc., aircrew members were killed. See Thompson, 454. The Royal Australian Air Force transported over 120,000 soldiers, 15,000 casualties, and "three million pounds of forces' air mail during the conflict." For its part, the Royal Canadian Air Force transported 13,000 personnel and "seven million pounds of freight and air mail" to Japan and Korea. While Canada's C-47s handled intratheater tactical airlift requirements, its C-54s and DC-4Ms flew the intertheater strategic missions. See Wragg, 84.

[381] The first instance occurred during the April - May time-frame of 1951, when the C-119s were grounded due to propeller problems. The second near-shortfall occurred in August 1952 when the C-119s were grounded again, and 5th AF fell dangerously short of jet engines replacements, which were normally air-delivered from air depots and rear maintenance facilities by the Boxcars. Finally, the 5th AF almost experienced a major logistical shortfall during the June - July time-frame of 1953, when a squadron of C-124s was grounded for faulty generators. See Futrell, 573.

[382] "The C-47s and C-54s were more suitable for passengers than heavy cargo. The C-119 with its removable rear cargo door allowed relatively large items of cargo to be airdropped and the even larger C-124, introduced late in the war, could carry vast amounts of cargo but was unable to land on runways [less] than 7,800 feet." See Eichhorst, 18.

[383] Rutenberg and Allen, *The Logistics of Waging War*, 142. An exception was the 5th Air Force,

General Tunner referred to Korea as a "proving ground in combat air transportation," (i.e., airdrop, aeromedical evacuation, guerrilla resupply, etc.). Yet, in light of what had been achieved in Burma and Berlin, he was concerned that airlift had been underutilized.[384] Tunner wrote in his end-of-tour report to General Stratemeyer that he was concerned that "*the full potential of air transport had not been realized.*"[385] Pointing to the future, Tunner wrote that "*air transportation must take its proper place in the military family* [emphasis added]."[386]

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given that "95% of aircraft support items for units in Korea traveled by air, and the air wings in Korea were held to small stock levels." See Futrell, 573. In terms of total tonnage, "sealift, controlled by the Navy's Military Sea Transport Service, moved most of the property from Japan to Korea and from the CONUS to Japan and Korea." See Gary F. Hollums, "A Push-Pull Combination Struggles Through," in Rutenberg and Allen eds., *The Logistics of Waging War*, 140. For the record, MATS accomplished the following during the course of the Korean War: MATS, using its fleet of C-47, C-54, C-97, C-119 and C-124 aircraft, airlifted 214,000 passengers and 80,000 tons of cargo to the combat area during the three-year conflict. Within the combat area, airlift forces airdropped 15,000 tons of supplies. ... In addition, the command airlifted about 386,000 patients, 320,000 within the combat theater and 66,536 to the U.S. The swift evacuation resulted in the lowest death rate from wounds experienced by U.S. forces in any war to date. See Richard J. Burkard, *Military Airlift Command: Historical Handbook 1941 - 1984* (Scott AFB, IL: MAC Command Historical Office, 1984) 4.

[384] Tunner, *Over the Hump*, 261.

[385] Comparing Korea to the two great airlifts of the recent past, Tunner wrote that: "The feasibility of a daily, 9,000-ton sustained cargo lift had been shown in Berlin; in Korea, CCC delivered only 1,050 tons daily during November, the airlift's peak month." Pointing to the fact that inadequate Korean airfields constituted the "most serious obstacle to a greater airlift contribution," he believed that the Far East Commmand should have devoted a greater percentage of resources to expanding and reinforcing Korea's airfields, rather than concentrating almost exclusively on improving the country's roads, railroads, bridges, harbors and tunnels. See Bowers, 65. He estimated that CCC could have delivered 8,000 tons a day rather than the actual 1,000 they were tasked with, which would have been sufficient to fulfill the requirements of all the U.N. air and ground forces. See Tunner, 261. In retrospect, while testifying before Congress in 1960 from his seat as the Commander of MATS, Lieutenant General Tunner made the bold assertion that with "better planning and support," his Combat Cargo Command could have air-delivered "8,000 tons a day to North Korea during General MacArthur's offensive, perhaps allowing U.N. troops to reach the Yalu before the Chinese were prepared to intervene." See Miller, 202. Four years later, he wrote more poignantly that "a larger CCC might readily have ... sustained 8th Army at Sinanju in December, making unnecessary the subsequent withdrawal south." See Bowers, 66.

[386] "Air transportation ... must be considered and planned for as necessary to support a given campaign under a given set of circumstances. It should be an integral part of the overall transportation system. We must plan for it to do the job for which it is best suited such as evacuation of medical patients; movement of critical items of supply and equipment; fast deployment of forces; movement of all the expensive and important material to avoid wasteful stockpiling of these materials, [and] air supply of isolated units." See Tunner, 263.

Tactical, as opposed to strategic, airlift made the most valuable contribution to the war effort in Korea. As justification for his assertion that airlift was militarily important, Tunner made the following observation concerning the role that tactical airlift had played during the Korean War:

> *The ability of the 8th Army to move farther and faster than any previous army in history was due in large part to air transport.* Aerial resupply allowed the 8th to drive up the west coast of Korea without regard to lines of ground supply.[387]

In his end of tour report to Stratemeyer, Tunner points out that tactical airlift:

> contributed substantially to the success of the Inchon landings, the 8th Army's race from Pusan to the Yalu, the 187th Airborne Regiment's assault on Sukchon and Sunchon, the deployment of the 5th Air Force units in the fall, the withdrawal of the Marines from the Choshin Reservoir, the withdrawal of the entire X Corps from Hamhung to Pusan, the retreat of the 8th Army, and finally the beginning of the new advance through Suwon.[388]

For its part, MATS' strategic airlift to Korea covered the farthest distances ever recorded, transporting troops and supplies from the CONUS across the Pacific to Japan.[389] Based upon the Korean experience, Tunner gleaned two lessons learned concerning the airlift fleet:

> (1) *The exists a need for more than one type of combat support airlift aircraft.* (2) *Worldwide airlift operations require a long-range heavy-lift aircraft.*[390]

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[387] Eichhorst, *Military Airlift*, 17.

[388] Tunner, *Over the Hump*, 263.

[389] Once in Japan, the CCC operated the tactical airlift operation shuttling troops and equipment to Korea. See Tunner, 9.

[390] Tunner elaborates on these points: "(1)Aerial resupply allowed the 8th to drive up the west coast of Korea without regard to lines of ground supply; (2) The C-47 was the only plane capable of routinely landing on short, rough, dirt landing strips to evacuate the wounded, but it was incapable of carrying or dropping the large cargo loads the C-119 could handle." See Eichhorst, 17.

One of the 315th AD Commanders who followed in Tunner's footsteps, General McCarty, reiterated his plea for a new multipurpose airlifter:

> *the needs of flexible theater air transport could have been best served if the 315th AD had possessed specially designed 'all-purpose theater airlift type' aircraft* which could have performed any theater airlift task and could have been easily diverted from one task to another.[391]

In conjunction, General Tunner made several concrete recommendations:

> (1) *Construct a long-range, heavy-lift aircraft* for worldwide operations. (2) *Increase the number of personnel in air transport units* in order to achieve greater efficiency through higher utilization rates. (3) *Consolidate all the assets into one command* with a mission to standardize equipment, units and techniques [emphases added].[392]

General Weyland's *FEAF Report on the Korean War,*[393] which Miller calls a "masterful summary of airlift doctrine,"[394] listed the following as fundamental lessons about the Korean airlift operation:

> (1) Airlift missions and priorities should be established by the theater commander; (2) Airlift cannot be allocated exclusively for the use of any service except for special one-time requirements; (3) All theater airlift should be concentrated to the maximum degree in one command for flexibility and best utilization; (4) Airlift efficiency can be greatly increased if manning tables are based on 24-hour maintenance and high daily aircraft utilization rates.[395]

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[391] Futrell, *U.S. Air Force in Korea*, 562.

[392] Tunner, *Over the Hump*, 264. During his 1960 Congressional testimony, Tunner shared "two overwhelming strategic airlift lessons" from his Korean experience: "(1) Do not count on a rapid response from MATS without giving it a peacetime base from which to respond; (2) Do count on civil airlines to be responsive for routine, but large, lifts into noncombat zones. See U.S. Congress, House, Committee on Armed Services, *Hearings on National Military Airlift*, (1960), Statement of Lt. Gen. William H. Tunner, Commander, Military Air Transport Service, cited in Miller, 203 - 204.

[393] Futrell, *U.S. Air Force in Korea*, 569.

[394] Miller, *Airlift Doctrine*, 202.

[395] Given that airlift had played a key role in MacArthur's rapid advances of 1950, the FEAF report found that "the greatest contribution troop carriers made to the Korean War ... was ... support for combat units." See Far East Air Forces, *Report on the Korean War*, vol. 1, 26 March 1954, 30, cited in Miller, 201.

The report still revealed that the "meat-ax economy drive of 1949, coupled with some poor planning in the theater, meant *there were not enough air transports to meet the initial emergency.*" The report points to the fact that Tunner had been unsuccessful in attempting to establish "round-the-clock, all-weather, high-utilization" as he had done in Berlin because he:

> lacked navigation and ATC facilities for night operations, *did not have the numbers of crews needed*, and lacked sufficient terminals in the combat zone. Very few fields in Korea could handle a sustained heavy airlift flow. *They lacked a sufficient number of airplanes that could deliver the goods forward.* Thus, airdrop often became a normal means of supply [emphases added].[396]

Based upon its demonstrated success during the Korean War, almost foretelling the Vietnam experience which loomed on the horizon, General J. Lawton Collins, Chief of Staff of the U.S. Army, made the following forecast concerning the utilization of airlift in future conflicts:

> The success of our ground operations in any future war will depend more than ever before upon the degree of air support that is provided. *Given air transports in sufficient quantity, our infantry divisions can assume greater strategic importance* in the far-flung operations of a global war [emphasis added].[397]

Analysis

Airlift Organization: Post Berlin / Korean

On 1 July 1958 Lieutenant General Tunner took command of MATS. The General had just assumed command when the Lebanon crisis erupted. He immediately deployed 36 C-124s and 48 Cargomasters to be in place on alert in Europe should they be called

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[396] Despite the fact that there was initially a shortfall of airlift assets, given the nature of the problems that General Tunner encountered, the FEAF report concluded that "even more airplanes would not necessarily have solved this problem." See Miller, 202.

[397] Bunker, "Organization for an Airlift," 31.

upon. The aircraft were in place before President Eisenhower decided to send the Marines into Beirut. General Tunner emphasized that this was indicative of our new "air age," in that the air transport mission was now the forerunner of all other missions, should an emergency arise. He pointed out, for example, that MATS aircraft had already set up a regular shuttle from Frankfurt to Beirut to Turkey and back, while the headquarters planned special missions directly to Beirut.[398]

While these forces were committed to the Lebanese conflict, another incident erupted in Taiwan, where two small islands (Quemoy and Matsu) were being attacked by artillery shells from Mainland China. MATS was immediately called into action and set up a trans-Pacific airlift composed of hundreds of planes, to deliver needed supplies to both Taiwan and the Philippines. Among their shipments was a squadron of F-104s loaded on C-124s. Not only did they load the pilots and ground crews, but the fighter aircraft as well! This show of force prompted the Chinese to end their shelling without further incident.[399]

Ironically, although MATS was the first command called upon in this new Cold War era, under the strategic doctrine of massive retaliation, it was hit the hardest with the conventional military cutbacks. From 1958 until 1960, General Tunner had to fight to save MATS as an entity within the U.S. Air Force. The two primary forces trying to squeeze MATS out of business were the civil airline industry and the military establishment. The military pressure was indirect in that it was more in favor of massive

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[398] Tunner, *Over the Hump*, 281.
[399] Ibid., 282.

retaliation to the exclusion and neglect of MATS more than directly opposed to MATS per se. The actual assault against MATS was formed by the Air Transport Association (ATA) and some of the individual member airlines.[400]

In 1958 the airline industry was making nearly one quarter of a billion dollars a year from revenues generated by individual U.S. Government passenger tickets and special charter flights contracted by MATS for service personnel. Yet, industry leaders believed it would be possible to earn an additional half billion dollars a year if they could takeover the cargo and passenger routes flown by MATS cargo aircraft as well.[401] In the interest of making additional profits, ATA initiated a smear campaign against the MATS peacetime airlift mobility mission, which was designed to keep the MATS forces ready to surge for war if necessary.[402]

ATA attacked on numerous grounds.[403] The charges against MATS were voiced repeatedly in newspaper columns, magazine articles, radio broadcasts, TV commentaries, speeches before community organizations, and testimony in Congressional hearings. ATA proposed three solutions. First, they suggested cutting the number of aircraft and personnel assigned to MATS. Second, they suggested that the forces assigned to MATS

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[400] Ibid., 287.

[401] Ibid., 290.

[402] The ATA employed three smear tactics: (1) ATA persuaded Congress to investigate the efficiency of MATS, with the hope of getting legislation to curtail their operations; (2) ATA elicited the support of the U.S. Chamber of Commerce and the American Legion to fight for their cause; (3) ATA recruited the press and had articles written supporting their proposition in such leading journals as *Time*, *The New York Times* and *The Wall Street Journal*, as well as all the leading aviation magazines. See Tunner, 291.

[403] The ATA claimed that MATS was the largest airline in the world and that its aircraft were extravagantly plush and serviced by 480 beautiful stewardesses. ATA claimed that MATS flew many of the same routes that the airlines flew. ATA said that because of their strategic support mission, MATS had been "riding on SAC's coattails." See Tunner, 292.

should drastically reduce their flying time and stay current in simulators instead. Third, they suggested that when MATS flew their aircraft, they should fly them empty.[404]

These negative charges and proposed cutbacks had two negative effects on MATS. First, because of the attacks, both the administration and DOD were reluctant to spend any money to purchase new equipment for a command which could very well be inactivated. In fact, *during the latter half of the 1950s, MATS did not have a single aircraft in design or on order*. Second, the nature of the attacks took a toll on the morale of the MATS personnel [emphasis added].[405]

To get to the heart of the problem, General Tunner asked Professor John Hohenbury of Columbia University to do a thorough study of the MATS operations.[406] Hohenbury discovered that MATS had been "taking criticism lying down." The reason there had been no public support for MATS was because "*a supply operation does not have the glamour that makes for intense local interest.*" In addition, he found that the people in MATS did not fully understand the mission of their organization. He finished with the following summary:

> *MATS has been the target of more abuse, misinformation and outright untruth than any other part of our armed forces.* It has been difficult, if not impossible, for the truth to catch up with them in many cases [emphasis added].[407]

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[404] Tunner, *Over the Hump,* 293.

[405] General Red Forman, the Commander of McGuire AFB, told his troops "morale is one of our gravest problems." To boost their morale, General Tunner praised his men for the important role they played in national security and he boasted that their safety record was the envy of every airline. See Tunner, 297.

[406] At the time, the professor was serving as a Special Assistant to the Secretary of the Air Force. See Tunner, 291.

[407] Tunner, *Over the Hump,* 292.

General Tunner believed that as the commander of what he considered to be an important military organization with a wartime strategic mission, it was his duty to fight back. He acknowledged that civilian pilots could perform many important functions, but felt that only military personnel, trained in the art of war, were capable of performing in a combat environment. Moreover, he pointed out the fact that during the Lebanon and Taiwan crises there were ten separate incidents where MATS could not get enough civilian carriers to augment its routine missions. The airline rationale for noncompliance was that they were overloaded with summertime vacationers. Additionally, many of the carriers made contract bids which were much too high to consider seriously. His point was that although the ATA was pushing to takeover MATS' peacetime mission, many carriers had turned their backs on MATS in its moment of need.[408]

The military opposition to MATS conformed to the Eisenhower strategic doctrine of massive retaliation, which created a reluctance to allocate scarce resources to any component of the service not directly involved in strategic bombardment. President Eisenhower had pledged to keep taxes low, and his new look force structure fit perfectly with his goal to strengthen the economy. His slogan was the "biggest bang for the buck." Since nuclear forces cost much less to build and keep than a balance between nuclear and conventional forces, "*the economic ax fell hardest on the Army and the conventional commands of the Air Force.*"[409] The Air Force leaders opposed to MATS were wholeheartedly convinced that U.S. national security relied entirely upon a strong nuclear

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[408] Ibid., 296.
[409] Ibid., 287.

deterrent, and that any allocation of scarce resources to airlift could potentially weaken America's deterrent capability in the Cold War. With the Air Force opposition in mind, General Tunner asked the Air Force Chief of Staff, General White, whether it would be permissible to state his viewpoint, even though it would be in direct contradiction to the official Air Force doctrine. General White told General Tunner to "say what you think."[410] So, although *the Air Force would not come to MATS' rescue*, it was not going to prevent MATS from defending itself [emphasis added].

General Tunner resorted to a three-part strategy. First, he took the MATS story to the press to sway public opinion. Second, he launched a grass roots campaign at the American Legion and Chamber of Commerce. Third, he presented his story to a number of influential Congressmen such as Senators Goldwater, Thurmond and Cannon and Representatives Rivers, Baldwin and Price. Hearings were conducted between 8 March 1960 and 22 April 1960. Congressman Mendel Rivers was appointed as the Chairman of the Special Subcommittee by Congressman Carl Vinson, Chairman of the House Committee on Armed Services.[411]

General Tunner not only protected his organization, but he went on the offensive. He called for procurement of new aircraft for the MATS fleet, charging that the backbone of the fleet, the C-124 which he had sold to Symington during the Berlin Airlift, had become obsolete. He suggested that if MATS had new jet aircraft added to its force structure (like the airline industry had), it could increase its payload, increase its range

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[410] Ibid., 305.
[411] Ibid., 304.

and lower its operating costs. He pointed out that a replacement aircraft was already long overdue, but there was nothing on order or being researched and developed.[412] Moreover, he requested a smaller fleet of aircraft capable of carrying outsize cargo (e.g., C-5).

Tunner explained the difference between the military airlift mission as compared to the civilian airline mission.[413] MATS had to constantly exercise every phase of its military airlift operation, with a minimum of a five-hour daily utilization rate. He pointed out that the airline industry was already getting $70 million per year with contracted MATS flights and an additional $250 million per year from individual airline tickets from service members. He estimated that giving them the MATS peacetime airlift mission would cost the U.S. Government an additional $300 million per year, and to fly the MATS aircraft empty would cost another $750 million.

Concerning utilization of airlift by all services, General Tunner pointed out that the Army and Navy for the most part had stuck to their traditional methods of transport, such as surface and sealift. If DOD was more forceful about ensuring that all services utilized air transport resources to the maximum extent, it would promote efficiency and cost savings in operations.[414]

Finally, although the General was vehemently opposed to relinquishing the peacetime airlift mission to the airlines, he did encourage an expansion of the Civil Reserve Air Fleet to help relieve the burden on the military forces, by flying the regularly

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[412] Tunner wanted a workhorse plane, cheap to operate, relatively large and easy to load. "This (C-141) would become the backbone of the fleet." See Tunner, 300.

[413] Tunner, *Over the Hump*, 296.

[414] MATS had to train 24 hours, 7 days a week to ensure that it would be ready for its "D-Day mission." See Tunner, 302.

scheduled peacetime airlift missions during times of crisis mobilization.[415] This would ensure that in a future crisis, CRAF would not refuse to fly missions to augment the military airlift force, as happened in Lebanon and Taiwan.

To make his case, General Tunner conducted the largest peacetime airlift exercise every attempted. Operation "Big Slam" went on for 15 days, beginning on 14 March 1960. Even though the press had no expertise in airlift, General Tunner was convinced that anyone observing would be able to discern the inadequacies of the MATS airlift fleet. So the press was invited and 352 correspondents came to Puerto Rico to witness the event for themselves,[416] as did several interested Congressmen.[417]

Big Slam taught the American public three lessons. First, it demonstrated the capabilities of the MATS personnel to get the job done. Observers realized that these capabilities would have been nonexistent had it not been for their extensive prior experience. Experience which could only be acquired through real live mission accomplishment, not simulator training. Second, when the CRAF picked up the excess airlift requirements, it proved the practical effects of augmenting regularly scheduled transport missions with commercial carriers. Third, with 50,496 accident free flight hours, it validated the MATS safety program.[418]

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[415] Tunner, *Over the Hump*, 302.

[416] The following observation sums up the impression of the press: "If these men were being sent to fight a small and poorly equipped enemy not far from home base and if time were not too important, the lift would be a success. But, if the Army had to fight a substantial force a long distance away in a hurry, it would be in trouble." See Tunner, 312.

[417] During that 15 days, 1250 round-trip missions were flown, some over 4130 miles, which was a new airlift continuous distance record: 50,496 accident free flight hours were logged; 21,095 troops were flown to Puerto Rico and then flown back home; 10,949 tons of cargo were also airlifted. See Tunner, 309.

[418] Tunner, *Over the Hump*, 310.

Although these important points were brought out by the exercise, the salient issue was described perfectly by observer Ray Towne who said "*this operation was the most spectacularly successful failure in the history of military training.*"[419] The fact of the matter was that the airlift provided by this exercise, the largest in history, was less than a third of what would have been needed to equip a combat ready force. Although the tonnage seemed impressive, it only included one tank, a few vehicles and small artillery pieces. It was estimated that it would have taken a full month to airlift a fully equipped combat division.[420] At the follow-on Congressional hearings, Senator Chavez, Chairman of the DOD Subcommittee of the Senate Appropriations Committee, stated:

> *I do not believe we have sufficient modern military airlift aircraft for the needs of today's world. It's a fact that both Congress and the Administrative branch must take prompt action in this area of national defense.*[421]

After the experience of Operation Big Slam, General Tunner testified that "*limitations of the majority of present MATS aircraft seriously limit the size of U.S. Forces which can be deployed to distant overseas destinations* [emphasis added]."[422]

The River Committee had numerous findings and recommendations. The principle finding of the committee was that the U.S. strategic airlift capability was seriously inadequate. The primary recommendation was to appropriate $50 million for a new workhorse aircraft. For a quick fix, they recommended augmenting the airlift fleet with fifty KC-135s and fifty C-130s. A secondary finding was that airlift was spread out

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[419] Ibid., 311.
[420] Ibid., 312.
[421] Ibid., 313.
[422] Ibid., 314.

among various commands, making it impossible to take advantage of all the assets owned by the military in an integrated manner. The recommendation was to consolidate all the DOD airlift assets under one command. The committee found that crews were pushed too hard in the exercise, working 84-hour weeks. They recommended that the peacetime utilization rate be raised to a minimum of one half of the surge rate so that the crews would be better able to handle the increased demands. In conjunction with this provision, the emphasis on airlift operations would be shifted to training rather than economy. It was found that CRAF had helped relieve the burden of flying regularly scheduled flights during the exercise. Therefore, the committee recommended that the CRAF fleet be upgraded with state-of-the-art equipment to better serve MATS.[423] Tunner sensed:

> Straws in the wind during that period indicated a turning point in our military planning, our entire strategic concept. *Top Air Force brass* (i.e. LeMay, Twining), though 'big bang' adherents, *began to realize that air transport did have some importance in the military establishment* [emphasis added].[424]

Airlift Force Structure: Post Berlin / Korea

In late February 1949, after the Berlin airlift had survived the worst of the winter, Major General Kuter, the Commander of MATS, wrote an article projecting what effect this massive operation would have on the future of the strategic airlift mobility mission, for it had "underlined, as nothing else could, the immense potential of strategic airlift." The very word "airlift" had finally become "part of the common vocabulary." It was already evident that "for the first time in peacetime history, air transport - strategic air

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[423] Ibid.
[424] Ibid., 315.

transport - has become a conspicuous expression of American air power, peace power, and an effective weapon of diplomacy." Moreover, it was apparent that "*from Vittles ... has come a greater appreciation of the big transport aircraft and its meaning for strategic airlift* [emphasis added]."[425]

After reflecting on what could have been done with a larger transport in the Berlin Airlift, Kuter projected what the requirements would be for a strategic airlifter of the future, one designed specifically for military use. He states that "*the future of strategic airlift lies in the development and production of the proper transport aircraft* [emphasis added]."[426]

One criteria Kuter purposely neglected to mention was the speed of such an aircraft. He believed that 250 knots was adequate, emphasizing that "in this era of jet and supersonic speeds it is important, I think, not to transfer this emphasis on speed to the field of air transport, where it is in fact a secondary consideration." Surprisingly, the Commander of all U.S. strategic airlift forces was not advocating the development of a jet-powered airlifter.[427] Kuter was pleased to see the "recognition of the big transport plane, already reflected in Air Force orders for the C-97 and C-124," both propeller-driven aircraft. Looking toward the future, he predicted that perhaps this:

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[425] In spite of the effectiveness of the airlift, Kuter pointed out that 86 C-74s would have been capable of completing the task of the 225 C-54s being used. Says Kuter: "I use this particular plane [C-74] because it has actually been used in the airlift. Fewer aircraft mean fewer of everything all along the line: trips, flying hours, air crews, maintenance and fuel, fewer terminals, less communications and fewer air traffic problems in all - obviously impressive economies." See Kuter, 7 - 10.

[426] In my opinion, these include: "ease of maintenance, high utilization, direct loading and unloading, maximum useful capacity, probably 25 tons, a range of 3,000 - 4,000 miles, and a low cost of operation." See Kuter, 7 -11.

[427] Kuter, "Vittles - Air Supply of Berlin," 7 -11.

> may ... foretell a strong and unified effort, *supported by the military*, the airline and aircraft industries, and the public - to develop a great national fleet of large transports, planes which will earn their way in commerce, contributing in peace to national prosperity and to national defense in time of emergency.[428]

Kuter warned that "*without this expansion of the national merchant fleet in the air, MATS would be helpless* to provide the really big aircraft for the Armed Forces of the U.S., which is sure to be one of the first American requirements of any major emergency."[429] In other words, at the time of his writing, MATS was being neglected. It needed to be expanded in order to be able to perform its wartime mission [emphasis added].

Fundamentally, Kuter believed that the Berlin Airlift had the effect of telescoping "years of education ... into months." So that "standing beside the great diplomatic victory of the Airlift, [was] the gratifying realization that *strategic air transport is recognized and respected* in the thinking of those who are most concerned with the formation of national aviation policy." He elaborated that:

> *No longer, I feel, is there the danger that the U.S. may develop a first-rate combat Air Force, Army and Navy, which might be hamstrung by inadequate support by second-rate air transport.* If Vittles has eliminated this danger then our great investment in that operation will have been repaid in full [emphasis added].[430]

He saw the Berlin Airlift as a wake-up call to get the neglected airlift fleet up to the level where it was as capable of performing its strategic air mobility mission as the fighter and bomber fleets could perform their aerial combat roles.[431]

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[428] Ibid.

[429] Ibid.

[430] Ibid.

[431] His rationale was that "should we reach the day when we must defend our country in another war, we know it will come with stunning swiftness." He projected that under these circumstances, "one of the first calls would be for airlift - strategic airlift - enough of it, right then, to permit our striking forces to go into operation." He warned that "it would be tragic indeed, perhaps fatal, if on this day our national air transport should be found wanting." See Kuter, 7 - 11.

During the course of the Korean War, General Henebry and his predecessor, General Tunner, reported to Headquarters Air Force at different times that although their C-47s were managing to get the job done, the fact remained that these aircraft "were *not designed to do the job* or meet all of the peculiar and difficult problems posed by the unusual Korean airstrips, terrain and weather." Both of them made a recommendation that a "new assault-type aircraft" be researched, developed and produced [emphasis added].[432]

In Korea, the U.S. Naval Forces Far East ran an independent inter- and intra-theater airlift operation for the logistical support of its own fleet requirements.[433] Through the duration of the war, the 8th Army continued to receive the greatest allocation of theater airlift support from the FEAF's Combat Cargo Command, and later the 315th AD. Despite the fact that the Army was the primary beneficiary of the Air Force's airlift mission, it still embarked upon the acquisition of its own organic fleet of helicopters in the fall of 1950.[434] A year later, the officer corps of the 8th Army had grown to accept the

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[432] Henebry and Tunner wanted this aircraft to be able to: "land or take off repeatedly on short, bumpy, temporary airstrips; carrying a high payload considerably in excess of the two and a half ton maximum load of the C-47; and designed to absorb a lot of hard wear and tear without continually breaking down." See Thompson, 163.

[433] Soon after hostilities began in the fall of 1950, the Air Force's Combat Cargo Command had a USMC R5D (C-54) Squadron under its chain of command. Shortly thereafter this squadron and the Marines' follow-on airlift forces were made "exempt from the control of the theater airlift commander" which in effect meant the CCC. However, the Navy and Marine Corps did agree to *accept* "approximately 10% of CCC's airlift capability," which later fell to less than one percent under the 315th AD when the Navy and Marines had their organic airlift fleets operating at full capacity. See Futrell, 569.

[434] On 20 August 1950, less than two months after hostilities initially erupted, General Douglas MacArthur initiated this course of action when he transmitted a formal request to the Department of the Army. Futrell points out that upon its receipt of this request in Washington: "the Department of the Army not only ordered substantial numbers of utility helicopters for assignment as organic aviation, but it also planned the activation of several transport helicopter companies which were to be equipped with light-cargo helicopters." See Futrell, 571.

idea of introducing helicopters to their force structure because of the manner in which the Marines were employing the helicopter to dramatically enhance the mobility of their own forces.[435]

Conceptually, the Army Staff was in general agreement with Ridgway's assessment, only on a reduced scale. Therefore, the Department of the Army agreed to an allocation of "four helicopter transport battalions, each with three companies, to a field army." The Air Force, took this to mean that the Army was attempting to establish an independent "air-transportation force" capable of operating in the battle zone, which would constitute a duplication of functions which had already been charged to the Air Force.[436] Nevertheless, because the 8th Army did not receive these helicopters until the final stages of the war, Futrell contends that "the Army-Air Force agreements on Army aviation actually had little significance in Korea,"[437] but afterwards.

Shortly after the Korean conflict the Army began to build its own fixed-wing tactical airlift aircraft because it claimed the Air Force was not devoting enough to the airlift mission. The Air Force protested and published a memorandum in 1956 entitled "Memorandum for Members of the Armed Forces Policy Council," which stated that the Air Force "presently provides adequate airborne lift *in light of currently approved*

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[435] General Ridgway submitted a requisition to Department of the Army in November 1951 requesting "four Army helicopter transport battalions, each with 280 helicopters." Ridgway justified the request on the grounds that "Korea ... had conclusively demonstrated that: "the Army vitally needed helicopters, and he recommended that the typical field army of the future should have ten helicopter transportation battalions." See Futrell, 572.

[436] According to the terms of the Joint Action Armed Forces Agreements of 1948 signed at Key West, the: "U.S. Air Force was assigned a primary responsibility for providing air transportation and airlift support for the U.S. Army." See Futrell, 571.

[437] Futrell, *USAF in Korea*, 572.

strategic concepts (i.e. massive retaliation)." The rationale was that an Army operating under that doctrine would have little need for a massive airlift capacity, since in the event of war, "the bomb would beat them to the action." The 1957 Department of Defense Directive #5160.22 prohibited the Army from procuring any fixed-wing aircraft which weighed more than 5,000 pounds and specifically prevented it from developing its own airlift capability except within the combat zone [emphasis added].[438]

Because of the Eisenhower Administration's strategic doctrine of massive retaliation, "air transportation was relegated to the bottom of the priority list on the grounds of grand strategy and economy."[439] The United States airlift capability, through normal wear and tear, was shrinking. Yet, there was no long-range program to develop and produce any modern follow-on airlift capability. So, as aging equipment was retired, there were no replacements and the number of aircraft kept dwindling.[440] In five years, MATS had lost over one third of its airframes due to attrition. General Tunner had been put in command of a sinking ship. To compound the problem, when he took charge, a plan had already been approved to assign half of the C-124 fleet (110 aircraft) to TAC and was just awaiting the signature of the Chief of Staff of the Air Force. This would have unnecessarily scattered a large portion of the national military airlift resources, which were already in dangerously short supply. As it turned out, the dual Lebanon and Taiwan

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[438] Morton Halperin and David Halperin, "The Key West Key," *Foreign Policy* 53 (Spring 1971): 117 - 120.

[439] Tunner, *Over the Hump*, 290.

[440] Following is the total number of aircraft in the MATS inventory on a year by year basis from 1955 until 1960: 1955 - 1290; 1956 - 1165; 1957 - 1039; 1958 - 1016; 1959 - 986; and 1960 - 824. See Burkard, 95.

crises prolonged General White's approval, and enabled General Tunner to convince him to reverse the earlier decision.[441] In conclusion, Bowers contends that Korea's "implications for the future of tactical airlift were strong:

> By the mid-1950s, new tactical transports appeared with payload and forward airstrip capabilities far beyond those of the CCC's. Cargo hauling methods of 1950 became grossly obsolete within a decade. But these developments merely strengthened the already incontestable conclusion to be drawn from Korea - that *air transport, centrally organized and strongly managed, was an instrument of vast tactical and logistical application* [emphasis added].[442]

With the exception of the C-124 and C-118, throughout the decade of the 1950s, the airlift fleet had to make due exclusively with its World War II vintage airlift fleet. Virtually all Air Force funding went toward strategic bombardment or support thereof. General Duane Cassidy, while serving as Commander in Chief of MAC, noted that:

> the airlift forces the United States had available in the late 1950s came as a result of the [strategic] doctrine established in the early years of the Eisenhower Administration ... airlift's primary mission under massive retaliation was the support of the nuclear strike forces. Tactical airlift forces stood by in Europe and the Far East for the prestrike movements of weapons and strike aircraft.[443]

Airlift Doctrine: Post-Berlin and Korea

Kenneth Macksey makes the case that, by necessity, immediately following World War II "it was air transport which assumed a leading role in the cold and limited wars which at once broke out" in Berlin and Korea.[444] Yet, from the perspective of the Air Force, the Korean War, though "tactical in nature," had been nothing more than "a

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[441] Tunner, *Over the Hump*, 289.

[442] Bowers, "Korea: Proving Ground ," 66.

[443] Duane H. Cassidy, "MAC's Moment of Truth," *Air Force Magazine*, September 1986, 116.

[444] Kenneth Macksey, *For Want of a Nail: The Impact of War on Logistics and Communications* (London: Brassey's, Ltd., 1989) 145.

temporary aberration." In fact, while that conflict was being waged, "the nuclear deterrent mission continued to dominate the thoughts and resources of the Air Force."[445]

Airlift's stagnation was due primarily to the strategic doctrine of massive retaliation, which emphasized the deterrent and warfighting role of strategic bombing to the exclusion of all others. Massive retaliation was first articulated by the Eisenhower Administration's Secretary of State, John Foster Dulles, in a January 1954 speech before the Council on Foreign Relations in which he "outlined a change of direction from the strategic doctrines that had been developing under Truman" ... whereby the U.S. would "depend primarily upon a great capacity to retaliate, instantly, by means and places of our own choosing."[446]

Based on the assumption that the entire arsenal of nuclear weapons would be employed in the event of a major war, there was no need to have a large airlift force, since U.S. soldiers would not have to be deployed to fight. Edward Teller predicted that "forces on a nuclear battlefield would be measured not in battalions or in divisions, but in commando groups of five to fifty men (pentomic divisions)." Because of this nuclear warfighting strategy General Duane Cassidy, CINCMAC, said there was "little incentive to exploit airlift's flexibility to support ground forces."[447] Thus, *none of the four versions*

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[445] John Schlight, *United States Air Force in Southeast Asia: The Years of the Offensive 1965- 1968* (Washington, D.C.: Office of Air Force History, 1988) 309.

[446] Lawrence Freedman, *The Evolution of Nuclear Strategy* (New York: St. Martin's Press, 1989) 85. Says Lawrence Freedmen: "This new doctrine, known as one of 'massive retaliation,' was widely assumed to be founded on an undiscriminating threat to respond to any communist-inspired aggression, however marginal the confrontation, by means of a massive nuclear strike against the centers of the Soviet Union and China." See Freeman, 76.

[447] Cassidy, "MAC's Moment of Truth,"116.

of U.S. Air Force basic doctrine published during the decade of the 1950s makes a single reference to the airlift mission.

The original version of Air Force Manual 1-2, *USAF Basic Doctrine,* was published in 1953. This manual stated that there were "two broad aspects of air operations, heartland and peripheral actions." It described heartland operations as those that attack the "vital elements of a nation's war sustaining resources, including the enemy's long-range air force." This would equate to long-range strategic bombing. It described peripheral actions as including "the tasks of reducing the enemy's air and surface efforts and are not necessarily limited to specific geographic areas." This meant, in essence, the interdiction mission of fighter aircraft. The manual elaborated that the heartland mission would "require the priority commitment of air forces" because of the "conclusive effects obtained by attacks on the heartland targets, which represent the greatest threats." It also expanded further on the peripheral mission as having the "task of gaining and maintaining control of the air" and "to neutralize the deployed enemy forces." Air defense was also mentioned as a primary mission of the Air Force. The doctrine stated that "the establishment and maintenance of an effective operational air defense force is mandatory." The 1953 Air Force doctrine also established the preeminence of the Air Force over the Army and Navy by stating that "measures to gain control of the air ... are a prerequisite to the commitment of armies and navies to battle." Finally, the doctrine confirmed the widely held view that warfare was now to be total in nature. It stated that:

> the effect of the advent of this force in the conduct of war is to make modern war more total--its threat more imminent, its impact more sudden, its expanse more extensive, and its destruction exceedingly more devastating.[448]

The 1954 edition was very similar in nature to 1953. However, it introduced the deterrent role of strategic bombardment, stating "its very existence is designed to deter the use of military force by nations endeavoring to impose their policies on others."[449]

The 1955 edition introduced the concept of massive retaliation. This edition plainly stated the "the military policy for the security of the United States recognizes that in the event of war air defense measures coupled with strong air counterblows against the sources of the enemy's strength will provide the best security." As far as allocating resources to the Air Force budget, the manual made it quite clear that it was Air Force policy that SAC would get the lion's share. It stated that:

> in the division of resources among forces of different types, the priorities must be established so as to insure allocations which provide the maximum return in military capabilities. The capabilities must be related to the forms of conflict and the threats projected by those forms of conflict, with emphasis in the allocation of resources being placed at all times on the provision of the means to meet the primary threat.[450]

Another mission was added to the Air Force in addition to the original three, that of air reconnaissance. It stated that "air reconnaissance is one of the major sources of information requisite to successful military operations." Finally, this edition posed that airpower was the most potent military force, stating that "of the various types of military forces, those which conduct air operations are most capable of decisive results."[451]

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[448] U.S., Department of the Air Force, *U.S. Air Force Basic Doctrine*, Air Force Manual 1-2 (1953)11.
[449] U.S., Department of the Air Force, *U.S. Air Force Basic Doctrine*, Air Force Manual 1-2 (1954) 2.
[450] U.S., Department of the Air Force, *U.S. Air Force Basic Doctrine*, Air Force Manual 1-2 (1955) 8.
[451] Ibid.

The 1959 edition brought in a new emphasis on space after the satellite launches. The term air was replaced with aerospace to include the space environment as a natural extension for the Air Force. To quote the text, it concluded that:

> the aerospace is a medium in which freedom to operate during war will be of vital military significance. That nation, or group of nations, which maintains predominance in the aerospace-not only in its military forces but also in its sciences and technologies-will have the means to prevail in conflict.[452]

Conclusion

The decade of the 1950s can be considered the "dark ages" of airlift, as stagnation occurred on every measure. Organizationally, MATS stayed in place as a peacetime-oriented support service commanded by a lieutenant general. Furthermore, its very essence came into question later in the decade. Structurally, the airlift fleet was allowed to deteriorate due to neglect, as only the C-124 and C-118 (a commercial derivative) were procured in any significant numbers. Doctrinally, airlift was not even mentioned as a footnote in the first four editions of Air Force Manual 1-1, spanning the years 1953 - 1959.

In large measure, this neglect can be attributed to the Eisenhower Administration's New Look force structure which placed primary emphasis on strategic bombers in support of its doctrine of massive retaliation. Nonetheless, by the end of the decade, airlift stood poised for a revolution that would take it to new heights under flexible response.

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[452] U.S., Department of the Air Force, *U.S. Air Force Basic Doctrine,* Air Force Manual 1-2 (1959) 13.

NEGLECTED U.S. MILITARY MISSIONS: CONTENDING THEORIES OF BUREAUCRATIC POLITICS AND ORGANIZATIONAL CULTURE AND THE CASE OF AIRLIFT MOBILITY

VOLUME TWO OF TWO

A Dissertation
submitted to the Faculty of the
Graduate School of Arts and Sciences
of Georgetown University
in partial fulfillment of the requirements for the
degree of
Doctor of Philosophy
in Government

By

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TABLE OF CONTENTS

VOLUME TWO

THE REVOLUTION IN AIRLIFT

Chapter

V. MILITARY AIRLIFT COMMAND 281

Vietnam Airlift 297
Years of the Offensive: 1965 - 1968 302
Years of the Withdrawal: 1969 - 1973 332
Analysis 343

VI. UNITED STATES TRANSPORTATION COMMAND 359

The Gulf Airlift 375
Desert Shield: 7 August-6 November 1990 384
Second Deployment: 7 November 1990-16 January 1991.. 406
Desert Storm: 17 January-28 February 1991 409
Analysis 422

VII. FINDINGS AND CONCLUSION 439

Findings 440
Conclusion 455

APPENDIX 477

SELECTED BIBLIOGRAPHY 484

CHAPTER V

MILITARY AIRLIFT COMMAND

Introduction

Because airlift had been neglected throughout the decade of the 1950s, at the onset of U.S. involvement in the Vietnam war, it was still organized as a peacetime-oriented Military Air Transport Service (MATS) with propeller-driven aircraft, many commercial airline variants. In addition, the U.S. Air Force had yet to integrate the airlift mission into its basic aerospace doctrine. Yet, according to CINCMAC, General Howell Estes, by the end of the war in Vietnam, there had been a "revolution in airlift."[1]

Reflective of its growing combat orientation during the Vietnam war, airlift was reorganized into a major U.S. Air Force command, the Military Airlift Command (MAC), ostensibly on a par with the more offensively-oriented Strategic Air Command (SAC) and Tactical Air Command (TAC). Furthermore, during the course of this conflict, jet-powered aircraft were introduced to the airlift fleet in the form of Lockheed's C-141 Starlifter and behemoth C-5 Galaxy. Finally, for the first time, Air Force basic doctrine reflected the fact that airlift was indeed an aerospace mission.

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[1] Howell Estes, Jr., "The Revolution in Airlift," *Air University Review* 18:2 (January - February, 1966) 2 - 15.

Airlift Organization: Pre-Vietnam

MATS had been established to conduct a peacetime mission in 1948, functioning as little more than a "military airline type of operation, operating on a predominantly scheduled basis and with *no combat role*." Nonetheless, since 1961 "the trend had been away from a purely logistic mission for MATS to increased concentration on joint airborne training, air mobility exercises and other combat airlift areas." Further evidence of MATS' growing combat orientation was the "high priority being given to the development of new equipment to permit even more flexibility of operation." In sum, Walker postulates in 1964 that:

> *the present concept of providing greater air mobility for the Army in Air Force aircraft is putting increased emphasis on MATS combat airlift capability.* This emphasis also projects MATS further into the Defense Department airlift mission, exploiting the full spectrum of MATS aircrew and aircraft capability [emphasis added].[2]

From the original mission statement drafted by Secretary of Defense Forrestal in 1948, it is clearly evident that "MATS was originally envisioned as a non-combatant airlift organization."[3] Walker argued that the original distinction between strategic and tactical airlift missions was predicated on "two distinct and separate airlift organizations, one for long-range airlift and the other for short-range airlift." This division was deemed

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[2] The C-141A was first brought into operation under MATS. The CX-4 heavy transport was researched and developed under MATS guidance, and was later produced as the C-5A. In addition, aircraft modifications included special electronics essential for all-weather formation and airdrop. See Henry L. Walker, "MATS Role in Combat Airlift," *Air University Review* 15:5 (July - August 1964) 57.

[3] The MATS mission statement states that: "the responsibility for air transportation for the National Military Establishment does not include responsibility for the tactical air transportation of airborne troops and their equipment, or the initial supply and resupply of units in forward combat areas. ... MATS responsibilities ... will not include ... the operation or development of either transport type aircraft or procedures employed in the air transportation of airborne troops in tactical situations." See Walker 49 - 50.

necessary because at the time MATS was created, "no single type of airplane ha[d] the required versatility to perform both categories of airlift." However, at the time of Walker's report, "aircraft [were] now entering MATS' inventory that [did] have this capability," such as the C-130E, C-141A. Furthermore, the CX-4 heavy transport was undergoing extensive research and development.[4] Tunner posited that "the World War II concept of distinct and separate strategic and tactical airlift functions has been superseded, in large part, by modern technology."[5] This viewpoint was being advocated by the Secretary of Defense and Commander of MATS as well.[6] As early as 1960 a discernible shift in MATS' mission orientation is evidenced by General Tunner's following description:

> *The primary mission is* to maintain, in being, the military transport, troop-carrier and service forces, and enroute bases and air routes *to meet the approved wartime requirements of the DOD as established by the JCS.* MATS peacetime operations are conducted to maintain this state of readiness [emphasis added].[7]

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[4] Walker, "MATS Role in Combat Airlift," 50.

[5] Tunner notes that "since the beginning of World War II, 95% of all 'troop carrier' airlift missions in all-out or limited war have involved moving troops and material from airfield to airfield, and only 5% or less of the effort was devoted to airdrops of Army forces." See See William H. Tunner, "Strategic Airlift," *Air University Quarterly Review* 12:3-4 (Winter - Spring, 1960 - 1961) 105.

[6] Secretary of Defense McNamara testified before the House Armed Services Committee in 1964: "The distinction between troop carrier and strategic airlift operations based upon difference in equipment will no longer be significant once the C-130Es and C-141's are acquired. Both of these aircraft are suitable for either mission. ... Indeed, the C-141 may open up entirely new vistas in troop carrier operations. For example, it might prove to be entirely feasible to load troops and their equipment in the U.S. and fly them directly to the battle area overseas, instead of moving them by strategic airlift to an overseas assembly point and then loading them and their equipment on troop carriers. Thus, the line of demarcation between the strategic airlift mission and the troop carrier or assault mission may, in time, become less important." This viewpoint was reiterated by General Joseph W. Kelly, Tunner's replacement at MATS, who testified at the same hearings that "the words strategic and tactical should not be used to describe airlift. Rather, terms such as deployment, employment, assault, and resupply are more descriptive of the role of airlift in combat." See Walker, 50 - 51.

[7] "Headquarters MATS establishes the mission directives IAW priorities developed at the top levels of military authority. The operating air forces, EASTAF and WESTAF [Eastern & Western Transport Air Force], are assigned specific missions, and they control the strategic airlift aircraft operating within their geographic areas of responsibility. MATS strategic airlift is global. EASTAF's area extends from the east

The trend toward a greater combat orientation for MATS also became apparent in official Air Force manuals, such as Air Force Regulation 23-17, dated 9 July 1963:

> The mission of MATS is to maintain, in a constant state of readiness, the military airlift system necessary to *perform all airlift tasks under emergency conditions assigned by the JCS in approved war plans* and appropriate JCS and Air Force guidance documents.[8]

Walker makes the case that "this mission statement is in marked contrast to the original charter given MATS."[9]

Walker traces the beginning of this combat orientation to the introduction of two C-124 troop-carrier wings to the MATS fleet in 1957, in order to "consolidate heavy transport aircraft under a single agency." Then in 1962, "*based on revised DOD planning*, the Air Force directed MATS to qualify all its C-124 crews, both troop carrier and air transport wings, in formation and airdrop." During the course of this qualification program, which was scheduled to be completed by September 1963, "*the Cuban situation demanded that the project be expedited. The formation training was given a high priority*, and within a 20-day period 305 aircrews were qualified."[10] Following this DOD

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coast of the U.S. to Saudi Arabia; WESTAF's area begins at the west coast and joins the EASTAF area in Saudi Arabia." See Tunner, "Strategic Airlift," 108. General Estes elaborates that "specified ton-mileage requirements were written into Emergency War Plans premised on general nuclear war. Under such assumptions, SAC had first and overriding priority to support its restrike capability; airlift for the nuclear-capable elements of TAC came next; and the remainder of the airlift capability, if any, would be allocated to the Army." See Estes, "The Revolution in Airlift," 6.

[8] "To ensure the ability to perform emergency airlift tasks, MATS will: (a) Train and equip its airlift forces in all airlift tasks, consistent with the aircraft assigned; (c) Develop detailed plans with appropriate agencies in support of approved JCS plans for deployment and employment airlift; (d) Participate in joint exercises and airborne training with the forces which MATS is required to support to ensure capability to execute specific plans." Furthermore, airlift was redefined to include "either a wartime or peacetime environment ... includ[ing] the aerial delivery of troops, equipment and supplies." See Walker, 51.

[9] Walker, "MATS Role in Combat Airlift," 51.

[10] Although the Air Force directed in 1957 that formation operations be discontinued, "the requirement to maintain proficiency in actual drops of personnel and equipment was retained." See Walker, 51. "In the midst of the aircrew qualification program, the Cuban crisis erupted in October 1962. The scope of MATS

directive, MATS implemented several initiatives which further institutionalized combat capabilities into its mission orientation.[11] Shortly after his retirement, Tunner wrote:

> *Like Strategic Air Command and Tactical Air Command, MATS is combat ready*, maintaining a strategic airlift task force always at runway alert in support of the initial deployment of the aerospace striking forces [emphasis added].[12]

Despite the fact that MATS had stepped into this combat role, nonetheless the Commander of MATS, General Estes, reflects that "*the command's ton-mile capability, ... was chronically behind the requirements.*"[13] In 1964, Tunner observed that *there were more transport aircraft assigned to various commands throughout the Navy, Marines and Air Force (TAC had over 350 troop-carriers) than there were assigned to MATS.* Moreover, he claimed these other commands were usually commanded by "*combat officers who do not understand airlift.*"[14] Although the Air Force had the lion's share of airlift assets, he was dissatisfied by the fact that "within the Air Force, they tended to be scattered among different commands, a *violation of basic organizational principles* that in part contributes to the deficiencies in airlift existing today [emphasis added]."[15]

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involvement in this operation was tremendous. Missions included a series of airlifts of essential battle equipment, ammunition and supplies to Florida. This was followed by a massive 48-hour airlift of battle-equipped Marines from the West Coast to Guantanamo. In addition, large numbers of dependents were evacuated to the U.S. mainland by air." See Walker, 52.

[11] These initiatives included: (1)The Applied Tactics Group was established on 1 January 1963 to "develop a coherent program of combat airlift crew qualification and currency, equipment requirements, improved employment tactics, and integration of new equipment into the MATS force"; (2) "More stringent operational readiness inspection (ORI) criteria have been developed and approved by HQ USAF to better evaluate the combat readiness of MATS units; and (3) MATS changed the unit training standards for C-124 and C-130E units to better align the training standards with the combat airlift mission." See Walker, 52.

[12] Tunner, "Strategic Airlift," 108. Tunner elaborates that "the wartime mission of MATS is established by the JCS. Similarly in peace, MATS is directly concerned with DOD instructions. The Secretary of the Air Force is the 'single manager' of airlift service for the DOD. MATS is his operating agent to provide airlift to all U.S. armed forces." See Tunner, "Strategic Airlift," 112.

[13] Estes, "The Revolution in Airlift," 6.

[14] William H. Tunner, *Over the Hump* (New York: Duell, Sloan and Pearce, 1964) 321.

[15] Tunner pointed out that within the Air Force "there are heavy aircraft assigned to both AF Logistics

The result was that aircraft with great potential were sitting idle on flight lines all over the world. Tunner maintained that MATS had developed a separate expertise within the military run by professionals dedicated solely to airlift and proposed that the solution to the problem would be to consolidate all the airlift functions under "one senior commander and an experienced staff whose whole thinking is devoted to the airlift mission, such as we find in MATS today."[16] More pointedly, he suggested that "assignment of all DOD airlift capabilities to a single airlift command - in *fact*, not merely name - would overcome some of the present airlift deficiencies."[17]

Tunner suggested that the new command should be named the "Military Airlift Command" and that it should be charged with sole responsibility for all the transport aircraft within the Department of Defense. He realized that in order for the change to take place, it would need the approval of the Secretary of Defense and the Joint Chiefs of Staff. If established, he reasoned the command should be administered by the Joint Chiefs of Staff. It would be responsible for rank-ordering the allocation of airlift resources among the various services according to their individual needs.[18] In sum, Tunner concluded in 1960 that:

Command, SAC and even TAC, which are used for specific airlift tasks. During limited or all-out emergencies some of the capability of these units is wasted or engaged in secondary or low-priority missions at the time the primary airlift system is accelerated to the maximum on the top-priority jobs." See Tunner, "Strategic Airlift," 113.

[16] Tunner writes: "in order to achieve a stronger defense, and to reduce costs, I strongly recommend the consolidation of all transport aircraft into a single command." See Tunner, *Over the Hump*, 321- 322.

[17] Tunner, "Strategic Airlift," 113.

[18] Tunner, *Over the Hump*, 322.

> today's airlift deficiencies point to the need for a more effective utilization of resources, primarily by creation of a single airlift command *in actuality not in name only* [emphasis added].[19]

Airlift Force Structure: Pre-Vietnam

General Tunner indirectly links the influence which strategic doctrine has had upon airlift when he posits that "strategic airlift is one of a kind - unique [in that it serves] the total defense establishment as well as the aerospace force of which it is a part. *Its structure is directly influenced by the offensive posture of all forces.*"[20] Following his retirement, Tunner wrote that "in the three fundamental requirements - central control, full equipment and combat readiness - *the most serious deficiency shows in outmoded equipment."* He asserted that "*the present force of 478 four-engine transports* (including 36 overseas on TDY, assigned to theater commanders) is some *90% obsolescent* [emphases added]."[21]

In 1964, on the eve of the U.S. buildup in Vietnam, MATS' strategic airlift inventory included 64 Douglas C-118s, 10 Lockheed C-121s, 375 Douglas C-124s and 43 Douglas C-133s.[22] Of these, the C-124 formed the backbone. However, given that it came into service during the Korean War, it was growing obsolete.[23] As for the C-133,

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[19] Tunner predicted that: "airlift control and management would be enhanced in an emergency if the readiness training were conducted under standardized procedures within a global airlift system under the authoritative direction of a single command." See Tunner, "Strategic Airlift," 113.

[20] Tunner, "Strategic Airlift," 105.

[21] Tunner judged obsolescence "in terms of the demands upon a modern strategic airlift force for speed, range, cargo capacity, passenger capacity, dimensions of cargo compartment, and ability to load and unload quickly to achieve a fast turnaround time." See Tunner, "Strategic Airlift," 109 -110.

[22] Richard J. Burkard, *Military Airlift Command: Historical Handbook 1941 - 1984* (Scott AFB, IL: MAC Command Historical Office, 1984) 100.

[23] Tunner points out that the C-124 was "one of the first large transports designed exclusively for airlift requirements rather than being an off-the-shelf commercial model." The C-124 had a range of 4,400 NM, cruising at 230 MPH at a ceiling of 20,000 feet. It could carry 66,000 lbs of cargo, 200 fully equipped

brought on-line in 1958, it was the "newest, largest, fastest of the strategic airlift aircraft, ... primarily a long-range freighter, with a cabin *specially designed to accommodate the Atlas and Titan ICBM's.*" It's primary drawback was its limited inventory.[24] The C-121 and C-118 were military derivatives of the commercial Constellation and DC-6A aircraft, respectively [emphasis added].[25]

The tactical airlift fleet consisted primarily of the DeHavilland C-7, Fairchild C-123 and the Lockheed C-130. The unique feature of the C-7 Caribou, was its ability to operate from fields under 1000-feet in length (700 feet) and takeoff in even shorter distances.[26] The idea for the C-123 assault airlift aircraft emerged from the assault glider experiences of the USAAF during the Second World War. However, it soon became apparent in joint field exercises that the Provider was too vulnerable to fulfill such roles. Therefore, by default, it assumed the reputation of being the Air Force's "first and only fixed-wing assault plane."[27] The workhorse C-130 four-engine, high-wing transport was

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troops or 127 medical patients. See Tunner, "Strategic Airlift," 109.

[24] The C-133 had a range of 4,750 NM, cruising at 300MPH at a ceiling of 30,000 feet. It could carry more than 100,000 pounds of cargo. See Tunner, "Strategic Airlift," 110.

[25] The C-121 had a range of 4,000 NM, cruising at 270 MPH at a ceiling of 25,000 feet. It could carry 37,000 lbs of cargo or 76 passengers. The C-118 had a range of 4,000 NM, cruising at 270 MPH at a ceiling of 25,000 feet. It could carry 28,000 lbs of cargo or 76 passengers. See Tunner, "Strategic Airlift," 111.

[26] Originally designated the CV-2, the U.S. Army placed the first order for these transports, ordering 159 aircraft. Deliveries began in 1959 and by 1967 there were still 134 in service, which were transferred to the Air Force and redesignated the C-7. With a maximum payload of 8740 pounds, it could fly 242 nautical miles at an average cruise speed of 182 MPH. Its maximum speed was 216 MPH. Empty, it could fly 1307 nautical miles. See Thomas E. Eichhorst, *Military Airlift: Turbulence, Evolution, and Promise for the Future* (Maxwell AFB, AL: Air University Press, 1991) 94 - 95. The C-7 could carry 32 passengers, 28 combat troops, or 20 medical evacuees. See John Schlight, *U.S. Air Force in Southeast Asia: The Years of the Offensive 1965 - 1968* (Washington, D.C.: Office of Air Force History, 1988) 238.

[27] Derived from the Chase Aircraft Company's XCG-20 glider, two underwing engines were mounted along with various other modifications to come up with the XC-123 design. In its production form, TAC began accepting deliveries of approximately 300 C-123s from the Fairchild Engine and Airplane Corporation in 1955. Relegated primarily to "logistics tasks in support of strike aircraft units," by 1957 the C-123s were being transferred to Reserve status. See Raymond L. Bowers, *U.S. Air Force in Southeast Asia: Tactical Airlift,* (Washington, D.C.: Office of Air Force History, 1983) 29. The C-123s maximum payload capacity

developed in the early 1950s specifically to meet U.S. Air Force requirements.[28] To put the magnitude of the C-130's capabilities in perspective, it was calculated that "fewer than a hundred C-130s could do the work equivalent to the capacities of fifteen hundred C-47s."[29]

Due in large part to Tunner's efforts while serving as Commander of MATS, in 1960, Congress had appropriated $50-million to "initiate development of a high-performance turbofan transport [which became the C-141A] ... to begin the modernization of the strategic airlift force."[30] Moreover, during his Presidential campaign, Senator Kennedy addressed the inadequacy of U.S. military airlift. He stated that "our ability to meet our commitments to more than 50 countries around the globe has

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was 24,000 pounds (12 tons). In a passenger configuration, it could carry 60 combat-equipped soldiers or 50 casualties on stretchers. It's maximum range was 1,340 nautical miles with a 19,000 pound payload and 2,440 nautical miles with a 12,000 pound payload. Its maximum speed was 253 MPH, with a normal cruise speed of 186 MPH. See Eichhorst, 92 - 93.

[28] The initial prototype C-130A first flew in 1954 and the Air Force began accepting deliveries in 1956. Since that time, numerous versions of the aircraft have been produced as a platform for "gunships, tankers, electronic surveillance, command and control, special operations, and ice operations." The aircraft's maximum cargo payload is 46,700 pounds (23 tons) or it can carry up to 92 troops, 74 stretchers or 64 paratroopers. Its maximum range is 2,500 nautical miles with a 25,000 pound payload. In an airdrop configuration, this aircraft can drop over 45,000 pounds of cargo. It is capable of taking off and landing on 2,500-foot assault strips. Its maximum speed is 386 MPH, with a normal cruise speed of 345 MPH. Today the aircraft is operated by more than 50 different countries throughout the world. The active and reserve U.S. Air Force still operate approximately 500 of these aircraft today, which are still being produced as the C-130H. See Eichhorst., 95.

[29] Eichhorst, *Military Airlift*, 30.

[30] According to Tunner, "until this equipment is available, the force will be provided a degree of interim modernization by limited purchases of aircraft now in production, or in the advanced stages of development. These purchases will include a number of C-130Es, the long-range version of the C-130B medium troop-carrier aircraft. Not only will modernization strengthen the airlift force, but larger capacity, greater speed and a quicker turnaround time will also reduce the total number of aircraft needed for the assigned strategic airlift mission." See Tunner, "Strategic Airlift," 109 - 110. Estes adds that: "the interim modernization of MATS, initiated by Congress in the wake of Big Slam, was stepped up with accelerated deliveries of the C-135 and C-130E. ... The C-135 jet resolved the problems of speed and range/payload to some extent, since it can carry 19 tons 3600 miles at high subsonic speeds. As a cargo aircraft, however, it has disadvantages: it is loaded from the side to a high cargo floor, is not stressed for sustained maximum-load operations, requires long runways of high weight-bearing capacity, and lacks the important airdrop capability." See Estes, "The Revolution in Airlift," 6.

been critically impaired by our failure to develop a jet airlift capacity," and he promised to do something about it if elected. Delivering his first State of the Union Address on 30 January 1961, President Kennedy kept his campaign promise:

> *I have directed prompt action to increase our airlift capacity.* Obtaining additional airlift mobility and obtaining it now, will better assure the ability of our conventional forces to respond, with discrimination and speed, to any problem at any spot on the globe at any moment's notice [emphasis added].[31]

Not long thereafter, the President revealed at his first news conference that he had approved a $1 billion program to build the aircraft General Tunner had proposed during his Congressional testimony on airlift during the late fifties. In the general's words:

> the C-141 is more than just a plane. It signifies the return of our entire military program from almost sole emphasis on all-out nuclear war to the more practical preparation, in addition, for the localized conflicts the free world constantly faces all over the globe.[32]

Secretary of Defense McNamara stated that "its the airlift aircraft we've been waiting for, and we intend to standardize on it for our heavy airlift requirement."[33]

Former Chief of Staff of the Army, General Maxwell Taylor, had complained during the Eisenhower Administration that his troops had inadequate airlift support.[34] After his retirement, Taylor wrote in *The Uncertain Trumpet,* that since its establishment as a separate service, *the Air Force had "neglected its responsibilities to the Army."*[35] General Taylor's influence grew substantially under the Kennedy Administration when the

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[31] Stanley M. Ulanoff, *MATS: The Story of the Military Air Transport Service* (New York: Franklin Watts, Inc., 1964) 11.

[32] Tunner, *Over the Hump,* 320.

[33] Ibid.

[34] Ibid., 121.

[35] Bowers, *Tactical Airlift,* 31.

President asked him to come out of retirement to become his chief military advisor in his new role as Chairman of the Joint Chiefs of Staff. Along with General Taylor, other high-ranking Army officers came to the forefront and advocated improvements in conventional Army forces and in strategic airlift capabilities needed to project those forces worldwide.[36]

During his 1962 Annual Defense Posture Statement to Congress, Secretary McNamara asserted that U.S. military airlift capabilities had fallen far short of its requirements and he *criticized the Air Force for "failing to provide adequate airlift for the Army."* He pledged that *the administration was going to "remedy the situation."* Both the President and the Secretary put pressure on the Air Force to double its airlift capacity by 1966, a requirement that ultimately led to the production of the C-5A [emphasis added].[37]

Tunner's primary concern with MATS' strategic airlift fleet had been that there were no jet-powered aircraft in its inventory. Unlike SAC and TAC, which had already progressed to their second and third generation of jet aircraft, respectively, with the B-52 bomber having already replaced the B-58 and the TAC fighters having progressed from the Korean vintage F-80 and F-86 to the Vietnam era F-100 and F-105 and beyond.[38] Tunner writes:

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[36] Ibid., 28.

[37] Later the same year before the House Armed Services Committee, Secretary McNamara reasserted the Johnson Administration's commitment to airlift when he said "an adequate airlift/sealift is essential to our global strategy." See Morton Halperin and David Halperin, "The Key West Key," *Foreign Policy* 53 (Winter 1983-84): 120.

[38] Estes writes: "The almost total commitment of military funds to the B-52 and B-58 force and the three families of ICBM's necessarily precluded any possibility of increasing MATS' capability through modernization of the airlift force." See Estes, "The Revolution in Airlift," 6.

> It is essential that this Nation maintain in being a strategic airlift force compatible with the aerospace-offensive forces it must support. To be compatible with the strike forces, *the strategic airlift force must be modernized and equipped with jet-powered aircraft* [emphasis added].[39]

Airlift Doctrine: Pre-Vietnam

President John F. Kennedy called for a reassessment of U.S. strategic doctrine in his first State of the Union address.[40] Heeding the advice of the academic[41] and professional military[42] communities, President Kennedy's "New Frontier" would build military forces able to fight at all levels of conflict.[43] A strategic doctrine of "flexible response" would rely more heavily on conventional forces, backed by stronger, more survivable nuclear forces.[44] Secretary McNamara stated that:

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[39] Tunner elaborates: "Outsized cargo airlift requires a large aircraft capable of airlifting missiles, tanks, vehicles, and even entire short-range aircraft when necessary" [e.g., C-5A]. "The workhorse aircraft, backbone of the strategic airlift force, must be capable of transoceanic flights with a practical and substantial payload. It must also be capable of operating under marginal base conditions, lifting a maximum payload from short runways with [normal] weight-bearing surfaces." [e.g., C-141A] See Tunner, "Strategic Airlift," 115.

[40] "We must strengthen our military tools ... in the past, lack of consistent, coherent military strategy ... [has] made it difficult to assess accurately how adequate or inadequate our defenses really are. I have, therefore, instructed the Secretary of Defense to reappraise our entire defense strategy." See James A. Nathan and James K. Oliver, *United States Foreign Policy and World Order* (Boston: Little, Brown and Company, 1976) 301. On 1 February 1961, Kennedy directed Secretary of Defense Robert McNamara to conduct a broad study and come up with an appraisal of U.S. defense strategy and capabilities. See Robert F. Futrell, *The United States Air Force in Southeast Asia: The Advisory Years to 1965* (Washington, D.C.: Office of Air Force History, 1981) 63.

[41] See Henry Kissinger, *Nuclear Weapons and Foreign Policy* (New York: W.W. Norton & Company, 1957), 144 - 145, cited in Nathan and Oliver, 252.Henry Kissinger, the head of a nuclear strategy think tank at Harvard University, called for the need to develop a military force capable of fighting at any level of conflict from insurgency to general nuclear warfare. He stated that "limited war is thus not an alternative to massive retaliation, but its complement. It is the capability for massive retaliation which provides the sanction against expanding the war."

[42] See Maxwell D. Taylor, *The Uncertain Trumpet* (New York: Harper & Row, 1960), cited in Nathan and Oliver, 251. This widely-read book articulated the point that nuclear weapons may be good for preventing full scale wars, but they were of no use to counter guerrilla-type warfare, especially in light of the Soviet's nuclear retaliatory capability. Because of massive retaliation's shortcomings, General Taylor called for a reassessment of U.S. strategic doctrine.

[43] The President proclaimed that "we are moving into a period of uncertain risk and great commitment ... thus we must be able to respond with discrimination and speed, to any problem at any spot on the globe at any moment's notice." See Nathan and Oliver, 288.

[44] The primary objective of flexible response was to: "maintain forces capable of meeting conventional

> our overall purpose here, ... is to augment our forces in a balanced fashion. ... As we have increased manpower, *we have modernized and expanded weapons procurement.* We have increased our tactical airpower to match our ground forces, and we have launched a program to provide sea and *airlift* tailored to the men and equipment [emphasis added].[45]

Theoretically, these forces would have the capability to fight 2 1/2 wars, one each in Europe and Asia and a limited conflict elsewhere.[46] President Kennedy steadily expanded his "conventional options" to uphold this strategy by taking measures such as "pre-position[ing] in Europe the equipment for two divisions and ... continu[ally] ... *expand[ing] the airlift* and sealift to move the strategic reserve [emphases added].[47]

Shortly after his retirement, reflecting upon his experiences in China, Berlin and Korea, William Tunner observed that "the history of strategic airlift is relatively brief. Yet in less than two decades strategic airlift forces have demonstrated time and again their diverse capabilities." He made the point that "strategic airlift is more than aircraft and communications, centralized command and control, and responsiveness to airlift priorities. It is the flesh and blood of men, the cumulative know-how of succeeding crises met and calmed as the concept of strategic airlift grew to maturity in the aerospace age:

> It is the man who flew the Himalayan Hump as a first lieutenant, captained a C-54 into Berlin, flew aircrew check rides as a major across the lonely Pacific to Korea,

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threats so that the United States would not be faced with the choice of either using nuclear weapons or foregoing vital interests abroad because it lacked nonnuclear options. ... In order to achieve a flexible response, the forces would be designed to fight a total thermonuclear war, limited nuclear war, conventional war in Europe or Asia, or unconventional warfare anywhere in the world." See Jerome H. Kahan, *Security in the Nuclear Age* (Washington D.C.: The Brookings Institution, 1975) 76.

[45] John E. Endicott and Roy W. Stafford, Jr., eds., *American Defense Policy*, 4th ed. (Baltimore: Johns Hopkins University Press, 1977) 72 - 73.

[46] Endicott and Stafford, *American Defense Policy*, 72. By 1962 the Army had grown from 11 to 16 combat divisions (200,000 new troops). These troops were trained to use conventional weapons and doctrine. The pentomic divisions trained for nuclear warfighting were converted to conventional units. The Air Force grew from 18 to 21 tactical fighter wings. See Kahan, 75.

[47] Nathan and Oliver, *U.S. Foreign Policy*, 305.

> and today commands the airlift squadrons or plans and shows the way to those who have come after him. It is courage and conviction of much work, and *all too little glory* [emphasis added].[48]

With this sequence of events in mind, the general posed that "the airlift doctrines which were tested, refined, and adopted with the passing years have never been static. They are as dynamic as the air vehicle itself. The salient features of today's airlift doctrine can be simply stated:

> (1) Airlift forces enhance the inherent mobility of aerospace combat elements and ensure their sustained striking power by expediting the mobility portion of the logistics function; (2) The greatest flexibility of airlift forces is attained by consolidating all military elements within the aerospace force and organizing the function within a single worldwide command to provide airlift to all armed forces within priorities established only at national Governmental policy levels, in consonance with the national global strategy; (3) Since ton-mile costs are the vital consideration in the economics of airlift forces, the airlift vehicle must be economical to build, economical to operate, easy to maintain, and easy to load, with sufficient versatility to accept various types of cargo.[49]

Looking at the Air Force as a whole, Tunner asserted that "as the U.S. Air Force crosses the threshold of the Sixties, its operating force structure has hardened into three distinct, yet inevitably related functional operating elements: offensive aerospace forces, defensive aerospace forces and *strategic airlift forces.* No one of these forces can operate for long without the other two. They are interdependent."[50] While Tunner acknowledged

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[48] Tunner, "Strategic Airlift," 106 - 107.

[49] Ibid., 107.

[50] Tunner elaborates that "the working relationship between offensive aerospace forces and strategic airlift forces is undoubtedly closest of all. Upon strategic airlift falls the major burden of ensuring that the first strike of manned offensive forces is not the only strike. Follow-on missions can be made possible by rapid airlift deployment of men, material, and weapons to recovery bases." Furthermore, Tunner made the case that "not only within the aerospace force but in the other armed forces as well strategic airlift has heavy responsibilities. This is particularly true in relation to the Army's strategic forces held in the U.S. for deployment where needed. ... Under modern strategy, a long-range strategic airlift force is the only means of delivering Strategic Army Corps (STRAC) troops and their equipment directly from the U.S. to overseas combat zones. Additional local airlift would be required only if it was desired to send the MATS-deployed STRAC troops directly into battle by assault aircraft of by airdrop. This mission could be accomplished by

the responsibility of "airlift planners and commanders" to "tailor airlift to the demands of the offensive force structure," nonetheless, his contention was that "*equally important, but less well recognized*, is:

> the responsibilities of the developers and planners of grand strategy to approach the over-all aerospace force structure with awareness that *strategic airlift cannot be relegated to a secondary category* to be considered after the combat forces have been shaped [emphasis added].[51]

The 1964 edition of Air Force Manual 1-1 (changed from 1-2), *United States Air Force Basic Doctrine*, incorporated the strategic doctrine of flexible response. The primary mission was still to deter aggression through U.S. strategic nuclear forces. But, should deterrence fail, the U.S. was now to respond with one of four levels of conflict. In a general nuclear war, the role of the Air Force was strictly strategic bombing. The lower three levels of conflict called upon the Air Force to execute the missions of air superiority, interdiction, close air support, *airlift*, and reconnaissance.[190] This was the first time that Air Force doctrine officially acknowledged airlift as a mission element.

Chapters Four, Five and Six incorporate the role of the airlift mission in their combat planning scenarios dealing with tactical nuclear, conventional and counterinsurgency warfare, respectively. Chapter Four, Employment of Aerospace Forces in Tactical Nuclear Operations, states that "performance of the airlift mission depends on the limits observed in the use of nuclear weapons."[52] Chapter Five, Employment of

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short-range theater airlift forces under control of the theater commander." See Tunner, "Strategic Airlift," 104.

[51] Tunner elaborates that: "Though the nature and form of the combat forces will exert profound influence upon the composition and origin of strategic airlift forces, the capabilities of global strategic airlift are too vast to be relegated to a minor role." He also acknowledged the responsibility of airlift planners to consider "the demands of surface forces, both land and water." See Tunner, "Strategic Airlift," 105.

Aerospace Forces in Conventional Air Operations, states that "in conventional warfare, airlift contributes to rapid concentration of air and ground forces and supply of tactical units in the field."[53] Chapter Six, Employment of Aerospace Forces in Counterinsurgency, points out that "airlift provides quick reaction mobility and supply to ground forces, to enable them to rapidly achieve and maintain contact with insurgent units.[54]

Although the 1964 edition of AFM 1-1 stated that "we must have forces with capabilities appropriate to different levels of conflict intensity," it emphasized that "of utmost importance, however, is that we maintain superior capabilities for the higher intensities of [nuclear] war."[55] As soon as the last B-52 rolled off the assembly line in 1962, the Air Force's topmost priority became the acquisition of a follow-on bomber. The XB-70 cancellation did not stop the Air Force from submitting plans in the late 1960s for a supersonic bomber capable of penetrating Soviet air defenses at low altitudes. For the next two decades, this B-1 bomber would prove to be the number one priority in Air Force acquisition.[56]

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[52] "When opposed by a nuclear armed opponent, tactical airlift forces would require extensive dispersal and vertical or short takeoff and landing capabilities. Strategic airlift could be operated from regular airfields with normal operating procedures as long as rear areas were not under attack. Under these conditions, required aircraft capabilities would be compatible with those of conventional warfare. However, in tactical nuclear operations without a nearby sanctuary, strategic airlift would require a large-scale increase in total aircraft to maintain an effective flow of supplies to dispersed locations. Centralized control of theater airlift under a theater airlift commander would provide most effective utilization of resources in support of joint operations." See U.S., Department of the Air Force, *United States Air Force Basic Doctrine*, Air Force Manual 1-1 (1964) 4-3.

[53] "In addition, long-range or strategic airlift participates in the support of heavy theater logistical requirements. Air superiority is required before effective airlift, and close control is necessary for the efficient utilization of tactical airlift." See AFM 1-1 (1964), 5-2.

[54] "Coordinated joint operations and centralized control are essential. In addition, leaflets, loudspeakers, and other psychological measures can be used from the air to produce defections from insurgent forces and provide guidance for the civil population." See AFM 1-1 (1964), 6-2.

[55] AFM 1-1 (1964) 1-3.

[56] McNamara canceled the XB-70 project because years earlier high-altitude jet aircraft had been

The Vietnam Airlift

Introduction

On the evening of 2 August 1964, three fast North Vietnamese "Swatow" PT boats fired upon the *Maddox,* a U.S. Naval destroyer which had been conducting surveillance operations from international waters, 28 miles off the North Vietnamese coast. The *Maddox* and fighters from the *Ticonderoga* retaliated immediately in self defense.[57] The next day, President Lyndon Johnson relayed a "note of protest" to the government in Hanoi. In the early morning darkness of the 4th of August, the *Maddox* again reported that it was "being fired upon" by North Vietnamese patrols.[58] In response to Admiral Felt's (CINCPAC) request, the JCS expanded the rules of engagement (ROE)[59] and on 5 August 1964 the President directed CINCPAC to execute "a single all-out assault on the North Vietnamese Swatow boat bases and their supporting POL storage at Vinh." On 6 August, sixty-four fighters from the carriers *Ticonderoga* and *Constellation* launched the retaliatory raid that the President had ordered.[60]

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proven vulnerable to Soviet air defenses when an American U-2 was shot down over Russian soil. See Richard A. Stubbing, *The Defense Game* (New York: Harper and Row Publishers, 1986) 113.

[57] On 30 July 1964 four South Vietnamese PT boats, "operating under U.S. guidance," had launched a rocket attack upon "a radar station on Hon Me Island and a radio transmitter on Hon Ngu Island," which were two North Vietnamese stations that had been "deeply involved in Hanoi's sea infiltration." See See Robert F. Futrell, *U.S. Air Force in Southeast Asia: The Advisory Years to 1965* (Washington, D.C.: Office of Air Force History, 1981) 229.

[58] The day after the Maddox had initially been attacked, Johnson announced that he had ordered the U.S. Navy to "continue patrols in the Gulf of Tonkin and add a second destroyer." Both the *Maddox* and another destroyer, the *C. Turner Joy,* returned to the Gulf of Tonkin covered by tactical air support from the carrier, *Ticonderoga.* The South Vietnamese launched another raid that evening upon "a radar station on Cape Vinh Son and a security station near Cua Ron." See Futrell, 229.

[59] The ROE were expanded to allow "U.S. aircraft to pursue planes into hostile airspace instead of stopping at a three-mile line off the North Vietnamese coast. He also sought authority to launch instant punitive air strikes on North Vietnam as retaliation for the attacks on the *Maddox*." See Msg, CINCPAC to JCS, 5 Aug 64, cited in Futrell, 229.

[60] The Joint Chiefs consulted with the President, who "shared [Felt's] reaction." The President used

After the attack, the House and Senate expressed their support for the President's actions by passing a joint resolution endorsing his continued ability to "prosecute military operations as he saw fit."[61] This Gulf of Tonkin Resolution would have the effect of permitting a gradual escalation of U.S. involvement in South Vietnam to go unchecked for nearly a decade. Shortly thereafter, William Bundy, the Assistant Secretary of State for Far Eastern Affairs, wrote a draft memo for the NSC entitled "Next Courses of Action in Southeast Asia."[62]

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this crisis as an opportunity to assure the American public in a nationally-televised address that "the U.S. response to the hostile action would be limited and fitting." The strikes on five boat bases and the Vinh oil storage destroyed eight boats and damaged twenty-one, put the oil reservoirs ninety percent out of commission, and lost two planes to antiaircraft fire. See Futrell, 230.

[61] This "Tonkin Resolution," as it was later called, stated that: "Consonant with the Constitution of the United States and the Charter of the United Nations and in accordance with its obligations under the Southeast Asia Collective Defense Treaty, the United States is ... prepared, as the President determines, to take all necessary steps, including the use of armed force, to assist any member or protocol state ... requesting assistance in defense of its freedom." See Hearings before the Committee on Foreign Relations, U.S. Senate, *The Gulf of Tonkin, the 1964 Incidents*, 90th Cong., 2d sess, passim, cited in Futrell, 232. Despite this apparent cohesiveness with the Congress of the United States, nevertheless there remained a lingering question as to whether or not the *Maddox* had actually come under fire during the night of August the 4th. The uncertainty centered on the possibility that because visibility is generally poor at night it may have been difficult to accurately assess where the shots actually originated. Robert McNamara recently wrote that "five factors in particular persuaded us [that an attack] had occurred" at the time: "The *Turner Joy* had been illuminated when fired on by automatic weapons; one of the destroyers had observed PT boat cockpit lights; antiaircraft batteries had fired on two U.S. aircraft overflying the area; we had intercepted and decoded a North Vietnamese message apparently indicating two of its boats had been sunk; and Admiral Sharp had determined there had probably been an attack." See Robert S. McNamara, *In Retrospect: The Tragedy and Lessons of Vietnam* (New York: Random House, Inc., 1995) 134. However, a month after the Tonkin Resolution the North Vietnamese circulated a detailed white paper "justifying the August 2 attack as proper defense against a covert operation, ... [and] declar[ing] that none of its naval craft was in the area two nights later." See Futrell, 232.

[62] This document called for: "an initial short 'holding phase' for the remainder of August to avoid actions that might intensify the war. Then would come the 'limited pressure' phase lasting through the rest of the year, to maintain the morale of the Khanh government without risking escalation. This phase would witness covert operations against North Vietnam, training of Vietnamese pilots to fly jet aircraft, moves across the border into the Laotian panhandle, reinstatement of naval patrols in the Gulf of Tonkin, and 'tit for tat' reprisals. Finally, more serious pressures were to start on 1 January 1965. Initial measures to destroy enemy infiltration routes and facilities would progress to the bombardment of military targets in North Vietnam. Bundy Memo on Actions Available to the U.S. after Tonkin, cited in Futrell, 232 - 233.

Shifting toward a more offensive orientation, the President directed the JCS to deploy more aircraft to Southeast Asia.[63] The 315th AD and ... three squadrons of C-130s "handled ... [the] hurried deployment of USAF units into South Vietnam and Thailand" while Clark's Detachment 3 served as the "movement control center."[64]

General William Westmoreland, the Commander of the U.S. Military Assistance Command, Vietnam (COMUSMACV), being a former airborne ranger, "recognized the ability of the transports to make fast division-sized movements." He believed that in this "war without fronts" the C-123 Provider was indispensable especially because of its ability to conduct airland tactical missions. This application "foreshadowed the employment of the C-123s and a larger force of C-130s in Vietnam in later years" in that the "*heart of the airlift story*" would be "*the ability of the Southeast Asia Airlift System to sustain daily high volume logistics demands, while maintaining readiness for surges in the tactical effort* [emphasis added]."[65]

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[63] Upholding SEATO's provisions for self defense, reinforcement USAF combat aircraft began arriving in South Vietnam on 5 August 1964. This initial air deployment included twelve F-102 interceptors, eighteen F-100s, thirty-six B-57s, six RF-101 tactical reconnaissance aircraft, eight KB-50 tankers, and eight F-105 tactical fighters. Furthermore, the CINC of Strike Command was directed by the JCS to deploy two F-100 squadrons to Clark on 9 August and six RF-101s to Kadena on 13 August. Moreover, CINCSAC deployed forty-eight KC-135 tankers to Hickam AFB, Hawaii, and Anderson AB, Guam and an additional eight KC-135s at Clark. Finally, 48 C-130 transports from TAC's Composite Air Strike Force, the 314th, 463rd, and 516th Troop Carrier Wings, arrived at Clark and Kadena between 9 - 21 August. See Futrell, 229 - 230.

[64] Futrell, *USAF in SEA: The Advisory Years*, 247. Additional airlift assets were received from the Royal Australian Air Force, which deployed a detachment of six Caribous to Tan Son Nhut on 10 August 1964. These aircraft and crews were integrated into the Air Force's centralized airlift control system. The U.S. Army Caribous, on the other hand, were not. See Futrell, 236. The Australians were able to bolster the monthly airlift effort by 600 tons per month, "proving that all the Caribous could be scheduled and used within a centralized system." See Futrell, 246. The U.S. Air Force Reserve began deploying the fourth squadron of C-123s on 23 September, when eight C-123s departed Hurlburt Field, Florida for Vietnam. Effective 1 October 1964 the 19th Air Commando Squadron (Troop Carrier) was activated at Tan Son Nhut. See Bowers, 146. The 19th ACS was assigned to the 315th Troop Carrier Group. See Futrell, 236.

[65] Bowers, *USAF in SEA: Tactical Airlift*, 137.

Although "LeMay preferred to have C-123 assault transports used in tactical operations rather than as logistic carriers," because the railroads and roads were vulnerable to sabotage and ambush, *airlift forces came under "great stress."* Moreover, Westmoreland "regarded all air operations as support for ground troops and of necessity responsive to ground commanders." The 315th TCG Commander, Colonel David Fleming, described this system of airlift as "*a hodgepodge of badly tacked-together elements, saturated with requirements.*"[66]

Because the Joint Airlift Allocation Board was a one-man operation, user requests could not be checked for authenticity. As a result, "*cargo that should have gone by surface transportation was airlifted.*" Moreover, the items that were supposed to be airlifted were usually either late or missing when aircraft arrived to transport them. Consequently, "*aircraft frequently left bases empty or partially loaded.*" Communications were so poor that it was difficult to keep track of the various aircraft movements. Because of these inefficiencies, "*the C-123s were pushed above their programmed sixty hours of flying time a month per aircraft.*" As a result, "*they were wearing out, stressed by landings and takeoffs at rough fields.*"[67] Reminiscent of airlift operations in World War II and Korea, in spite of these organizational and equipment problems, "the system did quite well [emphasis added]."[68]

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[66] Futrell, *USAF in SEA: Advisory Years*, 245.

[67] "By May 1964 skin wrinkles appeared on the top sides of two planes. Further inspection at Tan Son Nhut disclosed visible damage on all thirty-seven C-123s that had been in Vietnam for nearly three years. Eleven required extensive repairs. Those at Da Nang in the theater for a year had minor damage. Airlift further declined when three C-123s went to Thailand in July to join the two on station there." See Futrell, 246.

[68] "Over the first half of 1964, the C-123s bore the bulk of the airlift load. They airdropped 1,270 tons of supplies, moved 1,252 paratroopers and 115 tons of material in assault missions, and flew 239 flare sorties

On 8 August 1964, the JCS ordered CINCPAC to deploy a contingent of eight C-130s to South Vietnam for a period of four to six months.[69] Intratheater C-130 missions began flying on 10 August 1964 under the command of the 315th AD.[70] As the pace of events began to slow somewhat, in December 1964 a "rotational system" was introduced for the C-130 force.[71]

Effective 9 March 1965, the JCS implemented a new policy whereby "U.S. aircraft could be used for combat operations in South Vietnam."[72] This change marked the end of the decade-long advisory phase and the beginning of direct, overt U.S. combat involvement in Vietnam.[73] Having decided upon a larger and direct combat role for the

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(dispensing flares 119 times). The air commando C-47s airdropped 405 tons of cargo and flew 1,338 airlanded resupply missions (2,010 passengers and 1,246 tons of supplies). As a rule the two U.S. Army Caribous made short hauls. They flew 7,939 airlanded sorties (4,731 passengers and 3,322 tons of cargo)." See Futrell, 246 - 247. In addition to these airlift accomplishments, Nha Trang's three C-123s and three C-47s transported an average of 1,500 tons per month to the U.S. Army Special Forces' isolated dirt strips or drop zones. As of 1964 "more C-123s [had been] hit by ground fire than any other type of fixed-wing aircraft," See Futrell, 247. Seventeen C-123s received hits in 1962, seventy in 1963, and more than a hundred in 1964. See Bowers, 124.

[69] All C-130s continued to operate from their offshore locations, but they were applied to in-country backlogs by scheduling or diverting overwater missions to make multiple stops within Vietnam. The scheme avoided the need for a substantial C-130 support establishment within Vietnam, and afforded flexibility in meshing intratheater and intertheater schedules. See Bowers, 145.

[70] Clark AB and Naha AB each had one C-130B squadron which "quickly reduced the backlot of accumulated cargo resulting during the Southeast Asia buildup: In two weeks, beginning on 5 August, 2,000 tons of cargo were airlifted from Clark in more than 300 flights. Maintenance and aerial port personnel, along with additional communications and control center personnel, shifted from elsewhere within the 315th AD to Clark. Also, for three weeks, all Japan-based C-124s operated from Clark." See Bowers, 144.

[71] According to the rotation schedule, one aircraft and two crews were swapped out each week on a continual basis. This initiative bolstered the Far East C-130 presence to "four permanent and two rotational squadrons." See Bowers, 146.

[72] "No strikes were permitted from Thai airfields, and American aircraft were not to accept missions that the Vietnamese Air Force could carry out. But the planes now boldly displayed U.S. insignia, and a Vietnamese airman was no longer required to be aboard in combat." See Msg, JCS to CINCPAC, 9 Mar 65, cited in Futrell, 267.

[73] U.S. Air Force presence in South Vietnam grew exponentially over the course of the advisory decade: "In the late 1950s there were 68 airmen stationed in Vietnam. From 1961 on, these numbers gradually rose and on the eve of Americanization of the war stood at 6,604. By February 1965 the Air Force had 222 planes in South Vietnam. Seventy percent of these planes were clustered around the Saigon area operating from Tan Son Nhut or Bien Hoa Air Base. The remainder were up north, primarily at Da Nang.

United States, "the USAF units in place early in 1965 would form the nucleus for the coming buildup."[74] Miller notes that:

> *the growing war in SEA placed extreme pressures on the MAC* [strategic] *airlift system due to shortages in personnel and resources. Commitments* were increasing significantly while MAC was phasing out several old aircraft and phasing in its C-141 [emphasis added].[75]

The Years of the Offensive: 1965 - 1968

When the Vietnam conflict began to escalate in 1965, Travis AFB, California, was the sole port of embarkation from the U.S. to South Vietnam. This same year, the C-141 was introduced to the strategic airlift fleet, making it technically feasible for the first time to create east coast aerial ports of embarkation (APOE) by utilizing a north Pacific routing to South Vietnam.[76] The opening of the east coast APOEs for SEA operations had a "radial" effect of altering the system into "multidirectional ports" rather than "serving only selected destinations in adjacent ocean areas," as had recently been the case when the transport fleet was composed of "*few airlifters of relatively short range* [emphasis added]."[77]

Another innovation introduced by MAC during 1965 was the "Red Ball Express" operation "to make sure that truly high-priority items moved quickly."[78] Integral to all the

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One third of these aircraft were C-123 transports, operating for the most part out of Tan Son Nhut and one squadron from Da Nang. A sprinkling of support aircraft rounded out the total." See Futrell, 268.

[74] Futrell, *USAF in SEA: Advisory Years*, 268.

[75] Charles E. Miller, *Airlift Doctrine* (Maxwell AFB, AL: Air University Press, 1988) 326.

[76] During 1965, east coast APOEs were established at Dover AFB, Delaware; Charleston AFB, South Carolina; and later at McGuire AFB, New Jersey. Three additional west coast APOEs were established at Norton AFB, California, and McChord AFB, Washington and at Kelly AFB, Texas. This resulted in a reduction of traffic flow at Travis from "183 to 84 per month," thus alleviating congestion. Moreover, the time spent en route to South Vietnam was significantly reduced from "95 to 38 hours." See Miller, 328 - 329.

[77] The introduction of the C-141 made this new "source-to-user concept" possible. See Miller, 329.

[78] "Army vehicles, aircraft parts, and aircraft" would be delivered to South Vietnam within 24-hours of

cargo movement was the 463L cargo handling system, devised in 1957. However, because the peacetime acquisition of ground handling equipment had been neglected, the 463L system started the Vietnam War shorthanded. Moreover, the ground equipment that was available was afflicted with chronic maintenance problems through the duration of the conflict. It was "*only through increased and continuous procurement, improving maintenance, and intensive daily management [that] shortfalls were overcome* [emphasis added]."[79]

The "Fast Fly" program was another MAC initiative which entailed "extending the workweek from 40 to 48 hours" and "expanding the forward supply system from 45 to 57 forward supply points."[80] Another strategic airlift Fast Fly initiative included changing maintenance intervals from one based upon flying hours to one based upon prior scheduling, called an "isochronal system (ISO)."[81] Finally, MAC also instituted two crew

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arrival at an APOE. In 1966 a variant of this program, 999, was applied to all kinds of cargo. See Miller, 329.

[79] The 463L consisted of four parts:"(1) Terminal: could vary in size and configuration, but all would have to maintain the capability to receive, ship, process, document, label and sort cargo; (2) Cargo Preparation: essentially, all equipment associated with the palletization and restraint of cargo, to include pallets, nets, coupling devices and containers; (3) Cargo Terminal Handling: the K-loaders, forklifts, trailers, and similar vehicles used to load and unload cargo aircraft; (4) Aircraft Systems: all component items installed in the aircraft which were related to the cargo process, such as rail, roller, and lock systems. The C-141 was the first airlift aircraft designed with an integral system for rapid cargo handling." See Miller, 329.

[80] "Supply departure reliability" rose from 93% to 98% from 1965 to 1968. The "forward supply support system (FSS)" made spare parts available to strategic airlift aircraft throughout various points on the globe. MAC also introduced "central repair points (CRP)," located at Yokota and Clark specifically for "centralized repair and testing of delicate electronic components." See Miller, 329 - 331.

[81] The ISO system enabled MAC to manage the number of aircraft available at any given time. The previous system, based upon flying hours, caused many aircraft to become due for periodic maintenance concurrently, causing a backlog in maintenance and a shortage of aircraft in the system. By scheduling aircraft in advance, based on 70-day, 35-day and 7-day home station inspections, except for unscheduled maintenance, there was more continuity in the maintenance pipeline and on the flightline. See Miller, 331.

management initiatives, "Quick Stop and Quick Change," to reduce aircraft ground times.[82]

In 1965, because *"the airlift mode was particularly overtaxed and needed for critical lift requirements,"* the JCS implemented a program called SEA EXPRESS to "help decrease the air cargo backlog in the U.S."[83] Sealift was "processed" by the U.S. Army's Military Traffic Management and Terminal Service (MTMTS) which "coordinated" shipment requests with the Military Sea Transportation Service (MSTS). In a similar fashion, MTMTS coordinated its strategic airlift requests from MAC through the 8th Aerial Port Squadron. Yet, as there was no coordination between the MSTS and MAC, there was a "*lack of centralized management in South Vietnam during the early stages of the war* [emphasis added]."[84]

Strategic airlift played a critical, though "behind the scenes" role during the years of the offensive. The Korean War vintage C-124 Globemasters, requiring 95-hours to fly a round-trip mission between California and South Vietnam, had grown obsolete. Although the C-133 had increased range and payload capabilities, it too was "marginal for

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[82] The Quick Stop approach enabled an aircraft to transit a station and be flying again within an hour of touchdown (instead of two), assuming there was no change of crews. Quick Change was a way to expedite ground times when crew changes occurred by ensuring all the required paperwork was completed prior to landing and having the new crew meet the aircraft when it blocked into parking. See Miller, 331.

[83] These "fast ships" were able to sail from the west coast of the U.S. to South Vietnam in 20 days and over the course of the Vietnam war managed to transport "95% of the intertheater cargo movement to Southeast Asia." See David C. Rutenberg and Jane S. Allen, *The Logistics of Waging War* (Gunter AFS, AL: Air Force Logistics Management Center, 1988) 154.

[84] In May 1965 CINCPAC merged the control of sealift and airlift within the Southeast Asian theater into the West Pac Transportation Office (WTO), which had previously dealt exclusively with airlift matters. In addition to the facilities located at numerous sites throughout the region, in November CINCPAC set up a WTO liaison office in Saigon to "coordinate sealift and airlift problems with MACV Traffic Management Agency." Thus, says Rutenberg and Allen, "the mission of the WTO evolved from managing airlift to control of all theater airlift and sealift resources and determination of movement priorities." See Rutenberg and Allen, 157.

strategic airlift" because it required the same amount of time to perform its mission as the C-124, given that it was also propeller-driven. For its part, the C-135 was considered an "interim measure."[85]

With the ensuing buildup, the Lockheed C-130 Hercules was introduced to the Southeast Asian theater in greater numbers.[86] The C-130s based in-country came under the Southeast Asia Airlift System (SEAAS) and fell under MACV jurisdiction through the 315th Troop Carrier Group's ALCC (airlift control center),[87] which handled "scheduling, mission control, and operational planning."[88] The majority of the C-130 missions entailed airlifting cargo from main aerial port facilities to the more remote in-country airfields.[89]

General Westmoreland's ground strategy proposal was accepted by the participants at the DOD Honolulu conference held on 20 April 1965.[90] Significantly, "the change in

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[85] At the time of the Tonkin Gulf Resolution, MATS was composed of "twenty-one squadrons of C-124s, three of C-133s, seven of C-130s, and three squadrons of C-135s." Because the C-124 utilization rate was held to 6.7 hours per day, one trans-Pacific mission took 13 days. The C-135 was a military derivative of Boeing's 707 commercial jetliner, but it did not incorporate the latest technological designs for airlift aircraft such as clam-shell doors with a ramp to allow for drive-on loading of bulk cargo shipments. See Miller, 327.

[86] By 1965 32 C-130s were on rotation at four in-country bases, Tan Son Nhut (14 B Models), Vung Tan (5 E Models), Nha Trang (8 E Models) and Cam Ranh Bay (5 E Models). This was the most that could initially be accommodated because of "shortages of ramp space and base facilities plus aerial port inadequacies." See Miller, 314. Moreover, eight squadrons (approximately 136 aircraft) were based within the theater, four permanently and four on continual 90-day rotations. As of 1966, there were 44 C-130s in-country, with an additional 12 squadrons in-theater. This arrangement stayed in effect for the duration of the war (i.e., small number rotated in-country, large number based on periphery). See Eichhorst, 27.

[87] Miller, *Airlift Doctrine*, 314.

[88] Bowers, *USAF in SEA: Tactical Airlift*, 120. In addition to shear numbers, the utilization rate of the C-130 fleet was increased over 300% from 1.5 hours per day to 5.0 hours per day. See Eichhorst, 27.

[89] The average monthly tonnage grew from 30,000 tons in 1965 to 140,000 tons in 1966 to 180,000 by 1968. See Eichhorst, 27.

[90] DOD agreed to increase the U.S. troop strength to 82,000, supplemented by 8,000 allied troops by September. The Air Force contribution to the buildup would consist of 997 logisticians and 3,900 others who would man: "two new F-100 squadrons on Taiwan and another in the Philippines; an F105 squadron on Okinawa; F-4, RF-101, and C-130 squadrons in Japan; and another troop carrier squadron in the Philippines. See Schlight, 31.

strategy at the Honolulu conference to a ground war meant that *the principal role of air power in South Vietnam in the future was support for American and allied ground forces." This would soon translate into an ever-growing demand for airlift.* Fundamentally, this strategy meant that the Air Force had to adapt its nuclear force structure to an unconventional environment:

> *two decades of doctrine, force procurement, and training had ill-prepared it. While continuing to maintain its worldwide strategic posture,* which *had claimed most of its attention since World War II,* the Air Force was now directed to support a ground war. *The story of the next three years is largely one of adaptation to this alien environment.*[91]

By April 1965 "the airlift system [was already] showing signs of strain." Cargo became backlogged at aerial ports as "*Air Force C-123s and Vietnamese C-47s could not keep up with the logistics demands* [emphases added]."[92]

The delivery of a fourth U.S. Army CV-2 company occurred in November 1965 without Air Force opposition, so that by the year's end there were 85 Caribous stationed in South Vietnam. As his predecessor, General LeMay, had done, General John McConnell, the new Air Force Chief of Staff, proposed that the CV-2s should become a part of the centralized airlift system. On 11 December 1965 McNamara decided to postpone a final decision on further CV-2 expansion. To the Air Force's good fortune, the deferment "later became permanent."[93]

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[91] Schlight, *USAF in SEA: The Years of the Offensive*, 32 - 33.

[92] The 315th Troop Carrier Group sent out a request for C-130s to assist in the in-country airlift operation. PACAF relinquished four C-130s on a "temporary basis" until the backlogged cargo was cleared out of the South Vietnamese aerial ports. The C-130s remained in South Vietnam and over the course of the next several months, the strength of the force swelled to 13 and then to 30 as "they gradually became a permanent part of the airlift force within the country." See Schlight, 26.

[93] Subsequently, when the Army proposed a further expansion to 120 Caribous in Vietnam, the Air Force was firmly opposed, viewing the "turboprop aircraft as a costly duplication of the jet-modified C-123."

One of the war's most contentious airpower issues concerned the U.S. Army - Air Force controversy over the employment of the airmobile division. General McConnell claimed that the concept of the airmobile division was "untested" and that it should not be employed until it's organic supportability had been proven. Underlying McConnell's argument was a long-held contention between the Air Force and the Army over "the role and control of tactical support aircraft." Since it had become a separate service, the Air Force had perceived the steady growth of the Army's organic aviation capabilities as a threat.[94] The other Chiefs advised the Defense Secretary that an airmobile division would "offer unique potential combat characteristics ... in low- and mid-intensity combat situations." Overriding General McConnell's objections, in April 1965 Secretary McNamara "approved the permanent organization of the 1st Cavalry Division."[95] Schlight reveals that:

> *The implications of the [airmobile] division going to Vietnam reached far beyond the war in that country; the success or failure of the experiment could have an important bearing on the future force structure of both services* [emphasis added].[96]

On 17 July 1965 Secretary McNamara met with General Westmoreland in Saigon to discuss the level of force required for the U.S. to take back the initiative from the Viet

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All Westmoreland agreed to was that Army "Caribou pilots should advise Air Force aerial ports when unused cargo or passenger space was anticipated." See Bowers, 237.

[94] General McConnell argued that it would be unwise to deploy a large U.S. ground force to Vietnam before "knocking out the North Vietnamese with air power." See Schlight, 60.

[95] Bowers, *USAF in SEA: Tactical Airlift*, 207. A fundamental tenet of Air Force doctrine is the belief that: "air power [is] an indivisible entity, with a life and rules of its own, which [is] most effective and economical when planned and controlled rationally from one central place." As such, the Army's insistence on assigning "globules of single-purpose aircraft" to South Vietnam was anathema to Air Force doctrine, which deemed it "wasteful and inefficient." See Schlight, 62.

[96] Schlight, *USAF in SEA: Years of the Offensive*, 62.

Cong.[97] Westmoreland estimated that a force of "54 maneuver battalions" would be needed in-country within six months.[98] At a strategy session with the JCS held at the White House on 21 July 1965, President Johnson made the decision to go with General Westmoreland's plan for escalating the war,[99] which he announced at a White House press conference held on 28 July.[100]

Based upon the total projections made for the ground force deployment, "by the end of 1966, there would be the equivalent of 30 jet squadrons of 18 planes each in the country, flying close to 20,000 sorties a month to support 72 non-Vietnamese battalions."[101] Schlight points out the difficulties involved with finding enough replacement aircraft:

> Unlike the situation immediately before the Korean conflict, when the U.S. had been producing 35 different types of planes, there were now only seven coming off the assembly lines. *None of these were bombers, and only the F-4 and F-5 were fighters* [emphasis added].[102]

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[97] According to Westmoreland's estimates: "The first part of the program would stop the enemy's momentum by year's end and would require 154,000 ground troops and 23 American squadrons of strike planes. For the second phase, which would put the allies on the offensive during the first half of next year, the general would need 95,000 more men, including seven more Air Force strike squadrons." See History, MACV, 1965, cited in Schlight, 63.

[98] Thirty-four of the battalions were to be from the U.S., while most of the remainder would be from South Korea, rounded off by token forces from Australia and New Zealand. Maneuver battalions included "infantry battalions (airmobile or airborne), tank battalions, mechanized battalions, and armored cavalry squadrons." The air contribution to the first phase of operations would include "nine Air Force and six Marine jet fighter squadrons and four C-130 squadrons." The second phase called for an additional 28 maneuver battalions, which required "eleven more Air Force fighter and two troop carrier squadrons," one to be based at Tan Son Nhut in March and the other in Nha Trang in April 1966. See Schlight, 64.

[99] According to Schlight: President Johnson "ruled out disengagement on the grounds that it would weaken American credibility and cast doubt on the country's promises elsewhere in the world - he would not be the President to back down on commitments made by his two predecessors and himself." See Schlight, 70.

[100] President Johnson publicly revealed that "he had ordered to Vietnam the airmobile division and other forces that would raise the American fighting strength there from 75,000 to 125,000 at once, with the possibility of later increases." See The President's News Conference of 28 Jul 65, cited in Schlight, 70.

[101] Schlight, *USAF in SEA: Years of the Offensive*, 65.

[102] Ibid., 78.

The tables had turned. During this war, transports were being produced, with the C-130 continuing strong, the C-141 just becoming operational and the C-5 still being developed. Nevertheless, the overall "aircraft production base was weak."[103]

In September 1965 the JCS conducted a study to determine what impact the deployment of such a large force to Southeast Asia would have upon its "two and a half war strategy."[104] It was found that if the Southeast Asian deployment was executed as planned:

> The Air Force would have two-thirds (53 of 83) [64%]of its tactical fighter squadrons committed overseas, nearly one-fourth of them (20) [24%] in SEA. ... *Sixteen of the Air Force's 25 C-130 troop carrier squadrons [64%] ... would also be deployed overseas, four [16%] in SEA* [emphasis added].[105]

These findings indicated to the JCS that "*the increase in forces being sent to the Pacific was cutting severely into the force structure* that was coming perilously close to being unable to handle all its responsibilities." It was estimated that in order to uphold the two and a half war strategy (Vietnam = half-war), the Air Force would need to procure "eleven new fighter squadrons" and "*five more troop carrier squadrons*" by the end of 1965 [emphasis added].[106]

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[103] Lead times were a limiting factor. It took 12 months to speed up a production line and 18 to 24 months to reopen a line once it was shut down. ... Thirty months would be needed to reach 175 fighters of both types a month. See Schlight, 78.

[104] This strategy assumed the U.S. should be capable of: "responding simultaneously to a major nonnuclear attack in Europe by the Soviet Union against NATO, to a full-scale conventional outburst by the Chinese in the Pacific (most likely against Taiwan or Korea), and to a third conflict anywhere in the world that, while minor in nature, would require an immediate answer by the United States." See JCSM 721-65 to SECDEF, subj: U.S. Military Posture, Sep 1965, cited in Schlight, 85.

[105] Schlight, *USAF in SEA: Years of the Offensive*, 85.

[106] Ibid., 86.

Silver Bayonet

Silver Bayonet was the code name given to the "first full-scale combat test of the Army's new airmobile tactic," which incorporated the use of "organic Army aircraft for both close air support and logistic airlift." Schlight highlights the fact that:

> More was riding on the outcome of this operation than the immediate improvement of the tactical ground situation in Vietnam. General McConnell remained skeptical of the airmobile idea and believed that the best force for fighting a ground war was a regular Army division with Air Force tactical support. ... All eyes were now riveted on the Army's attempt to prove that it could sustain itself.[107]

Silver Bayonet was a search and destroy mission into the La Drang Valley utilizing helicopters to transport troops to the objective area and then to maintain a line of communications while they engaged enemy forces. The fixed-wing CV-2 Caribous, on the other hand, were used to airlift cargo to "rear and forward bases." When the operation first began, the U.S. Army Corps Commander ordered that his forces use organic airlift "within 150 miles of the battlefield," which was in accordance with "airmobile doctrine." For different reasons, the Air Force and Army both scrutinized every aspect of Silver Bayonet as a "key to future requirements." In the case of the Army:

> Secretary McNamara was leaning toward converting another of the Army's 16 divisions into an airmobile force and increasing the number of Army aviation companies during the next few years from 78 to 109.[108]

This scenario would be likely to transpire if Silver Bayonet proved to reduce the number of casualties by speeding up the timing of operations and thus reducing the troops'

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[107] Ibid., 102.
[108] Ibid., 103.

exposure to the enemy. General McConnell "doubted this would be the case," and thus ordered PACAF to:

> keep detailed statistics on every phase of the operation, including the amount of nonorganic air support requested by the division, both for strike and *airlift*; the order of battle of both friendly and enemy forces; and the enemy losses of soldiers and equipment, particularly to tactical aircraft and B-52s [emphasis added].[109]

The search and destroy operation commenced on 1 November 1965 and lasted for the next four weeks until the North Vietnamese retreated into the hills of Cambodia on 28 November. This operation proved to rely heavily upon U.S. Air Force close air support[110] as well as B-52 air interdiction missions.[111] Most significantly, "*Air Force airlift had proved to be even more important than had the fighters.*" During the course of this battle, "*Air Force airlift was clearly indispensable for the airmobile division.*" Air Force C-130s and C-123s were immediately brought into action, airlifting a continuous supply of petroleum and munitions from Tan Son Nhut to Pleiku to Catecka, which was just 10 miles south of Pleiku. The Army's divisional after-action report stated that *without the Air Force airlift support the Silver Bayonet operation would have "gr[ou]nd to a halt for lack of fuel* [emphasis added]."[112]

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[109] Ibid.

[110] "During the month-long action, strike planes flew 753 sorties, 330 of them during the critical 7-day period in mid-November. These sorties supported only two battalions in the field and averaged, during the most important week, 23 sorties a day for each battalion. See Schlight, 106.

[111] B-52 operations were heavily utilized and Westmoreland was delegated authority from the JCS to approve his own bomber missions, "subject to monitoring and possible veto by higher authority." B-52s executed "96 sorties and dropped close to 5,000 bombs on enemy positions and supply routes." Silver Bayonet had been "the first time in the war the huge bombers were used in direct support of the fighting on the ground." See Schlight, 104 - 105.

[112] The Army had planned on being able to use the highway connecting An Khe to Pleiku for ground lines of communication. However, the fighting had become so intense that a battalion could not be spared to defend a safe passage. Therefore, the Army attempted to airlift its own supplies with its helicopters and CV-2s. However, in so doing, the Army infringed upon the maneuverability of their own battalions. It finally

General Kinnard later wrote to General Moore that "the airmobile division had an even greater need of Air Force close air support, reconnaissance, and *cargo aircraft* than any other divisions," thus confirming General McConnell's suspicions. Kinnard summarized the Silver Bayonet operation as follows:

> The division lacked the ability to airlift supplies to the battlefield from 150 miles away. Any time major quantities of fuel and supplies had to be airlifted over ranges beyond 25 miles, the airlift requirement would start cutting into [the] division's operational capabilities. ... *Airmobile doctrine should call for Air Force, not organic Army, planes to fly supplies from the depot to the brigade bases.* This is the only way [we] could be certain of having enough planes for tactical operations [emphases added].[113]

Thus the experience of the Silver Bayonet operation moved the Air Force and Army closer toward a settlement of their doctrinal dispute over the particular role each service should play in the tactical airlift mission.[114]

Vietnam was the first major conflict in which an organization supplying the strategic airlift, MAC, actually "owned and operated its own system." In the past, the using organization established the rules by which the strategic airlifters had to comply.[115] Because MATS had been "designed and manned for peacetime," an extensive system of command posts was not in existence.[116] It was up to CINCMAC, General Howell Estes, to set up an elaborate worldwide system of MAC command posts. Estes held that:

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got to the point where: "after five days, when the fuel supply for his nearly 300 helicopters had sunk to 7,000 gallons (70,000 gallons a day were needed), Major General Harry Kinnard, the division commander, requested Air Force [airlift] assistance." See Schlight, 107- 108.

[113] Schlight, *USAF in SEA: Years of the Offensive*, 107 - 108.

[114] Ibid., 108.

[115] As of 1969: "the current MAC command post system [was] organized whereby the MAC Air Forces, area, and base command posts, with their separate and distinct functions, form[ed] an integral chain of command from Headquarters MAC to the lowest and most distinct echelon of command to exercise command control of the airlift force." See Miller, 331.

[116] At the start of the Vietnam airlift, the only command post in the Orient was Tachikawa's Far East

> positive command control of the MAC airlift force is the key to achievement of the higher utilization rates and successful mission accomplishment. ... Operational control of the Airlift Command Post system will be a clear-cut line from MAC Command Post to the MAC Air Force Command Post to the area to the base.[117]

Estes wrote early in 1966 that "the buildup in Vietnam, ... [was] representative of the entire trend [of the revolution in airlift]."[118]

Blue Light

Operation Blue Light was conducted over the course of a month from 23 December 1965 to 23 January 1966.[119] During this time frame a mixed force of "88 C-141s, 126 C-133s, and 11 C-124s flew 231 missions," completing the deployment of the 3rd Infantry Brigade and 25th Infantry Division from Hickam to Pleiku, South Vietnam, a week ahead of schedule. At the time this was accomplished, it was hailed as "*the most massive airlift of U.S. troops and equipment into a combat zone*" in military history. The achievement was lauded from the highest levels of government, including Secretary McNamara, who stated that:

Airlift Command Post (FEACP). See Miller, 333. In order to meet the growing demands for strategic airlift to SEA, "MAC [at first] deployed airlift control forces (ACF) that were later renamed airlift control elements (ALCE)." Because South Vietnam did not have an airlift command post, these ALCEs were the only organizational mechanisms available to fill the void. Primarily, they were responsible for: "command and control of the [airlift] mission. In addition to the control function, the ALCE furnishes operations, materiel, aerial port, and support resources at the deployed location." See Courtney L. Faught, "Combat Airlift Training in MAC," *Air University Review* 20:6 (September - October, 1969): 42.

[117] The FEACP set up a separate operating location at Clark in order to be able to accommodate "the Fast Fly program, a modernized jet fleet, and a generally mounting volume of movements" which demanded a more expeditious command and control system. Estes' empowered all the airlift command posts from functioning as "monitoring agencies" to "central control points." See Miller, 333.

[118] "In the first half of FY 65, MATS had carried almost as much tonnage to SEA as during all of 1964. In the first quarter of FY 66 that volume had already been doubled - all told, an increase in the ratio of 1:2:8." See Estes, "The Revolution in Airlift," 6.

[119] As of 1 January 1966, "the Air Force had 20,000 people and slightly over 500 planes stationed in South Vietnam that flew 144,000 sorties during the year." See Schlight, 94.

> *this movement by air was a striking demonstration of the Air Force's increased airlift capability* as well as the professional skills of the Military Airlift Command [emphasis added].[120]

Not only was Blue Light the "first operational test of the C-141," it was also the "first deployment of combat-ready troops from home station to an offshore combat location." A mix of aircraft was used so that airlift would benefit from the synergistic effect of having an outsize-cargo capable aircraft in the C-133 and the versatile C-141 for nearly everything else. The C-124s were used as spares when needed. The experience of this mixed force operation helped to pave the way for future C-141 and C-5 combined operations.[121] Although the C-141 was "new to the fleet and SOPs were still being developed, nonetheless, the on-scene workers persevered and succeeded."[122] The first four months of 1966 saw a huge surge of sorties across the spectrum of Air Force missions whereby the sortie rate increased twofold over the previous year. In particular, "*the largest surge was in airlift ... C-130 missions, which in these four months alone was three times that for all of 1965.*"[123]

In latter part of March 1966, Generals John McConnell and Harold Johnson, the Chiefs of the Air Force and Army respectively, reached a tentative agreement aimed at resolving the issued surrounding the two services' tactical airlift roles.[124] The essence of

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[120] The operation was hailed by General Westmoreland as well, who said "this was the most professional airlift I've seen in all my airborne experience." See Miller, 333.

[121] It flew scheduled flights over predetermined routes. There were stage crews available along the routes. There was nothing to prevent a normal logistics lift. There was no en route threat, staging bases were not being bombed, and the destination airport was relatively secure. See Miller, 333.

[122] "The C-141 proved its combat airlift capability, and the recovery base concept was validated. The C-141 took over the role of some of the C-124s and all C-130s with a fourfold increase in airlift capability, taking approximately one-third the time it took a C-124 or C-133." See Miller, 334.

[123] As of April, the Air Force had flown "97,000 sorties compared to 144,000 during all of 1965." In comparison, fighter missions increased 62% over the same period. See Schlight, 136.

the agreement was that "the Army relinquished claims to future fixed-wing aircraft, transferring the CV-2s to the Air Force, and the Air Force renounced the helicopter airlift role."[125] Bowers attributes this "*resolution of doctrinal differences ... [to] events in Vietnam.*" In particular, the gross deficiencies of the Army's airmobile division concept which came to light during operation Silver Bayonet "capped the continuing controversies over Army air mobility."[126] The Army had assigned six Caribou companies, with sixteen planes each, to its airmobile division based in Vietnam. From the perspective of the Air Force, not only had these 96 aircraft been duplicating the mission of the C-123, but they had been doing so in an inferior fashion [emphasis added].[127]

LeMay, who was the first Chief confronted with this problem, had been unwilling to compromise with his counterpart. McConnell, on the other hand, saw the potential for swapping Air Force rotary-wing for Army fixed-wing roles and missions. Besides wanting to settle the interservice controversy on pragmatic grounds to improve overall combat efficiency, another incentive to get this issue resolved was the fear that if he was unable to resolve the conflict himself, an external solution would most likely be imposed

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[124] The first iteration stipulated: "The Army would give up its claims to all fixed-wing airlift aircraft and would transfer those it had to the Air Force. [The Air Force] agreed to abandon the ... claim that it should operate all helicopters, including those in a combat theater that moved troops, provided fire support, and supplied Army forces." See Schlight, 123.

[125] Exceptions to this arrangement were stipulated as follows: "The Air Force could still use helicopters for special air warfare operations and for search and rescue. The Army could continue to fly small fixed-wing liaison planes for administrative purposes. [Finally], where the situation demanded, ... [and] if a joint or unified commander wanted, ... Air Force fixed-wing airlift planes could be attached to ground commands." See Miller, 316.

[126] Bowers, *USAF in SEA: Tactical Airlift*, 203.

[127] By Air Force standards, the CV-2s were grossly underutilized. Each company flew an average of ten missions per day, which equated to a little more than one mission every other day per aircraft. It was not possible to support an airmobile division with this low utilization rate. As these aircraft were outside the SEAAS, they were primarily used by the 1st Air Cavalry Division, Special Forces and "higher" U.S. Army Headquarters for "battlefield supply and to carry passengers, mail and medium cargo." See Schlight, 123.

by Secretary McNamara, the JCS, or the service staffs.[128] Given McNamara's preference that "the Army must be in the driver's seat," it was understandable why General McConnell did not want to allow this to transpire.[129] A worse possibility would have been to allow the two service staffs to handle the matter by themselves, given that "the controversy had taken on deep doctrinal overtones."[130] As an illustration, early in the controversy, a member of the Air Staff wrote the following note to the Chief of Staff of the Air Force concerning "Army Aviation Requirements:

> *because of fear of losing central control of a separate Army air service, the Army is not capitalizing on the inherent flexibility of air power.* It still wants to use aircraft as artillery pieces having them always on call at all levels of command [emphasis added].[131]

As no changes were made to the draft, the text of the final McConnell - Johnson agreement was signed on 6 April 1966.[132] The agreement set 1 January 1967 as the official changeover when the Air Force would inherit 104 CV-2s from the Army and

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[128] Schlight, *USAF in SEA: Years of the Offensive*, 123.

[129] In 1966, the SecDef testified: "If you have two or three men engaged in an operation, one has to be primary. The Army has to be primary in land war. The Air Force is there to serve the Army in the airlift role and the close support role, and the Air Force must tailor its activities to the Army." See Hearings Before the Committee on Armed Services, House of Representatives, *Military Posture*, 89th Cong., 2d Sess., 1966, cited in Futrell, 102.

[130] To the Air Staff: "it was a long-held conviction that it was wrong for the Air Force to deny itself the right to use any aerial vehicle necessary for military tasks. It was also seen as quite reasonable to impose limits on the Army, several of whose aircraft had exceeded the weight limits placed on them by earlier agreement. The Army Staff "saw the growth of their fixed-wing fleet as the nose of the camel within the tent of tactical air support and encouraged it." Because both staffs opposed any sort of compromise, the Chiefs' talks were conducted secretly. See Futrell, 102.

[131] See Ltr, Lt Gen, J.K. Gerhart, Deputy Chief of Staff of Air Force Plans and Policy, to CSAF, 17 October 1960, in Bowers, 31.

[132] This Agreement "permitted the Army to develop and employ armed helicopters without entering into a roles and missions controversy. The Air Force gained clear title to the tactical airlift role, which it was supposed to have in any case, while recognizing an accomplished fact (that the Army owned the helicopter combat role). In addition, the Air Force gained overriding influence in tactical transport development, though required to consult the Army for its needs." See Richard I. Wolf, *The U.S. Air Force Basic Documents on Roles and Missions* (Washington, D.C.: Office of Air Force History, 1987) 379 - 380.

redesignate them as C-7 Caribous. During the eight-month transition period, Army companies would be converted into Air Force squadrons, necessitating a complete turnover of "pilots, maintenance, equipment and procedures," while operating under combat conditions.[133]

On 1 July 1966, the Air Force's leading architect of tactical airpower doctrine, Lt. General William W. Momyer, became the Commander of 7th AF, replacing General Moore, who been reassigned as Vice CINCPACAF. The defining feature of Momyer's doctrinal emphasis was his strong belief that "air power was most efficient when it was centrally controlled." When he assumed command, airlift was the worst violator of this precept and, in Momyer's estimation was in desperate need of "tighter organization and direction." In Momyer's view, all of the fixed-wing airlift assets in Vietnam (i.e., C-130, C-123, C-7) should have been under a common centralized mechanism of command and control. This was even more important in Vietnam than it had been in the previous conflicts in Burma and Korea, given the "*unprecedented reliance on the Air Force's tactical airlift fleet.*"[134]

In the previous two wars the vast majority of inter- and intra-theater combat transport had been provided by trucks and ships, while only "priority cargo" was airlifted. However, in Vietnam this was not the case.[135] Although all the airlift aircraft now

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[133] Futrell, *USAF in SEA: Advisory Years*, 125.

[134] By the middle of 1966 the intratheater monthly airlift tonnage was averaging 50,000 tons a month and this was "expected to double before the year ended." See Schlight, 140.

[135] This was true for two reasons: "(1) Congestion at the few Vietnamese water ports often forced ocean-going vessels bearing cargo for Vietnam to deposit their loads at outlying ports in Okinawa or the Philippines, from which they were flown to Vietnam; (2) Once inside the country the cargo once again had to be moved by air, since the inadequacy and insecurity of road and railroads ruled out the more normal and less expensive surface distribution." See Schlight, 140.

belonged exclusively to the U.S. Air Force, nevertheless each type of aircraft had a different chain of command. The fact of the matter was that "separate airlift systems remained, with different, and at times, conflicting priorities and schedules." Momyer was adamant that all of these aircraft should be brought under the jurisdiction of 7th Air Force because in its present state "*the projected increase in airlift sorties would strain the system beyond the point of efficiency* [emphasis added]."[136]

The first controversy surrounded how to best integrate the C-7 into the Air Force's common airlift system. Whereas Momyer wanted the C-7s to be fully integrated into the Common Service Airlift System (CSAS), the various Army corps commanders wanted to keep them, arguing that otherwise "the airlift system would be reduced to near constant emergency" as combat helicopters would be forced to provide organic airlift. In the end, McConnell reached a compromise arrangement with Westmoreland whereby the C-7s would be "attached" to the corps commanders.[137] The transition began according to schedule on 1 January 1967.[138] The six Army Caribou companies were smoothly converted into Air Force squadrons between July and December 1966, "for the first time since the creation of the Air Force in 1947, a major Army unit was transferred to the Air Force."[139]

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[136] The four C-123 squadrons came under the 315th AD in Japan, although they were stationed in Vietnam and their crews were assigned to 7th AF. The C-130s also belonged to the 315th AD and were flown into Vietnam on two-week rotations. See Schlight, 140.

[137] In October 1966 Momyer elaborated that while the C-7s would be "nominally assigned" to the CSAS, they would continue being responsive to "regional direct air support centers," which were "outside the CSAS command, control and priority systems." See Miller, 317.

[138] Air Force troop carrier squadrons were activated at Phu Cat (537th), Qui Nhon (459th), Cam Ranh Bay (458th & 457th), and Vung Tau (535th & 536th). See Lowell W. Jones and Donald A. Lindbo, "Tactical Airlift," *Air University Review* 18:6 (September - October, 1967): 13.

[139] Schlight, *USAF in SEA: Years of the Offensive*, 146.

In addition to his 96 newly-inherited C-7s, Momyer had a force of 60 C-123s and 140 C-130s. Used to fly to unimproved strips and for airdrop, the Provider was very versatile. The C-123s each flew an average of five one-hour sorties per day. These airlifters were so heavily utilized that they were employed in nearly every major land battle.[140] The workhorse C-130s flew into many of the same forward strips which accommodated the C-123s.[141] Westmoreland and Momyer both fought for the C-130s to be permanently assigned to Vietnam.[142] However, both Headquarters Air Force and PACAF disapproved.[143]

Although the C-130s were not to be based in South Vietnam, nevertheless Momyer instituted organizational changes to bolster their efficiency. In February 1966, Saigon's 315th TCG was upgraded from a group to a wing, thereby giving Momyer command authority over C-130s when they were on temporary assignment in Vietnam.[144] Even so,

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[140] Jones and Lindbo, "Tactical Airlift," 13. The four C-123 squadrons had aircraft based at Tan Son Nhut (19th ACS), Nha Trang (310th ACS), and Da Nang (311th ACS), and Bien Hoa. See Schlight, 142.

[141] Jones and Lindbo, "Tactical Airlift," 13. As of mid-1966 there were 12 squadrons located in the Philippines, Okinawa, Taiwan, and Japan. Forty of these aircraft operated in Vietnam on a rotating basis. They operated out of Tan Son Nhut, Da Nang, Nha Trang and Cam Ranh Bay Within a year's time, the C-130 in-country force structure had grown by a factor of ten, from four to forty and was now transporting 67% of the country's total tonnage. See Schlight, 144.

[142] They cited the inefficiency of shuttling the planes back and forth between the islands and the mainland, usually empty on the return trip. They also argued that flying the mission in Vietnam required pilots with an intimate knowledge of the challenging terrain and often treacherous airstrips - knowledge that could not be acquired on two-week tours in the country. See Schlight, 144.

[143] According to PACAF and the Air Staff, "the C-130s had to serve the entire Pacific and must be ready for missions outside Southeast Asia if they were needed. PACAF also pointed out that Vietnam was crammed with airplanes and support units and keeping the C-130s there permanently would require maintenance and support elements that would further tax an already saturated situation." See Schlight, 144.

[144] The 315th Wing was still unable to "program the aircraft, reorganize their units, or integrate them with the other airlift forces." Before this change had been made, Tokyo's 315th Air Division controlled the C-130s' schedules, destinations and cargo loads. As a consequence, C-123 missions were frequently duplicated. Having to depend for its planes on another command located 2400 miles away, the wing could not easily adjust the C-130 missions to unforeseen emergencies, shift airplanes and crews about to fit unique situations, plan the maintenance workload that ebbed and flowed with the tide of war, nor get the last hour out of the planes and men. See Schlight, 145.

given that the 315th Wing belonged to PACAF, Momyer still was concerned that he was unable to "command ... the forces he needed to carry out his responsibilities."[145] Because of his persistence, General Momyer succeeded in establishing a new air division to "absorb the airlift control center; own the C-7s, the C-123 wing, and an aerial port group; and exercise operational control of the C-130s." The 834th Air Division was activated on 15 October 1966 at Tan Son Nhut, under the jurisdiction of 7th Air Force.[146]

The 834th AD's Airlift Control Center (ALCC) quickly became the "hub" of daily operations.[147] Bowers makes the point that the relative "autonomy" exercised by ALCC from the Tactical Air Control Center (TACC) in South Vietnam nearly violated a key concept of Air Force doctrine, "that of integrated control of all theater forces."[148] Schlight points out that:

> *while this divorce between airlift and strike forces contravened Air Force thinking on centralized control, its effectiveness in Vietnam was to lead to a revamping of the doctrine* to permit such split control in cases where one control center could not manage the force efficiently [emphasis added].[149]

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[145] Interestingly, before Momyer arrived in Vietnam, his predecessor, General Moore, had previously expressed similar views. However, "in his new position at PACAF and with a new perspective, he now opposed the idea" of giving genuine command authority to the 7th AF Commander. See Schlight, 146.

[146] Miller, *Airlift Doctrine*, 311. The same month a C-7 Wing, the 483rd, was formed at Cam Ranh Bay. See Schlight, 146.

[147] ALCC "scheduled missions, cut frag orders, monitored airlift status, and coordinated with the MACV Combat Operations Center concerning emergencies." Although officially the ALCC was "subordinate" to 7th AF's TACC, requests for airlift normally came through MACV's Traffic Management Authority. So, in practice, the ALCC was more responsive to MACV than to 7th AF. See Miller, 312.

[148] Brig. Gen. William Moore, the 834th AD Commander, with the backing of TAC, "defend[ed] the existing arrangement in an August meeting at Air Force Headquarters: Subordination of the airlift control center to the tactical air control center remained only nominal, but each day the airlift control officers delivered a copy of their schedules to the tactical center so they could be officially dispatched by the latter. Official documents carefully reiterate that the airlift control center was subordinate to and operationally connected to the tactical center. See Annotated Comments, by Maj Gen William G. Moore, comments on draft History Study, *USAF in SEA: Tactical Airlift*, 1973, cited in Bowers, 245.

[149] The airlift force continued to remain "outside the fighter-bomber system" and was exclusively controlled by the 834th Air Division. See Schlight, 165.

General Momyer continued to press his case for centralized control of the C-130 fleet, arguing that it would be more efficient and that it would give airlift pilots more proficiency operating in-country. However, armed with an new Air Staff study, General McConnell would not give-in to Momyer's persistence.[150] Based upon McConnell's decision, PACAF was able to keep the C-130s for the remainder of the war.[151] Despite the fact that in August 1966 PACAF delegated to 7th AF "full operational control of C-130 operations and maintenance" while they were in Vietnam, General Momyer wrote in his end of tour report:

> That *airlift remained a problem* was primarily correlated, in my mind, with the failure to assign a C-130 wing to the Air Component Commander. *We violate our own principles.* We complain about the Marines not coming in wholeheartedly with us. We complain about the Navy not doing it. We don't even do it in the Air Force [emphasis added].[152]

On 1 September 1966 the Air Force Tactical Airlift Center (AFTAC) was established at Pope AFB, North Carolina, with a primary mission to "seek new concepts, equipment, and procedures" for the airlift arena.[153] The Air Force sought to enhance the performance of the C-130 fleet, "*largely in reaction to the Army's argument for airmobile warfare.*" These projects *"helped earn for the Air Force a standoff in the service fight* and helped shape the future employment of the C-130 in Vietnam [emphasis added]."[154]

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[150] The Air Staff "analysis shop" held that: "basing the transports in Vietnam would require more planes, would cost more for facilities, and would destroy the shuttle system's flexibility to provide increasing or decreasing numbers of planes as the fluid situation changed." See Study, AFGOA, "C-130 Shuttle vs C-130 PCS Operations in SEA," December 1966, cited in Schlight, 146.

[151] Schlight, *USAF in SEA: Years of the Offensive*, 146.

[152] Momyer, EOTR, cited in Schlight, 146.

[153] CDS (container delivery system), LAPES (low altitude parachute extraction system), and PLADS (parachute low altitude delivery system) delivery systems were first developed at Pope. See Bowers, 259.

[154] Schlight, *USAF in SEA: Years of the Offensive*, 141.

Throughout the course of 1966, the Air Force conducted more than 355,000 tactical sorties and nearly 4300 Arc Light sorties. Of the tactical sorties, *"nearly half... were [flown] by fixed-wing airlift planes that delivered men and supplies."* In comparison, "only one fifth (74,000) of all the tactical flights flown that year in South Vietnam were strike sorties that dropped bombs and other ordnance." The remaining tactical sorties were categorized as reconnaissance (17%), forward air control (8%), special operations (4%) and search and rescue (4%). These numbers indicate that *airlift was the single most utilized air mission during the 1966 campaign.*[155]

In a speech before an *Aviation / Space Writers Association* meeting held on 8 December 1966 in Washington, D.C., Secretary of the Air Force Harold Brown stated *"within the theater, our C-130s, C-123s and combined Air Force / Army CV-2s have hauled a greater tonnage thus far in 1966 than was airlifted by troop carrier units in the entire Korean War."*[156] Six months later, on 12 June 1967, the Vietnam airlift achieved another, yet more significant, milestone:

> Tonnage lifted in Vietnam (since January 1965) surpassed the nearly two million tons credited to American transports during the Berlin airlift. Having previously exceeded the tonnages airlifted in the China-Burma-India theater and during the Korean War, *the Vietnam airlift became history's largest thus far* [ital. added].[157]

By the middle of 1967 the growing pains of acquiring the six C-7 squadrons were beginning to sort themselves out.[158] Nevertheless, General Momyer again proposed that

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[155] Ibid., 214. In 1966, USAF C-130 and C-123s flew "175,000 sorties to deliver 545,000 tons of cargo and more than 1,500,000 passengers." See Jones and Lindbo, 13.

[156] Jones and Lindbo, "Tactical Airlift," 13.

[157] Bowers, *USAF in SEA: Tactical Airlift*, 247.

[158] In accordance with COMUSMACV's preference, the 89 aircraft continued supporting the following Army units: "MACV, MACT[hailand]; U.S. Army I Field Force, II Field Force, 5th Special Forces Group,

the C-7s should be incorporated into CSAS. Ground Commanders strongly opposed any slackening of their control over the planes, and Westmoreland expressed satisfaction with the existing arrangement. Because the McConnell - Johnson agreement had given MACV the authority to assign the aircraft to the ground commanders, "the C-7s remained decentralized."[159]

Although Momyer was unsuccessful in gaining centralized control of the Caribous, he was able to improve their utilization rate.[160] According to Air Force records, these aircraft were more efficiently operated in 1967 than they had been earlier when they were owned by the Army.[161] However, the fact that the Air Force had clearly out-performed the Army's Caribou operations mattered little, given that the controversy *"transcended the Caribous and touched on the larger issue of tactical airlift support of Army units in the field*:

> *the controversy remained unsettled*, colored less by the actual Caribou operations than *by the larger consideration of roles and missions. At stake was the postwar relationship between the Army and Air Force in the area of airlift support. South*

1st Cavalry Division, and U.S. Army, Vietnam; the III Marine Amphibious Force in I Corps; and the newly revived pacification program of the Agency for International Development." See Schlight, 237.

[159] Two months later, though the aircraft remained assigned to the Army units, the 834th ALCC took over C-7 scheduling. ALCC still lacked the power to determine Caribou itineraries. Airlift allocations still originated in the MACV J-4 Directorate, where they were forwarded to the ALCC which in-turn made up an operational schedule for the C-7 airlift wing at Cam Ranh Bay. See Schlight, 238.

[160] Although the Caribous' home bases were Cam Ranh Bay, Vung Tau, and Phu Cat, the squadrons would disperse their aircraft in groups of 3 or 4 to various other locations such as Da Nang, Pleiku, Nha Trang, An Khe, and Don Muang in Bangkok, Thailand. In this way, there were always some aircraft readily available in nearly every major quadrant of the country. See Schlight, 238.

[161] "Averaging 50 missions a day (450 sorties), the planes flew into 188 of the 300 primitive strips in Vietnam. The missions included support to Special Forces camps, medical evacuations, radio relays, emergency resupply, and tactical emergencies, as well as airdrops of paratroopers, ammunition, building supplies, gasoline, rations, and live animals." In performing these missions, the Air Force flew "20% more hours and 26% more sorties and the planes carried 33% more passengers and 10% more cargo" than the Army had done in 1966. To compare these figures to something tangible, this was the equivalent of "squeezing an additional squadron's payload out of a slightly smaller number of airplanes." See Schlight, 238.

> *Vietnam was a providing a laboratory* for working out the divergent opinions of the two services [emphases added].[162]

Eagle Thrust

Eagle Thrust, conducted from 17 November to 18 December 1967, was a strategic airlift operation that was twice the size of Blue Light, transporting the 101st Airborne Division from Fort Campbell, Kentucky to Bien Hoa, South Vietnam. As the strategic airlift route system to Southeast Asia had matured by this time, the missions were able to be flown "over and through the existing airlift structure [which] took into account stage crew posture and en route station capabilities, routine missions already in the system, and retrograde needs." Again the C-133s flew the outsized cargo, while the C-141 flew everything else.[163]

By the end of 1967, 834 Air Force aircraft were in South Vietnam assigned to a "numbered Air Force, an airlift division, five jet fighter wings, and two airlift wings."[164] Schlight points out that:

> the changes that USAF aircraft underwent in 1967 were symptomatic of that service's acceptance, *still with reluctance* in some quarters, *of the realities and requirements of a flexible response strategy - a doctrine that the Air Force had eschewed in the 1950s in favor of massive retaliation* [emphasis added]."[165]

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[162] Schlight, *USAF in SEA: Years of the Offensive*, 239.

[163] In the course of this operation, which was accomplished two days ahead of schedule, 369 C-141 missions and 22 C-133 missions were flown to transport 10,024 soldiers and 5357 tons of their equipment and supplies. At Bien Hoa, the C-141s validated engine-running offload (ERO) procedures in 7.5 minutes, while the C-133 took the standard two hours. See Miller, 334.

[164] The five fighter wings had 338 jet fighter-bombers, representing 80% of PACAF's fighter aircraft and 18% of the USAF worldwide fighter resources, were distributed among 18 squadrons. Twenty B-57s, 15 F-5s, and 12 F-102s brought the total of jet attack planes to 385. The old 315th Airlift Wing, still at Tan Son Nhut, controlled the C-123s, while the new wing at Cam Ranh Bay prepared to receive the Caribous. See Schlight, 158 - 160.

[165] Schlight, *USAF in SEA: Years of the Offensive*, 236 - 237.

As of 1 January 1968, "combined C-130 and C-123 accomplishments monthly exceeded by two-thirds those of 15 months earlier."[166] The buildup of the C-130 fleet accounted for most of the increase.[167] Although the airlift assets were steadily increasing, the aircrew ratio did not keep pace, which at times "pushed aircrewmen close to physical and psychological exhaustion."[168]

Khe Sanh

On 21 January 1968, Khe Sanh, a 6000-man Marine outpost in the northern region of South Vietnam, suddenly fell under an intensive and extensive "mortar, rocket and artillery" barrage as a prelude to an assault by a force of 15,000 to 20,000 Viet Cong in four regiments. The battle would rage for the next 78 days, as the Marines maintained their position with the assistance of U.S. and R.V.N. Army forces.[169] Defense would be provided almost exclusively by tactical air support.[170] Moreover, "*the defenders of this post were exclusively resupplied by air, ... and had to rely on an air bridge until relieved.*"

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[166] The percentage of tonnage delivered to each major customer was as follows: U.S. Army: 67%; ARVN: 13%; U.S. Air Force: 9%; U.S. Navy and Marine Corps: 9%; and AID: 2%. See Bowers, 246. A 66% rise in airlift tonnage since 1965 reflected the growth in the number of usable airfields in South Vietnam to "91 for the C-130, 131 for the C-123, and 174 for the Caribou." See Bowers, 263.

[167] Whereas there were 44 C-130s in-country as of December 1966, by December of the following year this number had grown by a third to 65 aircraft. As of 4 January 1968, the in-country C-130 fleet stood at 72 aircraft. Twelve squadrons of C-130s were based around the periphery of South Vietnam in the Philippines, Thailand, and Okinawa. Although the number of squadrons had remained static since the 1965 buildup, there were indications that a 13th squadron would be needed during the following year to "support the 525,000 troop level approved for Vietnam in 1968." See Bowers, 248.

[168] Combat-ready C-123 airlift crews declined in number to 64 at the beginning of 1967 (90 crews had been authorized), and the assigned strength of C-130 pilots reached a low of 345 in midyear (the authorization was 444). ... Waivers of individual monthly flying limits were common in all units. The average daily C-130 utilization rate of the 314th Wing was more than 5.0 hours, whereas other units flew at a rate of approximately 3.0 hours per day. See Bowers, 249 - 250.

[169] Eichhorst, *Military Airlift*, 28.

[170] Schlight, *USAF in SEA: Years of the Offensive*, 280.

Miller compares the campaign with "the classic combat airlifts of Stalingrad, Burma and Dien Bien Phu:

> The success at Khe Sanh reflected the application of lessons drawn from past campaigns, *the improved technology for tactical airlift now at hand*, and the absolute allied air superiority. The outcome of the struggle was a triumph of tactical defense used in intelligent combination with heavy firepower and *air lines of communication* [emphasis added].[171]

When the North Vietnamese struck on 21 January, they scored a direct hit on the primary ammunition depot so that the Marines quickly requested an "emergency tactical aerial resupply" effort.[172] With air superiority established, C-123s were immediately employed, followed by the C-130s on the 23rd of January and "briefly a handful of C-7s[173] ... averag[ing] 250 tons per day."[174]

The North Vietnamese, who were dug-in throughout the surrounding hills, began to employ "automatic weapons and antiaircraft fire" against the inbound airlifters. The transports employed passive defensive measures to avoid these hazards as much as possible. Although the post was adjoined to a 3,900-foot airstrip, because of a combination of fog induced by the surrounding mountainous terrain and enemy ground fire, it's average utilization rate was just three hours per day, which was not enough to support the Marine force indefinitely.[175]

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[171] Miller, *Airlift Doctrine*, 319.

[172] Ibid.

[173] The first week's bombing campaign consisted of more than 3,000 fighter-bomber sorties and 200 B-52 sorties, which "destroyed scores of trucks, gun positions, bunkers and structures." During the course of the week, the airlifters managed to avoid "heavy ground fire," airlanding 1,700 tons of "sorely needed" ammunition to Khe Sanh in 158 sorties. See Schlight, 281 - 282.

[174] Miller, *Airlift Doctrine*, 319.

[175] Viet Cong "bombarded the airfield, creating direct hit hazards, tearing up the air strip on several occasions, and littering the field with fragments." Airlift passive defense measures included "staying in the clouds as long as possible, flying steep, tight approach patterns, and minimizing their time on the ground by

Following several incidents, effective 12 February, C-130 airland operations into Khe Sanh were completely prohibited by General Momyer[176] and C-123 operations were prohibited with the exception of "delivery of emergency medical supplies and evacuation of the wounded."[177] By March, as a result of the C-123s' ever-increasing vulnerability, they were no longer permitted to fly airland missions into Khe Sanh.[178] so that, reminiscent of the Korean Chosin Reservoir experience, "resupply would be by airdrop from C-130s and C-123s."[179]

The primary delivery means for the "large tonnage deliveries of ammunition, food and construction material" was by CDS (container delivery system) or LAPES (low altitude parachute extraction system). Because CDS could be delivered from high altitude, it offered the defensive advantage of cloud cover.[180] "For the first time in airlift history, planes dropped supplies under instrument conditions."[181]

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speedy off-loading." See Miller, 320.

[176] Miller, *Airlift Doctrine*, 320. Early in February, a C-130 was struck by enemy mortar fire during landing. The pilot was able to complete the landing as his crew extinguished the raging fire. See Eichhorst, 28. On 10 February, "a Marine C-130 was destroyed and another damaged while landing." See Schlight, 282.

[177] Eichhorst, *Military Airlift*, 28. C-123s were to be "escorted by O-2s on their wingtips that directed circling fighters against gun positions firing on the transports." See Schlight, 283 - 284.

[178] On 1 March "a C-123 was hit by mortar fire while on its takeoff roll, and the six passengers and four crewmen fled to safety as fire consumed the plane." On 6 March, "A C-123, bringing Marine reinforcements from Phu Bai was waved off final approach because a [South] Vietnamese plane was on the runway. As he circled the field, the pilot called that he was receiving heavy ground fire. His escort observed a fire and then an explosion on the plane's left wing as it was turning to final. The aircraft rolled into a vertical dive, crashed into the jungle, and all forty-eight aboard died." The same day, a C-123 tire blew on landing as it rolled over mortar shrapnel and while being towed off the runway it took a direct hit from mortar fire and burned to the ground. See Schlight, 284 - 285.

[179] Eichhorst, *Military Airlift*, 28.

[180] Miller, *Airlift Doctrine*, 320.

[181] Schlight, *USAF in SEA: Years of the Offensive*, 284.

As soon as the weather cleared, C-130s flying CDS missions became more vulnerable to enemy fire. Furthermore, "due to a shortage of LAPES rigging items," the C-130s were forced to resort to a third mode of delivery, GPES (ground proximity extraction system). This method involved the use of an arresting cable which would "hook and pull loads from extremely low-flying C-130s."[182] Supported by an air and artillery barrage, the Marines prevailed over the enemy on 8 April 1968.[183]

The Khe Sanh airlift operation utilized eight airfields in the northern provinces of I Corps, placing an inordinate burden upon the entire South Vietnamese airlift system. To compensate for this expanding utilization rate, "*additional C-130s were requested* and received to augment the in-country force."[184] *This campaign alone occupied 50% of all airlift assets* in South Vietnam for two continuous months. Although the U.S. was successful at simultaneously quelling the Tet Offensive, nevertheless "the preoccupation

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[182] C-130s flew 52 LAPES missions compared to 15 GPES, delivering 5,100 tons, thus shifting the momentum toward the allies' advantage. See Miller, 320. All totaled, "the airlift planes delivered 12,500 tons of supplies into the camp, flying 1,124 sorties to do so." See Schlight, 285. Combat support was provided by 17,731 fighter-bomber sorties, dropping 19,400 tons of ordnance and 2,600 B-52 bomber sorties, dropping 75,500 tons of ordnance. See Eichhorst, 28.

[183] Eichhorst, *Military Airlift,* 28. President Johnson described the air campaign at Khe Sanh as "the most overwhelming, intelligent, and effective use of air power in the history of warfare." See Burl W. McLaughlin, "Khe Sanh: Keeping an Outpost Alive," *Air University Review* 20:1 (November - December, 1968): 67 - 68. Schlight interprets the President's remarks as the "contemporary recognition of the decisive nature of tactical, B-52, and airlift missions in preserving the Marine base. During the course of this 70-day airlift operation, three C-123s were destroyed, and eight were damaged with a resultant loss of life of 48 people. Although none of the C-130s were destroyed, eighteen suffered extensive damage from enemy mortar attacks. See Schlight, 285.

[184] The airfields used to support Khe Sanh were Camp Evans, Ca Lu, Quang Tri, Lavang, Hue Phu Bai, Hue Citadel, Dong Ha and Khe Sanh. However, McLaughlin makes the case that "the airlift effort expended into Khe Sanh was an extreme example of the effect of a particular operation on the entire system." From January until March 1968, the average monthly airlift tonnage in this sector grew by 14,533 tons, for a 310% increase over the preceding six-months. See McLaughlin, 67 - 68.

with Khe Sanh during February and March provided the enemy with a [relatively] permissive environment"[185] in which to launch Tet [emphasis added].

While the Khe Sanh rescue was unfolding, concurrently, during the Tet annual national holiday, the Viet Cong launched an all-out offensive across the entire countryside. The surprise offensive began on the night of 30 January 1968 against several hundred locations, including most airfields.[186] This had an adverse impact on the airlift sortie generation rate, which fell from 1,100 to 625 on the first day. At the same time, the demand for airlift sorties escalated as the increased fighting was quickly depleting munitions stocks and the major interior truck routes had been blockaded by Viet Cong guerrillas.[187] Nevertheless, the assault was quelled in less than a week, with the exception of Hue, where the battle continued until early March.[188]

Miller claims that "the airlift system's flexibility and responsiveness fully proved their worth in the Tet offensive." Although the airlift infrastructure was initially overwhelmed, to help alleviate the traffic congestion, the aerial port system was quickly reinforced with additional equipment and personnel.[189] Schlight posits that "the events of

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[185] Schlight, *USAF in SEA: Years of the Offensive*, 285.

[186] Miller, *Airlift Doctrine*, 321. The coordinated Tet attack was waged against: "six major cities, thirty-four provincial capitals, and numerous U.S. and Vietnamese installations. All 12 major U.S. bases in the country were hit by rocket and mortar fire, many of them penetrated by enemy patrols." See Schlight, 282.

[187] Miller, *Airlift Doctrine*, 321.

[188] Schlight, *USAF in SEA: Years of the Offensive*, 282. For the duration of the assault, airlift was flown on an emergency basis only, as Miller's description portrays: "two C-123s airdropped five tons of supplies to Kontum on the night of 2 February. On the same day, 17 C-130 sorties moved 500 troops and over 100 tons of equipment of the 101st Division from Song Be to Tan Son Nhut. There was a shuttle between Tan Son Nhut and Bien Hoa to carry aircraft spares for the Vietnamese Air Force. In the delta region, C-130s and C-123s carried 30,000 tons of cargo in 15 days to support an area normally heavily dependent on road networks. By 4 February, the airlift system was carrying only priority cargo but even then did not have enough assets. ... The airlift system was overtaxed." See Miller, 321 - 322.

[189] An "eight-plane detachment" began flying missions out of Nha Trang on 25 February. At this point,

the first three months of 1968 formed a watershed for the Air Force, as it did for the entire American effort in Southeast Asia.":

> On the day that the successful Niagara [Kae Sanh bombing] campaign came to a close, President Johnson stopped the bombing of North Vietnam above the 20th parallel. ... At the same time, the American strategy began to change from one of prosecuting the war to one of gradual disengagement.[190]

During the course of the offensive air campaign from 1965 - 1968, "the Air Force had carried out the largest, *most sustained ground support campaign in the history of aerial warfare ... as the Air Force by early 1968 was devoting approximately one-third [33%] of its worldwide inventory to the conflict.*"[191] In comparison, if one looks specifically at the U.S. strategic airlift forces of the Military Airlift Command, *as of "1968 Southeast Asia was using 76% of the command's capacity.*"[192]

In order to accommodate this exponential increase in airlift, MAC had to institute several measures, such as reorienting its emphasis from Europe to the Pacific.[193] As had

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the in-country C-130 fleet stood at 96 aircraft. During the surge, the average daily airlift tonnage grew from 3,780 in January, 3,880 in February, to 4,420 in March. Over the course of the offensive, "42 C-130s, 33 C-123s, and nine C-7s were hit by ground fire; [and] one aircraft, a C-130, was shot down." Westmoreland recognized the airlift operation in the aftermath of the Tet offensive, noting that "the classical role of tactical airlift has been admirably performed in its truest sense." See Miller, 322.

[190] Schlight, *USAF in SEA: Years of the Offensive*, 287.

[191] Early in 1965 the Air Force had 1.5% of its aircraft in South Vietnam; three years later this investment had grown to 19%. With additional planes in the surrounding areas - Thailand, the Philippines, Okinawa, Taiwan, Japan and Guam. See Schlight, 289.

[192] In 1965, the airlift fleet was utilized at 35% of its capacity. Roughly 67% of these missions were flown by military aircraft such as the C-141, while the other 33% were flown by civilian contract carriers. Annual ton-miles increased from 700 million in 1965 to 5.7 billion in 1968. See Schlight, 296. By 1968, MAC's strategic airlift mission surged to the point that it was flying an average monthly load of "150,000 passengers and 45,000 tons of cargo ... to and from SEA." Tan Son Nhut was originally the only point of debarkation in South Vietnam. Later in the operation, other transshipment points were opened at Da Nang, Cam Ranh Bay, Pleiku, Bien Hoa, and Phu Cat, which served to "greatly reduce the pressures on the redistribution system" where cargo was offloaded from C-141s and onloaded to C-130s and C-123s. See Miller, 310.

[193] Before 1965 "the majority of airlift planes and flights were concentrated on the east coast of the U.S., looking toward Europe. As requirements for Southeast Asia mounted, the imbalance was evened out by creating new aerial ports on the west coast and pressing the east coast aerial ports into serving Southeast

been the case in Korea, airlift was also heavily utilized for aeromedical evacuation in Vietnam.[194] In-theater tactical airlift also grew exponentially during the years of the offensive. To accommodate the airlift surge without adding to the demands upon the TACS, a separate and distinct "airlift network" was established. Schlight points out that:

> while this flew in the face of the Air Force's preference to have all its tactical forces centrally managed, it proved necessary under the circumstances and, in fact, worked well, *leading to a doctrinal modification* [emphasis added].[195]

Although during the conflict the entire tactical airlift fleet had been consolidated under the 834th Air Division, "*an analogous consolidation of strategic and tactical airlift planes still eluded the Air Force in 1968.*" Military Airlift Command owned, operated and controlled all strategic airlift aircraft, while Tactical Air Command did the same with the tactical transports.[196] Even though the transport types remained separated based upon their physical characteristics, many times there would be an "overlap of responsibilities and functions throughout the theater at aerial ports, command posts, and support squadrons, as well as during evacuation efforts." For instance, to address in-country airlift shortfalls, oftentimes "MAC C-141s undertook hauls between the major South

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Asia. New support squadrons were placed at Midway Island, at Mactan in the Philippines, and at Cam Ranh Bay and Tan Son Nhut in South Vietnam." See Schlight, 296.

[194] From 1965 to 1968 the average number of monthly aeromedical evacuation sorties skyrocketed from "12 sorties with a handful of patients to 158 flights with 8,000 patients." Because of this program, the average percentage of wounded soldiers which would die after being admitted to a hospital fell to one percent, compared to four and a half percent during the Second World War. See Schlight, 296.

[195] Between 1965 and 1968, the tons of cargo and the number of passengers increased tenfold from 24,000 [tons] and 97,000 [pax] during the first quarter of 1965, to 250,000 [tons] and 992,000 [pax] during the same period of 1968. This was a significant achievement, considering the inadequacy of the airlift infrastructure, which had unpaved airstrips, overcrowded airspace, unreliable navigational aids and poor facilities. Furthermore, "the diversion of airlift planes to special missions, such as dropping flares, dispensing leaflets, and spraying herbicides, cut into airlift capability." See Schlight, 296 - 297.

[196] Schlight, *USAF in SEA: Years of the Offensive*, 296 - 297.

Vietnamese airfields."[197] However, because they were under the command of different organizations, aircraft arrivals were uncoordinated, leading to bottlenecks, especially at the main staging bases, as the aircraft competed for "ramp space, fuel, loading crews, and scheduling." Says Schlight, "*these experiences in SEA added further ammunition to the Defense Department's desire to centralize airlift for all the services in the Air Force.*" Yet, this would not happen until after the war, when in 1974 "TAC relinquish[ed] its airlift fleet and mission ... to MAC [emphasis added]."[198]

One final airlift controversy that was still left brewing at the end of the offensive was the question concerning whether or not to assign the C-7 Caribous to Army field commanders. Although led by General Momyer, 7th Air Force opposed this arrangement as being inefficient, nevertheless the situation still persisted as General Westmoreland believed it to be the most effective way to support his Corps commanders. Moreover, by the end of the offensive "this practice seemed on the verge of being accepted into Air Force doctrine."[199]

1969 - 1973: The Years of Withdrawal

Beginning in 1968, President-elect Richard Nixon decided upon a strategy of "Vietnamization" of the war effort combined with a gradual U.S. withdrawal with "minimum American casualties."[200] When General Creighton Abrams replaced

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[197] The C-141 missions usually originated at Clark, landed and reloaded at Saigon, Da Nang, Nha Trang, and again at Saigon before returning to Clark. The C-141s lifted 2500 tons of cargo and 7700 passengers in 250 such sorties during November and December 1972. See Bowers, 606.

[198] Sclight, *USAF in SEA: Years of the Offensive*, 298.

[199] Ibid.

[200] The Vietnamization strategy, in combination with a phased withdrawal, was intended to apply continuous military pressure upon North Vietnam to come to a political agreement at the Paris peace talks, while at the same time, declining U.S. casualties would hopefully buffer the domestic antiwar movement.

Westmoreland as the Commander of MACV in 1968, there became less of an urgent demand for airlift as he began to phase-out the search and destroy strategy.[201] Moreover, the lowering of force levels lessened the demand for airlift.[202] Unlike the buildup, the builddown was slower-paced and because the organizational apparatus was already in place, it was handled with more "efficiency, safety and control." Finally, the doctrinal dispute with the Army over tactical airlift support had abated to the point where "both services acquiesced in the established division of roles."[203]

Aircraft maintenance posed a problem because of the "continuing heavy flying hour rates and the wearing conditions of usage." The C-130 B and E models were experiencing wing fatigue while the A-model had fuel leaks and defective engine air ducting.[204] The C-123 fleet was also plagued by materiel defects that caused two major flight mishaps.[205]

"The fundamental political goal remained essentially unchanged - to preserve South Vietnam from forceful communist takeover." See Bowers, 467.

[201] In March of 1968, total Vietnam airlift tonnage peaked at 138,000 tons while the number of C-130 sorties peaked at 14,300. C-123 sorties peaked the following October at 9,500. A task force of eight C-130s at Nha Trang ceased operations in April 1968, while one of three C-130 squadrons temporarily deployed to Vietnam departed later that spring, and another followed-suit in August. By the end of 1968, 72 C-130s remained in South Vietnam. See Miller, 323.

[202] Over the course of the ensuing years, intratheater airlift tonnage dropped from a "peak of 82,500 tons in 1969, to 38,000 in 1970, to 20,000 in 1971." Along with the tonnage, the supporting infrastructure declined from "a peak of 18 airlift control element (ALCE) detachments countrywide" in March 1969 to 14 by the summer of 1970 to seven by the end of 1971. See Miller, 313.

[203] The number of "direct combat" movements executed by the 834th AD dropped from a high of more than 60 per month in 1969 to 20 per month by 1971. Whereas during the buildup, petroleum and ammunition had constituted the majority of the air cargo, this was now be replaced by passengers, which accounted for 53% of the tonnage by 1972, compared to 31% in 1969. See Bowers, 467.

[204] The in-commission rate of each of these aircraft continued to decline as "the C-123s averaged 77% in-commission in 1969, 75% in 1970 and 70% in 1971." This resulted in a corresponding dropoff of average daily flying hours per C-123 from 3.9 in 1969 to 3.0 by 1971. Likewise, the C-130 in-commission rate declined from more than 80% in 1969 to only 69% by June of 1970. Wing fatigue had first been diagnosed in 1967 and required that the aircraft be sent back in shifts to the U.S. to be retrofitted with a wing modification by 1971. See Bowers, 480.

[205] C-123 Metal fatigue was discovered to have caused cracks in the flap fittings that were responsible

Technical improvements continued being integrated into the C-130 force. Bowers posits that the driving force behind "the Air Force's determination to improve combat-zone capabilities of the tactical airlift force" came from the "experiences and needs of the Southeast Asia war," which was "*reinforced by earlier competition with the Army over roles.*" Although 7th AF and PACAF were able to request that technical modifications be made through their "formal SEA operational requirements documents," nevertheless "*more sweeping advances*, such as developing and procuring a new generation of transport aircraft with vertical takeoff and landing potentialities, *rested on decisions of national military and budgetary policy* [emphasis added]."[206]

The greatest technological leap occurred when the C-5 Galaxy made its maiden flight to South Vietnam on 9 July 1970, landing at Cam Ranh Bay. Reminiscent of the C-124 experience in Korea, "reshipments by C-130 out of Cam Ranh [had to be] increased." Moreover, there was more work required of Cam Ranh's aerial port facility as "cargo arriving by C-5 (unlike C-141 loads) usually required repalletizing for C-130 loading."[207] As a gauge of C-5 capabilities, *"seventeen of the C-5s would have replaced the 308 planes used daily in the Berlin airlift* [emphasis added]."[208]

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for a fatal crash in August 1970. Although temporary repair work was performed, nevertheless another accident occurred late in 1971. This led to "prohibitions against landing at short airstrips pending installation of new fittings at all critical points." In February 1971 cracks were found in the nose landing-gear struts. As a result of these cracks, the next month an aircraft crashed while performing a shortfield landing. Similar to what had happened with the flap problem, a temporary corrective measure was unable to prevent another crash in July. Thereafter, a special preflight inspection had to be accomplished prior to any C-123 operations into any "short or rough field." Bowers, 482.

[206] C-130 modifications included TALAR (tactical landing approach radar landing system), GRADS (ground radar air delivery system) and AWADS (adverse weather aerial delivery system) See Bowers, 486.

[207] With its mammoth dimensions, "MAC opposed landing the C-5 at other points in Vietnam because of congestion and unsatisfactory facilities." See Bowers, 490.

[208] Miller, *Airlift Doctrine*, 327.

In 1971 the 834th AD Commander, Brigadier General John Herring, had assigned the C-130 detachments back to their parent wings for "maintenance and materiel responsibility." In conjunction with this measure and the declining demand for airlift, the 834th AD was brought under the 7th Air Force effective 1 December 1971.[209] The on-going C-130 withdrawals were based upon "MACV estimates for in-county needs." The JCS and CINCPAC planned on utilizing MAC's C-141 fleet to "assist in the unit moves or to replace C-130s for other in-country tasks," if needed. Moreover, the JCS identified specific CONUS-based C-130 squadrons as being available for "fast augmentation" deployment if required.[210]

Beginning in late 1969, active duty C-130A and B squadrons began to be transferred to the Guard and Reserve forces.[211] As of 31 March 1972, four C-130E squadrons (24 aircraft total) remained on-station at Tan Son Nhut, South Vietnam.[212] C-123 strength reductions paralleled those of the C-130 fleet. Between July 1970 and January 1972, five squadrons were inactivated.[213] The final C-7 squadron, the 310th, was inactivated on 31 October 1972.[214]

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[209] Despite this merger with the 7th AF, the ALCC remained separate and distinct from the TACC as a "division of the newly created 7th AF Directorate of Airlift under the Operations Deputate." MACV continued to function as it had in the past, with its Traffic Management Agency responsible for scheduling routine airlift and the Operations Directorate maintaining responsibility for "emergency requests." During the inactivation ceremony conducted at Tan Son Nhut on 1 December 1971, the 834th Air Division was awarded the Presidential Unit Citation. See Miller, 315.

[210] In November 1970 it was estimated that a "surge requirement" of "68 C-130 equivalents" was needed, predicated upon the ability to fly 689 sorties to deploy a "Vietnamese division from the Saigon area to Da Nang in five days." See Miller, 315.

[211] The A-models ceased flying as of 28 December 1970, while the B-models flew until 25 October 1971. See Bowers, 473.

[212] The 21st, 50th, 345th and 776th squadrons were all assigned to the 374th TAW, headquartered at Tan Son Nhut while the 774th TAS was based at Clark AB, Philippines. The C-130 home base facility at Cam Ranh Bay ceased operations in February 1972. See Miller, 473.

[213] All that remained was the 310th TAS, which was relocated to Tan Son Nhut. The C-123 squadron

Once the C-123s and C-7s were withdrawn from active Air Force units an airlift "gap" existed with no fixed wing aircraft smaller than the C-130. Bowers points out that "the Air Force viewed this condition as temporary, anticipating that next-generation transports would attain landing and takeoff capabilities approaching the vertical while preserving the payload of the C-123 or the C-130 [e.g., the YC-14 and YC-15]."[215]

The 1972 Easter Offensive: An Loc

The battle for An Loc was "*a classic siege with the garrison supplied entirely by air*, meriting comparison with Stalingrad, Imphal, Dien Bien Phu, and Khe Sanh."[216] The North Vietnamese regular Army attacked An Loc as part of its synchronized nation-wide "Easter Offensive" throughout the northern provinces of South Vietnam. In a major departure from previous guerrilla combat tactics, this assault resembled "conventional ground warfare, ... [as modern] Soviet and Chinese weapons were used in South Vietnam for the first time.[217] During their surprise assault, the North Vietnamese successfully

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was primarily utilized as "a U.S.-controlled contingency force capable of making pickups at fields where C-130s could not land." The final U.S. Air Force C-123 mission was flown by a K-model on 14 June 1972 and on 19 June "the last [C-123] was turned over to the Vietnamese Air Force." See Miller, 473. After the 483rd Tactical Airlift Wing was downsized from six to five squadrons in June 1970 "it remained at that strength for most of the [withdrawal] period. See Bowers, 521.

[214] The C-7 aircraft from the squadrons inactivated in 1971 were returned to Air Force Reserve units in the U.S. whereas the aircraft in the squadrons inactivated after 1972 remained in South Vietnam and were initially used to train South Vietnamese pilots until being turned over to the SVNAF. See Bowers, 535 - 536.

[215] Bowers, *USAF in SEA: Tactical Airlift*, 537.

[216] Ibid., 557.

[217] Two North Vietnamese divisions began attacking southward from the DMZ on the night of 30 March 1972. Another division moved against Hue from the A Shau Valley. In the central highlands, two communist divisions opened attacks on 31 March and soon swept over the old battlegrounds of Dak To, Kontum and Pleiku. See Bowers, 559. On 7 April 1972 an overwhelming force of three North Vietnamese infantry divisions launched a surprise assault from Cambodia. See Eichhorst, 29 - 30. The North Vietnamese planned to takeover Loc Ninh, blockade the major highway (Rt. 13) running into An Loc and eventually seize An Loc to become "the center of government for the Communist-liberated provinces." See Miller, 324. Soviet and Chinese weapons included the SA-7 antiaircraft missile, wire-guided missiles, bigger and more mobile artillery weapons, and new rockets (up to 250 mm). Some 350 enemy tanks were in South Vietnam at the outset of the offensive and were backed by two hundred others in close reserve. See Bowers, 559.

trapped "a garrison of South Vietnamese rangers, local civilians, and a few American advisers at ... An Loc."[218]

Because of the magnitude of the enemy firepower, no logistical resupply missions, land or air, made it through to An Loc during the following week.[219] By capturing the outlying Quan Loi airfield and setting up an antiaircraft battery, the North Vietnamese had negated the allied option of flying fixed-wing airland sorties in relief.[220] From 13 - 15 April, 24 North Vietnamese tanks led a major ground assault into An Loc, capturing the northern sector of the city, and shelling the southern sector with mortar fire.[221]

When the Easter offensive began, USAF C-130E airlift forces stationed in Southeast Asia were caught in a precarious position as they were in the midst of transferring "most in-country lift tasks" to the South Vietnamese Air Force.[222] The handful of C-7s and C-123s still stationed in the Pacific theater made "modest contributions" to the allied airlift effort.[223] Although the SVNAF was ill-prepared, it participated in the airlift surge.[224] Combined "allied air power, including *a substantial air*

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[218] Only the South Vietnamese rangers were left to defend An Loc. See Eichhorst, 29 - 30.

[219] Eichhorst, *Military Airlift*, 29 -30.

[220] Miller, *Airlift Doctrine*, 324..

[221] Bowers, *USAF in SEA: Tactical Airlift*, 544.

[222] All that remained of the U.S. in-country C-130 airlift fleet was a "24-ship detachment at Tan Son Nhut" which was a part of the Taiwan-based 374th TAW. During the first week of the Easter offensive, the "in-country C-130 force was quickly expanded to 40 and soon afterwards to 44" which was all that Tan Son Nhut could handle. Accompanying the aircraft surge, the number of aircrews was rapidly increased from 43 to 60, while the airlift maintenance force was expanded from 260 to 370 personnel. This increase in manning enabled "all in-county aircraft [to be] flown to the maximum, around the clock." During the week two of the Easter offensive: "U.S. Air Force [C-130E] transports in Vietnam hauled 25,000 passengers and 4,300 tons of cargo, up substantially from the initial week. For the full month of April the 374th Wing flew 7,344 hours, up from 4,890 hours in March; 115 hours per plane, up from 76." See Bowers, 560 - 563.

[223] The 10 C-123s at Tan Son Nhut flew 1,700 airlift sorties during April, including numerous supply and refugee evacuation missions into and out of Song Be. The final Air Force Caribou squadron made 811 airlift sorties in April before being deactivated on 1 May. See Bowers, 564.

[224] The SVNAF was "heavily occupied with training and upgrade programs," Nevertheless, the Air

transport contribution, was unquestionably decisive in turning back the communist drives [emphasis added]."[225]

The 1972 operation at An Loc would prove to be "the most trying time of the war for Air Force C-130 crews"[226] as they had the difficult job of supplying An Loc entirely by airdrop for three months. In fact, "conditions at An Loc were far more difficult than those at Khe Sanh four years earlier.[227] The An Loc airdrop employed many of the techniques recently developed at Pope AFB. The initial plan called for employing CDS (container delivery system) drops.[228] However, the first CDS missions encountered heavy enemy AAA (anti-aircraft artillery) fire.[229] Moreover, the shoulder-held SA-7 antiaircraft missile added a new dimension to the enemy threat which had never been encountered before.[230]

Force Advisory Group had categorized five SVNAF airlift squadrons as "combat ready" before the onslaught of hostilities. There were two C-123 squadrons, and "one each with C-119s, C-47s and C-7s." SVN transports lifted "3,300 tons during April, up from 1900 in March and roughly 25% of the C-130 workload." See Bowers, 560 - 563.

[225] From April until July 1972, "allied airlifters made a maximum effort, moving countless units, hauling supplies, and lifting refugees." After July the intensity of the campaign dropped to a level where the U.S. could continue with its withdrawal. See Bowers, 559.

[226] Bowers, *USAF in SEA: Tactical Airlift*, 539.

[227] "The defenders at An Loc were Vietnamese, less reliable than the disciplined American marines at Khe Sanh. The only Americans on the ground were a few U.S. Army advisors." The airdrop supply goal was for "two hundred tons daily, including 140 tons of ammunition (mainly small arms and 105 mm), 36 tons of rice and other rations, and 20 tons of water." See Bowers, 539 - 540.

[228] "The usual CDS method used a high-speed low-level route (250 knots and below 100 feet) to an initial point. The aircraft then climbed to 600 feet AGL and set up for the drop which required slowing to 130 knots and opening the cargo door and ramp. This configuration was maintained until the supplies were dropped over the drop zone. The cargo door and ramp were then closed while the aircraft descended to treetop height and accelerated for its escape from the area." See A.J.C. Lavalle, ed., *Airpower and the 1972 Spring Invasion* (Maxwell AFB, AL: Airpower Research Institute, 1976) 87.

[229] The first four C-130 [CDS] drop missions received moderate to heavy battle damage [one lost two engines] while the fifth mission was shot down after making the drop on 18 April. This crew miraculously survived the crash landing and was immediately recovered by Army helicopters. See Lavalle, 87. As a result of this heavy enemy AAA fire, "two crewmen were wounded and one was killed," during the first three days of CDS drops. Furthermore, only 25% of the airdropped cargo was ever recovered by the people trapped at An Loc. See Eichhorst, 29 - 30.

[230] This heat-seeking missile flew at a speed of 1.3 Mach and climbed to an altitude of 10,000 feet. From 11 - 12 April a joint service test was performed at Nellis AFB, Nevada, to determine the most effective evasive maneuvering techniques to counter this new threat. Bowers points out that "these tactics proved

Complicating matters was the fact that the drop zone was only "the size of a soccer field" so that it was difficult to airdrop with extreme accuracy and the enemy had the luxury of concentrating all of his firepower on a fixed corridor of airspace. However, through a process of trial and error, the newly developed GRADS (ground radar aerial delivery system)[231] was employed with success. Says Miller, "the success of the high-velocity method made it clear that the resupply campaign would be won."[232]

The crescendo of strategic airlift operations took place in support of the 1972 Easter offensive. On 5 April 1972 the Commander of MACV transmitted an urgent request to the JCS for additional air forces. The Tactical Air Command responded with an operation code-named Constant Guard I - IV.[233] By the beginning of May the situation

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sound," as no C-130s were hit by the shoulder-held SA-7. Based upon the findings of the test, crews were briefed that if they observed an incoming missile to "eject flares and turn sharply into the missile path, thus using the wings to shield the heat." Furthermore, C-130 airdrops were to be conducted from altitudes of 10,000 or above to stay out of the missile's effective range. Still "four 374th Wing crews operating in Vietnam reported SAM attacks during May and June." For the future: "The Air Force procured additional flare dispensers for installation on C-130 and funded other aircraft types for prototype flare systems specifically designed for missile decoying. Investigations began, seeking new missile detection systems using Doppler radar principles in hopes of ending dependence on visual detection of oncoming missiles." See Bowers, 552.

[231] Miller, *Airlift Doctrine*, 325.

[232] During the next six days, 492 bundles were dropped with a 94% recovery rate. Drop altitude for the GRADS releases was well above 6,000 feet, practically eliminating the ground fire threat. According to Lavalle: "The initiation of the successful GRADS airdrops became a turning point in the defense of An Loc. High-altitude drops, through the months of May and June totaled 238; of the 3,100 tons released, more than 90% were recovered by the defenders. Although daily deliveries were but half the original resupply objective (2,000 tons per day), the drops provided enough sustenance for continued resistance." See Lavalle, 90 - 91.

[233] "(1) Constant Guard I: a squadron of F-105Gs from McConnell AFB, Kansas, two F-4 squadrons from Seymour-Johnson AFB, North Carolina, and several EB-66s from Shaw AFB, South Carolina, departed for Thailand. Thirty-eight C-141s lifted 854 troops and 400 tons of cargo, while four TAC C-130s moved en route maintenance teams and equipment to their locations; (2) Constant Guard II: a similar movement of two F-4 squadrons, one each from Homestead AFB and Eglin AFB, Florida, to Thailand; (3) Constant Guard III: the largest single move in the history of TAC. Four squadrons of F-4s of the 49th TFW at Holloman AFB, New Mexico, moved to Takhli, Thailand. MAC C-5s, C-141s, and commercial carriers moved 3195 personnel and 1600 tons of cargo in nine days. By way of comparison, it took 56 days to get the first ground troops to Korea from the U.S. in 1951; (4) Constant Guard IV: the deployment of two C-130E squadrons to join tactical airlift forces at Ching Chuan Kang AB in Taiwan. MAC augmented these and other SEA intratheater airlift forces in an operation code-named Cold Map, freeing up the C-130s for in-country work."

at An Loc and surrounding areas became so desperate that they necessitated another round of airlift expansion. Especially noteworthy is that on 10 May, while urging a more extensive airlift augmentation effort, the Joint Chiefs warned Secretary Laird that "the Pacific force was already committed at *near-maximum level*, and that the *use of C-141s in Vietnam had strained MAC's capabilities elsewhere, forcing cancellation of most training* [emphasis added]."[234]

Significantly, the Easter offensive provided MAC the first opportunity to employ its new C-5 jumbo-jet in a hostile combat environment[235] so that "*heavy armor was thus airlifted directly into a combat zone - an aviation first for the Air Force.*"[236] By 18 June 1972 the siege on An Loc had been broken.[237] As of July it was clearly evident that the

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See Miller, 339.

[234] Select TAC C-130 units in late April received preliminary notice to prepare for possible deployment to the Pacific. Upon direction by the JCS, TAC in early May sent ten C-130s to the Pacific to replace aircraft out of service because of battle damage. See Bowers, 565.

[235] The first C-5 missions were flown in support of a MACV emergency order to move six MK-48 tanks from Yokota AB, Japan to Da Nang AB, South Vietnam. As each tank weighed 49 tons, only the C-5 was capable of airlifting such heavy equipment. To minimize exposure to hostile fire, offload procedures were expedited to the point where the tanks were driven off the airlifter within 7 minutes and the C-5s were back in the air within a half hour. One thing that significantly reduced its ground time was its ability to "arrive at off-load stations with sufficient fuel to recover to an offshore base for refueling, maintenance, and crew change." See Miller, 339.

[236] Lavalle, *Airpower and the 1972 Spring Invasion*, 56. All told, the C-5 fleet conducted "201 missions in SEA during the last quarter of FY 72, compared to 102 missions during the first nine months of the year." See Miller, 339. Having proven its potential by moving the heavy MK-48s, the C-5s were next given the task of airlifting forty-eight 24-ton M-41 tanks and eight 7.5-ton M-548 tracked recovery vehicles to Da Nang and Cam Ranh Bay. In this instance, offloading took an average of 32 minutes. Again, the C-5 successfully flew 15 missions to accomplish this MACV tasking. See Miller, 340. MAC's C-141 strategic airlift fleet made the following contributions to the Easter offensive.: "Beginning on 21 April 1972 MAC C-141s began shuttling passengers and cargo between Tan Son Nhut and the other main in-country bases, principally Da Nang, Bien Hoa, and Pleiku. During the week beginning 28 April the MAC transports flew 193 in-country sorties, lifting 35% of the total Air Force in-country workload. The project lasted four weeks. Usually four C-141s worked in Vietnam daily although the effort expanded briefly to eight planes in late April. During the entire1972 Easter offensive, the MAC strategic airlift fleet demonstrated its surge capabilities by transporting "18,521 tons of cargo and 19,226 passengers within the Pacific area." See Bowers, 564 - 565.

[237] On 11 June, Vietnamese Air Force helicopters began airlanding replacement troops into An Loc and from 13 - 14 June, U.S. Army helicopters augmented their efforts by flying in 1,400 reinforcements. See

North Vietnamese spring offensive had ended in defeat. Miller claims that "*air transport made a decisive contribution to the allied victory* [emphasis added]."[238]

In response to the North Vietnamese Easter offensive, President Nixon escalated the B-52 bombing campaign. The combined effect of strategic targeting with technologically advanced systems "added a new dimension in the art of aerial bombardment."[239] After the President's 1972 decision to wage a conventional strategic bombing campaign, in conjunction with roused diplomatic advances, "the North Vietnamese backed away from their intransigence and entered into serious negotiations to conclude a peace settlement."[240] By the middle of October 1972, the North Vietnamese had shown a willingness to conduct serious negotiations, so that Nixon again called a halt to the bombing campaign, announcing that "peace was at hand." However, soon thereafter, the negotiation process reached another "impasse."[241]

In an effort to drive the North Vietnamese back to the bargaining table for serious negotiations and to convince them to rethink their offensive positioning, the President

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Bowers, 554. During the course of the siege, "from 15 April to 30 June 1972, 359 C-130 sorties delivered nearly 5,000 tons of supplies, more than 3,000 tons of which were recovered." See Eichhorst, 30.

[238] Although the siege had ended, the North Vietnamese continued to control Highway 13 and the Quan Loi airport through the end of the year. See Miller, 325 - 326.

[239] "Linebacker" missions were to be less restrained, and more strategic in nature than the unsuccessful "Arc Light" missions flown from 1965 - 1968. Furthermore, several technological developments, such as "electro-optical and laser" targeting systems had been incorporated into the old bombers. "The unprecedented accuracy of these weapons caused a severe crippling of the North Vietnamese logistic system and allowed air power to strike key industrial targets with little collateral damage." See George J. Eade, "Reflections on Airpower in the Vietnam War." 25:1 *Air University Review* (November - December 1973): 6.

[240] The damage from the bombing went beyond the Ho Chi Minh Trail as petroleum and electrical supplies were cut to the point where only "the minimum essential functions of NVN government and defense could be maintained." Furthermore, the aerial mining of Haiphong Harbor had the effect of "reducing the resupply to NVN by sea to a trickle." See Eade, 6.

[241] "Not only were the North Vietnamese showing signs of assuming once again their posture of intransigence toward meaningful negotiations, but there was clear evidence that they were again about to launch a major offensive." See Eade, 7.

ordered the resumption of the strategic bombing campaign of North Vietnam. However, "this time with the full might of all the U.S. air power resources in Indochina."[242] Linebacker II was flown into the "most concentrated air defense system in the world." In so doing, it served as a clear and unmistakable signal to the North Vietnamese that the U.S. was firmly committed to South Vietnam.[243] This intensive eleven-day bombing campaign achieved both its military and political objectives.[244] After the bombing campaign had wound down, the Air Force continued with the Vietnamization of the intratheater airlift mission.[245]

After the peace agreements were signed in Paris, a cease-fire went into effect on 28 January 1973. President Nixon said of the agreement that it would "end the war and bring peace with honor to Vietnam and Southeast Asia."[246] In closing, Bowers reflects upon the significance the Vietnam experience held for the U.S. airlift fleet:

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[242] In this December 1972 "Linebacker II" campaign: "during an eleven-day period, B-52s flew more than 700 sorties against military and industrial targets in the Hanoi-Haiphong area in conjunction with about 1,600 sorties by fighter bombers." See Eade, 7.

[243] "Those eleven days may well prove to be the most decisive period of the entire war; a period that, when the final accounting is taken, should provide unprecedented evidence of the capability of air power to achieve national objectives." See Eade, 7.

[244] Militarily, it inflicted serious damage upon North Vietnam's warfighting capacity and politically, it compelled the North Vietnamese to request a cease-fire and return to the bargaining table, this time in good faith. See Eade, 7.

[245] Soon, all that remained of the U.S. airlift force in South Vietnam were 20 C-130s at Tan Son Nhut. On 12 August the last C-130 was shot down while climbing out of Soc Trang with all of its 43 passengers and crewmembers killed, "the war's last fatalities in C-130 operations." On 13 November the C-130 unit assigned to Tan Son Nhut relocated to Nakhon Phanom, Thailand, though it still flew missions throughout South Vietnam. See Bowers, 605 - 606.

[246] The Accord made provisions for a: "Four-party joint military commission from the U.S., North Vietnam, the Saigon regime, and the Viet Cong to oversee the cease-fire, exchanges, and withdrawals, supervised by an international commission from four nonbelligerent powers." According to the terms of the agreement, all "American POWs were to be released and the last 23,700 American troops withdrawn within 60 days." The POWs were subsequently flown to the U.S. by C-141 Starlifter crews in an operation named "Homecoming." The prisoners were released incrementally between 18 February and six additional dates in March until the final 67 POWs were repatriated on 29 March 1973. See Bowers, 608 - 613.

> The final episode of the war in Vietnam provided some satisfaction for U.S. Air Force airlifters. ... That *the airlift arm emerged healthy and vigorous* compensated only in part for the unsatisfactory ending of the drama [emphasis added].[247]

Conclusion

As this analysis will demonstrate, an airlift revolution occurred during and after the Vietnam War. Organizationally, during the war, airlift was elevated from a support service to a major command, and soon after the war was upgraded to specified command status. As far as the force structure, during the war MAC transitioned into the jet-age with the introduction of the C-141 and C-5 and soon after the war, it inherited the C-130 fleet from TAC as well. Doctrinally, during the course of the war airlift was included as one of the missions described in the Air Force's basic doctrine for the first time. Later editions noted the overlap of tactical and strategic airlift, thus lending support to the eventual consolidation of the two fleets under MAC's umbrella.

Analysis

Airlift Organization: Post-Vietnam

Effective 1 January 1966, the Military Air Transport Service was designated the Military Airlift Command (MAC).[248] Although the name was changed, as Tunner had anticipated, the function of MAC was virtually identical to MATS and airlift assets were not consolidated throughout the defense establishment. Moreover, MAC was still classified as a support, rather than a combatant, command. So, although its stature had been upgraded from a "service" to a "command," MAC was still on the second tier of the

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[247] Bowers, *USAF in SEA: Tactical Airlift*, 647.
[248] Burkard, *Military Airlift Command*, 8.

Air Force when compared to SAC and TAC. Nevertheless, given that MAC was now a major command, it was commanded by a four-star general, giving the airlift community a stronger voice in the budget allocation process.

The long-standing division of U.S. strategic and tactical airlift resources among various, non-related commands had always made little sense and was a very controversial topic. In June of 1970 the Lindsay Committee made a unanimous recommendation that "steps be taken to achieve a single airlift command as soon as possible."[249] The final Corona Harvest report, published in January 1973, endorsed the Lindsay Committee's recommendations, calling for the establishment of "a single organization for airlift."[250] In the summer of 1974, Secretary of Defense Schlesinger directed "that the worldwide airlift mission, roles, resources and responsibilities be consolidated under the Military Airlift Command."[251] On 1 December 1974 the Air Force reassigned TAC's airlift resources

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[249] Colonel Louis P. Lindsey, "an officer with vast tactical airlift experience," headed this committee which "refined into a single-volume report" a four volume Corona Harvest study "treating the airlift system from 1965 - 1968," researched by a team of officers from the Tactical Airlift Center, at Pope. "After review by Air Force officers through four-star rank, a final report was issued in January 1973." Maj. Gen. Burl McLaughlin, Commander of the 834th AD, pushed for the change. The primary rationale was to eliminate duplication of effort in control, aerial port and supply elements, specifically in the Southeast Asian theater. Among those opposing the change was CINCTAC, "feeling strongly that removal of the tactical transports from TAC and the overseas commands would diminish the 'tactical' orientation of the force." See Bowers, 650 - 651.

[250] Bowers called the Corona Harvest recommendation a "milestone" which "led to a sweeping reassessment in Air Force Headquarters during 1973." See Bowers, 650.

[251] Secretary of Defense Schlesinger approved the proposal with "the expectation that duplication would be ended and flexibility improved. The wings and squadrons preserved their 'tactical airlift' names, and the AF Airlift Center was opened at Pope AFB to centralize development of tactics and equipment." See Bowers, 650. Secretary Schlesinger's decision had three major points of emphasis. First, it called upon the Air Force to consolidate the entire strategic (C-141, C-5) and tactical (C-130) airlift fleets into MAC, which would then be designated as a specified command reporting directly to the JCS. Second, all Navy and Marine Corps funds for airlift procurement were canceled as of FY76. In addition, their entire airlift operation was to be phased out and taken over by MAC by the end of the 1977 Fiscal Year. Third, the Air Force was vested with the responsibility of providing airlift for the entire DOD, including the Navy and Marine Corps. See The Joint Chiefs of Staff, *Briefing on MAC Specified Command* (1976), 1.

under MAC. In March of 1975, MAC also inherited the airlift assets of PACAF, USAFE and the Alaskan Air Command.[252] However, for the time being, MAC remained categorized as a support, rather than a combat, command.[253]

On 13 March 1975, the Secretary of the Air Force recommended that MAC should be placed under his direct command as a "single manager operating agency."[254] With the exception of the Chairman, every member of the JCS agreed with the Secretary of the Air Force. Despite their efforts to persuade him otherwise, the Chairman held to his view that MAC should be designated as a specified command.[255] The Department of Defense sided with the Chairman's recommendation and on 9 June 1976, Deputy Secretary of Defense

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[252] By 31 March 1975, the Air Force had complied with the first stipulation by transferring its tactical airlift force to MAC. See Burkard, 11.

[253] During the mid-1970s, the USAF combat commands were the Air Defense Command (ADCOM), Strategic Air Command (SAC), Tactical Air Command (TAC), U.S. Air Forces Europe (USAFE) and the Alaskan Air Command (AAC). MAC was categorized as a support command along with Air Force Logistics Command (AFLC), Air Force Systems Command (AFSC), Air Training Command (ATC), Air University (AU), Headquarters Command (HQ COMD USAF) and the U.S. Air Force Security Service (USAFSS). See U.S., Department of the Air Force, *Contrails: Air Force Academy Cadet Handbook*, Vol. 22 (1976-77), 55.

[254] SECAF"s three reasons were: "(1) The Air Force saw no advantage in having MAC becoming a specified command, since the consolidation of strategic and tactical airlift was done with minimal organizational changes; (2) Making MAC a specified command would require extensive reorganization efforts, which would be additional work for the Joint Staff and cause additional command layering, which ultimately, would impede its responsiveness; (3) Since the Air Force did not consider the dominant mission of MAC to be combatant, the existing single manager concept appeared more consistent with past practice in the establishment of unified and specified commands." See JCS, *MAC Specified Command*, 2.

[255] The CJCS had four strong reasons. First, MAC would become more of a factor in planning for combat operations now that they had sole responsibility for DOD airlift. Therefore, he felt it was important that CINCMAC receive his directives from the JCS. Second, making MAC a specified command would enhance the stature of CINCMAC in relation to the other CINCs, since this would serve as an official acknowledgment that airlift was a combat mission. It would also further the unification principle. Third, designating MAC as a specified command would be a "logical and progressive action which would strengthen the unified command structure and enhance the management of airlift forces in support of the combatant forces of the United States." Fourth, he felt that in wartime airlift would be confronted with competing demands from not only different U.S. commands, but also with allied requests. These allocation decisions would be the responsibility of the JCS, and could "best be accomplished under a command arrangement with CINCMAC reporting directly to the JCS along with other unified and specified commanders." See JCS, *MAC Specified Command*, 2.

Clements directed the JCS to make the necessary preparations to make MAC a specified command.[256]

A lingering issue was whether MAC qualified to be a specified combatant command under the provisions set by the 1947 National Security Act. Specifically, the Department of the Navy and the OSD General Counsel questioned the legality of elevating MAC to a specified command because the National Security Act had designated that specified command status could only be rendered to combat forces, rather than training, logistical, and administrative services. Thus, *the Navy was questioning the very essence of MAC's mission.* In peacetime, there was no question that MAC's functions were more logistical than combatant. But, in wartime or times of crisis, when a specified command is activated, airlift would become an integral part of both the strategic and tactical combat forces [emphasis added].[257]

To satisfy the Navy's concern, the mission statement for MAC as a specified command was written so as to differentiate the wartime/crisis mission from the peacetime logistical mission.[258] On 1 February 1977, DOD designated MAC as a specified

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[256] Secretary Clements, with concurring recommendations from the CJCS and the OSD for P&E and I&L, agreed on 6 April 1976 that making MAC a specified command would be an improvement. Preparations included making an amendment to the United Command Plan, an implementation plan, and a message to notify Congress of the intended action. See JCS, *MAC Specified Command*, 3.

[257] The Deputy Secretary of Defense testified that "the 1973 Israeli airlift operation or even the Berlin airlift operation are examples of airlift doing a logistical mission, that is clearly a military operation in support of national goals; and as such is well within the intent of Congress in passing the National Security Act." See JCS, *MAC Specified Command*, 3.

[258] The mission statement is as follows: "To accomplish military airlift missions during wartime, periods of crisis, JCS exercises and as necessary to ensure operational support to other unified and specified commands. The service logistic functions of MAC remain under the Secretary of the Air Force." With this distinction made, both the Navy and OSD General Counsel agreed with the legality of establishing MAC as a specified command. See JCS, *MAC Specified Command*, 3.

command. The Commander of MAC was given the title Commander in Chief and during times of crisis or war, he was made directly responsible to the JCS Chairman.[259] Estes notes, "that fact is *fundamental to the revolution in airlift* and the basis upon which airlift demands have been increasing steadily to this day [emphasis added]."[260]

Airlift Force Structure: Post-Vietnam

To Tunner, the need to respond immediately to U.S. worldwide commitments made the development of a "modern, flexible, fast-reaction, jet-powered airlift force a matter of urgency." The first squadron of C-141s became operational in 1965 and more than 200 were slotted for operation by 1968. That total would provide a 70% increase in airlift capabilities in just three years.[261] The stated objective of the Air Force was to provide fast reaction logistical support and mobility for the Army. Furthermore, Tunner asserted that:

> The minimum acceptable strategic airlift capability for the 1960 - 1970 time period for the aerospace force must be predicated on the offensive weapon systems in being and under development. The strategic airlift requirements

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[259] Burkard, *Military Airlift Command,* 12. General Moore, CINCMAC, testified at the 1977 House Armed Services Committee hearings on the recent designation of MAC as a specified command. He stated that specified command status: "means that we have a dual reporting structure: During wartime or conditions that approximate war, strategic guidance comes from the National Command Authority and the JCS. During peacetime, our lines of direction for airlift service come through the Secretary of the Air Force. This arrangement streamlines the wartime chain of command, makes MAC directly responsive to the authority that decides airlift priorities, and gives MAC a seat at high level conferences that plan and coordinate activities in which MAC is a participant." See U.S., Congress, House, *The Posture of U.S. Military Airlift, Hearings Before the House Committee on Armed Services, HR 2637,* 95th Cong., 1st sess., 1977, 7.

[260] General Estes wrote: "The Military Airlift Command combat airlift is now an essential factor in the detailed limited-war plans of the unified and specified commanders. ... In effect then, MAC, as the global airlift command of the Air Force, has become the key element in a far-reaching change in national policy: to a strategy of multiple options for flexible, measured response to any situation in the spectrum of war." See Estes, "The Revolution in Airlift," 6.

[261] Monro MacCloskey, *The U.S. Air Force* (New York: Frederick and Praeger Publishers, 1967) 189.

> associated with weapon systems employment will determine an objective strategic airlift force.[262]

The Lockheed C-141 Starlifter, still considered the backbone of the strategic airlift fleet today, is a "high-swept-wing, four-engine jet with a T-tail configuration." It was first flown while undergoing developmental testing in 1963 and subsequently began to come on-line with MAC in 1965. Because its rear cargo doors are of the clam-shell variety with an integral two-position ramp, the aircraft can be "loaded and offloaded with minimal ground support and [it] provide[s] excellent airdrop capability."[263]

In 1964 and 1965 the Air Force examined its future airlift requirements, especially in the field of outsized cargo. A number of comprehensive studies concluded that there was a definite requirement for a "large, efficient outsized cargo aircraft to add a higher degree of credibility to the United States contingency posture." An Air Force industry analysis settled on the C-5A. Secretary McNamara approved of the program in December 1964 and a $2 billion contract for fifty-eight C-5As was awarded in September 1965.[264] At the time it was introduced as the largest aircraft in the world, Lockheed's jumbo-jet C-5 Galaxy was an engineering marvel. With the same characteristic silhouette of the C-141, it too is described as a "four-engine jet with high wings and a T-tail configuration." It's unique capability is that it can "carry very heavy payloads and outsized cargo at high

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[262] Tunner elaborates that "in any given time period this strategic airlift force not only must be capable of satisfying the total ton-mile requirements associated with deployment of the weapon systems but in addition must have the capability of supplying the number of airframes for the required sorties in support of offensive aerospace operations." See Tunner, "Strategic Airlift," 117.

[263] A total of 277 C-141As were procured between 1965 - 1968. The C-141A was capable of carrying approximately 155 troops, 120 paratroopers, 80 stretchers or 69,900 pounds of cargo. It's unrefueled range was 3500 nautical miles with 40,000 pounds of cargo. Finally, its maximum speed was 570 MPH, with a normal cruise speed of 500 MPH. See Eichhorst, 95 - 96.

[264] MacCloskey, *The U.S. Air Force*, 190.

speeds over great distances." Also like the C-141, it has the rear clamshell doors. However, in addition it has "a full-width opening capability plus loading ramp in the front, ... [with] the ability to 'kneel' on the landing gear to facilitate loading and unloading."[265] Envisioning a mixed force of the C-5, C-141, and C-130, Secretary McNamara stated that:

> the ability of the U.S. Armed Forces to respond to aggression in a timely and appropriate manner requires the utmost in airlift flexibility and capacity, leading to revolutionary logistical concepts that will significantly increase the combat effectiveness of the U.S. military forces.[266]

Adds Estes, the C-5 "will for the first time permit the MAC force to respond without qualification to total airlift requirements, including the maximum demand - the division-force move."[267] Three years later, he described this new capability as "strategic combat airlift."[268]

As the previous and all subsequent administrations, during the Nixon - Ford era, the "most crucial criterion" as to the effectiveness of the U.S. strategic deterrent was whether it could maintain an "effective nuclear retaliatory capability" in the face of a Soviet nuclear attack.[269] Maintaining an effective triad of ICBMs, SLBMs and bombers

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[265] A total of 78 C-5As were procured between 1969 - 1973. The Galaxy was in-flight refuelable from the start, and it has an unrefueled range of 3500 nautical miles with a 170,000 pound payload. Primarily designed for cargo, rather than passenger transport, it can carry "291,000 pounds of maximum cargo with 73 passengers." Finally, its top speed is 571 MPH, while it normally cruises at 518 MPH. See Eichhorst, 96.

[266] Eichhorst, *Military Airlift*, 96.

[267] Estes, "The Revolution in Airlift," 9.

[268] "The jet age and technology that makes an aircraft like the C-5 possible have also engendered a radical *qualitative* alteration in airlift. Total ton-mile capability will soon have increased by at least an order of magnitude over 1961 - true - but the important point is that we have at the same time achieved a whole new *kind* of airlift." See Howell M. Estes, Jr., "Modern Combat Airlift," *Air University Review* 20:6 (September - October, 1969): 19.

[269] This criteria, modeled after the McNamara design, was used to shape a U.S. strategic arsenal which was capable of "inflicting decisive damage on the USSR under all foreseeable conditions." See Kahan, 150.

remained the most potent way to provide enough redundancy to compensate for a system failure and/or to protect against any unforeseen Soviet technological breakthroughs. Thus, the Nixon Administration put great emphasis on the strategic bomber force, adding new systems to the B-52 bomber fleet, such as advanced radar systems and advanced air-to-surface missiles, and pushing for the development of the follow-on B-1 bomber.[270]

Despite Laird's assurances,[271] Nixon's redefinition of defense commitments, combined with Congressional pressure to cut defense spending, had a negative impact on U.S. conventional forces. Although realistic deterrence translated into a reduction in U.S. conventional force levels, nevertheless it meant that the U.S. needed to place a greater reliance on its technological superiority. Thus, realistic deterrence was responsible for some technological advancements in the airlift force structure. Corona Harvest called for the near-term development of two advanced tactical transport aircraft, one to replace the C-130 for larger requirements, and one to replace the C-123 and C-7 for feeder roles.[272] Following the Corona Harvest recommendations, the decision to embark upon the YC-14, YC-15 "advanced medium STOL transport (AMST)" research and development program [to replace the C-130] was made by the Nixon and Ford Administrations.[273] However,

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[270] To strengthen the ICBM force, the administration pushed MIRV (multiple independently targeted reentry vehicle) development into operational readiness. Secretary Laird fought to develop a follow-on nuclear submarine called the Trident. See Kahan, 156.

[271] According to Secretary Laird,"to serve as a reliable deterrent, our general purpose forces, together with those of our allies, must be such as to convince potential enemies that they have nothing to gain by launching conventional attacks." See Laird, *FY 73 Defense Budget and FY 73-77 Defense Program*, cited in Endicott and Stafford, 81.

[272] Bowers, *USAF in SEA: Tactical Airlift,* 650.

[273] "AMST was conceived as a low-cost, medium payload, shortfield craft, powered by off-the-shelf jet engines. Two firms received contracts in late 1972 to construct and test prototypes, and four years later both the Boeing YC-14 and McDonnell-Douglas YC-15 were flying at Edwards AFB, California." See Bowers, 651.

"*because of the need for funds for the newer fighters and the B-1 bomber*, Secretary of the Air Force Robert Seamans and the Chief of Staff of the Air Force [General John Ryan] in March 1970 made what became a permanent decision to defer funding for the [tilt-wing light intratheater transport] LIT." Furthermore, neither the YC-14 nor YC-15 was ever procured, because "facing extreme fiscal stringency, *the Air Force of the mid-1970s focused on priorities and powers of persuasion on behalf of the newer fighters and bombers, moving to assure the service's capabilities to perform its most basic mission* [emphasis added]."[274]

From the point of view of the Air Force hierarchy, because Soviet air defense systems were becoming so advanced, the supersonic B-1 was needed to penetrate its borders at low altitude. Additionally, it was argued that production of a new advanced bomber could be used as leverage in the SALT negotiations. Whatever the case, "some studies suggest that *the drive toward the B-1 and the lack of bomber alternatives might well have been influenced largely by the Air Force's bureaucratic desires to retain a manned bomber mission* [emphasis added]."[275]

In 1974, CINCMAC, General Paul Carlton, wrote that, as part of the larger defense cuts, "airlift planning has far less for new procurement and research and development. It has less resources with which to meet defense commitments."[276] The cutbacks also impacted force readiness.[277] By 1975, MAC's military airlift fleet was

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[274] One of the Corona Harvest recommendations had been to develop a "tilt-wing light intratheater transport (LIT)" as a replacement for the smaller C-123 and C-7s. "During 1969 - 1970, Air Force policymakers pushed hard for the LIT, with five-ton payload capability in vertical flight." See Bowers, 650.

[275] Kahan, *Security in the Nuclear Age*, 156.

[276] Paul K. Carlton, "Military Airlift for Strategic Mobility," *Strategic Review* 2:1 (Winter 1974): 27.

composed of 285 C-130s, 274 C-141s and 76 C-5s.[278] The CRAF fleet was composed of "nearly 340 turbine-powered commercial airliners, of which about 245 [were] of the long-range intercontinental variety." [279] Carlton pointed out that "at a glance, it appears that the U.S. possesses the world's greatest strategic airlift armada, *by far*. But, on closer examination, the shocking fact is that this nation does not have enough strategic cargo airlift, *also by far*."[280] General Carlton sounded the warning that "the requirements that would face us in the event of a major military contingency - say, in the NATO area - are so great that even *our full military force and the fully activated CRAF do not provide enough cargo capacity*."[281] Based on this assessment, CINCMAC recommended that "further enhancement of our strategic airlift capability is needed through a stretched C-141 and inflight refueling of C-141s, as well as C-5" wing reinforcement and CRAF expansion [emphasis added]."[282]

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[277] "Capabilities are limited by command strength. Military flying hours, programmed utilization rates, and crew ratios have decreased to the lowest level necessary to maintain the readiness of the airlift force. By the end of the year, the Command will fly 378,000 hours - down nearly to one-half of the prewar period." See Carlton, "Military Airlift and Strategic Mobility," 28 - 29.

[278] Burkard, *Military Airlift Command*, 100.

[279] Paul K. Carlton, "Strategic Airlift: A Cargo Capability Shortfall," *Air University Review* 27 (November - December 1975): 2.

[280] Theoretically, CRAF could "almost double MAC's long-range crisis airlift capability if fully activated." However, the airlift shortfall was "especially in terms of civil augmentation of the military force." Carlton pointed out that whereas "commercial augmentation ... reached a peak of 3.6 ***billion*** ton-miles per year in 1968 and 1969, at the Vietnam War's peak, ... today it runs about 900 million ton-miles annually. Even without the modifications we'd like to see in the civil aircraft, the CRAF still represents about half of the nation's wartime strategic airlift capability and can provide up to 14.5 million cargo ton-miles and 7.5 million passenger ton-miles *a day*. But that is far short of the capability that is desirable to counter a full-scale European contingency." See Carlton, "Strategic Airlift: A Cargo Capability Shortfall," 5.

[281] Paul K. Carlton, "The Military Airlift Command," *Strategic Review* 3:4 (Fall 1975): 69 - 70.

[282] Interestingly, even though the tanker force was assigned to SAC, CINCMAC also recommended that "an advanced tanker is an important part of the equation, too, and the civil aircraft committed to the CRAF need modifications to include cargo doors and reinforced decks on the passenger aircraft which comprise the majority of CRAF assets." See Carlton, "The Military Airlift Command.," 70.

Airlift Doctrine: Post-Vietnam

Although in 1964 the Air Force had been wedded to the doctrine that "strategic nuclear forces provided the best instrument to prevent wars at all levels," by 1968, "the Southeast Asian experience" had demonstrated that:

> strategic force alone may not be a credible deterrent against hostile acts by small powers. *Strategic force should be complemented by enough general purpose forces for deterrence at lower levels* [emphasis added].[283]

At the most fundamental level, the air war in Vietnam modified, but did not completely change, the doctrine that "strategic nuclear forces provide the best instrument to prevent war *at all levels*." In other words, though the Air Force "remained wedded to the *primacy of the nuclear arsenal* as a deterrent of all kinds of war," nevertheless, it now acknowledged "the need for *some forces* to be ready to fight limited and *conventional* wars." The U.S. Air Force performance in Vietnam to this point had proven the ability of airpower to be effectively employed at the lower rungs of armed conflict. Says Schlight, "*recognition of this brought the Air Force to a qualified acceptance of flexible response.*" Moreover, "*this watershed in Air Force thinking established the agenda for future change and planning* [emphases added]."[284]

In January 1966, the month MAC was established, General Howell Estes, the former Commander of MATS who had just been elevated to the position of CINCMAC, wrote that that the Air Force was experiencing a two-phase "revolution in airlift":

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[283] Schlight, *USAF in SEA: Years of the Offensive*, 309.
[284] Ibid.

> (1) The acceptance and utilization of military airlift as a medium of combat deployment and employment and logistical support, on a large-scale basis, *despite its limitations*; (2) The *removal of limitations on airlift* [emphasis added].[285]

In sum, CINCMAC posited that "MAC is today on the threshold of the quantum transition from the first to the second phase of this airlift revolution. The concrete manifestation of that transition will appear in the Lockheed C-5A."[286] Three and a half years later, General Estes shared his concern that "even with the fully programmed force of C-141s and C-5s, modern combat airlift will not automatically spring into being:

> Combat airlift ... is in its essence a *concept* - and a concept, in order to become a reality, must be thoroughly understood, supported and proved. The best we can hope to adduce, then, is that the revolution in airlift, which I described three and a half years ago in these pages, is as much conceptual as technological and that certain conceptual conclusions flow from the technical antecedents with inevitable logic.[287]

Just prior to his retirement, General Estes cautioned that although "by early fall of this year [1969], we will be close to an initial operational capability with the C-5, ... we will still not have genuine combat airlift until the full *concept* of modern strategic mobility is fully understood."[288]

Richard Nixon was the first U.S. President to enter office faced with strategic parity and confronted with the prospect of Soviet superiority in ICBMs. Nevertheless,

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[285] Estes writes: "In the first phase, in which the many advantages of airlift have been recognized as outweighing its traditional disadvantages, the growth and progress of the Military Airlift Command have been basically linear. In the second phase, in which those disadvantages will have been largely obviated, the growth of airlift requirements and capabilities will without question trace out a steep exponential curve." See Estes, "The Revolution in Airlift," 5.

[286] Estes, "The Revolution in Airlift," 5.

[287] Estes, "Modern Combat Airlift," 14.

[288] "I hope I have shown that the strategic mobility of this nation in the future will be of an order entirely different from anything we have yet experienced and that it can be, above all, an effective deterrent against protracted and eroding 'limited' wars. And that, beyond any doubt, is what the revolution in airlift is really all about." See Estes, "Modern Combat Airlift," 25.

after paying the massive costs of the Vietnam War, the American public demanded cutbacks in defense spending.[289] Six months after his inauguration the President revealed the "Nixon Doctrine," which emphasized "partnership with our friends who are revitalized and increasingly self-reliant."[290] The Nixon Doctrine decreased the span of U.S. commitments by reducing the manpower levels from being able to handle 2 1/2 wars, one each in Europe and Asia plus a small "brush fire" on the periphery, to a force structure able to conduct just 1 1/2 wars.[291]

Not until late 1970 did Secretary of Defense Melvin Laird announce a "new strategy of realistic deterrence," which was "designed not to manage crises, but to prevent wars and ... to operate across the full spectrum of possible conflict ... and capabilities."[292]

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[289] Early in the Nixon Administration DOD began an extensive review of U.S. defense programs and policies in and effort to curtail or eliminate costly and/or unnecessary expenditures. An interagency task force was formed to look at the cost, feasibility and global impact of various force postures. See Kahan, 143.

[290] Nixon continued: "This partnership, together with strength and negotiation, will form a new foreign policy and an enduring structure of peace." Nixon first revealed his doctrine as a "Presidential backgrounder" given during an Air Force One refueling stop at Anderson AFB, Guam on 25 July 1969. See Kenneth L. Moll, "Realistic Deterrence and New Strategy," *Air University Review* 30:1 (November - December 1971) 3.

[291] Nathan and Oliver, *U.S. Foreign Policy*, 411. The President based his 1 1/2 war strategy on four assumptions: (1) Simultaneous attacks against both Europe and Asia were unlikely; (2) His long-term interest in Asia resided in the Northeast quadrant; (3) The Asian allies could and were willing to increase their indigenous conventional forces; (4) U.S. Air Force and Navy forces would remain in the Western Pacific region. See Kahan, 147.

[292] Realistic Deterrence was announced after "nearly two years of foreign policy and strategic studies by the Nixon Administration. The Secretary's 191-page 'Defense Report' of 15 March 1971 provided many additional guidelines and explanatory details." See Moll, "Realistic Deterrence and New Strategy," 2. Because of the "domestic pressures to reduce defense spending and overseas commitments," according to Secretary of Defense Melvin Laird, "in deterring nuclear warfare, primary reliance will continue to be placed on American forces, but at the local warfare level the primary defense burden will have to fall on the country threatened." "(1) The United States will keep all of its treaty commitments. (2) We shall provide a shield if a nuclear power threatens the freedom of a nation allied with us or of a nation whose survival we consider vital to our security. (3) In cases involving other types of aggression we shall furnish military and economic assistance when requested and as appropriate. But we shall look to the nation directly threatened to assume the primary responsibility of providing the manpower for its defense." See Melvin R. Laird, *Statement of the Secretary of Defense before the House Armed Services Committee on the FY 73 Defense Budget and FY 73-77 Defense Program*, 17 Feb 72, cited in Endicott and Stafford, 78.

The Nixon Administration used the guiding principles of realistic deterrence, which placed utmost emphasis on nuclear modernization programs, in shaping the U.S. military's force structure of the 70's.[293]

The 1971 edition of AFM 1-1 again listed airlift as one of the basic operational tasks of aerospace forces.[294] Under the category describing tasks of aerospace forces, it states that:

> the *global mobility*, responsiveness and versatility of strategic and tactical airlift forces permits rapid deployment of military forces to crises areas worldwide, and strategic and tactical airlift support of those forces once deployed.[295]

In addition, the non-combat effects of aerospace forces were acknowledged for the first time.[296]

Reflecting the combat experience gained in Vietnam, the individual strategic and tactical mission descriptions acknowledged that the two functions overlapped. This change in perception helped pave the way for the consolidation of strategic and tactical airlift forces under a single Air Force major command, MAC.[297] Chapter 3, Aerospace

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[293] "(1) Preservation by the United States of an adequate strategic nuclear capability as the cornerstone of the Free World's nuclear deterrent. (2) Development and/or continued maintenance of Free World forces that are effective and that minimize the likelihood of requiring the employment of strategic nuclear forces should deterrence fail. (3) An international security assistance program that will enhance self-defense capabilities throughout the Free World, and, when coupled with diplomatic and other actions, will encourage regional cooperation and/or security agreements among our friends and allies" See Laird, 78.

[294] The list included counterair (offensive and defensive), close air support, air interdiction, air reconnaissance, *airlift* and strategic attack. See U.S., Department of the Air Force, *United States Air Force Basic Doctrine*, Air Force Manual 1-1 (1971) 2-1.

[295] AFM 1-1 (1971) 2-3.

[296] "Aerospace forces may be employed to influence the economic, psychological, political and social fabric of other nations and thus contribute to the attainment of national objectives. These objectives are well served by rendering assistance in the form of humanitarian missions, disaster assistance, search and rescue operations. ... In times of crisis when armed conflict is threatened, national will and intentions may be communicated through increased alert, show of force, reserve mobilization options, force deployment and reconnaissance flights." See AFM 1-1 (1971) 1-4.

[297] Strategic airlift was defined as follows: "Strategic airlift is the continuous or sustained air

Forces in Conventional Air Operations, states that the airlift mission is "characterized by requirements for rapid movement of large numbers of personnel and supplies from the CONUS to oversea areas; and between and within theaters of operation."[298]

Project Corona Harvest was initiated half way through the Vietnam War as a systematic effort on the part of the Air Force to collect and diagnose data collected from the Vietnam War for the purpose of developing future Air Force doctrine.[299] Doctrinal statements of the final Corona Harvest report, published in January of 1973, verified that the Air Force appreciated the important role tactical airlift had played in Vietnam and could play in future conflicts.[300]

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movements of units, personnel, and material in support of all DOD agencies; between area commands; between the CONUS and overseas areas; within an area command when directed. Strategic airlift resources possess a capability to airland or airdrop troops, supplies and equipment for augmentation of tactical airlift forces when required." Tactical airlift was defined as follows: "Tactical airlift is the immediate and responsive air movement and delivery of combat troops and supplies directly into objective areas through airlanding, extraction, airdrop, or other delivery techniques, and the air logistic support of all theater forces, including those engaged in combat operations." See AFM 1-1 (1971) 1-4.

[298] " In the forward area and combat zone, airlift increases the battlefield mobility of military forces by providing the means to rapidly mass friendly forces and to provide the means for sustained, selective, or emergency air delivery of personnel, supplies and equipment as far forward as necessary." AFM 1-1 (1971) 3-2.

[299] The lessons learned in Vietnam had a profound impact on tactical airlift doctrine, as opposed to strategic airlift. A Corona Harvest paper written in 1969 analyzed the role tactical airlift was playing in Vietnam. The conclusion was that it should perform the following roles: "forward, lateral and rearward movements of ground combat units, high volume air resupply of mobile ground forces, routine distribution from strategic airheads or seaports, resupply to remote sites, logistics support of tactical air units and aeromedical evacuation." See Bowers, 649 - 651.

[300] The new tactical airlift doctrine no longer emphasized parachute assault or the old mission of providing transoceanic transportation for ground and air strike forces. Instead, it emphasized the continuation of high altitude parachute drop methods and low altitude parachute extraction (LAPES). In addition, the report expressed the need to orient the reserve forces toward operational readiness. Statements of operational doctrine for employment of the C-130 and, in the future AMST, all reflected experience gained from Vietnam. All in all, "the formal expressions of doctrine ... all confirmed the Air Force remained committed to the tactical airlift concept." The Multi-Command Manual 3-4, published in 1974, defined the mission of tactical airlift as follows: "the immediate and responsible air movement and delivery of combat troops and supplies directly into objective areas through air landing, extraction, airdrop, or other delivery techniques and the air logistical support of all theater forces." See Bowers, 651 - 652.

In 1975 an updated version of AFM 1-1 was published. In strict compliance with the strategic doctrine of realistic deterrence, this Air Force doctrine stated that:

> although the rapid deployment capabilities of U.S. forces are substantial, *the U.S. goal is to diminish the need for such deployments in the future* by helping its allies build their own military capabilities against localized aggression [ital. added].[301]

This served as an official acknowledgment on the part of the Air Force that it was going to de-emphasize the strategic airlift force in the immediate future.

Conclusion

As General Estes (Commander of MATS: July 1964 - December 1965; CINCMAC: January 1966 - July 1969) alluded to, though airlift had experienced a revolution organizationally, technologically and doctrinally, nevertheless, he warned that *conceptually*, within the Air Force, it still remained of secondary importance to the more offensively-oriented missions.

This was later evidenced by General Carlton (CINCMAC: September 1972 - February 1977) who sounded the alarm during the mid-1970s that MAC could not fulfill its wartime mission of resupplying Europe. Carlton's recommendations were to stretch the C-141 fleet, reinforce the C-5's defective wings, and expand the CRAF program. As is shown in the following case, exercise Nifty Nugget and the Carter Doctrine later provided the necessary external impetus to bring CINCMAC's recommendations to fruition.

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[301] U.S., Department of the Air Force, *United States Air Force Basic Doctrine*, Air Force Manual 1-1 (1975) 3-6.

CHAPTER VI

UNITED STATES TRANSPORTATION COMMAND

Introduction

Organizationally, as of 1977, airlift had officially joined the ranks of the National Command Authority's combatant commands with its elevation to specified command status. Ironically, it was already becoming apparent at this time that MAC's fleet of airlifters was in dire need of attention in order to perform the strategic mobility mission for which it was designed.[1] Doctrinally, because realistic deterrence shifted more of the burden of conventional defense to indigenous forces, there had been less emphasis placed upon strategic airlift mobility.

As this case illustrates, events in the Middle East (i.e., Iranian Revolution, Soviet invasion of Afghanistan) and the subsequent pronouncement of the Carter Doctrine would serve as a wake up call to reinvigorate the country's strategic airlift mobility capabilities. Organizationally, the U.S. Transportation Command consolidated the military's airlift, sealift and ground transport missions under one roof in time of war. Force structure improvements came in the form of the acquisition of 50 C-5Bs and 44 KC-10s, while

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[1] CINCMAC, Gen William Moore, testified that "readiness to respond immediately and adequately to a confrontation with Warsaw Pact Forces imposes stringent ... capability improvement demands on MAC." Brig. Gen. Charles Irions of the JCS called for modification of the wing of the C-5A, stretching the fuselage of the C-141,and enhancing the CRAF fleet. See U.S., Congress, House, *The Posture of U.S. Military Airlift. Hearings Before the House Committee on Armed Services HR 2637,* 95th Cong., 1st sess., 1977, 5 - 20.

research and development was begun on the C-17. Doctrinally, airlift's status as a full-fledged combat mission was officially acknowledged.

Airlift Organization: Pre-Gulf War

Nifty Nugget, a paper exercise conducted in the fall of 1978 to test U.S. deployment capabilities,[2] exposed the fact that interservice coordination among the three transportation operating agencies (TOAs), the Military Airlift Command, the Military Sealift Command (MSC) and the Military Traffic Management Command (MTMC) was virtually nonexistent.[3] Largely because of the failure of Nifty Nugget, the JCS established the Joint Deployment Agency (JDA) in 1979 with the express purpose of "coordinating war planning between the services and maintaining a data base of all the available equipment for a joint deployment."[4]

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[2] The Nifty Nugget scenario was a surprise Warsaw Pact attack on Western Europe. The exercise went on for over a month, with daily meetings of participants. A lack of coordination and a shortage in airlift assets resulted in the JCS over-committing 300% of the airlift fleet because it had approved each CINC's transportation request. See James A. Russell, "Deployment: Will TRANSCOM Make a Difference?," *Military Logistics Forum*, June 1987, 42.

[3] Interservice coordination was paramount because the MTMC schedule for the movement of forces and supplies to aerial and sea ports had to match the MAC and MSC airlift and sealift schedules. See U.S., Department of Defense, Office of the Secretary of Defense, *An Evaluation Report of Mobilization and Deployment Capability Based on Exercises Nifty Nugget - 78 and Rex - 78*, 30 June 1980, 17.

[4] Russell, "Deployment: Will TRANSCOM Make a Difference?," 40. The JDA official mission statement was as follows: "The JDA supports the JCS and supported commanders in planning for and executing deployments. As directed by the JCS, the JDA is responsible for coordination of deployment planning and execution in accordance with these guidelines and will act as the focal point for deployment associated decision making information." See U.S., Joint Chiefs of Staff, *Memorandum for the Secretary of Defense. Terms of Reference for the Joint Deployment Agency*, 23 October 1981, A-1. USCINCRED, Army General Volney Warner, became dual-hatted as the first Director of JDA. He testified a year after JDA had been established that one airborne or air assault brigade could be airlifted to the Persian Gulf within four to five days. An airborne division would take approximately twelve to fifteen days. He estimated that land based aircraft could reach the area in a matter of hours and within three days an entire combat wing could be deployed. See U.S., Congress, House, Committee on Appropriations, *Statement of General Volney F. Warner, USA, U.S. Commander in Chief Readiness Command, before the House Appropriations Subcommittee on Defense, on the Readiness Command*, 96th Cong., 2d sess., 6 March 1980, 4.

In 1981 DOD directed the JCS to study the feasibility of creating a unified command to centralize all of DOD's transportation assets. In July of 1981, Chairman of the JCS General David Jones reported that "more integrated management is required to efficiently operate a transportation movement system capable of smoothly transitioning to war."[5] In April of 1982 the Chairman's Special Study Group on the Organization and Functions of the JCS concluded that "the Joint Deployment Agency ... do[es] not have the authority, stature, trained personnel or support needed to carry [out] [its] job effectively."[6]

The following year, the shortcomings of the JDA and its Joint Deployment System (JDS) became manifest during the Grenada rescue operation. Problems stemmed from the fact that the JDA was vested with the responsibility of coordinating, rather than commanding, transport operations. Moreover, JDS never worked as planned, primarily because it lacked the requisite authority to get vital information from each member of the joint deployment community.[7]

In 1982 General Jones and General Edward Meyer, the Chief of Staff of the Army, rekindled earlier efforts to reform the JCS and provided the impetus for a sweeping investigation of DOD organizational and procedural problems.[8] By June of 1983,

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[5] "The current system grew through a series of compromises designed to preserve the best parts of existing systems. While well intentioned, the result has been a disjointed system that cannot adequately perform the function for which it was intended." See David C. Jones, "Why the Joint Chiefs of Staff Must Change," *Directors and Boards*, 6:(Winter 1982): 9.

[6] Russell, "Deployment: Will TRANSCOM Make a Difference?," 45.

[7] JDS was intended to provide JCS planners "information on such things as unit readiness, movement priorities, lift requirements and the status of needed equipment." Without command authority, each of the individual TOAs was free to operate autonomously. Each TOA executed its individual responsibilities effectively, the problem was in coordinating their efforts into a single, unified operation. See Russell, 44 - 45.

[8] See U.S., Congress, Senate, Committee on Armed Services, *Report Together With Additional Views to Accompany S. 2295 (DOD Reorganization)*, S. Rept. 99-280, 99th Cong., 2d sess., 1986, 4.

Senators Jackson and Tower had begun what would prove to be the most extensive examination of the organizational relationships and decision making procedures within DOD and ultimately lead to the passage of the 1986 Goldwater-Nichols DOD Reorganization Act three years later.[9]

The executive branch also began its own study in the summer of 1985, when President Ronald Reagan appointed David Packard to chair the Blue Ribbon Commission on Defense Management.[10] Both the interim report, published on 28 February 1986, and the final report, endorsed by the President on 30 June 1986, recommended that:

> the Secretary of Defense should establish a single unified command to integrate global air, land, and sea transportation, and should have flexibility to structure this organization as he sees fit.[11]

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[9] In response to Jones' and Meyer's criticisms, the Investigations Subcommittee of the House Committee on Armed Services began conducting investigative hearings in April of 1982. Jackson and Tower decided that rather than focus exclusively on the JCS, this examination should include all major organizational elements of DOD. The review consisted of 12 hearings in the summer and fall of 1983 from 31 witnesses. Near its completion, a nine-member Task Force on Defense Organization was formed and co-chaired by Senators Goldwater and Nunn. They reviewed the rough drafts of the study and gave inputs for the finishing touches for its completion. After *The Need for Change* was published, during the following months ten hearings were conducted with 27 witnesses. See U.S., Congress, Senate, Committee on Armed Services, *Report Together with Additional Views to Accompany S. 2295 (DOD Reorganization)*, S. Rept. 99-280, 99th Cong., 2d sess., 1986, 4 - 5.

[10] Packard was tasked to make findings and recommendations for improving overall "defense management including the crucial areas of national security planning, organization and command." See U.S., President, *Weekly Compilation of Presidential Documents*, vol. 23, no. 16, 27 April 1987, 423.

[11] David Packard, Chairman, *Final Report of the Blue Ribbon Commission on Defense Management to the President of the United States* (Washington, D.C.: Government Printing Office, June 1986) 38. By May of 1986, National Security Decision Directive - 219 (NSDD-219) had been issued by the Deputy Secretary of Defense, William H. Taft IV, "direct[ing] the establishment of a Unified Transportation Command (UTC) to provide global air, land, and sea transportation." See U.S., Joint Chiefs of Staff, Memo for the Secretary of Defense. *Implementation Plan to Establish the U.S. Transportation Command*, 12 March 1987, p. 1. The Chairman of the JCS (CJCS) then established a UTC task force, under the direction of the Office of the JCS (OJCS) Logistics Directorate to come up with their own findings and recommendations on the subject. The task force was composed of representatives from each TOA, the JDA, USREDCOM and the various JCS Directorates. Within seven months, the task force recommended to the CJCS that the UTC could best be achieved through a single command concept. See Russell, 44.

The Goldwater-Nichols DOD Reorganization Act of 1986 was signed into law on 31 October 1986.[12] Given the concern expressed in its own staff study[13] and armed with a Presidential endorsement, Congress tasked the JCS to study the viability of a unified transportation command.[14]

The Navy and Marine Corps opposed the idea of an Air Force-run transportation command,[15] as neither maritime service wanted its transportation headquarters located at Scott AFB, Illinois, under CINCMAC's command.[16] Despite their opposition, because of new provisions contained in the 1986 DOD Reorganization Act, the JCS Chairman was able to render an independent favorable opinion to the SECDEF.[17] On 31 December 1986, the Deputy Secretary of Defense approved the command concept and established a

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[12] U.S. Senate Armed Services Committee, *(DOD Reorganization)*, S. Rept. 99-280, 6.

[13] *The Need For Change,* posed the question "should a Military Transportation Command be created as a unified command?" See U.S., Congress, Senate, *Defense Organization: The Need For Change,* S. Rept. 99-280, 99th Cong., 1st sess., 1985 320.

[14] The statement read: "Sec. 212. INITIAL REVIEW OF COMBATANT COMMANDS (a) Matters To Be Considered: The first review of the missions, responsibilities, and force structure of the unified and specified combatant commands ... shall include consideration of the following: ... (2) Creation of a unified combatant command for transportation missions which would combine the transportation missions of the Military Traffic Management Command, the Military Sealift Command, and the Military Airlift Command. (b) Deadline: The first report to the President under such section shall be made no later than one year after the date of the enactment of this Act." See U.S., Congress, House, *Goldwater-Nichols Department of Defense Reorganization Act of 1986*, 99th Cong., 2d sess., 12 September 1986, Congressional Record, Vol. 132, p. 6838.

[15] The Navy proposed that an independent command be established on an "evolutionary basis," using JDA resources to improve strategic mobility planning and integrate the deployment related ADP [automatic data processing] systems of all services. The Marine Corps recommended "commissioning an independent management consultant to conduct a comprehensive analysis before any changes were implemented." See U.S., Joint Chiefs of Staff, *Memorandum for the Secretary of Defense: Implementation Plan to Establish the U.S. Transportation Command* (12 March 1987) 1.

[16] Secretary of the Navy John Lehman testified before the Senate Armed Services Committee on 19 April 1987 that "to take MSC and put it out in Illinois under an Air Force commander has to be taking the process of reorganization for its own sake to an absurd extreme." See Russell, 44.

[17] Before the new enabling legislation, the Navy/Marine opposition to establishing a unified transportation command would have ended with a "service veto." Interview with Captain David Easton, Joint Chiefs of Staff, Logistics Directorate (J-4), Arlington, Virginia (Pentagon), 15 July 1987.

task force to develop an implementation plan. By Presidential Directive, effective 15 April 1987, the unified U.S. Transportation Command (USTRANSCOM) was established as a combatant command.[18]

According to the Implementation Plan, the mission of USTRANSCOM was to "provide global air, land and sea transportation to meet national security needs." MAC, MSC and MTMC were assigned as operational components of this new command.[19] In order to fulfill his broad encompassing mission, USCINCTRANS, who was dual-hatted as CINCMAC, was to be held responsible for a myriad of tasks. In *planning* for deployments, TRANSCOM was to coordinate the mobilization of the theater commanders to ensure their requirements did not overlap and surpass U.S. transport capabilities. While *executing* deployments, TRANSCOM would continually keep all the forces abreast as to what resources were available for use. In addition, it would keep tabs on the amount of fuel, ammunition and equipment available in the different combat zones. Once in the midst of the conflict, TRANSCOM would direct the resupply function.[20]

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[18] On 1 December 1986, Admiral Crowe submitted his recommendation to the Secretary of Defense for approval. The implementation plan was submitted by the JCS Chairman to the Secretary of Defense on 12 March 1987. See JCS, *USTRANSCOM Implementation Plan*, 2. The definition of a unified command is as follows: "A unified command is a command with a broad continuing mission under a single commander and composed of significant assigned components of two or more Services, and which is established and so designated by the President, through the Secretary of Defense with the advice and assistance of the Chairman, Joint Chiefs of Staff, ... criteria for the establishment of a unified command are as follows: (a) A broad continuing mission exists requiring execution by significant forces of two or more Services and necessitating single strategic direction. (b) Any combination exists and significant forces of two or more Services are involved: (1) A large scale operation requiring positive control of tactical execution by a large and complex force. (2) A large geographic area requiring single responsibility for effective coordination of the operations therein. (3) Necessity for common utilization of limited logistic means." See U.S., Joint Chiefs of Staff, *Unified Action Armed Forces*, JCS Pub 2 (1 December 1986), p. 3-21.

[19] The JDA transferred its assets to TRANSCOM over a two-year transition period, whereupon it was inactivated. See JCS, *USTRANSCOM Implementation Plan*, ES-1.

[20] USTRANSCOM would also be the primary player in the worldwide military command and control system (WWMCCS) and be responsible for a computerized data base system designed to track the use of all

Airlift Force Structure: Pre-Gulf War

The Iranian revolution and Soviet invasion of Afghanistan brought to light the significant shortfall in U.S. military airlift capabilities.[21] The underlying reason for the airlift shortfall was that *airlift had "long been under-emphasized in the U.S. military. The vital interest in the Persian Gulf only exacerbated the problem."*[22] Renewed recognition of its salient need,[23] brought "military airlift back into its own, with *unprecedented high level Congressional and Defense Department backing of hardware programs.*"[24] Nevertheless, "*our contingency responses [would] remain constrained by limited strategic airlift ... assets* [emphasis added]."[25]

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the U.S. military transportation assets. See Russell, 40.

[21] A Congressional study, prompted by the Middle East situation, "questioned whether enough Lockheed C-5s would be available to fulfill the intertheater role." DOD acknowledged that "even with full mobilization and the full implementation of CRAF, we judge our deployment capabilities to be inadequate." A typical Middle East deployment scenario would take "10 days plus to get the 82nd AD to the Middle East. It would be three weeks for the air assault division and more than 60 days for an infantry division, which may have to go by sea." See "Options on Iran Considered Slim," *Aviation Week*, 10 December 1979, 16 - 18.

[22] The one airlift system that had been produced in the early 1970s, the C-5A, had problems with a $2 billion cost overrun. Moreover, its wings were weak and subject to metal fatigue, which restricted the aircraft's gross weight. This being the case, production was cut from a planned 120 to just 80 aircraft. The one program that had been initiated in the 1970s, the AMST, was canceled by the Carter Administration in January of 1978. Because of this neglect during the 1970s, it now appeared the United States would be committed to spending over $15 billion in the 1980s, and still be short of the minimum deployment requirements. Even with the realization of the transportation shortfall, little assistance was provided in 1980. Just $1 billion out of a $200 billion defense budget went toward airlift and sealift improvements combined in 1980. See Stubbing, 31 - 32.

[23] CINCMAC, Gen. Robert Huyser, stated in December 1979 that he "has never seen such concerted support for a wide-ranging production and deployment program." The CSAF, Gen Lew Allen, assigned the Chief of Staff of MAC, Maj Gen Emil Block, to "head a task force on early development of the CX concept ... to acquire the new aircraft as soon as possible." See "Airlift Focus," *Aviation Week*, 10 December 1979, 15. SecDef Harold Brown testified to the Senate Armed Services Committee that "the first CX could be ready in 1983 ... or perhaps by 1982." See "CX Schedule," *Aviation Week*, 31 December 1979, 11. "In response to a high level government and industry consensus," the Air Force moved the IOC forward a year to FY85. The expected buy was for 130 to 180 aircraft for an estimated total cost of $6 - 9 billion. See "USAF Accelerates CX Program Plans," Aviation *Week*, 10 March 1980, 16 - 18.

[24] "Airlift Focus," *Aviation Week*, 10 December 79, 15. In March of 1980 President Carter approved a list of items to improve U.S. mobility capabilities. He formed the Rapid Deployment Joint Task Force; stated his intention to buy a new CX strategic airlifter; committed to purchase eight fast-sealift ships (FSS); and established a six-ship flotilla of maritime pre-positioned ships (MPS), anchored at Diego Garcia, loaded with

Largely because of the Carter Doctrine, over $6 billion[26] was earmarked for "*airlift improvements to deploy forces rapidly to distant areas.*"[27] Yet, after the shock of Iran had subsided, mobility was no longer an immediate concern of the Carter Administration so that airlift policy decisions were largely shaped by "the military service interests and the defense contracting environment." Consequently, *the airlift enhancement program "suffered ... as a result of the low priority it received in the Air Force* [emphasis added]."[28]

The House Armed Services Committee initially voted 22 to 17 to disapprove the FY 81 $80 million funding request for the CX.[29] Their reason, and DOD concurred, was

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thirty days worth of supplies and equipment for a Marine Brigade. In the event of an emergency, the Marines would be airlifted in, matched up with their equipment, and sent off to fight. See Stubbing, 33.

[25] USCINCRED, Army General Volney Warner, testified in March 1980 that the U.S. was lacking a "strategically deployable, tactically employable outsize cargo aircraft such as the CX." As proof, he pointed out that the C-141 could only operate into 43% of the Middle East airfields, whereas the CX would be able to operate into 70% of the airfields with the same cargo capacity as a C-141. Besides the limited airfield use, because of the Army and Marine Corps acquisition of heavier battle equipment, he projected that the "requirement for airlift of outsize equipment will grow during the next decade." See U.S. House Appropriations Committee, *Statement of General Volney F. Warner*, 5.

[26] The Carter Doctrine, was initially backed by a five-year commitment to a 5% increase in Defense beginning in FY81. The $6.3 billion airlift enhancement program included adding 30% capacity to the C-141 fleet by stretching the fuselages by 23 feet and adding an air-refueling probe; replacing and strengthening the C-5A wing to extend its service life from just 8000 to 30,000 hours; and a "long-term plan to design the CX aircraft, which could be a version of the C-5 or commercial wide-body jets now flying." See "Airlift Focus," *Aviation Week*, 10 December 79, 15.

[27] "Carter Posture to Force Programming," Aviation *Week*, 28 January 1980, 18 - 20. FY81 funding included $80.7 million for RDT&E of CX, a "rapid response intertheater, intratheater transport. See "Major Weapon Systems Spending Detailed," *Aviation Week*, 4 February 1980, 18.

[28] Stubbing, *The Defense Game*, 34.

[29] "Funds For CX Transport Eliminated by House Unit," Aviation *Week*, 31 March 1980, 22 - 23. William Gregory, Editor of *Aviation Week & Space Technology*, wrote an editorial the following week noting "the White House was not doing much to follow through on the President's initiative." Although President Carter had cited the CX as one of the "prime defense initiatives ... in his FY81 budget," given that "there were few, if any, telephone calls to the Hill ... left an aura that the President had floated his CX balloon and then let it drift." The reason for the negative vote, according to Rep William Dickinson of the R&D Subcommittee, was that "not a good enough case was made, ... arguments for the CX are the same ones used to sell the C-5." The bottom line was "do we need to build a new airplane to operate on X number of small fields, or can we use what we've got?" See "Rebuff to CX," *Aviation Week*, 7 April 1980, 9.

that *the "Air Force had done less than an adequate job at justifying CX."*[30] In the FY 81 Authorizations Conference Committee, the House did finally agree to fund CX research, but only authorized $20 million because "*the Air Force had contradicted itself by asserting an airlift deficiency while admitting that it had underfunded C-5A spare parts by $511 million* [emphasis added]."[31]

In January of 1981 the Air Force received proposals to build the CX from Lockheed, Boeing and McDonnell Douglas, and in August chose the Douglas C-17 design,[32] announcing its decision the following month.[33] However, in January 1982 Secretary of Defense Casper Weinberger overturned the Air Force plan, announcing his

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[30] A McDonnell Douglas representative, whose company had drawn up a prototype, was quoted as saying "basically, DOD has been sitting on its hands as far as CX is concerned." An Air Force Congressional Liaison Officer was quoted as saying "to tell the truth, we've gone over there [Congress] a few times and seen a couple of members, but that's about it. We really haven't been overselling, as we sometimes do." See Stubbing, 34.

[31] This Congressional setback led the Air Force to slip its proposed initial operating capability (IOC) for the CX by two years, to FY87. As of 1980, the Air Force hoped to purchase 130-180 CXs at a total cost of approximately $10 billion, including $1.2 billion for R&D. See "CX Operational Date Postponed 2 Years," *Aviation Week*, 20 October 1980, 30 - 31.

[32] Lockheed submitted a bid to construct an upgraded version of the C-5, but the Air Force dropped it from the competition because their performance specifications had stipulated that the aircraft had to have a STOL capability. The Boeing design was too controversial because its jet engines were located above, rather than below, the wings like a conventional aircraft design. See Stubbing, 34.

[33] Rep Dickinson of the HASC, blamed DOD's "dilatory response to Congressional directives," and complained that "a certification that CX is in the national security interest has not been sent to Congress and neither has the strategic mobility study ... which was due on 1 February." DOD submitted the Congressionally Mandated Mobility Study (CMMS) in 1981, which objectively documented U.S. strategic airlift requirements and capabilities. The U.S. needed a minimum capability of flying 66 million ton-miles per day (MTM/D). This figure would allow MAC to uphold its commitments to move 60 tactical fighter squadrons, one Marine Amphibious Brigade, and six Army divisions all to Europe within a ten-day period. Even with the 66 MTM/D capability, MAC would be unable to deploy those commitments without massive pre-positioning of equipment as well. See "Airlift Far and Near," Air *Force*, October 1984, 44. On 8 January 1982 Secretary of the Air Force Vernon Orr briefed Deputy Secretary of Defense Frank Carlucci on the Air Force's C-17 procurement plan. See Stubbing, 34. According to Air Force estimates in FY80 dollars, development costs would be $2 billion and total procurement costs $10 - $12 billion for a planned force of 150 - 200 aircraft See "CX Design Resembles that of AMST," *Aviation Week*, 7 September 1981, 26 - 27. With a projected IOC of 1988, the DOD had $7.5 billion programmed into the five-year FY82-86 plan for the CX . See "Budget Cutters Are Only Ones Likely to Win Battle Over C-5B/747F/C-17 Airlift Alternatives," *Armed Forces Journal*, Jul 82, 38 - 42.

decision to purchase 50 Lockheed C-5Bs.[34] Military leaders, including *the Chief of Staff of the Air Force, were not consulted when the C-5 decision was made.*[35] Senator Sam Nunn speculated the reason may have been that "*the Air Force failed to justify and support fully the need for the C-17* [emphasis added]." [36]

The Air Force immediately took measures to ensure that the C-17 would not be canceled, but delayed.[37] As a guide for future procurement, MAC submitted its "Airlift Master Plan" to Congress, emphasizing that procurement of both the C-5B and C-17 would be necessary to meet a 66 MTM/D goal it had mandated.[38] Due in large part to

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[34] U.S., General Accounting Office, *Airlift Report*, 1982, p. 271 Within a week of the September C-17 announcement, Lockheed had submitted a rebuttal directly to Weinberger. Company officials promised the Secretary that Lockheed could deliver fifty new improved C-5Bs at a fixed cost of $8.2 billion as compared to $12 billion for 200 C-17s (not including inflation and cost overruns), and they promised delivery well before the C-17 would be ready. The Secretary went along with the Lockheed proposal and announced on 25 January 1982 that DOD would purchase fifty new C-5Bs instead of the C-17. Apparently, Lockheed had pleaded for financial relief because of a $2 billion loss on the L-1011 Tristar jumbo passenger jet. To appease McDonnell Douglas, the SecDef had also agreed to purchase 44 KC-10 tankers. See Stubbing, 36.

[35] The Joint Chiefs were surprised, especially given that Weinberger had assured them that they could "manage their own programs and budget for themselves." The Chiefs of Staff of the Army and Air Force and Commandant of Marine Corps "were jumping up and down livid over it," as they had co-signed a letter in December "favoring the C-17 as the optimum CX aircraft for all the services." See "Decision on C-5 Bypasses Military Leaders," *Aviation Week*, 25 January 1982, 18 - 20.

[36] Nunn also stated that "I hope the department will do a better job of justifying this [C-5B] budget proposal than they did on the ... CX. The C-5B would provide "a tremendous positive enhancement of our military airlift capability as well as a major economic boost for the Lockheed - Georgia Corporation, our state and region." See "USAF Seeks Continued Effort on C-17," *Aviation Week*, 1 Feb 82, 24. When DOD submitted its FY 83 budget request to Congress, there was no line item for the CX, but the C-5 had $800 million for the initial two aircraft and $60 million for spare parts. See "Fiscal 1983 Major Weapon Systems," *Aviation Week*, 22 February 1982, 54.

[37] The Air Force maintained that even though the airlift budget would double between FY 83 and FY 88, from roughly $5.5 billion to $11 billion, it would still be 12 MTMD short of the Congressionally mandated 66 MTMD requirement. The Air Staff approached DOD and Congress in February 1982 with a proposal to "continue development of the C-17 with a plan based on entering full-scale development in FY84, prototype flight tests in FY87 and a production decision point in FY88, [with] first delivery ... in FY89, just as the last of 50 additional C-5N aircraft came off the production line." See "Congressional Units Review Pentagon's selection of C-5N," *Aviation Week*, 1 February 1982, 24 - 25.

[38] According to CINCMAC, General Thomas Ryan: "it is the C-5B and then the C-17; an either/or approach is not satisfactory. We need both. The C-5B is available sooner, and the limited buy of fifty aircraft will permit an orderly transition to production of the C-17 to meet the long-term requirement." A newly developed "long-range acquisition strategy" drafted by MAC shifted the justification argument for the C-17 from satisfying the requirements of the Congressionally mandated mobility study (CMMS) to "replac[ing]

MAC's Airlift Master Plan, by the following March, the Air Force had managed to obtain a DOD commitment[39] to reallocate $27 million in the FY 83 budget for C-17 R&D.[40] On schedule, the first C-5B rolled out of the Lockheed-Georgia plant on 12 July 1985.[41] As of 1986, the Reagan Administration had made a substantial investment to uphold the Carter Doctrine with a powerful airlift fleet.[42] Nevertheless, if a major war had broken

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active-duty Lockheed C-141 transports between 1991 and 1998." The Air Force initially planned a slow-paced R&D program, so that delivery of the first C-17 would come shortly after the last C-5B. The Airlift Master Plan called for a total of 210 C-17s through the year 1998. The first C-17 aircraft was scheduled to be built in FY88, with its first test flight in FY90. The first operational unit was scheduled to be activated in FY92. See "Airlift Far and Near," 46 - 49.

[39] "Air Force Develops New Plan for Funding C-17 Transport," *Aviation Week*, 14 March 1983, 259. A 1984 DOD study entitled "Improvements in U.S. Warfighting Capability FY 1980-84," supported the Air Force's contention that it needed airlift relief beyond the C-5B. According to the study, strategic airlift capacity had expanded 28% since 1980. It was calculated that U.S. intratheater capabilities had increased approximately 67% as well. The increase was attributed to stretching the C-141 fleet 23 feet and adding an air-refueling receptacle, extending the life of the C-5A by 22,000 hours by modifying its fragile wing, adding two squadrons of KC-10s. The study projected that before the end of the decade, airlift would be further enhanced by the addition of fifty new C-5Bs, forty-four KC-10s and CRAF enhancements. However, even with all these improvements, MAC would still be 17.5 MTM/D short of the Congressionally mandated 66 MTM/D goal. See "Airlift Far and Near," 45.

[40] On 18 August 1982 the House voted 289 - 127 for fifty C-5Bs. See Stubbing, 37. The C-5B program had clear sailing through the conference committee, receiving appropriations of $847.5 million for FY83, when the administration had only requested $700 million to begin with. See "Defense Authorization Passed by Congress," *Aviation Week*, 23 August 1982. Production of the C-5B, was scheduled to dove-tail with the end of the C-141 stretch program and be incorporated with the wing modification program for the C-5A. See "Lockheed Prepares to Restart C-5 Galaxy Production," Aviation *Week*, 15 March 1982, 46 - 49. The production schedule was as follows: one C-5B in FY83; four C-5Bs in FY84; 10 C-5Bs in FY85; 16 C-5Bs in FY86; and 19 C-5Bs in FY87, with the last delivery scheduled for February, 1989. See "C-5B Production Planned for Cost, Time Efficiencies," *Aviation Week*, 28 May 1984, 139.

[41] "Lockheed Roles Out C-5B Galaxy Military Transport," *Aviation Week*, 22 July 1985, 19. The Congressional mobility study mandated a 66-million ton-mile per day (MTMD) requirement, yet the Air Force would only be capable of flying 48.5 MTMD by the end of the C-5B production cycle. Given Lockheed's success at delivering on-time and under cost, it submitted a proposal to the Air Force to keep the production line open beyond 1988 to produce an additional 24 airframes at the rate of 12 per year at the same price to meet the Congressionally mandated requirements. The Air Force remained committed to the C-17. See "Low Inflation Enables USAF to Cut C-5B Production Cost by $600 Million," *Aviation Week*, 4 August 1986, 127 - 131.

[42] The combined airlift and sealift program grew from 1.5% to 2.4% of the defense budget. The budget figures ($ billions) from 1980 until 1985 are as follows: (air & sealift)/total defense budget, 1980 - (2.1)/142.1, 1982 - (3.9)/211.3, 1983 - (4.3)/238.7, 1984 - (5.6)/259.1, 1985 - (7.3)/305.7.27. See Edward N. Luttwak, *The Pentagon and the Art of War* (New York: Simon and Schuster, 1984) 244. CINCCENT, General Crist, testified in 1986 that the C-5A wing modification extended the aircraft frame time from 8,000 to 30,000 hours, well into the 21st century. The procurement of fifty C-5Bs added 7.5 million ton-miles per day of jumbo airlift capability. Although not assigned to MAC, the fleet of 44 KC-10 added to the national

out in the Persian Gulf during the mid-1980s, the U.S. would still have faced a severe airlift shortfall.[43]

At the time of USTRANSCOM's activation in1987, MAC had an inventory of approximately 234 C-141s, 95 C-5s (growing to 120), and 500 C-130s in its active duty force structure. During periods of conflict, MAC would also have approximately 238 aircraft at its disposal from CRAF.[44] Alluding to the C-17, General Crist summed up the situation as thus:

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air refueling and cargo handling capabilities. The CRAF enhancement modified 19 wide-bodied aircraft to be convertible to handle heavy cargo if necessary, adding 1 million ton-miles per day to U.S. airlift capabilities. See U.S. Congress, Senate, *DOD Authorization for Appropriations for FY87*, 99th Cong., 2d sess., 559.

[43] Defense analyst William Kaufmann estimated that if the U.S. were confronted with a two-front war, airlift would be tasked to fly 800,000 tons of men and equipment during the first month of conflict. Yet, even after the last C-5B became operational in 1989, the U.S. was still only be capable of delivering 270,000 tons; far short of the requirement. See Stubbing, 39. Addressing the shortfall of strategic airlift, CINCCENT, General Crist testified that it was: "not new, ... [and] has faced all U.S. forces for some time but is a more glaring deficiency in the USCENTCOM area because of our limited access, the lack of forward deployed forces, long distances and the time critical requirement for credible forces once the decision is made to deploy." See *DOD Authorization for Appropriations for FY87*, 743. The USCENTCOM airlift plan, which covered 7,000 miles and 15 hours of flying time from the East Coast, called for the following breakdown of sorties: C-5/273, C-141/8205, CRAF/1003. The combined airlifted tonnage would be 205,650. This equated to 46 MTMD. See *DOD Authorization for Appropriations for FY87*, 665. USCINCRED, Army General Mahaffey, testified "as provided for in the U.S. Air Force Airlift Master Plan, ... the importance of maintaining the C-17 acquisition program, even in an increasingly austere fiscal environment, cannot be overemphasized from my perspective." Mahaffey, testified in 1986 that "despite improvements, significant shortfalls remain in our strategic deployment posture and will persist into the next century." *DOD Authorization for Appropriations for FY87*, 559.

[44] Russell, "Deployment: Will TRANSCOM Make a Difference?," 40. The function of CRAF is as follows: "(a) DOD provides for utilization of aircraft committed to CRAF by contractual arrangement with U.S. certified civil air carriers that own or otherwise control such aircraft. (b) DOD uses the contractually committed capability of the air carriers to augment the organic airlift capability of MAC in a declared defense-related national emergency or in defense-related situations short of a declared national emergency and to satisfy DOD airlift requirements based on plans approved by OJCS. See The Joint Chiefs of Staff, *Mobility System Policies, Procedures and Considerations*, JCS Pub 15 (15 September 1983), pp. III-1. Military Sealift Command (MSC), the naval component of USTRANSCOM, has 51 ships set aside in case a joint deployment becomes necessary. These 51 ships consist of 9 empty cargo ships, 22 oil tankers, 8 "fast" sealift ships and 12 pre-positioned maritime ships located in various strategic locations worldwide. Much like MAC's CRAF, MSC has a Ready Reserve Fleet of 116 ships available on short notice during periods of crisis. Military Traffic Management Command, (MTMC), the Army's component of USTRANSCOM, plans and executes the U.S. transportation routes, whether by truck or rail, to the nearest ports to load their equipment and supplies aboard the MSC ships. MTMC personnel are in charge of all loading and unloading operations at home and abroad. The MTMC assets are a fleet of rail cars which were specifically designed to carry

> with ... enhancements, we get about 50 million ton-miles per day. What gets me from 50 to the 66 million ton-miles goal is going to be a new transport of some type, ... in my mind, I need an aircraft which operates like a C-130 and has the capacity of a C-141. If I can get something like that, I've got it made.[45]

Airlift Doctrine: Pre-Gulf War

In the summer of 1977, the Carter Administration released Presidential Decision 18 (PD-18), which formed the basis of its strategic doctrine.[46] In a separate announcement made shortly after PD-18, President Carter canceled production of the B-1 bomber. However, to demonstrate his continued commitment to the manned bomber mission, the President announced that emerging "stealth" technology was being developed for future application on a bomber more advanced than the B-1.[47] Of particular concern to the Carter Administration was the imbalance in conventional capabilities which had transpired in the European theater since the Vietnam War. The Warsaw Pact's dramatic buildup had reduced NATO's warning time in the event of an invasion. A NATO Long-Term Defense Program was established to rectify the problem. For its part, the

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tanks and other heavy equipment. The other two TOAs, MSC and MTMC, continued to be organized, trained and equipped by their parent services and during normal peacetime operations they continued to be directed by their individual services. However, during joint deployment operations, either simulated are actual, they would come under USCINCTRANS' command. See Russell, 40.

[45] The FY87 budget request included funding to continue C-17 R&D with a target IOC in FY88. Crist emphasized that the C-17 would add flexibility to the C-141 and C-5 fleets: "though smaller than the C-5, the C-17 will be able to carry the full range of military equipment, including all armored vehicles and most other outsized cargo. Unlike other intertheater transports, the air-refuelable C-17 has outstanding ground maneuverability and takeoff and landing profiles designed to allow routine operations at small, austere airfields [i.e. the Middle East]. See *DOD Authorization for Appropriations for FY87*, 743.

[46] As before, the triad's role of strategic nuclear deterrence was given overriding priority. In addition, this new strategic doctrine endorsed the 1 1/2 war strategy, which would enable the United States to fight a major war in Europe and a minor conflict elsewhere. See Laurence Martin, *Strategic Thought in the Nuclear Age* (Baltimore: Johns Hopkins University Press, 1979), cited in John F. Reichart and Steven R. Sturm, eds., *American Defense Policy*, 5th Ed. (Baltimore: Johns Hopkins University Press, 1982) 137.

[47] Carter's justification for canceling the B-1 was that it was too expensive and that cruise missiles could perform the same mission at less cost. Furthermore, it appeared as though ongoing advances in Soviet radar technology would soon prevent the B-1 from being able to penetrate its defenses. See Martin, 139.

United States agreed to take steps to reduce its response time, which required an improvement in airlift.[48]

After ousting the Shah, Iranian revolutionaries took 44 American Embassy employees hostage in the fall of 1979. In December of the same year, the Soviets invaded Afghanistan. In response to these events, President Carter announced "let our position be absolutely clear:

> An attempt by any outside force to gain control of the Persian Gulf will be regarded as an assault on the vital interests of the United States of America, and such an assault will be repelled by any means necessary, including military force.[49]

Faced with regional instability in Southwest Asia without any military forces designated to defend the region, the President pressed for the United States to develop a rapid deployment force.[50]

The 1979 edition of Air Force Manual 1-1 emphasized airlift functions more so than any prior edition, thus foretelling the renewed emphasis on strategic airlift in the decade of the 1980s. It reduced the primary operational tasks of the Air Force to just three: strategic, mobility and tactical. Greater emphasis was placed on the mobility mission's ability to "deploy our forces and the forces of friendly nations," which fit in well

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[48] Collectively, the NATO members agreed to a three percent increase in defense spending to improve their readiness, air defense, electronic warfare, and reinforcement. See Martin, 138.

[49] Gaddis Smith, *Morality, Reason and Power: American Diplomacy in the Carter Years* (New York: Hill and Wang, 1986), 230.

[50] U.S., Congress, House, Appropriations Committee, Statement of General Volney F. Warner, USA, U.S. Commander in Chief Readiness Command, before the House Appropriations Subcommittee on Defense, *The Readiness Command*. 96th Cong., 2d sess., 1980, p. 1. The Rapid Deployment Joint Task Force (RDJTF) was established in March of 1980, as a subordinate component of the United States Readiness Command with a mission to deploy joint forces worldwide, particularly the Middle East. RDJTF had no standing forces assigned, but various forces were listed as possible components should a crisis erupt. See John F. Reichart and Steven R. Sturm, eds., *American Defense Policy* 5th ed. (Baltimore: Johns Hopkins University Press, 1982) 136 - 140..

with President Carter's newly established doctrine to defend the Persian Gulf. To support the new RDJTF, the Air Force was now vested with the responsibility of "conducting operations anywhere in the world to protect international lines of communication, and trade routes."[51] No longer merely a support service, airlift was officially recognized as a combat command. In fact, to emphasize this, a quote from General Hap Arnold was inserted in the airlift section which says "we have learned and must not forget that, from now on, air transport is an essential of airpower, in fact, of all national power."[52]

In 1981 President Reagan came into office with a campaign promise to bolster U.S. defense spending in the face of an unprecedented Soviet arms buildup.[53] His trillion-dollar defense program included an array of strategic systems as well as airlift enhancements to uphold the Carter Doctrine's commitment to defend the Persian Gulf.[54]

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[51] Once forces deployed, the Air Force was also responsible for "resupplying deployed forces in a timely manner." In its peacetime role or during times of increased international tension, the Air Force was tasked with the role of conveying our national resolve, by "showing the flag," a traditional airlift mission. See U.S., Department of the Air Force, *Functions and Basic Doctrine of the United States Air Force*, Air Force Manual 1-1 (1979) 5.

[52] The airlift mission statement was as follows: "Through our strategic and tactical military airlift, we can deploy our forces to any part of the world and support them there. Airlift embodies a key facet of a fundamental Air Force capability; rapid, long-range mobility. Airlift can be used to support joint and combined operations, as well as military assistance and civilian relief programs. Our ability to resupply allies in a timely manner builds confidence and stability. We must be able to insert our forces directly into a combat area and then resupply them. This capability can also be used for evacuation. The airlift force, which is made up of both military and civil contract aircraft, performs four primary tasks: (1) Employment operations. (2) Strategic and tactical deployment of combat forces and equipment. (3) Logistics support. (4) Aeromedical evacuation. See AFM 1-1 (1979) 2-11.

[53] Reagan's premise was that the only way to get the Soviets to agree to arms reductions was to bargain with them from a position of strength. See John A. Vasquez, *Evaluating U.S. Foreign Policy* (New York: Praeger Publishers, 1984) 19. The Reagan defense budget called for an 8.1% annual increase from 1981 until 1987, for a total net increase of 59%. This equated to a rise from 5.6% of the GNP in 1981 to 7.4% of the GNP in 1987. See Kenneth A. Oye and Robert J. Lieber, *Eagle Defiant: United States Foreign Policy in the 1980s* (Boston: Little, Brown and Company, 1983) 67.

[54] Strategic systems included the Trident submarine program, the cruise missile, the Pershing II IRBM, the MX ICBM, the B-1 and stealth bombers and the strategic defense initiative. See Vasquez, 19. Airlift enhancements included the procurement of 50 C-5Bs and 44 KC-10s as well as continued C-17 R&D.

The closest articulation of the Reagan defense policy came in a speech delivered by Secretary of Defense Caspar Weinberger to the National Defense University in July of 1981.[55] Three years later, he devised six tests by which to judge whether to commit U.S. force abroad, referred to as the Weinberger Doctrine.[56]

In January 1983 the Reagan Administration established the unified Central Command in place of the RDJTF with specific geographic responsibility of defending U.S. interests in the Persian Gulf region.[57] General H. Norman Schwarzkopf shares that CENTCOM's original mission had been to "prevent the Soviet Army from swooping down out of the Caucasus and seizing the oil fields in Iran."[58]

The 1984 version of AFM 1-1 *Basic Aerospace Doctrine* includes airlift as a distinct Air Force mission. But this issue goes further than the previous editions by

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[55] Taking Soviet capabilities into account, the Secretary defined U.S. national security objectives for the decade of the 1980s as follows: "(1)Prevent coercion of the United States, its allies and friends. (2) Protect United States interests and citizens abroad. (3) Maintain access to critical resources around the globe, including petroleum. (4) Oppose Soviet global expansion and political control, military presence, especially those which threaten the American geostrategic position. (5) Encourage long-term political and military changes within the Soviet empire to facilitate building a more peaceful and secure world order." See Frank R. Barnett; Hugh B. Tovar; and Richard H. Shultz, *Special Operations in U.S. Strategy* (Washington, D. C.: National Defense University Press, 1984), 4.

[56] The six tests of the Weinberger Doctrine included: (1) Is a vital national interest at stake?; (2) Will we commit sufficient resources to win?; (3) Will we sustain the commitment?; (4) Are the objectives clearly defined?; (5) Is there a reasonable expectation that the public and Congress will support the operation?; (6) Have we exhausted our other options?" Correll poses that this test "struck a harmonious chord with a generation that had learned hard lessons in half-hearted adventures from the Bay of Pigs to Vietnam to the Desert One fiasco in Iran." See "The Lake Doctrine," *Air Force*, May 1996, 3.

[57] "Between 1980 and 1983, Congress approved $435 million for the Central Command to replace a former British installation at Diego Garcia in the Indian Ocean. Between this base and the Persian Gulf waters, naval and merchant supply ships carried military materiel for the Central Command which was based in Florida. By 1990, these pre-positioned ships could provide arms for over 300,000 Army troops, a Marine brigade, and high-tech equipment for the Air Force." See Lester H. Brune, *America and the Iraqi Crisis, 1990 - 1992* (Claremont, Regina Books, 1993) 54.

[58] "Should such an invasion seem imminent, our two sister divisions, the 82nd Airborne and 101st Air Assault, would rush to the Middle East aboard giant C-5 and C-141 transport planes. Then our division's troops would fly in while our tanks and heavy equipment followed aboard high-speed cargo ships." See H. Norman Schwarzkopf, *It Doesn't Take a Hero* (New York, Bantam Books, 1992) 239 - 240.

making a clear distinction between airlift's *combat*, *combat support,* and *peacetime* missions:

> The airlift mission is performed under varying conditions, ranging from peace to war. As a *combat mission*, airlift projects power through airdrop, extraction, and airlanding of ground forces and supplies into combat. ... As a *combat support mission*, airlift provides logistics support through the transportation of personnel and equipment. In *peacetime*, airlift provides the opportunity to enhance national objectives by providing military assistance and civilian relief programs [emphasis added].[59]

The Gulf Airlift

Introduction

James Kitfield observes that "because TRANSCOM is the command epicenter of all of DOD's deployment agencies, the story of the early part weeks of Desert Storm is in large part a story about TRANSCOM. And at least in the first stages of the operation, ... the story of TRANSCOM was largely about airlift. Quite simply, *the United States does not have enough of it.*"[60] Similarly, Douglas Menarchik's analysis shows that "America was short of strategic transportation to rapidly move the military forces to the Persian Gulf."[61] Even CINCMAC, General H.T. Johnson points out that the Gulf War showed that the strategic airlift mobility mission has been neglected:

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[59] The airlift mission is described as follows: Airlift objectives are to deploy, employ, and sustain military forces through the medium of aerospace. Airlift, therefore, accomplishes the timely movement, delivery, and recovery of personnel, equipment, and supplies, furthering military and national goals. Airlift may be performed from a strategic or tactical perspective. Strategic (intertheater) airlift transcends the boundary of any one theater and is executed under the central direction of higher authority, normally in support of a more pervasive or overall effort. In contrast, tactical (intratheater) airlift is performed within a theater of operations and supports theater objectives through the rapid and responsive movement of personnel and supplies. See U.S., Department of the Air Force, *Basic Aerospace Doctrine of the United States Air Force,* Air Force Manual 1-1 (1984) 3-5.

[60] James Kitfield, "Dash to the Desert," *Government Executive,* 22:111 (November 1990), reprinted in *Strategic Deployment and Mobility* (Maxwell AFB, AL: Air Command and Staff College, L31, 1993) 45.

[61] Douglas Menarchik, *Powerlift - Getting to Desert Storm - Strategic Transportation and Strategy in the New World Order* (Westport: Praeger, 1993) xiii.

> Airlift is what stabilizes a crisis, because if we relied on fast sealift, Saddam Hussein could have done all sorts of things, and been finished long before we got there. And *the fact is, our airlift is not adequate*. People who say it is don't realize that our forces arrived late. If we had been in a shooting war, we couldn't have afforded that.[62]

Menarchik contends that "American forces were at risk in August and September 1990," before the shield could be erected.[63] Throughout the course of the war, the relative neglect of the strategic airlift mobility mission was apparent in force structure and organization.

Concerning force structure, during the war in the Gulf, the C-141 proved itself to be an "aging lift aircraft," in dire need of replacement. Kitfield points out that "with pilots 'flying the pants' off of every strategic airlifter in Desert Shield rotations, MAC officials fear[ed] that stress cracks already plaguing some C-141s [would] be aggravated."[64] Yet, going from 234 C-141s to [120] C-17s will actually precipitate a "net loss of airlift capability." Bottom line:

> The American airlift system [is] shrinking in all quarters: the numbers and types of aircraft needed for strategic lift are decreasing. The commercial air fleet will have fewer carriers and its makeup is changing. Some commercial carriers are swapping out their larger Boeing 747 aircraft for smaller, more commercially economical aircraft. *The strategic transportation picture is better now than it will be.*[65]

Organizational shortcomings were evident as the "Military Airlift Command did not adequately control the air flow into the theater:

> At bottom, America pushed equipment, supplies and troops to the Gulf that backlogged at reception ports in Saudi Arabia. ... America needed a holistic transportation perspective, not one that was structured for [AFCENTCOM] in-theater supply and transport and one for [MAC] strategic transportation.[66]

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[62] Ibid., 48.
[63] Ibid., xiii.
[64] Kitfield, "Dash to the Desert," 45.
[65] Menarchik, *Powerlift*, 175.

In a fundamental sense, differences in organizational culture resulted in a breakdown in communication between AFCENTCOM and MAC. As a result, the "weak link[s]" in the strategic airlift mobility system were the "[in]adequacy and number of en route staging and in-theater reception bases and a poor hand-off between strategic transport and in-theater reception."[67]

Background

On 21 July 1990 Iraq began massing its forces along the Kuwaiti border. In response to this intimidating show of force, Kuwait agreed on 27 July to "cease overproduction and to accept OPEC's decision to raise the price of oil to $21 a barrel." However, Kuwait refused to write-off the war loans or to surrender its strategic islands. The following day, Iraqi tanks rolled across the Kuwaiti border and took control of the tiny country in a matter of hours.[68]

Shortly after the invasion of Kuwait, on 2 August General Hansford Johnson, the dual-hatted Commander in Chief of the unified U.S. Transportation Command (USTRANSCOM) and the Air Force's Military Airlift Command (MAC), convened a "small airlift Crisis Response Cell" (CRC) at Scott Air Force Base, Illinois.[69] The CRC began to construct a preliminary plan in case the President gave the order to deploy.[70]

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[66] Ibid.

[67] For instance, there was intraservice rivalry that persisted between the airlift and fighter communities which led to competition for limited ramp space in Dhahran, Saudi Arabia and Torrejon Air Base, Spain. See Menarchik, 175.

[68] Brune, *America and the Iraqi Crisis,* 38 - 39.

[69] James A. Winnefeld, Preston Niblack and Dana J. Johnson, *A League of Airmen: U.S. Air Power in the Gulf War* (Santa Monica: RAND Project Air Force, 1994) 29.

[70] Using data from a similar deployment plan, the CRC "began the planning to deploy a quick reaction force to the Gulf" so that by 3 August:"the crisis cell [had] developed sets of lift configurations for the deploying forces and several routing operations to the Gulf using Torrejon AB, Spain, and Ramstein and

On 4 August 1990, U.S. intelligence reported that Iraqi forces had continued moving as far as "four miles from the Saudi border, ... in the oil-rich Kuwaiti administered neutral zone."[71] Secretary Cheney, Chairman of the JCS General Colin Powell, and CINCCENT, General Norman Schwarzkopf, flew to Camp David to brief President Bush on OPlan 90-1002.[72] Cheney called upon Powell to begin the briefing. Powell endorsed the OPlan as having a "deterrence piece and a war-fighting piece:

> Within a month, we could have a large field army in Saudi Arabia. It would be hard to sustain, though, for a long period. *There is not much left for elsewhere in the world should a new crisis develop.*[73]

At the time Iraq invaded Kuwait, it was "reputed to have the fourth largest Army in the world."[74] Nevertheless, General Schwarzkopf began his detailed briefing by reassuring the President that although the Iraqi Army would be a formidable opponent, they were "not ten feet tall." Based upon the OPlan timeline, he estimated that it would

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Rhein-Main AB in Germany, as principal European staging bases. ... The cell also inventoried aircraft and crews assigned to the active, reserve and guard forces, and well as the CRAF. MAC had fewer than 900 C-141 crews and about 250 C-5 crews total, with over 500 C-141 and 160 C-5 crews qualified for aerial refueling." See Menarchik, 57.

[71] Joao Resende-Santos, "The Persian Gulf Crisis: A Chronology of Events," in Joseph S. Nye, Jr. and Roger K. Smith, eds., *After the Storm,* (New York: Madison Books, 1992) 305.

[72] U.S. Department of Defense, *Conduct of the Persian Gulf War: Final Report to Congress,* Pursuant to PL 102-25 (April 1992) xxvii.

[73] Powell briefed Bush: "The sooner we put something in place to deter, the better we are. What we can get there most quickly is air power. The Navy's in position. There's more moving." See Bob Woodward, *The Commanders* (New York: Star Books, 1991) 229. During the spring of 1990, CENTCOM drew up a "Concept Outline Plan," OPlan 90-1002, aimed at the potential Iraqi threat. The plan was initially tested in July Exercise INTERNAL LOOK 90. See DOD, *Conduct of the Persian Gulf War*, xxvii.

[74] Perry writes: Iraq "was one of the most formidable regional military powers, with over a million men in its army. Most Iraqi officers had gained recent combat experience in the Iran-Iraq War. Iraqi forces were equipped with large quantities of Soviet equipment, mostly modern, as well as some Western equipment, including Mirage aircraft and Exocet missiles. They had a dense air defense system, a large number of mobile missiles, 4000 tanks, 3000 modern long-range artillery and a demonstrated capability to deliver chemical weapons both by air and artillery." See William J. Perry, "Desert Storm and Deterrence," *Foreign Affairs* 70:4 (Fall 1991): 67.

take 17 weeks to deploy the initial deterrent force of "200,000 to 250,000 Army, Navy, Air Force and Marine" forces to the Gulf region. However, he elaborated that he would need a total of "eight to twelve months to put in place the U.S. force needed to kick Saddam out of Kuwait."[75]

The President then asked about the possibility of resorting entirely to airpower to evict the Iraqi Army from Kuwait. Schwarzkopf replied that "hundreds of planes could be made available ... within days and weeks." However, Cheney and Powell quickly interrupted to make clear that "they were not at all comfortable with airpower only." Cheney fervently believed that "ground power [was] the key back-up to airpower:

> It was necessary, he felt, to adopt a skeptical approach to *all* the components of any deployment. Defensive or offensive U.S. air superiority might do what was need right off the bat, and he hoped it would, but no one could be sure. *Of course, the Air Force would say it could take care of everything*, but Cheney knew he couldn't buy into that view, or present it to the President [emphasis added].[76]

At the end of this and another meeting of the NSC, Secretary of State Baker reflected that:

> there had been no debate on whether to make the deployment. Likewise there had been no discussion about the level of force. The deployment had been decided by George Bush; the level of force was being decided by OPlan 90-1002.[77]

When the TRANSCOM and MAC Crisis Action Teams (CAT) initially convened on 4 and 5 August respectively, although they had no standing orders to act upon, they were able to "query units about their status, estimate the available capacity under various assumptions, and develop [an] initial concept of operations."[78] However, given that

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[75] Woodward, *The Commanders*, 230 - 231.

[76] Ibid., 231.

[77] Ibid., 244.

[78] Throughout the war, CATs filled the role of "crisis managers and nerve centers: "Managing mobility resources and scheduling lift, these CATs, at the commands' headquarters at Scott AFB, IL, linked to their

neither the JCS nor CENTCOM had shared any preliminary transport requirements, the CATs "could not plan a flow."[79] Nevertheless, CINCTRANS could foresee that whatever happened, there was a strong likelihood that MAC would soon be involved with a massive airlift.[80]

On 5 August President Bush declared that the invasion of Kuwait "will not stand" and he sent Secretary Cheney to Saudi Arabia to "procure air and naval installations for American forces if the need to respond militarily arises." At the meeting, Saudi Arabian King Fahd asked Cheney for "U.S. military protection." Once the President was notified of the King's request, he ordered the implementation of Operation Desert Shield.[81]

The execute order, issued by the President on 6 August at 4:00 PM EST to the JCS, was to "to defend against an Iraqi attack on Saudi Arabia and be prepared to conduct other operations as directed."[82] The JCS "immediate order" directed CENTCOM to "execute OPlan 90-1002."[83] MAC received its initial tasking order at 8:45 PM[84] on 6 August 1990 when "a JCS verbal alert identified the deploying force to be two F-15 squadrons, AWACS, the 82nd AD Ready Brigade and command elements."[85] Thirteen

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component units and networked into a Worldwide Military Command and Control System. The CATs planned and directed the air flow." See Menarchik, 57.

[79] Winnefeld, Niblack and Johnson, *A League of Airmen*, 29.

[80] Given the likelihood of deployment, on 5 and 6 August CINCMAC "reviewed and approved the initial flow through Torrejon AB, with missions also staging through Zaragoza AB, Spain, and Rhein-Main and Ramstein Air Bases, Germany." See Menarchik, 57.

[81] Saudi Arabia placed all of its forces on "full alert" and activated its reserves. The following day, 6 August 1990, intelligence indicated that Iraq had "redeployed 70,000 troops from the Iranian border into Kuwait, ... within ten miles of the Saudi border." See Resende-Santos, 305.

[82] CENTCOM set 5:00 PM EST, 7 August as "C-day" (commencement day). See Menarchik, 58.

[83] The first unit sent would be 48 advanced F-15 jets from the 1st Tactical Fighter Wing at Langley AFB, Virginia. The Division Ready Brigade of 2,300 men from the 82nd Airborne Division - the troops in the highest state of readiness - would be next. See Woodward, 256.

[84] Colin Powell, *My American Journey* (New York: Random House, 1995) 467 - 468.

[85] Winnefeld, Niblack and Johnson, *A League of Airmen*, 29.

hours later, "the first loaded C-141 took off from Charleston AFB, South Carolina." Colin Powell recounts that:

> *The MAC fleet would zoom from 80% usage to 100%, putting aloft everything that could fly.* ... MAC would hire dozens of commercial air charters to round out the airlift. A winged armada was about to fill the skies over the Atlantic [emphasis added].[86]

Desert Shield / Storm would be the "the first major military operation in U.S. history where transportation was directed by one central headquarters."[87] Late on the 6th of August, following the receipt of the JCS order, "MAC put its primary numbered air forces - 21st at McGuire AFB, New Jersey, and 22nd at Travis AFB, California - on alert."[88] The numbered air forces received the "flow schedules" from MAC and then assigned specific mission taskings to the various wings, which allocated them among their squadrons who ultimately manned the missions. Once the missions were underway, the numbered air force command posts were in charge of command and control of the various strategic airlift missions.[89]

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[86] "Over 16,000 paratroopers of the 82nd ABD would start to board C-141s. ... Enough ammunition, spare parts, and maintenance equipment to support an entire wing of about 72 fighters would begin rolling aboard mammoth C-5 Galaxies." See Powell, 467 - 468.

[87] CINCTRANS: "USCENTCOM established the requirements and made the final decisions on priorities. USTRANSCOM then directed its components to provide the lift. [The components: MAC, MSC and MTMC,] delivered the forces provided by other supporting commands such as USFORSCOM (U.S. Forces Command) and USSOCOM (U.S. Special Operations Command), to the supported command, USCENTCOM, which employed the forces. See U.S., Senate, *DOD Authorization Hearings before the Committee on Armed Services, Statement of General H.T. Johnson*, 102d Cong., 1st sess, (April 1991) 148.

[88] Winnefeld, Niblack and Johnson, *A League of Airmen*, 29.

[89] "MAC scheduled aircraft into a flow of regularly scheduled arrivals into airfields servicing deploying units [and] passed the flow schedule to 21st AF for allocating aircraft and crews. The 21st AF CAT managed and executed the plan for the stateside and European bases, trying to keep en route bases evenly balanced with activity. See Menarchik, 57.

At the time that Iraq invaded Kuwait, CINCCENT's OPlan was only in a "concept" format, meaning that it had no accompanying plan for moving the required forces from the U.S. to the desert. Moreover, as all preliminary planning was done on a "close-hold" basis, "*no experienced transport planners were involved in this process until the deployment order was issued on 7 August 1990.*" As a consequence, initial deployment expectations were based upon "older operational plans whose assumptions were invalid," *meaning that "the initial requirements passed down by CENTCOM and JCS planners were infeasible in many cases* [emphasis added]."[90]

The initial war plan was based upon a modified version of Exercise Internal Look 90 OPlan (OPlan 90-1002), which had been practiced the previous July and "set the general logistics framework and gross requirements for Desert Shield."[91] The problem was, unlike Saddam's surprise invasion of Kuwait, the OPlan 90-1002 scenario was predicated on the assumption that there would be 30 days advance notice, which would allow for initial preparations to be made before the actual "commencement, or C-Day, of the deployment."[92] Another assumption that OPlan 90-1002 had made was that either Saudi Arabia or another Gulf state would permit the U.S. to "set up a series of bases."[93] Despite these optimistic assumptions, Secretary of Defense Richard Cheney was

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[90] Winnefeld, Niblack and Johnson, *A League of Airmen,* 28 - 29.

[91] Menarchik, *Powerlift*, 58. IAW the OPlan: "On Day 1, tactical F-15 fighters could be sent to the region; by Day 7 the most ready ground force, the Division Ready Brigade of some 2,300 troops from the 82nd Airborne, would be on the ground; on Day 17, the Marines would arrive from the U.S. and be joined up with ammunition, supplies and equipment that would be sent on the Marine Prepositioned Ships (MPS) from Diego Garcia; not until Day 27 would the first heavy tanks start arriving." See Woodward, 200 - 201.

[92] Woodward, *The Commanders*, 201.

[93] Ibid., 209.

"comfortable with OPlan 90-1002" in light of the fact that "it was the only one they had and *he did not want to reinvent the wheel in the midst of a crisis* [emphasis added]."[94]

Douglas Menarchik argues that "*the airlift to the Gulf was the first test of modern airlift to do a massive, rapid deployment at great distances*[95] [and that] *the scale of the Gulf War makes it a case study of modern airlift in an interstate crisis in a new world order.*"[96] In comparing this case to the others, "the Gulf War can be viewed as the equivalent of cramming the Korean or Vietnam conflict into seven months instead of three or eight years ... the amounts of U.S. forces deployed were roughly similar in each conflict [emphasis added]."[97]

This was made possible only due to the advances in technology, organization and doctrine which had occurred since Vietnam.[98] The logistical success of the Persian Gulf War was made possible largely due to previous actions taken in the decade of the 1980s such as building up the airlift force structure, prepositioning munitions and equipment at Diego Garcia, constructing the Saudi infrastructure and the increased emphasis placed on training and exercises.[99] For the purposes of the airlift case study, Operations Desert Shield and Desert Storm are analyzed in three chronologically distinct phases:

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[94] Ibid., 228.

[95] Menarchik, *Powerlift,* 45 - 47.

[96] Ibid., fn 30, pp. 124 - 125.

[97] Winnefeld, Niblack and Johnson, *A League of Airmen,* 223.

[98] In a broad sense, the Desert Storm experience would be a vindication of the Weinberger Doctrine, as "the Persian Gulf War of 1991 - in marked contrast to the uncertain gradualism that characterized the Vietnam War - met all of the tests. For a change, military force was employed in the right way. It worked spectacularly. See "The Lake Doctrine," *Air Force*, May 1996, 3.

[99] Winnefeld, Niblack and Johnson, *A League of Airmen,* 224.

> Phase I: DESERT SHIELD, 7 August to 9 November 1990. Deploying and sustaining forces to defend Saudi Arabia and the Gulf Cooperation Council states; Phase II: 10 November 1990 to 16 January 1991. Deploying offensive forces intended to evict Iraq from Kuwait, and sustaining deployed forces; Phase III: DESERT STORM, 17 January to 28 February 1991. Supporting and sustaining wartime operations.[100]

Phase I: Operation Desert Shield, 7 August - 6 November 1990

In order to achieve the DOD objective to "develop a defensive capability in the Gulf region to deter Saddam Hussein from further attacks,"[101] the U.S. began its deployment of ground forces.[102] Although preliminary estimates were that 19 days would be required to accomplish "pre-hostility deployments," followed by nine additional days of post-hostility deployments before an Iraqi assault could reach Al-Jubayl, as events transpired it soon became evident that "these assumptions were too optimistic."[103] The constraining factor was that "available sealift meant the buildup of heavy ground forces would take several weeks, if not months." As it was, the "*rapid buildup of initial forces during these crucial days would have been impossible without strategic airlift.*"[104]

The first weeks of the deployment and in the weeks leading up and into the offensive, "*strategic airlift provided the means of moving critical assets rapidly*, ... [and] it carried over 75% of the people deployed to and from the Gulf." Moreover, "*it*

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[100] Ibid., 27.

[101] Other objectives were: "(2) Defend Saudi Arabia effectively if deterrence failed; (3) Build a militarily effective Coalition and integrate Coalition forces into operational plans; and (4) Enforce the economic sanctions prescribed by UNSC Resolutions 661 and 665." See DOD, *Conduct of the Persian Gulf War*, 33.

[102] The "area defense" plan was predicated upon "establishing initial defenses near Al-Jubayl and Dhahran, and using air power to reduce substantially the combat power of attacking Iraqi forces. The idea was to rely on an enclave strategy to hold key ports and airfields or, in essence, trade space for time while U.S. combat forces deployed to Saudi Arabia" See U.S. DOD, *Conduct of the Persian Gulf War*, 34.

[103] During the first two days of the deployment, MAC aircraft flew 91 missions into theater and averaged more than 70 missions per day for the rest of August. See DOD, *Conduct of Gulf War*, 34 - 36.

[104] U.S. Dept. of Defense, *Conduct of the Persian Gulf War*, 34 - 36.

transported a higher-than-expected proportion of cargo[105] by "surging" to the occasion.[106] However, the MAC force could not be totally committed to the Desert Shield buildup, as 48 C-141s were out-of-commission due to maintenance, "including 18 C-141s for *wing cracks.*"[107] This surge *"strapped MAC's organic aircraft and crews."*[108]

Aggravating matters further was the fact that "*moving the American forces to the Gulf took longer and proved to be harder than anyone had anticipated,* [as] ... *logistics had always been CENTCOM's Achilles' heel.*"[109] Three things in particular disrupted CENTCOM's deployment:

> First, the surprise invasion cut short America's preparation time; Second, the surprise invasion caught America in a plans change; Third, the tactical situation facing General Schwarzkopf dramatically changed the flow schedule envisaged in the original war plan [emphases added].[110]

First, concerning the lack of preparation time, because OPlan 90-1002 was predicated on having 30 days advance warning, it was estimated that *beginning with C-day, TRANSCOM was already "17 days behind the planned scheduled deployment flow."*[111]

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[105] Airlift accounted for 15% versus 5 % of sustainment cargo and 30% versus 10% of dry cargo. See Winnefeld, Niblack and Johnson, 27.

[106] The term "surge" is military parlance used to describe the process of "using all resources at full capacity to get the job done on time." See Menarchik, 46.

[107] 23 other C-141s were dedicated to various "high priority missions such as presidential support and airlifting nuclear weapons." See Menarchik, 46. "250 for the C-5 (45% reserve) and 890 for the C-141 (48% reserve)." As far as crew availability, at the onset of the surge, MAC had a total of 1,140 reserve and active-duty crews. See Menarchik, 77.

[108] On 6 August 1990, MAC Headquarters briefed that it had on hand 234 C-141s, 110 C-5s, 410 C-130s and 57 KC-10s, plus the aircraft available in the CRAF, if activated. This nonmobilized force could haul up to 18-million ton-miles of cargo per day. See Menarchik, 64.

[109] Michael R. Gordon and Bernard E. Trainor, *The General's War: The Inside Story of the Conflict in the Gulf* (Boston: Little, Brown and Company, 1995) 60.

[110] Menarchik, *Powerlift,* 58 - 62.

[111] Ibid., 58 -59.

The second problem facing CENTCOM was the fact that the OPlan 90-1002 logistics plan was halfway through an ongoing change at the time of the invasion, so it "lacked detailed transportation data." As a result, *CENTCOM was forced to "wr[i]te the logistics plan,"* which basically consisted of "a framework and gross lift information, ... *as the crisis and deployment evolved.*"[112] General Schwarzkopf recounts that:

> In theory, all I had to do was push a button. Hours after Desert Shield began, our divisions should have been inundated with thousands of pages of [schedule] printouts. ... However, *there was a big problem.* Since we'd been in the middle of revising Central Command's battle plan when the crisis broke, we hadn't yet entered the data into the computer banks - a painstaking process that under normal circumstances takes a full year. *Our only alternative was to schedule the airlift* and sealift *by hand* [emphases added].[113]

Meanwhile, the hundreds of Army, Navy, Marine and Air Force units which were to be deployed submitted their airlift requirements estimates to TRANSCOM based upon the numbers they had in their OPlans, which were "inaccurate" and proved to be "unreliable indicators of actual airlift requirements." As a result of this confusion:

> Airlift sometimes arrived at locations where neither troops nor equipment awaited lift. 'Planes went where nobody was!' The wrong type of aircraft arrived for a load not appropriate for the lift - a larger C-5 for a smaller C-141 load for example. The notational data in the inchoate war plan created more problems by confusing bogus 'planned' requirements with actual requirements.[114]

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[112] CENTCOM's force package included 224 ship loads for combat units' equipment and 395 C-141 loads for three fighter wings, all with a closure in about 110 days. The first days of 'front loaded' deployment, however, required 16,000 to 19,000 short tons of airlift per day. [The problem was] logisticians knew MAC's organic capacity to be 2,750 short tons of cargo and 2,500 passengers per day. See Menarchik, 58 - 60.

[113] Schwarzkopf, *It Doesn't Take a Hero*, 310 - 311.

[114] Menarchik, *Powerlift*, 59 - 60.

To make matters worse, *the "ad hoc TPFDL"* (time-phased force deployment list) was "totally inadequate for flow planning and simply *was not transportation feasible*." This was primarily because:

> *the plan ... called for too much lift, too soon* and 'assumed' a full Ready Reserve Force, Strategic Reserve Fleet, Civil Reserve Air Fleet Stage II activation and 'demanded lift that just wasn't there. ... *CENTCOM ... did not have the lift to support properly a fight against the Soviets in Iran, nor to stop the Iranians from taking the Gulf* [emphasis added].[115]

Because of MAC's inability to provide for the entire deployment community at once, "*interservice tensions and finger pointing resulted.*"[116] Schwarzkopf recounts that:

> Officers at TRANSCOM told us: 'We keep sending airplanes down to Ft. Bragg and they keep loading on the wrong stuff!' The Airborne Commander at Ft. Bragg insisted, 'I'm sitting here looking at an empty airfield. I've got troops lined up waiting and there isn't a single airplane anywhere!'[117]

Moreover, Schwarzkopf reflects that because all "*the services were competing for space in the same airplanes* ... an enormous amount of my time was devoted to untangling snafus."[118] As would be expected, "*the transporters ... received the blame* for not meeting time schedules."[119] Because the amount of airlift available was the limiting factor in the initial deployment, Major General Walter Kross of the Joint Staff claims that:

> Strategic lift directly affected American military deterrent strategy in the surge by 'determining its character, pace and size of power projection. No matter how much force General Schwarzkopf wanted or how much the war plan called for, *on-hand strategic lift, or lack of it, shaped the flow.* ... The logic was clear - *available lift determined available warfighting force that, in turn, determined strategy feasibility* [emphasis added].[120]

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[115] Ibid., 61.
[116] Ibid.
[117] Schwarzkopf, *It Doesn't Take a Hero*, 311.
[118] Ibid.
[119] Menarchik, *Powerlift*, 61.
[120] Ibid., 61 - 62.

The third deployment problem CENTCOM faced was that the tactical situation was not the same as the original OPlan. Rather than moving the logistical apparatus first, as traditional military doctrine espouses, Schwarzkopf had the "core deterrent and defense forces" moved in order to dissuade Saddam from continuing his assault southward into Saudi Arabia.[121] Duncan Anderson points out that the Gulf deployment followed "the reverse order of the move to Vietnam in March 1965, when logistics troops landed first and established bases for the combat forces.[122]

Deterrence was to be provided by the "presence" of very visible U.S. combat forces with "long-range attack capabilit[ies]."[123] Schwarzkopf's plan was to make it seem credible that Saudi Arabia was capable of being defended, even before a heavy division was in-place. Though this force looked impressive on camera, it was actually "more a symbol than a real capability," as General Schwarzkopf explains:

> The 82nd was nothing more than a trip-wire force. It was a show of resolve, a way to say to the Iraqis if you run down the highway, by the way, you are at war with the United States. I never believed for one minute that it could do anything against a sustained offensive armored onslaught.[124]

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[121] Ibid., 46.

[122] "Now, fighter aircraft would fly in before their ground crews and maintenance equipment had arrived, and combat troops would fly in not only before requirements like food, water and accommodations had been arranged, but while the bulk of their ammunition and heavy equipment was still at sea." See Duncan Anderson, "The Buildup," in John Pimlott and Stephen Badsey, eds., *The Gulf War Assessed* (London: Arms and Armour Press, 1992) 83.

[123] At the beginning of the deployment, this force equated to "the lead battalions of the 82nd AD and air-to-air F-16 and F-15C fighters and some air-to-surface F-15E fighters." See Menarchik, 53.

[124] "To try to fool the Iraqis, Schwarzkopf ordered that the deployment of combat forces be given precedence over the dispatch of ammunition, spare parts, and logistics." See Gordon and Trainor, 59 - 60.

From the perspective of General Pagonis, the commanding general of CENTCOM logistics, "the practical result ... was that four people (my three officers and I) constituted the entire logistical operation in-theater."[125]

Another problem was that the "menu of requirements" continually changed so that the early deployment was somewhat chaotic.[126] The changes in movement priority slowed the deployment of Army and Marine forces. For example, two days after the initial deployment order was given, "fac[ing] the possibility of an immediate Iraqi attack," General Schwarzkopf ordered the deployment of "anti-armor" units.[127] Schwarzkopf's decision to give top priority to deploying anti-armor units meant that MAC gave priority to Air Force fighter units,[128] which "slowed the [Army and Marine] deployment."[129]

When Operation Desert Shield began, "the airlift system tend[ed] to generate aircraft faster than deploying units [could] generate cargo."[130] It got to the point where "chaos spread at U.S. air bases."[131] As a case in point, the Commander of the 1st TFW

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[125] William G. Pagonis, *Moving Mountains: Lessons in Leadership and Logistics from the Gulf War* (Boston: Harvard Business School Press, 1992) 89.

[126] Menarchik, *Powerlift*, 62 - 63.

[127] Anti-armor units included: Air Force A-10 squadrons to neutralize tanks and armored personnel carriers, F-4Gs to suppress anti-aircraft missile fire control systems and F-117s and F-111s to hit point targets deep inside Iraq, and an Army Apache helicopter brigade. See Menarchik, 53. Swarzkopf reflects that "the Air Force ... flowed to Saudi Arabia wonderfully - a little *too* wonderfully, it turned out, because at the end of the first week we had not five squadrons I'd expected, but ten." Complicating matters was the fact that each of these squadrons required "more than 1500 engineers, technicians, and armorers ... [which] tied up dozens of flights we had been allocated for other units." See Schwarzkopf, 312.

[128] "MAC sent 30 C-141s to lift two A-10 squadrons from Myrtle Beach, 12 C-141s to George AFB for an F-4G squadron and 32 C-141s and 5 C-5s to Ft. Campbell to pick up an Army helicopter aviation task force group." See Menarchik, 63.

[129] The 82nd AD and 7th MEB deployments were delayed. See Menarchik, 63.

[130] Winnefeld, Niblack and Johnson, *A League of Airmen*, 29.

[131] "Every few hours giant C-5 transports of MAC arrived to pick up avionics, engines and munitions. Ground crews were simply unable to keep up the pace, and flying schedules were severely disrupted." See Anderson, 85.

initially requested that MAC send one C-141 to Langley every 30 minutes to be loaded for deployment to Saudi Arabia. Despite his best intentions, "*unit onloading problems quickly slowed the process, and an airlift backlog developed.*" In an effort to help alleviate the cargo backlog, the 1st TFW agreed to slow the pace of the C-141 arrivals to one per hour. Nevertheless, delays continued as "*airlift commanders and fighter commanders squabbled* over what to take and how to load the materials."[132] As a result, "confusion at the unit level was inherent in Desert Shield surge deployment:

> *Limits on raw surge transportation capacity* stretched the timing of the deployment, and surprise, changing plans and priorities, and the normal 'frictions of war' associated with a 7500-mile deployment *degraded TRANSCOM's initial surge operations* [emphasis added].[133]

On 8 August 1990, MAC began the deployment of the 82nd Airborne's Ready Brigade from Pope AFB, North Carolina, to Saudi Arabia.[134] As was the case with the 1st TFW, the air deployment of the 82nd AD Ready Brigade "also had problems [as] ... *three-fourths of the missions departed late.*"[135]

Other than designating that he wanted the 1st TFW F-15s and the 82nd ABN Ready Brigade in-place as soon as possible, General Schwarzkopf left it up to the U.S. Transportation Command to determine the flow priority of the other units he had designated to be moved during the initial phase of deployment. The problem was,

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[132] "The 1st TFW cargo loaders could handle a maximum of three airlifters at one time and were unable to prepare loads fast enough to use the planned airlift flowing into the base. By 10 August, ten airlifters sat waiting for a load. Cargo generation slowed the deployment of the 1st TFW, with the average delay over five hours." See Menarchik, 49.

[133] Ibid., 46.

[134] Ibid., 51.

[135] "MAC had over 20 loads scheduled for 10 August and 20 loads scheduled for 11 August. averaging four hours for the C-141s and seven hours for the C-5." As had been done at Langley, "MAC slowed the flow to the 82nd to one aircraft per hour." See Menarchik, 51.

because of a lack of specific movement guidance, it was left to unit commanders on the scene to designate what was to be moved when.[136] Schwarzkopf recounts that:

> TRANSCOM... would rush its giant cargo planes, *which were in short supply*, to the appropriate bases to pick up the forces. That's when human nature would take over. Some high-ranking officer on the ground would decide that, just to be on the safe side, his unit really needed to bring more people and equipment than originally planned. So *airplanes would takeoff carrying loads they weren't scheduled to carry.*[137]

This process of "plugging" operational units into MAC's strategic airlift system was responsible for delaying the deployment during the first ten days. The "vast majority" of the early delays were not caused by MAC, but by the "users."[138]

As of 17 August, *MAC was dedicating nearly "95% of its C-5s and 88% of its C-141s to support Desert Shield."* Says Menarchik, "*for the first time in history, MAC had committed the entire strategic airlift capability worldwide.*"[139] Even though it was devoting its entire organic fleet to the deployment effort, Gordon and Trainor reveal that "*there was a shortage of transport planes to move troops and equipment to the Gulf,*"[140]so that MAC was still falling short of its deployment goals. To counteract this trend, on 15 August General Johnson authorized MAC aircraft to carry the maximum allowable weight load, reserved only for wartime. Even though the higher weights were authorized, "loading inefficiencies ... offset MAC's attempt to increase load capacity." As a result,

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[136] Menarchik, *Powerlift,* 46.

[137] Schwarzkopf, *It Doesn't Take a Hero*, 311.

[138] The average onload time took more than six hours for a C-5 and four and a half hours for a C-141. These times gradually decreased over the course of the next 100-days to five and a half hours for the C-5 and three and a half for the C-141. The following statistics show: "C-5s had 246 delays, with just over 100 delays caused by users. The next highest was maintenance delays, at about 50. For the C-141, of 350 delays in the first 30 days, 147 were caused by the user, and about 60 caused by maintenance." See Menarchik, 50.

[139] Ibid., 64.

[140] Gordon and Trainor, *The General's War*, 62.

throughout the Desert Shield buildup, MAC's strategic airlift fleet averaged 15 million ton-miles per day, rather than the 18 million ton-miles per day upon which operational planning factors were based.[141]

Another limiting factor was the crew force. To get the most productivity out of the crew force, General Johnson authorized extending the normal crew duty day from 16 to 20 hours. Despite his best efforts, "*Johnson had neither enough aircraft nor crews to meet the time line and tonnage demands for the surge.*" Johnson said of the airlift that it was "*the largest sustained airlift ever over a short period of time, ...* more complex than the airlift to Southeast Asia." As a result, *"MAC's organic strategic airlift surge capacity could not support the time lines of the planned military strategy* [emphasis added]."[142]

Because MAC did not have enough airlifters to accomplish the initial force deployment, during these first weeks of the deployment, CINCMAC requested that participating Civil Reserve Air Fleet (CRAF) carriers "volunteer aircraft and crews for military missions to the Gulf,"[143] whereupon TRANSCOM drew up the contracts.[144]

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[141] For instance, even though the C-5 could transport 70 tons of cargo, its average load was still just 60.5 tons. Likewise, the C-141 was authorized to carry 22.5 tons, but only averaged 18.5 tons. See Menarchik, 64. Under normal circumstances a C-141 was allowed to operate to a maximum takeoff weight of 325,000 pounds. However, in time of war, it could operate at 344,000 pounds, which puts more stress on the engines and airframe, thus reducing its overall service longevity.

[142] The total number of strategic airlift crews was approximately 1,150. Whereas during peacetime 70% of the C-141s would fly an average of five hours, during the Desert Shield deployment approximately 90% of the crews were flying approximately 12 hours per day. An average of 89 C-5 and 195 C-141 sorties were flown each day. Volunteers from the Air National Guard and Air Force Reserve helped. On 8 August, 566 volunteers helped, increasing to 7200 by 15 August, 9700 by 22 August, easing back to 9200 by 27 August, 6900 by 31 August and then fluctuating between 5000 to 7000 between September and October 1990." See Menarchik, 64 - 65.

[143] In response to the request, MAC was able to gain the use of "6 to 10 passenger aircraft and 10 to 15 cargo lifters." A major reason for the lack of voluntary airlift was because carriers had to contend with a quadrupling of insurance premiums for flights in the Gulf theater. See Winnefeld, Niblack and Johnson, 40.

[144] Joel H. Nadel, "Logistics Lessons," in Bruce W. Watson, ed., *Military Lessons of the Gulf War* (London: Greenhill Books, 1991) 169.

On 14 August, CENTCOM managed to come up with an initial TPFDD (time-phased force deployment data) which "set its estimated deployment requirements." Based upon the CENTCOM requirements, it was apparent to CINCTRANS that the additional services provided by volunteer reserve and contract carriers alone could not generate the requisite number of aircraft or crews to accomplish the mission. The next day General Johnson asked CINCSAC, General Lee Butler, who agreed to lend five of his KC-10 tankers to the strategic airlift effort.[145]

Besides eliciting the support of SAC, on 17 August, General Johnson activated the first stage of the CRAF for the first time in its 38-year history.[146] CRAF is an incentivized "voluntary" contractual arrangement between MAC and the nation's commercial airline industry as a way for MAC to utilize "civil aircraft to supplement military airlift" in times of crisis.[147] Although as CINCTRANS, Johnson had the authority

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[145] Once it had finished air-refueling the main contingent of fighters bound for the Gulf, on 24 August SAC donated five of its tankers to MAC's airlift effort. "The five KC-10s increased MAC's airlift capability about 375 tons per day. By 10 September, up to ten KC-10s were airlifting cargo to the Gulf. SAC's KC-10s lifted 407 short tons of cargo in August (1%), 3491 tons in September (5%) and 1816 tons in October (4%)." See Menarchik, 65.

[146] Winnefeld, Niblack and Johnson, *A League of Airmen*, 30. CINCMAC activated CRAF I only "after consulting with DOD, DOT, CJCS, SECAF and the air carriers." See Vernon J. Kondra, "Desert War Proves Air Fleet's Worth," *Defense 91* (March/April 1991) reprinted in *Strategic Deployment and Mobility* (Maxwell AFB, AL: Air Command and Staff College, L31, 1993) 54.

[147] The incentive to the participating airlines is that they become eligible for "benefits and guaranteed compensation in exchange for their commitment and their purchase of airlifters [i.e., 747, DC-10, etc.] that have military utility." See Winnefeld, Niblack and Johnson, 39. Johnson testified that activating the first stage of CRAF "expanded our civilian airlift fleet to 68: 17 long-range international (LRI) CRAF passenger aircraft, 21 LRI CRAF cargo aircraft, plus 15 passenger and 15 cargo volunteer aircraft." See U.S. Senate, *Statement of General H.T. Johnson*, 144. This effectively added 18 airliners to his operation, capable of transporting 1920 passengers to the Gulf per day, and 23 cargo aircraft adding an additional 490 tons to the daily total of the strategic airlift fleet. Furthermore, beginning on 10 August, various civil carriers, whose number had grown to 40, had been flying primarily passengers on a voluntary basis. See Menarchik, 65.

to activate the first stage of CRAF, by law he was not allowed to go beyond Stage I, nor mobilize MAC's reserve forces.[148]

At the beginning of CRAF's integration into the airlift flow, its aircraft were only given 24-hours of advance notice by MAC's CAT "flow cell" to be in-place at various locations ready to upload passengers and/or cargo. In less than a month, the scheduling flow had stabilized to the point where the civil carriers were given an average of 2-to-3 days advance mission notification. By October, this lead-time had grown to five days and by December they could usually plan a month ahead.[149]

Once the CRAF missions were underway, they fell under the jurisdiction of the 21st Air Force Command Post, located at McGuire AFB, New Jersey. Nevertheless, the carriers' parent company continued to "monitor its own flights and report back any known delays or problems." Although the majority of CRAF airlift missions were flown in direct support of Operation Desert Shield, some were used to backfill normal MAC channel missions in various other theaters, such as the Pacific. Despite its growing pains, the activation of the CRAF proved that "the concept works. Since 1952, the [CRAF] program

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[148] These civil aircraft were in addition to the ones already operating under contract as charter passenger carriers. See Menarchik, 65. The carriers appreciated the fact that MAC resorted to Stage I activation for several reasons: "(1) it authorized the government to underwrite war risk insurance; (2) it helped management with labor relations in getting cooperation from the unions; (3) it helped spread the load: it was better to force all CRAF carriers to fly so that the burden was more evenly distributed." See Winnefeld, Niblack and Johnson, 42 - 43.

[149] In scheduling the missions, MAC provided the commercial carriers strictly with "onload times, dates, and the final destination." As far as aircraft "load requirements," they were generally assigned prior to missions being "bought" and verified as soon as a mission was confirmed. Other than the load requirements, carriers were free to plan their own routes of flight and en route servicing arrangements. Although this system generally worked well "there were a number of cases of aircraft arriving at the onload site only to find that the cargo had been shipped out on an earlier flight. Despite the double checks, the problem continued into late October, though less frequently." See Winnefeld, Niblack and Johnson, 41.

has provided MAC extra airlift capability from commercial assets, but *until Desert Shield, no one was sure how effective a start-up operation would be.*[150]

The CRAF aircraft ran into difficulties when it came to being loaded and offloaded because "*the military did not have the proper equipment to handle ... commercial aircraft.*" Besides the equipment limitations, the commercial carriers were incapable of carrying the outsized equipment which the C-5 could accommodate. However, the "major drawback" of the CRAF was its inability to "quickly respond to surge requirements." As the surge subsided in October, the CRAF carriers reverted primarily to their passenger transport role, which they continued to perform well [emphasis added].[151] At a news conference held on 21 August, General Johnson "boasted that:

> his planes and ships had carried a huge number of people and that one billion pounds of weapons, ammunition, and other supplies had arrived at or were en route to the Gulf. He compared this to moving all the men, women, and children in Jefferson City, Missouri, to Saudi Arabia - along with their cars, trucks, household goods, food and water supply. The effort by then was so huge that controllers at MAC were tracking as many as 80 planes at a time winging their way across the Atlantic. (They nicknamed the airlift their 'aluminum bridge' to the Middle East.)[152]

It was soon apparent to General Johnson that at the present rate of flying, the strategic airlift crews would exceed their authorized limit by the 27th of August.[153] A

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[150] Winnefeld, Niblack and Johnson, *A League of Airmen*, 41. During August, commercial aircraft flew 195 missions (12% of total), hauling 32,559 passengers (45% of total) and 8,900 tons of cargo (17% of total); in September, 322 missions (17%) hauled 37,000 passengers (64%) and 14,000 tons of cargo (21%) and in October, 246 missions (17%) hauled 39,700 passengers (80%) and 10,700 tons of cargo (21%). See Menarchik, 66. As of the end of November 1990, CRAF had "successfully completed 963 missions in support of the force deployment, 45% of these were passenger flights, the remainder cargo." See Winnefeld, Niblack and Johnson, 41.

[151] Menarchik, *Powerlift*, 66.

[152] Swarzkopf, *It Doesn't Take a Hero*, 324.

[153] The monthly flying-hour limit had already been raised from 125 to 150 hours, See Menarchik, 66.

major obstacle contributing to the impending aircrew shortfall was the fact that "almost half of MAC's crews are in the reserves," which meant that without activating the reserve component, MAC was "limit[ed] in the length of time that [it could] continue at surge sortie rates." Although many reserve officers had already volunteered their services, nevertheless their efforts were "not enough to continue operations for a sustained period."[154]

Given that the active force was already being stretched to limit, the only possible way to increase "*military* airframes and aircrews, ... was ... [by] calling up the Reserve and National Guard." Faced with this situation, "CENTCOM and TRANSCOM, through the CJCS, pressed DOD to call up the Reserve."[155] On 24 August CINCMAC activated the airlift Reserve forces. Despite this massive reserve augmentation of MAC's strategic airlift fleet, "*in early September, 40% of the C-141 crews were out of flying time* [emphasis added]."[156]

On 21 August, given the severity of the strategic airlift shortfall, "TRANSCOM turned to allies and friends for no-cost foreign-flag lift" by delivering to the Department of State, through DOD, a list of airlift requests. In response, by 27 August, TRANSCOM

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[154] Winnefeld, Niblack and Johnson, *A League of Airmen,* 29.

[155] Menarchik, *Powerlift*, 66. On 22 August, the President signed Exec. Ord. 12727 authorizing SECDEF, under U.S. Code Title 10, Sec. 673b, to call to active duty selected Reserve units and individual Reservists." The following day, the SecDef "delegated to the Service Secretaries the authority to order Selected Reserve members to active duty." The "initial authorization provided for the recall of 25,000 Army, 14,500 USAF, 6,300 Navy, and 3,000 USMC Reservists." See DOD, *Conduct of the Persian Gulf War,* 37.

[156] MAC used 100% of the Reserve C-5 and C-141 aircraft, but Reserve crews were needed because of the Reserve-Active Duty mix: 62% Reserve versus 38% active for C-5s and 60% Reserves and 40% Active Duty for C-141s. On 24 August, the Air Force activated two Reserve C-5 squadrons and three C-141 squadrons. On 31 August, the Air Force activated three C-5 Reserve Associate squadrons; on 4 September, two additional C-5 Reserve Associate squadrons and on 9 September, two additional C-141 squadrons. MAC called up five of 14 C-141 Associate and all the C-5 squadrons by the end of Phase I. See Menarchik, 66.

was entertaining "offers of foreign airlift from Korea, Kuwait and Japan for integration into the flight schedule."[157] Given that the foreign augmentation was minor when compared to the U.S. carriers, they were judged to be "more important politically than significant militarily."[158]

In spite of this bleak picture, "by 1 September, over 90% of the Air Force Phase I fighter deployment was completed."[159] As a relative comparison, General Johnson boasted that "*during the first three weeks of the deployment, USTRANSCOM moved more* personnel and equipment to the Persian Gulf *than the U.S. transported during the first three months of the Korean War* [emphasis added]."[160]

According to Lt. General Kondra, although the Saudi Arabia had "expansive infrastructure, [it] lacked the robust facilities to run an intensive 24-hour per day surge deployment." Early in the conflict, Dhahran and Riyadh served as the primary reception bases. Dhahran was the busiest of the two and quickly turned into a "chokepoint" to the point where Schwarzkopf considered it his "number one Achilles heel,"[161] causing the

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[157] The list included "long-range, wide-body passenger and cargo aircraft, and roll-on / roll-off, container and break bulk ships." "Korea offered three Boeing 747s as chartered flights. MAC integrated Korean aircraft into the air flow on 28 August and the Kuwaiti aircraft on 4 September. The Japanese offered to pay for some U.S. civilian charter flights. On 22 September, TRANSCOM used the Japanese-contracted Boeing 747." See Menarchik, 67.

[158] Menarchik., *Powerlift*, 67. "Japan, which was heavily dependent on Persian Gulf oil, paid American charter companies to fly cargo to the Gulf instead of offering its own planes, thus enabling Japan to keep its profitable commercial routes over the Pacific." See Gordon and Trainor, 63.

[159] In the first five days, five squadrons rapidly moved directly into the Gulf (2 F-15C, 1 F-15E and 2 F-16C squadrons), a deterrent package that comprised about one-forth of the Phase I Air Force fighters planned to go to the Gulf. On 11 August, the first of several squadrons of C-130s began arriving. By 14 August, over 200 USAF combat aircraft had deployed. By 22 August, almost half the planned Phase I Air Force was in-theater. See Menarchik, 50.

[160] U.S. Senate, *Statement of General H.T. Johnson*, 143.

[161] While the bases had long runways and ample ramps and taxiways, they did not have the navigation aids, lighting, messing, billeting and structures. Saudi Arabia had lots of fuel, but few spigots and fuel bladders. Few loaders and fork lifters to handle the cargo also slowed the offloading. See Menarchik, 72 - 75.

"initial airlift surge [to] rapidly clog."[162] There were only a limited number of bases in the Gulf region that could accommodate U.S. military aircraft. The problem with the system, according to Lt. General Vernon Kondra, the 21st Air Force Commander, was the "bottleneck" in Saudi Arabia.[163] Aggravating the situation, according to General Pagonis, was that "we were trying to set up a logistical structure for reception in the middle of the deployment."[164] To help alleviate the congestion, in mid-August Lt. General Charles Horner, the Commander of CENTAF, ordered that the Air Force deployment be slowed until CENTAF was able to "beddown aircraft properly and clarify the air basing situation."[165]

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[162] An average of 124 strategic airlifters were flying to destinations in the Gulf region on a daily basis, which equated to "one landing every 11 minutes" at the peak of operations. "The three nodes of the airlift were the onload airports, the staging bases and the reception airports. ... 180 aircraft were flying in the Desert Shield airlift system; 66 were loading, launching or recovering in the U.S., 60 were en route or returning from Europe, 24 were on the ground in Europe, 48 were en route to, or returning from the Gulf, and 12 were on the ground in the Gulf." See Menarchik, 67 - 68. The primary points of embarkation in the U.S. during Desert Shield were the east coast air bases at Westover, Massachusetts; Dover, Delaware; McGuire, New Jersey; Charleston, South Carolina; Norfolk, Virginia; and Pope, North Carolina. The airlift system worked follows: "After onloading at U.S. bases, C-5s flew to Westover AFB, MA., and C-141s to McGuire AFB, NJ, for refueling and crew change. From these set staging bases, they flew missions into European staging bases or, if aerial refueled, directly into the Gulf. On the return leg, all C-5s returned to Dover AFB, DE, and C-141s normally returned to Charleston AFB, SC." See Menarchik, 79. After most of the missions departed from one of these U.S. bases, they would generally fly to one of the four following European destinations: Rhein Main, Germany; Ramstein, Germany; Torrejon, Spain; or Zaragoza, Spain. See Menarchik, 68.

[163] Dhahran, Riyadh, Jubayl and King Fahd were the only four reception bases in Saudi Arabia. See Anderson, 81. Despite the fact that its airfields were large and modern, the fact remained that: "with 100 to 115 onloads at 35 sites in the U.S. going into three offload sites at Jubayl, Dhahran and Riyadh was like force feeding water into a large, 7000-mile long pipe and trying to get something out of a small garden hose at the other end." See Menarchik, fn 108, 131.

[164] "According to doctrine and common sense, you set up the structure first, and only then do you begin the deployment. But the reality of the situation didn't allow us this luxury." See Pagonis, 85.

[165] Schwarzkopf writes that: "Riyadh was so jammed with aircraft that it looked like an aircraft carrier: we had about a billion dollars worth of AWACS just lined up on the apron, not to mention dozens of other jets. There was no way to solve the overcrowding - we had no other place to put the planes." See Schwarzkopf, 350.

Because of the backlog, there developed a "window of vulnerability" before enough heavy armored units were in-place to effectively ward off an Iraqi attack.[166] Although the U.S. had shown its resolve and thus far had deterred an attack by committing its forces, nevertheless "the ability of Coalition forces to defeat a determined Iraqi attack into Saudi Arabia remained questionable."[167]

Interservice problems were apparent in Desert Storm. The MAC on-scene commander complained that "the ground commanders did not understand strategic airlift systems." Instead, they were more interested in having soldiers and materiel land as closely as possible to the harbor in order to facilitate the marrying of men with their equipment, so they would be battle ready as they traveled a short distance to the front lines. Because of "the Army's reluctance to use other reception bases," they limited the number of points of debarkation and thereby "clogged the lift system."[168]

From September through November, TRANSCOM pressured CENTCOM to open up more offload locations. However, the Army resisted the idea because it lacked a sufficient number of "support units and trucks" to conduct a large-scale ground transport operation of equipment and supplies. Fundamentally, says Menarchik:

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[166] U.S. Dept. of Defense, *Conduct of the Persian Gulf War*, 37. Schwarzkopf shares that "as I studied it," the most likely Iraqi invasion would be a "three-pronged attack to be launched from Kuwait. One thrust down the coastal highway that led to Saudi oil fields and refineries and to the port of Al Jubayl; a second far to the west, along the highway to the sprawling Saudi base at King Khalid Military City; and a third across the desert straight toward Riyadh, 280 miles to the south." See Schwarzkopf, 314.

[167] "CINCCENT determined this would require deployment of heavy armored and mechanized forces. However, shortages of sufficient fast sealift with a roll-on/roll-off capability ... meant that heavy forces would deploy incrementally." See DOD, *Conduct of the Persian Gulf War*, 37.

[168] Menarchik, *Powerlift*, 81.

> *The major congestion problem resulted from differing views between strategic transportation needs and in-theater logistical capabilities and Air Force versus Army doctrine* [emphasis added].[169]

Finally, "late in the surge," General Schwarzkopf took active measures to break open the logjam by "open[ing] additional offload sites at Khamis Mushait, King Faisal at Tabuk, Dammam and King Khalid Airport," which was capable of handling 60 airlifters per day.[170]

Menarchik also attributes some of the logistical problems in Desert Storm to "internal Air Force politics."[171] The intraservice rivalry manifested itself with the emergence of what he describes as the *airlifter-fighter "cultural gap."* The Airlift Command Element commander in the Gulf was vested with less formal authority than the tactical fighter commanders so that the "*non-lifter fighter pilots ran the in-theater Air Force system, and understood neither lift requirements nor staging needs.*" Speaking of the fighter community, Lt. General Kondra perceived that:

> they did not see the big picture - that is, the role strategic transportation played in shaping the tactical and strategic situation. In addition, *planners had not factored in strategic airlift in-theater requirements in the initial planning.* Initial Air Force personnel estimates were for combat units, and largely omitted support units. *As a result, Air Force personnel figures were underestimated by nearly 100%* [emphasis added].[172]

These claims are evidenced by the fact that "*fighter units* commandeered ramp space and fuel trucks and *established their 'turf'* at the reception fields."[173] As an example of this

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[169] Ibid., 72 - 73.

[170] "About 50% of the strategic airlift missions through January 1991 continued to land at Dhahran." See Menarchik, 75.

[171] Menarchik, *Powerlift*, 72.

[172] Ibid., 80.

[173] Ibid., 50.

intraservice rivalry, Lt. Colonel James Butts, TRANSCOM's liaison officer to CENTCOM, points out that "some MOG (maximum aircraft on the ground) problems resulted from turf battles:

> Tactical fighter squadrons filled up airfields. They took over Dhahran and its ramps space. For the first forty days, *Central Command's priority went to fighters* while the perceived threat was higher. After the threat diminished, priority should have shifted to the deployment community. It did not. TAC didn't budge at Dhahran [emphasis added].[174]

Further aggravating things was the fact that "*local tactical commanders reluctantly shared their space with strategic airlifters.*" Menarchik explains:

> when Dhahran and Riyadh choked up with aircraft, CENTAF, which commanded the theater air power assets, would take fuel trucks and ramp space at the expense of the transient airlifters passing through. In practice, *Airlift Command Element commanders in the Gulf had lesser clout compared to that of tactical fighter commanders. ... The airlifter - fighter and combat - support 'cultural gap' remained the root cause.*[175]

Gordon and Trainor confirm Menarchik's claim, pointing out that "in Dhahran, *cargo pilots were not allowed to eat in the dining hall used by the fighter pilots*, and some had to go to the 82nd Airborne to find sleeping quarters." CINCMAC, General Johnson, says that "*I was very disappointed about how the Air Force treated us* [emphasis added]."[176]

Air Force cultural rivalry was not confined exclusively to the Gulf region. To the contrary, MAC also experienced difficulties in Spain at the Torrejon Air Base, just outside of Madrid. In fact, it became so critical that General Johnson had to circumvent

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[174] Ibid., 73.
[175] Ibid., 80.
[176] Gordon and Trainor, *The General's War*, 63.

the normal Air Force chain of command by contacting Spanish authorities in order to free up ramp space for airlifters. The general explains that:

> *Logistical - operational tensions hindered staging through Spain.* The Spanish commander helped, but the local U.S. fighter commander did not. Equally *vexing was the 'second-class' treatment airlift crews received at the staging bases,* especially at Torrejon, where *the U.S. Air Force wing commander allowed a 'caste system' to exist* that catered to his [fighter] unit but less so to the transient [airlift] crews passing through.[177]

Gordon and Trainor posit that "*the cargo haulers' second-class status in the military's warrior culture was an added burden* [as] cargo pilots who refueled at the American air base at Torrejon received only perfunctory cooperation from their Air Force colleagues." General Johnson recounts that:

> Torrejon AB never worked like it should have as a strategic hub. Spanish authorities helped work problems, but *Tactical Air Command focused on TAC problems, at the expense of the airlift mission. Support for strategic airlift suffered.*[178] The Spanish commander moved his forces before the U.S. commander moved his to give us more space. *We were treated worse than any foreign country would have treated us* [emphases added].[179]

In the end, "in-theater commanders did not consider logistics equivalent to tactics," so that the overall result was "a delay in the deployment," which caused logistics to suffer, and negatively impacted strategy and tactics. Menarchik points out that "while tensions ... improved over time, they did not evaporate totally and complicated the strategic air flow."[180]

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[177] Menarchik, *Powerlift*, 83.

[178] During the Desert Shield Phase I buildup, approximately 8,000 C-5 and C-141 sorties (84% of total) to the Gulf originated at one of these four bases. Of these, Torrejon Air Base handled 44%; Rhein-Main, 27%; Zaragoza, 20%; and Ramstein, 9%. The remaining 16% of the missions either "aerial refueled or staged through other European locations, among them Upper Heyford, U.K., or Sigonella, Italy." See Menarchik, 69.

[179] Gordon and Trainor, *The General's War*, 63.

[180] Ibid.

International politics also was a detriment to obtaining a MAC staging base. Although MAC sought the use of Jidda as a strategic airlift hub, the Saudi government wanted to limit the number of U.S. military personnel stationed at its bases, especially close to the "holy sites of Mecca and Madina." Because "Schwarzkopf rank-ordered combat air units: fighters, bombers, tankers and airlift, [this] precluded MAC [from] attaining a staging base" in the Gulf theater. As a consequence, MAC crews were forced to turn around and fly back to Europe after offloading and refueling in Saudi Arabia.[181]

Although Schwarzkopf was able to get the Saudis' to relent on 14 August and allow tankers to operate from Jidda, he "chose not to burn additional diplomatic chips by asking for a MAC staging base in the Gulf." However, in September Egypt granted CENTCOM authorization to conduct 25 sorties a day from Cairo West. Soon thereafter, Schwarzkopf allowed MAC to use Cairo West as a temporary staging base, with the provision that it had to depart once hostilities erupted, so that "higher priority weapons systems could base there."[182]

By the middle of September, intelligence estimates had indicated that "Iraq was abandoning the idea of invading Saudi Arabia."[183] Toward the end of the month, the majority of "high-priority units and cargo" had been airlifted to the Gulf.[184] The Air Force had 18 tactical fighter squadrons in-place.[185] Moreover, the deployment of Army and

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[181] Crew duty days went from "22 to 24 hours, at times lasting up to 36 hours." As a result, the crews had to be augmented with a third pilot, which was "burning our MAC crews at twice the rate planned." See Menarchik, 75.

[182] Menarchik, *Powerlift*, 76.

[183] Ibid., 53.

[184] Winnefeld, Niblack and Johnson, *A League of Airmen*, 30.

[185] The F-15Cs alone could blunt the Iraqi Air Force. The F-4Gs could handle the Iraqi anti-aircraft missile systems, the A-10s could engage a significant percentage of the Iraqi armored threat, and the F-117s

Marine Corps ground force was formidable. With a reduced threat and enhanced capabilities, CENTCOM began transitioning from primarily a deterrent, to a "defensive, posture."[186] General Johnson claimed that *as of the end of the sixth week of the deployment, MAC had* "logged more than 700 million ton-miles, *exceeding that of the 65-week-long Berlin Airlift* in 1948." Moreover, he pointed out that at the peak of the initial deployment, "127 planes landed daily in the desert of Southwest Asia, averaging *one arrival every 11 minutes* [emphasis added]."[187]

As of 19 September, "MAC [had] completed deploying the largest Phase I troop contingents" as the initial deterrence / defensive buildup was complete,[188] so that the pace of activity temporarily subsided as "requirements slackened." As fewer missions were flown, MAC had an opportunity to perform maintenance on its aircraft that had been deferred due to the initial crisis.[189] By the beginning of October, CINCCENT was confident that the "window of vulnerability" had closed so that the Coalition could now successfully defend Saudi Arabia.[190]

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and F-111s could attack point targets deep inside Iraq. See Menarchik, 53.

[186] "The Marines defended the ports and coastal approaches to Saudi Arabia. The heavy equipment of the 24th Mech. Inf. Div. began arriving 25 August aboard FSS. ... 3rd Arm. Cav. Reg. heavy armor began arriving 20 September and the 1st Cav. on 18 October." See Menarchik, 53.

[187] U.S. Senate, *Statement of General H.T. Johnson*, 144.

[188] Menarchik, *Powerlift*, 86.

[189] Winnefeld, Niblack and Johnson, *A League of Airmen*, 30. While it "continued hauling troops and time-critical cargo [to the Gulf], ... the sustainment lull allowed MAC to get its fleet back into shape ... and rest its crews." See Menarchik, 54.

[190] U.S. Dept. of Defense, *Conduct of the Persian Gulf War*, 39. During this period of reduced activity, the average number of daily strategic missions declined to "80 on C+40 to about 40 by C+58 [and] ... airlift activity remained at a reduced level until [the] Phase II deployment in late November." See Menarchik, 86.

Hailed as the "greatest airlift in history" by CINCMAC,[191] each of the 185,000 passengers airlifted during Phase I required approximately "one ton of airlifted cargo, ... [a] ratio [that] held throughout the logistics war."[192] As most equipment and supplies delivered during the sustainment phase was not considered time-critical, beginning in October, sealift was used to transport "the bulk of the ... cargo."[193]

General Johnson testified that pushing the C-141 to the maximum "required us to defer routine preventive maintenance and cannibalize parts from aircraft undergoing depot level repairs."[194] Moreover, these increased flying hours put increased "wear and tear on the aircraft" in a short amount of time. Alarmingly, the immediate impact was that "*a number of C-141s were retired early* as the result of ... Desert Storm." Most significantly, the longevity of C-141 fleet became questionable and highlighted "*the need for the new C-17 replacement* [emphasis added]."[195]

On the morning of Sunday,16 September 1990, General Powell discovered that the lead story in the *Washington Post* was "U.S. to Rely on Air Strikes if War Erupts." The article quoted the Chief of Staff of the Air Force, General Michael Dugan, as saying:

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[191] Whereas in September, MAC had airlifted 68,000 tons, by the next month this total had fallen to just 50,000 tons. During Phase I (7 Aug 90 - 8 Nov 90) MAC flew 5,235 airlift missions transporting 178,358 tons of troops and cargo. See Menarchik, xv.

[192] Menarchik, *Powerlift,* 85.

[193] Menarchik, *Powerlift,* 54. Following is a statistical portrayal of Desert Shield: "During the first ten days of deployment, C-5s moved 41% of the passengers and 55% of the cargo; C-141s moved 38% of the passengers and 36% of the cargo; C-130s moved 5% of the passengers and 5% of the cargo. In August, the Army used 40%, Air Force 27% and Navy 23% of the airlift missions flown. Desert Shield consumed 90% of the strategic airlift missions flown, flying 2000 missions during the first 30 days. C-141s flew 60% and C-5s flew 26% of the missions in August. In August, C-5s and C-141s flew between 60 - 80 Gulf missions daily. On C+14, 94% of MAC's C-5s and 73% of the C-141s were supporting Desert Shield lift operations. On C+27, airlift hit its peak during Phase I, when MAC flew 90 Desert Shield missions." See Menarchik, 86.

[194] U.S. Senate, *Statement of General H.T. Johnson,* 145.

[195] Menarchik, *Powerlift,* 89.

> The JCS [had] concluded that U.S. military air power - including a massive bombing campaign against Baghdad that specifically targets Iraqi President Saddam Hussein - is the only effective option to force Iraqi forces from Kuwait.[196]

Powell's initial impression was that:

> His remarks had been an obvious *grab for Air Force glory*. It would have been difficult to pack more impolitic, indiscreet, and *parochial* statements into a single interview [emphasis added].[197]

Shortly after Secretary Cheney was alerted by Powell, he consulted with President Bush who said he would support him if he relieved Dugan of command. The next morning, after Dugan was let go, Powell recommended that he should be replaced by General Merrill "Tony" McPeak, who was serving as CINCPAC. Powell recalls "Dugan was being replaced by another airpower advocate, one, I hoped, who would be a tad more discreet."[198]

Phase II: The Second Deployment, 9 November 1990 - 15 January 1991

"To permit the U.N. coalition to take offensive actions to expel Iraqi forces from Kuwait if necessary," President Bush ordered the commencement of another buildup on 9 November 1990.[199] Although MAC had been informed in late October that there might be a second deployment, it was not notified of the final decision until 8 November, the day

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[196] Woodward, *The Commanders*, 274.

[197] Powell, *My American Journey*, 477.

[198] On a trip to the Pacific, Powell had been impressed by McPeak, whom he described as a "lean-as-leather fighter pilot, 54-years old, bursting with energy and imagination." See Powell, 478.

[199] Phase II deployment schedule for MAC: "(a) Passenger moves in support of the deployment of VII Corps stationed in Germany; (b) A third armored division from CONUS; (c) A second Marine division, and various support units; (d) A growing sustainment requirement" The VII Corps was to constitute the Coalition's primary armored assault force. While MAC would transport the VII Corps personnel, MSC was to transport its supporting equipment. See Winnefeld, Niblack and Johnson, 30 - 32. On 29 November 1990 the UN passed Resolution 678, authorizing the use of force for the first time since Korea. See U.N. Security Council, Resolution 678 (29 November 1990), cited in Nye and Smith, 372.

after the Congressional elections. Even then, it was not given the execute order until the beginning of December.[200] To uphold the UN Resolution 678 deadline given to Saddam, CENTCOM set a goal of 15 January 1991 for the "deployment of all combat troops."[201] This compounded the complexity of the airlift mission, as MAC was going to have to sustain the Desert Shield defensive force already in the Gulf, while simultaneously doubling the deployed troop strength. This new deployment required MAC to establish a European-based airlift system, causing new complications."[202] Because their mission had been to "defend Europe against a Soviet mass attack," the U.S. forces forward-deployed in Europe "lacked plans" and were "untrained and ill prepared for strategic deployment" to the Gulf.[203]

Although CRAF was able to accommodate the majority (62%) of the passengers, the combination of CRAF Stage I and contracted carriers was "*not enough ... to meet the requirement.*" In an effort to achieve this massive feat, MAC took extraordinary measures during the months of December and January such as "converting some C-141s to a passenger configuration ... to meet the closure requirements."[204]

In many respects, the Phase II airlift system mirrored that of Phase I and also "incorporated many lessons learned earlier in the deployment." Because an effective

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[200] Menarchik, *Powerlift*, 140.

[201] Winnefeld, Niblack and Johnson, *A League of Airmen*, 32.

[202] Kondra states: "Europe [was] in an entrenched mentality. The U.S. Army went over there to dig in, and they [were] not in a mobility mode. Every day [MAC] didn't do something, [it] lost around 140 C-141 equivalent missions. Some Army units finally moved in the first week of December, but the 15 January deadline stayed the same. ... These were daunting transportation problems." See Menarchik, 140.

[203] Menarchik, *Powerlift*, 141.

[204] CRAF, contracted carriers and C-141s transported a total of "over 225,000 passengers, or an average of 3,750 per day" throughout December and January. See Winnefeld, Niblack and Johnson, 32.

defensive apparatus was already in-place, General Schwarzkopf ordered that the Phase II deployment would be conducted in accordance with U.S. warfighting doctrine whereby "support units deploy first, followed by the combat units."[205] Although in Phase II CENTCOM was more responsive in giving TRANSCOM a detailed TPFDL, as had occurred during Phase I, the units commanders permitted cargo to grow on the loading ramps.[206] "Desert Express," which operated as "the functional equivalent of commercial overnight delivery systems in the U.S.," was an innovative measure MAC introduced to deal with the unforeseen high priority shipments.[207]

Astoundingly, "Phase II airlift more than replicated the Phase I effort, [as] ... [it] delivered more than Phase I in three weeks less time." The reason was due primarily to better preparation and operational efficiency.[208] Such performance was not without its

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[205] CENTCOM's TPFDL was forwarded to TRANSCOM with the following units designated to be airlifted: "VII Corps plus their combat service support; 2nd Armr Div; 2nd Armr Cav Reg, plus a brigade out of Europe; the 1st Mech Inf Div out of Ft. Riley and the 6th Marine Exp Force out of Camp Lejeune." Of these forces, "only the 2nd Armr Cav Reg completely closed by the 15 January deadline." See Menarchik, 141.

[206] As a result, whereas CENTCOM had estimated that between 11 November and 15 January it would need to have "72,951 short tons of dry cargo ... moved with 115,838 short-tons of equipment, an additional 61,168 short tons of sustainment cargo [was] actually delivered." Whereas CENTCOM estimated that 196,105 passengers would be moved, which was close to the actual 198,636 actually flown. "General Schwarzkopf divided his airlift amongst the services and other users" as follows: "of 2,450 tons per day of airlift available, the Army received 350 tons of airlift for equipment and 425 tons for supplies, the Air Force 300 tons for equipment and 190 tons for supplies. European Command received 150 tons of equipment and 150 tons for sustainment lift." See Menarchik, 142.

[207] Plans for Desert Express began in the middle of October and the first mission was flown on 30 October. A single C-141 departed daily from Charleston AFB to Saudi Arabia loaded with "critical items, principally spare parts." A critical item request in the Gulf could be delivered within 33 hours from Charleston AFB, South Carolina, as compared to the normal 12-day supply cycle. The air route went via Torrejon to Dhahran with Riyadh being added as a second destination on 7 November. See Winnefeld, Niblack and Johnson, 228 - 229. This system airlifted 234.8 tons in November, 398.6 tons in December and peaked at 580 tons in January. The Army was by far the largest single recipient of Desert Express cargo, receiving "171.4 tons in November, 229.3 tons in December and 266.2 tons in January," which was more than half of the total tonnage. See Menarchik, 144.

[208] There were 5,458 Phase II missions versus 5,235 Phase I missions, only a small increase of 223 missions. C-141 missions rose from 2,804 to 5,666; C-5 missions from 1,424 to 2,641 and commercial

costs. The U.S. military airlift utilization rate during phase II was over 90%, with the implication being that the *"U.S. could handle one Desert Shield-type airlift at a time."*[209] In comparison, the U.S. had to utilize only 33% of its combat forces in the deployment to the Gulf. If the other 66% had been needed, how would it have been deployed by the deadline [emphasis added]?

Phase III: Desert Storm, 17 January - 28 February 1991

Upon the outbreak of hostilities, on 17 January Secretary of Defense Cheney "declared an *airlift emergency*"[210] and activated Stage II of CRAF, also for the first time in history. [211] Stage II put an extreme burden on the airlift support apparatus. According to MAC system analysts, "en route ground times were higher than normal, with onload times

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missions from 834 to 1,977. ... Airlift again hauled over 99% of the passengers in Phase II, with 20,500 passengers in November, 118,000 in December and 115,000 in January. Commercial lift hauled the bulk of the Phase II passengers, 13,100 in November (64.2%); 85,100 in December (72%); and 69,800 in January (60.7%). Airlift hauled 205,713 passengers, up from 185,891 in Phase I. Tonnage almost doubled from 1,513.7 tons per day in November to the end of December 2,949.3 tons per day. After a Christmas-New Year holiday lull, it remained at 3,558.6 tons per day in January. In November, commercial airlift hauled 20.6% of the cargo, 29.9% in December and 30.6% in January. .See Menarchik, 146 - 147. Approximately 40% of MAC's airlift missions flew relief supplies necessary for the sustainment of the forces which were already in-place. See Winnefeld, Niblack and Johnson, 33. This amounted to 181,241 tons, compared to 178,358 tons during Phase I. Significantly, rather than flying 5% of the sustainment tonnage, as originally planned, MAC flew 15.3% of the entire dry sustainment cargo: 14.2% in November, 16.2% in December, and 11.4% in January. See Menarchik, 147. During the nine-week Phase II (8 Nov 90 - 16 Jan 91) period, the buildup grew to 359,000 tons and a total of 391,000 troops with 10,693 missions. See Menarchik, 2.

[209] Including the CRAF, at it's peak, the U.S. was generating nearly 400 strategic airlift missions a day, with an average of approximately 325 missions per day throughout the months of December and January. MAC strategic airlifters alone were accountable for approximately 275 daily missions during the peak period, with an average of approximately 225 daily missions throughout most of December and January. As these statistics indicate, "commercial lift played a major role in Phase II," beginning with "10 daily missions in November, commercial lift rose to 45 missions daily in December to 70 missions daily in January." See Menarchik, 146.

[210] Menarchik, *Powerlift*, 164.

[211] Stage II added the services of "77 long-range international (LRI) commercial passenger and 40 LRI cargo aircraft." Moreover, the airline industry as-a-whole voluntarily provided "an additional 30 cargo aircraft above those required by activation of CRAF Stage II." See Menarchik, 164. General Johnson testified that: "Neither Desert Shield nor Desert Storm forced MAC to fully use CRAF, but it was a necessary reserve of strategic airlift readily available if a surge required it. The CRAF Stage II activation was MAC's 'final pot of planes.' See U.S. Senate, *Statement of General H.T. Johnson*, 144.

very high, especially for commercial aircraft." To correct this inefficiency, MAC incorporated the British RAF airfield at Upper Heyford into its en route structure, thus "redistribut[ing] the aircraft flow through its European base system" and thereby "unclogging the en route airfields" in Europe.[212]

Early in the Desert Storm phase, the airlift flow was interrupted by Iraq's SCUD attacks. On the night of the first SCUD attack, CENTCOM held-up inbound traffic, "backing up 30 aircraft all the way back to the U.S." However, by the next evening, "MAC headquarters [had] installed divert procedures to minimize the disruption."[213] The CRAF carriers were disturbed by the possibility of chemical contamination from a Scud missile attack. Given that the civil aircrews were not privy to top secret intelligence reports nor equipped with chemical protective gear, many of the carriers refused to fly into Dhahran or Riyadh at night.[214] Furthermore, some civil carriers were ill-equipped to fly into King Khalid Military City, as they lacked the necessary "IFF (identification, friend or foe) equipment to identify them as 'friendly' aircraft." This placed an added burden on the theater C-130 fleet, which had to compensate for a lack of civil carriers by flying the Dhahran to Khalid route.[215]

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[212] Beginning operations on 8 December, this system delivered "81 tons in December and 295 tons in January." Unlike the other system, the Air Force was the primary recipient of European Desert Express deliveries, receiving "61.5 tons in December and 184.7 tons in January," also well over half of the total tonnage. Menarchik points out that "much of the Air Force tonnage was spare parts for 'broken C-141s and C-5s." See Menarchik, 165.

[213] "If an aircraft was airborne, it continued its mission; if an aircraft was on the ground, it stayed there; if an aircraft was in theater, it entered a holding pattern awaiting clearance to land or divert, if necessary." See Menarchik, 165.

[214] Winnefeld, Niblack and Johnson, *A League of Airmen,* 34.

[215] Menarchik, *Powerlift,* 91.

As soon as the first SCUD hit Israel on 18 January, at General Powell's urging, the President ordered that Patriots should be dispatched to Israel "right now." Menarchik notes that transporting Patriot missile batteries was the "most demanding [mission] because of the time and space problem." The airlift was complicated by the disjointed locations of the various missile battery components.[216] Nevertheless, MAC deployed the first battery within 24-hours of the initial order.[217]

In order to best accommodate short-notice requirements for high-priority shipments, beginning on 19 January, MAC doubled the Desert Express sortie rate to two flights per day.[218] Even though the pace of strategic airlift operations remained at a heightened level of activity through the duration of the conflict, nevertheless by 5 February, "MAC headquarters noted the airlift requirements were starting to dry up."[219]

Overall, the airlift surge was impressive as "*a high percentage of America's strategic lift (through Stage II call-up) was committed to Desert Storm operations.*"[220] The average number of daily passengers and cargo delivered by this surge exceeded that of Desert Shield.[221] In addition to the surge activity, the sustainment mission "increased

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[216] "The launchers were in Germany and moved to Rhein-Main AB for shipment. Some missiles were in Little Rock, Arkansas, while others were in Ramstein, Germany. The planned move of two Patriot batteries required 35 C-5s and nine C-141 missions." On 24 January MAC received yet another JCS order to move additional Patriot batteries. See Menarchik, 165 - 166.

[217] "MAC diverted most of its C-5s (the only aircraft that can handle the many pieces of outsize equipment in a Patriot battery) and many of its C-141s (to carry missiles and other equipment) from other missions to support this move." See Winnefeld, Niblack and Johnson, 34.

[218] Winnefeld, Niblack and Johnson, *A League Of Airmen,* 34.

[219] After the Desert Storm air war was well underway, the average daily sustainment airlift was approximately 2,420 tons per day. See Menarchik, 168.

[220] "Deployment missions ranged between 350 and 400 daily throughout January and early February as the last of the units arrived. In mid-February, deployment missions dropped to 300 daily. MAC's military aircraft flew 250 to 300 missions daily through January, dropping to 225 daily in February. Commercial airlift operations during Desert Storm reached 70 to 80 daily, with 10 to 15 additional missions assigned to other national airlift needs." See Menarchik, 168.

dramatically in January, generating another tremendous backlog" which was not rectified until the middle of February. Finally, the Desert Express and European Desert Express missions "proved to be a major logistical success story, providing war-stopper supplies almost on demand [emphasis added]."[222]

President Bush announced on 6 March 1991 that hostilities had ended in the Gulf. Within a month, General Johnson testified before the U.S. Senate Committee on Armed Services that the Desert Shield / Desert Storm deployment was unparalleled in history:

> The airlift amounted to *a Berlin Airlift every six weeks* and sent 482,000 people and 513,000 tons of cargo to West Asia, *the equivalent of moving Oklahoma City* - all its people, vehicles, food and household goods - *halfway around the world.*[223]

General Schwarzkopf endorses Johnson's claim, proclaiming that the Gulf airlift provided for "*the fastest buildup and movement of combat power across greater distances in less time than at any other time in history.*"[224] Both Johnson and Schwarzkopf's claims are supported by the results of the RAND study, which finds that "*the airlift for Operation Desert Storm was the largest ever conducted* [emphasis added]."[225] Finally, in less glowing, but more pragmatic terms, General Pagonis points out that:

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[221] In January, an average of 4,800 passengers and 3,200 tons of cargo were delivered each day, for a total of 132,000 passengers and 111,000 tons of cargo. By February this had tapered off to an average of 1,800 passengers and 3,800 tons of cargo per day for a total of 45,500 passengers and 98,000 tons of cargo. Finally, by March, daily airlift productivity had dwindled to 400 passengers and 2,500 cargo tons. See Menarchik, 168.

[222] Sustainment tonnage grew from 36,400 in January to 42,600 by February. The Desert Express and European Desert Express missions contributed 574 and 295 tons in January, and 628 and 260 tons in February, respectively. Although CENTCOM's TPFDD had originally estimated an airlift requirement for 63,500 troops and 75,479 tons of cargo during the Desert Storm phase, as the war transpired, there were 95,700 troops and 85,400 tons of cargo airlifted to the Gulf as of 10 March, "the date General Johnson officially ended the airlift for the war." See Menarchik, 164 - 168.

[223] Rod Alonso, et. al., "The Air War," in Bruce W. Watson, ed., *Military Lessons of the Gulf War* (London: Greenhill Books, 1991) 61.

[224] Winnefeld, Niblack and Johnson, *A League of Airmen*, 25.

[225] Ibid., 289.

> The three phases of the Gulf War should really be seen as part of a whole. Together, they comprised a war that was fought less on the battlefield and more in the LOC, more along the main supply routes and less in Washington and Riyadh. It was months of logistical preparation that allowed our forces to wrap up the air and ground wars in 1,012 hours.[226]

RAND notes that the "42 days of combat [would] require a year of airlift." MAC continued with its sustainment mission to "support the half-million troops in the theater and to replenish spent stocks if fighting resumed." Moreover, MAC redeployed troops to the U.S. throughout the remainder of the year.[227] General Pagonis points out that "this would be the first war in modern military history in which everything was accounted for, cleaned, sorted, labeled, and shipped off in an orderly and comprehensive fashion."[228]

Tactical Airlift in the Gulf

On 18 August 1990 General Schwarzkopf activated ARCENT SUPCOM (Provisional), later designated 22nd Army Support Command, under the command of Major General Pagonis, whose responsibilities included "host nation coordinator, overseeing logistics and supply for the theater at large, and supporting the Army component of USCENTCOM." Pagonis managed all in-theater logistical transport,

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[226] Pagonis, *Moving Mountains*, 158.

[227] Winnefeld, Niblack and Johnson, *A League of Airmen*, 35. According to General Pagonis, beginning on 8 March,"the first wave of 5,000 soldiers left Dhahran headed for the U.S.: "The redeployment of troops continued at a consistent and remarkable pace of 5,000 soldiers per day. ... We were effectively running both a military outprocessing unit and a customs operation. ... By 1 April, more than 165,000 U.S. troops had been sent home; and by the time ninety days had gone by, we had moved more than 365,000 soldiers." See Pagonis, 155. Desert Farewell's redeployment rate of 5,000 air-passengers per day exceeded that of the Desert Shield / Storm deployments, so that the redeployment was accomplished more expeditiously than the deployments had been. See Winnefeld, Niblack and Johnson, 34 - 35.

[228] In comparison: "We left huge amounts of equipment to rust and rot in Germany after World War II, and it took months, even years, to get all the troops home. In the wake of Korea, some materials were shipped to Japan, but the process was apparently a haphazard one. Our departure from Vietnam was so abrupt that we left billions of dollars worth of equipment behind." See Pagonis, 156.

whether via air, ground or sea "so that service component commands would not be competing for scarce lift and supplies."[229]

A key element of this intratheater transportation system was airlift provided by a MAC fleet of more than 150 C-130s,[230] 57% active duty and 43% Guard and Reserve.[231] Generally speaking, the C-130 missions originated at strategic airlift drop-off points, such as Dhahran, from which they would fly diverse loads of cargo and passengers to smaller fields throughout the Arabian peninsula. The arrival airports sometimes consisted of nothing more than "sections of highway." This was particularly the case along the forward edge of the battle area along the northern border of Saudi Arabia. Besides redistributing cargo and passengers which the strategic transports had airlifted, the C-130s were also utilized "extensively" to reposition forces which were already in-theater. For example, "support for F-16 squadrons was moved from southern and central Saudi air bases to bases near Dhahran, [sometimes] literally overnight."[232]

SAC's Organic Deployment to the Gulf

With its massive fleets of KC-135 and KC-10 tanker aircraft, SAC airlifted nearly all of its own requirements during the peak phases of the deployment to the Gulf. This was necessitated by the fact that MAC's C-141s and C-5s were almost entirely committed to "the movement of Army units and USAF and Marine tactical air force units.:

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[229] Winnefeld, Niblack and Johnson, *A League of Airmen,* 229.

[230] Ibid.

[231] U.S. Senate, *Statement of General H.T. Johnson*, 145.

[232] Winnefeld, Niblack and Johnson, *A League of Airmen,* 229. By 1 February 1991, C-130s had flown 50,815 hours on 9,124 airlift missions. See U.S. Senate, *Statement of General H.T. Johnson*, 144. Through the entire war, "the 317th Tactical Airlift Wing (Provisional) transported over 209,000 troops and 300,000 tons of cargo" within the Gulf theater. See Alonso, 61.

> *The lack of available MAC airlift* and SAC's accelerated deployment to Diego Garcia *resulted in the use of tankers in a purely cargo-carrying role* [emphasis added].[233]

Despite the apparent success of the SAC deployment, CINCSAC, General Lee Butler, testified before the Senate that "readiness and deployability standards were not always met" and that "*SAC was not as prepared for rapid deployment and conventional missions* ... in Desert Storm *as we could have been* [emphasis added]." [234]

Besides deploying its own forces, SAC also assisted TAC in its fighter deployments because "*TAC complained that MAC did not support TAC's maximum mobility efforts* and priority mission to get to the Gulf fast." In it's defense, MAC rebutted that "it had other priority lift missions to fly as well, not exclusively TAC lift missions." Menarchik relates that "General Johnson believed:

> *TAC misused its relationship with SAC for airlift aircraft.* Some TAC commanders wanted SAC's airlift aircraft to move its units first, without coordinating with U.S. Transportation Command or Central Command. This tactic exploited *the 'old boy network'* but *undermined USTRANSCOM's ability to best manage and allocate strategic airlift as a whole* [emphasis added].[235]

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[233] SAC tankers saw continued use in the cargo-only mode in supporting SAC forces at Diego Garcia. Using this method, it was able to maintain a 30-hour part resupply time from Castle AFB, California, to Diego Garcia, in contrast to the MAC-supported nominal 72-hour part resupply time. As the narrow-body KC-135 is not configured to accommodate the standardized "five-ton cargo pallets" which the MAC airlifters normally carry, they had to be temporarily modified with cargo "skids," which made loading and unloading "more labor intensive." See Alonso, 44.

[234] During the early portion of the Phase I Desert Shield deployment, SAC deployed 20 of its conventionally-armed B-52 bombers to the island of Diego Garcia, in the Ocean Island. See Alonso, 46.

[235] Menarchik, *Powerlift*, 80.

Conclusion

In spite of its documented success, the strategic "airlift *system*" has been blamed for "failing to deliver its full capability." Problems included wartime planning factors, utilization rates, and in-commission rates.[236] Concerning planning factors, Desert Shield began "without a JCS-approved operation plan or feasible transportation plan." This resulted in an inability to operate the airlift system as efficiently as possible.[237] As a result, CENTCOM's initial tasking orders "were as much as *three times larger than the capability MAC was able to provide.*"[238] Since the war, as a corrective measure, *all the service components of USTRANSCOM are being put under the CINC's operational control during peacetime as well as during hostilities [emphasis added].*[239]

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[236] Whereas the C-5 utilization rate was advertised to be "11 hours for surged operations and 9 hours for sustained operations," in actuality it averaged a daily rate of 5.7 hours. Likewise, the C-141 was supposed to be capable of operating for 12.5 hours in a surged capacity and 10 hours in a sustained condition, but only managed to operate for an average of 7 hours per day during the war. Furthermore, the C-5 in-commission rate averaged just 67%, and sometimes fell to only 50%. The C-141 in-commission rate was much higher at 84%. The payloads carried per mission also fell below the pre-war planning assumptions, with the C-141 averaging 74% of its expected capacity and the "narrow-body" (e.g., DC-8, 707) CRAF aircraft only 57% of planned capacity. See Winnefeld, Niblack and Johnson, 35.

[237] The lack of prior planning was complicated by the fact that: "automated database processors and procedures often could not reliably keep up with CENTCOM's frequent changes to the requirements. Some of the apparent shortfalls in capability arose from people outside MAC who did not understand the assumptions underlying planning factors." See See Winnefeld, Niblack and Johnson, 38.

[238] Generally, complaints were that: "airlift was unreliable, coming too late or not at all; that units had little warning about when aircraft would arrive or what type of aircraft would be provided; and that payloads for the C-141 were substantially lower than planning factors." RAND attributes these shortfalls to a combination of: "serious inefficiencies in airlift operations, serious overestimation of capability in peacetime, a failure by people outside the deployment community to understand the planning factors, [and] a lack of realistic training and exercises." See Winnefeld, Niblack and Johnson, 34 - 35.

[239] Winnefeld, Niblack and Johnson, *A League of Airmen,* 270. General Johnson testified that: "USTRANSCOM has made significant strides in developing C4 systems. ... New interfaces to the airlift and sealift scheduling systems were developed during Desert Shield to speed requirements information into JOPES [joint operations planning and execution system]. JOPES can now be used more readily in the deployment of forces and, in future versions, not only aid us in controlling follow-on sustainment, but assist theater CINCs like USCINCCENT in the employment of forces." See U.S. Senate, *Statement of General H.T. Johnson*, 149. SECDEF issued the "Valentine Memo" on 14 February 1992 in a attempt to "strengthen DOD transportation." This memo states: "the mission of the CINC of the United States Transportation Command shall be to provide air, land, and sea transportation for the Department of Defense, both in time of

Aircrew utilization was another problem. MAC's projected utilization rates were predicated upon using its Reserve pilot pool, which constituted approximately half of it's force. Yet, the deployment had been going on for16 days before the President authorized even partial Reserve activation. Eventually, SECDEF authorized full activation of the C-5 reserve pilot force and a 75% activation of the C-141 force.[240] CINCMAC was generally pleased with the performance of CRAF. However, since the airlines have been able to thoroughly assess the impact of the Desert Shield operation on their balance sheets, "*some airlines are reconsidering their future participation in CRAF* [emphasis added]."[241]

Aircraft reliability was a problem as neither the C-5 nor the C-141 performed as well as planning factors had assumed. Primarily as a result of aircraft maintenance-related problems, the average Desert Shield mission was "delayed 10.5 hours." Most susceptible to delays was the C-5, with an average out-of-commission rate of 33% (18% related to maintenance). Even the C-141's "*average payload was 26% below planning factors* [because] ...concerns about *fatigue displayed in the inner-outer wing joint of the aircraft resulted in load weight restrictions* [emphasis added]."[242]

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peace and time of war. In essence, the Valentine Memo "vested USCINCTRANS with DOD Single Manager for Transportation authority," meaning that the service secretaries would have to "assign all their department's transportation assets to TRANSCOM, except for service-unique or theater-assigned transportation." More importantly, this memo presented CINCTRANS with "much more authority and control." Thus,"with this new charter, TRANSCOM may be able to persuade the Air Force and Navy to place greater emphasis on procuring ... strategic lift." See Raymond J. Tyc, "Regional Defense and Strategic Mobility," *Strategic Deployment and Mobility* (Maxwell AFB, AL: Air Command and Staff College, L31) 9.

[240] As a result: "MAC had to use augmented crews - specifically, three rather than two pilots - for the Europe-theater-Europe leg of the mission, where crew duty days routinely reached 24 hours. The lack of a stage base at a time when aircrews were scarce could by itself explain a 20% - 25% shortfall in system performance." See Winnefeld, Niblack and Johnson, 38.

[241] Winnefeld, Niblack and Johnson, *A League of Airmen,* 43.

[242] The remaining 67% of the fleet was delayed an average of 9.0 hours. RAND notes: "This poorer-than-expected reliability of the C-5 significantly reduced its utilization level. It also meant at certain times during the operation, the C-5 fleet could not meet the demand for outsize cargo capability." See

Complicating matters further was the fact that, prior to the war, Saudi Arabia had denied U.S. "exercises for the bases and ports, and consequently, *American logistics planning had been ad hoc, notional, and not transportation feasible.*:

> At bottom, America was not the master of its own logistical fate, and theater access problems complicated joining the strategic lift system into the theater reception system. ... *The military and political 'system' had prevented the logistics structure from working properly. ... Such a logistical blind spot was not an aberration but was the American way of war*, and it was strategy affecting. ... High risk resulted.[243]

In sum, Trainor makes the piercing observation that "*logistical problems were more formidable than Iraqi defenses* [emphasis added]."[244]

To conclude, Menarchik makes the case that "the Gulf War showed *strategic transportation [is] ... the stepchild of American military might.*:

> *As Desert Storm showed, America had plenty of bombs, bullets, planes, tanks and troops, but barely enough lift for timely deployment to meet its declared strategy. America has under-valued the role of logistics in formulating military strategies, emphasizing combat force structure at the expense of logistics force structure* [emphasis added].[245]

In spite of these documented problems which hindered the execution of the strategic airlift mission, nevertheless Menarchik claims that "*the American transportation system won the Gulf conflict* with three strategic moves:

> (1) Strategically moving a defensive force to the Gulf in twelve weeks; (2) Strategically moving an offensive force to the Gulf by doubling the original size in nine weeks; and (3) Strategically moving two Corps in theater for a surprise grand envelopment of the Iraqi right wing.[246]

Winnefeld, Niblack and Johnson, 38.

[243] Menarchik, *Powerlift*, 85.

[244] Bernard E. Trainor, "War by Miscalculation,"in Joseph S. Nye, Jr., and Roger K. Smith, *After the Storm* (New York: Madison Books, 1992) 212.

[245] Menarchik, *Powerlift*, 171 - 172.

[246] Ibid., 176.

Nadel claims that "two factors permitted this enormous logistical feat: technology and complete freedom of movement.

> Technology such as fast sea lift, *jet transport*, and computerized movement control [which] were developed after World War II. Also, the Coalition, unlike the Allies of fifty years ago, were operating with complete freedom of movement on the ground sea, and air [emphasis added].[247]

Testifying before the Senate in the wake of the U.S. victory in the Gulf, General Johnson emphasized that the Gulf War was "not the worst-case scenario," but instead there had been "many factors in our favor:

> First, we didn't have to fight our way into the Persian Gulf; We also had unprecedented international cooperation with foreign country overflights; Saudi Arabia had a sophisticated infrastructure of airports; Most importantly, we had nearly months to deploy this force.[248]

Johnson emphasized that if any of these factors had not worked to the U.S. advantage, the deployment would have presented "a much greater transportation challenge." Therefore, he cautioned that "it would be unwise to base future plans on such cooperative and benign environments."[249]

> The time and resources required to complete this deployment of truly historic proportions underscores the *critical role our strategic lift assets play in projecting* our forces rapidly and in sufficient quantity to provide *a credible conventional deterrent.* If rapid deployment prevented Saddam Hussein from moving troops into Saudi Arabia, then *mobility itself can be seen as a deterrent to military aggression* [emphasis added].[250]

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[247] Nadel, "Logistics Lessons," 172.
[248] U.S. Senate, *Statement of General H.T. Johnson*, 142 - 143.
[249] Ibid., 143.
[250] Ibid., 150.

The participants in the U.S. Air Force-sponsored RAND study found that the Desert Shield deployment was "unique in the annals of warfare" and they also agree that it served as an effective conventional deterrent, convincing Saddam to stay put in Kuwait:

> *The rapidity of the deployment and the assemblage of usable combat power in the Gulf are generally considered to have deterred Iraq* from invading Saudi Arabia during the critical days of August and September 1990 [emphasis added].[251]

Because Saudi Arabia is situated 8,000 miles from the U.S., "*strategic airlift was to play the critical role* in the early force deployments."[252] RAND concludes:

> *strategic mobility and sustainability were the essential successes of the Gulf War* - without detracting from the deserved accolades given to high-tech weapons, the training of our forces, and a greater degree of jointness in command and operations. *The indispensable ingredient of victory was getting there - quickly and in force* - with the capability to support high-tempo operations.[253]

Menarchik endorses the RAND findings, pointing out that "*the Gulf conflict was quintessentially a strategic transportation war.*" Moreover, he predicts that "in the post-Cold War era typified by regional conflict, American strategists may be called upon again to solve the time and space problem of power projection."[254] He asserts that "*few people ever consider that Desert Storm* not only entailed a 1000-hour air combat campaign and 100-hour ground assault, but also *a 215-day logistics war.*" [255] RAND also touches upon this point:

> *Given what we consider the preeminent role of logistics* (including force deployment), *it strikes us as remarkable that few of the official or popular*

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[251] Winnefeld, Niblack and Johnson, *A League of Airmen*, 25 - 26.
[252] Ibid.
[253] Ibid., 223 - 224.
[254] Menarchik, *Powerlift*, xiii.
[255] Ibid., xiii.

> *monographs on the Gulf War give the subject much attention.* Rather, the attention has been on the strike plan [emphasis added].[256]

In closing, Menarchik contends that "given the centrality of logistics to strategy, national leaders and military commanders should take it to heart intellectually and substantively. They do not. *Civilian and military leaders tend to undervalue logistics*:[257]

> Logistics affects military strategy, military strategy affects grand strategy, and grand strategy affects political outcomes. It raises important issues for America's security policy in the post-Cold War era and is worthy of leadership interest to ensure America's logistics is in order. America and the international community need to pay more attention to logistics infrastructure, doctrine and its effects on strategy, tactics and military-political outcomes.[258]

Perhaps Menarchik's call for high-level attention has finally been heeded, as Secretary Cheney wrote in his *Report on the Conduct of the Gulf War* that "among the many lessons we must study from this war, five general lessons ... stand out." One of these lessons was:

> In a highly uncertain world, sound planning, forces in forward areas, and *strategic air* and sea *lift* are *critical for developing the* confidence, capabilities, international cooperation, and *reach needed in times of trouble* [emphasis added].[259]

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[256] Winnefeld, Niblack and Johnson, *A League of Airmen*, 223 - 224.
[257] Menarchik, *Powerlift*, 172.
[258] Ibid., xiv.
[259] U.S. Dept of Defense, *Conduct of the Persian Gulf War*, xviii.

Analysis

Airlift Organization: Post-Gulf War

Largely in reaction to the end of the Cold War and the downsizing it would bring, in June 1990, Secretary of the Air Force Donald Rice released a White Paper, entitled *Global Reach - Global Power*, which set the general guidelines for the future organization of the service.[260] Using the Bush Adminstration's national security strategy as his benchmark,[261] Rice acknowledged that "deterring nuclear attack will remain the first priority," nevertheless his White Paper "call[ed] for an *increased emphasis on force projection capabilities* - even more flexible, rapidly responding, precise, lethal forces *with global reach* [emphasis added]."[262]

The following September, in the midst of the Desert Shield deployment, the newly anointed Chief of Staff of the Air Force, General Michael Dugan reiterated Rice's call to concentrate "on those kinds of missions that we discuss in *Global Reach - Global Power:*

> The Air Force is now ready for different organizational schemes, and it is busily looking at them. At a time of great turbulence, there is an opportunity and a need for us to look again at the way the Air Force is - at all the things we came to accept about the Air Force as lieutenants or captains or colonels.[263]

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[260] "The concepts outlined here, ... guided the development of our most recent program and budget recommendations, provide a framework to conduct future Air Force planning." See Donald B. Rice, *The Air Force and U.S. National Security: Global Reach - Global Power*, (Washington, D.C.: SAFOSX White Paper, June 1990) 1.

[261] "The President has recently reiterated the foundation of our defense strategy is deterrence - based on a mix of nuclear and conventional forces, strong allies, forward defense, and power projection capabilities." See Rice, 2.

[262] Rice, *Global Reach - Global Power*, 2 - 3. "The following objectives, their associated forces, and Air Force attributes provide a planning framework to support our Nation's defense strategy: (1) Sustain Deterrence - Nuclear Forces; (2) Provide Versatile Combat Force - Theater Operations & Power Projection; (3) Supply Rapid Global Mobility - Airlift and Tankers; (4) Control the High Ground - Space & C3I Systems; (5) Build U.S. Influence - Strengthening Security Partners and Relationships." See Rice, 5.

[263] Dugan had previously served as the Air Force DCS/Plans and Operations before assuming command of USAFE in the spring of 1989. In his previous Pentagon post, the general had "advocated taking fresh

Thus, although Merrill McPeak had been the Air Force's first theater commander to initiate reform measures,[264] when he inherited the reigns of power from Dugan, the wheels of change were already in motion. So that, "immediately after becoming chief, [he] kicked off "the year of organization," by restructuring to the "Objective Air Force."[265] By the beginning of 1991 "senior Air Force officials announced initiatives on reducing personnel, restructuring organizational units, and closing bases."[266] The July 1991 CORONA TOP annual Air Force conference of four-stars marked the beginning of "serious considerations of forming two commands," which would take place four to five years hence.[267]

Later in July, CINCSAC, General Lee Butler, revealed at the "Lessons Learned Evaluation of Desert Shield/Storm" held at Maxwell AFB, that "SAC was not trained,

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approaches to formulating future force structures." Until his tour was cut short at a mere three months, as CSAF, Dugan "was clearly in position to bring to the finish line the plans that he once set in motion." See "Back to the Future," *Air Force,* October 1990, 35 - 36.

[264] Although the beginnings of reorganizing the military can generally be dated to the end of the Cold War in November 1989, General McPeak was already reviewing theater control of Pacific-based assets as early as July 1989. See Betty R. Kennedy, "*Air Mobility Command (Provisional) 15 January - 31 May 1992, Global Reach for America: Air Mobility Command's Inception* (Scott AFB, IL: Office of History, Headquarters AMC, June 1993) 4 - 5.

[265] Merrill A. McPeak, "Flexibility and Airpower," in *Policy Letter from the Office of the SECAF*, July 1993, 1.

[266] "The Air Force began its restructuring before the SECDEF and JCS had completed their review of the unified and major commands." Initially, the issue was worked in a close-hold manner by senior DOD and DAF officials. Among this group, on the Air Force side, were Generals Larry D. Welch (CSAF), Dugan, McPeak and George Lee Butler, the Joint Staff Director of Strategic Plans and Policy from May 1987 - January 1991, whereupon he became the last CINCSAC. Powell had "asked Butler to come up with a unified command plan that took into consideration a reduced armed forces." When Butler assumed command of SAC, the initial plan was to keep it intact as the Air Force component of USSTRATCOM. He began by "reorganizing to accommodate a 30% reduction as SAC's nuclear deterrent mission diminished, leaving its bomber and tanker forces to be applied to more conventional roles. ... Once SAC's assets had been divided along nuclear and conventional lines, it followed that other commands should gain the conventional forces." See Kennedy, *Global Reach for America,* 1 - 4.

[267] "After CORONA the initiative rapidly unfolded. Fundamental changes in the Soviet system in July clearly indicated that a Soviet invasion of Europe was no longer likely." See Kennedy, *Global Reach for America*, 6.

organized, or equipped to fight a conventional war."[268] Responding to a request from McPeak concerning his "thoughts on integrating tankers and airlift," General H.T. Johnson tasked his "plans, programming and policy staff to *build a case for acquiring SAC's tanker assets.*"[269] On 13 August, the CSAF convened all the Air Force's four-stars for "a briefing in which he laid out his plan to reorganize the Air Force further."[270] Apparently, before McPeak's briefing, his slides had originally read that MAC would get *some* tankers, and Secretary Rice personally intervened to change the wording to reflect that MAC would get *most* of the tankers, while TAC would get *some* tankers and *some* tactical airlift.[271] Nevertheless, at a subsequent implementation briefing conducted on 23 August, Brig. Gen. Robert Linhard, SAC DCS/Plans, indicated that "TAC had most of the tankers because it would get the bases." General Johnson recounts that Brig. Gen. Griffith, TAC

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[268] "Thus, the situation in the Commonwealth of Independent States and General Butler's statements led General McPeak to press ahead so that the Air Force was postured to respond effectively." See Kennedy, *Global Reach for America*, 6.

[269] "Rutherford told Maj Gen James McCombs, MAC DCS/Plans, to be 'positive' and to 'lean forward' like [the tanker acquisition] would happen." The planning group "recognized that SAC's reorganization of its numbered air forces by missions facilitated the transfer of air refueling aircraft to MAC. They also knew that the potential existed for forming a new command." Johnson replied via phonecon to McPeak on 8 August, stating that "the assignment of tanker forces, in particular the KC-10s, provided MAC with a "significant enhancement." The command would have little difficulty absorbing the KC-10s and those KC-135s dedicated to conventional roles." In this conversation Johnson temporarily convinced McPeak that "MAC should not give all of its C-130s to the Air Combat Command and the overseas commands." Based upon Johnson's and the other CINC's inputs, "McPeak's staff composed the 13 August briefing on reorganizing the Air Force combatant commands." See Kennedy, *Global Reach for America*, 7 - 8.

[270] "Gen. McPeak announced his plan to form an 'Air Command' that would serve as the Global Power tenant of the Air Force by providing the offensive forces. Although SAC would lose its bombers, ICBMs, tankers and reconnaissance assets, it would still remain in existence and retain an advocacy role. Similarly, MAC would lose some of its tactical airlift assets but still retain advocacy responsibilities and gain some tankers." See Kennedy, *Global Reach for America*, 8 - 9.

[271] Gen. Johnson originally believed that "Gen. McPeak desired to break up MAC." See Kennedy, *Global Reach for America*, 12. It was not until years later, at the end of FY 94, that "ACC transferred almost all of its tankers to AMC." See See Betty R. Kennedy, "Evolution of Roles and Missions Authorities Vested in AMC and USTRANSCOM, 1941 - 1994," *Background Paper* (Scott AFB, IL: HQ AMC/HO, 30 November 1994) 10.

DCS/Plans, "*talked in terms of taking over SAC.*" It was Johnson who finally proposed that "the three commands be disestablished with two new commands activated in their place as the best course." This was the eventual solution which Rice and McPeak adopted, as McPeak apparently "changed his mind when he recognized that AMC would provide the Global Reach for Secretary Rice's *Global Reach - Global Power* equation [emphasis added]."[272]

On 17 September 1991, Secretary Rice announced his plans for the future organization of the Air Force at a major address at the annual Air Force Association Convention:

> Three major combatant commands based in the U.S., SAC, TAC, and MAC, will *merge* into two commands. Fighters, bombers and ICBMs ... will be in one command, along with reconnaissance aircraft and command, control, communication, and intelligence platforms. This command has been designated Air Combat Command. It will also possess *some* tanker and airlift aircraft. Air Mobility Command will include the bulk of airlift assets as well as a considerable portion of the tanker force. This integration of lift with tankers will better enable us to supply global mobility and reach.[273]

Given that the Army Air Corps had originally given theater commanders control of their air power assets, "Rice characterized the restructure as a renaissance in air power."[274]

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[272] "The MAC position was still evolving while it was obvious that SAC and TAC had already gotten together and worked out a position. The general impression was that they had come to tell MAC how things would transpire." See Kennedy, *Global Reach for America*, 11.

[273] White Paper, DAF, *Air Force Restructure*, September 1991, p. 6, Sup Doc 1-2, cited in Kennedy, 2. According to the provisions of the White Paper, "AMC [was] assigned all strategic airlift assets and the majority of theater airlift and tanker assets, effective 1 June 1992. Overseas C-130s [were] reassigned to USAFE and PACAF, effective 1 April 1992." McPeak subsequently reviewed AMC's international en route structure, whereupon he reduced "AMC's overseas presence from 39 to 13 key locations, effective 1 July 1994." See Kennedy, "Evolution of AMC and TRANSCOM Roles and Missions," 9.

[274] Rice based this arrangement upon two assumptions. First, the Desert Storm experience had blurred the distinction between strategic and tactical missions, as bombers sometimes struck tactical targets, whereas fighters struck many strategic targets. Second, there was a recognized need to "ensure that theater commanders' requirements received paramount attention." See Kennedy, Global *Reach for America*, 2.

On 18 September 1991, at the same AFA Convention, General McPeak elaborated on Rice's groundbreaking speech the previous day. Pointing to the fact that the Air Force was already being funded at a level equivalent to the hollow force of 1980, he estimated that it was still to be cut an additional 25%:

> Secretary Rice and I have absolutely no intention of presiding over the decline of the Air Force. Therefore, we will instead press for a top-to-bottom restructure as the best way to sustain our combat capability as we get smaller.[275]

Congress was officially notified of the Air Force's reorganization plan on 13 December 1991.[276] Thus, this reorganization was internally generated from within the Air Force. Nevertheless, looming budgetary constraints made reorganization a necessity all the same.

Effective 1 June 1992, MAC was inactivated and replaced by the Air Mobility Command (AMC), the new Air Force component of USTRANSCOM. The change combined the Air Force's strategic airlift aircraft (C-5, C-141) with most of the tanker aircraft (KC-135, KC-10) which were formerly assigned to the Strategic Air Command. Moreover, MAC surrendered its overseas tactical airlift aircraft (C-130) to PACAF, USAFE and Alaska Air Command and in October 1993 to the newly established Air Combat Command (ACC), which also took command of SAC's former bomber force of

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[275] "Guiding the restructuring initiative would be maintaining 'simplicity' in command relationships. The Air Force would therefore, organize along mission versus functional lines with air power being employed as an 'integrated whole' as it had been during the early years. The AMC mission would provide the Global Reach aspect of air power. As the U.S. reduced its forward presence, but not its commitments, in the post-Cold War setting, possessing the means to transport mobility forces rapidly assumed a larger importance." McPeak attributed the changes to "the international environment as well as the declining support for defense." See Msg, OSAF/PAN, to ALMAJCOM - FOA/CC, "CSAF Remarks to AFA Annual Convention," 231530Z Sep 91, Sup Doc 1 - 5, cited in Kennedy, *Global Reach for America*, 3.

[276] The first public announcement was made this date that the ACC and AMC commands were to be activated on 1 June 1992, including the force structure and basing changes." See Kennedy, *Global Reach for America*, xiv.

B-52s and B-1s. The term "mobility" signified the ability to not only airlift troops and equipment, but also to extend the range of the entire fighter, bomber and transport fleets to provide global reach.[277]

Airlift Force Structure: Post-Gulf War

During the spring of 1990 Secretary Cheney announced that the C-17 program buy would be drawn out and reduced from 210 to just 120 aircraft, based upon C-141 replacement needs. His justification for this move was "based on changed world conditions," which had led to the virtual collapse of the Warsaw Pact. This new situation would allow for "increased warning time of a Soviet conventional attack in Europe." Nevertheless, he supported continued production of the C-17 given that "the U.S. is likely to have fewer troops based overseas."[278]

Lawrence Korb points out that "*the Gulf War ... renewed the debate about the lack of mobility of U.S. forces.*"[279] More specifically, although "the need for increasing airlift capacity was recognized over a decade ago, ... [Korb predicted that] *the Gulf crisis should*

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[277] In essence, the three former major commands of the Air Force, SAC, TAC and MAC have devolved into just two commands: ACC and AMC. Effective 1 July 1993, ACC transferred the former SAC missile fleet to AFSPACECOM. See "The U.S. Air Force in Facts and Figures," *Air Force*, May 1993, 58.

[278] Cheney's measures had the effect of reducing the FY91 aircraft purchase orders from six aircraft to just two, delaying full scale production another year until FY94, increasing the program cost per C-17 from $200 million to $250 million, and reducing overall C-17 program costs by $4.168 billion during the FY91 - FY94 time frame. See "Cheney Proposes Stretchouts in B-2, C-17 Programs," *Aviation Week*, 30 Apr 90, 20.

[279] "It took more than six months for this country to deploy to the Gulf the necessary men, women, and materiel sufficient to liberate Kuwait. One of the reasons that the ground war could not begin until late February 1991 was that all the ground forces thought to be necessary were not in place until then." See Lawrence J. Korb, "The Impact of the Persian Gulf War on Military Budgets and Force Structure," in *After the Storm: Lessons from the Gulf War*, eds. Joseph S. Nye, Jr., and Roger K. Smith (Lanham: The Aspen Institute, 1992) 235.

give new life to the C-17, which [had] been troubled by cost overruns, performance retrogrades, and production delays since its inception [emphasis added]."[280]

On the heals of Secretary Rice's June 1990 *Global Reach - Global Power* White Paper, the Air Staff published *Airlift and National Security: The Case for the C-17* in December 1990. The document begins by restating the *Global Reach - Global Power* case that "a key Air Force objective is to supply rapid global mobility." The report continues that "*it is a quirk of military history that airlift is rarely fully appreciated except in crises, when it becomes a dominant focus of attention and concern.*" It even acknowledges that "*underappreciation of airlift is as old as the emergence of modern airpower itself* - and ***we, in the Air Force, have occasionally been guilty of it as well*** [emphasis added]."[281]

During the spring and summer 1990 debate surrounding "force requirements and appropriate levels of future defense spending, ... *some did not have a great appreciation for the importance of airlift.*"[282] However, a comprehensive Air Staff "analysis of the strategic environment clearly indicate[d] that airlift w[ould] be *more* - not less - important

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[280] "The administration hoped to purchase 18 C-17s in FY 1992 and FY 1993 at a cost of $7 billion, and eventually buy 120 at a cost of $35.2 billion, or almost $300 million per aircraft." See Korb, 235.

[281] U.S., Department of the Air Force, *Airlift and National Security: The Case for the C-17* (December 1990) 120.

[282] In the post-Cold War airlift debate, "some suggested that easing tensions in Europe eliminated the need for the C-17. Others stated that the C-17 wasn't the right airlifter - that a derivative of a commercial airliner would be cheaper or better." See DAF, *The Case for the C-17,* 120. "The Air Force has decades of experience with trying to convert civil aircraft to military purposes. The results have usually been less than satisfactory. ... Historically, the U.S. has both adapted existing military and civil airframes and developed dedicated aircraft. Experience derived from combat operations demonstrated the problems of adapting commercial airframes and led to the design of purpose-built, more capable airlifters." See DAF, *The Case for the C-17*, fn 7, 131.

to provide conventional deterrence and underwrite national security strategy in the future." Using the Gulf War as an example:

> While one must always be cautious of defining any single example as 'the way of the future,' the sudden Iraqi invasion of Kuwait was exactly the kind of security threat forecast by Global Reach - Global Power: a sudden, unpredictable action by a well-armed rogue state that directly threatened U.S. interests. It will not be the last. In response, as outlined in Global Reach - Global Power, *our force planning calls for an increased emphasis on force projection capabilities - even more flexible, rapidly responding forces with global reach.*[283]

Furthermore, written in the midst of Desert Storm, the report acknowledged that "while the media was filled with headlines about the importance of airlift, *history indicates that sensitivity may dull with time.*"[284] In sum, the report indicated that "*the USAF is fully committed to the C-17* as the means to provide global reach to America's forces and put backbone into conventional deterrence for the 21st century [emphasis added]."[285]

On 5 February 1991, Secretary Cheney and General Powell proposed a "22% real budget reduction and a 25 % force structure reduction for the FY 1992-97 period" for all DOD assets.[286] Such drastic cutbacks required an overall restructing of U.S. military forces into "three conventional packages: Atlantic, Pacific and Contingency" and a nuclear "Strategic Force package."[287] Within the Contingency Force package, there were

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[283] U.S., DAF, *The Case for the C-17*, 127.

[284] "Eventually, some would-be budget cutters may attempt to draw the lesson that since today's airlift appears to have been sufficient to maintain deterrence, it is adequate for the future - forgetting how very heavily that airlift system was strained, or how potentially fragile was the period until sufficient forces were built up to slam shut what some have called Saddam Hussein's 'window of opportunity.'" See DAF, *The Case for the C-17*, 123.

[285] U.S., DAF, *The Case for the C-17*, 143

[286] "After rising by almost 55% between FY 1980 and FY 1985, and dropping by approximately 22% since then, defense authority [would] fall another 22% by FY 1997. This plan follow[ed] the Budget Summit Agreement and [would] bring defense spending in real terms back to the level of FY 1980 by FY 1997." See Korb, 226.

[287] Korb, "The Impact of Gulf War on Military Budgets and Force Structure," 229.

provisions for "7 wings of inter-theater airlift."[288] Cheney subsequently designated the C-17 program as one of eleven weapon systems slated for a cost and performance review.[289] Senior Air Force officials continued to support the C-17 and pointed out that there were "no suitable alternatives."[290]

Later the same month, General H.T. Johnson, CINCTRANS, sounded the warning that "airlifters cannot survive in the 1990s threat environment with 1960 technology. *The current MAC fleet is old*, with many aircraft rapidly approaching the end of their service life." He emphasized that the C-17 would "replace *portions* of the aging airlift fleet, contributing more than 25 MTM/D" to MAC's capabilities. [291] Nevertheless, it was still estimated that "*the airlift shortfall will continue well into the next decade, even when the C-17 is produced and enters the Air Force inventory* [emphasis added]."[292]

General Powell testified before the House Armed Services Committee on 7 February 1991 that "deterrence is only credible if we possess a robust means of power

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[288] The Atlantic package would consist of the Army's 12 active divisions, six of the Navy's 12 carrier battle groups, five of the Air Force's 15 tactical air wings, and 33% of the Marine Corps active force. The Pacific Force would be primarily a maritime force. It would consist of the remaining six carrier battle groups and the other 66% of the Marines, plus two Army divisions and three Air Force wings. The Strategic package would consist of 18 Trident submarines with 432 missiles, 550 land-based ICBMs, and some 300 B-52H, B-1 and B-2 bombers." See Korb, 229 - 231.

[289] "Programs that appeared to be on the 'bubble' because of the end of the Cold War were the B-2, Advanced Tactical Fighter (ATF), Advanced Tactical Aircraft (ATA), Advanced Medium Air-to-Air Missile (AMRAAM), Tacit Rainbow antiradar cruise missile, SDI, C-17, Joint Surveillance and Targeting Radar System (JSTARS), Army Tactical Missile System (ATACMS), and the Milstar Satelite System, as all of these systems had been recommended for reductions or cutbacks at one time or another by the Armed Services or Defense Appropriations Subcommittees." See Korb, 232 - 233.

[290] "Air Force, Douglas Press C-17 Assembly to Retain First Flight in 1991," *Aviation Week*, 15 Jan 90, 18.

[291] Hansford T. Johnson, "U.S. Transportation Command," *Defense Transportation Journal* (February 1992), reprinted in *Strategic Deployment and Mobility* (Maxwell AFB, AL: Air Command and Staff College, 1993) 31-31.

[292] King, "Transportation and Strategic Mobility," 31 - 26.

projection and the mobility to deploy and sustain our forces."[293] There still was some glitter of hope for a full production lot of 210 C-17 aircraft in a statement he made in a 22 June 1991 speech :

> Once we get that program going, and as we march toward 120 aircraft, we can make a judgment along the way, over the next several years, as to whether that will be adequate or whether we need to buy more C-17s.[294]

Besides the reduced purchase, MAC was concerned about the continued delays. The C-17 IOC (initial operating capability) was again pushed back, this time another two years to the fall of 1994. Because of unavoidable C-141 retirements, there would be a sort of airlift window of vulnerability while the C-17s came on line to replace its predecessor whose service life had already been extended from 30,000 to 45,000 hours.[295]

A year behind schedule, in September 1991 the C-17 flew its first flight test sortie from the McDonnell Douglas Long Beach Plant to Edwards AFB, where it would be put through a rigorous flight test program.[296] As of 1992, the DOD five-year defense program for FY 1992 - 97 planned on maintaining "current [airlift] capacity well into the next century." Given that the C-141 would be "nearing the end of its useful life at the end of the decade," DOD had "examined a range of options for retaining the existing capacity,

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[293] "USTRANSCOM's First Great Challenge," 31-39.

[294] "USAF Plans to Combine C-17 Production, Smoothen Workload at Douglas Aircraft," *Aviation Week*, 9 July 1990, 24 - 25.

[295] Any further C-141 life extensions were deemed too costly. MAC did intend to keep approximately half of the C-141 fleet, 128 aircraft, in service with the Guard and Reserve where their utilization rate would be significantly less, allowing continued operation into the next century. The shortfall was not as severe as it could have been, given that the Congress' mandated requirement was reduced to 54 MTMD shortly after it was announced that the C-17 buy would be reduced to 120 airframes. See "MAC Satisfied C-17 Meets Requirements, But Fears Further Production Delays," Aviation *Week*, 9 September 1991, 52 - 53

[296] "First C-17 Flight Marks Key Program Milestone," Aviation *Week*, 23 September 1991, 18

and found that the C-17 provides the most capability for the regional deployments that the U.S. is likely to face in the future."[297]

The FY 1993 DOD Budget made provisions to procure "8 C-17s in FY 1993 and 66 additional C-17 purchases through 1997." Plans were for the C-141s to be "transferred from the active force to the reserve component - or be retired - as C-17s are delivered." Of the C-141s retained, they would be in need of "maintenance and repairs to achieve the 45,000-hour service life required by this plan," as the aircraft was originally designed to fly for 30,000 hours.[298] As far as the intratheater C-130 fleet, the DOD plan was for the force to "remain almost constant throughout the period."[299]

On 14 June 1993, McDonnell Douglas delivered the first operational C-17, flown by Air Force Chief of Staff Merrill McPeak, to Charleston Air Force Base, South

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[297] "As the C-17 is phased in, the total capacity of the U.S. military and civil airlift fleets will grow from today's level of 48 MTM/D to 53 MTM/D as the aircraft funded in FY 1997 are delivered in FY 1999. If additional C-17s beyond those [120] currently planned are not purchased, or if CRAF does not grow beyond its current level, then capacity will return to 48 MTM/D with the retirement of the C-141 fleet early in the next century. Of the 53 MTM/D of cargo capacity programmed for FY 1997, about 37 MTM/D will be provided by military airlift and the remainder by CRAF. CRAF Stage I, which is activated by CINCMAC, will provide 3 MTM/D or capacity. CRAF Stage II, activated by SECDEF, will provide an additional 2 MTM/D of capacity, and CRAF Stage III (also activated by SECDEF) will contribute another 11 MTM/D." See DOD, *1992 Annual Report of SECDEF*, L31-16-17.

[298] As of February 1992, the C-141 phase out plan assumed that "when the C-17 acquisition goal is reached with the delivery of the 120th aircraft in 2001, there will be 64 C-141s in the active force and 64 in the reserves. The active C-141s are scheduled for retirement between 2001 and 2005. The reserve C-141s will leave one decade later, between 2012 and 2015. DOD plans to maintain the CRAF program at its current level, contributing up to 30% of U.S. cargo capability and the majority of our capacity to carry personnel." See See DOD, *1992 Annual Report of SECDEF*, L31-21.

[299] "Eight C-130Hs are slated for procurement in FY 1993 with eight per year funded in FY 1994 and beyond. These aircraft will be used to replace E-models in the active force." See DOD, *1992 Annual Report of SECDEF*, L31-21. Effective 1 October 1993, all AMC C-130s were transferred to ACC. The rationale was that it allowed "ACC to better integrate combat forces in support of theater commanders, and it enable[d] AMC to concentrate its assets to support the mobility portion of 'Global Reach - Global Power." The same date ACC transferred its KC-135 aircraft (except for the aircraft at Mountain Home AFB, ID) to AMC in order to consolidate air refueling assets under one command." See Walter S. Hogle, Jr., "Force Structure Changes," in Policy Letter from the Office of the SECAF, July 1993, 4.

Carolina, to be operated by the 437th Airlift Wing. The next aircraft was scheduled for delivery in August, and the first squadron of 12 aircraft was projected to be mission ready by early 1995.[300] In closing, CINCTRANS, General Ronald Fogleman, now Chief of Staff of the Air Force, predicts that:

> we will end up with the C-17 like we did with the C-5. We will make a C-17 buy, and ultimately this country will see that it has no choice but to buy more of them.[301]

Airlift Doctrine: Post-Gulf War

On 2 August 1990, the same day that Iraq invaded Kuwait, President Bush announced a strategic doctrine for the new world order before the Aspen Institute, in Colorado:

> Our new strategy must provide the framework to guide our deliberate reductions to no more than the forces we need to guard our enduring interests - the forces to exercise forward presence in key areas, to respond effectively to crisis, to retain the national capacity to rebuild our forces should this be needed.[302]

This was later refined by Secretary of Defense Richard Cheney in a way that shifted the U.S. "from a strategy of forward defense to one of regional defense," which encompassed the four keystones of "nuclear deterrence, forward presence, *crisis response* and reconstitution." In order to accommodate the changed political forces of the Post Cold War, Bush's new doctrine was "less intrusive in its deployments and more flexible in its response to unexpected requirements."[303] According to Donald Snyder and Gregory Grant [emphasis added]:

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[300] "The C-17 Fights the Headwinds," Air *Force*, July 1993, 34 - 40.
[301] "Fogleman Cites Need for 70 - 80 C-17s,"*Aviation Week*, 25 April 1994, 19.
[302] George Bush, "U.S. Defenses," *Vital Speeches of the Day*, vol. 61, no. 22, 677, cited in Tyc, 7.
[303] "The New Defense Strategy," *Air Force*, July 1991, 27, cited in Tyc, 7.

> The shift toward a forward presence and away from the forward deployment of military bases ringing the Soviet Union signals the most significant change from the old containment strategy to a new strategy of responding to distant threats.[304]

Concerning crisis response, the *1992 Annual Report to the Secretary of Defense* states:

> The capability for rapid movement of forces to remote areas is also an essential component of our national strategy. As our overall force levels and forward-deployed forces shrink, we must continue to invest in prepositioning, *airlift*, sealift and space capabilities [emphasis added].[305]

Bottom line, "readiness and mobility must be among the highest priorities, especially for forces designated to respond to short warning crisis."[306]

The current 1992 edition of AFM 1-1 de-emphasizes the role of airlift in that it is no longer officially recognized as having a combat mission. The four basic "roles" of the Air Force are prioritized into four categories:

> (1) Aerospace Control assures the friendly use of the environment while denying its use to an enemy (i.e., Counterair and Counterspace); (2) Force Application brings aerospace power to bear directly against surface targets (i.e., Strategic Attack, Interdiction, and Close Air Support); (3) *Force Enhancement* increases the ability of aerospace and surface forces to perform their missions (i.e., *Airlift*, Air Refueling, Spacelift, Electronic Combat, Surveillance and Reconnaissance and Special Operations); and (4) Force Support must sustain operations if aerospace forces are to be successful (i.e., Base Operability and Defense, Logistics, Combat Support and On-Orbit Support) [emphasis added].[307]

Force Enhancement is defined as follows:

> 3-6. The force enhancement role both enables and improves operations of aerospace and surface forces. The missions within the force enhancement role are

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[304] Donald M. Snider and Gregory Grant, "The Future of Conventional Warfare and U.S. Military Strategy," *The Washington Quarterly*, 15:1 (Winter 1992): 224, cited in Tyc, 7.

[305] U.S., Department of Defense, *Annual Report of the Secretary of Defense to the President and the Congress*, February 1992, reprinted in "Excerpts from the Annual Report of the Secretary of Defense," *Strategic Deployment and Mobility* (Maxwell AFB, AL: Air Command and Staff College, L31) 13.

[306] DOD, *1992 Annual Report of SECDEF*, 13.

[307] U.S., Department of the Air Force, *Basic Aerospace Doctrine of the United States Air Force*, Air Force Manual 1-1 (1992) 7.

> vital to aerospace and surface campaigns. In some situations, force enhancement may be the major contribution aerospace forces make to a campaign.[308]

The description of airlift's role within the force enhancement category is as follows:

> a. Sufficient strategic and theater airlift must be available to respond quickly to worldwide threats and to sustain deployed aerospace and surface forces. When time is a critical factor, airlift is often the only means of transporting forces rapidly enough to the point of crisis. Airlift may be the only practical method of sustaining those forces with critically needed supplies and equipment. In addition, airlift must be able to clandestinely insert and extract small numbers of personnel in denied territory.
>
> (1) Airlift's key enhancement of the campaign is its ability to place properly concentrated combat forces where and when needed. Aerospace power's flexibility allows the commander to deploy forces within theater or from the United States and other theaters.
>
> (2) Because strategic and theater airlift capacities are finite, the air component commander must recommend priorities for their use. Strategic and theater airlift must be systematically coordinated with each other and with other transportation means to achieve the proper concentration of aerospace and surface forces at the proper time.[309]

In a new Volume II to the manual, there is a separate section devoted to airlift. This section makes the first official recognition that:

> Airmen face formidable obstacles in designing and structuring appropriate strategic and theater airlift capabilities. *The most pervasive problem is the requirement to strike the appropriate balance between airlift and other types of aerospace forces. Experience has demonstrated that shortchanging airlift forces can lead to serious consequences* [emphasis added].[310]

A multivolume analysis of German airpower during World War II, written by former Luftwaffe generals for the U.S. Air Force, cites an example of airlift failure. The

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[308] Ibid., 13.
[309] Ibid., 14.
[310] Ibid., 188.

German High Command "lamented the fact that *airlift had taken a distant second place in the development of the Luftwaffe force structure*. The shortfall in airlift became most apparent on their Eastern Front, most notably at Stalingrad."[311]

James Smith notes that "within the framework of AFM 1-1, *airlift is always considered in a supporting role*. Where this doctrinal analysis falls down is in the failure to recognize areas where airlift could take a lead role." He points to the fact that even in its formative stage, airlift had proven itself to a viable "military instrument to achieve political objectives" during the Berlin Airlift. Operation Vittles (as the mission was called) was a military success because of the "Herculean effort to get the maximum tonnage of supplies into the city." Moreover, it was a political success because it "demonstrated Western resolve and solidarity in the face of Soviet aggression [emphasis added]."[312]

In light of airlift's proven success, he asks "why, then, is there no place for this kind of logic in current Air Force doctrine?" Smith asserts that Air Force doctrine should be revised to promote "the use of airlift in operations independent of lethal air and surface forces." He believes that in its present form, Air Force doctrine, "limits our understanding," because in an attempt "to be technically precise, [it] is too narrowly focused." Because it try's to "defend the decisiveness of lethal [offensive] air power," it often neglects the "unique, significant contributions of non-lethal aerospace power." He

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[311] Ibid., 194.

[312] James B. Smith, "Airlift: Time to Look Beyond the Supporting Role," *Airlift / Tanker Quarterly* 1:4 (Fall 1993) 58.

urges the authors of the next edition to "define, then expand on, just what air power can accomplish in a broader context."[313]

Conclusion

In the post-Gulf War era, primarily two external factors have been responsible for the substantial changes which have taken place in Air Force organization, force structure and doctrine. On the one hand, because of the end of the Cold War, there are fewer forward deployed forces, thus airpower is needed more than ever to maintain the nation's ability to exercise global reach and global power. Second, the U.S. budget deficit has led to drastic defense cuts, which has forced a reexamination as to how the U.S. organizes, trains and equips to fight its wars. In sum, "just as the post-World War II environment led to the establishment of the Air Force, world events in the late 1980s and early 1990s drove the Air Force to undertake a massive and far-reaching reorganization."[314]

The core organizational, structural and doctrinal changes being experienced by airlift forces today are primarily a byproduct of this overall metamorphosis of the Air Force. Organizationally, U.S. airlift assets are once again decentralized. Strategic airlifters (C-5, C-17, C-141) have been grouped together with tankers (KC-135, KC-10) to form the new Air Mobility Command. The tactical airlifters (C-130s) have rejoined the combat air forces as a part of the new Air Combat Command. Structurally, the Air Force has embarked upon an $18 billion airlift modernization program to procure 120 McDonnell Douglas C-17s to replace the aging C-141 fleet.[315] Today, this acquisition

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[313] Ibid., 59. Smith's line of reasoning generally supports Posen's assertion of the offensive proclivity of military doctrines.

[314] Kennedy, *Global Reach for America*, 1.

program is the service's number one priority, accounting for $2.5 billion in FY 96, compared to just $747 million for the B-2 and nothing for the fighter force.[316] Doctrinally, airlift has taken a step backward, in that it is now categorized as a "force enhancer" rather than one of the elements of "force application." To reiterate James Smith's point, until airlift is perceived as a force in its own right, it will always remain neglected in a relative sense.

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[315] "Defense Acquisition Board Announces Decision to Buy 80 More Globemaster IIIs," *Airlift / Tanker Quarterly*, 4:1 (Winter 1996) 19.

[316] "Procurement of Major Air Force Systems," *Air Force*, May 1996, 15.

CHAPTER VII

FINDINGS AND CONCLUSION

Introduction

Using the five pairs of competing hypotheses developed in Chapter II, this chapter tests the relative ability of Graham Allison and Morton Halperin's bureaucratic politics model[1] and Morton Halperin and James Q. Wilson's organizational culture (or essence) models[2] to explain the chronic neglect of the U.S. Air Force airlift mobility mission. Based upon the results, each theory is judged in terms of G. John Ikenberry's empirical, aesthetic and analytic criteria.[3] Barry Posen and Stephen Rosen's theories of military innovation[4] are then tested to explain the periodic changes that have occurred in the airlift mobility mission. In conclusion, using the sealift, minesweeping and special operations missions as examples, the theories of organizational culture and military innovation are shown to hold promise for explaining the wider phenomenon of neglected military missions.

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[1] See Graham T. Allison, *Essence of Decision* (Boston: Little, Brown and Company, 1971); Graham T. Allison and Morton H. Halperin, "Bureaucratic Politics," in *Theory and Policy in International Relations*, 40 - 79, eds. Raymond Tanter and Richard H. Ullman (Princeton: Princeton University Press, 1972).

[2] See Morton H. Halperin, *Bureaucratic Politics and Foreign Policy* (Washington D.C.: The Brookings Institution, 1974) and James Q. Wilson, *Bureaucracy* (Basic Books, 1989).

[3] See G. John Ikenberry, "The Problem of Oversupply of Theory," in G. John Ikenberry ed., *American Foreign Policy* (Harper Collins Publishers, 1989) 8 - 11.

[4] See Barry R. Posen, *The Sources of Military Doctrine* (Ithaca: Cornell University Press, 1984); Stephen P. Rosen, "New Ways of War" *International Security* 13:1 (Summer 1988): 134 - 168.

Findings

Using the neglected missions model on page 81, this section tests the five competing pairs of hypotheses of bureaucratic politics and organizational culture to see which most adequately accounts for the neglect which has been illustrated in the five case studies.

Stagnation vs. Learning

The first test examines the dependent measure of doctrine, to see whether it has stagnated, as bureaucratic politics contends, or whether it has changed due to learning which has occurred over the course of the study. At the highest level, strategic doctrine is articulated by the reigning presidential administration. As a reflection of strategic doctrine, basic aerospace doctrine articulates how the U.S. Air Force intends to conduct its warfighting role within the framework of the unified command structure.

Besides the initial establishment of the Air Transport Command in 1942, throughout these five case studies there have been only two instances of core learning. One occurred in the early 1960s when the Kennedy Administration instituted the flexible response strategic doctrine with resulted in the establishment of the Military Airlift Command in 1966. The other took place after the Cold War when the Bush Administration's Secretary of the Air Force, Donald Rice, introduced his Global Reach mobility concept, which resulted in the establishment of the Air Mobility Command in 1992. Alluding to the fact that the Air Force had gone full circle, and in the case of airlift had gone from decentralized airlift to centralized airlift back to decentralized airlift,

Secretary Rice referred to his policy of Global Reach - Global Power as the "renaissance of airpower."

Whereas the Eisenhower Administration had placed almost sole reliance upon nuclear retaliation as part of the New Look force structure, the Kennedy Administration pursued active measures to bolster U.S. conventional, as well as nuclear, capabilities in order to have more flexibility than unleashing a nuclear strike in the event of deterrence failure. Fundamentally, this call for change had begun during the decade of the 1950s with leaders in the academic and military communities, such as Henry Kissinger and Maxwell Taylor,[5] pointing to the limits of nuclear weapons in dealing with brush-fire conflicts or insurgencies on the periphery. Another problem with nearly sole reliance on nuclear weaponry was the fact that the Soviet arsenal was gradually increasing to the point where it would inevitably reach parity with the U.S. Thus, a nuclear first-strike would become literally a "MAD" option as both sides would assuredly be destroyed in the process of retaliating with second-strike forces.

Under the strategic doctrine of massive retaliation, the U.S. Air Force stood as the primary caretaker for two legs of the nuclear triad with its long-range strategic bombers and intercontinental ballistic missiles (ICBM). Given this was the case, the Strategic Air Command (SAC) was the dominant culture within the service, as Halperin and Wilson have alluded to earlier in this study. As a result, during the decade of the 1950s, there was no mention whatsoever of the airlift mission in the Air Force's official basic doctrine. As

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[5] See Henry Kissinger, *Nuclear Weapons and Foreign Policy* (New York: W.W. Norton & Company, 1957) and Maxwell D. Taylor, *The Uncertain Trumpet* (New York: Harper & Row, 1960).

flexible response was being instituted in 1964, although the Air Force continued to place primary emphasis upon its nuclear forces, for the first time there was at least official acknowledgment that airlift was indeed one of the service's conventional support missions.

Rather than being a minor peripheral change of performing the same mission, this was a fundamental shift in the mission of the Air Force, which now gave greater emphasis to the conventional warfighting mission, while at the same time continuing to place primary importance upon the nuclear deterrence mission. Although this transition to flexible response was induced by external forces (e.g., President Kennedy) and was not the product of internal Air Force entrepreneurship, nevertheless, the outcome conforms to the organizational culture hypothesis that significant learning is indeed possible. If the bureaucratic politics hypothesis held true, Air Force doctrine would have continued to espouse the preeminence of the nuclear mission to the exclusion of airlift. Instead, the Air Force adapted its doctrine to accommodate conventional missions such as airlift.

The recent adoption of Global Reach - Global Power was internally imposed by the Secretary and Chief of Staff of the Air Force. Although the Air Force initiated proactive measures to adapt, the changes it instituted were driven by external international as well as domestic political factors. Internationally, the dramatic ending of the Cold War necessitated the return of much of America's forward deployed forces, requiring a greater need for airlift modernization. Domestically, the need to get the budget deficit under control led to a drastically reduced defense budget and downsizing of all military forces,

including the airlift fleet. Thus, the decision was made to continue with the C-17 modernization program, but at reduced levels.

Conforming to organizational culture, in relative terms, the combat element of the Air Force made out much better than mobility. In rough numbers, in 1991, the year prior to the merger, TAC had approximately 1100 fighters and attack aircraft, SAC had approximately 300 bombers and 550 tankers, while MAC had approximately 300 strategic and 500 tactical airlifters. In 1992, the year of the merger, ACC initially had approximately 1100 fighters, 200 bombers and 75 tankers while AMC had approximately 300 strategic and 400 tactical airlifters and 100 tankers. By the end of the following year, ACC had approximately 600 fighters, 125 bombers, 135 tactical airlifters and 12 tankers, while AMC had approximately 300 strategic airlifters and 250 tankers. Thus, while combat air forces became more centralized by putting fighters and bombers under the same roof while at the same time adding additional enhancement elements, such as tactical airlift and tankers; airlift forces actually became more decentralized, as the tactical airlift mission was surrendered to the ACC in exchange for a vast majority of tankers. Thus, their has been a distinct culture shift in the transition from MAC to AMC. Whereas MAC was the single manager of all DOD military tactical and strategic airlift, AMC remains the single manager of strategic airlift and tanker support in a newly emerging mission of mobility.

Calm vs.Crisis

The second test examines the dependent measure, roles and missions, to see whether it became contentious under normal conditions of relative calm, as bureaucratic politics contends, or whether it was disputed during the heat of crisis, as organizational culture predicts. Because questions of roles and missions concern multiple services, the Secretary of Defense is usually the final arbitrator in such matters.

Crises precipitated the three instances in which interservice roles and missions became the most contentious during the Hump, Berlin and Gulf case studies. During the early days of the Hump airlift, U.S. Army General Stilwell did not believe that by itself, airlift could provide enough equipment and supplies to support the Chinese Army. Instead, backed by General Marshall, he continued to advocate a massive ground campaign to open the Burma Road. The airman, General Chennault was confident that the Hump airlift would succeed. With Chiang Kai-Chek's backing, Chennault pushed for, and won over, Roosevelt's confidence to resort to an air campaign as a force multiplier to inflict massive damage upon the Japanese Air Force.

In the case of Berlin, at the beginning of the airlift the Air Staff, led by Chief of Staff of the Air Force, General Vandenberg, was reluctant to divert its few airlift resources from supporting its strategic bomber fleet.[6] U.S. Army General Clay, on the other hand, was adamant and President Truman concurred, that the maximum number of

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[6] "In the evaluation of possible alternatives to relieve the blockade of Berlin in 1948 the Air Force bitterly resisted the airlift concept because it would use up all of the planes believed to be necessary for the [nuclear] combat role of the Air Force." See Robert Murphy, *Diplomat Among Warriors*, cited in Halperin, 31.

aircraft possible should be diverted to supplying Berlin. This example demonstrates that organizational culture continues in crises, while the President can overrule parochial bureaucratic politics in crises.

Finally, in the Gulf War, originally led by the Chief of Staff, General Dugan, the Air Force position was that it could independently prosecute the war with precision-guided conventional munitions carried by tactical fighter and attack aircraft. However, reflecting the advice of his principal advisor, Chairman Powell, Secretary Cheney advised the President, who concurred, that airlifting deterrent, defensive and then offensive ground forces to the Gulf was paramount to success. This was the purest example of organizational culture in that General Dugan ultimately sacrificed his career by pushing his organization's culture to such an extreme that he ultimately went against the wishes of his fellow JCS members and Secretary of Defense.

Turf vs. Knitting

The dependent measure of the airlift force structure is examined to see whether it conforms to the forces of bureaucratic politics of amassing more turf by acquiring different types of aircraft (i.e., helicopters) and branching out into other mission areas (i.e, special operations), or whether it clings more closely to the organizational culture hypothesis of sticking to the knitting by continuing to procure fixed-wing military airlifters to perform the same basic mission. Given his position as the appointed civilian head of the service, the Secretary of the Air Force would be the single-most influential player in the relative allocation of resources among Air Force missions.

Throughout this entire 50-year study, the only time that the airlift mission became an interservice point of contention was in the midst of the crisis of the Vietnam War. As the case study illustrated, the Air Force used the results of Operation Silver Bayonet as evidence that it was best able to conduct the tactical airlift resupply mission in support of Army airmobile operations. Prior to this setback, the Army had been intent upon building its own indigenous fixed-wing tactical airlift fleet.

Given that the Secretary of Defense was a major proponent of the Army's airmobility mission, the Air Force had every incentive to find a mutually-agreeable resolution with the Army, rather than having the Secretary of Defense impose an arbitrary solution to the dispute. As the case illustrates, the Chiefs of Staffs of the Air Force and Army, Generals McConnell and Johnson, came to a mutual understanding whereby the Air Force agreed not to use helicopters for tactical airlift while the Army agreed not to develop a fixed-wing tactical airlift fleet and relinquished its CV-2s to the Air Force.

This interservice dispute between the Army and the Air Force concerning the tactical airlift mission serves to illustrate the forces of organizational culture at work. The Air Force chose to reject the helicopter resupply mission so that it could acquire exclusive jurisdiction, or autonomy, over the fixed-wing resupply mission. The Army, on the other hand, was willing to relinquish its role in fixed-wing airlift so that it could maintain an independent organic rotory-winged airlift fleet able to conduct intraservice combat aerial resupply missions.

Stands = Seats or Baggage

The fourth test examines the measure of airlift force structure, to see whether the Chief of Staff of the Air Force has attempted to keep it as modern as the fighter force, or has allowed it to deteriorate from neglect. According to the bureaucratic politics hypothesis, by virtue of his seat as the head of the service, he should take a stand which is in the best interest of the organization as a whole, and thus ensure that the needs of the airlift community are properly tended to. The organizational culture hypothesis, on the other hand, predicts that the chief should be heavily influenced by the baggage that he brings to his seat. In other words, if his formative experience in the service was in combat aircraft, then he should supposedly be more inclined to tend to the needs of the combat force structure, rather than the airlift force structure.

From FY 62 - FY 86 the airlift budget has remained relatively stable, accounting for approximately 5% of the Air Force budget. It fell to a low of 3% in FY 74 and rose to a high of 7% in FY 85. In other words, it has never varied by more than 2% from the norm. The budget drop in FY 74 can be attributed to the fact that this was the year following the acquisitions of both the C-141A and then the C-5A, which had been ongoing from the beginning of FY 62. The budget spike in FY 85 can be attributed to the Reagan Administration's purchase of an additional 50 C-5Bs, which was deemed necessary to uphold the Carter Doctrine's commitment to deploy the newly-formed CENTCOM forces to the Middle East in the event of a Soviet (or Iranian) threat to the oil fields of the moderate Arab states.

Using the indicators of numbers of airframes procured, average age of the fleet, and combat utilization rates, airlift has been shown to be in a continual state of relative neglect since its inception. Procurement-wise, between FY 52 - FY 56 the Air Force acquired more transports than it has from FY 57 to the present. Even during the FY 52 - FY 56 buying spree, the Air Force procured just 1238 transports, compared to 1787 bombers and 8671 fighters during the same time frame. Today, the Air Force owns a total of 4688 aircraft, of which 1878 are fighters, 183 are bombers, 606 are airlifters, and 376 are tankers.[7]

The average age of the airlift fleet is 23.0 years and the tanker fleet averages 30.1 years, while the bomber force averages approximately 19.7 years and the fighter force 9.8 years of age. From a different perspective, the average age of the mobility fleet is 25.7 years of age while the average age of the combat fleet is 10.7 years.[8] These figures indicate that not only is the airlift fleet older than both the fighter and bomber fleets, but that the newly inherited tanker fleet is even older than the airlift fleet.

Finally, Desert Shield / Storm necessitated a wartime utilization rate of approximately 90% of the airlift fleet compared to 33% of the fighter fleet. In other words, while the Military Airlift Command was being pushed to its limit, the Tactical Air Command could have been simultaneously employed in a conflict of similar size with enough resources left to fight a smaller conflict as well. Thus, the air combat fleet was

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[7] Fighters include: 231A/OA-10s, 40 F-4s, 628 F-15s, 780 F-16s, 142 F-111s, 57 F-117s; Bombers include: 84 B-1s, 14 B-2s, 85 B-52s; Airlifters include: 81 C-5s, 23 C-17s, 317 C-130s, 185 C-141s; Tankers include: 59 KC-10s, 317 KC-135s. Total Mainline Combat Aircraft (includes C-130) = 2378. Total Mainline Mobility Aircraft = 665. See "The Air Force in Facts and Figures," *Air Force Magazine*, May 1996, 60.

[8] Ibid.

equipped to fight up to 2 1/2 simultaneous wars, while the airlift fleet could only manage one. Given that the air combat fleet would have had to rely upon airlift to deploy its support equipment and maintenance technicians if such an escalation occurred, the airlift shortfall would have prevented the fighter fleet from engaging in a simultaneous conflict. Thus, the limiting factor of airlift would have driven wartime strategy.

In view of the fact that no airlift pilot has ever risen to the position of Chief of Staff of the Air Force, this trend would not be unexpected. For that matter, airlift pilots rarely rise to command their own command, thus conforming to organizational cultural tendencies as well as bureaucratic politics, given that the dominant air arm in terms of budget and personnel dominates the service as a whole.

The bureaucratic politics contention that where you stand depends on where you sit does not consider the fact that players do not always sit in the same seat. In other words, some positions are dual-hatted. In the case of the Chief of Staff of the Air Force, he serves both as the head of service as well as a member of the Joint Chiefs of Staff. In his capacity of the head of the service, intra-service cultural forces come into play as he promotes the combat arms above the support missions. Yet, as a member of the JCS, each chief protects the interests of his service, no matter which component, combat or support.

This became evident in the dispute over tactical airlift roles and missions, which was resolved through secret negotiations between the Chiefs of Staff of the Air Force and Army. Although General McConnell was a bomber pilot, he fought for sole responsibility of the tactical airlift mission, rather than allow the Army to share in its execution and

continue posing a threat to the Air Force tactical airlift mission. However, this ploy was more than mere bureaucratic politics, as the general willingly relinquished the rotary-wing transport mission to the Army in return for autonomy in the fixed-wing tactical airlift realm. Thus, rather than building turf, this move served to protect the essence of the Air Force's predominance in land-based, fixed-wing aviation.

Thus, depending on the forum, the Chief of Staff of the Air Force will either protect or neglect the tactical airlift mission. In his role as a member of the JCS, the CSAF protects the essence of the airlift mission from Army infringement. Yet, as the head of his service, the CSAF allows the airlift mission to continue to be neglected, relative to the combat aviation missions. This intraservice neglect has been apparent both during times of budgetary contraction or growth. An example of relative neglect during times of budget cuts occurred in 1949 when the Senior Officers Board of the Air Force met late in December to "consider in closed sessions the procurement program of the Air Force ... anticipating the severe cuts in existing force strength which the President was determined to make:

> *The Board decided to concentrate the limited resources of the Air Force upon strategic bombing aircraft* (i.e., long-range and heavy bombers), in order to make sure that the Air Force could at least fulfill what they regarded as their first responsibility, retaliatory capability. *It recommended to the Secretary of the Air Force* on January 6 that the procurement of medium bombers (B-45, RB-49), *troop transports (C-125)*, and ... fighters (F-93) *be cut back and the money thus saved transferred to purchasing B-36s and B-50s* [emphasis added].[9]

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[9] Paul Y. Hammond, "Super Carriers and B-36 Bombers," 489 - 490, cited in Halperin, 32.

More than thirty years later, a similar trend was apparent during the Reagan years of budgetary increases. As was shown earlier, rather than expending the resources to continue with a full-scale research and development program designed to bring the C-17 on line in the late 1980s, Secretary Weinberger chose to procure 50 of the 1960's technology C-5B instead. Yet, when it came to strategic bombers, 100 B-1s were brought on line, while the B-2 research and development program continued in earnest. Thus, the introduction of the C-17 was delayed until the mid-1990s, by the time the C-141 fleet was on its last legs.

Captured vs. Capture

In this test, the dependent measure of airlift organization is examined in terms of whether the organization captures its commander in chief, as the bureaucratic politics paradigm predicts, or whether it becomes captured by the CINC, as organizational culture hypothesizes may sometimes be the case. Based upon the findings of this study, it depends upon the organization's stage of development.

During the formative stages of the airlift mission, General Tunner was able to capture and leave his indelible imprint upon the airlift organization as no other single individual throughout its formative history. Tunner was to the art of airlifting as LeMay was to the art of strategic bombardment. Thus, in this case, the CINC captured the airlift organization. However, after the doctrine was written and the SOPs were put into play, subsequent CINCs have been less influential and have been captured by the airlift organization. Just as the CSAF becomes an advocate of all Air Force missions in the

forum of the JCS, so does CINCAMC become airlift's chief advocate in an intra-Air Force forum. As the CSAF personifies the Air Force in the forum of the JCS, so does CINCAMC personify the airlift mission to Headquarters Air Force. This is his primary role, to advocate the airlift mission. As an example, in 1960, before testifying the before a special subcommittee of the House Committee on Armed Services, General Tunner, who was the Commander of MATS at the time, conferred with General Thomas White, the CSAF:

> Tunner: As you know, I am a strong believer in the fact that we need an air transport force, and that we need more money for the modernization of that force. We need to hold on to what we have, and to go forward with modernization. But I want to make sure that my testimony to this effect before the Congressional committee will not run counter to the wishes of the Air Force.
>
> White: Bill, some people here on the staff don't approve of your position, it's true. But the fact remains that *you are the boss of MATS*, you have been with it for many years, you see it more closely than anyone else, and I think you will come up with the right answers. When you go before Congress, you say what you think and you will be all right [emphasis added].[10]

In sum, the capture versus captured scenario must be qualified in the sense that it is important to distinguish whether one is speaking of the formative era of an organization or its mature phase. In the formative era, leaders tend to capture their organizations, whereas in the mature stage, they tend to be captured by them. In either case, as this previous example illustrates, leaders are expected to speak as the chief advocate of their organization's interests.

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[10] Tunner, *Over the Hump*, (New York: Duell, Sloan and Pearce, 1964) 305 - 306.

As a final test, using Ikenberry's empirical, aesthetic, and analytic criteria, this study rates bureaucratic politics' and organizational culture's relative ability to account for airlift's neglect.[11] *Empirically,* much of the data provided by the five historical case studies can be made to fit both the bureaucratic politics and organizational culture models. Moreover, *aesthetically*, they both provide rigorous explanations of airlift's neglect. However, *analytically, organizational culture is better able to account for the intra-service rivalry*, while bureaucratic politics is better suited for explaining inter-service rivalry. Furthermore, military services are more prone to being captured by organizational culture during the formative stages of development, while bureaucratic political influences tend to capture services in their later stages of development. Finally, capture by organizational culture is more likely to occur when an outside reformer is imposed after an organization has failed to accomplish its objectives. As the case of airlift has demonstrated, this very thing happened on three separate occasions and each time General William Tunner was brought in to fix the situation.

In the first case of the Hump airlift, 10th Air Force, a combat organization, was not managing its airlift resources properly to maintain an adequate aerial pipeline to keep Chennault's Flying Tigers in business. Thus, the Air Transport Command was later put in charge of the airlift when it established the India-China Wing ATC, which later developed into the India-China Division by the time Tunner arrived. In Berlin, USAFE, another air combat command, initially attempted to keep Berlin supplied with the "LeMay Coal and

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[11] See Ikenberry, "The Problem of Oversupply of Theory," 8 - 11.

Feed Service." When it became apparent that Berlin would not be able to ride out the winter unless the airlift was expanded to the point where approximately a month's worth of coal and food could be stockpiled, Tunner was again called upon. This time he formed the Combined Airlift Task Force, which also included British and Commonwealth support. Once Tunner's men instituted the processes they had used in China, the Berlin Airlift became a viable lifeline to the free world. Finally, in Korea the airlift began with 5th Air Forces ad hoc scheduling of the widely scattered airlift assets throughout the Pacific theater. Again, as soon as it became apparent that airlift was not delivering the punch, Tunner's services were called upon once more. This time, the Major General was "temporarily assigned" to Korea from his position as the Vice Commander of MATS. Bringing his own men, Tunner quickly instilled the proven techniques from China and Berlin and the exploits of his Combat Cargo Command soon became legendary within the airlift world. Once Tunner had turned things around by establishing a bonifide airlift system, the Provisional CCC was elevated to permanent divisional status as the 315th Air Division. Soon thereafter, after Tunner had gotten the 315th AD up and running, he relinquished the reigns to his understudy, General Henebry, so that he could return to his more powerful position as the Vice Commander of MATS.

Each of these three aforementioned cases, the Hump, Berlin and Korea, followed a similar pattern of organizational development. In each case, the airlift began under the direct control of the applicable theater combat air force (e.g., CBI: 10th AF, Berlin: USAFE, Korea: 5th AF). Given that the combatant commanders had no prior experience

with airlift matters, their ad hoc arrangements fell through in each instance. Each time, General Tunner and his men were called upon to rectify matters by instituting specific airlift procedures and techniques they had developed based upon their experience.[12] In this way, Tunner essentially cast the die for distinct cultural mold of future airlift doctrine. So it was that Congressmen Rivers entered his name in the *Congressional Record* as "Mr. Airlift" upon his retirement.

Conclusion

Having examined the case of airlift mobility neglect, like J.Q. Wilson:

> I have come to have grave doubts that anything worth calling 'organization theory' will ever exist. Theories will exist, but they will usually be so abstract or general as to explain rather little. Interesting explanations will exist, some even supported with facts, but these will be partial, place- and time-bound insights.[13]

The case of airlift mobility has served to illustrate that Halperin and Wilson were correct in their assessment that the bureaucratic politics paradigm is unable to account for all aspects of organizational behavior, namely neglect. As has been shown, their alternative paradigm of organizational culture is better able to account for airlift's neglect. Wilson's organizational culture theory also recognizes that organizations are not stagnant, and thus makes allowances for innovation. However, given that true innovation requires the active involvement by individual executives, it tends to be highly idiosyncratic and thus inconducive to theoretical progress. Nonetheless, as this case has illustrated, both Barry Posen and Stephen Rosen's theories of military innovation are applicable to this study.[14]

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[12] By the time Tunner arrived in the CBI, he had gained a wealth of air transport experience from being in charge of ATC's Ferrying Division.

[13] Wilson, *Bureaucracy,* xi.

[14] See Posen, *The Sources of Military Doctrine* and Rosen, "New Ways of War."

As previously discussed, Posen contends that although "militaries oppose innovation, ... we see some remarkable innovations." He observes that although "often, militaries prefer offense, ... defensive strategies emerge." He attributes this behavior to the fact that "*civilians do affect military doctrine.* Their intervention is often responsible for the level of innovation ... achieved in a given military doctrine [emphasis added]."[15] Although this tendency may be true, nevertheless, what prompts civilians to intervene?

According to Posen's organization theory, if the military organizations are left to their own devices, their doctrines tend to remain "offensive, disintegrated and stagnant."[16] Therefore, some sort of external, intervening variable must be responsible for innovation to occur. Posen identifies this intervening variable as balance of power theory, or systemic, third image factors.[17] His study suggests that:

> when threats become sufficiently grave, soldiers themselves begin to reconsider organizationally self-serving doctrinal preferences, if those preferences do not adequately respond to the state's immediate security problem.[18]

Posen argues further that "*innovation should occur mainly when the organization registers a large failure, or when civilians with legitimate authority intervene.*"[19]

The case of airlift innovation conforms very closely to Posen's hypothesis. First of all, as was evidenced in each of the five major crises, airlift was incapable of performing to expectations without taking extraordinary measures, such as relying upon allied support

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[15] Posen, *The Sources of Military Doctrine*, 227.

[16] Ibid., 239.

[17] For the most authoritative and comprehensive explanation of balance of power theory, see Kenneth N. Waltz, Chapter 6, "Anarchic Orders and Balances of Power," *Theory of International Politics* (New York: Random House, 1979) 102 - 128.

[18] Posen, *The Sources of Military Doctrine*, 240.

[19] Ibid., 224.

and / or contracting with civilian carriers, or even activating the Civil Reserve Air Fleet (CRAF). Thus, in the aftermath of each of these major crises, these recognized shortcomings served as an impetus for the Office of the Secretary of Defense to dictate that improvements be made to the airlift force structure. Nevertheless, once the shortfalls were addressed and the Air Force was left to its own devices, airlift again was neglected in favor of the offensive combat missions so that when the next crisis arose, again there was a shortage of airlift assets.

Over the course of this fifty-year study, a recognizable pattern has emerged whereby during the course of normal peacetime operations the airlift force structure is allowed to deteriorate due to neglect spawned by organizational cultural forces. Periodically, this normal state of affairs is interrupted by an external crisis event which presses the limited capabilities of the airlift fleet and demonstrates its state of neglect to civilian authorities. Thus, in the aftermath of the crisis event, the civilian authorities intervene in the airlift policy-making process so that innovation occurs, as Posen's theory predicts. A case in point occurred during Vietnam in the mid-1960s when "the Air Force did accept procurement of a large number of C-5A troop-carrying airplanes, but *only because the move was forced on it by civilians.* When *given their own way, the priorities of the Air Force officers have always been clear.* ... In sum, says Paul Hammond, "i*n taking stands on many strategy and policy questions the Air Force has been guided by the effort to protect its role in the strategic delivery of weapons by air* [emphasis added]."[20]

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[20] Hammond, "Super Carriers and B-36 Bombers," 485, cited in Halperin, 32.

Stephen Rosen concedes that before the innovative measures are taken, "the normal tendency of [military] organizations [is] to use new capabilities to support existing missions, or to oppose new capabilities that threatened existing missions." This tendency to *subordinate new capabilities to the primary mission* conforms to the case of airlift, which in the post-World War II era was initially used by the Air Force as a way to assist in the deployment of its heavy bombers to distant operating locations, rather than as an independent mission in-and-of itself. For example, Robert Murphy points out that "in the evaluation of possible alternatives to relieve the blockade of Berlin in 1948 the Air Force bitterly resisted the airlift concept because it would use up all of the planes believed to be necessary for the [nuclear] combat role of the Air Force."[21]

Concerning the second tendency of military organizations to actually *oppose new capabilities* deemed as a threat to the primary mission, Halperin reveals that after the Berlin Airlift, "the Air Force failed to exploit this success to enhance its prestige, and the reasons for not capitalizing on the episode related to the top officers' view of the essence of the service,[22] as explained by Paul Y. Hammond:

> Why did the Air Force thus fail to fully exploit the public relations value of the notable achievement of air power in the Berlin airlift? ... The airlift was a freight-carrying operation which served to demonstrate the importance of air transport. But *the Air Force has been paring its transport facilities to a minimum* in order to maximize its strategic bombing forces. *Supporters of strategic air power, the predominant strategic doctrine in the Air Force, might have viewed the airlift as a potential threat to the primary mission of the Air Force*, and feared that airlift publicity would only give substance to the charges which had often been voiced in Army circles that *the Air Force was neglecting its duty to provide air transport* for Army troops [emphases added].[23]

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[21] Robert Murphy, *Diplomat Among Warriors*, cited in Halperin, 31.
[22] Halperin, *Bureaucratic Politics and Foreign Policy*, 31.
[23] Hammond, "Super Carriers and B-36 Bombers," 485, cited in Halperin, 31.

After acknowledging the normal tendency of military organizations to neglect new capabilities which threaten the dominant culture, Rosen offers another explanation for military innovation which takes into account *internal forces* within the military that ally themselves with civilian guardians who sponsor needed changes in their behalf. Briefly stated, Rosen's theory is as follows:

> *U.S. military organizations ... generate innovation internally* when senior military officers who support the values of the establishment to which they belong consciously adopt a two-part strategy to produce innovation over a period of a generation: (1) Effect an intellectual redefinition of the way the entire military organization conceived of the tasks it would have to perform in the next war; (2) A political struggle to create a new, stable career path for younger officers not committed to the old way of war [emphasis added].[24]

Furthermore, Rosen contends that civilian intervention is limited to "support[ing] ... the senior officers pursuing the two-part strategy described above."[25]

In other words, according to Rosen, a prerequisite for military innovation is for "the doctrinal and operational implications of new capabilities ... to be intellectually translated by senior officers into *new critical military tasks and missions* for the entire service."[26] In the case of airlift, General Tunner filled the role of pioneer, demonstrating its military utility beginning with the Army Air Force Hump airlift in World War II, followed by the newly-established U.S. Air Force's Berlin airlift and culminating with the Korean airlift. As Rosen's theory predicts, a generation transpired between the proving ground of the Hump airlift to the establishment of the Military Airlift Command in 1966. Raymond Towne describes Tunner as a visionary, as "even in the heat of World War II:

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[24] Rosen, "New Ways of War," 136.
[25] Ibid.
[26] Ibid.

> [Tunner] viewed his airlift mission not in static relation to organization charts or tables of equipment but as one of the dynamic forces soon to reshape our postwar world.[27]

Within two years of the war's end, "he saw the postwar world with a clarity of mind that, unfortunate when it happened, at times exceeded his superiors." Towne quotes Tunner in 1947 comparing the American predicament to the Roman Empire:

> Are we to become the Roman Empire of the Twentieth Century? Are we Americans, together with our allies, going to be forced to man the frontiers of the free world against the Communist Huns and Vandals? ... If this is to be our future, then *we are going to need airlift forces of a size and capability we can't even conceive of today*. How else can one nation lead its allies in policing the world except through a superior technology that will give our military forces unquestioned flexibility and mobility?[28]

Further in conformance with Rosen's theory of innovation, Tunner accomplished "a successful struggle to establish this new career path ma[king] it possible for younger officers to pursue the new special skills without prejudicing their careers, and to advance to positions of senior command." [29] Rising to the rank of Lieutenant General, Tunner's last assignment was as the Commander of the Military Air Transport Service from 1 July 1958 until 31 May 1960. As his resume indicates, Tunner was not a so-called "maverick," but was a mainstream officer who graduated from West Point and held a variety of responsible staff positions within the Air Force which were outside the airlift realm, such as the Deputy Commander of the Air Materiel Command, the Commander in Chief of U.S. Air Forces Europe, "a post he held for four years during the buildup of the Air Forces of NATO," and finally the U.S. Air Force Deputy Chief of Staff for Operations before

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[27] Raymond L. Towne, "Tunner and the Saga of Airlift," *Air University Review* 16:1 (November - December, 1964): 96.

[28] Ibid.

[29] Ibid.

ending his career at the helm of MATS.[30] Tunner personally reflects upon how the Hump operation helped to establish a new mission element within the airpower community, as it "cast the mold for all future air transport, both civilian and military:

> Many of my staff members went on to serve in successive emergencies following World War II [e.g,, Berlin, Korea], climbing up the ladder of success. Their enthusiasm for the job they were able to do, the job they loved to do, rubbed off on their assistants and junior officers. This zeal for air transport, the willingness and the know-how to get the job done, spread throughout the Air Transport Command over the years. *That excellent and efficient group of men - were directly responsible for scores of capable junior officers going on to serve the Air Forces well in the technical and demanding field of air transport* [emphasis added].[31]

Despite the fact that he had served a broadly-based career, Raymond Towne points out that "Tunner ... must have felt the effect of seeing his immediate successors at U.S. Air Forces in Europe and at MATS put on four stars to do a job he had been doing with only three." Described as a "hard-driving, coldly brilliant, and known for the unusually penetrating quality of his displeasure," his brazen personality had apparently already become legendary by 1946. A colonel who experienced his wrath reflects that:

> If General Tunner were running the lion-taming act for Barnum and Bailey, the lion would put his head in Tunner's mouth - so watch out.[32]

Nevertheless, he left the service with a legacy of respect, as is attested by the fact that Representative Mendel Rivers named the general "Mr. Airlift" at the conclusion of the Airlift Subcommittee Hearings of 1960, just prior to the general's retirement.[33]:

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[30] Richard J. Burkard, *Military Airlift Command: Historical Handbook 1941 - 1984* (Scott AFB, IL: MAC Command Historical Office, 1984) 23.

[31] Tunner, *Over the Hump*, 135.

[32] Towne, "Tunner and the Saga of Airlift," 95.

[33] Ibid., 97.

> If there is anyone in America today who has justly earned the title of 'Mr. Airlift,' I am sure it is you. When we realize that *the airlift over the 'Hump' in World War II, the Berlin Airlift, and the Korean Airlift were all under your command*, and owe the greater part of their success to your leadership and endeavors. ... By the very nature of things, it has not been easy in recent years to carry the banner of MATS. Crosscurrents both within and without the military services have made your voyage rather stormy. And I know *it has been a matter of concern and keen disappointment to you to see the MATS fleet age into obsolescence*. But you have fought a good fight and, *at long last, it looks as if the help which has been so elusive in the past is about to arrive in the form of interim modernization for MATS* as well as a firm program for the future. ... I am not one to count dividends before they are declared. But I sincerely believe that the *Congress is going to provide the relief which is required*, and I sincerely hope that the Executive Branch will join us in our attempt to solve the airlift problems. That is *the result which both you and we earnestly seek.*[34]

Thus, entrepreneur Tunner, allied with Congressman Rivers, was responsible for the birth of military air transport as a separate and distinct career path within the U.S. Air Force.

Having provided supporting evidence for both Posen and Rosen's theories of military innovation, given that they both focus on different intervening variables, how can they both be accurate? On the one hand, Posen posits that innovation is externally imposed by civilian intervention driven by systemic factors. On the other hand, Rosen contends that innovation is internally driven by senior military officers allied with civilian sponsors.

I propose that the difference lies in the nature of the learning which is taking place, be it core or peripheral. As the names themselves imply, core learning is driven from within whereas peripheral learning originates outside the boundaries of an organization. Reiterating what Wilson pointed out earlier, "peripheral changes often are a response to a demand in the agency's *environment*.":

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[34] Tunner, *Over the Hump*, 317.

> Outside forces - academic scientists, industrial engineers, civilian theorists, members of Congress, and presidential aides - all helped induce the military to embrace programs that initially seemed irrelevant to (or at odds with) their core tasks.[35]

Core changes, or what J.Q. Wilson refers to "true innovation," actually "redefine core tasks."[36] Important for the purposes of this study, "almost every important study of bureaucratic innovation points to the great importance of *executives* in explaining change:

> ... Innovations are ... heavily dependent on *executive interests and beliefs*. ... It is for this reason, I think, that little progress has been made in developing theories of innovation. ... Innovations differ so greatly in character that trying to find one theory to explain them all is like trying to find one medical theory to explain all diseases.[37]

In the process of achieving innovation, the founding executive must "create incentives for subordinates" to join in the process. This usually entails "convincing them that ... their careers will not be blighted if the innovation fails or if the executive departs before it is implemented." One way to do this is to "create a specialized subunit that will take on the new tasks."[38] This is what happened during the Second World War, when the Air Transport Command was first established. Commanded by Major General Lloyd George, this U.S. Army Air Force command formed the basis around which military officers could build their careers while nurturing the newly-founded profession of military airlift. Thus, once ATC was formed, its contingent of military officers had a vested interest in helping it survive, as their careers were riding on its success or failure. To reiterate what Wilson stated before, "innovation is rare [because it] requires an exercise of

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[35] Wilson, *Bureaucracy*, 225.
[36] Ibid., 224.
[37] Ibid., 227.
[38] Ibid., 231.

judgment, personal skill, and misdirection, qualities that are rare among government executives."[39]

It is important to emphasize that these theoretical notions of externally versus internally driven innovation are not hard and fast rules of behavior, but instead connote the most common trends. In fact, Wilson admits that "sometimes entrepreneurs within an agency bring about the peripheral changes." In a similar manner, sometimes core changes are externally induced, as was the case when:

> President John F. Kennedy called for an improvement in the Army's ability to fight guerrilla wars, the task was given (reluctantly) to a new 'special forces' unit that, *owing to strong leadership and presidential support*, acquired its own sense of mission but that for many years was treated as a peripheral (and trivial) activity in the army as a whole.[40]

In sum, the theories of Posen and Rosen, though using different independent variables to explain the same dependent variable of innovation, are not mutually exclusive. As far as their abilities to account for airlift innovation, they each explain part of the story.

Rosen's theory accounts for the formative era of airlift, what I refer to as "the Tunner years," during which time General Tunner played the role of the entrepreneur who first introduced the notion of airlift mobility to the repertoire of Air Force missions. Given that this constituted a totally new element of airpower, it was truly innovative, requiring that core learning take place. This required that an initial cadre of airlift

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[39] Ibid., 232.
[40] Ibid., 225.

professionals had to be developed from a pool of Air Force pilots, formerly trained to fly bomber and fighter aircraft.

Once the Air Transport Command had been established, there was no longer any need for an entrepreneur, as the profession of airlift had already been established. Thus, Rosen's theory was no longer applicable. However, given that airlift did not constitute a new "dominant" culture within the Air Force, as this study has shown, it has tended to be neglected. Given that organizational cultural forces within the Air Force led to its neglect, external forces had to come into to play to keep it afloat. This is where Posen's theory of innovation becomes relevant.

As Posen implies, once civilian leaders perceive that the military's cultural tendency to promote combat capabilities at the expense of support functions is impairing the national interest, they intervene, not to establish new modes and orders, but to bolster the capabilities of the support missions that are being neglected. As the case studies have shown, neglect is usually evidenced during a major crisis. Moreover, it can become manifest during major exercises or in conjunction with the establishment of new doctrine, such as flexible response or the Carter Doctrine.

In the case of airlift, since the Tunner years, besides the transition to flexible response and more recently to global reach, only peripheral changes have occurred. Most noteworthy, as part of the Goldwater-Nichols DOD Reorganization Act of 1986, the U.S. Transportation Command was established. This, in combination with empowering all unified CINCs with greater command authority and a larger role in the procurement

process, has placed greater emphasis on the strategic mobility missions, both airlift and sealift. Nevertheless, relative to the combat arms, the logistical transportation mission remains in a state of neglect.

Airlift is not the only U.S. military mission which has a tendency to be neglected. For example, based upon documented shortages that occurred during the Persian Gulf War, it is very likely that sealift, minesweeping, and to some extent, special operations, are also neglected. In closing, I will articulate ten propositions which can be applied in future research to the general phenomenon of neglected U.S. military missions.

Sealift Mobility

In the midst of the Persian Gulf War, it became clearly evident that the U.S. Navy's sealift mission had been neglected over the course of the previous decades. As Duncan Anderson reveals:

> the poor performance of the Fast Sealift Ships (FSS) ... could have come as no surprise to anyone who had noted the steep decline in American merchant marine power since the 1960s. By 1990, skilled maritime manpower was thin on the ground. Few seamen understood how to operate the boiler technology of the 1960s and 1970s.[41]

During the War in the Gulf, Vice Admiral Francis Donovan was in command of the Navy Sealift Command (NSC). The No. 1 Fast Sealift Squadron (FSS) was the most critical element of his Strategic Sealift Force, composed of "eight 55,000-ton Ro-Ro [roll-on/roll-off] transports held in reserve at various ports in the eastern U.S." for contingencies. Although "no realistic exercises had been undertaken," according to the

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[41] Duncan Anderson, "The Build-Up," in *The Gulf War Assessed,* eds. John Pimlott and Stephen Badsey (Sandhurst: Department of War Studies, Royal Military Academy, 1992) 88.

results of numerous "Gallant Knight" computer simulations the FSS should have been capable of sealifting the heavy armor equipment of the 24th Infantry Division from Savannah, Georgia, to the Gulf in 14 days, assuming that the ships could be fully loaded within 24 hours and then cruise at a speed of 30 knots. However, given that these ships had been floating since the late 1970s, they were incapable of performing as planned. A naval officer states:

> Imagine taking a 1978 car, draining the gasoline and all the fluids and putting it up on blocks for twelve years. Then you get a call saying the car has been taken off the blocks and has to be ready for a long trip in one week.[42]

Although the first ship loaded somehow managed to set sail on 14 August and successfully completed the voyage to Ad Damman, the second ship departed on the 15th, "but after maintaining a punishing run of 27 knots for 48 hours, her engines burst into flames." Although the fire was extinguished, the ship had to be towed to Rota, Spain, where its cargo was transferred to another FSS ship which completed the trip.[43]

In the aftermath of the war, the Department of Defense acknowledged that "*shortages of sufficient fast sealift* with a roll-on/roll-off capability so crucial to loading and unloading armored equipment rapidly *meant that heavy forces would deploy incrementally*," and thus created a "window of vulnerability" during Desert Shield.[44] General Hansford Johnson, USCINCTRANS, testified before the Senate Committee on Armed Services concerning the performance of the sealift mobility mission during the

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[42] Ibid., 87.

[43] Ibid.

[44] U.S. Department of Defense, *Final Report to Congress: Conduct of the Persian Gulf War* (Public Law 102-25, April 1992) 37.

Persian Gulf War.[45] In his statement, he outlined the extent of the nation's sealift capability, revealing that "*the only ships that we own are the eight Fast Sealift Ships.*"[46] According to Senator Exon, the only reason these eight boats existed was because "many, many years ago, ... [when] we were consumed primarily with the situation of reinforcing NATO in case of a Soviet attack, *we forced through* ... some fast sealift capability."[47]

General Johnson testified before the Senate that "the continued decline of the U.S. Merchant Marine has *compelled us* to enhance our organic sealift capability, and Congress has supported this need by appropriating $1.5 billion for this effort over the past two years."[48] Yet, Anderson points out that *"although Congress had voted $7 billion during the previous decade to maintain military sealift, the U.S. Navy had diverted much of this sum to other purposes.*"[49] Senator Kennedy brought this tendency to General Johnson's attention during the Senate testimony, noting that "*Congress in FY 1990 - 91 appropriated over $1.5 billion, and about $1.3 billion remains.*" Senator Cohen asserted to General Johnson that "*we have, in fact, a war taking place between building of warships and the building of ships for the transportation of essentially Army equipment.*" The senator then recommended that perhaps the solution would be to "transfer ... the funding responsibility to defense agencies procurement rather than the ship building account." However, General Johnson stated that, *given the experience of the Gulf*, "I

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[45] U.S. Congress, Senate, Committee on Armed Services, *Statement of General Hansford T. Johnson, USAF, Commander in Chief, U.S. Transportation Command*, 102d Cong. (February 21; March 6, 13, 19, 20; April 11, 18, 23, 25; May 14; June 18, 1991) 141 - 199.

[46] Ibid., 168.

[47] Ibid., 174.

[48] Ibid., 191.

[49] Anderson, "The Build-Up," 88.

think that the Navy will spend the money this year. I also think *the Department of Defense will provide them good guidance* on how to spend it [emphases added].:

> I'm led to believe that they're [Navy] coming to a solution on the correct way to go, building some new ships, buying some other ships. I think you'll see a good reaction this year. But I believe the Navy is best prepared of all our government agencies to buy ships .[50]

Finally, the general pointed out that "the Navy budget submission allocates $201 million for sealift procurement in FY 1993, in addition to the $1.275 billion mandated by Congress from FYs 1990 - 91."[51]

The Center for Strategic and International Studies (CSIS) points out that in the near future the U.S. should have "fairly robust, strategically mobile [Army and Marine] contingency forces. But these forces will be useless under a contingencies strategy unless the *glaring shortages in strategic mobility manifested in the Gulf War* are corrected [emphasis added]." In response to this recognized shortcoming, "the Department of Defense's new mobility goal includes:

> acquiring enough sealift to transport [six Army brigades], the equivalent of two divisions with sustainment - a total of over 50,000 men - anywhere in the world within 30 days.[52]

According to CSIS:

> The first installment toward reducing the sealift shortfall will be made up of standard, 25-knot diesel transport ships - not 30+ knot 'fast' sealift, but in sufficient quantities to move two heavy divisions with sustainment anywhere in the world in 30 days or less.[53]

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[50] U.S. Senate, *Statement of General Johnson*, 160.

[51] Ibid., 194.

[52] James Blackwell, Michael J. Mazarr and Don M. Snider, *The Gulf War: Military Lessons Learned* (Washington, D.C.: The Center for Strategic & International Studies, 1991) 19.

[53] Ibid., 34 - 35.

Using an organizational culture explanation for this neglect, *Time* writes:

> The explanation of the logistical shortfall is simple enough: *the armed services are not interested in spending money on programs that do not produce weapons. Promotions go to those officers who command warships and fly warplanes*. Says a Navy captain: '*You don't make admiral driving freighters* [emphasis added].'[54]

Sealift is a mission that has been more neglected than airlift. The Director of Professional Development at the U.S. Naval Academy revealed in an interview that graduating midshipmen can only choose a career field from among the Navy's unrestricted line, which encompasses: aviation, surface warfare, submarines, SEALS and special operations. Limited numbers of graduates are able to enter: medicine, supply, meteorology, intelligence and aircraft maintenance.[55] Thus, the profession of sealift within the Navy is in the pre-Tunner era. In other words, an entrepreneurial naval officer has yet to establish and institutionalize a sealift career track within the Navy. Until that takes place, no one's career in the Navy will be tied to the sealift mission, and it will remain neglected. In fact, based upon the quote of the captain, it appears to be an assignment that should be avoided altogether.

Finally, neglect of logistical transportation is not confined to the U.S. Air Force and Navy, as DOD reported after the war that the U.S. Army "did not have enough Heavy Equipment Transporters or off-road mobility for logistics support vehicles."[56]

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[54] *Time International*, 10 September 1990, cited in Anderson, 88.
[55] Christopher Breslin, telephone interview, 25 March 1996.
[56] U.S. Dept of Defense, *Conduct of the Persian Gulf War*, xvii.

Minesweeping

The authors of the DOD Report also note that "after the need for strategic sealift, perhaps the next most prominent is in the area of mine countermeasures:

> The Gulf War was the second indication of a major shortcoming - in the Persian Gulf reflagging operation in the late 1980s, *World War II-era mines gave the U.S. naval forces real problems* [emphasis added].[57]

Shortly following the war, General Norman Schwarzkopf testified before Congress that:

> *the United States has a very, very antiquated minesweeping fleet and very, very small numbers that frankly just couldn't get the job done* [emphasis added].[58]

In its final report to Congress, DOD acknowledged that "*we were not nearly capable enough at clearing land and sea mines*, especially shallow water mines."[59] Nevertheless, despite this recognized neglect of its minesweeping capabilities, "existing plans to remedy this deficiency have not yet reached fruition."[60]

Special Operations Forces

Another mission element which, though improved, showed signs of needed attention during the Gulf War is special operations forces (SOF). In this "revolution toward nonlinear ground warfare," SOF carried out a host of missions behind the lines of Iraq and Kuwait such as:

> laser-designating targets for U.S. aircraft, searching for mobile Scud missile launchers, collecting intelligence, cutting lines of communication, helping organize resistance inside Kuwait, etc.[61]

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[57] Ibid., 19 - 20.
[58] Ibid., 20.
[59] Ibid., xvii.
[60] Blackwell, Mazarr and Snider, *The Gulf War: Military Lessons Learned*, 20.
[61] Ibid., 18.

The CSIS study concludes that "given their performance in the Gulf, the emphasis on SOF within DOD should increase; *even after the creation of a distinct Special Operations Command by Congress, SOF capabilities remain too low on the list of mission priorities.*"[62] As this finding infers, SOF it is not accorded the same prestige and emphasis within the Army as the conventional armor, infantry and artillery career tracks. Thus, historically it has necessitated civilian intervention by Congress to get the attention it deserves [emphasis added].

The cases of sealift, minesweeping and special operations all exhibit similar attributes to the case of airlift. They do not conform to the dominant culture of their parent services. Thus, each of these missions had been neglected and as a result, were unable to accomplish their tasks in an satisfactory manner during the Gulf War. As a result, they have all been flagged for increased Congressional appropriations in the aftermath of the crisis.

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[62] Ibid.

Generally speaking, a common theme is apparent which can be knitted into a set of ten propositions concerning neglected military missions:

1. Neglected missions are imbedded within services which have competing cultures and they tend not to coincide with the dominant culture of their parent service.

2. Neglected missions are not found to be neglected until they are unable to perform to expectations during a major crisis, exercise or change in national strategy.

3. Neglected missions tend to receive external assistance from legitimate civilian authorities after a crisis, exercise, or change in national strategy has occurred.

4. Neglected missions can be innovative and experience internal change if they have an entrepreneurial leader who, with civilian sponsorship, is able to institutionalize the mission as a separate career track within the parent service.

5. Neglected missions always remain secondary in importance to their parent service's dominant culture, and thus always stay neglected in a relative sense.

6. Neglected missions are sometimes performed primarily in support of another service (e.g., airlift, sealift, close air support).

7. Neglected missions tend to have smaller budgetary outlays and thus smaller and older force structures than favored missions'.

8. Neglected missions tend to be categorized as support, as opposed to combat, missions in the parent service's basic doctrine.

9. Neglected missions tend to be commanded by flag officers from the parent service's dominant culture.

10. Neglected missions tend not to have enough power and resources to satisfy the prevailing national defense strategy.

In sum, drawing upon the general theory of organizational culture, I have devised this partial subset of propositions which describe some of the characteristics of U.S. military missions which tend to be neglected. This is not to say that all neglected missions exhibit all of these traits. However, by and large, they most likely exhibit some of these tendencies as well as others not included in this generic list of ten propositions. Using these propositions as a guide, testable hypotheses can be developed to test whether any of the aforementioned mission elements (i.e., sealift, minesweeping, special operations) exhibit some of these tendencies. Neglected military missions are not limited to these four mission elements. Many other possible military mission areas exist, such as close air support and air defense. Finally, although this dissertation pertains strictly to the neglect of *military* missions, the general concepts could potentially be applied to research projects in other government agencies as well. For example, it recently became apparent that the mission of counter-espionage has been neglected by Central Intelligence Agency after an earlier period in which it was over-emphasized to the point that it became debilitating to the whole organization. It may be that this mission neglect has been driven by the dominance of the Operations Directorate in determining the CIA's organizational culture.

Airlift Update

In closing, over the course of the past fifty years, the organization of airlift forces has evolved from Ferrying Command to ATC to MATS to MAC to AMC, the air service component of the unified USTRANSCOM, thus bearing out "General Tunner's expectation." John Correll asserts that airlift forces have become so essential for other military missions to perform that "it is *the airlifters, not the shooters*, that *are the limiting factor in national military strategy*." Moreover, Correll asserts that beyond supporting other forces, airlift has become "*an instrument of national power in its own right*," being that it is "a primary element in the Air Force's operational concept of Global Reach - Global Power [emphasis added]."[63]

However, just two years ago the tale of airlift was not so rosy, as the C-141 fleet was seemingly on the verge of retirement, having outflown its original expected life-cycle, and the C-17 program was at risk of being canceled, having been placed on a two-year probation by the late Secretary of Defense Les Aspin.[64] In 1994, CINCCENT, General Joseph Hoar testified that "*airlift in this country is broken* right now. *I'm not sure it's workable for even one major regional contingency*." His assertion was supported by an AMC estimate that "*it could provide the lift for one contingency* - but *not the two prescribed by national defense strategy*." This is not unusual as Correll points out that

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[63] "The demand for airlift never stops. In a typical peacetime week, AMC operates 1,000 missions and more than 3,000 sorties into forty countries." See "Anything, Anywhere, Anytime," *Air Force Magazine*, February 1996, 3.

[64] "At one juncture, 70% of the C-141s were either grounded or restricted. The proposed replacement, the C-17, was in danger of cancellation." See Correll, 3.

historically, airlift has had "trouble holding its funding priority," because it "does not stir the passions [emphasis added]."[65]

However, in less than a year there was "an amazing reversal of fortunes" when, in November 1995, "DOD authorized the Air Force to proceed with the procurement that will eventually reach 120 aircraft." Furthermore, the C-141 modernization program is to be "aggressively managed" so that the Starlifter remains productive until being retired in 2006. Yet, Correll warns that "*there are already signs from some corners of the Pentagon of wobbling on the commitment to airlift modernization.* The problem is financial competition with other programs."[66] In closing, the Chief of the Joint Doctrine Branch at Headquarters Air Force, Lt. Col. Robert Owen, wrote in a 1995 edition of *Airpower Journal* that:

> The demand for airlift always has (and probably always will) exceed the supply [so that] *effective airlift policy making involves asking for what one can get instead of what one actually needs* [emphasis added].[67]

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[65] "Anything, Anywhere, Anytime," 3.

[66] Ibid.

[67] This assertion is supported by the fact that whereas "in 1981 the Congressionally mandated Mobility Study set the official requirement for airlift at 66 MTM/D, the computed requirement was understood to be higher, but that was essentially academic since the capability peaked below 50 MTM/D. After the Cold War ended, a 1992 Mobility Requirements Study adjusted the goal downward to 57 MTM/D. The current goal, set in 1995, is stated as a range: 49 to 52 MTM/D, depending on the stock of equipment and supplies prepositioned abroad. Present wartime airlift capability, counting activation of the Guard and Reserve and mobilization of the CRAF, is approximately 49 MTM/D." See Robert C. Owen, *Airpower Journal,* 1995, cited in "Anything, Anywhere, Anytime," 3.

APPENDIX

Air Transport Command

The following table illustrates a breakdown of Hump tonnage for all of 1944:

Month	Total	14th AF	XX BC	Other U.S.	Chinese
Jan	13,399	7,601	----------	1,177	4,621
Feb	12,920	7,071	383	1,640	3,880
Mar	9,587	4,379	3,603	940	665
Apr	11,555	6,757	1,693	1,772	1,333
May	11,383	6,231	1,532	1,826	1,794
Jun	15,845	12,537	350	1,033	1,925
Jul	18,975	13,213	1,070	2,664	2,028
Aug	23,676	13,871	3,055	3,919	2,831
Sep	22,315	13,245	3,452	2,686	2,932
Oct	24,715	13,014	7,037	2,557	2,107
Nov	34,914	14,476	7,881	9,081	3,539
Dec	31,935	12,805	4,348	13,188	1,594

ATC TON-MILES FLOWN IN GLOBAL TRANSPORT OPERATIONS

YEAR	INTERNATIONAL	DOMESTIC	WORLDWIDE
1942	49,867,415	14,500,099	64,367,514
1943	274,036,359	46,325,301	320,361,660
1944	788,506,711	69,003,820	857,510,531
1945	1,357,322,849	103,300,955	1,460,623,804
1946	155,241,083	47,851,554	203,092,637
1947	103,253,811	27,839,152	131,092,963
1948	44,617,302	19,553,127	64,170,429
TOTAL	2,772,842,000	328,371,000	3,101213,000

1. Coakley and Leighton, *U.S. Army in W.W.II: Global Logistics and Strategy 1943 - 1945*, 528.
2. *Statistical History of the Air Transport Command*, (Washington, D.C.: HQ ATC Analysis Division, 1948) 32.

Military Air Transport Service

Berlin

On 20 October the Office of Military Government in Berlin increased the winter daily minimum airlift requirement from 4,000 to 5,620 tons, broken down as follows:

ITEM	TONS
Food	1435
Coal	3084
Commerce and Industry Supplies	255
Newsprint	35
Liquid Fuel	16
Medical Supplies	2
U.S., U.K., & French Military	763
Three C-54 Passenger Flights Daily	30
Total	5620

THE BUILD-UP OF THE BERLIN AIRLIFT

MONTH	SORTIES	TONNAGE
JUL 48	13,520	69,000
AUG 48	17,925	119,000
SEP 48	19,766	139,600
OCT 48	18,235	147,600
NOV 48	13,574	113,600
DEC 48	16,405	141,500
JAN 49	19,494	171,900
FEB 49	17,086	152,200
MAR 49	22,163	196,150
APR 49	26,026	235,363

The final record of the Berlin Airlift was as follows:

Total Number of Flights	276,926
Total Number of Tons	2,323,067
Total Cost to U.S. Government	$300,000,000
Average Sorties Per Day	877
Total Flying Hours	567,537
Flying Hours Per Day	1,800
Average Aircraft Loading Time	35 Minutes
Average Aircraft Unloading Time	12 Minutes
Number of Accidents	12
Number of Lives Lost	31

3. Tunner, *Over the Hump*, 207.
4. Hammond Innes, "The Art of Airlifting," *Military Review* 33:4 (July 1953): 75.
5. Tunner, *Over the Hump*, 222.

Korea
USAF Aircraft Assigned to the Korean Theater, 1950 - 53

Combat Aircraft	July 1950	July 1951	July 1952	July 1953	Avg.
B-26	79	157	190	194	161
B-29	87	104	118	117	109
F-51	190	227	150	65	167
F-80	528	254	224	152	270
F-82	37	24	0	0	16
F-84	0	175	353	410	247
F-86	0	93	177	439	184
F-94	0	14	100	82	56
Total	921	1,048	1,312	1,459	1,210

Transport Aircraft	July 1950	July 1951	July 1952	July 1953	Avg.
C-46	41	72	76	73	70
C-47	84	129	134	133	123
C-54	31	64	64	21	47
C-119	0	86	95	104	87
C-124	0	0	13	25	9
Total	156	351	382	356	336

315th Air Division Combat Cargo Operations, 1950-53

Parameter	Into Korea	Intra Korea	Out of Korea	Intra Japan
Total Sorties	65,334	58,573	45,572	40,864
Passengers	906,262	416,686	868,753	413,890
Ton-Miles (x 1000)	75,609	12,553	32,828	37,374
Pax-Miles (x 1000)	481,338	96,911	516,352	188,766

Breakdown of USAF Sorties

Cargo	181,659 (25%)
Close Support	57,665 (8%)
Counterair	66,997 (9%)
Interdiction	192,581 (27%)
All Other	222,078 (31%)
TOTAL	720,980

6."The Air War in Korea: A Statistical Portrait of USAF in the First Hot Conflict of the Cold War," *Air Force*, April 1996, 60 - 69.

Military Airlift Command

The following chart depicts the buildup of USAF aircraft assigned to RSVN, 1965-67:

Aircraft Type	Dec 1965	Dec 1966	Jan 1968
A-1	53	20	0
A-37	0	0	25
B-57	22	20	23
F-4	68	135	116
F-5	11	15	0
F-100	76	203	193
F-102	9	12	12
Fighter-Bombers	239	405	369
C-7	0	0	80
C-47	7	6	16
C-123	49	60	53
C-130	0	0	73
Transports	56	66	222

The total tonnage (in thousands of short tons) delivered in South Vietnam during 1967 was broken down as follows:

Trucks:	13,912	(78%)
Sealift:	1,823	(10%)
Airlift:	984	(5.5%)
Heli.:	827	(4.5%)
Rail:	216	(1.2%)
Total:	17,762	

During the buildup between 1965 and 1968, the Military Airlift Command's "intertheater logistics airlift mission" rapidly expanded as the figures below attest:

	1965	1966	1967	1968
Cargo Tons	53,198	117,465	141,113	155,005
Passengers	175,539	254,080	343,027	398,671

7. Schlight, *USAF in SEA: Years of the Offensive*, 159.
8. Bowers, *USAF in SEA: Tactical Airlift*, 246.
9. Miller, *Airlift Doctrine*, .Ibid., 310.

U.S. Transportation Command

U.S. Strategic Airlift Missions Flown: Aug 90 - Feb 91

	C-5	C-141	KC-10	CRAF	Total
Aug 90	397	967	17	172	1,553
Sep 90	510	998	88	309	1,905
Oct 90	437	682	55	249	1,423
Nov 90	416	710	50	215	1,391
Dec 90	570	1,399	115	558	2,642
Jan 91	680	1,639	48	775	3,142
Feb 91	552	1,457	0	781	2,790
TOTAL	3,562(24%)	7,852(53%)	373 (2.5%)	3,059(20.5%)	14,846

Short Tons Transported

	C-5	C-141	KC-10	CRAF	Total
Aug 90	23,145	18,470	546	7,810	49,971
Sep 90	32,385	19,261	3,450	15,424	70,519
Oct 90	26,133	12,071	1,848	10,722	50,774
Nov 90	26,250	12,922	1,660	9,885	50,717
Dec 90	34,314	26,161	3,439	26,012	89,926
Jan 91	42,568	31,469	1,344	33,236	108,617
Feb 91	33,562	28,703	0	33,796	96,060
TOTAL	218,356 (42%)	149,058 (29%)	12,286(2.4%)	136,884(26.5%)	516,582

Passengers Carried

	C-5	C-141	KC-10	CRAF	Total
Aug 90	20,207	18,566	102	31,741	70,617
Sep 90	13,362	8,184	114	38,617	60,278
Oct 90	5,943	3,342	94	40,634	50,012
Nov 90	5,034	4,828	135	12,689	22,686
Dec 90	12,768	19,166	529	78,629	111,093
Jan 91	16,320	28,683	125	71,096	116,223
Feb 91	7,231	5,828	0	30,623	43,682
TOTAL	80,865(17%)	88,597(19%)	1,099(.2%)	304,029(64%)	474,589

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10. Winnefeld, Niblack and Johnson, *A League of Airmen*, 28 - 31.

Civil Airlines' Participation in Desert Shield / Desert Storm

Airline	# of Aircraft	#Pax Msns	#Cargo Msns	Total # Msns
Northwest	5	75	36	111
Federal Express	8	4	95	99
American Intl.	1	0	88	88
Evergreen	2	0	71	71
Am. Trans Air	1	70	0	70
Pan Am	3	56	0	56
World Airways	1	30	22	52
So. Air Transport	1	0	51	51
Rosenbalm Av.	4	0	50	50
Hawaiian Airlines	0	47	0	47
Air Trans Intl.	1	1	44	45
Tower Air	1	37	1	38
UPS	2	0	35	35
American Airlines	2	30	0	30
United	4	27	0	27
TWA	2	23	0	23
Korean Airlines	0	0	16	16
China Airlines	2	10	0	10
Servico Acornina	0	0	10	10
Florida West	0	0	8	8
Eastern Airlines	0	7	0	7
Sun Country	0	6	0	6
Delta Airlines	0	5	0	5
Buffalo Airways	0	0	4	4
Trans Continental	0	3	0	3
Kuwaiti Airlines	0	0	1	1
TOTAL	40	431	532	963

General Statistics on the Airlift Operation: 8 August to 30 September

	Missions	Sorties	Hours	Passengers	Cargo
C-5	924	5,000	32,010	34,248	55,266
C-141	1,979	11,599	72,300	27,248	38,474
C-130	305	1,129	4,337	3,122	2,160
KC-10	106	471	2,933	214	3,900
Civil	502	2,126	11,902	69,869	23,926
Total	3,816	20,325	123,482	134,701	123,726

11. Ibid., 290.

Desert Express Cargo (in short tons)

	Army	Air Force	Navy	Marines	Total
Oct 90	2.17	.27	0	0	2.44
Nov 90	171.45	52.53	1.49	9.31	234.78
Dec 90	229.31	124.62	26.32	17.07	397.32
Jan 91	266.25	251.42	36.01	20.34	574.02
Feb 91	274.58	273.74	39.49	40.88	628.69
Mar 91	200.54	139.06	10.37	26.60	376.57
TOTAL*	1,144.30	841.64	113.68	114.20	2,213.82

*30 Oct 90 - 19 Mar 91

European Desert Express Cargo (in short tons)

	Air Force	Army	Total
Dec 90	61.55	19.58	81.13
Jan 91	184.72	110.42	295.14
Feb 91	168.76	91.17	259.93
Mar 91	25.76	17.53	43.29
TOTAL*	440.79	238.70	679.49

* 8 Dec 90 - 9 Mar 91

Strategic Airlift Summary: Passengers and Cargo

	Unit Cargo	Sustainment	Desert Expr	Euro-Expr	Passengers
Aug 90	0	0	0	0	67,263
Sep 90	49,738	19,142	0	0	60,476
Oct 90	33,781	20,512	2	0	51,154
Nov 90	9,663	34,028	235	0	20,553
Dec 90	52,045	38,064	399	375	105,413
Jan 91	80,903	36,372	580	488	132,095
Feb 91	52,009	42,611	637	442	45,562
Mar 91	9,831	14,396	213	136	18,204
TOTAL	334,916	205,125	2,066	1,441	500,720

12. Ibid., 167.