

INTEGRATING JOINT INTRATHEATER AIRLIFT COMMAND AND CONTROL
WITH THE NEEDS OF THE MODULAR ARMY: A PERSPECTIVE
OF CURRENT AND PAST NONLINEAR OPERATIONS

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The opinions and conclusions expressed herein are those of the student author and do not necessarily represent the views of the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

ABSTRACT

INTEGRATING JOINT INTRATHEATER AIRLIFT COMMAND AND CONTROL WITH THE NEEDS OF THE MODULAR ARMY: A PERSPECTIVE OF CURRENT AND PAST NONLINEAR OPERATIONS, by MAJ William D. Percival, 136 pages.

The command and control of today's intratheater airlift system, as seen in doctrine and in application, is complicated and conflicted. As the Army continues its transformation to the modular force, requirements for responsive and flexible intratheater airlift have grown. In contrast, existing Joint and Air Force intratheater airlift doctrine does not address these needs, as seen in recent operations during Operation Iraqi Freedom. Presented in this thesis are two historical case studies of past intratheater airlift efforts: Burma during World War II and the tactical airlift system of Vietnam. Both provide examples of distinct intratheater airlift command and control arrangements with similar attributes called for by Army transformation. Both case studies provide lessons in the application of theater airlift to support ground forces in a nonlinear battlefield. Coupled with identified failings in both doctrine and structure of the current theater distribution system, this thesis identifies requirements of theater airlift if it is to provide effective and efficient support to the modular force. With an understanding of current and past doctrine, structural evolutions of intratheater airlift, and the effects of each system, this thesis concludes with recommended changes to the intratheater airlift command and control structure to meet Army requirements.

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ACRONYMS

AAGS	Army Air-Ground System
ACH	Air Cargo Headquarters (World War II)
ACS	Air Control Section (World War II)
AD	Air Division (Vietnam)
AFDD	Air Force Doctrine Document
AFI	Air Force Instruction
AFM	Air Force Manual
ALCC	Airlift Control Center (Vietnam)
ALCE	Airlift Control Element (Vietnam)
ALFSEA	Allied Land Forces Southeast Asia (World War II)
ALPC	Airlift Planning Cell
ALSOC	Airlift Support Operations Center
AMC	Air Mobility Command
AMD	Air Mobility Division
AMLO	Air Mobility Liaison Officer
AMR	Air Movement Request
AO	Area of Operations
AOC	Air and Space Operations Center
BAE	Brigade Aviation Element
BCD	Battlefield Coordination Detachment
BCT	Brigade Combat Team
BG	Brigadier General

C2	Command and Control
CACC	Combat Air Control Center
CAF	Combat Air Force
CCT	Combat Control Team
CCTF	Combat Cargo Task Force (World War II)
CINCPAC	Command-in-Chief, Pacific (Vietnam)
C/JFACC	Coalition/Joint Forces Air Component Commander
COMCAFOR	Commander Combat Air Forces
COMALFOR	Commander Airlift Forces
CONOPS	Concept of Operation
CSAS	Common Service Airlift System (Vietnam)
DIRMOBFOR–A	Director of Mobility Forces–Air
DDOC	Deployed Distribution Operations Center
EAC	Eastern Air Command (World War II)
EAW	Expeditionary Air Wing
ESC	Expeditionary Sustainment Command
FM	Field Manual
JCA	Joint Cargo Aircraft
JFC	Joint Force Commander
JMC	Joint Movement Center
JMR	Joint Movement Request
JP	Joint Publication
LTG	Lieutenant General
MAF	Mobility Air Force

MCB	Movement Control Battalions
MCC	Movement Control Center (Vietnam)
MCT	Movement Control Team
MG	Major General
MNC-I	Multi-National Corps – Iraq
MTTP	Multi-Service Tactics, Techniques, and Procedures
NCAC	Northern Combat Area Command (World War II)
OEF	Operation ENDURING FREEDOM
OIF	Operation IRAQI FREEDOM
PACAF	Pacific Air Force
PACOM	Pacific Command
RAF	Royal Air Force
SEAAS	Southeast Asia Airlift System (Vietnam)
SEAC	Southeast Asia Command (World War II)
TACP	Tactical Air Control Party
TACC	Tactical Air Control Center (Vietnam)
TACS	Tactical Air Control System
TALO	Tactical Airlift Liaison Officer (Vietnam)
TCC	Troop Carrier Command (World War II)
TDS	Theater Distribution System
TMA	Traffic Management Agency (Vietnam)
USAAF	U.S. Army Air Forces (World War II)
USAF	United States Air Force

USCENTCOM	United States Central Command
USMACV	United States Military Advisor Command, Vietnam
USTRANSCOM	United States Transportation Command
WTO	Western Pacific Transportation Office (Vietnam)

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CHAPTER 1

INTRODUCTION

This study examines intratheater airlift command and control (C2) and provides recommendations on how this system can effectively support the requirements of Army modularity. Similar to Operations Enduring Freedom (OEF) and Iraqi Freedom (OIF), future combat operations will likely be in nonlinear environments within a contiguous area of operations (AO). Based upon Army modularity, the Brigade Combat Team (BCT) will be the principal land force dispersed throughout a combatant commander's theater of operation. To sustain these forces, secure lines of communication are vital but, as seen recently in Iraq and Afghanistan, ground lines of communication are vulnerable in a nonlinear battlefield. A relatively small enemy force, with modest means, can effectively disrupt ground convoys at little cost and with great effect. Thus, air lines of communication will continue to be a critical means to support any fielded land force. This "new" reality underscores the necessity for effective and efficient intratheater airlift operations between joint forces.

Background

The current intratheater airlift C2 system is doctrinally dysfunctional and is neither efficient nor effective in applying the inherent capabilities of air mobility to forces in a dispersed battlefield. Despite operating within a joint Theater Distribution System (TDS), the division of labor between various service-based organizations does not provide an integrated or interdependent approach to airlift operations. Doctrinal attempts to unify the air-ground logistical effort with combat-centric C2 systems like the

Air Force Tactical Air Control System (TACS) and the Army Air-Ground System (AAGS) have proven ill suited for joint air mobility operations. While interlinked in the execution of close air support missions, both systems operate in parallel for intratheater airlift operations and represent a service-specific approach to a joint capability. Through AAGS, Army theater airlift is a decentralized force focused on organic support. In contrast, Air Force airlift under TACS operates common-user airlift under the principles of centralized command, decentralized control that has characterized independent air operations since World War II.

Conflicting perspectives from the tactically minded Soldier and operationally focused Airman only compound these structural problems. Many of the arguments for expanding the Army's airlift capability echo the position taken by General Maxwell D. Taylor, Army Chief of Staff from 1956 to 1959 and later Chairman of the Joint Chiefs during the Kennedy administration. In his book, *The Uncertain Trumpet*, Taylor accused the Air Force of neglecting Army needs and concluded that all air support, to include tactical airlift, should be organic to the Army (1959, 169). In contrast, many Air Force advocates have persistently demanded the centralized control of airpower in all its forms. While the debate, then and now, largely depends on service perspective, the historical evidence is clear; parochial solutions are not the answer to what is a joint interdependence issue. However, the current joint approach is not working either and the frustration felt by ground commanders is understandable. Today's intratheater airlift system, evolving from operations in World War II, Korea, and Vietnam, has itself become an obstacle to effective and efficient support.

For Army units currently in U.S. Central Command's (USCENTCOM) area of responsibility, there are two separate intratheater airlift systems. The first is the AAGS Air Movement Request (AMR), which uses organic Army assets like the UH-60 Blackhawk, CH-47 Chinook, or C-23 Sherpa. To access common-user airlift, such as the C-130 Hercules or C-17 Globemaster III, USCENTCOM uses the Joint Movement Request (JMR) process executed by TACS. Whereas the AMR is an internal ground component process enabling short notice execution, the time needed to coordinate a JMR is much longer.

Getting common-user airlift support in USCENTCOM is a complicated process. The user first submits a JMR via the Intratheater Airlift Request System, a web based program that electronically sends and tracks all requests. After initial validation by the servicing Movement Control Team (MCT), the JMR then goes to an Area MCT that is collocated with the Sustainment Brigade under the Expeditionary Sustainment Command (ESC). The Area MCT, provides component validation of the request and sends it to the USCENTCOM Deployed Distribution Operations Center (DDOC). The DDOC, located in a rear area, will then validate the request as a joint requirement. After approval, and if airlift is deemed a suitable mode of transportation, the Air Mobility Division (AMD) in the Combined Air and Space Operations Center (AOC), in yet another rear area, gets the requirement and tasks an Expeditionary Air Wing for execution via the air tasking order. Finally, the squadron plans and executes the mission to support the unit's JMR.

What begins as a tactical request moves through a system that is strategic in design. A properly formatted JMR goes through three validations at three separate levels and can take several days to process. Unlike an AMR, all United States Air Force

(USAF) intratheater airlift also requires a window of two days or greater between the available load date and the required delivery date, further delaying the execution. Finally, the requesting unit rarely has the organic C2 connectivity or expertise at the tactical level to track movements in execution. Although provisions are in place to handle immediate airlift requests, the user is still required to process the JMR through each organization. Unless the user is intimately familiar with the system, this too is a daunting process. The inherent inflexibility of this system matched by a lack of airlift expertise within ground units results in needless frustration at all levels.

From an Airmen's perspective, the JMR process makes sense because it focuses on the fundamental tenet of centralized control, decentralized execution but it leaves them unaware of the systems impact at the tactical level. Conversely, the allocation of airlift assets to a division commander makes absolute sense to the Soldier, who is equally unaware of the limited numbers of airlift platforms and the need to use them as efficiently as possible. Simply stated, the underlying problem in the effective and efficient employment of intratheater airlift is one of service-based perceptions.

During OEF and OIF, the ability to leverage USAF intratheater airlift assets to meet the tactical requirements on the ground has been called into question by Soldiers and Airmen alike. Where one sees an ineffective and inflexible system, unable to support the needs of the ground commander, the other sees an inefficient, disjointed use of limited assets. As a result, the lack of trust has deepened between the Air Force and Army over intratheater airlift.

Army units in USCENTCOM's area of responsibility have responded by stressing organic assets, specifically CH-47 Chinooks, and contracting airlift in lieu of using

existing Air Force assets. For future intratheater requirements, the Department of the Army has endorsed the new Joint Cargo Aircraft (JCA). According to BG Stephen D. Mundt, Director of Army Aviation, since “the Air Force does not perform [intratheater] missions in the tactical spectrum” an Army operated airlifter is needed to push logistics the last ‘tactical mile’ to support the modular force (U.S. Army Public Affairs 2006). While his assessment of Air Force airlift employment is questionable, the fact that the Army is seeking to expand its organic fixed-wing airlift capability highlights the lack of interoperability and trust that currently exists.

The air component has responded as well, largely through ad hoc organizational changes and personnel assignments, but has remained firm in its approach to intratheater airlift management. According to the Air Force, additional airlift platforms are not needed. Recent purchases of the improved C-130J, additions to the C-17 fleet, and the JCA program have been a product of congressional budgets, not service priorities. From an air-centric perspective, the real problem is rooted in Army inefficiencies.

If both approaches are wrong, as I believe they are, the critical question is how can the intratheater airlift C2 system be responsive and predictable while balancing effectiveness and efficiency? That is the objective of this study, to understand the current system, review lessons from the past, and submit recommendations to integrate Air Force intratheater airlift C2 with the needs of the modular Army.

Primary and Secondary Research Questions

What problems does the current intratheater airlift C2 structure and process have in providing effective logistical support for an Army BCT in a nonlinear operational environment? Secondary questions are:

1. What are current airlift requirements for a BCT in a nonlinear operational environment and how does existing Air Force C2 doctrine support them; are they nested and supporting or are they uncoordinated and divergent?

2. After looking at historical case studies of Burma and Vietnam, how has airlift supported ground forces in past nonlinear environments? What was the impact of intratheater airlift C2 during operations, and how did the contemporary air and land components judge airlift integration?

3. What did the Burma and Vietnam case studies have in common and are there any relevant patterns to the current air-ground relationship in terms of airlift C2? Why were they successful or unsuccessful?

4. After looking at current doctrine, recent operations in Iraq, and the historical case studies, how should the intratheater airlift C2 structure and process change?

Definitions

Listed below is a brief glossary of key terms relevant to this study. Based on Joint, Air Force, or Army Publications, these definitions will aid the reader, irrespective of background, in understanding the concepts and analysis presented in this paper. While most come directly from existing doctrine, some terms are ill defined by the existing literature. For the purpose of clarity, a general definition based on basic operational concepts is applied. A short discussion of each concept is included in the entries listed below.

Combat Employment. According to Air Force doctrine, “combat employment airlift moves combat-loaded units to maximize their readiness for immediate engagement in combat operations within a theater” (U.S. Air Force 2006, 30). Methods of combat

employment include airborne and airland operations and directly support the insertion of combat forces into hostile areas. As one of the four basic missions of airlift forces described in Air Force Doctrine Document (AFDD) 2-6, it is often confused with combat sustainment as well as passenger and cargo movement.

Combat Sustainment. Defined as the ability of airlift to supply forces “under hostile conditions” and normally accounts for a small number of total airlift sorties (U.S. Air Force 2006, 31). Incorrect use of “Combat sustainment” and non-combat “sustainment” is common, resulting in confusion within the joint community. Although they might appear similar, the missions are very different. The organization of intratheater airlift forces and the accompanying C2 structure have focused on efficient sustainment through passenger and cargo movements rather than combat effectiveness due to this misunderstanding.

Command and Control (C2) System. As defined in Joint Publication (JP) 1-02, C2 systems are “the facilities, equipment, communications, procedures, and personnel essential to a commander for planning, directing, and controlling operations of assigned and attached forces pursuant to the missions assigned” (Joint Chiefs of Staff 2007, 101). While facilities, equipment, and communications are vital for any C2 system, the purpose of this thesis is to explore the joint linkages in personnel and procedure required for an effective and efficient theater airlift system.

Direct Support. As “a mission requiring a force to support another specific force” and authorized to answer directly to the supported force (Joint Chiefs of Staff 2007, 161), direct support is a source of friction between air and land commanders. Due to limited airlift assets, the Coalition or Joint Force Air Component Commander (C/JFACC) is

typically reluctant to release assets to ground commanders. One intratheater airlift mission normally supports multiple JMRs and the apportionment of airframes would directly affect the TDS. For ground commanders, since intratheater airlift has proven to be unresponsive outside of missions scheduled per the air tasking order, direct support is a means to gain tactical flexibility at the expense of efficiency.

Effect. Joint publications define this as, “1. The physical or behavioral state of a system that results from an action, a set of actions, or another effect. 2. The result, outcome, or consequence of an action. 3. A change to a condition, behavior, or degree of freedom” (Joint Chiefs of Staff 2007, 174). This study focuses on point three.

Efficiency. Although there is no joint definition, efficiency is a ratio of output to input. This is a key concept for air mobility forces since they are concerned with maximizing the effects of limited assets. A driving factor for air planners, efficiency focused operations can hinder tactical flexibility. The balance of applying airlift in an efficient and effective manner is at the heart of this study.

General Support. “That support which is given to the supported force as a whole,” not subdivided by unit (Joint Chiefs of Staff 2007, 223). General support under centralized command is the air-centric approach to intratheater airlift. Due to constraints on the number of airlift assets available, this is the most efficient means to fulfill TDS requirements. Like direct support, this is a contentious issue between the Army and the Air Force rooted in inherently different tactical and operational perspectives.

Intratheater Airlift. Simply, airlift conducted within a theater. Intratheater airlift assets, unlike intertheater airlift, are assigned to the geographical combatant commander who typically places them under operational control of the C/JFACC. As noted in JP 1-

02, “During large-scale operations, US Transportation Command (USTRANSCOM) assets may be tasked to augment intratheater airlift operations,” being temporarily attached to the Joint Force Commander (JFC) (Joint Chiefs of Staff 2007, 277). This study does not discuss the role of USTRANSCOM in intratheater operations but, instead, focuses on the C2 of theater assets as a whole.

Nonlinear Operations in Contiguous AOs. Despite recent changes in Army publications, Joint doctrine defines contiguous areas as “the JFC’s entire assigned operational area divided into subordinate AOs” (Joint Chiefs of Staff 2008, V-18). Within these areas, subordinate component commanders conduct nonlinear operations, where “forces orient on objectives without geographic reference to adjacent forces” (Joint Chiefs of Staff 2008, V-17). In combination, nonlinear environments within contiguous AOs typically support stability and civil support missions. Whereas the recently published Field Manual (FM) 3-0, *Operations*, has deleted the term “nonlinear” in favor of “noncontiguous,” this study applies the concepts outlined in JP 3-0.

Sustainment. Unlike combat sustainment, it is “the provision of logistics and personnel services required to maintain and prolong operations until successful mission accomplishment” (Joint Chiefs of Staff 2007, 524). Although vague, this definition does not mention a combat environment or operations in hostile areas and sustainment airlift typically focuses on passenger and cargo movement (U.S. Air Force 2006, 30). For the purpose of this study, sustainment airlift refers to logistical operations in a relatively benign environment.

Theater Air Control System (TACS). Is the system that provides the Air Force Component Commander and the C/JFACC “the capability to plan and conduct theater air

operations” (U.S. Air Force 1995, 1). It is “task organized to provide centralized planning and control and to ease decentralized execution of air and air defense operations” (U.S. Army 1996, A-1). TACS is but one part of the Theater Air-Ground System, an amalgamation of service specific air C2 systems. A key element in TACS for air-ground coordination at the Corps level and below is the Air Support Operations Center. Unfortunately, the Air Support Operations Center focuses on combat air force (CAF) missions, leaving operational airlift C2 to the AMD in the Combined AOC. The Director of Mobility Forces-Air (DIRMOBFOR-A) oversees the intratheater airlift effort from an AOC, but does not have command authority over those forces and by doctrine can only advise the AOC Director. Adding to this confused chain of command, the Air Mobility Liaison Officers (AMLO) interface with specific units at the Army corps level and below, but are not under operational control of the Air Force Component Commander. In TACS, there is not a commander of airlift forces and the AMLO typically answers to Air Mobility Command’s (AMC) 18th Air Force Commander when deployed to a theater of operation.

Theater Distribution System (TDS). Defined as “a distribution system comprised of four independent and mutually supported networks within theater to meet the geographic combatant commander’s requirements: the physical network; the financial network; the information network; and the communications network,” (Joint Chiefs of Staff 2007, 543) the TDS is the overarching theater logistical system. Within it are various service specific organizations, like the Theater Support Command, and integrated joint organizations such as the DDOC and the Joint Movement Center (JMC). The JFC selects the lead component for TDS, typically based upon the one with the preponderance

of forces. During the open days of OEF, the Air Force assumed control of the TDS while in OIF the Army had lead.

Limitations

There are two significant limitations. First, while doctrine and regulations provide a description of the theater airlift system, specific information on recent operations in Iraq and Afghanistan is inaccessible due to classification. Second, because of the ad hoc nature of the mobility environment, doctrine and regulations do not always accurately represent the current employment of intratheater airlift forces. Confined to published doctrine and historical evidence, this study accurately reflects the system as it is supposed to be, not its ad hoc evolution during recent combat operations.

Scope

The focus of this thesis is the connectivity between air and ground forces in the request and fulfillment of intratheater airlift support. Therefore, scope is limited to airlift C2 in a nonlinear operational environment within a combatant commander's theater of operation. This study begins with the examination of current doctrine used in OIF prior to presenting an historical review of airlift C2 in Burma and Vietnam. Both historical case studies are particularly relevant for intratheater airlift operations in a nonlinear environment and provide contrast to today's TDS. First, the "air supply" of Allied ground force in the Burma during World War II is an example of two independent airlift systems within one theater of operation. Next is the evolution of "tactical airlift" during Vietnam as a single airlift C2 system within an undivided theater. After comparing past and

current C2 systems, this study then makes recommendations to organizational structure and procedure to integrate Air Force intratheater airlift with the Army's modular BCT.

Delimitations

Since the focus is on intratheater airlift in an established theater of operations, this study does not examine the deployment and re-deployment process, intertheater airlift, the design of airspace, or the planning process to develop and maintain airfields. Furthermore, this study focuses on theater-wide systems, not airlift support during siege relief. Although they are specific examples of intratheater airlift in action, siege operations such as Diem Bien Phu or Khe Sanh provide a limited perspective of theater airlift C2 structure as a whole. Finally, since the subject centers on sustaining a brigade-sized force in a nonlinear environment, this study does not discuss aeromedical evacuation.

Significance of Thesis

Effective and efficient intratheater airlift has proven vital in recent conflicts. Since the cornerstone of any airlift operation is its C2 structure, this study focuses on the process of meeting ground force requirements within a theater of operations. The approach is significant as well. Through comparison of three different airlift models, a historical perspective provides insight on how intratheater airlift can successfully support a brigade-sized force in a nonlinear environment.

Modularity has fundamentally changed the Army's operational model, shifting from a forward-deployed, division-based force to brigade-sized units that are mobile, flexible, and responsive. Weapons systems currently in development, like the Future

Combat System, will take this concept a step farther, focusing on both intertheater and intratheater air mobility for operational maneuver. Conditions faced in Iraq and Afghanistan compel air and land commanders to accept the realities of nonlinear operations. In the current environment, extended and vulnerable ground lines of communication are an asymmetric weakness. All of these developments have a significant impact on intratheater airlift C2.

As mentioned, the current intratheater airlift system is neither effective nor efficient in meeting ground force needs. Differing service perspectives stifle airlift's inherent advantages and a lack of comprehensive doctrine prevents a true joint approach to theater logistics. As a result, a noticeable lack of trust exists between Soldiers and Airmen alike over its employment. To counter this, the mechanism for employing theater airlift support for ground forces must change.

A great deal of literature has been devoted to the subject of airlift, to include doctrine, historical accounts of past operations, as well as service-based papers and research. Chapter 2 examines this body of work by type and significance, deriving common themes applicable to intratheater airlift C2. This review reveals lessons learned, as well as those forgotten, and examines the breadth of intratheater airlift literature.

CHAPTER 2

REVIEW OF LITERATURE

Four types of literature are relevant to this study. The first is joint and service doctrine to include Army FMs, Air Force Instructions (AFI), and geographical theater guidance that regulate the current application of intratheater airlift. Second, a vast amount of information exists in service school publications, papers, and professional military journals. Third, non-profit research organizations, such as the RAND Corporation's Project Air Force and service white papers identify current issues, future concepts, and proposed organizational changes. Finally, this study reviews historical documents, books, and articles focusing on nonlinear intratheater airlift efforts in Burma during World War II and the Vietnam War. Following a brief overview of these four categories, this chapter then identifies conflicting guidance, information gaps, and trends in the literature. The final segments discuss the significance of this study to the existing record and a summary of the literature as a whole.

Significant Literature

A general definition of doctrine is the “fundamental principles by which the military forces or elements thereof guide their actions in support of national objectives. It is authoritative but requires judgment in application” (Joint Chiefs of Staff 2007, 166). Joint doctrine differs in that it supports “coordinated action toward a common objective” (Joint Chiefs of Staff 2007, 284). In addition to doctrine, this study reviews applicable AFIs, FMs, Concepts of Operations (CONOPS), and handbooks. Although more

regulatory in nature, these sources fill in many of the gaps not addressed and show the application of doctrinal concepts during operations.

Joint Doctrine

Under joint publications and Joint/Multiservice Tactics, Techniques, and Procedures (JTTP or MTTP), there are four noteworthy documents that apply to intratheater airlift C2. The first is JP 3-17, *Joint Doctrine and Joint Tactics, Techniques, and Procedures for Air Mobility Operations*, dated 14 April 2006. Considered a capstone publication for common-user air mobility, it stresses the tenets of centralized control and decentralized execution while defining the fundamental concepts of airlift prioritization, air mobility C2 structures, and airlift response.

In comparison, JP 3-30, *Command and Control for Joint Air Operations*, focuses on the overall air C2 processes for joint operations. Although important, this document centers of the organization and function of the Combined or Joint AOC and provides limited guidance on theater airlift operations. Mostly focused on CAF driven processes that culminate into the air tasking order cycle, JP 3-30 briefly discusses the AMD within the context of the theater airlift system.

In *Multi-Service Tactics, Techniques, and Procedures for Theater Air-Ground System (TAGS)* there is a comprehensive description of the over-arching C2 system for theater air-ground integration. This document discusses the Joint Task Force and component level considerations, to include functions like air tasking order integration and targeting cycles. Of note for this study is the description of both the AAGS and the Air Force TACS and how both relate to the intratheater airlift system. The organization and functions of the Battlefield Coordination Detachment (BCD), as well as air-ground

coordination through Air Force Tactical Air Control Parties (TACP) are described under AAGS. The document also goes into some detail describing Air Force C2 organization within the Combined or Joint AOC, highlighting the functions of the AOC Director and “core teams,” or divisions.

Greater logistical detail is in JP 4-01.3, *Joint Tactics, Techniques, and Procedures for Movement Control Procedures*. Stressing “the importance and necessity of a well defined and integrated transportation system” (Joint Chiefs of Staff 2002, I-1), this publication defines the three elements of transportation, discusses the geographical combatant commander assigned logistical responsibilities, and the elements, principles, and functions of movement control.

Air Force Doctrine

Whereas Army includes doctrine in FMs, the Air Force publishes a series of AFDD that guides organization, operations, and functions within the service. Within this series, AFDD 2-6, *Air Mobility Operations*, describes airpower employment of the mobility air force (MAF). Not to be confused with the Army’s airmobile concept developed in the early 1950’s, today’s air mobility combines intertheater (formally strategic) and intratheater (formally tactical) airlift with air refueling. Prior to the creation of the AMC in 1992, these three forms of air operations were under different Air Force major commands.

The Air Force defines intratheater airlift in AFDD 2-6. Topics include how theater air mobility fits into the larger Air Force Air and Space Expeditionary Force system, the service definition of Agile Combat Support, as well as the functions of the AMD, JMC, and the DDOC. Important concepts presented in *Air Mobility Operations*

include combat employment, combat sustainment, passenger and cargo movements, and the differences among these missions.

Although more regulatory than doctrinal, airlift-centric AFIs and CONOPS were also reviewed to provide specific information on intratheater functions. Establishing Air Force AOC roles, responsibilities, and functions is AFI 13-1AOCV3. While the AFI centers on CAF functions of the AOC, it does detail AMD operations, structure, and the roles of the DIRMBOFOR-A and AOC Director. Another important AFI is 13-106, *Air Mobility Liaison Officer (AMLO)*, a short publication addressing the integration and capabilities of Air Force mobility liaisons and their relation to ground forces. Although not an instruction, Air Force Policy Directive 13-1 establishes policies for TACS. Only five pages and published in 1995, this directive provides nominal information on how TACS is employed and briefly mentions intratheater airlift C2 support.

The last type of Air Force publication reviewed could impact future theater airlift C2. Written in August 2007, the *Air Mobility Command (AMC) Concept of Operations (CONOPS) for Joint Cargo Aircraft (JCA)* defines the projected air-ground command relationships of the C-27J assault airlifter. The CONOPS incorporates JCA in the present airlift system described in AFDD 2-6, but its discussion of direct support marks a shift in not only Air Force thought, but Joint doctrine as well.

Army Doctrine

FMs are Army doctrinal documents and conceptually straddle AFDDs and AFIs. Although not as detailed on intratheater airlift C2 functions as joint or Air Force publications, they establish Army expectations and perceptions. Documents like the Field Manual Interim 3-0.1, *Modular Army Force*, shows current Army thought toward

modularity while FM 3-04.11, *Aviation Brigade*, provides a ground force perspective of theater air operations. Logistical FMs, including 4-20.41, *Aerial Distribution in the Theater of Operations*, are much more intratheater airlift specific and stress the need for aerial delivery in nonlinear operating environments. As mentioned in previously reviewed Joint and Air Force doctrine, FM 100-13 describes the functions of the BCD. By detailing liaisons support to the AOC, this FM describes Army C2 integration supporting intratheater airlift planning and execution.

United States Central Command Guidance

Since a review of current intratheater airlift doctrine explains only how the supporting C2 system should work, research also included recent geographical combatant commander guidance from OIF. Unfortunately, due to classification, most documents detailing intratheater airlift within the CENTCOM AOR were inaccessible. Despite this limitation, open-source data provided the basic information needed to describe the system in place.

Service School Publications, Papers, and Professional Journals

Providing themes of recent and past professional thought, this study divided service school publications, papers, and professional journals into three areas: the evolution of intratheater airlift, theater airlift C2 and force management, and technical planning concepts or models. All represent different approaches to analyzing theater airlift capabilities and requirements.

Many of the historical papers and articles concerning tactical airlift are about the watershed airlift effort in Khe Sanh, such as the 1969 Sikorsky Corporation study, and

the French failure at Diem Bien Phu. Most did not focus on the evolution of tactical airlift as a whole. Two notable exceptions are Ray Bowers' *USAF Airlift and the Airmobility Idea in Vietnam* and *Doctrine by Default: The Historical Origins of Tactical Airlift*, an Air Command and Staff College paper written in 1982 by Major Ronald G. Boston. The focus of the Bowers article is the parallel development of Army and Air Force tactical airlift doctrine during the post-Korean War period and the validation of these concepts during Vietnam. In *Doctrine by Default*, Boston provides a concise overview of the ad hoc development of tactical airlift operations.

In contrast, there is a wide range of material on airlift C2 and force management, most discussing the organization of Air Force common-user airlift within a theater of operation. One notable paper is *An Airfield Too Far: The Army's Search for a Runway*, an Air War College thesis written by Army LTC Kent V. Hufford detailing the decline of Army capabilities in combat airfield management and C2. A good discussion of operational C2 consideration is in *Theater Airlift Management and Control: Should We Turn Back the Clock to Be Ready for Tomorrow?* Another Air War College thesis, it reviews major combat operations of the past and suggests changes in AOC control of airlift forces.

Of the papers and articles reviewed, the two most technically challenging propose advanced theater airlift planning concepts using analytical models. Written in response to operations in southwest Asia, these papers highlight current trends in professional thought and the importance of efficiency models for airlift forces. The first, *Scheduling Intra-Theater Airlift for Operation Iraqi Freedom and Enduring Freedom*, proposes mathematical models to improve the efficiency of airframe utilization that, the author

argues, equals greater effectiveness. The second, *Planning United States Central Command Intra-Theater Airlift Routes*, discusses route selection for frequency and requirement channels using the same rationale.

Non-Profit Research Organizations and Army White Papers

Army and Air Force research studies and policy papers often denote the direction of service thought. Relevant are two recent Air Force reports, both published by RAND Corporations' Project Air Force, and two Army white papers, to include the *Army Transformation Roadmap* published in 2003. These authoritative reports represent service-identified issues, concepts, and visions for the future.

Although RAND covers a wide range of topics, two reports focus on intratheater airlift. The most relevant is *A Framework for Enhancing Airlift Planning and Execution Capabilities within the Joint Expeditionary Movement System*, published in 2006. This report responds to theater airlift deficiencies identified by LTG Walter E. Buchanan, the Coalition Force Air Component Commander at the end of major combat operations in OIF. The second is *Airlift Capabilities for Future U.S. Counterinsurgency Operations*, a study to address changes in airlift doctrine and organization to meet counterinsurgency requirements. While this study does not focus on counterinsurgency operations, *Airlift Capabilities* provides recommendations to improve concepts of prioritization and intratheater airlift capabilities. Both studies also serve as lenses to air-centric thought, which focuses on efficiency as the means to attain effectiveness.

Complementing the RAND reports are two Army white papers providing a ground-centric vision for future airlift operations. The first is *Concepts for the Objective Force*, written in 2001 under the direction of General Eric K. Shinseki. Although

strategic in nature, *Objective Force* outlines Army transformation and discusses intratheater airlift as a means of future operational maneuver. In 2003, *The US Army Transformational Roadmap* refined these concepts. Unlike *Objective Force*, the *Roadmap* discusses how the Army will transform from the Current Force to the Future Force. Divided into several joint-operating concepts, it provides some guidance for intratheater airlift to support the modular force.

Historical Documents, Books, and Articles

The historical literature used focuses on intratheater airlift efforts in Burma during World War II and the Vietnam War. Documents reviewed include command reports, past Air Force Manuals (AFM), FMs, and Air Force Contemporary Historical Examination of Current Operations Reports. Several books and papers describe both periods and a series of articles specifically on airlift efforts in Vietnam provide important information.

During the course of research, historical accounts specific to the airlift effort in the India-Burma sector during World War II were difficult to find. The majority of available information focused on the intertheater airlift effort of the entire China-Burma-India Theater, with little on intratheater airlift supporting operations to secure Burma from the Japanese. Through the Combined Arms Research Library at Fort Leavenworth, Northern Combat Area Command (NCAC) reports and conference notes were available and provided detailed logistical information as well as organizational diagrams. Another resource available via the Internet was the U.S. Army Center for Military History series on China, Burma, and India. Although not specific to the effects of airlift in Burma, they too provided general historical context as well as some specific data applicable to this study. There was one detailed source describing the entire airlift effort in the India-Burma

sector. A 1957 USAF Historical Studies document, *Air Supply in the Burma Campaigns* by Dr. Joe G. Taylor provided a comprehensive account of the evolving air supply effort from 1942 to the end of hostilities in 1945.

In contrast to Burma, the amount of information detailing intratheater airlift in Vietnam was more comprehensive. Relevant documents included AFM 1-9 *Tactical Airlift* written in 1954 and AFM 2-4, *Tactical Air Force Operations: Tactical Airlift*, a 1966 update used for the remainder of the war. Another important source was the series of Air Force Contemporary Historical Examination of Current Operations reports addressing tactical airlift operations. Three were particularly relevant and, in combination, detailed the maturation of tactical airlift operations in Vietnam from 1962 to 1972. To balance these air-centric primary sources, the US Military Advisory Command Vietnam (USMACV) Command History provided a joint appraisal of tactical airlift performance.

Airlift during the Vietnam War was well documented, with two important works influencing this study. The first was *The USAF in Southeast Asia: Tactical Airlift*, by Dr. Ray L. Bowers. A detailed account of tactical airlift throughout the war, Bowers' provides a comprehensive view of airlift organization, C2, and performance. Important are the internal Air Force command relationships and their effect on operations. While *Tactical Airlift* is a generally positive account of the Air Force effort, *Interservice Rivalry and Airpower in Vietnam* presents ground-centric issues, stressing Army and Air Force doctrinal tension. In this negative account of air-ground integration, Dr. Ian Horwood identifies the persistent doctrinal competition between services that still exists today.

Several articles provided historical accounts of airlift efforts in Vietnam. These included the 1969 Armed Forces Management article, *TAC Airlift Revamped in Vietnam*, and Air Force news releases like *Airlift Action Unprecedented in 1968*. Articles like these provide era-specific perceptions of the performance and effects of intratheater airlift.

Aside from previously reviewed doctrine and instructions, there was one source for recent operations in Iraq especially pertinent to this study. Although focusing mainly on intertheater airlift deployment and intratheater combat employment, *On Point: The US Army in OIF, 2004* offers valuable insight on Army perceptions of joint integration and support.

Analysis of Literature

Current doctrine provides conflicting guidance for intratheater airlift C2. Some of this confusion stems from changing organizations and functions described in recently revised publications, like the DDOC concept in JP 3-17 and AFDD 2-6. Aside from this, there are other important doctrinal contradictions. These include the validation of airlift requests, the types of requests, how TACS integrates with the TDS and intratheater airlift, as well as the MAF and CAF relationship of the Air Support Operations Center, TACP, and AMLO in theater. All show a disjointed and often service-specific approach to theater airlift C2.

Gaps in the Record

There are doctrinal, historical, and conceptual gaps within intratheater airlift literature. Doctrine does not regard airlift C2 as a separate entity. Instead, it is included in CAF-centric documents like JP 3-30, FM 3-52.22, and AFI 13-1AOCV3, leaving

individuals to sift out airlift specific points. Another factor is the integration of all forms of Air Force airlift under the single doctrinal concept of air mobility, as seen in AFDD 2-6. Focusing on efficiency as the means to effective operations, Air Force doctrine does not discuss direct support or emphasize airlift's role in operational maneuver. While the AMC JCA CONOPS mentions both, Joint and Air Force doctrine generally view intratheater airlift as an operational-level sustainment force. Unlike Army doctrine, efficiency appears to trump tactically responsive airlift.

There are gaps in the historical record as well. Little is written on intratheater airlift operations within Burma during World War II. Although part of the greater China-Burma-India campaign, most literature focused on airlift efforts to supply Chinese National forces over the Himalayas, better known as the "Hump." While the Vietnam record is much better, Air Force sources provided the majority of literature. With the exception of *Interservice Rivalry*, a ground-centric perspective is missing. Additionally, the history of Vietnam lacks a comprehensive joint assessment of tactical airlift.

Two approaches are absent in current intratheater airlift literature. The first is conceptual modeling of past airlift C2 systems and their comparison to the current structure. Historical sources generally describe airlift C2 during specific conflicts or campaigns. While papers and professional publications incorporate these examples, they are typically narrow in focus, such as the role of today's DIRMOBFOR-A compared to that of the Commander Airlift Forces in Operation Desert Storm. Non-profit research organizations, like RAND, provide notional systems as improvements, but only in relation to current doctrine without historical context. Centralized command and decentralized control are the accepted Air Force tenets, but current literature lacks

comparisons with other distinct C2 systems that could either challenge or support this position.

The second one is beyond the scope of this study but requires recognition. Missing in today's doctrine and the historical record are Army and Air Force measurements of effectiveness and performance for intratheater airlift. Most metrics focus on theater distribution performance and not intratheater airlift effects. The Army and Air Force both stress the importance of effectiveness, but a joint approach to measuring it is missing in doctrine. Aside from subjective impressions of air and ground commanders, measurements of effectiveness in the historical record are lacking as well. While information on tonnage and sortie rate is available for Burma and Vietnam, these are performance-based criteria. In the future, a joint definition of measurements of effect and performance will need to be established.

Trends

The principal trend in the evolution of intratheater airlift is the search for effective and efficient means to support land-based forces. Many documents and publications present this as a single concept to achieve, not competing qualities to balance. Another is the ad hoc nature of the airlift C2 structure. Service-based misperceptions in employing airlift are the last and most historically enduring trend.

Significance of Thesis in Relation to Existing Literature

In comparison to current literature, this study uses a different approach to joint integration of airlift C2 system in support of the modular force. By identifying lessons-learned from past operations and discontinuities in the current intratheater airlift system,

this thesis recommends needed changes to support the modular force effectively while efficiently using limited airlift assets in a nonlinear operational environment. In the future, as joint and service doctrines address this issue, this research may provide a unique perspective to restructure the intratheater airlift system and C2 structure.

As seen in this review, the four types of literature provide a comprehensive view of intratheater airlift C2, with an eye to future requirements for the Army's modular force. Doctrine defines the system as it is today. Service school publications, papers, and journals provide themes in professional thought. Service-based research reports and white papers identify problems and propose solutions. Finally, historical accounts complete the picture by describing past intratheater airlift C2 concepts which, taken in context, can be applied to the future. This review has also identified conflicts in current doctrine, significant gaps in the record, and trends in existing literature.

CHAPTER 3

RESEARCH METHODOLOGY

While a great deal of literature exists on intratheater airlift, the current record does not adequately address this problem from a joint, historical perspective. To answer the research questions posed in chapter 1, this modified case study compares today's intratheater airlift system to those found in Burma during World War II and its evolution in the Vietnam War. This study then recommends changes to meet the challenge of providing intratheater airlift support to the modular Army in a nonlinear environment.

Before defining research methodology, this chapter describes the steps taken to obtain relevant information. Next are research criteria to include feasibility of method, the selection of relevant case studies, and the credibility of the sources material. Following a description of the research methodology applied, chapter 3 discusses the strengths and weakness of this approach.

Steps Taken to Obtain Information

Limited to doctrine, regulations, and relevant unclassified USCENTCOM publications, the study made extensive use of Joint, Army, and Air Force electronic publication sites. Additional web-based research included the Air Force Historical Research Agency, Texas Tech University's virtual Vietnam archive, and the RAND Corporation's Project Air Force reports. The U.S. Army Combined Arms Research Library in Fort Leavenworth, KS provided access to historical records defining the Burma and Vietnam case studies. Research librarians in the Combined Arms Research

Library also enabled access to a wide range of service-school papers, secondary sources, and other relevant literature.

Research Criteria

Today's intratheater airlift C2 structure, including its various processes and the joint interactions, is complex. Per the literature review, most professional research focuses on specific elements of the airlift system. However, the existence of three distinctive theater-wide examples makes this study feasible. By comparing conceptual models of Burma and Vietnam against the current TDS supporting OIF, this study can recommend an improved theater airlift C2 structure.

Initial research focused on a wide range of past airlift operations, divided into intertheater, intratheater, and siege relief operation. Historical efforts like the Berlin Airlift, the 1958 Lebanon intervention, and Operation Desert Shield/Desert Storm were intertheater in nature and not applicable to this study. Major intratheater operations included Allied and German airlift during World War II, the French campaign in Indo-China, the American experience in Vietnam, and efforts of the Soviet Air Force in Afghanistan. Also of note are recent coalition experiences in Afghanistan and Iraq. Within many of these campaigns were specific operations to support besieged forces, particularly German attempts to re-supply forces during the battle for Stalingrad, the failed French effort at Diem Bien Phu, and the successful American response to the North Vietnamese encirclement of Khe Sanh.

Several factors led to the selection of Burma and Vietnam. First, when compared to current C2 doctrine these examples provide two distinct intratheater airlift systems for comparison. Second, each represents operations in a nonlinear environment. Finally,

unlike the specific events of siege relief, both provide a theater-wide perspective. German, French, and Soviet efforts were applicable, however this would not address the evolution of American airpower over the past 60 years.

Research Methodology

To answer the primary and secondary questions posed in chapter 1, the approach of this study is divided into four areas: current doctrine, reports, and studies; historical case studies; the comparison of these case studies with current doctrine; and finally the construction of conceptual intratheater airlift C2 models. From the analysis of this research come recommended improvements to meet the demands of Army modularity.

Strengths and Weaknesses of Methodology

The strength of this research is in the combination of current and historical perspectives of intratheater airlift C2. By comparing Burma and Vietnam to today's doctrine, this methodology provides three distinct approaches to theater airlift C2 in a nonlinear environment. From this historical data, conceptual modeling of the different systems supports recommendations for improvement.

There are also weaknesses in this approach. First, this thesis is limited to only two case studies. Although Burma and Vietnam are relevant, historical data from non-U.S. operations could provide additional information and perspective. Due to the prescribed length of the paper, this weakness is self-imposed. Second, while both case studies address nonlinear operations, they are in the context of the land forces they supported and the technological limits of the period. Finally, and perhaps most importantly, the classification of this study relies on doctrine to define the current intratheater airlift C2

system. There is a risk that the recommendations made could be redundant in light of ad hoc changes to theater airlift structure not reflected in doctrine.

The research methodology of this study consists of four parts. Through the definition of current theater airlift C2 and the review of historical case studies, recommendations to improve the system come from the comparison of the three conceptual models. The next three chapters answer the primary and secondary questions posed in chapter 1. The conclusions derived from the answers form the basis for recommendations to integrate joint intratheater airlift C2 with the needs of Army modularity.

CHAPTER 4

MODULARITY AND THE CURRENT INTRATHEATER AIRLIFT SYSTEM

As the Army continues its transformation to the modular force, the requirements for responsive and flexible intratheater airlift will continue to grow. Unfortunately, neither the Army nor the Air Force agrees on the roles and responsibilities of airlift in a nonlinear operating environment. Today's intratheater airlift system, as already noted, is complicated and conflicting.

Current Doctrine

Army Modularity and the Intratheater Airlift System

Refined from General Eric K. Shinseki's Objective Force concept, the Army's modular force relies on flexibility and responsiveness. Mission flexibility is a central facet in meeting the wide-range of current and future threats, but the attribute of responsiveness directly affects Army requirements of both the inter- and intratheater airlift systems. Whether it is supporting operational maneuver during major combat operations or sustaining fielded forces through "discontinuous, temporary lines of communication" (U.S. Army 2003a, 3-8), the modular force will depend on Air Force airlift. To meet these advanced mobility and logistical requirements, the intratheater airlift system must address the following concepts found in Army doctrine.

First, future operations will likely be in contiguous areas, nonlinear in character, and requiring rapid deployment. In this environment, the primary mission of joint air mobility is the "strategic power projection, operational employment, and continuous sustainment throughout the JOA [Joint Operating Area] to ensure operational momentum

and agility” (U.S. Army 2003a, 4-3). While strategic power projection is under the purview of intertheater lift, intratheater air mobility is a critical component to operational and tactical employment and sustainment. Aerial delivery is “no longer the *last resort*, [original emphasis] but rather, through necessity, it is becoming a viable mode of distribution to support the fight against a very flexible, fluid, and ever-changing threat environment” (U.S. Army 2003, 1-2). Thus, a major requirement of modularity is an interoperable Army and Air Force air mobility system.

Second, the Army’s concept of airlift favors direct over general support, enabling the operational maneuver and responsive sustainment called for by modularity. Army operations often decentralize assets to enhance tactical flexibility, an idea in direct conflict with Air Force doctrine of centralized control of airpower. For example, Army aviation units are typically under the control of the supported ground commander. In contrast, Air Force platforms are centrally controlled by the air component through the AOC. With the greater integration of intratheater airlift called for in modularity, the services need to address the issue of direct versus general support.

Third, a key element of sustainment is defining and forecasting requirements. Per FM 4-01.30, *Movement Control*, the Army prefers a fourteen-day planning period (2003, 7-3). Requirements for the first seven days are firm and the following seven are tentative. This enables tactical flexibility and avoids overstocking supplies, but gives the TDS little time to respond. If the intratheater airlift system is to support this planning cycle, it needs either greater fidelity on the requirements process or improved flexibility to meet BCT needs.

Fourth, the Army logistical structure supporting deployed BCTs has changed. Replacing both the Corps Support Command and Division Support Command is the ESC, a modular organization providing C2 for operational-level logistical support. The ESC reports to the Theater Support Command directly under the Army Service Component Command. Within the ESC are two organizations that affect the intratheater airlift system: the Movement Control Battalion (MCB) and the MCT. Each element has a specific role in routing and validating unit airlift requests. Understanding ESC operations would allow for greater integration between the services and improve overall effectiveness and efficiency of the intratheater airlift.

Finally, Army doctrine emphasizes the importance of liaisons at all levels. Two elements are significant to intratheater airlift C2. The first is the BCD, which provides Army liaisons to the C/JFACC. Co-located in the AOC, the mission of the BCD is to “facilitate the synchronization of air support for Army operations” (U.S. Army 2008a, 3-19). The BCD possesses an airlift section that marries ground situational awareness and understanding with airlift management, ensuring air-ground coordination. The second element is the AMLO. Per Field Manual Interim 3-0.1, *The Modular Army Force*, the AMLO is the “primary advisor on using airlift resources,” and operates the “advanced airlift coordination net” (2008a, 4-18). The AMLO is an Air Force mobility pilot or navigator embedded with Army and Marine units at the corps, division, and brigade levels, but no such “coordination net” yet exists. Furthermore, Army doctrine places the AMLO within the TACP but, according to AFI 13-106, this too is incorrect. The TACP is primarily a CAF centric organization focused on close air support. While the BCD is a well-characterized liaison element, the joint role of the AMLO is undefined.

Table 1. Intratheater Airlift Needs of Army Modularity

<ol style="list-style-type: none">1. Interoperable airlift system to enhance maneuver as an asymmetric capability2. Resolve issue of allocating direct support versus general support3. Fourteen day forecasting, greater flexibility in scheduling4. Joint understanding of modular logistics5. Army and Air Force defined role for the AMLO

Army transformation establishes new requirements for the intratheater airlift system. (See table 1.) Modularity's attributes of flexibility and responsiveness necessitate greater airlift integration between the Army and the Air Force. Associated Joint and Air Force doctrine should nest with the concepts above. Unfortunately, this is not the case.

Joint and Air Force Intratheater Airlift Doctrine

Joint and Air Force publications do not directly address the intratheater airlift needs of Army modularity. This is a symptom of a greater problem. Since joint doctrine supports service doctrine, and not the other way around, the Army and Air Force concepts of theater mobility appear uncoordinated and divergent. Air Force doctrine focuses on the centralized control of airlift assets, organizational consolidation to gain efficiency, and emphasizes passenger and cargo movements over combat employment and combat sustainment. Of particular interest are the functions of airlift liaisons and the conflicting guidance that governs them.

Whereas the Army favors decentralized control to enhance combat effectiveness, the joint community sees centralization as the means to ensure efficient use of limited assets. Existing Joint and Air Force doctrine depicts effectiveness and efficiency as being complimentary attributes, not contrasting qualities requiring balance. Per JP 3-17, *Joint Tactics, Techniques, and Procedures (JTTP) for Air Mobility Operations*, centralized control and decentralized execution are key to effective and efficient air mobility operations (2006, III-1). Under this approach, centralized control enables the commander to focus on priorities and force management, while decentralized execution fosters initiative and tactical flexibility. Although defined as “delegating execution authority to subordinate commanders” (Joint Chiefs of Staff 2007, 145), the decentralized execution of airlift is still controlled by various mechanisms issued by the C/JFACC. Important in ensuring a unified effort as well as in establishing safety measures to prevent fratricide, control mechanisms like the air tasking order, special instructions, and the airspace control order can also be tactically restrictive. Moreover, unlike decentralized Army forces, Joint and Air Force doctrine does not generally advocate direct support. Instead, subordinate commanders execute the mission to meet requirements, but the AOC must approve any changes. The unintended result is centralized execution of intratheater airlift.

Centralized control is a historic Air Force tenet dating back to the U.S. Army Air Forces (USAAF) of World War II, but the strict adherence to only allowing Airmen to control air assets might be eroding some. The recent *Air Mobility Command (AMC) Concept of Operations (CONOPS) for the Joint Cargo Aircraft (JCA)* discusses both the general and direct support roles for the new C-27J assault airlifter. Per the CONOPS, when apportioned by the JFC for direct support, C-27Js would be under the tactical

control of the supported ground commander or the Joint Force Land Component Commander. Although not reflected in other Joint or Air Force doctrine, this could denote a shift in the Air Force concept of support for the modular force.

Concepts of control and execution might be changing, but the Air Force approach to force organization has not. The intratheater airlift system described in Joint and Air Force doctrine can be characterized as organizational consolidation to achieve efficient and thus, to air advocates, effective use of the limited assets. While neither Joint nor Air Force doctrine discusses how the Army determines airlift requirements, it does describe the functions of the DDOC, the JMC, and airlift C2 within the AOC. Unlike the Army movement control model that attempts to maximize organic lift capabilities at the lowest level, the general focus of Joint and Air Force airlift doctrine is the operational level of war.

The DDOC, a recent development within the TDS, is a “multi-modal organization” that supports the geographical command’s J-4 “by facilitating the movement of material from the intertheater system to the intratheater distribution system” (U.S. Air Force 2006, 21-22). Of greater impact is the DDOC’s oversight of theater airlift operations, from which the J-4 can recommend changes to the TDS.

Functioning within the DDOC, the JMC is the principal organization of the movement control system. Stated in JP 4-01.3, the JMC is responsible for planning, apportioning, allocating, coordinating, de-conflicting requirements, and conducting in-transit visibility to support joint theater logistics (2002, III-4, figure III-2). These comprehensive duties apply to all common-user modes of transportation, to include intratheater airlift. Within the transportation request process, the JMC also validates the

use of the theater's common-use lift assets. Components desiring support, such as Air Force intratheater airlift, forward all requests to the JMC. The center then validates the requirement, reviews threat levels that may affect the movement, and then determines if ground, sea, or air assets will support. The major side effect of validating all service component requests through a single joint center is redundancy and stove piping. Per Army doctrine, the Division Transportation Officer, the MCB, and the Transportation Command Element validate airlift requests originating in a BCT before routing them to the JMC (U.S. Army 2003c, 9-18, figure 9-9). Thus, every level validates the request, often resulting in delayed processing.

The Air Force component level of the intratheater airlift C2 system is the AMD. Normally divided into four functional teams, the division integrates into the air planning and execution process with the AOC Director providing policy and guidance. In turn, the AMD then plans, coordinates, tasks, and executes all theater air mobility functions for either the Commander Air Force Forces or C/JFACC. Per AFDD 2-6, the AMD has twelve responsibilities, of which only four directly apply to intratheater airlift support: integrated execution of air mobility support, meeting validated requirements, management of air mobility assets, and assistance in joint force in-transit visibility (2006, 23-24). Furthermore, only two of the four functional teams are involved in the planning and execution of theater airlift, the Air Mobility Control Team and the Airlift Control Team.

The Air Mobility Control Team is the central C2 source within the AMD charged with directing or re-directing air mobility forces to meet joint force requirements. As the execution arm of all C/JFACC air mobility assets to include intratheater airlift, the Air

Mobility Control Team should work “side-by-side with the AOC combat operations division personnel to integrate and deconflict air mobility operations with other operations” (U.S. Air Force 2006, 24). In reality, this interaction is generally computer based since the Air Mobility Control Team and Combat Operations Division work in separate spaces.

The heartbeat of joint intratheater airlift support is the Airlift Control Team. Working within the AMD, the Airlift Control Team plans intratheater airlift missions to meet JMC requirements, develops tactics for execution, and determines long-range planning requirements to fulfill JFC priorities. Like the Air Mobility Control Team, Air Force doctrine envisions the Airlift Control Team working in close coordination with other AOC divisions. Yet in practice, Airlift Control Team integration is typically through digital means as well.

A confusing organizational concept within Air Force theater air mobility C2 is the DIRMOBFOR-A. According to AFI 13-1AOCV3, “The DIRMOBFOR is responsible for integrating the total air mobility effort for the COMAFFOR [Commander Air Force Forces] or C/JFACC and, in this capacity, provides *direction* [emphasis added] to the AMD to execute the air mobility mission” (2005, 88). Assigned or attached to the air component commander’s special staff, the DIRMOBFOR-A is the designated coordinating authority between USTRANSCOM and the theater’s air mobility forces. Typically the senior MAF officer in the AOC, the DIRMOBFOR-A does not doctrinally exercise control over the AMD.

Due to organizational consolidation, the AOC construct marginalizes the intratheater airlift effort. As depicted in doctrine, Air Force theater airlift C2 falls under

what essentially is a CAF organization. AMD organization mimics the functions of existing divisions. With its own separate intelligence, surveillance, and reconnaissance cell, combat operations, and strategy sections, it is a functional based operations center within AOC. Finally, while the DIRMOBFOR-A provides advice and direction, the lack of a theater MAF commander limits air mobility advocacy.

The final characteristic of the current intratheater airlift system is the bias toward sustainment, not combat support. Echoing Army doctrine, Joint and Air Force doctrine share the common purpose of achieving “strategic, operational, and tactical effects or support national objectives across the spectrum of conflict” (U.S. Air Force 2006, 29). However, the C2 structure described in both Joint and Air Force doctrine clearly emphasizes passenger and cargo movements operations over combat employment and combat sustainment.

Following Vietnam, the focus of intratheater airlift shifted to passenger and cargo movements in relatively benign environments. Today’s air doctrine continues this assumption of linear operations, contrary to the precedents set by Iraq and Afghanistan. Defined as “the movement of supplies, vehicles, and other equipment through the air because it cannot wait for surface transportation” (U.S. Air Force 2006, 30), passenger and cargo movements are means to supplement traditional ground logistics. Under this logistics augmentation paradigm, the need for efficiency is paramount. In contrast, doctrine presents combat employment and combat sustainment as a minor role in the overall airlift effort since they are typically a “small percentage of total airlift sorties” (U.S. Air Force 2006, 31). While Air Force doctrine discusses the concept of nonlinear environments, emphasizing the ability of simultaneous operations along multiple lines to

“induce paralysis and shock among enemy troops and commanders” (U.S. Air Force 2006, 33), the importance of this mission is overshadowed by efficiency-driven passenger and cargo movements.

Critical elements supporting intratheater airlift C2 are Army and Air Force liaisons. As previously discussed, the Army BCD and the Air Force AMLO typically fulfill these functions. Whereas Joint doctrine clearly explains the roles and responsibilities of the BCD, the same is not true for the AMLO. Per AFI 13-106, these liaison officers advise Army and Marine units on the optimum and safe use of Air Force mobility assets (2007, 2). In garrison, AMLOs conduct training and provide advice during intertheater movements. Deployed, they continue to provide advice with the added responsibility of coordinating joint airlift support. Additionally, the AMLO provides ground units a limited capability to establish fixed-wing landing zones and drop zones, a function traditionally conducted by Air Force Combat Control Teams (CCT). Using AFI 13-106 as a guideline, current confusion over AMLO roles and responsibilities are two-fold: command relationships and AMLO functions within the intratheater airlift system.

First, AMLO command relationships are confusing since they do not change operational control when deployed to a theater of operations. Working for neither the ground commander they support nor the Commander Air Force Forces, AMLOs remain under the control of AMC’s 18th Air Force (U.S. Air Force 2007, 4). As a result, they are not part of the TACP. This has far-reaching effects and conflicts not only with joint guidance, but with other Air Force doctrine as well. Second, partly due to the unusual command relationship, Joint and Army doctrine misrepresent the deployed functions of the AMLO. Per JP 3-17, the TACP has the capability to plan and request all tactical air

support, to include intratheater airlift (2006, III-9). Although this assumption is common to Army and even some Air Force publications, the current TACP does not incorporate the AMLO or theater airlift C2 functions.

When compared against the *Army Transformation Roadmap* and relevant FMs, today's airlift doctrine does not fulfill Army needs. Focused on centralized control without provisions for direct support, consolidation of the C2 infrastructure under CAF-centric organizations, and efficiency-based operations suited for a linear environment, intratheater airlift C2 is unable to meet either the flexibility or responsiveness called for by modularity. Even worse, the doctrine presents a fragmented C2 structure strewn with contradictions. Recent airlift operations supporting OIF illustrate this dysfunctional approach.

The Intratheater Airlift System in Operation Iraqi Freedom

Assessment of the current system supporting OIF first requires the comparison of the USCENTCOM intratheater airlift C2 against existing joint and service doctrine. Following this is an examination of mission categories for theater airlift and a brief review of the request process. Based upon a recent Army account (Fontenot et al. 2004, 406) and Project Air Force reports by the RAND Corporation, the discussion then shifts to problems with intratheater airlift as identified by the Army and Air Force within the Iraqi theater of operations.

Joint intratheater airlift C2 in Iraq is doctrinally correct with only one minor variance. As described in AFDD 2-6, within the USCENTCOM DDOC is a JMC to manage the movement control system. There is an AMD in the Combined AOC to plan, execute, and track the theater air mobility effort as well as a DIRMOBFOR-A to

coordinate inter and intratheater mobility for the C/JFACC. However, operations within MNC-I differ from FM 4-01.30, *Movement Control*, in that units send airlift requests within a division AO to area MCTs who then forward it to the MCB, bypassing both the Division Transportation Officer and Transportation Command Element. Otherwise, intratheater airlift C2 supporting OIF reflects the concepts presented in joint and service doctrine.

Current operations within the USCENTCOM area of responsibility are largely dependent on intertheater and intratheater airlift. Difficult terrain, isolated locations, and the enemy's ability to threaten ground lines of communication have stressed the ability of airlift to support ground forces in a nonlinear environment. In 2007, Air Force mobility forces flew 49,250 sorties carrying 999,719 passengers and 165,202 tons of cargo. When compared to operations in 2004, the performance of the airlift system increased. With only 1,800 additional sorties in 2007, the output of airlift grew by more than 14,000 tons of cargo and almost 300,000 passengers. As noted by Anthony Cordesman of the Center for Strategic and International Studies, this data reflects "the fact that this is a war where virtually all troops move by aircraft, and where air cargo plays a critical role in both theaters" (Cordesman 2007).

USCENTCOM uses three intratheater airlift mission categories, or profiles. The first is the "Single Ticket" program that connects intertheater movements based on Time Phased Force Deployment Data to intratheater airlift. The second is theater channel missions, divided into frequency and requirement channels. Third are all other movement requests, which require a JMR. Since intertheater airlift is outside the scope of this study, this section focuses on channel missions and those requiring a JMR.

Per Air Force doctrine, “fixed route structures with personnel/cargo capacity available to all common users” (U.S. Air Force 2006, 35) typically fulfill movement requirements and sustainment operations. These channel missions focus on providing a structured and predictable system to support operational-level requirements while maximizing airlift efficiency. Channel missions operate in Iraq under the concept of first-in/first-out, where precedence of movement is not a result of JFC priorities but based on when the requirement enters the system. These missions are further divided into two doctrinal types, frequency or requirement channels, and operate based on logistical throughput. The AMD schedules and executes requirement channels to move excess cargo or personnel, while frequency channel missions fly standard routings much like a commercial airline. All other airlift requests require a JMR that must meet specific requirements in either the number of personnel, amount of cargo, or a combination of both. The primary reason for a JMR is the inability of an existing channel mission to meet the user’s needs.

The JMR request for immediate airlift is an item of interest, since it could apply to the concept of operational maneuver essential to modularity. The DDOC/JMC requires a complete and validated JMR before mission execution, which is where the AMLO is vital in coordination. However, the bureaucratic nature of the joint process essentially remains intact for all requests. (See figure 1.)

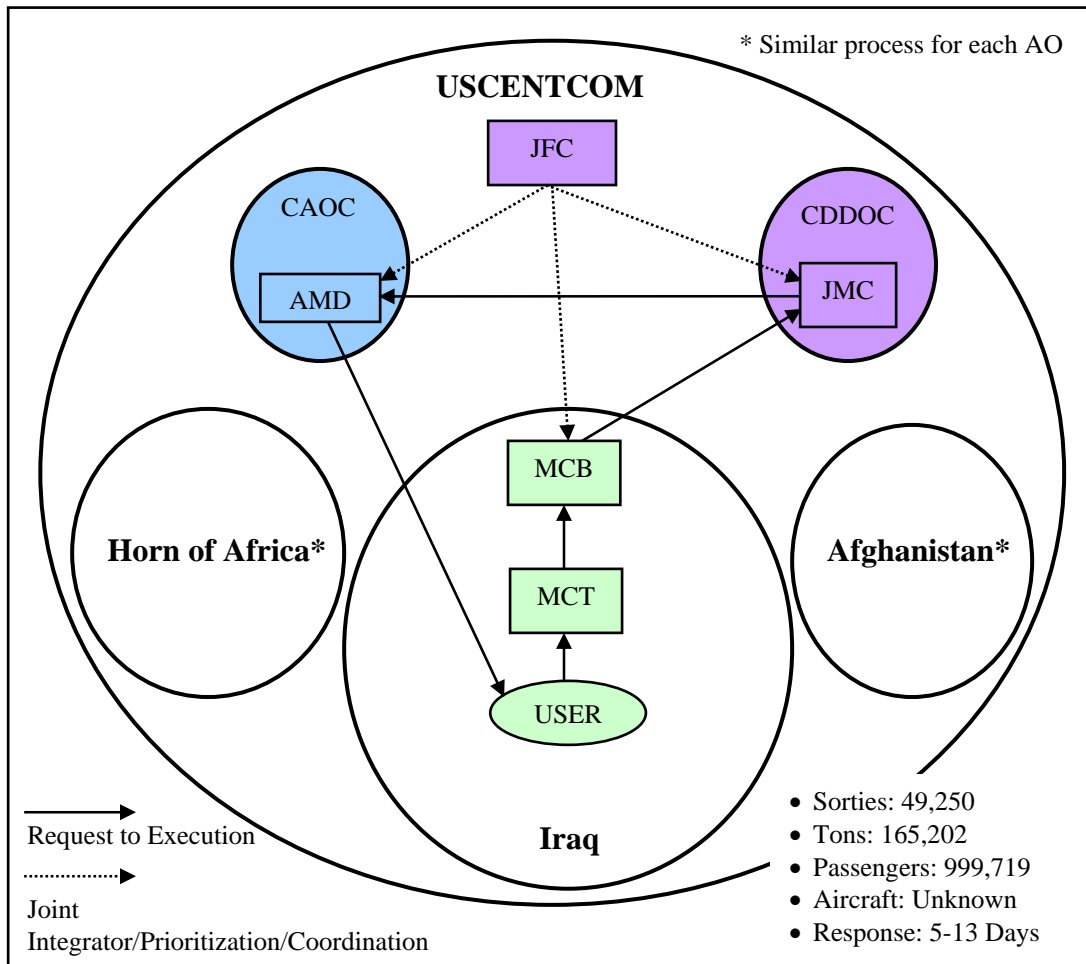


Figure 1. USCENTCOM Theater Distribution System Intra-theater Airlift, 2007

Ground units requiring transportation support have two other options aside from the joint request form to fulfill their needs, a Transportation Movement Request or an AMR. The Transportation Movement Request is strictly for ground movement requests and the AMR for Army aviation support. While each system has its own request and validation process with differing timelines from submission to execution, Army aviation support is much more responsive via the AMR than is Air Force common-user airlift.

This difference in initial responsiveness is especially important in combat support. Army and Joint elements only validate support for modality based upon the form

submitted. Thus, the user can select Army or Air Force airlift support simply by the form they submit, negating the primary function of the JMC. Coupled with the responsiveness of Army versus Air Force intratheater airlift, users can quickly overload one while under-utilizing the other.

As one might expect, since the 2003 invasion of Iraq the Army has been critical of the responsiveness of common-user intratheater airlift. Since competing Army and Air Force doctrine have opposing views on the value of effectiveness and efficiency, this criticism is largely the product of differing positions regarding service concepts of support. In *On Point: The United States Army in Operation Iraqi Freedom*, the authors frame the issue as one of joint integration versus joint interdependence.

According to the authors, the Army views integration as “combining resources in such a way to produce synergy,” focusing on effectiveness over efficiency. In contrast, interdependence suggests “efficiency and therefore the elimination of capabilities in one service that may be redundant if they can be provided by another service” (Fontenot et al. 2004, 400). LTG McKiernan, Coalition Forces Land Component Commander during the invasion of Iraq, offers another perspective of effective versus efficient logistical operations. When asked about the Request for Forces initiative, he stated the system was:

...a peacetime efficiency based system. So every plan and every ship is validated and loads are validated and efficiencies gained so no space goes unvalidated [sic]. To me, it doesn't work worth a damn in contingency operations. (Fontenot et al. 2004, 406)

This view of peacetime efficiency versus contingency effectiveness is a central theme in Army concerns of the current intratheater airlift system.

In contrast to Army views, the Air Force sees the problems of USCENTCOM's intratheater airlift system in a much different light. In August of 2003, the Central Air

Force Commander, LTG Walter E. Buchanan, identified numerous issues associated with the planning and execution of theater airlift and requested that the RAND Corporation, a non-profit research organization, analyze options to improve airlift effectiveness and efficiency within the USCENTCOM area of responsibility. LTG Buchanan noted the following problems: Backlog of cargo at aerial ports; Incomplete in-transit visibility of personnel and cargo within the TDS; Information connectivity problems with Air Terminal Operations Centers operated by service components; The “lack of discipline” in requesting airlift support; Apparent inefficient use of airlift; and Perception of inadequate support for intratheater resources (Tripp et al. 2006, xvii). In response, RAND released a report entitled *A Framework for Enhancing Airlift Planning and Execution Capabilities Within the Joint Expeditionary Movement System* in 2006. The following year RAND published an airlift counterinsurgency study, which includes concepts to improve the theater airlift system as well.

In its analysis, *A Framework* identifies several disconnects within the TDS as it applies to airlift under Joint, Army, and Air Force organizations. First is the lack of joint integration and guidance to either supported Army logistical needs or the supporting Air Force assets. Another assertion is the inability of ground forces to accurately forecast movement or sustainment requirements, which then hampers the intratheater airlift system’s ability to estimate future movement demands. Finally, due to fragmented guidance, the Air Force airlift system is ineffective in planning or re-planning airlift networks and routings. It cannot establish metrics and “control limits,” nor can it accurately track performance against these limits (Tripp et al. 2006, 30, figure 3.1). The study is critical of the JMC and USCENTCOM DDOC, noting that both focus on

“tactical day-day decisions concerning prioritization of airlift cargo. As a result, the strategic shaping of the TDS took a backseat to more immediate concerns of operating the airlift system within the existing TDS” (Tripp et al. 2006, 46). These reports also challenged Army support concepts like direct support or decentralized control. As noted in the counterinsurgency study, “Efforts to ‘bank’ airlift forces, by operating them below their maximum sustainable tempo will usually be unproductive because they will entail the certain loss of irrecoverable airlift sorties in exchange for an uncertain increase in their ability later on” (Owen and Mueller 2007, 23). Both reports provide recommendations for improving the intratheater airlift system but persist in representing an operationally focused Air Force perspective of joint interdependence and mission consolidation, a positioned opposite to the Army’s call for joint integration.

In conclusion, the intratheater airlift system supporting OIF is conflicting and dysfunctional at both the joint and service component level despite adhering to the doctrinal model. Designed to centralize intratheater airlift operations to ensure efficient and effective operations, it supports neither. While the Army and Air Force recognize problems inherent in the system, both hold divergent views on how to improve it. The Army values flexibility and rapid response, decentralized forces, and dispersed operations. Whereas flexibility is a characteristic of airpower, the Air Force doctrinally rejects the Army’s approach in order to retain the historic tenet of centralized control and decentralized execution. To air-centric eyes, efficiency leads to effectiveness and any attempt to disperse operations would negatively affect both. The concepts of Army interoperability and Air Force interdependence are much the same. Despite these differences, there is generally agreement that today’s intratheater airlift system is far from

optimal. If both sides seem intractable, each wedded to a service-specific approach built upon its own operational domain, perhaps the best hope for positive change lies in the past.

CHAPTER 5

HISTORICAL CASE STUDIES - BURMA AND VIETNAM

Like other aspects of warfare, the organization of intratheater airlift forces has evolved over time. Although a relatively new capability, the unique ability of airlift to support ground operations in a nonlinear environment has proven essential in modern warfare. Two historical case studies are especially relevant. The first is the air supply effort in the India-Burma sector during World War II. The second is tactical airlift during Vietnam. Similar to the nonlinear operations seen today, each is distinct in organization. The lessons of these case studies, as well as their comparison to current doctrine and operations, provide the context for joint change in intratheater airlift C2.

Air Supply in the India-Burma Sector

The Allied “air supply” effort in Burma is a distinct model of early airlift organization. This section first examines the chaotic development of the theater airlift system, before shifting focus to air supply C2 during the period of decisive operations (June 1944 to June 1945). Following a discussion of airlift organization, process, and prioritization during the target year, the section concludes with an appraisal of intratheater airlift support in Burma and the lessons learned.

As agreed upon during the Casablanca Conference in January 1943, the Allied campaign in China-Burma-India campaign had two purposes. First, tie-up Japanese forces in mainland China by providing lend-lease war materials to Chiang Kai-shek’s National Chinese Army. Second, establish allied air bases on the Chinese mainland to interdict enemy shipping and, ultimately, bomb the Japanese home islands. In May of

1942, Japan's conquest of Burma cut the primary lines of communication supporting the Chinese. The only alternative was to move a minimum amount of war stocks into China via airlift. In conjunction with these airlift operations over the Himalaya Mountains, better known as the Hump, a combined American, Chinese, and British force focused on opening a land route through Burma.

The importance of air supply operations cannot be overstated. Due to restrictive terrain and fierce Japanese resistance, the only means to conduct offensive operations was via airlift. Seen in the operations of MG Orde Wingate's Long Range Penetration Groups, or Chindits, and BG Frank D. Merrill's Marauders, Allied air supply enabled ground forces operational maneuver and sustainment in a hostile, nonlinear environment. Noted in *Stillwell's Command Problems*, a U.S. Army Center for Military History publication, "By September 1943, the air supply of combat in north Burma was accepted as a matter of course" (1954, 98). From late 1943 and throughout 1944, construction of the Ledo Road in the north was dependent on supplies airlifted to remote fields. Likewise, the final British offensive in central Burma "provided the spectacle of an entire army operating hundreds of miles from its base without significant surface lines of communication" (Taylor 1957, 8). Without air supply, this successful Allied campaign would have not been possible.

Evolution of Air Supply Operations prior to June 1944

Beginning as the American Volunteer Group under Claire Chennault in 1941, the Allied air effort in China, Burma, and India experienced a rapid and chaotic change to meet theater requirements. The air supply effort was a competition for limited resources within three distinct geographical areas, each under a different Allied commander. The

Chinese maintained control of their own territory as did the British in India. However, the Allies divided Burma between the American-Chinese NCAC and the British Fourteenth Army to the south. Since China-Burma-India was an isolated theater, limited supplies and the means to transport them characterized operations. Forces in Burma fell under the Southeast Asia Command (SEAC), which included India, Ceylon, Thailand, and the Malay Peninsula. Established in November 1943 under the command of British Admiral Lord Louis Mountbatten, the American/Chinese force in the north supported the construction of the Ledo Road connecting India and China, while British forces along Imphal and the Arakan front to the south opposed a Japanese invasion of India. Driven by the realities of coalition warfare, this division made coordinated operations difficult.

The evolution of the airlift system prior to 1944 was one of almost continual change. In July 1943, MG George Stratemeyer took command of USAAF in the India-Burma sector that included the 10th Air Force. Within the 10th were Troop Carrier and Combat Carrier Squadrons supporting ground operations in Burma, while the India-China Wing Air Transport Command remained an independent command focusing on supplying Chinese forces over the Hump. In December, the SEAC Air Commander, Air Chief Marshal Sir Richard Pierse, established the Eastern Air Command (EAC), an unsuccessful endeavor to centralize the air effort in India and Burma. As a result, the responsibilities of the 10th Air Force and its Royal Air Force (RAF) equivalent changed from operational to administrative. The EAC, also under the command of Stratemeyer, consolidated the American and British air forces. Like a modern coalition air component commander, by 1944 not only was Stratemeyer the administrative commander of USAAF under General Joseph “Vinegar Joe” Stillwell, but he also held operational control of both

USAAF and RAF air units as the EAC commander. In light of British efforts to retain their own airpower, this control proved contentious and was often tentative.

The EAC consisted of four air components with command responsibility evenly split between the RAF and USAAF. British officers commanded the Third Tactical Air Force and the Photographic Reconnaissance Force, while the Strategic Air Force and Troop Carrier Command (TCC) were under American leadership. Although the TCC consolidated the operational control of Allied airlift in India and Burma, command conflicts between the RAF led Third Tactical Air Force and the USAAF controlled TCC were persistent. Air Marshal Sir John Baldwin firmly believed that the troop carriers belonged under his Third Tactical Air Force, a point he made very plain to BG William D. Old. In response to Baldwin's habit of issuing operational instruction to RAF airlift units through administrative channels, Old as TCC commander repeatedly requested Stratemeyer's intervention. The EAC commander obliged until 1 May 1944. Following a conference with the SEAC Air Commander, Stratemeyer suddenly placed the TCC under Third Tactical Air Force control. The arrangement did not last long. In June, the TCC dissolved and the two Allied commands divided the airlift assets between them. Those units supporting Stillwell's operation in the north came under the control of the USAAF 10th Air Force. To the south, the RAF Third Tactical Air Force commanded the rest.

One reason for this change might have been how the TCC provided airlift, which relied on monthly allocations to Stillwell's NCAC and LTG Sir William Slim's Fourteenth Army. By the 15th of each month, Stillwell and Slim's staffs would submit the next month's estimated airlift requirements to the TCC. The TCC would consolidate these requirements, match them to the projected airlift available in theater, and then

submit a schedule to the EAC for approval. Based on this schedule, the EAC assigned priorities after coordination with ground component headquarters. Support for any non-scheduled or emergency airlift requests was at the discretion of the TCC commander. Since neither the American nor the British commands could predict their airlift needs fifteen to forty-five days in advance, the TCC system was too inflexible to be effective. To ensure they would receive at least some airlift support from competing requests, ground commanders artificially inflated their estimates and priorities. In operations dependant on air lines of communication, the TCC approach to efficient operations in a nonlinear environment simply did not meet the user's needs.

While the TCC sought to centralize air assets according to the tenet of unified command, after June 1944 the intratheater airlift system evolved into decentralized control based on direct support to ground units in a divided theater. In May of 1944, one month prior to the dissolution of the TCC, the NCAC G-4 "took" control of its own air supply operations, determining what supplies should be packaged by the services of supply, delivered by the USAAF, and which ground units would receive this support. After 1 November 1944, the 10th Air Force through the Air Cargo Headquarters (ACH) controlled monthly allocation of tonnage and set limits for the northern Burma air supply system. Aligned directly with the American headquarters, the Air Control Section (ACS) assigned priorities. Under the daily control of the NCAC G-4, the air supply effort supporting Stillwell's operations along the Ledo Road greatly improved.

Air Supply Operations, June 1944 to June 1945

By June of 1944, 90 percent of all air supply requests were marked urgent by requesting units. To rectify this, ACS designed its own daily priority system. Urgent

requests were limited to 10 percent of the total daily tonnage capacity. In reality, these requests were only filled to meet combat emergencies. For other than urgent, ACS developed a daily requirement system that prioritized movements. Each day after 1500 hours, the ACS would compile priority sheets for the next day's missions. Validated by ACS, requirements fell under two categories. First priority missions were limited to 90 percent of available daily airlift and included rations, ammunition, forage for combat units as well as specific requirements for Office of Strategic Services, USAAF, and engineer units building the Ledo Road. Any remaining airlift supported second priority missions, which was everything else. Often what was second one day became first the next. In the evening, ACS transmitted priority sheets by teletype to the agencies involved in supporting air supply operations who, in turn, would prepare loads and aircraft for the next day's effort. Throughout this daily cycle, packing and supporting elements submitted progress reports to ACS. In the evening, a final status report addressed to ACH, 10th Air Force headquarters, and services of supply coordinated the next day's effort. "The air supply control system in NCAC was one of divided responsibility but the difficulties were minor. The efficiency that was attained was undoubtedly due to the fact that Tenth Air Force, NCAC, and services of supply made every effort to cooperate fully" (Taylor 1957, 41).

Contrasting NCAC's centralized control of the air supply system was that of the Combat Cargo Task Force (CCTF) supporting the British led Fourteenth Army to the south. Following the dissolution of the TCC, the USAAF and RAF transport squadrons supporting operation on the central front and the Arakan fell under the Third Tactical Air Force. By 15 September 1944, Baldwin's concept of tactical air control over transport

functions proved unworkable and the CCTF was created. While similar to the TCC, the CCTF did not have operational control of airlift units assigned to the Americans in the north. By design, CCTF was responsible for meeting theater requirements and units submitted requests for support to the EAC for approval. Unlike the NCAC, the Allied Land Force Southeast Asia (ALFSEA) determined priorities between the Fourteenth Army and XV Corps, which was located in India opposite the Arakan. In turn, the Fourteenth Army assigned its own priorities for subordinate units. Frictions in RAF and USAAF command relationships found in the TCC remained and these conflicts in administrative and operational control further fractured the airlift effort. As a result, air supply operations devolved into air transportation squadrons supporting localized regions for specific units. With a lack of centralized control of airlift assets, a request system at the theater level, and disjointed priorities, there was no effective air supply system supporting the campaign in central and southern Burma. (See figure 2.)

When the Allied campaign in northern Burma ended in the spring of 1945, the 10th Air Force prepared to move its operations to China. With the NCAC mission complete, SEAC created yet another air supply organization to support operations in the north. From May to early June, transports of the newly created North Burma Air Task Force returned over 21,000 troops to nationalist China. Following the capture of Rangoon in May 1945, USAAF units began withdrawing from CCTF as well. By 25 June, all American personnel within the CCTF headquarters were gone. While limited air supply operations continued in Burma until the end of the war, the withdrawal of American forces signaled the end of major combat operations.

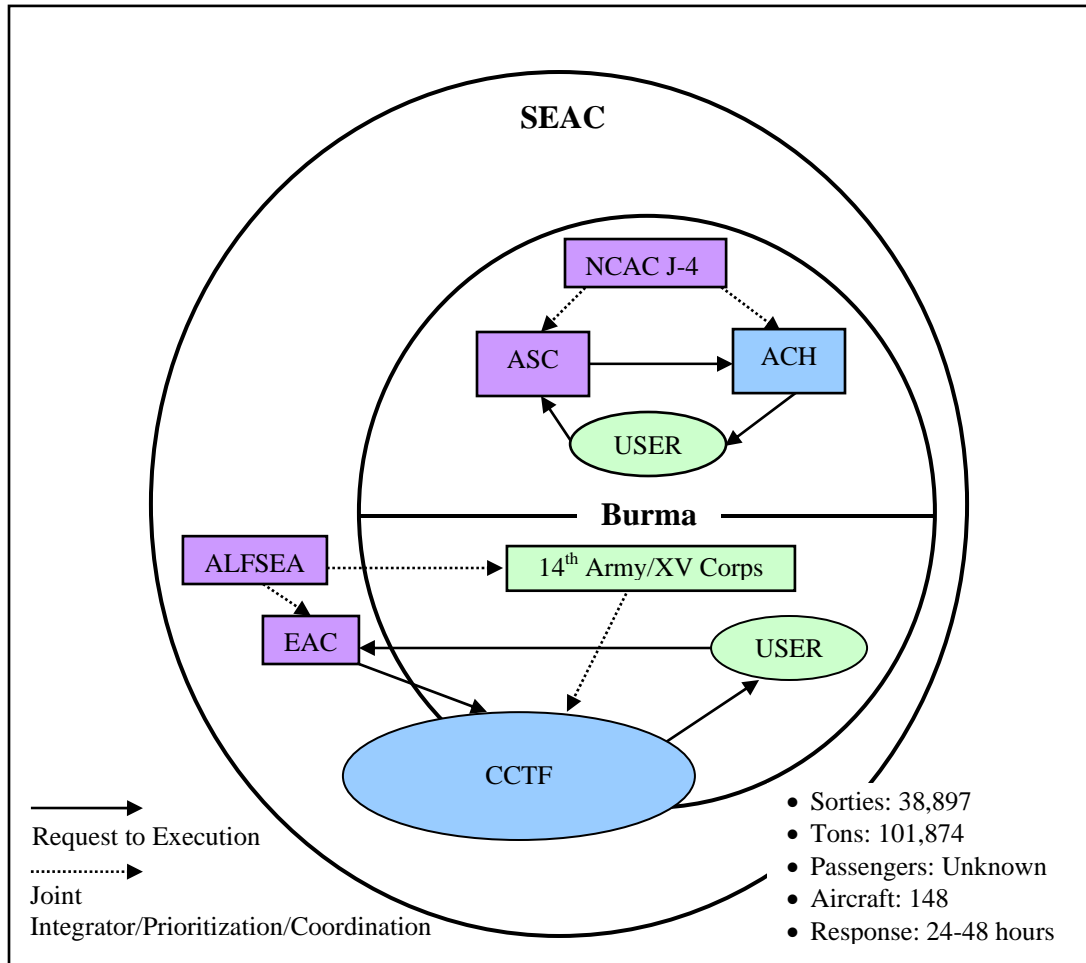


Figure 2. Air Supply in Burma, 1944

The Lessons of Air Supply Operations in Burma

The air supply operation in Burma provides two important lessons. First, to be effective airlift organization and C2 must be flexible and responsive while preserving the centralized control of airlift assets. Second, successful air-ground integration is a function of relationships at the lowest level.

From 1943 to 1945, the organization of air supply forces supporting the India-Burma sector was one of constant change. Attempts by the TCC to consolidate the air supply system ultimately failed due to the inherent inflexibility of forecasted

requirements and unresolved administrative tensions between the USAAF and the RAF. By June of 1944, two separate intratheater airlift systems emerged, both providing direct support to their respective ground forces in Burma's divided AOs. Under the NCAC, centralized air supply C2 acted in concert with the ACH to enhance combat maneuver and sustainment. From June to July 1944, air supply support to American and Chinese troops increased from 4,796 short tons to 10,168, with over 4,000 short tons delivered by either parachute or "free drop" (Headquarters U.S. Forces India Burma Theater 1945, 13-14). To the south, divided C2 responsibilities at the Theater and Army levels and a fragmented control of airlift assets hampered the effectiveness of the CCTF. In October of 1944, movements supported by 131 CCTF transports totaled 8,214 short tons. During the same period, NCAC operations totaled 15,722 short tons with approximately 148 aircraft. Although CCTF numbers would increase from late 1944 through mid 1945 due to additional airframes, the American effort in the north made better use of their assets. Thus, the centralized control measures enacted by NCAC proved more effective and efficient than the stratified and decentralized approach taken by EAC and the Fourteenth Army.

The second lesson of Burma was the effect of detailed coordination on air supply operations. In NCAC, the success of ACS airlift planning was a product of its coordination with supporting elements. By keeping lines of communication open with the ACH, 10th Air Force headquarters, services of supply units, NCAC leadership, and air party personnel embedded with ground forces, the ACS maintained visibility of the northern air supply system. In contrast, the fractured nature of the CCTF resulted in localized control and poor integration of air supply forces. Based on mutual trust, liaisons

within ground units enabled air supply forces to adjust requirements and represent the warfighter's needs. Due to the "close coordination between supporting air units and supported ground units, efficient and effective air supply operations became the rule rather than the exception" (Taylor 1957, 133).

The lessons of Burma were quickly forgotten in the early days of the Cold War. Linear operations of the Pacific and European theaters, the advent of nuclear warfare, and the impact of an independent Air Force all overshadowed the achievements of airlift supporting ground forces in a nonlinear environment. Operations in Korea included the integration of airlift forces under command of the newly formed USAF, but air logistics in that war were largely linear in nature. Due in large part to the focus on strategic airlift movements, such as the Berlin Airlift in 1948 and the 1958 U.S. intervention in Lebanon, the Air Force of the 1950's and early 1960's forgot the lessons of tactical integration and theater organization proven in Burma. Not until the American involvement in Vietnam, seventeen years later, were they rediscovered.

Tactical Airlift in Vietnam

Often called the first "helicopter war," the American experience in Vietnam proved the value of both rotary-wing and fixed-wing air mobility. Like Burma, it was a nonlinear battlefield where difficult terrain favored the enemy. Ground lines of communication were vulnerable and easily severed. Both systems evolved over time and ad hoc organizations developed airlift C2 to meet ground component needs, real or perceived. Despite these similarities, by 1968 the tactical airlift system in Vietnam was distinctly different. The introduction of the helicopter changed the character of airlift following the Korean War. Furthermore, the creation of an independent Air Force in

September 1947 created serious interservice rivalries over all forms of airpower. At times contentious with the semi-autonomous USAAF of World War II, during the 1950's and 1960's the Army's relationship with the newly emancipated USAF turned caustic.

To understand intratheater airlift in Vietnam and the development of the tactical airlift system, this case study first examines changing doctrine and the Army and Air Force agreements that shaped the concepts behind tactical airlift. Next is the evolution of the tactical airlift in Vietnam, focusing on organization of airlift forces, C2, and the development of liaisons. Culminating in the target years, 1968 to 1969, the case study concludes with an assessment of theater airlift in Vietnam and highlights lessons learned.

Evolution of Tactical Airlift Doctrine and Service Agreements

After the creation of an independent Air Force in 1947, the evolution of tactical airlift doctrine closely followed attempts by both the Army and Air Force to define and defend service roles and responsibilities. The long disagreement over the purpose and place of airpower had a theme, centralized versus organic control. Within these two approaches were the concepts of general and direct support, duplication of effort, and the need for effective and efficient operations. In the evolution of tactical airlift, each variable depended on the service defining it.

The Bradley-Vandenberg Agreement of 1949 marked the beginning of a seventeen-year struggle between the Army and Air Force to define service roles and responsibilities for airlift support. Named after Army Chief of Staff Omar N. Bradley and his Air Force counterpart, Hoyt S. Vandenberg, the agreement formalized the duplication of airpower between the services but provided limits on Army aviation. Army fixed-wing aircraft were not to exceed 2,500 pounds empty, 4,000 pounds for rotary-wing. Two

years later, this changed under the first of two agreements between Army Secretary Frank Pace, Jr. and Air Force Secretary Thomas K. Finletter. In October 1951, the first Pace-Finletter Agreement ended all weight restrictions imposed on Army aviation but limited its purpose to the support of ground combat and logistics within fifty to seventy miles of the forward line of troops. Additionally, the Army would not duplicate Air Force capabilities in reconnaissance, interdiction, close air support, and troop lift to include assault transports. Based on Air Force complaints of Army operations during the Korean War, a second Pace-Finletter agreement on 4 November 1952 re-imposed weight restrictions on Army fixed-wing aviation, this time up to 5,000 pounds, but extended their reach to 100 miles in depth. The most important aspect of this renegotiated agreement was on the development of Army rotary-wing aviation, which was unlimited. This set the course for future Army concepts of heliborne battlefield mobility. Based on these agreements and the experiences of Korea, in July 1954 the Air Force published AFM 1-9, *Air Doctrine: Theater Airlift Operations*.

Still tied to the troop carrier model of World War II, AFM 1-9 focused on airborne operations as the primary means of airlift employment. While force sustainment was a function, AFM 1-9 stated that, “with the exception of aeromedical evacuation, airlift should not be considered a substitute for surface transportation” (1954, 1, para. 2b). Although AFM 1-9 repeated the basic Air Force tenet of centralized control and decentralized execution, it also dovetailed with the realities of the evolving Cold War. The advent of the nuclear battlefield required an increase in mobility. Much as in current doctrine, troop carrier forces were under the theater air commander. The major difference was the establishment of a troop carrier commander. The distribution of airlift was

another key concept of AFM 1-9. Transportation allocation to service components was the responsibility of the theater commander who usually established a Theater Transportation and Allocation Board that included representatives from the three major components. Per AFM 1-9, within this allocation process the components were “free to determine their individual priorities for the traffic of their services” (1954, 4, para. 5b). Under the Transportation and Allocation Board was a Theater Air Transportation Board that translated allocations and priorities into specific airlift requirements. Concurrent to this process, the Troop Carrier Commander submitted airlift capacity. If service defined requirements exceeded capabilities, the theater commander determined allocation or augmentation for the airlift effort.

Aside from Air Force tenets, command, and airlift allocation, AFM 1-9 also outlined the elements of a theater airlift system as envisioned in 1954. While essential components included aircraft, airfields, and communications, the areas of aerial port operations and C2 are of particular interest. According to AFM 1-9, “Selection, preparation, and operation of aerial ports is an Air Force responsibility” (1954, 6, para. C). Specialized units from the sister services could augment this capability, but it was a core Air Force function. The second issue was C2, specifically the function of the Transportation Movement Control Center and the interservice relationship within. One of four elements in the “Airlifted [sic] Supply Request System Control,” the Transportation Movement Control Center was typically located in the troop carrier headquarters. Whereas the troop carrier headquarters forecasted airlift capability and the Theater Air Transportation Board allocated it, the Transportation Movement Control Center was responsible for scheduling theater airlift based on guidance from Airlift

Coordination Officers. As service representatives, these officers were the conduit for component requests. The concept of the Airlift Coordination Officer has two important points. First, each component had direct representation within the airlift control system. Second, these positions were more than liaisons; the coordinating officer was actually part of the airlift request process. This relationship gave each service component the flexibility to use allocated airlift based on its own priorities. As noted in AFM 1-9, “arrangements by the ALCO [Airlift Coordination Officer] should be finalized twenty-four hours in advance of actual operations” (1954, 7, para. e.4). Although the doctrine is not specific on request process time, in light of this statement one can assume airlift execution was twenty-four to forty-eight hours after receipt of mission.

In parallel to Air Force concepts of theater airlift, Army thinkers began developing the airmobile concept. Following LTG James M. Gavin’s April 1954 article in Harper’s Magazine entitled *Cavalry, and I Don’t Mean Horses*, the Army began experimenting with his “Sky Cavalry” concept. Beginning with the Sage Brush exercise in 1955 and Army Aviation Center experiments the following year, the concept of a mobile, heliborne infantry force began to take shape.

In November of 1956, Secretary of Defense Charles E. Wilson issued a memorandum that, among other things, again limited the roles and capabilities of Army aviation. It forbade the developing of Army close air support and limited aviation to observation, airlift, medical evacuation, and liaison missions. Under airlift, the capability was limited to “only small combat units and limited quantities of material to improve local mobility” so as not to “infringe on the mission of the Air Force” (Horwood 2006, 27). The Wilson memorandum re-imposed weight restrictions on Army helicopters, this

time not to exceed 20,000 pounds, while limits on fixed-wing aircraft and combat radius remained unchanged, 5,000 pounds and 100 miles respectively.

Army reaction to the Wilson memo was uproarious. In his 1958 testimony before congress, former Army Chief of Staff Maxwell D. Taylor decried Wilson's apparent bias. Taylor "blamed the Air Force for recruiting the Secretary in its 'resistance' to legitimate Army efforts to escape from its 'dependence' on the former service" (Horwood 2006, 27-28). General Taylor, like Gavin, believed that the independent Air Force was a mistake that diluted Army mobility and firepower. In the context of the rapidly heating Cold War, the Air Force was the Army's chief competitor for limited congressional funding.

In 1960, the Army Aircraft Requirements Review Board called for an increase in Army airlift capability to augment ground transportation. Better known as the Rogers Board, it did not recommend adoption of the airmobile concept despite Gavin's lobbying. The idea stewed for a while longer until April 1962, when Secretary of Defense McNamara issued a memorandum asking the Secretary of the Army to submit "fresh and perhaps unorthodox concepts which will give us a significant increase in mobility" (Bowers 1982, 108). As a result, McNamara had set the stage for competing Army and Air Force boards to further inflame the interservice air issue.

On 20 August 1962, the Army Tactical Mobility Requirements Board chaired by LTG Hamilton H. Howze submitted a report to Secretary McNamara. Unlike the Rogers Board, Howze enthusiastically endorsed the airmobile concept. Noting that the Army would rely on the Air Force and Navy for all intertheater and some intratheater lift, the Army should provide its own fire support and tactical airlift from organic fixed- and rotary-wing aircraft. The report stated that the C-130, while capable, did not have the

short takeoff and landing or rough landing zones capability needed by this new, mobile force. Although the Howze Board envisioned Air Force airlift providing logistical support to secured locations, separate air transport brigades consisting of heavy helicopters and CV-2 Caribous could distribute supplies more effectively to forward operating locations. Similar to the hub and spoke concept in current doctrine, this argument echoes recent calls for Army aviation to fly the “last tactical mile.” Overall, the Howze Board represented Army distrust of Air Force tactical support that had been festering since the Wilson memorandum six years earlier.

In response to this apparent Army usurpation of an air component mission, the Air Force convened the Tactical Air Support Evaluation Board under the leadership of LTG Gabriel P. Disosway, then vice commander of the Tactical Air Command. The Disosway Board concluded that even though the Army needed improved mobility the means existed in proven Air Force capabilities. Whereas the Howze Board recommended increased use of the CV-2, the board argued that the C-130 was more efficient and, thus, more effective. Furthermore, helicopters were slow, vulnerable to enemy fire, and not suitable for assault operations. Finally, the board restated the Air Force tenet of centralized control as the sole effective and efficient means to operate intratheater airlift.

Both the Howze and Disosway Boards reflect the perceptions and concerns of each service. In reality, they were both accurate in their basic assumptions. The Army needed greater mobility and without its own air arm would be wholly dependent on the Air Force. The Air Force saw the Howze Board as an attack on defined service roles and responsibilities. The real problem was the inability of either service to integrate operations in a mutually supporting manner. Neither was ready to give up its own

service-specific view of warfare nor the C2 methods inherent to each. Joint interoperability was not an option in 1962.

As American involvement in Vietnam escalated, the debate in Washington over Army and Air Force roles and responsibilities continued to rage. The Air Force did make one concession in 1962 when the service renounced its own burgeoning helicopter assault capability. However, this was minor in both Army and Air Force eyes. By the end of 1965, the Army had deployed three companies of Caribous, totaling 88 aircraft of approximately 160 available, to support operations in Vietnam. Since Army aircraft did not operate under centralized control of the Southeast Asia Airlift System (SEAAS), the Caribou competed with the Air Force C-123 Provider for similar missions. While the USMACV did attempt to use Army airlift to move excess cargo and personnel within the Air Force system, this did little to ease tensions. Finally, in 1966 the Air Force Chief of Staff, General John P. McConnell, and his Army counterpart General Harold K. Johnson came to an agreement that affects intratheater airlift today. Signed on 6 April 1966, the McConnell-Johnson Agreement ended the debate begun seventeen years earlier by Generals Bradley and Vandenberg.

In negotiations privately managed by the two generals, McConnell and Johnson both realized that any acceptable agreement would be a compromise. For McConnell, he was “determined to do something about service differences on tactical aviation, and later recalled that his observation on the Army’s low usage rate of the Caribou became the catalyst for their discussions” (Bowers 1982, 237). While the Air Force Chief wanted to protect the service’s fixed-wing mission, Johnson sought the same for the Army’s growing helicopter force supporting the airmobile concept. The negotiations themselves

were cordial but back and forth. At one point during the negotiation, Johnson complained that Air Force airlift was not responsive enough to meet Army tactical requirements, specifically the need for an emergency airlift request process in Vietnam. As a good faith gesture, the Air Force offered to place liaison officers as low as the battalion level when necessary, institute emergency airlift process using the Air Force TACS, and to accept the concept of ground commander control over airlift missions on a temporary basis. While the last provision became part of the official agreement, evolving tactical airlift operations in Vietnam would incorporate the remaining two.

There was another, more subtle pressure both Army and Air Force Chiefs felt, the encouragement of General Earle F. Wheeler, then Chairman of the Joint Chiefs. Wheeler, much like McConnell and Johnson, wanted to avoid any resolution of the issue by either the Joint Chiefs or the Secretary of Defense, since either could involve Navy or Marine Corps interests. Obvious to all parties, in a Pentagon divided by interservice rivalry, the Army and Air Force would gain more from compromise than from a “joint” solution.

There were concessions on both sides. Per the McConnell-Johnson Agreement, the Army would transfer all Caribous and Buffalos (an upgraded version of the Caribou designated by the Army as a CV-7 and bought in limited numbers) to the Air Force by 1 January 1967, and renounce all future claims for fixed-wing tactical airlift aircraft. Excluded were aircraft for “administrative support.” In return the Air Force relinquished “all claims for helicopters and follow-on rotary wing aircraft which are designed and operated for intratheater movement, fire support, supply and resupply of Army Forces and those Air Force control elements assigned to DASC [Direct Air Support Center] and subordinate thereto” (Bowers 1982, 673). Not included was Air Force special air warfare,

search and rescue, or administrative support helicopters. While each service lost and gained a specific airframe type, the Air Force also made a series of promises. First, when determined by a joint or unified commander, the Air Force would accept ground commander control of CV-2s, CV-7s, or C-123s. Second, the Air Force would retain short takeoff and landing capable aircraft like the Caribou in its inventory and consult with the Army on any changes of capability. Finally, the Air Force would address Army requirements during the development of future airlift aircraft.

Although the agreement received a luke-warm response from within the Air Force, Army recriminations were especially bitter. During negotiations, Johnson sought the opinion of Col. Dilbert Bristol, an Army aviation expert, on whether the Army needed its own air arm. Bristol's attitude toward any agreement "was not untypical within the Army aviation fraternity. He replied that he did not think the independent air force should have been created in the first place and that he believed the Army should have both its own tactical transport aircraft and its own close air support aircraft" (Horwood 2006, 110). Upon hearing about the McConnell-Johnson Agreement, Bristol attempted to stop the transfer of Caribous and Buffalos by writing a personnel letter to McNamara. Many in the Army, fresh with experience in Vietnam, listed a host of reasons why the Army needed fixed-wing airlift. LTG George P. Seneff, commander of the 11th Aviation Group during the 1964 Air Assault tests and the 1st Aviation brigade in Vietnam, noted that in 1966 demands for airlift increased while Army access to C-7s (Air Force designation for the CV-2) had fallen. As a result, utilization rates for Army medium lift helicopters like the CH-47 Chinook, which were more expensive to operate, increased. Counter to Air Force logic, others saw the small load of the Caribou as an advantage, maximizing

payload to increase utilization. Finally, others claimed that the Army's decentralized system was more efficient than Air Force centralization since it required less personnel to operate. While these arguments accomplished little, the real effect of McConnell-Johnson is with us today. Despite advances in technology, the Army and Air Force still define aviation by airframe type, not capability.

An immediate effect of the McConnell-Johnson Agreement was revised Air Force doctrine. Released on 10 August 1966, AFM 2-4, *Tactical Air Force Operations: Tactical Airlift*, updated AFM 1-9 written twelve years earlier. The doctrinal name for today's intratheater airlift had evolved, beginning with "air supply" operations during World War II, "theater airlift" operations in AFM 1-9, to "tactical airlift" in 1966. This change was significant since AFM 2-4 was much more ground-centric in nature and reflected the evolution of airlift experienced in Vietnam. Similar to AFM 1-9 in organization, *Tactical Airlift* introduced significant changes. Mobility requirements included rapid and short notice operations, surprise and concentration, economy of force, flexibility, and decisive response to enemy actions. Unlike previous doctrine, airlift now focused on ground maneuver and support operations. Under the title "Tactical Airlift Capabilities," AFM 2-4 concisely stated this paradigm shift.

Tactical airlift forces are manned, equipped, and trained to perform airborne operations for the delivery of combat forces directly into an objective area, both during the assault and subsequent to the assault phase of an operation; to perform those airborne operations which provide for the relocation of forces within and from a combat area; and to perform air logistic operations in support of all theater forces, including those engaged in combat operations. (U.S. Air Force 1966, 1, para. 1-2, a)

Under this revised doctrine, the focus of Air Force shifted from airlift sustainment to providing nonlinear support to maneuver forces in the enemy's rear or flanks. While

employment included sustaining a brigade level force, the new doctrine went further by stating, “The Air Force will also deliver personnel, supplies, and equipment to the battalion/company level and further forward as required in furtherance of the Army’s combat mission” (U.S. Air Force 1966, 3-4, para. 2-4). In requirements, capabilities, and employment, tactical airlift was the Air Force answer to the Army airmobile concept.

Incorporated throughout the doctrine was McConnell and Johnson’s negotiated agreement four months earlier. For the first time, the independent Air Force doctrinally approved the concept of direct support under the control of a ground force commander, procedures for an emergency airlift request system, and airlift liaisons assigned at the division, brigade, and battalion levels. As for the liaisons, they were “Experienced tactical airlift officers” providing “Army commanders authoritative guidance in the management of and planning for tactical airlift support” (U.S. Air Force 1966, 15, para. 5-3, d). Although not mentioned in the doctrine, this would become the basis for the Tactical Airlift Liaison Officer (TALO).

There were other changes not specific to McConnell-Johnson, specifically the organization of deployed airlift forces and the categories of requests. Unlike the “control facility” of AFM 1-9, the new doctrine created an Airlift Control Center (ALCC) that was to be located adjacent to the Tactical Air Control Center (TACC), thus doctrinally separating CAF and MAF operations centers. Another concept introduced was the Airlift Control Element (ALCE). Acting under ALCC guidance, the ALCE maintained control of airlift operations at specific airfields, to include all Air Force units and aircraft supporting theater mobility operations. While maintaining the aerial port was still an Air Force function, the ALCE added the C2 piece needed to synchronize theater-wide

operations. Finally, AFM 2-4 introduced the CCT as a component of the airlift system, not special operations forces as seen today. Through CCT, airlift could support ground forces at austere forward tactical airfields or landing zones and integrate operations with theater airlift C2. The structure of the request process was also changed. Defined as routine, specific item, or emergency requests, this new system reflected the flexibility and responsiveness desired by Army commanders. Unchanged was the function of the Airlift Coordination Officer and the priority system. As seen in AFM 1-9, the coordination officers were still the ground component's primary means to request airlift support under established service priorities following airlift allocation.

The origins of tactical airlift doctrine began with the troop carrier concepts of World War II but evolved under the pressures of Korea and Vietnam. Because of Army and Air Force tension over the roles and responsibilities of airlift, especially as it pertained to the concept of the airmobile force, the McConnell-Johnson Agreement set the conditions for tactical airlift doctrine. While this new doctrine was significant, the battlefields of Vietnam were to be its proving grounds.

The Development of Tactical Airlift in Vietnam

The development of tactical airlift during the Vietnam War consists of three periods. Beginning in 1962 with the short-lived Project Mule Train under the Military Advisor and Assistance Group, Vietnam, the intratheater airlift system developed into the Southeast Asia Airlift System later that year. Six years later the Common Service Airlift System (CSAS) would replace SEAAS and remain in effect until the end of the war.

On 7 December 1961, Republic of Vietnam President Ngo Dinh Diem formally requested American military aid from President Kennedy. Already established in South

Vietnam were Air Force advisors, or air commandos, under Operation Farm Gate supporting Vietnamese Air Force C-47 operations employing, “Classic techniques for forward area resupply, known to Skytrain crewmen in Burma, Korea, and among the French in Indochina” (Bowers 1982, 47). By January 1962, the more conventional forces of the 315th Air Division (AD) based in Tachikawa, Japan deployed C-123 Providers to various locations in South Vietnam. The airlift war in Vietnam had begun.

Overshadowing Farm Gate, Project Mule Train used elements of the 315th in Vietnam to assist and compliment the Vietnamese Air Force. Its secondary mission was to support the 2nd Advanced Echelon and other American units in country. The airlift request system during this initial deployment was simple. An Air Traffic Coordination Officer would pass airlift requests identified as either routine or priority to the Vietnamese Air Force/2nd Advanced Echelon Joint Operations Center at Tan Son Nhut Air Base. The Joint Operations Center Airlift Branch, consisting of four officers on temporary duty from Japan, would then schedule the mission. In early 1962, only one of these officers had a tactical airlift background and abuse of the system was rampant. This included Vietnamese officials using Air Force airlift for personal “junkets.” These deficiencies soon gained Air Force attention. Following a Pacific Air Forces (PACAF) inspection by BG Travis M. Hetherington and spurred by General Curtis E. LeMay’s visit in late April, a centralized airlift system using Air Force TACS was quickly developed.

On 11 October 1962, MACV Directive 42 created SEAAS, under which deployed elements of the 315th would control Air Force airlift based in Vietnam and established procedures governing MACV airlift. Replacing the Joint Operations Center Airlift

Branch was the Cargo Command Group, which prescribed airlift request procedures and provided C2 for Air Force airlift forces.

Under the SEAAS request system, users would submit airlift requirements twenty-five days prior to the next month. At the same time, the Combat Command Group would forecast airlift capability. The Joint Airlift Allocation Board, chaired by the USMACV logistics chief, would convene ten days later to build a tentative airlift schedule for the next month based on Air Force and user inputs. To assure flexibility, the system allowed additional request inside this window if given forty-eight hours prior to shipment. Per the guidance from MG Rollen H. Anthis, 2nd AD commander, Airmen in the Joint Operations Center would field all emergency requests through TACS. The priority systems were structured as well and ranged from priority one (emergency) to four (not urgent). Items within the same priority moved on a first-in/first-out basis. Initial results of SEAAS were promising. From June to November 1962, C-123 cargo movements increased by 1,600 tons without an increase in monthly flying hours. Totals for 315th Troop Carrier Group that year included 14,077 personnel, with 606 airdropped, and 5,508 tons of cargo airlifted (Whitaker and Paterson 1967, 18).

From 1963 to 1964, the need for tactical airlift grew with increased American involvement and cracks began to develop in SEAAS. There were three developmental trends during this period. First, SEAAS continued to refine operations to centralize the control of airlift operations, although Army and Air Force disagreements over the Caribou persisted. Second, the Air Force searched for a tactical, not sustainment, mission for the troop carrier role despite the fact that parachute assaults were being supplanted by Army helicopters. Finally, the development of air lines of communications provided

support to isolated Special Forces camps via short takeoff and landing aircraft like the C-47, C-123, and Caribou (Bowers 1982, 115).

As SEAAS continued to expand its capability to efficiently control airlift assets, the requirements, forecasting, and allocation process proved unworkable since most logistical and tactical movement requests arrived twenty-four to forty-eight hours prior to execution. Much like the TCC in Burma, the system became near-sighted to meet user needs instead of being proactive as originally envisioned. The daily process began with consolidation of movement requests by an Air Force field grade officer assigned to the Movements Branch in the USMACV logistics section. An officer from the 315th Troop Carrier Group supplied aircraft status for the next day as well as cargo backlogs at various aerial ports. After rank ordering request versus airframes available, the logistics officer posted the schedule by 1600 hours. When requests exceeded airlift, which was often the case, the same logistics officer became the final adjudicator. Due to the inability of the USMACV logistics officer to critically review requests and screen those that were unjustified or exaggerated priorities, the request and prioritization of airlift under SEAAS was not very different from the previous system. To solve this problem and others, in mid-1963 the 315th Troop Carrier Group in Tan Son Nhut stood up an ALCC. While the SEAAS process remained essentially unchanged, increased manning and sections for scheduling, mission control, and operational planning addressed many of these problems. Although the inexperience of staff on temporary duty to Vietnam and limited workspace were issues, SEAAS ability to control the airlift increased. By the end of 1963, the three squadrons of the 315th Troop Carrier Group possessed 45 C-123Bs and in over 14,000 sorties, SEAAS moved 87,691 passengers and 20,980 tons of cargo (Whitaker and

Paterson 1967, 31). Although this was a tremendous increase from 1962, the coming years would see further rapid expansion of the airlift in Vietnam.

The organization of SEAAS changed little the following year, but the demands for intratheater airlift again more than doubled. The number of C-123s increased to 67 by the end of 1964 and the 315th flew more than 33,000 sorties carrying 218,171 passengers and 54,354 tons of cargo. There were four reasons for this increase. First, due to the Gulf of Tonkin incident in early August, the U.S. troop strength in Vietnam rose from 15,989 to 23,301 by the end of the year. Related to this was the arrival of the “Free World” contingents and other American allies. Third, with Viet Cong interdiction of ground lines of communication, airlift became the only viable means to support many of the isolated camps. Compounding the problems presented by Viet Cong activity, the November and December flooding in central Vietnam required emergency relief to many isolated areas (Whitaker and Paterson 1967, 37-38). Despite Bowers’ appraisal that the “the Air Force had proven its organizational skills” by establishing a “productive, responsive, and expansible airlift system” by the end of 1964 (Bowers 1982, 146), events in Vietnam and the U.S. would lead to significant changes in SEAAS during 1965 and 1966.

While the Army and the Air Force debated the roles and responsibilities of airpower in Washington, 1965 was an important year for airlift in Vietnam. The temporary basing of C-130s inside Vietnam, in limited numbers the year prior, increased and augmented the support of Army CV-2s and Air Force C-123Bs. Movement for that year totaled 718,900 passengers and 207,702 tons of cargo. The increasing demand for airlift soon outstripped SEAAS capabilities. Initially meant to augment, the western Pacific Command (PACOM) airlift system evolved under increased use into a competing

organization supporting theater operations. Two distinctive airlift systems were thus created, one was controlled by the Western Pacific Transportation Office (WTO) under the direction of the Command-in-Chief, Pacific (CINCPAC); the other being SEAAS controlled by commander USMACV through the 2nd AD.

Under the command of CINCPAC, the western PACOM airlift provided additional intratheater capabilities to USMACV. Largely made up of C-130 assigned or attached to PACOM, as well as one attached Military Air Transport Service C-124 squadron, the WTO involved all 315th AD aircraft not dedicated to operations within Vietnam and Thailand. With offices co-located with the 315th in Tachikawa, WTO allocated PACOM airlift to forces in Vietnam through a CINCPAC, not USMACV, request and priorities process.

With the WTO intratheater system servicing all U.S. forces in the western Pacific, SEAAS was strictly concerned with tactical airlift operations within South Vietnam and Thailand. By the end of 1965, 2nd AD USMACV had operational control of four permanently assigned squadrons of C-123Bs, totaling approximately sixty aircraft augmented by thirty PACAF C-130s on temporary duty rotation. Operated by the 315th AD Air Commando Group at Tan Son Nhut Air Base, the ALCC used daily fragmentary orders to schedule missions per requirements and priorities of the USMACV J-4. Much like the CCTF in Burma, the SEAAS request and priority system became fragmented over time. Although the USMACV J-4 Joint Airlift Allocations Board technically determined priorities, over the years separate airlift request “nets” and priority systems developed for the I Corps in Da Nang and U.S. Special Forces in Nha Trang. Per the Air Force Contemporary Historical Examination of Current Operations Report covering

1965, “This had the undesirable effect of allocating and scheduling from three different locations without optimum coordination” (Whitaker and Paterson, 1967, 44). Not unlike the ALFSEA-Fourteenth Army relationship in 1944, separate sub-commands within USMACV competed for limited resources by developing their own processes. Although there were proposals to alleviate the strain on Air Force airlift by incorporating Vietnamese Air Force, Thai, Korean, and U.S. Army aircraft into SEAAS, all resisted except the Australians with their handful of Caribous.

The pooling of U.S. Army and Air Force transportation aircraft for maximum and most efficient utilization was long a subject of controversy, dating back to the ‘Hump’ airlift operations of World War II. The Army maintained they could get quicker response to tactical emergencies if they controlled their own transports, while the Air Force took the position that airlift could be better managed through a centralized control system. As of 31 December 1965, only the RAAF aircraft were supplementing those of the U.S. Air Force. (Whitaker and Paterson 1967, 45)

From 11 October to 10 November 1965, Headquarters USAF conducted an evaluation of the airlift system within Vietnam. The report was scathing. Among the findings, the evaluation team identified the conflict between two intratheater airlift systems working independently of the other, with separate priorities and allocation systems, and an inability to identify problem areas within a fragmented airlift force. Inefficient utilization of airframes was another. The aerial port system was deficient. Finally, neither system could accurately forecast airlift requirements more than a month in advance, noting that approximately 70 percent of the missions executed by theater airlift were on an on-call, or unscheduled, basis. Directed at CINCPAC, the team’s recommendations reflected the guidance found in AFM 1-9. They include improved forecasting, centralization of all Air Force theater airlift under the 315th AD in Tan Son Nhut, and the creation of a single PACOM priority and allocation system.

The theater airlift system did not change immediately. By mid-1966, Army complaints of ineffective and unresponsive Air Force airlift began to mount. In April the 2nd AD was deactivated and replaced by the 7th Air Force. By October the provisional 315th AD in Vietnam disbanded. Taking its place was the permanently assigned 834th AD to provide improved management of the airlift effort. As a result, all elements of the 315th Air Commando Wing supporting operations in Vietnam, such as the ALCC, as well as the 2nd Aerial Port Group based in Tachikawa, became part of 7th Air Force under the operational control of commander USMACV. The parallel structure of the WTO remained, but tactical airlift in Vietnam came of age when the CSAS replaced SEAAS in late 1966.

By the end of 1967, CSAS proved to be an effective and acceptably efficient airlift system for both the Air Force and the Army. Despite continued interservice tension over airlift, especially as the Army relinquished its CV-2 Caribous to the Air Force under the provisions of McConnell-Johnson, the system provided both general and direct support to ground units. Airlift in 1966 had surpassed the previous year. The demand in 1967 was unprecedented, moving over 1.1 million tons of cargo and almost 4 million passengers as compared to approximately 300,000 tons and 720,000 passengers the previous year (Merrell 1972, figures 5, 6). CSAS, like all organizations, continued to change with events and it applied the ground-centric concepts of tactical airlift found in AFM 2-6. A key element was the development of Air Force liaison officers embedded with ground units.

Tactical Airlift Liaisons Officers

As the two service chiefs negotiated the future of airlift, in March 1966 the Air Force floated the idea of placing an airlift officer with ground forces for improved tactical coordination. Although vague, this concept was included in AFM 2-4 published in April. Tested in Vietnam in late 1966, the TALO soon became an important element of CSAS. Led by the program's chief advocate, Lt. Col. Thomas M. Sadler, initially thirty airlift officers served with Army units at the division and brigade level. Their role was two-fold. As staff officers, the TALO would assist the planning and management of unit air movements and resupply operations. More importantly, the TALO second role was as an expeditor of information between fielded Army units and Air Force airlift C2. To many, the TALO appeared redundant since it overlapped functions of the airlift mission commanders, CCT, the Air Liaison Officer, and the request and priority process. Yet, "given the frictions of theater operations and in the context of past ground force dissatisfaction, [the TALO's] presence with ground units seemed absolutely justifiable to all Air Force officials" (Bowers 1982, 246). The experiment was an overall success and resulted in permanent TALO billets in late 1967, but TALOs proved ineffective in brigades not dependant on airlift. Without a productive role in some units, evaluators concluded that several TALOs should be attached to each division and available for temporary duties with brigades as needed. Operating independently of existing TACPs, by 1968 the TALO integrated with TACS and supported tactical airlift operations in Vietnam.

Tactical Airlift System, 1968-1969

From 1968 to 1969, the tactical airlift effort in Vietnam was at its peak. Events in early 1968, such as the Tet Offensive and the siege of Khe Sanh, tested an airlift system that had evolved over six years of war. The 1966 reorganization under CSAS and the creation a permanent command structure under the 834th AD did much to improve overall Army satisfaction with the intratheater airlift system. The PACOM airlift system run by WTO still operated in parallel, but its use was better coordinated. CSAS addressed many of the problems of SEAAS and established greater connectivity with ground forces by dispersing C2 elements and liaisons. Even though the allocation process under the Joint Airlift Allocations Board remained unchanged in 1968, the transportation request system provided ground units an additional means for intratheater airlift support. Users would first submit requests to a local Movement Control Center (MCC). If it justified airlift, the MCC would forward the request through the regional Traffic Management Agency (TMA) to the USMACV TMA. Either the regional or theater TMA could deny the request. Much like the JMC today, the USMACV TMA determined the transportation modes for all requests it received. If airlift was appropriate, the request went to the ALCC in Tan Son Nhut for execution.

Under the 834th AD headquarters on Tan Son Nhut Air Base, elements controlling the tactical airlift system grew to meet the Army demands in Vietnam. Expanded were directorates like operations, material, intelligence, and personnel. The ALCC grew in size and function, to include sections for airfield surveys, aerial port traffic, and joint planning, as well as strengthening existing functions like scheduling. After receiving requirements from the TMA, the USMACV J-4 organization managing

the request process and the ALCC scheduled airlift best suited for the mission under either operational control or tactical control of the 7th Air Force. Unlike SEAAS, these schedules were coordinated with WTO. After much lobbying by the Army, the Air Force created an emergency airlift request system activated through the USMACV combat operations center. All aerial ports in Vietnam were under the control of 7th Air Force through the 2nd Aerial Port Group, enabling better coordination and control. Often co-located at these ports were ALCEs, which further centralized the airlift effort. At forward operating location unconnected to CSAS, transportable ALCEs, aerial port detachments, or CCT would provide C2 functions. By extending these control elements down to the lowest level, the CSAS proved to be more efficient and effective. (See figure 3.)

Tactical Airlift in Vietnam, 1968

CSAS refined Air Force control of the tactical airlift system, but the issue of decentralized control when providing direct support to Army units in the field was still very much alive. By 1968, the airmobile concept was firmly rooted in the Army tactics employed in Vietnam. Although the transfer of Army Caribou to Air Force control in January 1967 was still contentious, their supporting relationship changed little. Whether it was because the Air Force did not want them or, more likely, did not know what to do with them, very few C-7s supported CSAS operations. As of June 1969, forty-five of fifty daily C-7 missions were dedicated to Army units who determined routing as well as aircraft use (Merrell 1972, 11-12). This balance between decentralized C-7 and centralized C-123 and C-130s operations provided effective support without affecting desired AF efficiencies.

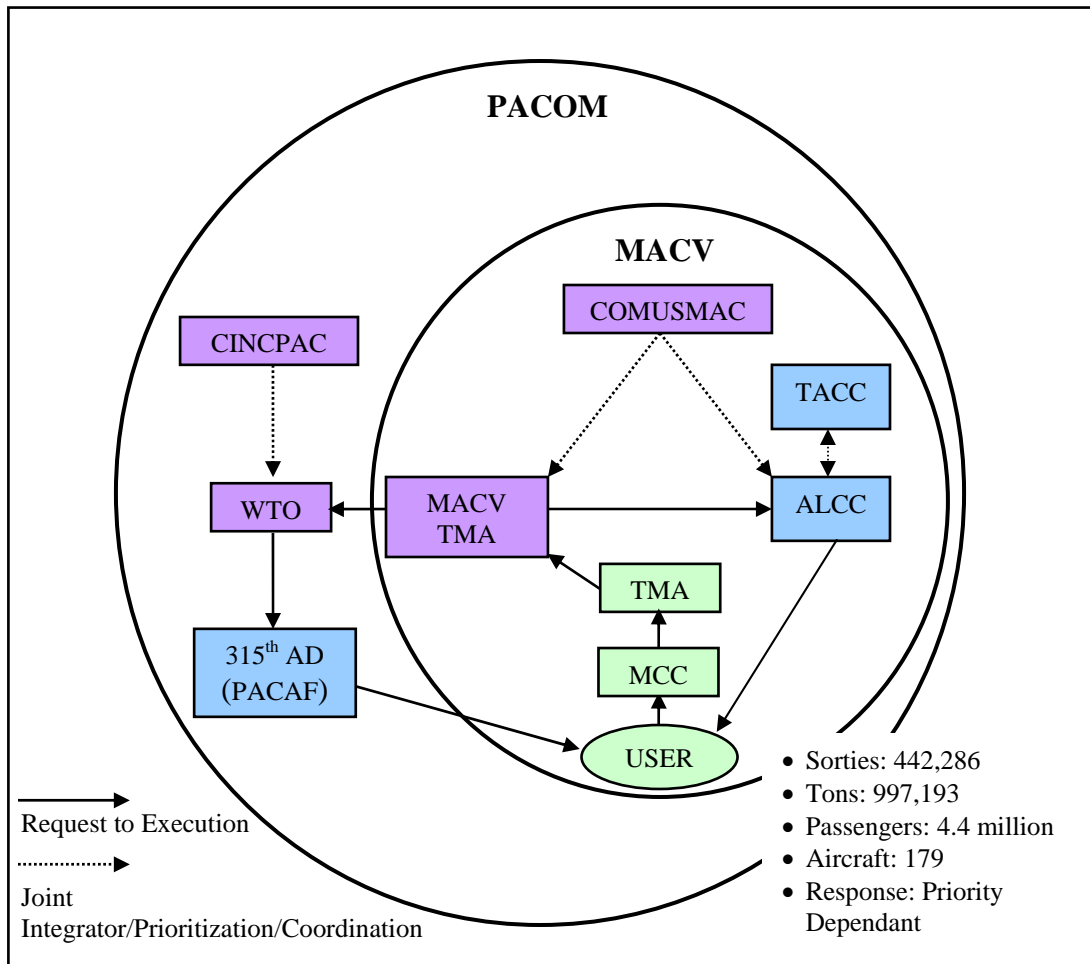


Figure 3. Tactical Airlift in Vietnam, 1968

By 1968, the theater airlift system in Vietnam effectively integrated Air Force tactical airlift through CSAS with Army aviation. Tactical airlift transported 3.8 million passengers and a record 928,118 tons of cargo. The following year would see a slight decrease in cargo but the movement of 4.6 million passengers (Merrell 1972, figure 7). The real accomplishment was the improved responsiveness and flexibility of the airlift logistical system allowing ground units to leverage organic rotary-wing aviation for combat operations. Moreover, a hub and spoke system evolved at the tactical level. From

established or temporary forward airfield, Army rotary-wing aviation flew shorter distances to disperse supplies and personnel directly into the field, further negating the need for ground lines of communication to support fielded forces.

The Lessons of Tactical Airlift in Vietnam

From 1970 to the end of the American involvement in Vietnam the tactical airlift effort declined and General Abrams' strategy of "accelerated pacification" gave way to "Vietnamization." By 1972, the majority of U.S. combat forces were withdrawn. Three years later, following the political decision to cut all U.S. military support to South Vietnam, Saigon fell to the communist north. Despite the ultimate failure of the American effort in Vietnam, the war provides several important lessons that apply to today's intratheater airlift system. These lessons are the importance of theater airlift C2 spanning the operational and tactical levels, the need to balance centralized and decentralized control, the role of tactical liaisons, and the impact of dividing rotor-wing and fixed-wing capabilities between the services.

Much like Burma, the intratheater airlift system during Vietnam began as an ad hoc organization with limited objectives. Over time, as the effort grew, the airlift system evolved in a reactive manner. While SEAAS established a centralized control structure for airlift at the operational level by early 1963, the rigid position of centralized command and forecasted requirements could not adjust to the realities of combat operations in a dynamic nonlinear environment. To meet increasing demand, PACOM airlift under WTO became a parallel intratheater airlift system with separate priorities. Moreover, the organizations supporting SEAAS, the 315th AD and the Air Commando Wing, were provisional in nature. Without permanently assigned forces, the rotation of

personnel and temporary infrastructure affected capabilities. Perhaps the most significant deficiency of SEAAS was the inability of airlift C2 to integrate at the tactical level.

Two catalysts made the 1966 theater airlift reorganization possible. First, the Army and Air Force debate over roles and responsibilities that resulted in the 1966 McConnell-Johnson Agreement. The second was the Headquarters USAF evaluation of the two competing airlift systems in Southeast Asia the year prior. While McConnell-Johnson led to the development of AFM 2-6 and a tactical airlift doctrine that addressed Army needs under the airmobile concept, the evaluation of 1965 enabled the creation of a more permanent Air Force command structure to support the new system. As discussed, the transition from SEAAS to CSAS did not substantially change either WTO or USMACV request and prioritization processes. What had changed was the resources available, in both personnel and organizational structure. Combined with new doctrinal concepts like the ALCE, transportable airlift control elements, and CCT, airlift forces could integrate operations at the tactical level. This enabled both effective and sufficiently efficient operations.

Another lesson of CSAS was the balance of general support through centralized control and direct support via decentralized means. Considered anathema by many in the Air Force, the dedicated airlift favored by Army operations did have a place in the tactical airlift system. Although this was a condition of the McConnell-Johnson Agreement, the direct support provided by Air Force C-7, following their transfer from the Army in 1967, worked well. The unique short takeoff and landing capability and small load of the Caribou made it well suited for this work. Additionally, CSAS visibility of the Caribous prevented duplication of effort with organic Army fixed-wing assets.

Despite the Air Force tendency to centralize all elements of C2, the ability of the TALO to address the needs of fielded Army units proved invaluable. As noted by Lt. Col. Sadler in 1966, “the very act of being in the field” (Bowers 1982, 246) improved air-ground coordination. Whether as a staff officer or a mission expeditor, the ability of the TALO to integrate with ground forces at the tactical level enhanced both the responsiveness and flexibility of airlift operations. Instead of reacting to requests, the airlift system through TALO inputs could proactively plan movements. The same was true for ground forces. With airlift experts in their ranks, units could better manipulate the tactical airlift system and reduce their dependence on emergency airlift requests. Like all liaisons, the TALOs’ effectiveness depended upon the relationships they built.

Finally, the McConnell-Johnson Agreement had a lasting effect on intratheater airlift. As the debate brewed in Washington and the battlefields of Vietnam, the division of rotary- and fixed-wing aviation prevented a unified airlift effort. Despite the evolution of CSAS and the dedicated support provided by the Caribou force, Army and Air Force concepts of C2 were still competing. The Army was “obliged to think increasingly in terms of rotary-wing aircraft for all its organic transport requirements,” which caused “the employment of helicopters in Army roles for which fixed-wing aircraft might have been better suited” (Horwood 2006, 115). A true statement, but not one found in an Air Force desire to limit Army operations. Doctrinally, the Air Force had accepted the direct support concept in AFM 2-6 and, to a limited degree, employed it in Vietnam. Instead of further integration that could provide theater wide visibility, the Army and Air Force systems diverged after Vietnam. With the atrophy of tactical airlift concepts and the

organizational consolidation following the Air Force transformation in 1991, the divide between Army and Air Force intratheater airlift C2 increased.

Vietnam, like Burma before it, provides a unique model of intratheater airlift C2. Four years after the airlift effort began in earnest, tactical airlift doctrine and the organization of CSAS provided a balanced approach to intratheater operations. Whereas the rigid concepts of SEAAS were similar to the over-centralized, efficiency based model found in today's doctrine, the development of an airlift C2 system with elements spanning the operational and tactical level of war provides an excellent example of how airlift can succeed in a nonlinear environment. Despite this, the McConnell-Johnson Agreement in 1966, while practical, had lasting effects on service separation of rotary- and fixed-wing airlift. The divide between decentralized Army control and Air Force centralization has only increased. The next chapter examines the differences and commonalities of Burma, Vietnam, and OIF, identifying the basic requirements for an improved intratheater airlift system that can support the modular force in a nonlinear operating environment.

CHAPTER 6

SYSTEM COMPARISON AND REQUIREMENTS FOR EFFECTIVE AND EFFICIENT THEATER AIRLIFT

To compare and contrast the different intratheater airlift systems, this chapter is composed of three sections. The first identifies organizational differences in each system through conceptual models based on the air supply system in Burma from June 1944 to June 1945, tactical airlift during Vietnam between 1967 and 1968, and the TDS supporting OIF as of 2007. The second presents the common traits between the two case studies, Burma and Vietnam. Finally, the chapter consolidates the identified problems and lessons learned from all three conflicts to form requirements for improved intratheater airlift C2.

Organizational Differences

Each intratheater airlift system presented is distinct in organization and each represents a unique approach to intratheater airlift C2. Much like the RAND Corporation Strategies-To-Task approach, the discussion focuses on the relationship between C2 functions that provide requirements (demand-side), those who provide airlift (supply-side), and the organization or commander who determines intratheater airlift priorities and use (joint integrator). Through this approach, the organizational differences of each system become apparent.

Between June 1944 and 1945, theater airlift forces in Burma provided direct support to ground forces in a divided contiguous theater, using a decentralized approach. With the NCAC under American control and the Fourteenth Army to the south under the

British, two parallel intratheater airlift systems supported different allied operations within Burma. For NCAC, transports under ACH fulfilled demand-side requirements of ASC, with the NCAC J-4 providing guidance as the joint integrator. To the south, a complicated system divided supply and demand-side C2, as well as joint integration outside the Fourteenth Army AO that further decentralized the air supply effort. As seen in the case study, the inefficiencies of this system reduced effectiveness through divided direct support only operations.

The CSAS system in Vietnam was a balanced approach characterized by both general and direct support of ground forces in an undivided contiguous theater. While there were two intratheater airlift systems, unlike Burma, both supported ground forces throughout South Vietnam and Thailand. Under the guidance of commander USMACV, the 834th AD operated ALCC responded to TMA requests. Of note was the separation of airlift C2 from the remaining tactical air component, which supported CAF functions. Through increased coordination with CSAS, WTO provided requirements for 315th AD force under PACAF with CINCPAC guidance providing joint integration.

Finally, the USCENTCOM intratheater airlift structure supporting OIF in 2007 provided general support to ground forces in a contiguous AO. As an efficiency-based model, this system represents a centralized approach. Instead of separate airlift systems supporting operations in contiguous areas, the USCENTCOM model combines all intratheater airlift operations under the JFC as joint integrator. Providing demand-side requirements is the JMC. Following validation based on JFC direction as joint integrator, the AMD executes missions. Unlike in Vietnam, the AMD operates within a centralized operations center that is not separate from the CAF structure.

Commonalities of Burma and Vietnam

Although distinct models of intratheater airlift organization and employment, Burma's air supply operations and the tactical airlift effort in Vietnam experienced many of the same problems. Different in overall structure, they performed in a similar nonlinear environment supporting dispersed ground forces in a contiguous AO. While current operations in USCENTCOM focus on several contiguous areas, many of these issues echo Army and Air Force concerns identified in this study. While each system developed in different ways due to various reasons, such as coalition relationships and doctrinal disagreements on employment, intratheater operation in Burma and Vietnam share the following characteristics.

1. Airlift organizations were often reactive by nature and began as ad hoc solutions during the early phases of the war.
2. Attempts to forecast monthly airlift requirements proved ineffective. Aside from programmed sustainment, the typical airlift request-to-execution cycle was twenty-four to forty-eight hours.
3. To ensure support, ground forces tended to exaggerate requirements or cite tactical need to justify organic or dedicated common-user airlift.
4. After allocation of airlift, components controlled their own priority of movement.
5. Air lines of communications required local or general air superiority as well as the suppression or destruction of enemy air defenses along aerial routes and areas surrounding airfields.

6. The effectiveness of intratheater airlift often depended on air-ground relationships and coordination at both the operational and tactical levels.

7. Airlift organization, functions, and C2 were distinct from those of CAF.

8. Finally, the most significant issue of intratheater airlift C2 was the differences between the inherent perspectives of Airmen and Soldiers. Whereas the Air Force typically insisted on centralized control of airpower, often tying efficiency to effectiveness, the Army believed in organic support and decentralized control with less concern for efficient operations.

Requirements for Effective and Efficient Theater Airlift

These commonalities form relevant patterns of intratheater airlift C2 in a nonlinear environment. Aside from the “axiomatic” need for air superiority and relatively safe access to airfields, when compared to current operations in Iraq the case studies identify five requirements for effective and efficient theater airlift operations.

First, to provide flexible support, the intratheater airlift C2 should maintain centralized control of airlift forces. As seen with the CCTF in Burma, attempts to disperse airlift forces within a theater of operations dilute capability to a point where inefficiency prevents effective operations. In contrast, by 1963 SEAAS improved operational capacity by establishing centralized control. Although this has negative effects when rigidly applied, both NCAC and CSAS are examples of mature centralized systems that provided effective support through detailed coordination with ground and supporting units while maintaining relative efficiency.

Second, the airlift movement process, excluding forecasted sustainment operations required by recurring logistical needs, must be responsive to airlift requests

within forty-eight hours of notification. Forecasting all ground force requirements a month in advance proved unrealistic during TCC operations in 1944 and those of SEAAS between 1962 and 1966. While scheduled airlift allocation meetings address frequency and requirement channels for day-in-day-out logistical needs, supporting ground forces in nonlinear operations through air lines of communications requires the ability to execute missions quickly. Furthermore, if the system is not responsive, ground forces will seek alternate means of support like the WTO in Vietnam or the over-utilization of organic rotary-wing today.

Next, detailed air-ground coordination throughout the intratheater airlift system is essential. This includes tactical liaisons at the corps, division, and brigade level with the capability to support battalion and lower. Unlike strategic movements, intratheater airlift operations often require detailed integration with ground forces outside logistic channels. Moreover, the only way to build mutual trust between Army and Air Force units is through personal relationships. The Army must see the Air Force in the field, just as the Air Force must see the Army at the aerial ports and control centers. Whether this is seen as integration by the Army or interoperability from Air Force eyes, air-ground interaction at the lowest levels improves airlift performance. For example, the success of CSAS was partially due to extending the reach of airlift C2 to the tactical level of war through fixed or transportable ALCEs, CCTs, and TALOs.

A balance of effectiveness and acceptable efficiency is the fourth requirement, recognizing the fact that these are two very different concepts and are rarely equal. Although the debate over organic versus common-user support will continue, included in this equation is the role of general support doctrinally preferred by the Joint and Air

Force community with direct support requirements of the ground commander. Although McConnell-Johnson created lingering problems in the division of airlift capability, it was correct in its application of dedicated airlift support through the joint theater commander. Furthermore, if intratheater airlift C2 integration succeeds at the tactical level, as it did with the TALO beginning in 1967, better use of general support airlift would decrease the need for dedicated support as was the case with emergency airlift requests in Vietnam.

Finally, the airlift priorities system should be responsive to the needs of the supported force while preserving the efficiency needed to support the system. Unfortunately, as seen with the division between the WTO and SEAAS, as well as the current TDS process, when priorities are set by the theater commander or higher they are rarely responsive. In Burma under the NCAC and then USMACV J-4 in Vietnam, following the allocation process each component determined their own priorities. In the case of Vietnam, the Airlift Coordination Officer further enhanced this by directly representing ground force concerns and needs in the ALCC. Whether originating at the operational or tactical level, an airlift priority system should address conditions on the ground while preserving an acceptable level of efficiency.

To meet the challenges of the 21st century the Department of Defense is undergoing a significant transformation. As seen in past periods of change, the Army is reorganizing its force structure to meet contemporary and future challenges. Under the concept of modularity, the Army envisions a responsive and flexible force that can conduct full-spectrum operations. Accordingly, this evolving doctrine places a premium on airlift to enable maneuver and sustainment in a nonlinear operational environment. In contrast, existing Joint and Air Force intratheater airlift doctrine does not address these

needs, as indicated by recent operations in Iraq. Both Burma and Vietnam provide examples of distinct intratheater airlift systems with similar attributes called for by Army transformation. Unlike today's USCENTCOM area of responsibility, which has multiple contiguous AOs, each approach provides important lessons learned in the application of theater airlift to support ground forces in a nonlinear battlefield. Coupled with the identified failings in both doctrine and structure of the current TDS approach, this chapter has identified five requirements of theater airlift if it is to provide effective and efficient support to the modular force. (See table 2.) With an understanding of current and past doctrine, structural evolutions of intratheater airlift C2, and the effects of each system, the next chapter presents recommendations for changing the current system to meet the requirements of modularity.

Table 2. Requirements for Effective and Efficient Theater Airlift

- | |
|---|
| <ol style="list-style-type: none">1. Provide flexible support while maintaining centralized control of airlift forces2. Intratheater airlift process must respond to requirements within 48 hours of notification3. Detailed air-ground coordination is essential4. Balance effectiveness with acceptable efficiency5. Airlift priorities must be responsive to the needs of the supported force while preserving the efficiency needed to support the system |
|---|

CHAPTER 7

RECOMMENDATIONS AND CONCLUSION

There is a growing gulf between Army modularity and today's intratheater airlift C2 doctrine. Recent operations in Iraq provide glaring examples of this disjointed approach. While the case studies of Burma and Vietnam include important lessons on how to employ nonlinear airlift, they do not provide specific answers. The recommendations presented here apply these lessons in the context of current airlift C2 to achieve a balanced system capable of meeting the needs of Army modularity.






Interpretations of Findings

In the analysis of Army modularity and current Joint and Air Force doctrine, this study identifies five specific needs for effective intratheater airlift support. First is an interoperable airlift system that enhances maneuver as an asymmetric capability. The second need is scheduling flexibility to operate airlift within the fourteen-day forecasting window favored by modular logistics. Next are defined roles for liaisons like the AMLO, followed by a joint agreement on the allocation of airlift providing direct support to ground commanders. Lastly, there needs to be a joint understanding of modular logistics. While the latter is a function of service education and revisions to Joint and Air Force doctrine, the remaining four require changes to organization and process. When compared to the lessons of Burma and Vietnam, how to approach this becomes clearer.

The identified lessons of the air supply operations in Burma and tactical airlift in Vietnam provide five requirements for effective and efficient theater airlift operations. These ideas developed over time; were often the painful result of failed efforts common

to both theaters; and are valid when compared to the deficiencies identified by the Army and Air Force in recent operations supporting OIF. The first lesson is the need to provide flexible support while maintaining centralized control of airlift forces. Second, excluding forecast sustainment operations required by reoccurring logistical needs, the intratheater airlift process should be responsive to user requests within forty-eight hours of notification. Additionally, detailed air-ground coordination proved essential, as did the ability to balance effectiveness with acceptable efficiency. Finally, airlift priorities must be responsive to the needs of the supported force while preserving a level of efficiency needed to support the system. As seen in table 3, matching these requirements to the needs of modularity provides the basis for organizational and procedural change.

Table 3. Needs of Army Modularity Compared to the Requirements for Effective and Efficient Theater Airlift

INTRATHEATER AIRLIFT NEEDS OF ARMY MODULARITY	REQUIREMENTS FOR EFFECTIVE AND EFFICIENT THEATER AIRLIFT
Interoperable airlift system to enhance maneuver as an asymmetric capability 	Provide flexible support while maintaining centralized control of airlift forces
14 day forecasting, greater schedule flexibility 	Intratheater airlift process must respond to requirements within 48 hours of notification
Army and Air Force defined role for the AMLO 	Detailed air-ground coordination is essential
Resolve issue of allocating direct support versus general support 	Balance effectiveness with acceptable efficiency
Joint understanding of modular logistics 	Airlift priorities must be responsive to the needs of the supported force while preserving the efficiency needed to support the system

While joint integration has come a long way since the jungles of Burma and Vietnam, it is still a persistent problem. Differing opinions over the roles and responsibilities of airlift have typically been the product of service orientation, stemming from the contentious debates over the use of airpower during World War II and the inflamed service rivalries of the 1950s and 1960s. As seen in the Howze board, many in the Army still believe that direct and organic control of air assets by the land component should be the primary means to support ground forces. In contrast to this fragmented approach to airpower, the Air Force has consistently fought for centralized control. These conflicting attitudes are tied to resources, span of control, and the fear of one service being marginalized by the other. At its core, the problem is one of perspective. Advocates of the air and ground component simply do not understand the concerns and fears of the other. In light of these different perspectives, the crucial question is whether joint integration and interoperability can improve intratheater airlift C2 support of the Army's modular force.

Recommended Changes

Based upon the analysis of current doctrine and the comparison of airlift efforts in Burma, Vietnam, and OIF, changes are needed to joint TDS and air component organization. In comparison to the three different systems presented, these recommendations support a balanced approach to intratheater airlift operations similar to that employed by CSAS during Vietnam.

Before focusing on the air component, four specific changes are required to joint organizations and functions within the TDS. First, to prevent the current "bottle-neck" for joint validation and modal selection, align the JMC with the ESC in each contiguous AO.

Still connected to the TDS through a centrally located DDOC, the ability of the JMC to provide joint guidance and validation within a theater of operation would streamline the request process. Similar to the USMACV TMA, this would also enable greater coordination of movement requests than currently exists and increase joint visibility of theater needs. Second, theater airlift priorities, while based on JFC objectives, should be specific to a contiguous AO with the associated JMC as primary coordinator. As seen in both Burma and Vietnam, the ability to manage priorities in an ever-shifting combat environment increases both airlift effectiveness and efficiency. In today's doctrine, only a joint organization like the JMC can do this. Third, change the focus of Joint airlift doctrine to include support for nonlinear operations, elevating combat employment and combat sustainment in a hostile environment to the same level as passenger and cargo sustainment operations. Much like the shift in focus from AFM 1-9 to AFM 2-4, a renewed emphasis on tactical capabilities would directly address specific needs of the modular Army and expeditionary ground forces. The final change centers on the joint determination of general versus direct support. Today's contiguous AO commander does not "own" common-user airlift assets as he did in Vietnam and, therefore, cannot directly designate direct or general support. Much like the common-user request process, all requests for dedicated theater airlift should go through the forward deployed JMC to the DDOC for JFC allocation. Although this presents an additional request chain, it would provide a means to secure direct support through joint channels.

Recommended changes to the air component fall under three areas: basic operating relationship of airlift and theater C2, changes to the air tasking order cycle, and a move toward a more tactically organized C2 structure. While many of these

recommendations are airlift-centric, they would affect the TACS system and AOC structure currently employed by the Air Force.

Air Force doctrine favors organizational consolidation as an efficient means to gain centralized control of air component assets. Although the efficiency gains are arguable, this approach hampers effective operations by isolating the C2 structure at the operational level. In an age of rapid data transfer and networking, geographical separation no longer prevents centralized control. Furthermore, the benefits of dispersed C2 elements in both the operational and tactical arena improves situational awareness and understanding throughout, as proven by CAF operations conducting close air support. Similar to organizational consolidation is the current trend of centralized execution of intratheater airlift operations. Although some control mechanisms are vital, specifically those that prevent fratricide, the air component needs to reemphasize decentralized execution of airlift operations as well.

Identified in both the Burma and Vietnam case studies, CAF and MAF operations are distinct. Per today's AOC concept, attempts to consolidate all theater airpower within a single operations center ignore the fundamental differences in planning, request, and execution between non-lethal airlift operations and those supporting lethal weapons employment. Although separating CAF and MAF C2 structures might appear to be a division of effort, thus violating the Air Force tenet of centralized control, it was a common theme in both historical case studies. Based on NCAC J-4 operations in Burma and the TACC – ALCC relationship proven in Vietnam, the air component should similarly divide the AOC into separate combat and airlift operations centers, referred to as the Combat Air Control Center (CACC) and ALCC in the conceptual model presented

later in this chapter. Commanding the CACC and ALCC would be the Commander Combat Air Forces (COMCAFOR) and the Commander Airlift Forces (COMALFOR) respectively, both supporting the C/JFACC's mission. Although not a new concept, this does contrast previous proposals recommending the creation of a theater mobility commander, mirroring the delineations present in major Air Force commands. The approach recommended here differs in that it would place all air refueling operations under the COMCAFOR since tankers typically support combat, not airlift, operations once in theater. Additionally, while each commander focuses on his or hers specific aspect of the air component's mission, there would need to be common functions that ensure coordinated operations, such as air space management, mutual support, and administration. Despite this separation, the recommended change acknowledges the distinct nature of airlift and combat airpower through organizations that still maintain centralized control of the air component under C/JFACC guidance.

Closely tied to the separation of airlift from the current AOC construct, the second major recommendation to air component C2 focuses on providing desired scheduling flexibility in support of Army modularity. Based on the lessons of Burma and Vietnam, a separate air tasking order cycle for airlift forces is needed to meet contiguous AO priorities. Operating on a forty-eight hour cycle, instead of the seventy-two hours required for CAF missions, would increase airlift responsiveness. Despite separate planning cycles, the CACC and ALCC would combine products to produce a single air tasking order. While detailed coordination would be required at specific points during the planning process, a separate CACC and ALCC air tasking process would increase airlift effectiveness and efficiency without adversely affecting the CAF mission.

The final area for recommended change focuses on connecting the operational effort to tactical employment. As presented in AFM 2-4 and seen in Burma and Vietnam, to be effective intratheater airlift C2 must be directly involved in tactical operations from planning to execution. To enable this, the Air Force would need to expand not only its liaison elements but tactical C2 nodes as well. The importance of liaisons to affect successful theater airlift operations is a recurring theme in the case studies presented. From Burma to Vietnam to OIF, embedding airlift experts in forward deployed ground units has proven vital. With this in mind, this study recommends specific changes to the AMLO position thus meeting the stated requirement of defining their roles and responsibilities in supporting Army modularity. Additionally, to meet planning needs at the tactical level, the Air Force should create an Airlift Planning Cell (ALPC) at the division-level.

The primary duty of the brigade AMLO, an Air Force captain and rated air mobility pilot or navigator, would be to advise the brigade commander and staff on fixed-wing airlift support and coordinate its integration with organic Army fixed- and rotary-wing assets. With a capability to conduct landing and drop zone operations, the brigade's AMLO could also enable limited intratheater airlift at austere locations when Air Force CCT is unavailable. Working within the Brigade Aviation Element (BAE), the AMLO would coordinate with the division ALPC and maintain direct liaison with all elements of the TDS. In this model, the brigade AMLO is a critical node for intratheater airlift planning and execution.

In turn, the division AMLO, a similarly rated Air Force major, would provide advice to the division commander and staff as well as lead the ALPC. Focused on

maximizing the capabilities of fixed-wing airlift assets, the ALPC would provide the division with airlift planning expertise to support brigade mobility and sustainment operations. Manning for the ALPC should include logistics planners, rated loadmasters, an airfield management specialist, and Air Force C2 controllers.

Overseeing the brigade and division AMLOs and ALPC personnel would be the corps AMLO, a rated Air Force Lt. Col. experienced in airlift operations. Charged with synchronizing airlift planning and execution at the JTF level, the corps AMLO would provide guidance to all airlift liaison elements within the AO. Furthermore, as the senior airlift liaison in theater, the corps AMLO would report directly to the COMALFOR.

Although liaison and planning personnel are critical to successful intratheater airlift operation, additional C2 elements focusing on tactical integration during execution are needed. The first is the Airlift Support Operations Center (ALSOC), a C2 element similar in function to today's CAF centric Air Support Operations Center. Charged with managing the execution of intratheater airlift operations within a contiguous AO, the ALSOC would provide C2 support to all airlift missions entering that theater and coordinate any changes to the air tasking order during execution. Located within the ESC, the ALSOC would aid ground force coordination and be the focal point for all immediate or emergency airlift requests forwarded by the brigade or division AMLOs. Another element of the proposed intratheater airlift C2 system is the ALCE, as described in AFM 2-4 and employed by CSAS during Vietnam. Providing airlift C2 for established fixed-wing airfields, ALCEs would be key nodes for tactical and operational integration of mobility operations by extending ALCC control to specific locations. At austere airfields, ALCE detachments would provide similar support on a smaller scale. These

light, mobile elements would focus on temporary or low volume fixed-wing airfields providing CCT-like support for conventional forces in hostile environments not requiring special operations capabilities. The final element would be an expansion of existing aerial port squadrons or detachments, providing airlift to user interface for passenger and cargo movements at all standing or temporary common-user airfields. Working in tandem with the ALCE or ALCE detachment, aerial port elements would ensure detailed coordination for cargo preparation, loading, off-loading, and passenger manifests.

With these organizational changes in mind, the next step is to identify how they would interact within a combatant commander's theater of operations. Conceptual models of the planning, request, and execution phases of intratheater airlift C2 explain how these proposed elements integrate. Assuming the need for airlift support originates at the brigade-level, figure 4 depicts the planning process.

The AMLO, in coordination with the brigade staff and the BAE, initiates airlift planning for an expected request supporting ground force needs. Working with the division AMLO and ALPC, the feasibility of airlift operations is considered. Coordination with the other elements of the TDS, like the JMC, ensures dissemination of existing policies and changes to theater operating procedures.

The ALPC would identify and address issues like airfield suitability, aircraft compatibility, and operational support. If an austere airfield lacks necessary infrastructure, the ALPC would identify the resources needed to execute the mission. The corps AMLO provides oversight, ensures integration at the corps level, and disseminates C/JFACC guidance to airlift elements within the AO.

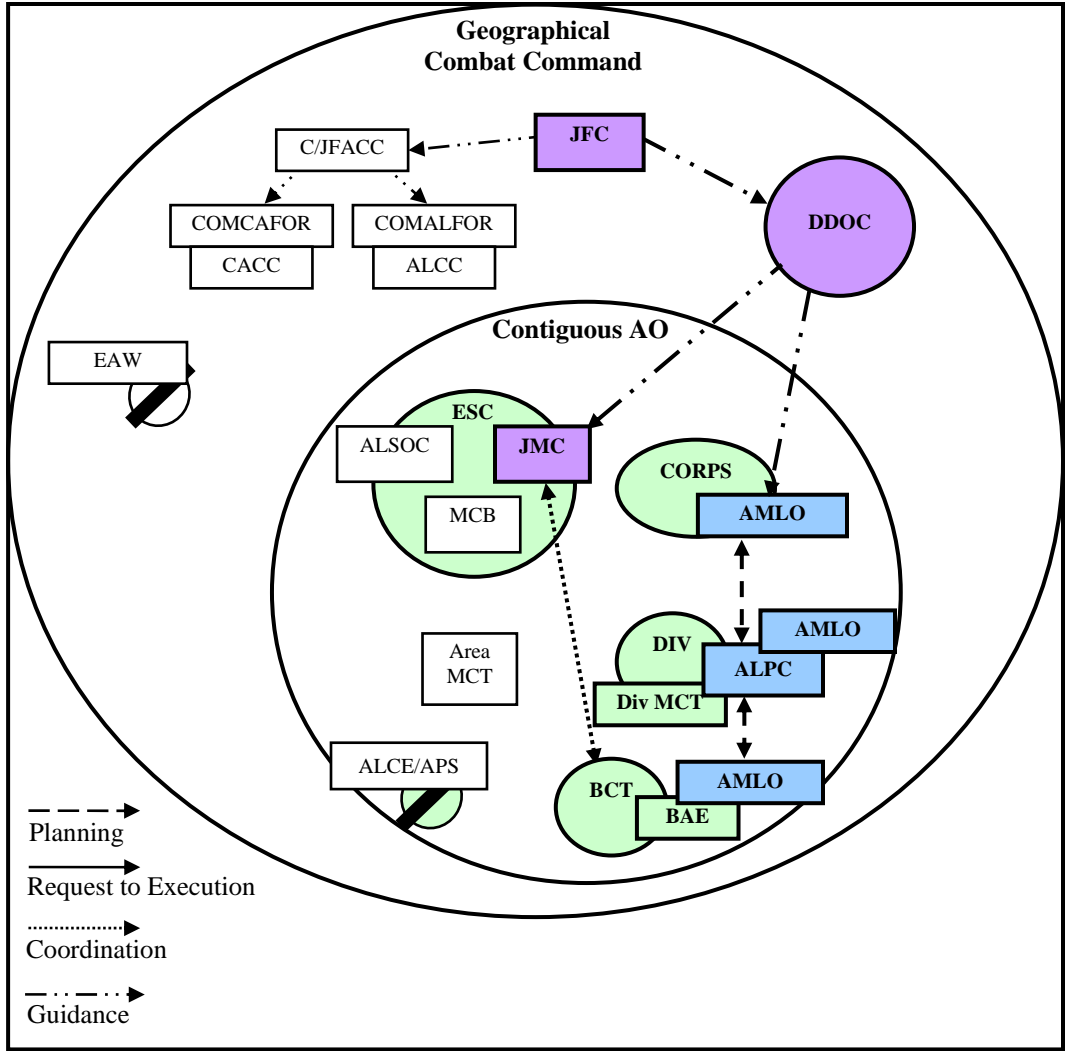


Figure 4. Recommended Intratheater Airlift C2 (Planning)

The request process, as seen in figure 5, follows Army modular logistics doctrine until it reaches the ESC. After service validation of a common-user airlift requirement, the collocated JMC would make the joint validation and modal determination. Following approval for intratheater airlift, in coordination with the DDOC, the request becomes a requirement for the ALCC.

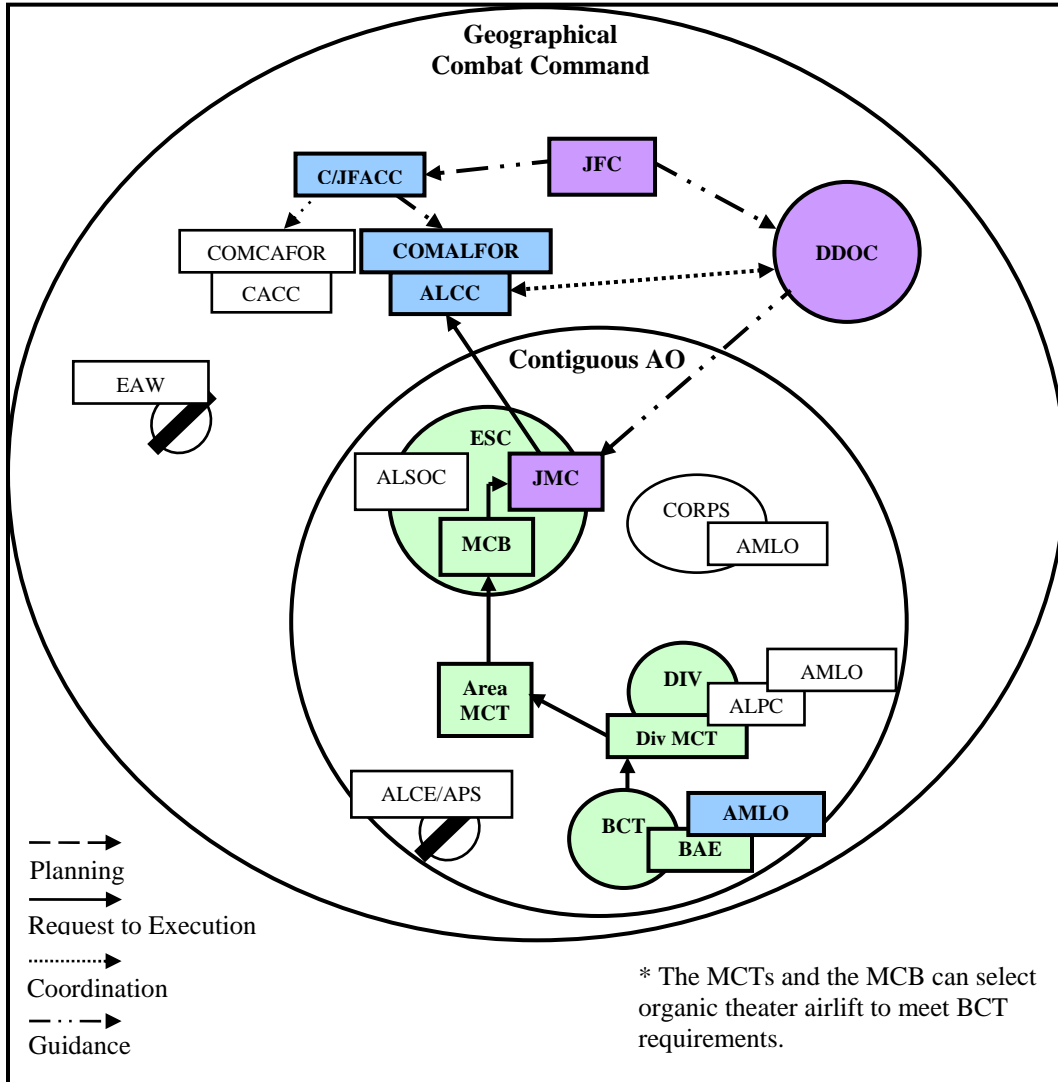


Figure 5. Recommended Intratheater Airlift C2 (Request)

During the execution phase shown in figure 6, the ALCC acting on C/JFACC guidance would schedule airlift missions based on the priority assigned by the AO specific JMC. While scheduling would be priority dependant, the ALCC's goal would be execution of all supporting airlift missions no later than forty-eight hours after receiving the requirement. As already noted, the CACC and ALCC planning process would incorporate into a single air tasking order published by the C/JFACC.

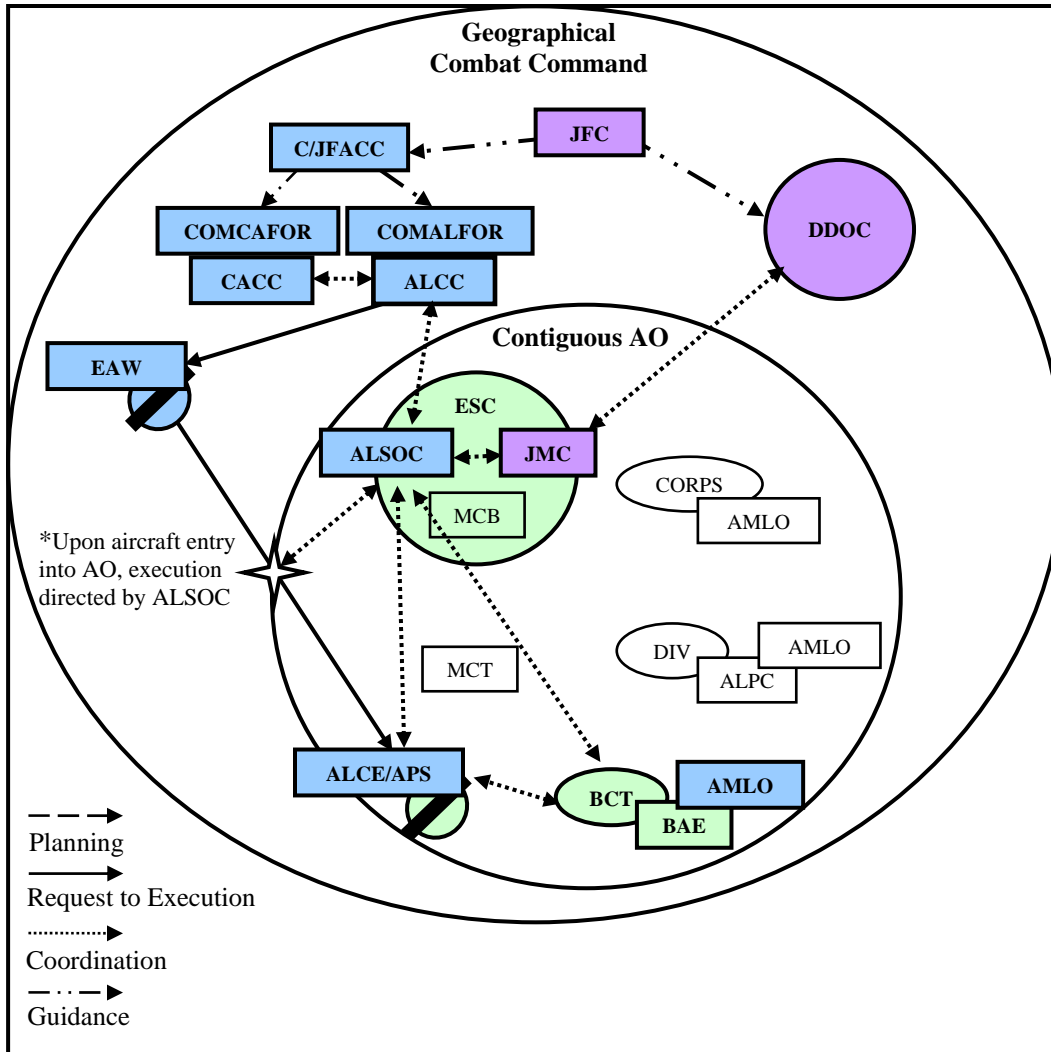


Figure 6. Recommended Intratheater Airlift C2 (Execution)

Much as in today's C2 structure, assignment of airlift missions to Expeditionary Air Wings (EAW) would be through the daily air tasking order. Airlift squadrons within these wings would plan, schedule, and execute the specific sorties as directed by the ALCC. Although data developed by the ALPC would be included during aircrew preparation, the squadron level process of receiving, planning and executing the mission would remain largely unchanged with one exception, the integration of the ALSOC. Once an airlift aircraft enters the AO's airspace, the aircrew would check in with this

centralized C2 node for their mission status. The ALSOC, in turn, becomes the focal point for any changes in mission or priority for intratheater airlift within that specific AO. Working in coordination with the user and all elements of the TDS, the ALSOC would orchestrate any changes in mission profile as well as coordinate immediate or emergency airlift requests. Due to their impact on the air tasking order, changes in profile would need COMALFOR approval. The final element for execution is the ALCE and aerial port squadron located at established or remote airfields within the AO, providing integrated C2 and logistical support from service provider to user.

These recommendations are counter to current proposals in joint C2 structure, specifically those presented by RAND Corporation in recent studies. These studies consider organizational consolidation and “reach-back” as means to reduce the deployed force requirements. However, as proven in Burma and Vietnam, physically increasing the number of C2 personnel at the tactical level significantly improves the effectiveness of intratheater airlift. There are two likely reasons why this approach has been discouraged: manpower requirements and belief in technological versus physical presence.

Increases in personnel would be four-fold. First, by moving the JMC to contiguous AOs there would be a marginal increase in joint slots. Second, dividing the AOC would require a revision of current manning documents but not necessarily more personnel. Third, the Air Expeditionary Force deployment model, taking specialists from around the Air Force during contingency operations, could meet ALPC requirements. Finally, the largest manpower draw would come from the rated airlift community to bolster AMLO numbers at the corps, division and BCT levels. Despite these four specific areas, the overall increase in intratheater airlift C2 manning would be minimal.

Technology alone is often perceived as the key to creating a smaller footprint for expeditionary operations, which is valid to a point. Advances in communications and data transmission have enabled the rapid flow of information, resulting in organizational consolidation at the operational level. However, as noted by the TALO experience of Vietnam, effective and efficient C2 cannot be disassociated from tactical realities. Air mobility experts embedded with forward forces can accurately connect the needs of the ground commander to the airlift capabilities available.

The recommendations presented provide a framework for change. The benefits of improved airlift C2 must be weighed against acceptable costs in manpower and resources. Additionally, to implement this model a host of details would need to be addressed. These include the incorporation of intertheater airlift operations like direct delivery, refined operational and administrative control relationships both deployed and in garrison, as well as the incorporation of aeromedical evacuation functions. Common during organizational change, there will be second and third order effects that this study has not identified. Nevertheless, the ideas presented here, supported by historical evidence, provide a way forward.

Recommendations for Further Study

During research and analysis, three areas for further study became apparent: the development of joint measurements of effect and performance for intratheater airlift; interoperable fixed- and rotary-wing airlift operations; and changes to the Army's modular logistics. The first area concerns joint agreement on what intratheater airlift should focus on, which this thesis partially addresses, and the means to measure its performance. Current doctrine is divergent and defines neither. The lack of integrated

fixed- and rotary-wing airlift operations is another issue, as impacted by the McConnell-Johnson agreement in 1966. Unfortunately, like measurements of effectiveness and performance, this problem of integration is neither addressed in doctrine nor supported by either service's culture. While the focus of this study is on Joint and Air Force functions, streamlining the validation process currently used by the modular Army would significantly decrease the time needed to identify joint movement requirements. Further research in any of these areas would expand joint perspectives and should focus on attaining interdependent solutions supporting the warfighter, not necessarily the concepts of integration and interoperability proposed by this study.

Conclusion

The current theater C2 system is neither effective nor efficient in applying the inherent advantages of airlift. Through modularity, the Army seeks a light mobile force that can fight and win across the full spectrum of land-based operations. Based on the need for flexible and responsive power projection, effective intratheater airlift is a critical aspect in Army transformation. Unfortunately, Joint and Air Force doctrine does not address these needs. Part of the problem is the lack of joint integration and interoperability inherent in today's service-centric approach to doctrine. As seen in recent operations, neither the Army nor the Air Force agrees on the roles and responsibilities of intratheater airlift supporting nonlinear operations within a contiguous AO. Furthermore, the tactically minded Soldier and the operationally focused Airman see airlift from their own service perspectives. Where one seeks effectiveness at the cost of efficiency, the other believes that efficient operations define effectiveness.

By analyzing current Joint, Army, and Air Force doctrine, the intratheater airlift needs of modularity become apparent. Whether it is interoperability to support maneuver, scheduling flexibility, defined roles for liaison elements, the allocation of direct support, or increased understanding of modular logistics on part of the joint community, future operations will require an integrated theater airlift effort. Providing an effective and acceptably efficient C2 structure to meet these needs is the focus of this study.

Divergent attitudes regarding airlift are not new. In Burma, the USAAF in the north conducted a centralized, but localized, air supply effort to great effect while the British, to the south, used airlift in a decentralized and haphazard manner. Although both were eventually successful, largely through the hard work of Airmen and Soldiers alike, effects were limited by their inherent inefficiencies. Furthermore, in an age of ever-tightening military budgets and congressional demands for cost-effective operations, overcoming inefficiency through the overwhelming resources seen in World War II is no longer a viable option.

Despite the bitter interservice rivalries that punctuated the 1950s and 1960s, the tactical airlift effort in Vietnam was a marked change from the organizational environment of Burma two decades earlier. Although the Army and Air Force still had conflicting views on how best to apply theater airlift in a war characterized by airmobile operations, both formed an effective and acceptably efficient tactical airlift system. Resulting in the CSAS, by 1968 the mobility air war of Vietnam proved an unparalleled success. The issue of direct and general support to ground commanders was adequately addressed, although unintentionally, and elements of theater airlift C2 were effectively integrated at the tactical level. While the intratheater airlift system of 1968 was not as

efficient as the one seen today in the USCENTCOM Theater, it was effective without overly stressing the resources available.

The lessons from both case studies provide valuable insight, from which this study has gleaned several requirements for intratheater airlift that balance effective operations with the efficiency needed to support a system. By comparing the needs of the modular force to the requirements of flexible support, centralized control, responsiveness, detailed air-ground coordination, balance, and priorities responsive to ground commander needs proven in the mountains of Burma and the jungles of Vietnam, a new approach to theater airlift C2 is possible.

The recommended changes offered in this study attempt to balance effectiveness with efficiency. Based on the historical context that mobility and combat air functions are distinct, the revised model for intratheater C2 supports modularity while maintaining the efficiency needed to maximize what has become a critical resource. By restructuring elements of the TDS, such as the JMC, accelerated joint validation is possible. Greater tactical connectivity of liaison and planning elements embedded in ground component units increases the effectiveness of airlift operations. Restructuring the air components chief operational center in theater, the AOC, in combination with decentralized execution enhances airlift efficiency. Finally, by pushing elements of theater airlift C2 to tactical location throughout a joint theater of operations, the airlift system can directly connect with the tactical user. All of this does come at a price, specifically in resources and manpower. However, when compared to the consequences of failed airlift operations in which ground lines of communication are either threatened or untenable, the cost is relatively minor.

The inherent capabilities of intratheater airlift, whether it is combat employment or passenger and cargo movements, are a critical capability in joint operations. Faced with an uncertain future of persistent conflict in nonlinear environments, Army modularity requires flexible and responsive support to meet the challenges ahead. Airpower, specifically intratheater airlift, can deliver. Based on historical pretexts, the way forward is one of joint integration and interoperability with the promise of attaining interdependence. Any debate over which service or domain is decisive in combat is ultimately moot. Service-centric approaches to warfare have proven wasteful, in both resources and lives. Only as a joint team can we fight and win our nation's wars and maintain the promise of peace for coming generations.

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