

DIVERGENT PATHS:
THE CENTRALIZATION OF AIRLIFT COMMAND,
CONTROL, AND EXECUTION

BY

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FINALLY, MY FATHER, COL KENT BROWN, USA, RETIRED, READ A DRAFT COPY AND PROVIDED ME HIS INSIGHTS FROM AN ARMY SOLDIER'S VIEWPOINT AND WITHOUT WHOM, WELL, I WOULDN'T BE HERE.

Abstract

The Mobility Air Force is centralizing its command, control, and execution. This thesis describes how this is so, but restricts itself to the command, control, and execution of USAF airlift forces. For purposes here, centralizing is the movement toward a more centralized state. This does not necessarily mean the MAF has reached a centralized state, only that it is trending more so. The MAF is centralizing in its command because authority and responsibility over organization and resources are each consolidating under the AMC/USTRANSCOM commander. The MAF is centralizing in its control because all MAF assets fall under the control of a single commander at the theater-level or above. Furthermore, the AMC commander controls nearly 71 percent and increasing, of the military's airlift capacity. The MAF is centralizing in execution by demonstrating an increasing trend away from decentralized execution, currently exhibiting four of five doctrinal criteria indicative of centralizing execution, and may realize the fifth as the Integrated Flight Management program matures. This centralization overlooks the intent of the Goldwater-Nichols Act, weakens theater unity of command, and diverges from DOD Transformation initiatives. In light of this, the MAF should conduct an extensive reevaluation of its current command, control, and execution processes, methods, and organization.

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Introduction

Everyday, across the globe, USTRANSCOM provides transportation, sustainment and distribution to our nation's warfighters. USTRANSCOM fully supports and is on the leading edge of DOD transformation efforts for a seamless, wholly integrated, synchronized end-to-end deployment and distribution system under a single unified commander providing responsive, support to the warfighter throughout the continuum of peace and war. These transformational efforts are at the heart of the command's Distribution Process Owner initiatives.

--USTRANSCOM Website

The Mobility Air Force is centralizing across its command, its control, and its execution functions. This creates vulnerabilities and is divergent from both the Goldwater-Nichols Act of 1986 and current DOD transformation. The centralization of Mobility Air Force (MAF) command and control nodes creates vulnerability to both kinetic and non-kinetic attack. Further, the 1986 Goldwater-Nichols Act sought to separate train-organize-equip and operational functions, yet the character of MAF command centralization appears to ignore this. MAF control centralization may generate problematic friction between MAF and theater commanders. Execution centralization may produce difficulties interfacing with other transformed DOD agencies and slows the MAF ability to make decisions. In sum, MAF centralization overlooks the intent of the Goldwater-Nichols Act, weakens theater unity of command, and diverges from DOD Transformation. This paper is about US Air Force airlift command and control, which means there are plenty of terms throughout the work unique to the community.

The scope of this work is limited and a few terms that need clarification. This thesis addresses United States Mobility Air Force command, control, and execution of common-use airlift mission aircraft and aircrews.¹ This includes airlift organizations and aircraft belonging to Air Mobility Command (AMC), United States Air Forces in Europe (USAFE), the Pacific Air Forces (PACAF), or those deployed in support of the current operations in Central Command (CENTCOM) and European Command (EUCOM). Although this work references Air National Guard (ANG) and Air Force Reserve (AFRC) aircraft and aircrews, they are not the focus of this

¹ Although the term “mobility” normally includes both tanker and airlift missions, this thesis uses the term “mobility” to mean airlift missions only. Further, although the KC-10 is a dual-role aircraft capable of both airlift and tanker missions, it is not included explicitly.

research. This research does not include Air Force Special Operations Command (AFSOC) or any other Major Air Command (MAJCOM) airlift aircraft in the term Mobility Air Force. As with any work, the definitions of key ideas and concepts are essential to lay a foundation.

The terms centralizing command, centralizing control, and centralizing execution are crucial to understand this thesis. These are propositions. Table 1 contains these propositions. They form the standard to evaluate the evidence presented in following chapters. Doctrine forms their foundations.

Since doctrine defines command, control, and centralized control, the propositions for centralizing command and centralizing control are straightforward extractions from doctrinal definitions. By mixing a dictionary definition of centralizing and the doctrinal definition of command, the following definition for MAF command centralization results: *MAF centralizing command occurs as additional authority and responsibility over available resources and organizations shifts to the AMC commander.*

Doctrine defines centralized control, which permits a minor adjustment to accommodate the difference between centralized and centralizing. The resulting definition is: *MAF centralizing control occurs as additional authority and responsibility over planning, directing, and coordinating of airlift shifts to the AMC or Eighteenth Air Force commander.* However, doctrine does not define either execution or centralized execution, but it does define decentralized execution. Thus, a different approach must be used to codify that terminology..

This thesis measures centralizing execution as movement *away* from decentralized execution using five criteria. In a polar construct, centralized execution occurs whenever decentralized execution does not and vice versa. The author rejects this concept as too restrictive since it rules out the possibility of something between centralized and decentralized execution. The final chapter of this thesis will further address this possibility. However, doctrine contains many passages defining and describing decentralized execution with more specificity. These passages generate five criteria one can use to indicate centralizing execution via a move away from decentralized execution. According to joint doctrine, general staffs “assist their commanders in planning, coordinating, and supervising operations.”² From a standpoint of decentralized execution, it does not matter too much if the general or his staff is the one who over-controls. Either one violates decentralized execution. As such, one can add the clause “or his staff” as appropriate when doctrine mentions “commanders.”

² Joint Publication (JP) 1-02. *Department of Defense Dictionary of Military and Associated Terms*, 12 April 2001. (As Amended Through 30 November 2004) as presented at <http://www.dtic.mil/doctrine/jel/doddict/index.html>

MAF movement away from decentralized execution occurs in varying degrees as one or all of the following conditions become evident: (a) when superior commanders or their staffs retain execution authority; (b) when aircrews do not have the authority to exploit fleeting opportunity because they must obtain a superior commander's approval to act; (c) when higher-level commanders, or their staffs, direct the decisions of front-line commanders; (d) when aircrew do not accomplish the mission's detailed planning; and (e) when senior-commanders, or their staffs, personally direct tactical operations.

Table 1 - Thesis Propositions

Term	Definition	Source
Centralized	Concentrate control of an activity or organization under a single authority	Oxford American Dictionary
Centralizing	Centralizing is the movement toward a more centralized state or the movement away from a decentralized one	Inflected form of centralization: "the act or fact of centralizing" which is "to bring under one control" --Random House Unabridged Dictionary
Proposition 1 Centralizing Command	MAF centralizing command occurs as additional authority and responsibility over available resources and organizations shifts to the AMC commander.	Definition of centralizing above in concert with JP 1-02 definition of command: "The authority that a commander in the Armed Forces lawfully exercises over subordinates by virtue of rank or assignment. Command includes the authority and responsibility for effectively using available resources and for planning the employment of, organizing, directing, coordinating, and controlling military forces for the accomplishment of assigned missions."
Proposition 2 Centralizing Control	MAF centralizing control occurs as additional authority and responsibility over planning, directing, and coordinating of airlift shifts to the AMC or 18th AF commander.	JP 1-02 Definition of centralized control: "Placing within one commander the responsibility and authority for planning, directing, and coordinating a military operation or group/category of operations." (AFDD 1-2 add: by an airmen at the theater level)
Proposition 3 Centralizing Execution	Centralizing execution is movement away from decentralized execution using five criteria below	Derivative of "Centralizing" above. AFDD 1 p29-30 Warning - "Modern communications technology provides a temptation towards increasingly centralized execution of air and space power. Although several recent operations have employed some degrees of centralized execution, such command arrangements will not stand up in a fully stressed, dynamic combat environment, and as such should not become the norm for all air operations. Despite impressive gains in data exploitation and automated decision aids, a single person cannot achieve and maintain detailed situational awareness when fighting a conflict involving many simultaneous engagements taking place throughout a large area. A high level of centralized execution results in a rigid campaign unresponsive to local conditions and lacking in tactical flexibility."
criteria 3a	Superior commanders or their staffs retain execution authority	Opposite of decentralized execution definition JP 1-02: "Delegation of execution authority to subordinate commanders."
criteria 3b	Aircrews do not have the authority to exploit fleeting opportunity because subordinates must obtain superior commander's approval to act	Multiple Passages: AFDD 2-6.1 p8: "Decentralized execution ensures those who are responsible for executing the airlift mission actually accomplish the detailed planning and have the requisite authority to exploit fleeting opportunities as required to successfully meet mission objectives." AFDD 2-8 p7: "When the vertical flow dominates, subordinate commanders and operators may suffer as the initiative is passed to senior commanders...Senior commanders making decisions about operations, combined with subordinates free to exercise initiative in executing those decisions, make up the heart of C2—centralized control and decentralized execution." Oxford American definition of initiative: "the ability to assess and initiate things independently." Webster's: "at one's own discretion : independently of outside influence or control."
criteria 3c	Higher-level commanders, or their staffs, direct front-line commander decisions	AFDD 1 p30: "...execution should be decentralized within a command and control architecture that exploits the ability of strike package leaders, air battle managers, forward air controllers, and other front-line commanders to make on-scene decisions during complex, rapidly unfolding operations."
criteria 3d	Aircrews do not accomplish the mission's detailed planning	AFDD 2-6.1 p8 description: "Decentralized execution ensures those who are responsible for executing the airlift mission actually accomplish the detailed planning..."
criteria 3e	Senior-commanders, or their staffs, personally direct tactical operations	AFDD 2-8 p4: "Some commanders may fulfill their responsibilities by personally directing units to engage in missions or tasks. However, as the breadth of command expands to include the full spectrum of operations, aerospace commanders are normally precluded from doing so. Thus, C2 operations normally include the assignment of responsibilities and the delegation of authorities between superior and subordinate commanders. A reluctance to delegate decisions to subordinate commanders slows down C2 operations and takes away the subordinate's initiative. Senior commanders should provide the desired end-state, desired effects, rules of engagement, and required feedback on the progress of the operation without actually directing the tactical operations."

General Patton effectively captured these execution criteria in his famous advice, "Never tell people how to do things. Tell them what to do and they will surprise you with their

ingenuity.”³ The following chapters will measure evidence against these three definitions of centralizing command, control, and execution. Demonstrating this requires significant evidence, which this thesis provides.

Several evidentiary resources support this study. Joint and Air Force doctrine represent historically proven best military practices and will be used to ground concepts and criticisms throughout this work.⁴ This thesis also derives evidence from White House and Congressional records, reports and testimony, National Strategy and DOD transformation documents, network-centric warfare theory, airlift organization, doctrine, regulations, instructions, initiatives, programs, actions, culture, interviews, e-mails, and the author’s experience. Air Mobility instructions, especially those regarding the operation of its aircraft, will be used to show current policy, control structures, and defined limits. A few programs and initiatives such as: Integrated Flight Management (IFM) program, Aircrew Aircraft Training and Scheduling (AATS) program, Mobility-21 (M21), and its “warrior culture” initiative are evaluated to demonstrate current thinking and near-term plans for the MAF. Evidence evaluated in this thesis comes from many sources. Among the evidence presented are significant events from the developmental history of both AMC and the United States Transportation Command (USTRANSCOM). Recent organizational changes within the MAF community, such as the consolidation of Eighteenth Air Force and the creation of the Distribution and Deployment Operations Center (DDOC) are also evaluated. This work further examines evidence derived from the interview of numerous leaders, staff workers, and line flyers both inside and outside the MAF community. Finally, this thesis cites congressional testimony by the Air Force secretary and the commander of USTRANSCOM, in addition to legislative reports generated during the period leading up to the passage of the Goldwater-Nichols Act. In summary, this work uses various and numerous sources of evidence.

This evidence, the conclusions drawn from it, and recommendations will be presented using the following structure: chapter 1, “Centralizing Command,” evaluates organizational structures, command relationships, and defined roles and missions to demonstrate that MAF command is centralizing. Chapter 2, “Centralizing Control,” discusses MAF’s control centers and the extent to which airlift control is centralizing. Chapter 3, “Centralizing Execution,” presents evidence from programs, initiatives, previous regulations, Air Force instructions, and doctrine to demonstrate both prescribed and dynamic execution centralization in the MAF. Chapter 4, “Synthesis of Divergence,” rebuilds the thesis summarizing each of the evidentiary chapter’s conclusions. The work then transitions to implications, which include divergence from

³ <http://www.military-quotes.com/Patton.htm>

⁴ Air Force Doctrine Document (AFDD) 1. *Air Force Basic Doctrine*, 17 November 2004, 3.

DOD transformation and the intent of the Goldwater-Nichols Act. Chapter 5, “Rebuilding the Machine,” presents the author’s recommendations regarding a reevaluation of the current MAF organization and processes.

In a broad and general sense, there are two primary purposes for a military organization. One is to prepare for war; the other is to wage war. For very specific purposes, both the national leadership and the legislature mandated the military separate these functions to prevent undue influence of one to rob from the conduct of the other. Such is not the case in today’s Mobility Air Force. This is the subject of the next chapter.

Chapter 1

Centralizing Command

As the air component of the U.S. Transportation Command, AMC serves many customers and, as the single manager for air mobility, AMC's customers have only one number to call for Global Reach.

--HQ AMC Website

This chapter examines how command authority and responsibility over Mobility Air Force (MAF) organizations and resources is increasingly centralizing. This centralization of command started with both USTRANSCOM's and AMC's origins and continues today with the expansion of USTRANSCOM responsibilities into a geographic combatant commander's area. This chapter also describes the merged train, organize, equip, and operational warfighting functions at AMC. It begins with a brief history of USTRANSCOM and its recent designation as global distribution process owner (DPO). Next, the chapter briefly covers AMC's history and then delves into the consolidation of the Twenty-first and Fifteenth Air Forces into a single numbered Air Force geographically collocated with Air Mobility Command and USTRANSCOM. It then describes the centralized nature of AMC staff functions, the Transportation Working Capital Fund (TWCF), and finally the dual-hatted command of AMC and USTRANSCOM. The USTRANSCOM commander is responsible for global military transportation in support of US forces.

USTRANSCOM is a functional combatant command in charge of global transportation using DOD and DOD-contracted assets. The 1986 Goldwater-Nichols Department of Defense Reorganization Act created USTRANSCOM and the current combatant and functional command structure. One of the things it did was to repeal the prohibition on consolidating the functions of the military transport commands.¹ This paved the way for USTRANSCOM to stand up in 1987, which the act assigned the wartime responsibility of providing global mobility--primarily to the

¹ Public Law 99-433. *Goldwater-Nichols Department Of Defense Reorganization Act of 1986*. 1 October 1986.

DOD--via air, land, and sea transportation. This realigned previously segregated service transportation commands under one, but it took a war to truly fuse these components.

Before Desert Storm, USTRANSCOM's peacetime authority was limited. When it stood up in 1987, the individual services viewed USTRANSCOM's authority as applicable only during times of war.² During peacetime, operations continued much as they had before Goldwater-Nichols created USTRANSCOM. This changed in 1991 with the execution of Operation Desert Shield and the immediate follow-on of Operation Desert Storm.

The difficulties USTRANSCOM faced during the war led the secretary of defense to release a policy expanding the role of USTRANSCOM, giving it global responsibility and authority for DOD transportation during wartime and peacetime.³ This consolidated combatant command authority for most DOD transportation assets, including the MAF, under the USTRANSCOM commander.

USTRANSCOM's current component organizations are the Air Force's Air Mobility Command, the Navy's Military Sealift Command, and the Army's Surface Deployment and Distribution Command. USTRANSCOM's mission is to "provide air, land and sea transportation for the Department of Defense, both in time of peace and time of war."⁴ Recent actions have further centralized command of the global distribution system.

Two recent changes have dramatically centralized USTRANSCOM influence. The first was the designation of USTRANSCOM as the DOD distribution process owner (DPO). The second flowed from the first, which was USTRANSCOM's creation of the CENTCOM Deployment and Distribution Operations Center (CDDOC), which the Pacific, European, Korea, and Southern Commands rapidly copied. These changes have centralized USTRANSCOM influence by expanding its traditional "fort to port" role to "fort to foxhole" in the aforementioned commands. The following pages describe these two changes in more detail.

The first major change occurred in September 2003 when the secretary of defense designated USTRANSCOM as the Department of Defense DPO.⁵ In plain English, this meant that USTRANSCOM became globally responsible for the movement of all personnel and materiel for the DOD anywhere on the globe, starting at the factory and ending at the foxhole. More than simply transporting goods; these actions include all DOD logistics activities worldwide. For the first time ever, all DOD distribution processes fell under the responsibility and command of a single organization and commander--USTRANSCOM. Since it is impossible to fight a war

² <http://www.transcom.mil/history/history.html>

³ <http://www.transcom.mil/history/history.html>

⁴ <http://www.transcom.mil/organization.cfm>

⁵ <http://www.transcom.mil/organization.cfm>

without moving people and material both inside and outside the theater of operations, this placed USTRANSCOM in a unique position crucial to all geographic combatant commanders. Nevertheless, the secretary made this decision for good reasons.

Before USTRANSCOM was the DPO, the global distribution process was inefficient. Each service had its own independent distribution processes to support specific needs, but these processes were not compatible with each other. General John Handy, commander USTRANSCOM, put it this way:

Prior to this designation [of distribution process owner], end-to-end distribution support to the warfighter was marked by a multitude of process and information technology challenges. Essentially, DOD distribution was a series of stove-piped processes and information systems managed by many discrete owners. Such segmentation caused inefficiencies and drove DPO designation to promote enterprise solutions.⁶

These organizational and informational interface troubles caused poor in-transit visibility, and created problematic frictions and inefficiencies. In the logistics world, “in-transit visibility” describes an ability to accurately know the location and contents of all of the cargo and passengers moving in the system.⁷ A General Accounting Office (GAO) study of Operation Iraqi Freedom (OIF) logistics concluded “there [were] substantial logistics support problems in the OIF theater.” It cited evidence detailing large numbers of pallet backlogs, a \$1.2 billion discrepancy between what was shipped and what was received in theater, millions of dollars in late fees on leased containers, cannibalization, duplication of effort, and acres of unsorted and unidentified equipment and supplies in the Kuwait theater distribution center. The report also reiterated previous reports of similar issues that occurred during Operations Desert Shield, Desert Storm, and Allied Force.⁸ The GAO and DOD each laid much of the blame for these problems on inadequate asset visibility caused by incompatible information tracking systems.⁹ In short, the theater logistics system was not using the Joint Operations Planning and Execution System (JOPES) to track cargo while USTRANSCOM was employing that program.

USTRANSCOM uses JOPES to provide in-transit visibility of cargo and passengers. This computer network system includes all mobility command and control (C2) and terminal nodes as well as many customer locations, but requires trained operators in each. These operators

⁶ Gen John W. Handy, United States Air Force, Commander, United States Transportation Command. *Testimony before the House Armed Services Committee United States House of Representatives Subcommittee on Projection Forces Regarding State of the Command*. 17 March 2004.

⁷ The community sometimes uses another term called “total asset visibility” which has a slightly different meaning, but for purposes here, one can interchange the two.

⁸ Note, the GAO, by recent legislation, is now called the Government Accountability Office. General Accounting Office (GAO) 04-305R. Report. “Preliminary Observations on Effectiveness of Logistics Activities during Operation Iraqi Freedom,” 18 December 2003, 3

⁹ GAO 04-305R, 4.

retrieve and type data into JOPES concerning every mission and every piece of cargo or passenger. In theory, this system provides total asset visibility for anyone on the network.

In-transit visibility is vital to mobility system performance. The JOPES asset visibility system facilitates better C2 by solving a basic problem: it is hard to move things in a distribution system if you do not know where they are. A recent quantitative study on the CENTCOM theater distribution system found that in-transit visibility was by far the single most important factor both in that distribution system's effectiveness and efficiency.¹⁰ A lacking of in-transit visibility makes it difficult to effectively schedule airlift, yet if there is too much to move, another problem develops.

USTRANSCOM has more lift capability than what the theater distribution system can handle.¹¹ In the past, commanders who "wanted their stuff there now" could send their cargoes to theater independent of the ability of the theater distribution system to keep pace with the incoming flow. The fact that the theater lacked visibility into USTRANSCOM's flow placed them further behind since they could not optimize the theater system by anticipating future demand. Similarly, USTRANSCOM could not properly schedule onward movement once troops reached the theater because they had little visibility or authority to synchronize the two systems. The result was that during OIF, soldiers and equipment commonly waited for a week or more in Kuwait before the theater distribution system could catch up.¹² Thus, the combination of poor theater in-transit visibility, USTRANSCOM's ability to overwhelm the theater logistics system, and inadequate synchronization created a situation that demanded a solution.

The second major change centralizing USTRANSCOM influence was the creation of the CDDOC. General Handy authorized its establishment in December 2003 and one month later it was formed.¹³ The CDDOC is collocated with the Combined Forces Land Component Commander (CFLCC) in Kuwait and absorbed the smaller Joint Movement Center, replacing it with a more robust capability. The DDOC function is "to link strategic deployment and distribution processes to operational and tactical functions to support the warfighter, thereby improving end-to-end distribution within USCENTCOM's Area of Operations (AOR)."¹⁴ Using

¹⁰ Maj Jeff Brown, "Modeling and Analysis of CENTCOM's Theater Air Distribution System" Graduate Research Project, USAF AFIT/GOS/ENS/04-02 May 2004, 162.

¹¹ Lt Col Mark Czelusta, USTRANSCOM J-3R, interviewed by author, 25 January 2005.

¹² Col (s) John Lipinski, USTRANCOM J-3R, interviewed by author, 25 January 2005.

¹³ *CENTCOM Deployment and Distribution Operations Center (CDDOC) 'Spiral 1' Report Jan-May 04*, 14 May 2004, 1 (obtained from Lt Col Mark Czelusta, USATRANSCOM J-3R).

¹⁴ Entire paragraph sourced from CDDOC Spiral 1 Report, 1.

JOPES, the DDOC does this by improving in-transit visibility, setting priorities, and directing assets in theater.¹⁵

The DDOC has directive authority of CENTCOM's intratheater airlift forces.¹⁶ Doctrinally, through the process known as change operational control or CHOP, the theater Commander of Air Forces (COMAFFOR) can gain operational control over C-130s or other assets and then delegate tactical control (TACON) to (himself) the Combined Forces Air Component Commander (CFACC) (In every example up to the present and for the foreseeable future, the COMAFFOR and CFACC have been the same individual).¹⁷ However, with directive authority, the DDOC can determine where and when airlift aircraft fly.¹⁸ This authority gives the DDOC the ability to synchronize both the intertheater and intratheater airlift system without asking for permission. This enables the DDOC to integrate the two systems seamlessly. Although the DDOC reports to the Theater Commander's J-4 (who exercises TACON over the DDOC), USTRANSCOM personnel staff it on an ad hoc basis.

The DDOC was an instant success in CENTCOM so other theaters moved to copy it.¹⁹ General Handy claims the CDDOC, "shattered the barrier between strategic and theater distribution."²⁰ Since the institution of the CDDOC, the average time passengers waited for onward movement decreased from 72 to 27 hours and the CDDOC "identified thousands of excess...air cargo pallets" using advanced computer tracking systems.²¹ Yet, "the most impressive fact is that 71% of [lower priority cargo is] now being shipped by the less-expensive surface method with the remaining 29% by air...This is almost a complete reversal of the previous method."²² Commands across the globe, including Pacific Command (PACOM), European Command (EUCOM), United States Forces Korea (USFK) and Southern Command (SOUTHCOM) have started to emulate CENTCOM's success and will have DDOC's in their areas by the summer of 2005.²³ As such, the DDOC may soon replace the Joint Movement

¹⁵ CDDOC Spiral 1 Report, 5-7.

¹⁶ CDDOC Spiral 1 Report, 7.

¹⁷ Joint Publication (JP) 3-17. *Joint Doctrine and Joint Tactics, Techniques, and Procedures for Air Mobility Operations*. 14 August 2002, III-8 through III-10.

¹⁸ CDDOC Spiral 1 Report, 5.

¹⁹ Lt Col Mark Czelusta, USTRANSCOM J-3R, interviewed by author 25 January 2005.

²⁰ *USTRANSCOM Annual Command Report 2004*, 2004, 1, On-Line, available from <http://www.transcom.mil/annualrpt/2004acr.pdf>.

²¹ CDDOC Spiral 1 Report, 7,11.

²² CDDOC Spiral 1 Report, 12.

²³ Lt Gen Duncan McNabb, Director for Logistics, Joint Staff, Washington. "Combatant Commander's Conference 2005-1: Joint Theater Logistics." 26 January 2005, Slides 2-4.

Center in joint doctrine, becoming the JDDOC.²⁴ Moreover, even though it is intended to be a theater asset, USTRANSCOM personnel will staff these organizations for the foreseeable future.

The DDOC is a de facto TRANSCOM organization because theater personnel lack JOPES expertise.²⁵ The JOPES computer system requires a moderate level of training and classified access. USTRANSCOM personnel use the system in their day-to-day jobs at their permanent duty stations. However, most theater-deployed personnel come from a variety of disciplines around the DOD on a rotational basis. Many of these people are not ideally suited to the jobs they perform in theater because they are not JOPES-trained.²⁶ This places the theater in a dilemma, which they solve by using USTRANSCOM personnel as the core of the DDOC. Thus, the theater finds it difficult to maintain a professional cadre of JOPES-trained personnel in the DDOC, yet the DDOC is a vast improvement over the old way of business.

The creation of the DDOC gives USTRANSCOM a means to assert directive authority inside the theater. The USTRANSCOM-manned CDDOC--the template for other theaters--has directive authority over intratheater airlift forces. It is in USTRANSCOM's best interest to keep the DDOC a de facto USTRANSCOM asset--assuming additional manning--because of USTRANSCOM's designation as the global distribution process owner. Consider USTRANSCOM's view of this:

Everyday, across the globe, USTRANSCOM provides transportation, sustainment and distribution to our nation's warfighters. USTRANSCOM fully supports and is on the leading edge of DOD transformation efforts for a seamless, wholly integrated, synchronized **end-to-end** deployment and distribution system **under a single unified commander** providing responsive, support to the warfighter throughout the continuum of peace and war. These transformational efforts are at the heart of the command's Distribution Process Owner initiatives.²⁷

As Distribution Process Owner we're now DOD's supply chain manager. We're responsible for the entire distribution process, **not just our old "fort-to-port" portion**. We're expanding supply chain visibility and are **crafting a true sense and-respond logistics reach all the way back to suppliers and forward to the point of the spear in combat**. (Emphasis added)²⁸

Consequently, as the global distribution process owner and now the de facto director of theater logistics, USTRANSCOM's authority and responsibility spans the entire globe, *and into the theater*, regardless of a theater or joint force commander's geographic responsibilities. Required by all theaters to support their missions, USTRANSCOM is the designated single

²⁴ Lt Gen Duncan McNabb, "Combatant Commander's Conference 2005-1: Joint Theater Logistics," Slide 4.

²⁵ Lt Col Mark Czelusta, USTRANSCOM J-3R, interviewed by author 25 January 2005.

²⁶ CDDOC Spiral 1 Report, 7-8.

²⁷ <http://www.transcom.mil/organization.cfm>

²⁸ <http://www.transcom.mil/organization.cfm>

manager for strategic air, land, and sea movement. The 2003 designation of USTRANSCOM as the DPO from factory to foxhole centralized the command of transportation management to a degree never seen before. The theater commander used to be solely responsible for theater logistics, but now USATRANSCOM has an increasingly significant responsibility inside the theater vis-à-vis its DPO designation and the DDOC. Thus, what was previously decentralized under multiple unified commands is now centralizing under the purview of one command-- USTRANSCOM. The air component of USTRANSCOM, Air Mobility Command, is yet another centralizing organization.

AMC has dual roles. It serves as Major Air Command (MAJCOM) under the Headquarters Air Force and the Air Component under USTRANSCOM. AMC is collocated with USTRANSCOM at Scott AFB, Illinois. Air Mobility Command has an important mission:

To provide airlift, air refueling, special air mission, and aeromedical evacuation for U.S. forces. AMC also supplies forces to theater commands to support wartime tasking. As the Air Force component of the United States Transportation Command, AMC is the single manager for air mobility.²⁹

AMC formed in June 1992, combining airlift capability from Military Airlift Command (MAC) and most of the Air Force's tanker fleet from the deactivating Strategic Air Command.³⁰ In 1997, the command's resources and responsibilities further increased when the majority of the Air Force C-130 fleet left Air Combat Command and realigned under AMC.³¹ As a MAJCOM, AMC has important responsibilities preparing its forces for war.

Air Mobility Command trains, organizes, and equips US Air Force airlift wings. The Goldwater-Nichols Act of 1986 amended Title 10 of the United States Code, the law that assigns the responsibility to organize forces, train them for their missions, and equip them to perform to each branch of the DOD.³² Headquarters Air Force assumes this mission for the Air Force and then delegates it out to its subordinate MAJCOMs. In the case of airlift, AMC serves this

²⁹ <http://public.amc.af.mil/>

³⁰ <http://public.amc.af.mil/Library/Factsheets/factsheets.htm>

³¹ Robert deV. Brunkow and Kathryn A. Wilcoxson, "Poised for the New Millennium: The Global Reach of the Air Mobility Command--A Chronology" (Scott AFB: AMC Office of History 2001), 23: They cite [94] -AMC SO GAXP-11 (U), 31 Mar 97; AMC SOs AXP-4 through AXP-16 (U), 1 Apr 97; AMC SOs AXP-18 through AXP-36 (U), 9 May 97. Two Guard units transferred on 17 December 1997; AMC SO AXP-2 (U), 12 Dec 97. [95] USAF PAD 97-2 (U), "Reorganization of CONUS C-130 Airlift Forces from ACC to AMC and AETC," 13 Jan 97. [96] Ibid; "White Paper: A Review of Today's Airlift System," attachment to Report (U), AMC/XDP, "Executive Summary AMC/CC Trip to Corona: Strategic/Tactical Mobility Seam," ca Jun 96; Article (U), "Air Force Realigns Airlift," Air Force News, 23 Oct 96. Brig Gen Duncan J. McNabb, Commander TACC, quoted by John A. Tirpak "Local Lift" *Air Force Magazine* Vol 81 No 9 September 1998 available at http://www.afa.org/magazine/Sept1998/0998lift_print.html

³² US Law TITLE 10 > Subtitle D > PART I > CHAPTER 803 > § 8013. Secretary of the Air Force (edited to change format) obtained from http://straylight.law.cornell.edu/uscode/html/uscode10/usc_sec_10_00008013----000-.html.

function for all airlift assets and organizations permanently based within the United States. Air Mobility Command's responsibilities include at least 58 Airlift Wings/Groups of CONUS-based active, guard, and reserve units flying C-5, C-17, C-21, C-37, C-130, and C-141 aircraft; in addition to other units. There are two other Airlift Wings in PACAF and another one under the purview of USAFE.³³ These numbers do not count tanker wings or groups. Since Air Mobility Command owns the preponderance of air mobility assets, it takes on additional responsibilities.

Air Mobility Command is the designated lead command for the mobility air forces.³⁴ In this capacity, AMC charts the course for all mobility component forces worldwide including the tanker and airlift units in USAFE and PACAF. Air Mobility Command establishes the organizational structure for mobility units; leads the coordination of all joint and Air Force mobility doctrine; writes operating, training, and tactics regulations; and interfaces with Headquarters Air Force on the behalf of all mobility air forces for budgeting and programming decisions.³⁵ AMC has only a single numbered active Air Force, the Eighteenth Air Force.

Commanded by a lieutenant general, Eighteenth Air Force is AMC's warfighting component. Its mission is to "command assigned forces, present air mobility forces (airlift and air refueling) and support forces to the combatant commanders through U.S. Transportation Command, and act as the Commander, Air Force Forces (COMAFFOR), and Joint Force Air Component Commander (JFACC), when so designated."³⁶ "All AMC wings and groups based in the continental United States report to the 18th Air Force, as well as two expeditionary mobility task forces, the 15th EMTF [Expeditionary Mobility Task Force] at Travis AFB, Calif., and the 21st EMTF at McGuire AFB, N.J., and their subordinate air mobility operations groups."³⁷ In its operational role, Eighteenth Air Force tasks and executes USTRANSCOM air mobility missions.

The creation of the Eighteenth Air Force geographically consolidated MAF command structures at Scott AFB. Until recently, AMC had two numbered Air Forces--one on each coast. McGuire AFB was home to Air Mobility Command's Twenty-first Air Force and Travis AFB was home to Air Mobility Command's Fifteenth Air Force. In 2003, both of these units converted into Expeditionary Mobility Task Forces (EMTF) and consolidated their numbered air force functions into Eighteenth Air Force. Eighteenth Air Force is located across the street from

³³ Airlift Wing / Airlift Group Counts from <http://www.globalsecurity.org>.

³⁴ Air Force Policy Directive (AFPD) 11-2. *Aircraft Rules and Procedures*, 1 April 1997, 2; Air Force Doctrine Document (AFDD) 2-6. *Air Mobility Operations*, 25 June 1999, 18.

³⁵ Air Force Policy Directive (AFPD) 10-21. *Air Mobility Lead Command Roles and Responsibilities*, 1 May 1998, 1-2.

³⁶ Headquarters Air Mobility Command (HQ AMC) 18th Air Force Fact Sheet available at <http://public.amc.af.mil/Library/Factsheets/18af.htm>.

³⁷ HQ AMC 18th Air Force Fact Sheet.

Air Mobility Command Headquarters at Scott, AFB. This consolidation allegedly returned the numbered air force to its warfighting responsibilities.

The consolidation of two numbered air forces into one supposedly *separated* AMC's training, organizing, and equipping from Eighteenth Air Force's warfighting responsibilities by realigning the Tanker Airlift Control Center (TACC) under Eighteenth Air Force. The TACC is the MAF's air operations center (AOC) controlling about 9,000 missions per month.³⁸ Using the TACC, the Eighteenth Air Force commander exercises operational control over all USTRANSCOM airlift and tanker missions. General Handy describes the perceived advantages of this consolidation:

Reorganization within AMC in 2003 returned the command to its historical roots of executing global mobility operations and eliminated functions redundant to the AMC staff...Simultaneously, AMC reactivated the 18th Air Force at Scott AFB to **create a single commander charged with the tasking and execution of all air mobility missions**. The 18th Air Force Commander maintains operational control of AMC's Tanker Airlift Control Center and all AMC airlift wings and groups within CONUS, Europe, and the Pacific, **freeing the AMC Headquarters staff to focus on training, organizing, and equipping the air mobility force**. Similar to the USTRANSCOM and SDDC changes, AMC's restructuring optimizes the organization to support worldwide deployment and distribution operations. (Emphasis added)³⁹

Thus, the purpose of this restructuring was to remove redundancies, return the numbered air force to a warfighting footing, and free AMC to focus on its train, organize, and equip functions.

However, underneath this new and seemingly distinct USTRANSCOM-AMC structure lies a conflated organization of entwined functions and components. The next few pages will demonstrate this starting with the mixture of numbered air force warfighting functions and AMC's train, organize, and equip functions. Expanding on this is the fusion of funding resources between USTRANSCOM and Air Mobility Command, and the chapter finishes with an overview of the dual-hatted command structure of USTRANSCOM and Air Mobility Command.

³⁸ Lt Col Bruce Card, Air Mobility Command A38IP Briefing "Integrated Flight Management: Building to the Vision," slide 3.

³⁹ Testimony of General John W. Handy United States Air Force Commander United States Transportation Command before the House Armed Services Committee United States House Of Representatives Subcommittee on projection forces regarding state of the command, March 17, 2004.

18th Air Force Organization Chart

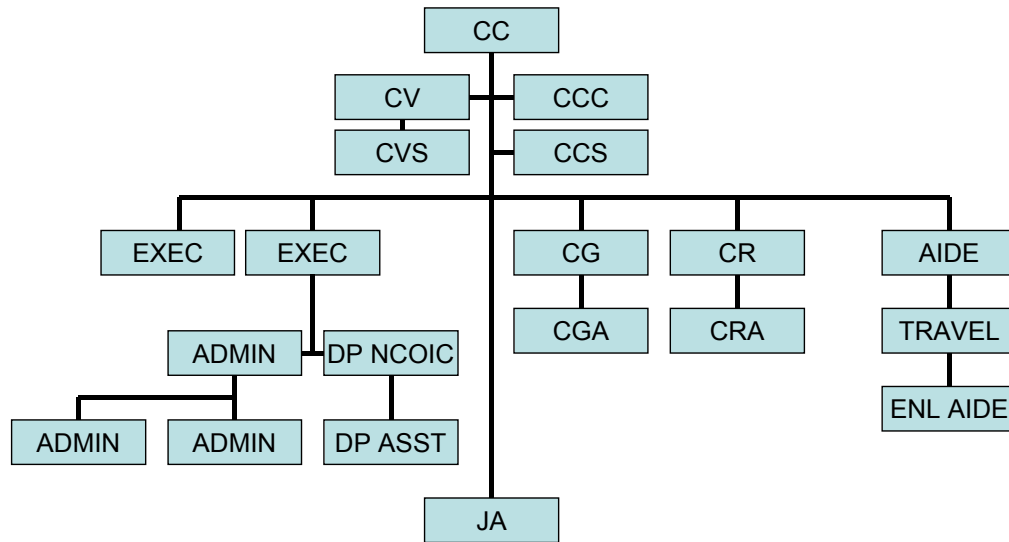


Figure 1 - Eighteenth Air Force Staff
SOURCE: 18AF/CCE

The AMC staff also serves as the Eighteenth Air Force staff, which consolidates multiple responsibilities. General Handy “made it crystal clear that the HQ AMC staff was to serve double duty as the 18th Air Force staff.”⁴⁰ Since the Eighteenth is right across the street from Air Mobility Command, creating yet another staff would have caused inefficiencies and redundancies.⁴¹ When the dust settled, Air Mobility Command’s staff retained many of the staff functions the Eighteenth Air Force needs as the airlift warfighting organization, leaving the Eighteenth Air Force commander a small support staff instead (Figure 1). The Eighteenth Air Force staff has people like the vice commander (CV), executive officer (EXEC), legal (JA), personnel (DP), commander’s assistants (AIDE and Enlisted AIDE) secretaries (CCS and CVS). This decision blurred the Eighteenth Air Force Commander’s operational responsibilities with AMC’s organizing, training, and equipping functions.

Eighteenth Air Force relies on its TACC staff and the AMC staff to perform its operational mission. Four specific examples serve to illustrate this point. First, there are at least four offices--two in AMC and two in the TACC, and *none at Eighteenth Air Force*--that perform contingency planning and a single intelligence chief, the AMC A-2, serves three staffs. The first office is the contingency operations cell inside the TACC. It “develop[s] the initial CONOPS

⁴⁰ Lt Col David Gillespie, HQ AMC Deputy Director of Intelligence and Commander, AMC Air Intelligence Squadron, interviewed by author 2 April 2005.

⁴¹ Lt Col Erick D. McCroskey, AMC/A59 (Studies and Analysis), interviewed by author 24 January 2005. Further edited by Lt Col McCroskey in an e-mail to the author 18 May 2005.

[concept of operations] and aircrew brochure for the operation and work[s] with AMC staff functionals to develop the AMC OPORD [operations order] for distribution.”⁴² A second office, AMC’s A33O division, writes the Aircrew Brochure which currently supports Operations Noble Eagle, Enduring Freedom, and Iraqi Freedom.⁴³ This document and its classified counterpart, the Air Mobility Command OPORD, constitute the “AMC SPINS” (Special Instructions) that spell out the procedures for aircrews under the operational control of Eighteenth Air Force to use in support of current contingencies. The AMC vice commander has the third office: a team called the Crisis Support Staff (CSS). This team performs contingency planning and makes authoritative decisions during the process.

The CSS is an AMC/CV organization formed to work operational issues for a contingency or humanitarian operation. They provide a cross functional look by each AMC directorate to solve operational issues and form a consistent policy to keep air mobility functions operating smoothly during active air operations. Each directorate or special staff agency supports the crisis action planning process with highly qualified representatives who are empowered to make decisions within their functional area.⁴⁴

Last, the AMC/A39 division does airlift contingency planning for airdrop, combat airland, and special operations support missions under the operational control of Eighteenth Air Force. For example, the AMC/A39 division participated in planning the Afghanistan humanitarian airdrops during Operation Enduring Freedom and the Bashur paratroop airdrop during Operation Iraqi Freedom.⁴⁵ Finally, both the AMC Director of Intelligence (A2) and his deputy are triple-hatted. Their organization is charged to (1) train organize and equip all EMTF and wing-level AMC intelligence units, (2) serve as the Eighteenth Air Force A2 to ensure effective and efficient warfighting intelligence interoperability between Eighteenth Air Force and all other numbered air force and air operations center intelligence entities, and (3) service the TACC with global operational intelligence situational awareness and flight following for enroute threats.⁴⁶ Thus, there are four organizations within AMC and the TACC which conduct overlapping and cross-functional contingency planning and intelligence--each empowered with authoritative responsibilities.

The second example of blurred operational responsibilities is that the Eighteenth Air Force commander cannot waive common mobility operations restrictions such as minimum

⁴² TACC Brochure, January 2005, 27.

⁴³ Headquarters Air Mobility Command Directorate of Operations A33O Aircrew Brochure. *Operations NOBLE EAGLE/ENDURING FREEDOM/IRAQI FREEDOM*. 12 August 2004, 4.

⁴⁴ TACC Brochure, January 2005, 28.

⁴⁵ Lt Col Jon Hunter, AMC A39I, e-mail correspondence with author, 31 March 2005.

⁴⁶ Lt Col David Gillespie, AMC A2 deputy, AMC Air Intelligence Squadron / CC interview by author 2 April 2005. Edited by Lt Col Gillespie in an e-mail to the author 18 May 2005.

equipment lists, crew day, crew rest, and aircraft operating limits such as maximum gross weight. In spite of instructions stating that waiver authority rests with the agency with operational control, which Eighteenth Air Force has over TRANSCOM airlift missions,⁴⁷ its commander does not possess the staff expertise or the authority to waive operating restrictions.⁴⁸ This authority rests with the AMC A3 (a major general) who delegates this day-to-day function to an on-call officer who works in the AMC A37 office (formerly AMC/DOV or Standardization and Evaluations).⁴⁹ This means that HQ AMC, supposedly a train-organize-equip organization, decides on a case-by-case basis whether airlift aircraft on operational missions can continue with degraded equipment, extend their maximum crew duty day, or exceed their maximum gross weight limitations.

Third, the Eighteenth Air Force commander does not set the acceptable risk level for his operational missions. The AMC A3 heads a Threat Working Group (TWG), which is comprised of many AMC agencies.⁵⁰ This group meets daily to evaluate the safety and set policy--from a threat standpoint--of all airfields in the world focusing on the fields located in areas of concern. The AMC A3 makes the decision and then the group then posts its evaluation of each field on a secure website.⁵¹ Air Mobility Command mandates aircrews under the operational control of Eighteenth Air Force follow AMC TWG guidance including day/night, defensive systems, tactics, and go/no go restrictions.⁵² The planners at TACC must also follow the TWG guidance and cannot schedule a mission to transit a field deemed off-limits by the AMC TWG.⁵³ Thus, the AMC A3--who is in the train-organize-equip chain--sets global threat mitigation policy and sets the acceptable risk level for all MAF Assets under the operational control of Eighteenth Air Force.

Fourth, AMC determines the suitability of all airfields and landing zones for all missions under the operational control of Eighteenth Air Force. An office in AMC (A36AS) determines the suitability of and publishes authorization to use paved airfields in its Airfield Suitability and

⁴⁷ 18AF has operational control - JP 3-17 III-6 through III-13, backed by testimony of General John W. Handy United States Air Force Commander United States Transportation Command before the House Armed Services Committee United States House Of Representatives Subcommittee on projection forces regarding state of the command March 17, 2004.

⁴⁸ TACC Brochure, January 2005, 9.

⁴⁹ Air Force Instruction (AFI) 11-2C-130, Volume 3. *C-130 Operations Procedures*, 1 April 2000.; Change 1 13 April 2000; AMC/DO Addenda B 25 March 2003, 24; Air Force Instruction (AFI) 11-2C-17, Volume 3. *C-17 Operations Procedures*, 1 December 1999; Change 1, 5 May 2001; Change 2 31 March 2004, 24; Air Force Instruction (AFI) 11-2C-5, Volume 3. *C-5 Operations Procedures*, 1 January 2000; Change 1, 30 April 2001; Change 2 14 September 2002, 12.

⁵⁰ Air Mobility Command Instruction (AMCI) 14-106 *Threat Working Group*, 15 September 2004, 2.

⁵¹ AMCI 14-106, *Threat Working Group*, 5.

⁵² HQ AMC Directorate of Operations A330 "AMC Aircrew Brochure Operations Noble Eagle/Enduring Freedom/Iraqi Freedom," 19.

⁵³ AMCI 14-106 *Threat Working Group*, 7.

Restrictions Report (ASRR) for all AMC operational and training missions.⁵⁴ This publication not only determines whether or not a paved field may be used by AMC aircraft, but it also establishes operational restrictions--such as restricting a field to day only operations--for all paved airfields on the planet. "Planners at USTRANSCOM or HQ AMC/TACC should contact HQ AMC/A36AS to request an airfield suitability determination for proposed AMC aircraft operations at airfields not contained in this publication."⁵⁵ In the case of unpaved airfields--commonly called landing zones--the Air Mobility Command A-3 is the approval authority for the use of such airfields by all missions under the operational control of Eighteenth Air Force. Although the Eighteenth Air Force is responsible for planning, scheduling, tasking, and executing all AMC missions,

AMC organic and commercial contracted aircraft/crews must adhere to A3 policy while flying worldwide missions. Within 18 AF, Tanker Airlift Control Center (TACC) mission planners and C2 controllers, operations directors and flight managers must...be familiar with and ensure adherence to A3 policy.⁵⁶

Thus, Eighteenth Air Force--ostensibly exercising operational control over its missions--does not independently plan contingency missions, set acceptable threat risk, determine the suitability of airfields and landing zones, waive operating restrictions or equipment requirements, or write the special instructions (SPINS) for its aircrews. This situation prevents Eighteenth Air Force from independently conducting its operational mission and merges AMC's train-organize-equip functions with the numbered air force's operational execution function. Further evidence of this issue of overlapping responsibilities can be found by following the money trail. Air Mobility Command manages USTRANSCOM's Transportation Working Capital Fund (TWCF), financially centralizing the two organizations. The TWCF is the funding source through which USTRANSCOM and AMC draw their resources to acquire, operate, and maintain their infrastructure and operations. Unlike most DOD agencies, USTRANSCOM operates on a "fee for service" system whereby users of DOD transportation assets pay USTRANSCOM for the movement of their men and material. In simple terms, USTRANSCOM operates like a business--generating the funds it needs to operate by selling transportation services to the DOD. These monies go into the TWCF. In 1992, the secretary of defense made USTRANSCOM "the single DOD financial manager for common-user transportation-related funding."⁵⁷ In response, USTRANSCOM made AMC its executive and administrative agent for TWCF funds since AMC

⁵⁴ Airfield Suitability and Restrictions Report (ASRR) 1 February 2005, iii.

⁵⁵ ASRR, vii and viii.

⁵⁶ AMCI 14-106 *Threat Working Group*, 10.

⁵⁷ USTRANSCOM Handbook 24-2, *Understanding the Defense Transportation System*, 4th edition, 1 September 2003, 16.

dominates USTRANSCOM's revenues and since USTRANSCOM was "already heavily engaged with the Air Force both operationally and financially."⁵⁸

Moreover, USTRANSCOM relies on AMC-generated capital to augment the funding of its other components when USTRANSCOM falls into cash shortages.⁵⁹ "Fiscal year 2004 was another exceptional year for AMC's Transportation Working Capital Fund."⁶⁰ According to the 2004 USTRANSCOM annual command report, "[AMC's] operating results were \$425 million better than planned" which made AMC the only component to post a profit for USTRANSCOM.⁶¹ Of the three USTRANSCOM components, AMC consistently generates the majority of TWCF revenue. In 2004, AMC took in \$5.5 billion of the total \$8 billion of TWCF revenue, \$6.3 billion of \$9 billion in 2003,⁶² and \$4.2 billion of \$6.3 billion in 2002.⁶³ Since this is the case, it makes sense that AMC runs USTRANSCOM's TWCF. This arrangement fuses the financing of these organizations and places AMC, a train-organize-equip organization, in a dominant position within a combatant command. AMC leads USTRANSCOM in one more way that is important.

The AMC commander is the USTRANSCOM commander, which further melds USTRANSCOM and AMC. In fact, the USTRANSCOM commander has always been the "dual-hatted" commander of AMC and has always been an Air Force general.⁶⁴ The USTRANSCOM commander exercises combatant command over his assigned transportation assets. He delegates operational command of his aircraft to the AMC commander--his dual-hatted self. Acting as the AMC commander, he re-delegates operational command of his airlift assets to the Eighteenth Air Force Commander. On the budgeting side, dual-hatting removes useful checks and balances. For example, this situation means that a single commander has the ability to inject combatant

⁵⁸ Understanding the DTS 16-17

⁵⁹ Understanding the DTS 16-17

⁶⁰ *USTRANSCOM Annual Command Report 2004*. 2004, 15. On-Line. Available from <http://www.transcom.mil/annualrpt/2004acr.pdf>.

⁶¹ *USTRANSCOM Annual Command Report 2004*, 14-15. On-Line.

⁶² U. S. Transportation Command (USTRANSCOM). *USTRANSCOM Annual Command Report 2003*. 2003, 14. On-Line. Available from <http://www.transcom.mil/annualrpt/2003acr.pdf>

⁶³ Calculated from U. S. Transportation Command (USTRANSCOM). *USTRANSCOM Annual Command Report 2002*. 2002, 15-17, 23. On-Line. Available from <http://www.transcom.mil/annualrpt/2002acr.pdf>.

⁶⁴ Source: compilation of USAF Biographies available at www.af.mil and a USTRANSCOM Publication by Danita L. Hunter, Chief Command Information Public Affairs Office, USTRANSCOM, "United States Transportation Command - 10 Years of Excellence 1987-1997" no publication date. Since USTRANSCOM stood up, the following Air Force Generals have commanded both AMC and USTRANSCOM: 1987-1989 General Duane Cassidy, 1989-1992 General Hansford Johnson, 1992-1994 General Ronald Fogelman, 1994-1996 General Robert Rutherford, 1996-1998 General Walter Kross, 1998-2001 General Tony Robertson, 2001-2005 General John Handy. There is speculation that a non-Air Force General may succeed General Handy in the summer of 2005. If and when this happens, it is conceivable that some centralizing issues may be forced to a head.

command (COCOM) budget requests via both joint channels and service channels, improving his position without as many opposing views. This relationship creates a high level of centralization because the same person has authority over two large organizations--one for joint warfighting and one for service training, organizing, and equipping. Moreover, all of these organizations are geographically co-located. Thus, the commander of this conglomerate simultaneously wields authority with the joint staff, the air staff, and the secretary of defense--enabling the entire military airlift machine to speak with one voice under the vision of one leader.

Serving as a guidepost and in contrast to USTRANSCOM/AMC/Eighteenth Air Force, the relationship between and among United States Central Command (USCENTCOM), Air Combat Command (ACC), Ninth Air Force, and United States Central Command Air Forces (CENTAF) is far less consolidated. Figure 2 depicts the current command structure of CENTCOM as it relates to the Air Force. Briefly, USCENTCOM is a geographic combatant command with responsibility in the Middle East. It is the combatant command that fought Desert Storm and continues to wage both Operations Enduring Freedom and Iraqi Freedom. Air Combat Command is AMC's combat air force counterpart with responsibility to train, organize, and equip USAF fighter and bomber units. Ninth Air Force is one of ACC's numbered air forces. CENTAF is the air component of USCENTCOM and made up of air forces based in the United States under the operational control of the theater. Notice how the train-organize-equip organizations are relatively distinct from their warfighting counterparts. This prevents improper influence vis-à-vis the Planning, Programming, Budgeting, System (PPBS)⁶⁵ cycle and warfighting activity; and promotes better joint integration by removing undue service influence. Further, while not a requirement, these organizations are also geographically separated. On the

⁶⁵The PPBS is the system by which services define their budgetary requests to the President. DOD Directive 7045.14 Change 1 (9 Apr 87) explains, "The purpose of the PPBS is to produce a plan, a program, and finally, a budget for the Department of Defense. The budget is forwarded to the President for his approval. The President's budget is then submitted to Congress for authorization and appropriation. The PPBS processes are based on and consistent with objectives, policies, priorities and strategies derived from National Security Decision Directives. Throughout the three major phases of planning, programming, and budgeting the secretary of defense will provide centralized policy direction while placing program execution authority and responsibility with the DoD Components. The DoD Components will provide advice and information as requested by OSD to permit the latter to assess execution and accountability. Participatory management involving the DoD Components shall be used in each phase to achieve the objective of providing the operational commanders-in-chief (CINCs)) (author's note: now known as Combatant Commanders) the best mix of forces, equipment and support attainable within resource constraints. The decisions (as modified by legislation or secretary of defense direction) associated with the three major phases of the PPBS will be reflected in the FYDP as secretary of defense approved programs for the military functions of the Department of Defense. The FYDP will address the prior, current, budget and program years." obtained from <http://www.dtic.mil/srch/search?template=%2Fwhs%2Fdirectives%2Fk2template.html&c=6FDF5BD0BF338D19&q=7045+change+1&sort=title&cat=pdf>

other hand, Figure 3 depicts the current USTRANSCOM structure as it relates to the Air Force. USTRANSCOM's dual-hatted commander is centralized one-level higher than in CENTCOM--at the combatant commander level. This is important because the PPBS cycle takes official inputs from the services and from the combatant commanders but not the numbered air force commanders.⁶⁶ Furthermore, AMC's numbered air force shares AMC's staff and houses its TACC inside headquarters AMC. In contrast, ACC is headquartered at Langley AFB, Ninth Air Force at Shaw AFB, and CENTAF's air operations center (the combat air force equivalent of the TACC) is in Qatar.

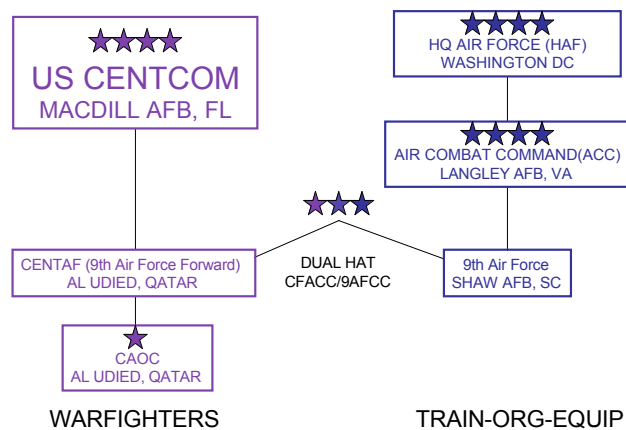


Figure 2 - USCENTCOM-ACC Command Relationship

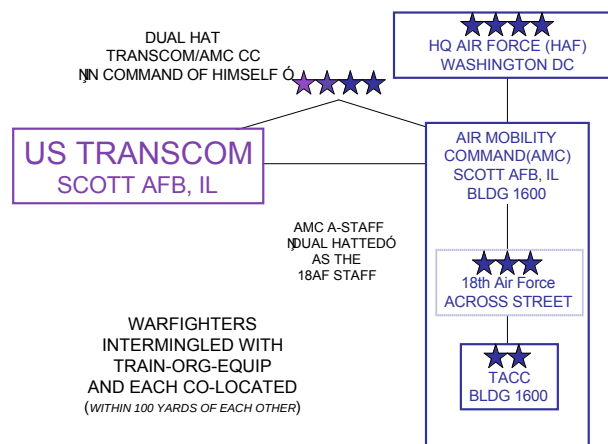


Figure 3 - USTRANSCOM-AMC Command Relationship

⁶⁶ Department of Defense (DOD) Directive 7045.14 *Implementation of the Planning, Programming, and Budgeting System, Change 1*. 9 April 1987, 40.

Reassembling the evidence chronologically, one can see the MAF is centralizing in its command. USTRANSCOM stood up in the wake of Goldwater-Nichols in 1987, charged with the global DOD responsibility of movement via air, land, and sea. It began by merging three previously independent commands into one. One of those commands was Military Airlift Command whose commander assumed a dual-role as commander AMC and commander USTRANSCOM. This dual-hatting means the AMC commander has direct PPBS input as the combatant commander and indirect PPBS input through the Air Force staff. Before 1992, USTRANSCOM's responsibilities only existed in wartime. Then, the secretary of defense greatly expanded them giving USTRANSCOM combatant command of all transportation assets during peace and wartime. In 1992, MAC deactivated and AMC stood up in its place. AMC not only assumed MAC's airlift role, but also integrated all Strategic Air Command tankers into its fleet. In 1992, USTRANSCOM administratively aligned with AMC since it was already "heavily engaged with the Air Force both operationally and financially." In 1997, nearly all ACC C-130 aircraft merged into AMC. In 2003, the secretary of defense designated USTRANSCOM as the global distribution process owner, formally charging it with the responsibility for all DOD logistics reaching from the factory to the foxhole. In response, General Handy created the DDOC, which has directive authority inside the theater, to optimize global distribution system performance by synchronizing the intertheater and intratheater distribution systems. Also in 2003, AMC's Fifteenth and Twenty-first Air Forces consolidated into Eighteenth Air Force at Scott AFB, across the street from AMC and USTRANSCOM. Consolidation did not separate AMC's train, organize, and equip functions from Eighteenth Air Force's operational mission because the AMC staff is also Eighteenth Air Force's staff too.

In short, a centralized global mobility machine seeking "a seamless, wholly integrated, synchronized end-to-end deployment and distribution system under a single unified commander,"⁶⁷ commands all its functions from training and equipping to operations and funding. Consequently, AMC exhibits centralizing command because its *resources*--working capital funds and the assimilation of tanker and C-130 fleets, *authority*--USTRANSCOM's expansion as the DPO, and *organization*--the combination of train, organize, equip, and operational functions at AMC; are each consolidating. As one might expect, an organization increasingly centralizing in its organization and resources also exhibits characteristics of centralizing control. This is the topic of the next chapter.

⁶⁷ <http://www.transcom.mil/organization.cfm>.

Chapter 2

Centralizing Control

*NO ONE CAN SERVE TWO MASTERS. EITHER HE WILL HATE ONE AND LOVE THE OTHER,
OR HE WILL BE DEVOTED TO ONE AND DESPISE THE OTHER.
-- MATTHEW 6:24 (NIV)*

The Mobility Air Force is centralizing control by shifting additional authority and responsibility over planning, directing, and coordinating of airlift operations to the Eighteenth Air Force commander. This is not surprising as centralized control is a long-held Air Force tenet. What is more striking is the global, rather than theater, extent of this central control. Seventy-one percent, and growing, of all airlift capacity falls under the operational control of the AMC commander, who delegates it to the Eighteenth Air Force Commander exercised through the Tanker Airlift Control Center (TACC). Theater commanders each centrally control their portions of ten percent of the remainder.¹ This level of control means that a large percentage of any wartime theater's airlift requirements are not under control of the designated Joint Force Commander (JFC). The rest of this chapter unpacks these statements in two stages. First, the chapter demonstrates *centralized* control at each of the MAF's three types of airlift control centers. Second, the argument extends to reveal a growing centralization of airlift capacity in the hands of the Eighteenth Air Force commander to demonstrate *centralizing* control.

Air Force commanders exercise centralized control of MAF assets through the Tanker Airlift Control Center (TACC), Air Mobility Operations Control Center (AMOCC), or the Air Mobility Division (AMD). As shown in the introduction (Table 1), centralized airlift control is vesting one commander, at the theater or higher level, with the responsibility and authority for planning, directing, and coordinating airlift operations necessary to accomplish the mission. The MAF complies with this doctrinal requirement. This first section will demonstrate centralized airlift control exists in all three of the aforementioned organizations.

¹ The Air National Guard and the Air Force Reserve control the remaining 19%.

The Eighteenth Air Force commander centrally controls USTRANSCOM airlift missions through the TACC.² The Eighteenth Air Force commander has delegated operational control over airlift missions flown in support of USTRANSCOM.³ The TACC, located at Scott AFB, reports to the Eighteenth Air Force and serves as the organization's air operations hub, planning and directing tanker and transport aircraft operations around the world.⁴ Although the TACC is physically inside HQ AMC, it reports to Eighteenth Air Force, and controls all airlift assets and missions executed in support of USTRANSCOM's global mission. The TACC is:

The command's hub for **planning and directing** tanker and transport aircraft operations around the world. Created to **centralize command and control** responsibilities previously located in the numbered air forces and airlift divisions...In effect, the TACC is "one-stop shopping," which brings customers and suppliers together to efficiently and effectively accomplish AMC's Global Reach mission...Approximately 700 strong, the TACC became operational April 1, 1992. It consists of nine directorates with the resources and talent to task, **schedule, execute, and recover** all TACC missions--airlift, air refueling, aeromedical, and operational support. The TACC is a single integrated team...(Emphasis added)⁵

THE KEY POINT HERE IS THAT THE "ONE STOP SHOPPING" TACC CENTRALLY PLANS, DIRECTS, SCHEDULES, EXECUTES, AND RECOVERS AIRLIFT MISSIONS. AIR MOBILITY DOCTRINE ECHOES AMC'S CENTRALIZED DESCRIPTION OF THE TACC:

The [18AF] TACC is the C2 node for most intertheater operations. As the **sole C2 node capable of directing and providing oversight for MAF anywhere around the globe** [emphasis added], it provides the essential services required by these forces to operate. Specifically, the TACC is able to receive validated common-user requests from the USTRANSCOM Mobility Control Center (MCC), **task** [emphasis added] the appropriate unit, **plan** [emphasis added] the mission, and provide continuous communications connectivity between intertheater forces, the common-user, and supporting... forces.⁶

Intertheater airlift operations are generally global in nature and serve the CONUS to-theater air transportation needs of the geographic CINC. *The vast majority of intertheater airlift missions are executed by AMC airlift aircraft. Command and control of these airlift assets is normally exercised through [18AF]'s TACC* [emphasis in original]. The TACC plans, coordinates, schedules, tasks, and

² Most instructions and doctrine have not yet caught up with the fall 2003 formation of 18AF. As such, doctrine and airlift instructions still indicated that the TACC reports to AMC. Currently, the TACC reports to the 18AF, which reports to AMC. Thus, the author replaced "AMC TACC" with "18AF TACC" in following quotations.

³ Joint Publication (JP) 3-17. *Joint Doctrine and Joint Tactics, Techniques, and Procedures for Air Mobility Operations*. 14 August 2002, III-6 through III-13. backed by testimony of General John W. Handy United States Air Force Commander United States Transportation Command before the House Armed Services Committee United States House Of Representatives Subcommittee on projection forces regarding state of the command March 17, 2004.

⁴ Headquarters Air Mobility Command (HQ AMC) Factsheet published on AMC's website at <http://public.amc.af.mil/Library/Factsheets/factsheets.htm>.

⁵ HQ AMC Factsheet published on AMC's website above.

⁶ JP 3-17, I-4, I-5.

executes airlift missions worldwide. **The TACC is the single tasking and execution agency for all activities involving AMC assets operating to fulfill USCINTRANS-directed requirements.** (Emphasis added)⁷

The TACC is the sole C2 node capable of globally directing, tasking, and executing MAF airlift missions. Obviously, the Eighteenth Air Force commander, through the TACC, exercises centralized control of the majority of intertheater airlift missions. Curiously, the doctrinal statement above also seems to say the TACC centrally executes airlift missions--the subject of the next chapter. Although the TACC controls the majority of MAF airlift, there are two standing theater AMOCCs.

The AMOCC is the organization through which theater air component commanders plan, direct, and coordinate *theater* airlift forces.⁸ An AMOCC centrally controls the tasked airlift missions tasked by both US Pacific Command (USPACOM) and US European Command (USEUCOM) in their respective geographic theaters. These control organizations are similar to the TACC. The USAFE AMOCC is located at Ramstein AB, Germany. The PACAF AMOCC is located at Hickam AFB, Hawaii. Air Mobility doctrine explains:

Intratheater airlift operations may be controlled using one of two command and control concepts. *In a mature theater*, with a durable airlift mission and permanently assigned airlift forces, *the CINC may establish an air mobility operations control center (AMOCC)* through which OPCON of theater assigned or attached forces or TACON of intertheater assets (made available as the situation warrants) is exercised. The AMOCC is the theater air component commander's **single command and control layer for planning, coordinating, tasking, and executing theater airlift operations.** [Emphasis added]⁹

In immature theaters or during a crisis, another organization controls air mobility assets.

The Commander of Air Force Forces/Joint Force Air Component Commander centrally controls airlift missions through a Director of Mobility Forces (DIRMOBFOR, nominally a brigadier general) for aircraft assigned or attached to the Joint Force commander through the Air Mobility Division (AMD) inside a Joint Air Operations Center (JAOC).¹⁰

In a theater in which an AMOCC has not been established, the theater air component commander will normally establish an airlift control organization (typically, an AOC) within the theater C2 structure to plan, coordinate, task, and execute theater-assigned airlift assets...*The AMD of an AOC or JAOC is the vehicle for C2 of airlift forces within a JTF's JOA.* (Emphasis in original)¹¹

One of the teams inside the AMD is the Air Mobility Control Team (AMCT). "The AMCT serves as the [director of mobility force's] centralized source for air mobility command, control,

⁷ Air Force Doctrine Document (AFDD) 2-6.1. *Airlift Operations*, 13 November 1999, 26.

⁸ JP 3-17, III-8.

⁹ JP 3-17, III-4.

¹⁰ JP 3-17, III-6 through III-10.

¹¹ AFDD 2-6.1, 27 and 31.

and communications during mission execution.”¹² Regardless of which of these two theater organizations, AMOCC or AMD, exercises theater airlift control, these C2 organizations centrally plan, direct, coordinate, task, and execute theater assigned or controlled airlift forces under the command of the theater commander.

Figure 4 summarizes MAF command and control relationships as depicted in current joint doctrine and described in previous pages. As with other doctrine, this figure does not reflect the fall 2003 formation of the Eighteenth Air Force and its ownership of the TACC. The correct command line should go from AMC to Eighteenth Air Force then to the TACC. The definitions of combatant command (COCOM) and operational control (OPCON) are included in Table 3 in the appendix.

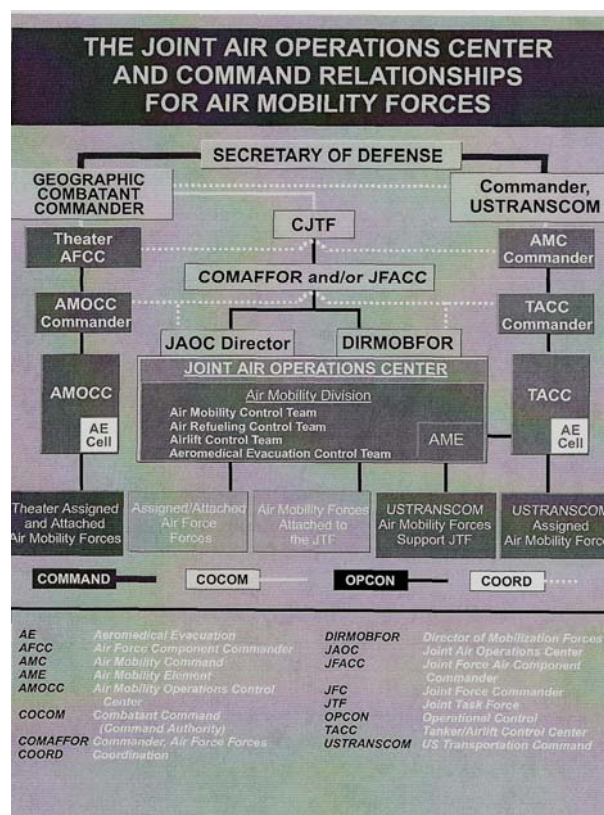


FIGURE 4 - JP 3-17 MAF OPERATIONAL COMMAND AND CONTROL

SOURCE: JOINT PUBLICATION 3-

Concluding this MAF *centralized* control section, the Eighteenth Air Force commander, theater air component commander, or commander of Air Force forces centrally controls MAF assets through the TACC, AMOCC, or AMD, respectively. This is because a single commander at the theater or higher level has the responsibility to plan, direct, and coordinate the airlift

¹² Air Force Doctrine Document (AFDD) 2-6. *Air Mobility Operations*, 25 June 1999, 22.

operations necessary to accomplish the mission. This establishes centralized control across the entire MAF; the next task is to demonstrate *centralizing* control.

THE EIGHTEENTH AIR FORCE GLOBALLY CONTROLS THE MAJORITY OF AVAILABLE AIRLIFT; THEATER COMMANDERS SPLIT THE REST. THE USTRANSCOM COMMANDER EXERCISES COMBATANT COMMAND OVER ALL C-5, C-17, AND C-141 AND ALMOST ALL C-130 ASSETS. AS DISCUSSED, HE DELEGATES OPERATIONAL COMMAND OF THESE ASSETS DOWN THE CHAIN TO THE EIGHTEENTH AIR FORCE COMMANDER. IN CONTRAST, COMBATANT COMMANDERS IN OTHER THEATERS DO NOT HAVE COMMAND OR OPERATIONAL CONTROL OVER C-5, C-17, AND C-141 ASSETS. AIR MOBILITY COMMAND POSTS THE ASSIGNED STATUS OF MAF AIRCRAFT ON ITS WEBSITE. USING IT, ONE CAN CONFIRM THAT GEOGRAPHIC COMBATANT COMMANDERS DO NOT HAVE ANY ASSIGNED C-5, C-17, OR C-141 ASSETS.¹³ FURTHER, THESE ASSETS DO NOT ROUTINELY CHANGE OPERATIONAL CONTROL (CHOP) FROM AIR MOBILITY COMMAND.¹⁴ AIR FORCE DOCTRINE STATES, "AMC DOES NOT FURTHER DELEGATE ITS AIR COMPONENT RESPONSIBILITIES BECAUSE OF THE INHERENT ADVANTAGES IN CENTRALIZING CONTROL OF THE GLOBAL INTERTHEATER AIR MOBILITY SYSTEM IN THE TACC..."¹⁵ THIS PROMOTES THE EFFICIENT USE OF SCARCE AIRLIFT RESOURCES AND PREVENTS A THEATER COMMANDER FROM CONSUMING TOO MUCH AIRLIFT AT THE EXPENSE OF OTHER THEATERS AND USERS. IT IS THE EIGHTEENTH AIR FORCE COMMANDER WHO CONTROLS THIS GLOBAL AIRLIFT SYSTEM, AND BY PRECEDENT, THESE FORCES DO NOT CHANGE OPERATIONAL CONTROL.

In recent years, the MAF's "no CHOP" policy has weathered attempts to change it. Lieutenant General Welser, the Eighteenth Air Force commander put it this way, "the underlying belief is that theater commanders do not need to command and control airlift to produce an effect on the battlespace. Rather, what they should do is specify the effects they need--troops and material moved--and allow USTRANSCOM/18th AF to manage airlift resources to produce that effect."¹⁶ When asked about whether AMC tracks theater requests for CHOPed C-5 or C-17s, Lt Col Spaulding at AMC/A55 explained it this way:

The days of a theater commander saying, "I need a C-5" or "five C-17s" should be over...We've spent a long time educating other commands that they don't need a C-17, they need "stuff" moved--let us figure out how to do that. Other commands do, however, [make requests], that may incorrectly state deploying forces command relations. One recent example asked for...a TALCE [Tanker Airlift Control Element] to CHOP to a theater for theater operations...We continue to advocate Support command authority for mobility assets when appropriate...[and] ensure that the command relationships are correctly articulated in orders.¹⁷

"This way of operating enables USTRANSCOM to meet the needs of the Supported Commander by applying the required airlift and support resources to meet validated mission requirements. In

¹³ AMC's aircrew portal links to <https://amclg.okc.disa.mil>

¹⁴ Downloaded "assigned" status of the entire C-5, C-17, C-130, and C-141 fleet from AMC's "aircrew portal" website as of 5 May 05. No CHOP from Lt Col James Spaulding, AMC/A55 e-mail correspondence with author 3 May 05. This is not absolute. Doctrine does leave open the possibility that these assets could CHOP. In practice, they do not with one exception. A couple of C-17s did CHOP during OIF to support special operations forces.

¹⁵ Air Force Doctrine Document (AFDD) 2. *Organization and Employment of Aerospace Power*, 17 February 2000, 69.

¹⁶ Lt Gen William Welser III, Commander 18th AF, interviewed by author 26 January 2005. Words edited by the General via e-mail on 19 May 05.

¹⁷ Lt Col James Spaulding, AMC / DA55, e-mail correspondence with author, 3 May 2005.

addition, the theater commander does not need to worry about how he is going to support a CHOPed C-17.”¹⁸ However, this same logic does not apply to C-130 assets.

This “no-CHOP” policy does not extend to AMC intratheater C-130 assets.¹⁹ At present, C-130 assets CHOP to augment a theater commander and both EUCOM and PACOM each have permanently assigned C-130s. Although there is at least one staff proposal to end this practice, it has not come to fruition.²⁰ However, a potential precursor to changing this may exist in the recent USTRANSCOM-led sourcing solution that involved transfer of OPCON of PACOM and EUCOM assigned C-130s to CENTCOM in support of ongoing operations.²¹ This recent change upsets a tradition of theaters not releasing the few airlift aircraft they do control.²² This raises the question; to what extent has Eighteenth Air Force globalized the control of airlift in its TACC?

The TACC centrally controls 71 percent, and increasing, of US Air Force, Guard, and Reserve common-use airlift pallet capacity. Table 2 summarizes this calculation representing who controls what percentage of airlift capacity measured by pallet positions. A single pallet measures 7 feet by 8 feet and is a standardized aluminum platform for transporting military air cargo. A C-130 E/H has six pallet positions, the C-130J-30 has eight, the C-141 has 13, the C-17 has 18, and the C-5 can carry 36.

¹⁸ Lt Gen William Welser III, Commander 18th AF, interviewed by author, 26 January 2005. Words edited by the General in an e-mail 19 May 05.

¹⁹ Lt Col James Spaulding, AMC / DA55, e-mail correspondence with author, 5 May 2005.

²⁰ One well received such proposal originated at SAASS in response to an Air Force XO tasking to determine the best way to organize intra-theater airlift to support the Army’s transformation to what it calls “units of action.” During this process (which the author participated in), the Headquarters Air Force Global Mobility Conops champion, Lt Col Harrison, indicated that both he, the AF XO and the USTRANSCOM CC (General Handy) favored such actions. Regardless, it is too soon to tell if such a change will occur.

²¹ Col (s) John Lipinski, USTRANSCOM J-3R, interviewed by author 24 January 2005. Edited by Col Lipinski in an e-mail to author 18 May 2005.

²² Author’s experience flying C-130s from 1995-2003.

Table 2 - Portion of Common-Use Airlift Control by Agency

Aircraft	C-5	C-17	C-130E/H	C-130J-30	C-141	Totals
AMC	30	92	73			195
ANG	18	8	155	13		194
AFRC	32		85	5	13	135
USAFE			18			18
PACAF			29			29
AETC	8	11	38	3		60
AFSOC			64			64
ACC			15			15
AFMC		1	2			3
Depot	25	22	49	3		
Global Total	113	134	528	24	13	713
Operational	80	100	360	18	13	571
ANG AMC Factor	0.75	0.8	0.5	0.5	0.75	3.3
AFRC AMC Factor	0.75	0.8	0.5	0.5	0.75	3.3
USAF CHOP to Theater	N/A	N/A	42		N/A	42
AFRC CHOP to Theater	N/A	N/A	15		N/A	15
ANG CHOP to Theater	N/A	N/A	18		N/A	18
AMC Total	67	98	118	9	9	301
Theater Total	N/A	N/A	122	0	N/A	122
Pallet Capacity	36	18	6	8	13	81
Global Pallets	4068	2412	3168	192	169	10009
Operational Pallets	2880	1800	2160	144	169	7153
18AF Pallets	2412	1764	708	72	117	5073
Theater Pallets	N/A	N/A	732	0	N/A	732
18AF O-Portion	0.838	0.980	0.328	0.500	0.692	0.709
Theater O-Portion	N/A	N/A	0.339	0.000	0.000	0.102
AFRC/ANG O-Portion	0.163	0.020	0.333	0.500	0.308	0.188

See footnote for more detail.²³

²³AMC/ANG/AFRC C-5, C-17, C-130, and C-141 data from an HQ AMC website: <https://amclg.okc.disa.mil> which interactively generates daily reports on the status of AMC/ANG/AFRC airlift aircraft by type. C-5, C-17 data pulled 5 May 05, C-130 and C-141 data from 16 May 05. Non-AMC C-130 aircraft AMC/A44 spreadsheet “ebh.xls,” 5 February 2005, which inventories the entire C-130 fleet vis-à-vis their wing lives. Since they are not available for common use, special mission (AFSCOC and ACC), training (AETC), development (AFMC), and aircraft in depot-level maintenance are not included as common-use operationally available airlifters. As of February 2005, AMC, ANG, and AFRC had 75 C-130s CHOPed to theater (source: AMC/A5 briefing entitled “C-130 Wing Box Restricted/Grounded Aircraft” 16 Feb 05 slide 25).²³ AMC, ANG, or AFRC control the remainder. The AMC commander delegates operational control of his aircraft to the 18th AF commander, controlled through the TACC (source: JP 3-17, III-6 through III-13, backed by testimony of Gen John W. Handy, United States Air Force, Commander, United States Transportation Command, before the House Armed Services Committee, United States House Of Representatives Subcommittee on projection forces regarding state of the command, March 17, 2004).²³ The determination of who controls Air National Guard and Air Force Reserve airlift aircraft is more complex since at times these aircraft fall under the control of either the 18th AF, theater, HQ Air Force reserve, or the individual states. Factors estimating the portion of AFRC C-5/C-17 missions under control of the 18AF are from the 22AF/DO (22AF is a reserve component numbered AF that aligns under AMC when activated) to estimate the percentage under 18AF control for Air Force reserve C-5 and C-17 aircraft (source: Col Reinhard “Rhino” Schmidt is the 22AF/DO, an AFRC numbered Air Force providing airlift to US Air Forces).²³ A similar factor is used for the ANG, but this factor is the author’s best guess. Recomputing the percentages by removing *all* ANG and AFRC C-130s from AMC’s portion--which is not accurate either--yields a theoretical 60% lower bound for 18AF’s portion of operationally available airlift capacity. Reversing this by giving all AFRC and ANG C-130s to AMC yields an 82% theoretical upper bound. The table reflects the author’s 50% estimate. AFRC C-5 aircraft are under the operational control of 18AF. The AFRC does not own any C-17 aircraft yet, but they do have

As the MAF grounds older C-130 aircraft and new C-17s roll out of the factory, the percentage of airlift capacity that AMC controls should increase. The current C-130 fleet suffers from wing cracks in its center wing box. These cracks appear in the lower center wing-box areas as it fatigues from pressures generated by aircraft operation.²⁴ To mitigate the risk of aircraft mishaps, MAF policy is to dramatically restrict the operating speeds, weights, and other parameters of aircraft as the aircraft wing cracks grow; eventually grounding the planes. These restrictions render the affected aircraft essentially useless as airlifters.²⁵ This policy has already restricted 90 aircraft and grounded 30 more as of February 2005.²⁶ Worse, 138 of 189 active MAF C-130s will be restricted within five years.²⁷ While the MAF restricts and grounds C-130Es, the C-17 fleet is growing to a planned fleet of at least 180 and the C-130J fleet to 168 aircraft.²⁸ Once this situation settles, the Eighteenth Air Force commander should control 80 percent of common-use airlift pallet capacity--an increase from the current 70 percent figure.²⁹

associate units that fly active duty aircraft usually under 18AF control [22AF/DO says ~80% of the time] but are under the control of HQ AFRC for training flights. HQ AFRC has operational control of its C-130s while in CONUS, but do fly TACC missions, yet CHOP to theater when deployed. From 9/11 until Oct 04 the AFRC had 18 C-130 aircraft deployed continuously, this number stands at 15 currently. ANG C-130s belong to their respective state Governors, but fly both TACC missions and CHOP to a theater commander when deployed. The theater commander's equation is simpler. It includes all assigned and CHOPed Active and ANG C-130 aircraft (122). Theater commanders do not control C-5 or C-17 aircraft regardless of whether they are Active Duty, AFRC, or ANG.

²⁴ AMC/A5 briefing entitled "C-130 Wing Box Restricted/Grounded Aircraft" 16 Feb 05, slide 12.

²⁵ For example, the fuel restrictions alone mean a C-130 with one half of a typical theater allowable cargo load (10,000 lbs instead of 20,000 lbs) can only burn 34,000 lbs of fuel during a mission reducing its range significantly (maximum fuel load for a non-restricted C-130E is ~58,000 lbs). Further, a 190-knot restriction below 2000 feet AGL effectively turns the aircraft into a fast Cessna in a tactical environment. AMC/A5 briefing entitled "C-130 Wing Box Restricted/Grounded Aircraft" 16 Feb 05 slide 12 notes list the following: "Restrictions based on reducing probability of reaching Wing Limit Load (WLL) by reducing loads to 60% of WLL, Max Gross Operating Weight of 139,000 lbs, Max Zero Fuel Weight of 90,000 lbs, Min Landing Fuel Weight of 15,000 lbs, Max Airspeed of V_H above 2000 feet AGL regardless of location within the weight limit chart V_H - Maximum recommended speed, ref T.O. 1C-130E(H)-1 Figure 5-4, Max Airspeed of 190 KIAS at or below 2000 feet AGL, No high speed-low level operations permitted, Max Maneuver Load Factor +2.0g clean and +1.5g flaps extended, Limit control wheel throw to +/- 90 degrees at speeds > 185KIAS, Primary Fuel Management only, Avoid flight in moderate or greater turbulence, Avoid abrupt maneuvers."

²⁶ AMC/A5 briefing entitled "C-130 Wing Box Restricted/Grounded Aircraft" 16 Feb 05 slide 13

²⁷ AMC/A44 spreadsheet "ebh.xls," 5 February 2005, which inventories the entire C-130 fleet vis-à-vis their wing lives remaining, obtained from the 463rd OSS.

²⁸ Planned C-17 buy from Gen John W. Handy "The Air Mobility Flight Plan" Oct 04.

²⁹ Recomputing the numbers, the 18th AF should control about 80% of airlift capacity after reaching the planned 168 x C-130J, 180 x C-17 fleet sizes, and the expected retirement of C-130E aircraft resulting from wing cracks. Conservatively, this trend holds true even if the MAF grounds no more C-130E's, although the percentage would drop to 75%. Even though the C-130J program had been slated to cancel, the funding for the program was restored as of this writing. 168 C-130J's as per AMC/A37T briefing "Advanced Program Briefing to Industry" by Col John Clatanoff date unknown, confirmed by Capt Ken "Hef" Gjone, C-130J Initial Cadre pilot e-mail correspondence with author 16 May 05 and Lt Col Doug "Duke" Kennedy AMC A53 e-mail correspondence with author 17 May 05. If all 168 C-130J and 180 C-17 aircraft enter service in their planned locations and no more C-130E's are grounded, 18AF's share of the global pool will

Summarizing the first half of the chapter, the MAF centrally controls the airlift mission. A single commander, at the theater level (AMOCC or AMD) or higher (TACC) has the responsibility and authority to plan, direct, and coordinate airlift missions. The Eighteenth Air Force commander's TACC controls about 70 percent of this airlift and theater commanders centrally control about 10 percent from an AMOCC or AMD. Even this theater control is "confirmed" by AMC and TACC: crews who question theater-approved waivers are encouraged to "request additional assistance or confirmation from their home units or AMC/DO through HQ AMC TACC."³⁰ Regardless, MAF airlift control is centralized.

Synthesizing the second half of this chapter, the Eighteenth Air Force commander's control of available airlift capacity is increasing. Recalling previous evidence--although AMC gave them to ACC in 1993--AMC regained control over most CONUS-based C-130 aircraft in 1997. Further, the centralization of control over airlift under Eighteenth Air Force should trend upward as the C-130E fleet retires and the C-17 fleet increases to its planned size of at least 180--unless the command breaks tradition and CHOPs C-17 lift. Consequently, the Mobility Air Force is centralizing control by shifting additional authority and responsibility over planning, directing, and coordinating of airlift operations to the Eighteenth AF commander because, as time goes by, the percentage of total airlift capacity that falls under his operational control increases. According to Air Force doctrine and its tenet specifying centralized control, this is as it should be.

The geographic centralization of the MAF on Scott AFB's Ward Drive represents quite an achievement. One can walk between the AMC, Eighteenth Air Force, and USTRANSCOM buildings in a minute or two. The effect such close proximity has on the culture of MAF staffs could be the subject of another study. Coupling this rumination with the evidence of the past two chapters, one might expect an organization centralizing in its command and control to also be centralizing its execution.

be 75%. However, 166 C-130E's will be grounded within five years according to AMC A44. Thus, the author projects 18AF to control about 80% of nominally available operational common-use airlift capacity once the dust settles.

³⁰ AMCI 11-208, 11; reiterated in AFI 11-2C-130 Vol 3, 44; AFI 11-2C-17 Vol 3, 45; AFI 11-2C-5 Vol 3, 33.

Chapter 3

Centralizing Execution

It is critical to note that the goal of effective distributed operations is to support the operational commander in the field; it is not a method of command from the rear.

-- Air Force Doctrine

The Mobility Air Force is centralizing the execution of its airlift missions because it is moving away from decentralized execution. This type of argument is different in its logic from the centralizing command and centralizing control arguments in the previous chapters. The previous arguments focused on demonstrating centralization by comparing evidence against a doctrinal standard that defined the bar to which the evidence had to exceed. There is not an agreed upon definition of centralized execution with which to set such a standard. This creates a subjective situation whereby centralized execution is in the eye of the beholder. Thus, this chapter will focus on demonstrating the MAF has and is moving *away* from decentralized execution by using the five criteria extracted from Air Force doctrine in the introduction. That covered, the MAF does not decentrally execute because superior commanders or their staffs retain execution authority, require their crews to seek permission to exploit fleeting opportunity, direct front-line decisions, and perform detailed planning for aircrews. The evidence will show that the MAF has met an increasing number of the criteria listed in the introduction over time. Air Mobility doctrine seems to reflect this:

A high degree of tasking and execution control is centralized above the wing level, with an appropriately experienced air mobility commander to direct forces and respond as a system to mobility requirements.¹

The term “execution control” used above seems to be an oxymoron. What does the term “execution control” mean? How does it fit with the long-held tenet of “centralized control and decentralized execution?” Since this chapter quotes many instructions, a few points are worth illuminating.

¹ Air Force Doctrine Document (AFDD) 2-6. *Air Mobility Operations*, 25 June 1999, 6.

The degree to which instructions make sense or to which crews intentionally break them has no bearing on whether or not the MAF centrally or decentrally executes. Do not confuse the wisdom of regulatory guidance with the appropriateness of requiring high-level officers to override it. A lot of the guidance contained in AMC instructions makes sense. However, the wisdom of this guidance is not the issue; the issue is whether MAF tactical-level commanders possess the authority to judge and contravene this guidance, when necessary, to enable decentralized execution. Furthermore, *regulation breaking does not enable decentralized execution as intended by Air Force doctrine*. As shown in the introduction, the intent of decentralized execution in Air Force doctrine is to delegate decision authority down the chain of command to enable lower echelons to make appropriate decisions to exploit tactical opportunity and speed the decision-cycle. While regulation breaking may accomplish these ends, it does not constitute delegation of authority; rather, regulation breaking is more like stolen authority.

Criteria 3a: Superior Commanders or their Staffs Retain Execution Authority

High-level MAF commanders retain execution authority, contravening doctrinal definitions of decentralized execution. Joint, Air Force, and Air Force mobility doctrine each define decentralized execution as the, “Delegation of execution authority to subordinate commanders.”² Although mobility doctrine claims the MAF does this,³ airlift operations instructions for the C-5, C-17, and C-130 each state that the commander with operational control *retains* execution authority.⁴ Dated in 1995--before the advent of Eighteenth Air Force--the

² Air Force Doctrine Document (AFDD) 2-6. *Air Mobility Operations*, 25 June 1999, 6.; Air Force Doctrine Document (AFDD) 1. *Air Force Basic Doctrine*, 17 November 2004, 28; Joint Publication 3-30, Command and Control for Joint Air Operations, 5 June 03, viii

³ AFDD 2-6, 6.

⁴ AFI 11-2C-17, Vol 3 uses the term “execution authority” on page 51 in a diagram labeled “Typical Launch Decision Matrix.” This diagram lists several agencies across the bottom with an arrow labeled “execution authority” pointing toward them. The words on above the arrow diagram states that AMC is the execution authority for TACC-directed missions, the MAJCOM/DO for non-AMC missions, and contingencies are “as specified.” This statement is further backed by three other instances of “execution authority” in three MAF 11-2-C-X (C-5/17/130) series operating instructions which refer to either to execution approval coming from C2 channels, prohibiting the diversion of a mission without approval from the execution authority, and prohibiting aircrew “bootlegging” without the approval of the execution authority. Furthermore, each of these MAF 11-series instructions has a glossary defining the term execution as “Command-level approval for initiation of a mission or portion thereof after due consideration of all pertinent factors. Execution authority is restricted to designated command authority.” This definition seems to say the MAJCOM retains execution authority. MAF 11-series operating instructions specifically state, “Waiver authority is based on “who” has operational control and execution of the aircraft performing a specific mission.” (AFI 11-2C-130 Vol 3, 44; AFI 11-2C-17 Vol 3, 45; and AFI 11-2C-5 Vol 3, 33) A few sentences later in these instructions, the AMC/DO is listed as the waiver authority for AMC-directed missions controlled by the TACC. Ergo, the AMC/DO has “operational control and execution” of TACC-directed missions. MAF 11-series operations instructions also contain a vague definition of the term “execution authority” in the section specifically addressing the term. The C-17 instruction states (others

current AMC command and control regulatory guidance specifies retention of execution authority also:

The AMC C2 system consists basically of two echelons: centralized control with primary execution authority retained by COMAMC [AMC commander] and decentralized execution exercised by...[the] TACC...DIRMOBFOR [AMD airlift director]...⁵

Aircrews are conspicuously absent from this list of decentralized executors. According to this instruction, the commander of AMC *retains* execution authority and “decentralized execution” occurs primarily at the TACC--AMC’s *global* control center. Taken together, these instructions clearly establish the Eighteenth Air Force commander, COMAFFOR, JFACC, or the MAJCOM/DO as having execution authority of MAF missions, depending on the situation.⁶

Headquarters AMC, USAFE and PACAF each retain the authority to determine what paved airfields its airlift crews can use rather than specifying safe parameters--commander’s intent--and allowing subordinate commanders to decide. Regardless of MAJCOM, MAF aircraft cannot land at a paved airfield unless AMC’s Airfield Suitability and Restrictions Report (ASRR) lists the airfield as suitable.⁷ An office in AMC headquarters establishes the criteria (commander’s intent) for each type of mobility aircraft to safely operate from an airfield.⁸ Another office in AMC headquarters translates this commander’s intent into a worldwide database defining where all AMC aircraft may operate, “AMC missions may operate only at airfields that are listed as suitable in the ASRR or GDSS airfield database.”⁹ Thus, the MAF does not delegate the authority to determine airfield suitability based on commander’s intent. Air Mobility Command has a similar process for unpaved landing zones approval.

Air Mobility Command also retains the authority to determine what unpaved airfields its crews may use. For instance, according to instruction, C-130’s may operate on unpaved landing zones provided they have an approved landing zone survey on file at AMC. The catch is that a

exactly the same): “**Execution Authority.** Execution approval will be received through the local command post or command element. The operations group commander will be the executing authority for local training missions. The aircraft commander will execute missions operating outside communications channels.” Thus, “execution approval” is received from somewhere (presumably AMC, TACC, AMOCC, or the AMD) unless operating outside communications channels--a rare situation indeed in today’s communications world considering that many MAF aircraft have built-in satellite communications suites and all have HF radios.

⁵ AMCI 10-202 AMC *Command and Control Operations* Vol 1 13 February 1995, 10.

⁶ In general, 18AF has OPCON of C-5, C-17, C-141, and most C-130 aircraft. The USAFE/DO and PACAF/DO has OPCON of theater assigned C-130 assets. The COMAFFOR or JFACC has OPCON of C-130s CHOPed to a JFC.

⁷ Air Mobility Command Airfield Suitability and Restrictions Report (ASRR) 1 February 2005, iii. USAFE - Air Force Instruction 11-202 Volume 3 USAFE Supplement 1, *General Flight Rules*, 29 April 2005, 4. PACAF - PACAF Instruction 10-2101, *Pacific Air Mobility Operations*, 13 April 2001, 5.

⁸ AMC/A37

⁹ ASRR, iii.

landing zone survey “is not valid for use until it has been reviewed and recommended for use by the appropriate [a major or lieutenant general].”¹⁰ In the case of the C-17, a major general also decides on a case-by-case basis if a unit can land at an already surveyed and approved semi-prepared assault-landing zone (ALZ).¹¹ Furthermore, pilots must obtain authorization from a major general “prior to taking off from, or landing on gravel runways,” even on an ALZ with a valid landing zone survey already on file.¹² Thus, higher headquarters retains execution authority to establish, and in many cases use, a landing zone. In summary of criteria 3a, the MAF does not delegate execution authority below the general officer level. This is both explicit, as written in its instructions, and implicit, by retaining authority to land at new airfields and landing zones--at times on a case-by-case basis.

Criteria 3b: Authority to Exploit Fleeting Opportunity only by Obtaining Approval to Act

As will be seen, the MAF does not permit its aircrews or lower level commanders to exploit fleeting opportunities or independently solve common execution issues such as broken equipment without obtaining general-officer approval. Such a philosophy was not always the case. The year 2000 release of new MAF 11-series operations instructions de-emphasized aircrew judgment and innovation. The previous operations instruction for the C-130 was Multi-Command Regulation (MCR) 55-130 dated in 1993. MCR 55-130 opens by stating it was “written for normal and contingency operations to reduce procedural changes at the onset of contingencies”¹³ and specifically states, “Although this publication provides guidance for C-130 operations under most circumstances, it is not a substitute for ‘sound judgment.’”¹⁴ In contrast, 11-2C-130 Volume 3 starts by explaining the instruction, “establishes policy for the operation of C-130...aircraft to safely and successfully accomplish their worldwide missions” and deletes the “sound judgment” clause from its opening pages.¹⁵ More interesting is what else AMC removed.

¹⁰ Air Force Instruction (AFI) 13-217. *Drop Zone and Landing Zone Operations*, 1 May 2003, 47.

¹¹ Air Mobility Command Instruction (AMCI) 11-208. *Tanker/Airlift Operations*, 1 June 2000, 15.

¹² ASRR, xvi.

¹³ Multi-Command Regulation (MCR) 55-130, Volume 1. *C-130 Operations*, 15 April 1993, 2.

¹⁴ MCR 55-130, Volume 1. *C-130 Operations*, 2.

¹⁵ AFI 11-2C-130 Vol 3, 1-27. In fairness, there is a similar clause in the opening paragraph of chapter 17 “Airland Employment” which says: “The procedures contained herein are not all encompassing...aircrews should use good judgment and sound airmanship to successfully accomplish the mission.” However, a little context is required. MCR 55-130 was a two-volume regulation. Volume 1 was entitled “Operations” and contained the lion’s share of operating directives and restrictions. Volume 2 was entitled “C-130 Tactical Operations” and functioned essentially as the Tactics Techniques and Procedures manual for C-130 Combat Operations. When AFI 11-2-C-130 Volume 3 was released, it replaced both Volumes of MCR 55-130 and assimilated these two volumes into one, placing most of what had been MCR 55-130 Volume 2 (Tactical Operations) into the back chapters of the 11-series instruction starting with Chapter 16. The point is that “sound judgment” was removed from the front end of the more directive 11-series instruction

The paragraph containing the only remaining reference for using “sound judgment” in the 11-series instruction is different from its 55-130 predecessor. The opening paragraph of chapter 17, entitled “Airland Employment,” states, “The procedures contained herein are not all encompassing... aircrews should use good judgment and sound airmanship to successfully accomplish the mission.”¹⁶ This paragraph is *nearly* a block copy of MCR 55-130, Volume 2, paragraph 2.1, page 22. However, the 11-series instruction deleted the 55-series recommendation for crews to use *innovation*. The 55-series sentence reads as follows: “The procedures contained herein are not all encompassing...aircrews should use sound judgment, innovation, and sound airmanship to successfully accomplish the mission.”¹⁷ Innovation at the tactical-level has historically been an American military trademark and is a key ingredient in decentralized execution. In addition to a shift in what the MAF expected from aircrews, the 11-series instructions dramatically moved authority up the chain.

Decision authority moved up the chain with the release of the 11-series C-130 instructions compared to the 55-series. Under MCR 55-130 the aircraft commander--on his own authority--could extend his aircrew’s maximum crew day from 16 to 18 hours.¹⁸ The 11-series replacement removed this authority and moved it to the general officer level.¹⁹ Until recently, the aircraft commander also had the authority to approve takeoffs at airspeeds below minimum controlled airspeed, which reduces the aircraft takeoff distance.²⁰ Current AMC guidance removes this decision from the aircraft commander also.²¹ MCR 55-130 had a *two page* chapter called “Recommended Operating *Guidelines*” that 11-2C-130, Volume 3, replaced with a 12-page chapter called “Aircraft Operating *Restrictions*” as discussed previously in this chapter (emphasis added). The “Recommended Operating Guideline” chapter in MCR 55-130 contains the

¹⁶ AFI 11-2C-130 Vol 3, 212.

¹⁷ AFI 11-2C-130 Vol 3, 212 and MCR 55-130 Vol 2, 22. There is another minor difference in the two paragraphs. The 11-series instruction adds the word “assault” to the 55-series term landing zone (a somewhat cosmetic change). Lt Col Baxter Swift, who is listed on the front cover of 11-2C-130 Vol 3 as the OPR, speculated in an e-mail to the author 27 May 05, “speculation is [that] the AFI is procedural so we don’t want to encourage people to be fast and lose with the rules. This could be implied with the word “innovation.” Also, if you take “innovation” out, good judgment and sound airmanship are the bedrock for good decision-making. It could have been a standardization issue with another AFI. Maybe the C-141 Vol 3 had the same paragraph with the same wording without the word innovation. Bottom line, I can’t remember and you can quote me on that.”

¹⁸ MCR 55-130, Volume 1. *C-130 Operations*, 10.

¹⁹ AFI 11-2C-130 Vol 3, 38.

²⁰ MCR 55-130 Vol 1, 18, and AFI 11-2C-130 Vol 3, 61.

²¹ AMC Flight Crew Information File (FCIF) 03-02-08 “C-130 Performance Manual Policy” 19 February 2003. “Prior to seeking MAJCOM/DO approval to takeoff at a V_{meto} less than V_{mca}, assault-qualified pilots will check available data (weather, runway length, surface condition, applicable airfield survey, other hazards, obstructions, terrain laterally and along the climb out flight path, V_{meto}, refusal speed (V_r), V_{mca}, V_{mcg}, etc.) to ensure takeoff is feasible. when factors indicate aircraft performance permit takeoff using V_{mca}, pilots should use V_{mca} even if MAJCOM/DO approves takeoff at a V_{meto} less than V_{mca}.”

following statement, “The aircraft commander is the approving authority for operations with degraded equipment and needs no further approval.”²² This level of MAF aircrew authority ended with the release of the Minimum Equipment List (MEL) contained in MAF 11-series operations instructions.

The 11-series instructions centralized MAF authority to launch or continue a mission using an aircraft with minor equipment problems. The list of equipment requiring an airlift pilot to request general officer judgment to continue the mission is long (Figure 5).

²² MCR 55-130, Volume 1. *C-130 Operations*, 13. Interestingly, a similar statement still exists in the current version of Air Force Special Operations Command C-130 instructions AFI 11-2-MC-130 Volume 3, 26 contains the following statement, “The final responsibility regarding equipment required for a mission rests with the aircraft commander.”

Table 4.1. Engines/Auxiliary Power Units (APU).

Item/System	Installed	Required		Remarks/Limitations/Exceptions
		A	B	
1-1. Engine Fuel Pump	4	4	3	(B) Both affected fuel tank boost pumps shall be operative. One-time flight to nearest repair capable facility if only low-pressure element is inoperative.
1-2. Continuous Ignition	4	4	3	(B) Requires MAJCOM approval. One-time flight to nearest repair capable facility. Normal and Airstart position shall be operative.
1-3. Start Ignition	4	4	4	Either Normal or Airstart position shall be operative.
1-4. Starter	4	4	4	
1-5. Fuel Heater	4	4	3	(B/L) Required on flights with fuel temperature below 0° C. Valve must be failed closed.
1-6. Oil Pressure Indicating System				
a. Low Oil Pressure Switch	4	4	3	(B/L) The low oil pressure light may be inop if the oil pressure gauge is operative.
b. Oil Pressure Gauge	4	4	4	
1-7. Oil Temperature Indicator	4	4	4	
1-8. Oil Filter Differential Pressure Light	4	4	3	(B/L) Mission may continue if malfunction is determined to be an indication problem and the oil filter has been checked for clogging or indication of bearing failure (metal chips). The engine oil filter shall be checked at every stop until the indication malfunction is corrected. Carry spare seals.
1-9. N1 Indicator	8	8	*	(B/L) If possible, place the operative indicator at the engineer panel. Associated N2 shall be operative. (B) Both may be inoperative, at least one shall be repaired at next repair capable facility.
1-10. N2 Indicator	8	8	1/Eng	(B/L) If possible, place the operative indicator at the engineer panel. Associated N1 shall be operative.
1-11. TIT Indicator	8	8	1/Eng	(B/L) If possible, place the operative indicator at the engineer panel.
1-12. Fuel Flow Indicator	8	8	1/Eng	(B/L) If possible, place the operative indicator at the engineer panel.
1-13. Engine Overheat & Fire Detection System	4	4	4	System shall be capable of detecting both an engine fire and overheat condition. 1. Do not take-off with a shorted system. 2. Fire warning and ovht test shall be operative. (B) Open circuits. Take-off from a non-repair capable facility only. Shall be repaired at next repair capable facility. No more than one open circuit may exist and the location of the break shall be determined. Reverify open at each enroute stop.
a. Engine Fire Annunciator/Warning Light	8	8	*	(B) One light shall function at the pilot or engineer position. The associated fire handle light shall be operative. Shall be repaired at next repair capable facility.
b. Engine Overheat Annunciator/Warning Light	8	8	*	(B) One light shall function at the pilot or engineer position. The associated fire handle light shall be operative. Shall be repaired at next repair capable facility.
c. Engine/Pylon Optical Fire Detection System	4	4	*	(B) Fire, ovht, and short discriminator tests shall be operative. Shall be repaired at next repair capable facility.

Table continued on next page.

Figure 5 - Example of C-5 Minimum Equipment Table

SOURCE: AFI 11-C-5 VOLUME 3

This table is one of 31 similar tables. Everything from degraded individual radios to scroll checklist holders and first aid kits require the AMC A3, a general officer, to decide whether a mission can launch or continue without the inoperative equipment. Although the C-5 is the most regulated in this sense, the C-17 and C-130 operations instructions contain similar minimum equipment lists (18 tables for the C-130 and 31 tables for the C-17).²³ In the case of the C-17, there is even a “mission launch decision matrix.”²⁴ Rather than specifying the commander’s

²³ AFI 11-2C-130 Vol 3, Chapter 4; AFI 11-2C-17 Vol 3, Chapter 4.

²⁴ AFI 11-2C-130 Vol 3, 51.

intent with respect to safety and degraded equipment, airlift instructions prescribe exactly what systems must be operating and require a higher headquarters waiver to continue without them. They also limit aircrew ability to exploit fleeting opportunity.

In a sense, airlift instructions specifically prohibit decentralized execution. According to airlift doctrine, “Decentralized execution ensures those who are responsible for executing the airlift mission...have the requisite authority to exploit fleeting opportunities as required to successfully meet mission objectives.”²⁵ With this in mind, consider that C-17 aircraft commanders are (the C-5 instruction has a similar restriction):

Responsible for ensuring that only activity authorized by the executing authority is accomplished, unless emergency conditions dictate otherwise (for example, unscheduled “bootleg” air refueling or transition training are not authorized without the approval of the executing authority).²⁶

THIS REQUIRES AIRCREWS AND LOWER LEVEL COMMANDERS TO OBTAIN SPECIFIC APPROVAL FOR ANY MISSION CHANGE NOT ALREADY AUTHORIZED BY THE EXECUTION AUTHORITY--TYPICALLY, THE AMC OR EIGHTEENTH AIR FORCE COMMANDER. THUS, AIRCREWS ARE NOT FREE TO EXPLOIT FLEETING OPPORTUNITIES WITHOUT FIRST OBTAINING HIGHER HEADQUARTERS AUTHORIZATION. THIS SITUATION MANIFESTS ITSELF IN MANY WAYS.

Aircrews cannot make a decision to *not* land at an airfield with no cargo. From time to time an aircraft may be scheduled to stop at an airfield that has no cargo or passenger upload or download. When this situation arises, the obvious question is whether one should or should not land at the airfield. Airlift instructions state, “The C2 agency may approve a request to overfly a scheduled enroute stop.”²⁷ Thus, aircrews must obtain C2 approval to *not land* at an airfield even if the local air terminal operations center (agency in charge of loading and unloading air cargo and passengers) informs the crew--usually by radio--that there is nothing to upload or download. This policy mitigates potential downstream problems caused by a mission getting ahead of schedule; however, it does represent a centralized decision-making process. A related decision to overfly an airfield is the divert decision.

Except in emergencies, the decision to divert a mission in response to an emerging situation rests with the “execution authority,” a lieutenant general, but is typically delegated to the mission director on the floor of the TACC/AMOCC/AMD. Mission diverts: “Must be authorized by the execution authority, except in an emergency or when required by en route or terminal weather conditions.”²⁸ Higher headquarters also plans and provides details supporting a mission divert to the aircrew. In short, higher headquarters makes the decisions and plans related to

²⁵ AFDD 2-6.1, 8.

²⁶ C-5 aircraft commanders have similar verbiage in their instructions. AFI 11-2C-17 Vol 3, 27; AFI 11-2C-5 Vol 3, 15.

²⁷ AFI 11-2C-130 Vol 3, 108; the C-5 and C-17 instructions have similar statements.

²⁸ AFI 11-2C-17 Vol 3, 27; the C-5 and C-130 instructions have the same guidance.

mission diverts, freeing the aircrew to simply pilot the aircraft to the new destination. A similar process exists for developing situations on the ground.

Higher command levels prohibit crews from executing tactical ground operations without obtaining senior officer approval. A combat offload is essentially an airdrop conducted on the ground whereby an airlift aircraft taxis out from underneath its cargo, which rolls out the back of the plane onto the ground. This maneuver can expedite ground operations in a threat area or enable unloading an airlifter without material handling equipment. The C-130 (C-5 and C-17 are similar) operations instruction specifies, “The controlling C2 commander, MAJCOM DO/XO or the commander, DIRMObFOR may authorize combat offload when conditions warrant.”²⁹ C-130 aircrews must also seek higher-permission from the DIRMObFOR or OG/CC to perform alternate methods of starting engines with nothing wrong with them but a bad starter.³⁰ These procedures are the “windmill taxi” and “buddy” starts.³¹ Thus, when unexpected situations develop during execution such as airfield threats, broken forklifts, or bad starters, aircrews must obtain high-level approval on a case-by-case basis to act.

In summary of criteria 3b, subordinate commanders and aircrews must seek general officer permission to operate aircraft with degraded equipment, react to unexpected ground situations such as broken material equipment, and are in fact specifically prohibited from doing anything not cleared by a general officer. Such activity labeled as “bootlegging.” While some of these restrictions existed before, this situation resulted primarily from a dramatic shift in authority and expectation with the release of MAF 11-series operations instructions in the year 2000.

²⁹ AFI 11-2C-130 Vol 3, 224; AFI 11-2C-17 Vol 3, 203.

³⁰ AFI 11-2C-130 Vol 3, 65. “BUDDY AND WINDMILL TAXI STARTS MAY BE PERFORMED WHEN APPROVED BY THE OG/CC OR DIRMObFOR. THIS AUTHORITY MAY BE DELEGATED TO THE SQUADRON OR MISSION COMMANDER WHEN THE UNIT IS DEPLOYED.” ALTHOUGH THIS LATTER POINT GOES A LONG WAY TOWARD DECENTRALIZING THIS AUTHORITY, WHAT’S THE DIFFERENCE FROM THE AIRCREW’S POINT OF VIEW IF BROKEN SOMEWHERE--THEY STILL MUST ASK SOMEONE ELSE TO APPROVE THESE METHODS WHEN TIME AND CONDITIONS MAY OR MAY NOT BE CONDUCIVE TO DOING SO. IN PRACTICE, THIS AUTHORITY IS NOT DELEGATED BELOW THE DIRMObFOR OR OG/CC. THE AUTHOR ONLY KNOWS OF TWO SUCH AUTHORIZATIONS IN HIS PERSONAL EXPERIENCE--EACH A DIRMObFOR DECISION.

³¹ Each of these procedures is defined in the C-130 Flight Manual. All C-130 aircraft commanders train to perform windmill taxi starts during aircraft commander qualification training. All C-130 pilots practice both the windmill taxi and buddy start in annual simulator refresher training. The windmill taxi start requires the aircraft to fast taxi, usually using a runway, at 60-100 knots, which causes an engine with a bad starter to turn allowing it to start. A buddy-start is similar except that it requires another C-130 to line-up in front of the affected aircraft, set its brakes, and run its engines up to high power settings. This spins the broken aircraft’s affected engine using propeller wash.

Criteria 3c: Directing Front-Line Commander Decisions

In the airlift world, higher headquarters direct many personal and unit-level activities and aircraft commander choices including aircrew management, departure and arrival method, terminal area tactics, and night vision goggle tactics.

AMC instructions and programs very specifically control and manage unit aircrews. Instructions specify when aircrews must enter crew rest, when they can be disturbed, and by whom, how much time crews are allotted to drive in to work, how long they can work, and when they can drink alcohol.³² AMC instructions also specify the prioritized order that a stage manager must alert crews out of the stage.³³ More specifically, AMC manages unit aircrews through a program called Aircrew Aircraft Tasking System (AATS). The AATS program began in 2002, resulting from the need for aircrews to support Operation Enduring Freedom.³⁴ The program specifies how many aircrews each unit “owes” TACC for taskings.³⁵ It also manages aircrew allocation in a very detailed and prescribed manner.

TACC decides for each wing how many crews it can use for training, on staff, on business trips, at schools, on vacation, or sick.³⁶ In accordance with the program, each wing must report daily the available number of aircrews on station to TACC. TACC uses this information to determine how many aircrews it can task from each unit. Ultimately, the AMC A-3 (a major general) decides the proper number of crews a unit should be able to provide. It also suggests how unit commanders should do their jobs.

The AATS program lists methods for unit commanders to do their jobs: “Once tasked to surge, [unit commanders] determine how to meet their tasking. Units can reduce office manning, waive the first 12 hours of pre-mission crew rest, restrict [post mission crew rest], cancel local ground/flying training, and/or reduce leave to meet tasking level.”³⁷ The AATS program also requires unit commanders to submit their plan for managing their aircrews to the TACC 30 days in advance.³⁸ If a unit commander cannot meet his tasking level, he must ask for the permission of the AMC A3 (a major general) to alter the management of his crews.³⁹

In sum, MAF instructions and the AATS program puts Headquarters AMC in the business of managing unit aircrews. AMC determines how many crews units may use in training and holds sway in all wing and operations group commander requests for changes in how their

³² AFI 11-2C-130 Vol 3; AFI 11-2C-5 Vol 3; AFI 11-2C-17 Vol 3.

³³ AMCI 11-208, 31.

³⁴ Air Mobility Command *Aircrew/Aircraft Tasking System (AATS) CONOPS*, 1 August 2004, 3.

³⁵ *AATS CONOPS*, 3.

³⁶ *AATS CONOPS*, 2.

³⁷ *AATS CONOPS*, 6.

³⁸ *AATS CONOPS*, 8.

³⁹ *AATS CONOPS*, 6 and 9.

crews are used. The program also tells unit commanders how to manage their aircrews to obtain the desired TACC tasking levels. In short, instead of allowing a unit-level commander to manage his crews to meet TACC tasked missions, the TACC reaches into operational squadrons, dictates the answer, and requires lower level commanders to ask for permission to change this management. This type of directed decision-making also occurs in operations.

Airlift instructions specify what type of departure and arrival airlift aircraft must use. For the C-5, C-17, and C-130, airlift instructions specify that crews must fly instrument departures and can only depart under visual flight rules if required for mission accomplishment, but in no case in lieu of meeting the published climb gradient for the airfield in question.⁴⁰ Similar to these departure restrictions higher headquarters mandates the type of approach airlift crews fly:

Fly a precision approach, if available, at night or during marginal weather. If a precision approach is not available, fly any available approved instrument approach. During night VFR conditions, if an approved instrument approach is not available, a visual approach may be flown. On training and evaluation flights at familiar fields, pilots may fly non-precision approaches or VFR traffic patterns to accomplish required training and evaluations.⁴¹

This restriction is in the C-5, C-17, and C-130 operations instructions, although the C-5 instruction adds an additional restriction ruling out the visual approach without an operating visual approach slope indicator at the field. Exceptions to these departure and arrival policies require a general officer waiver to do otherwise. The MAF also centralizes its tactics and tactical direction.

The MAF uses a centralized Threat Working Group (TWG) to specify tactics on operational missions and set acceptable risk. Similar to the PACAF and USAFE TWGs, Air Mobility Command's threat working group (TWG) meets to evaluate and set threat mitigation policy for global air mobility operations.⁴² It develops consolidated policy for all airfields which

⁴⁰ AFI 11-2C-130 Vol 3, 75; AFI 11-2C-5 Vol 3, 85; AFI 11-2C-17 Vol 3, 72. Three situations follow from this directive: takeoffs from an airfield with an authorized instrument departure procedure and (1a) aircraft performance meets the required climb gradient, (1b) climb gradient exceeds aircraft climb performance capability, or (2) takeoffs from an airfield without instrument departure procedures. If aircraft performance meets or exceeds the published climb gradient, instructions *mandate* an IFR departure using an instrument departure procedure. If aircraft performance does not meet the required climb gradient, the mission cannot depart.⁴⁰ Each of these situations is excepted if a VFR departure is inherent in the mission.

⁴¹ AFI 11-2C-130 Vol 3, 97; others similar, see AFI 11-2C-17 Vol 3, 90; AFI 11-2C-5 Vol 3, 103.

⁴² Air Mobility Command Instruction (AMCI) 14-106 *Threat Working Group*, 15 September 2004, 1; during the research for this thesis the author confirmed the operational details of the threat working group with Col Ronald Newsom (AMC A7F) who is a principle on the AMC TWG. He confirmed that the TWG operates essentially as described in AMCI 14-206. Col Newsom then vectored the author to Lt Col David Gillespie, cited in this work, who reconfirmed the operating details of the TWG. Although the USAFE and PACAF TWGs do not have operating instructions posted on the Air Force pubs website, these organizations and their functions are referenced in Air Force Instruction 11-202 Volume 3 USAFE

become a virtual risk assessment (VRA) once posted on a classified website. The policies are binding and include day or night-only restrictions; defensive system switch position settings; and altitudes to select each position, tactical approach recommendations, personal armor, aircraft armor, laser eye protection, security forces support, restrictions on commercial aircraft operations, airfield operations, remain overnight (RON), maximum aircraft allowed on the ground (MOG), and medical issues and restrictions.⁴³ The CENTCOM AMD has a similar system.

The Air Mobility Division inside the Air Operations Center has a similar TWG process which dictates tactical policy.⁴⁴ The CENTAF AMD defaults its own TWG risk assessments to the AMC TWG's recommendations and then makes its own determinations for airfields in its area of responsibility.⁴⁵ Like the AMC TWG, the CENTCOM theater-based assessment is binding for its crews with key experts making inputs and the DIRMObFOR setting policy. From time to time, the AMC TWG and the theater assessments for the same airfield differ. When this happens, AMC instructions require its staff to resolve the difference with the theater.⁴⁶ Thus, the MAF uses a centralized TWG process to make tactical threat decisions. A recent night vision goggle policy illustrates the level of tactical detail that the MAF sometimes specifies from higher headquarters.

First, a vignette; the random shallow is a tactical arrival procedure used by airlift aircraft to mitigate surface to air threats like small arms, rocket-propelled grenades, and man-portable missiles. There are many different types of random shallow approaches and each has certain tactical advantages and disadvantages. However, in general these maneuvers involve low altitude, high-speed arrivals to an airfield from "random" approach azimuths, including perpendicular, to the runway of intended landing. Ingenious aircrews developed these airlift specific tactical approaches in the Vietnam War and its aftermath.⁴⁷ Over the years, these procedures have codified in airlift instructions with a measure of higher headquarters restraint imposed to enhance safety.

Supplement 1, *General Flight Rules*, 29 April 2005, 26 and PACAF Instruction 10-2101, *Pacific Air Mobility Operations*, 13 April 2001, 5.

⁴³ Air Mobility Command Instruction (AMCI) 14-106 *Threat Working Group*, 15 September 2004, multiple pages.

⁴⁴ Author's experience as the chief of airlift tactics inside the Prince Sultan Air Base Combined Air Operations Center Air Mobility Division (PSAB CAOC AMD) from September 2002 - December 2002.

⁴⁵ Author's experience in the PSAB CAOC AMD.

⁴⁶ Air Mobility Command Instruction (AMCI) 14-106 *Threat Working Group*, 15 September 2004, 3.

⁴⁷ Capt Robert "Animal" Ain, "Random Shallow Approaches" a paper written when he was stationed in the 463 Tactical Airlift Wing at Dyess Air Force Base, Texas. The C-130 Weapons School distributes this paper as part of its Tactical Approach Course EMP-392GP. The C-130 Weapons School course credits Capt Ain as one of the originators of the random-shallow tactic. He wrote the paper after assimilating the tactics of Vietnam War and attempting to improve them should the US fight a war in Europe against the Soviet Union.

As US Army tanks rolled north toward Baghdad in March 2003, AMC released the following directive affecting the entire C-130 fleet which strictly controlled airlift tactics:

In all arrival situations (day or night with or without NVGs) pilots shall fly at the highest altitude with the minimum amount of maneuvering necessary for the given airfield conditions. Tactical VFR approaches should primarily be employed during day VFR conditions...Avoid use of low altitude tactical VFR approaches at night which use “beam” or “break” maneuvers unless absolutely essential for mission completion. Such maneuvers are limited to 500 AGL minimum. For night/NVG operations, limit bank angles to 30 degrees between 500 AGL and 1000 AGL and 45 degrees at or above 1000 AGL. When below 1000 AGL on a night arrival or departure, do not exceed 30 degrees bank angle unless threat reaction or other urgent situation so dictates. Preferred NVG arrival is via standard VFR pattern (straight-in, downwind entry, base-leg entry) or straight-in instrument approach (for IFR conditions). When flying any approach using NVGs, pilots will plan the final approach to roll out and stabilize no less than 500 AGL and 1 1/2 mile from the runway.⁴⁸

This directs very specific methods of performing tactical approaches. It applies to “all arrival situations” and dictates altitudes, bank angles, distances, and dictates a prioritized order to use specific approach types. One could even argue this direction prohibits the use of tactical approaches at night since, unless actually fired upon, one could always second-guess whether a tactical approach was “absolutely essential for mission accomplishment.” The Air Mobility Division in CENTCOM pushes similar detailed tactical direction to MAF aircrews operating in support of OEF and OIF that specify ground tracks, altitudes, and roll-out points.⁴⁹

In summary, the MAF directs many front-line commander decisions. AMC manages unit crews through the AATS program; the MAF directs the types of approaches and departures its crews fly; and the TWG process specifies in detail tactical measures including defensive systems switch positions, personal armor use, and day/night restrictions for threat reasons. The MAF also specifies very detailed guidance for terminal area tactics. Effectively then, these processes limit the ability of on-scene commanders to make decisions during rapidly unfolding operations demonstrating this third criterion.

Criteria 3d: Aircrews do not accomplish the Mission’s Detailed Planning

The TACC is the designated planning agency for most AMC operational missions. The TACC is the designated lead planning agency for special assignment airlift missions, exercises, contingencies, channel missions, strategic intertheater deployments, and coronet missions. In PACAF, the AMOCC is “responsible for all mission planning including diplomatic clearances

⁴⁸ AMC/DO AFI 11-2C-130 Vol 3, Addenda B, 2.

⁴⁹ Author’s experience in the PSAB CAOC AMD.

and PPRs, as well as entering the mission cut into C2 systems.”⁵⁰ The Eighteenth Air Force TACC and the PACAF AMOCC perform tactical-level planning for their missions by designing, creating, and pushing flight plans for many airlift missions. An office called TACC/XOCZF has this responsibility for Eighteenth Air Force. This office:

Operates 24/7 and provides winded, optimized computer flight plan (CFP) support for AMC mission operations. XOCZF also creates/maintains flight plans posted to the Permanent Bulletin Board (PBB) and the route database posted to the TACC web site...XOCZF will automatically provide CFPs 6-8 hours prior to scheduled departure for legs of 450 NM or greater and are available at en route C2 facilities for nearly all AMC missions that are not flight-managed.⁵¹

THE USAFE AND PACAF AMOCC’S ALSO PROVIDE A SIMILAR FUNCTION FOR THEIR AIRLIFT CREWS.⁵² THIS SAVES AIRCREWS TIME, REDUCES FLIGHT ROUTE ERRORS, AND OPTIMIZES ROUTES FOR FUEL. CREATING A ROUTE OF FLIGHT EVOLVES MANY TACTICAL-LEVEL CONSIDERATIONS AND DECISIONS SUCH AS FUEL PLANNING, EMERGENCY DIVERT PLANNING, WEATHER CONSIDERATIONS, AIRCRAFT PERFORMANCE CONSIDERATIONS, AIRCRAFT EQUIPMENT CONSIDERATIONS, LENGTH OF DUTY DAY, TIME CONTROL, AND CAN INCLUDE TACTICAL THREAT CONSIDERATIONS.⁵³ THESE TACC/AMOCC-RUN PROCESSES OF PERFORMING DETAILED MISSION PLANNING PRECEDED ANOTHER CALLED INTEGRATED FLIGHT MANAGEMENT THAT EXPANDS THIS CAPABILITY.

Integrated Flight Management is a relatively new program embedded in the TACC and USAFE AMOCCs, launched in FY 1999.⁵⁴ The IFM program is currently similar to an airline dispatch operation. The TACC IFM program employs 62 certified flight managers, and is growing to 91.⁵⁵ The USAFE and PACAF programs are smaller, but growing. They flight plan the execution phase of missions in place of aircrew planning. The flight manager chooses the route and altitude of flight; fuel load; calculates takeoff gross weight; determines maximum space available seat release; files all of the mission flight plans; obtains the weather; Intelligence; and NOTAM information; and consolidates mission information from the global decision support system, airfield summary of restrictions report, and the C2IPS databases.⁵⁶ The flight manager then posts all of these electronically on a password-protected website for aircrews to download, print, review and discuss with the flight manager before boarding the aircraft. Clearly, flight managers are performing detailed planning in place of the aircrew, however, once airborne; flight managers continue the planning process using data links.

Real-time two-way communications enables the flight manager to push mission changes to the crew in near real time, producing dynamic and proactive command and control. The IFM

⁵⁰ PACAF Instruction 10-2101, *Pacific Air Mobility Operations*, 13 April 2001, 21.

⁵¹ *TACC Brochure*. January 2005, 12.

⁵² PACAF Instruction 10-2101, *Pacific Air Mobility Operations*, 47.

⁵³ Many airfields outside of officially designated combat zones but inside unstable or third world countries have restrictions and tactical threat considerations that can be affected by flight route planning.

⁵⁴ Air Mobility Command (AMC) IFM Operation Concept (approved) version 7.21, 8 October 2004, iv.

⁵⁵ Bruce Card, Briefing to Lt Gen Baker, AMC/CV. AMC A38IP “Integrated Flight Management (IFM) Operating Concept Update.” January 2005, slide 15.

⁵⁶ Mr. Bob Meyers, TACC Flight Manager, TACC/XOCM, interviewed by author 24 January 05.

cell in TACC and the AMOCC has communications with air traffic control facilities worldwide as well as downrange AMC command and control nodes such as the Tanker Airlift Control Elements (TALCEs). Many AMC aircraft already have satellite communications systems aboard that allow two-way data and voice communications between the flight managers and the aircrew while a mission is in execution. At present, the program manages approximately 4,000 of the 9,000 average TACC missions per month. The TACC projects this to grow to include nearly all TACC missions by the fall of 2005.⁵⁷ The plan is to equip the entire C-17 and C-5 fleet with two-way digital links to communicate with TACC by 2009.⁵⁸

In summary of criterion 3d, the IFM program and its predecessors move the TACC away from decentralized execution. The IFM program already controls about half of all USTRANSCOM airlift missions, forecasted to include all missions by the end of 2005. Both USAFE and PACAF have budding IFM programs too, and the MAF intends to expand this system into theater C2 nodes.⁵⁹ Aircrews under flight management no longer plan; instead they fly the detailed Flight Manager plan. Many aspects of mission planning including route selection, performance planning, and space available passenger capacity are now handled through the detailed planning by the IFM program. Airlift doctrine states, “Decentralized execution ensures those who are responsible for executing the airlift mission actually accomplish the detailed planning.”⁶⁰ Thus, either Flight Managers decentrally execute from the TACC/AMOCC or the IFM program does not do decentralized execution.

The future of the IFM program has not yet unfolded. As such, one cannot say for sure how far the MAF will go leveraging this newfound technology. One of the current IFM program managers, Mr. Bruce Card, insists that flight management is about collaboration and in his words, “Flight managers don’t execute anything...they assist, support, confirm, aid, [and] provide.”⁶¹ Mr. Card explains that thus far, the program has received nothing but praise from aircrews and he takes exception to the author’s suggestion that IFM represents centralizing execution.⁶²

Criteria 3e: Senior Commanders or their Staffs Personally Direct Tactical Operations

However, there are signs that the IFM program will get MAF control centers into the business of directing tactical operations. For example, *Inside the Air Force* magazine quoted a

⁵⁷ Bruce Card, “Integrated Flight Management (IFM) Operating Concept Update,” slide 15.

⁵⁸ Lt Col Scott Weaver, Tanker Airlift Control Center (TACC) Briefing. “AOC Datalink Update,” 9 June 2004.

⁵⁹ AMC IFM Operation Concept version 7.21, iv, 36, 37.

⁶⁰ Air Force Doctrine Document (AFDD) 2-6.1. *Airlift Operations*, 13 November 1999, 8.

⁶¹ Bruce Card, e-mail to author 19 May 05.

⁶² Bruce Card, telephone interview with author 13 May 05.

previous IFM program manager as saying, “The flight manager will direct airborne aircrews from the ground and act as a ‘virtual crew member.’”⁶³ The same manager also said, “AMC flight managers will steer pilots to use certain routes and direct them away from bottlenecks.”⁶⁴ Mr. Card discounts this as “old thinking,” yet he has already resisted internal AMC proposals to make flight manager fuel load decisions binding on the aircrew.⁶⁵ At the core of this issue is the awesome potential for IFM to either enable decentralized control or centralized execution depending on implementation. Air Force doctrine warns, “Modern communications technology provides a temptation towards increasingly centralized execution of air and space power.”⁶⁶ In the future flight managers will *enable* the TACC to personally direct tactical operations--which some passages in the approved IFM operations concept document seem to imply may happen.

According to the approved IFM operational concept document, flight managers are “an integral part of the aircrew,”⁶⁷ and one day may split responsibility with the aircraft commander. The document continues, “Aircraft Commanders are in partnership with Flight Managers for the safe, risk-mitigated, and effective conduct of the sortie.”⁶⁸ The aircraft commander and the flight manager may eventually split responsibility 51 percent to 49 percent once the program is mature.⁶⁹ This is similar to the shared responsibility that already exists in many civilian airline operations.⁷⁰ A recent IFM update briefing to the AMC/CV, describes the current nature of this shared responsibility, “[the] TACC and unit planners do all planning and most flight planning before show time...crew executes the plan with Flight Managers proactively managing changes.”⁷¹ As this relationship and technology matures, new methods of defeating threats develop.

At maturity, MAF flight managers will proactively manage all MAF airlift missions leveraging control center staff expertise to assess, decide, and push “actionable” decisions to the aircrew including threat reactions.

When disruptions (e.g. pop-up threats, aircraft systems malfunctions, weather deterioration, etc.) jeopardize sortie success, decision makers must interact to

⁶³ *Inside the Air Force*, Vol 11. No. 22, “AMC to Pitch Flight-Management Integration Plan to Key Mobility Bases,” June 2, 2000. quoting Col Greg Padula when he was the deputy program director for the Mobility 2000 project (M2K) which incorporated IFM.

⁶⁴ Seena Simon, “Flight Managers key to ‘Mobility 2000,’” *Air Force Times*, 23 July 2001. Quoting Col Greg Padula, when he was the director of operations management at the TACC.

⁶⁵ Bruce Card, telephone interview with author 13 May 05.

⁶⁶ Air Force Doctrine Document (AFDD) 1. *Air Force Basic Doctrine*, 17 November 2004, 29-30.

⁶⁷ AMC IFM Operation Concept version 7.21, 12.

⁶⁸ AMC IFM Operation Concept version 7.21, 12.

⁶⁹ Mr Bruce Card (Lt Col ret) AMC A38IP e-mail correspondence with author, 10 February 2005.

⁷⁰ Mr Bruce Card (Lt Col ret) AMC A38IP e-mail correspondence with author, 10 February 2005.

⁷¹ Lt Col Bruce Card, Air Mobility Command A38IP Briefing “Integrated Flight Management: Building to the Vision.” date not listed, slide 12.

devise courses of action. In time compressed conditions, fused information and the ability to push this information directly to the cockpit are critical...Those C2 personnel [Flight Managers] with the best knowledge of sortie/mission planning factors, in concert with the aircrew, integrate activities to determine the most appropriate alternative.⁷²

This process will involve MAF staff functions to respond to emerging threats “as they are detected” so as to push “actionable countermeasure options” to the aircrew:

In an IFM environment of shared situational awareness, improved communications, and fused flight management information, Security, Intelligence, Investigative, and Information Operations Agencies can quickly identify to Flight Managers changing threat conditions. Tactics and Intelligence [staffs] can then devise actions to avoid, mitigate, or defeat potentially hostile actions. Sorties are planned with timely mitigation strategies and replanned on the fly when emerging threat conditions would impede successful sortie accomplishment. Aircrews are apprised of threats as they are detected with analyses and actionable countermeasure options pushed directly to the cockpit.⁷³

These statements indicate that decision-makers on staff will “push” tactical decision options including “actionable counter-measure[s]” about how to handle “pop-up threats and aircraft systems malfunctions,” from Scott AFB’s TACC, or an AMOCC. In fairness, the concept document frequently stresses collaboration with aircrews and also states, “In all cases, Aircraft Commanders retain final decision authority for safe and prudent aircraft operations.”⁷⁴ But, who wants to be the aircraft commander who overrode an IFM pushed decision for what seemed like a good reason, but in doing so caused something bad to happen? Often, it may be better to “follow the plan” since this dilutes the aircraft commander’s complicity if something bad does happen.

Thus, it is possible that MAF staff agencies will “personally direct” missions from the MAF control centers through IFM. Using two-way machine-to-machine communications, flight managers located in MAF control nodes will plan the mission and aircrews will execute the plan, calling on the flight managers to handle tactical changes during execution all the while sharing the responsibility for the mission. Flight managers will proactively manage mission changes; “push” solutions to “pop-up threats” and will eventually share responsibilities with the aircraft commander. This system will react dynamically to changes in the global situation and push actionable information and decisions to the aircrew enabling MAF commanders, or their staffs, to actually direct tactical operations. It remains to be seen whether this situation materializes, if it does, this would satisfy the fifth and final criteria indicating centralizing execution.

⁷² AMC IFM Operation Concept version 7.21, 6.

⁷³ AMC IFM Operation Concept version 7.21, 7.

⁷⁴ AMC IFM Operation Concept version 7.21, 12.

Regulation in General

While not specifically falling under one of the five criteria, the degree to which regulation seems to permeate the MAF is a more generalized indicator of MAF regulatory centralization; albeit somewhat difficult to quantify. For example, the C-5 operating instruction goes so far as to inform the aircraft commander, “A checklist is not complete until all items have been accomplished. Momentary hesitations for coordination items, ATC interruptions, and deviations specified in the flight manual, etc., are authorized.”⁷⁵ In yet another, the C-17 instruction tells the aircraft commander that he has four engines installed and all four are required for flight and that there is one crew entrance door and it must operate to safely fly also.⁷⁶ Another telling metric comes simply by counting pages.

Mobility Air Forces (MAF) seem to be more regulated than their Combat Air Force (CAF) counterparts. Instructions contain standardized procedures, direction, and control from higher headquarters. In general, instructions tell one what one can do or what one cannot do or they standardize conduct for interoperability and evaluation reasons. The sum-total of these rules essentially defines the allowable operating area or limits. Given all of this, a simple page count represents a rough measurement of regulation. Figure 6 displays the number of pages required to establish policy for the “safe and successful operation” of many Air Force aircraft types.⁷⁷ Obviously, this is a coarse measurement, but it is still revealing.

⁷⁵ AFI 11-2C-5 Vol 3, 64.

⁷⁶ AFI 11-2C-17 Vol 3, 51.12.

⁷⁷ Opening paragraph of each 11-series instruction is similar, stating, in the case of the C-17, “It establishes policy for the operation of the C-17 aircraft to safely and successfully accomplish their worldwide mobility missions.”

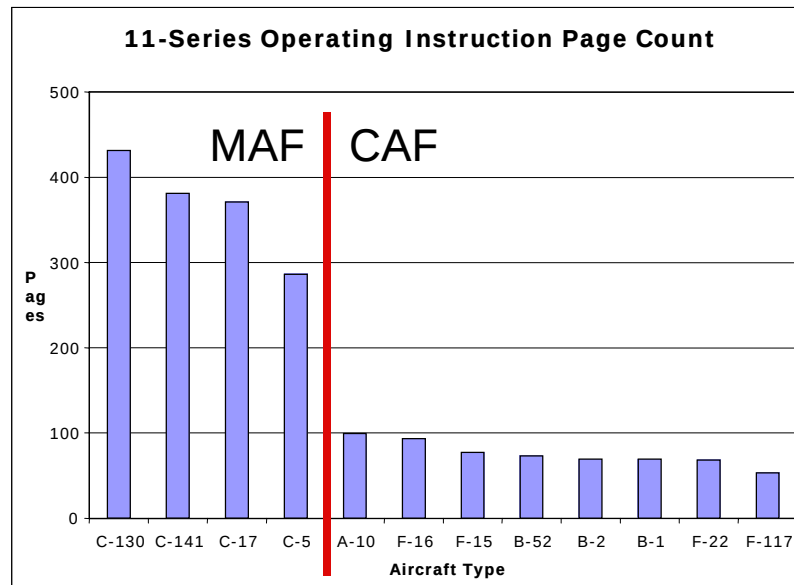


Figure 6 - 11-Series Operating Instruction Page Count Comparison

Summarizing the chapter's evidence, the MAF is centralizing in execution meeting four and potentially all five criteria specified in the introduction. First, by instruction, the MAF does not delegate execution authority below the general officer level. One example of this is that senior commanders prescribe when and if operational missions takeoff and what airfields and landing zones can be used--at times on a case-by-case basis. This contradicts the joint and Air Force doctrinal definitions of decentralized execution. Second, subordinate commanders and aircrews cannot exploit fleeting opportunity for several reasons. MAF instructions prohibit its C-5 and C-17 aircraft commanders from conducting any activity not specifically authorized by the execution authority--a general officer. The MAF also removed from MCR 55-130 the charge for crews to be innovative and requires senior officer approval for divers and overflights of airfields, combat offloads, operations with degraded equipment, crew day extensions, windmill taxi, and buddy starts. Third, higher level commanders direct front line commander decisions by managing unit aircrews, specifying departure and approach types, setting terminal area tactics including defensive systems switch positions and policies via the TWG, and dictating very specific tactical parameters for NVG operations. Fourth, MAF control centers and flight managers perform detailed MAF airlift mission planning *in place* of aircrews. This contradicts airlift doctrine, which states, "Decentralized execution ensures those who are responsible for executing the airlift mission actually accomplish the detailed planning."⁷⁸ Last, the intent of the IFM program is

⁷⁸ AFDD 2-6.1, 8.

transforming Mobility Air Forces (MAF) C2 from a reactive, management-by-exception concept to a dynamic, proactive system for global air mobility...It represents the **linchpin in the MAF's effort** to move to an integrated approach to sortie/mission planning and execution, **re-engineering C2** into a more **centralized, collaborative style of decision making. IFM encompasses the entire sortie planning and execution process.** (Emphasis added)⁷⁹

As this program matures, flight managers will push actionable decisions to aircrews--including reactions to pop-up threats--to aircrews that are expected to “fly the IFM plan.” This last example has not yet, and may not ever, happen. However, with four and the potential for all five criteria met, it is safe to conclude that the MAF does not decentrally execute. However, demonstrating centralizing execution requires a trend.

The MAF's move away from decentralized execution is trending more so. Under MCR 55-series regulations, MAF aircraft commanders were the decision authority for operating aircraft with degraded equipment, extending crew day, and takeoff below minimum controlled speeds. Most of this ended with the release of the 11-series instructions in 2000, moving these decisions to the general officer level. The IFM program began in 1999 and the AATS program in 2001. The IFM program currently manages about 50 percent of TACC's 9,000 missions per month. The TACC expects this to be 100 percent by the end of 2005. USAFE and PACAF each have budding IFM programs already. The forecast is for all C-17s to have vertical information flow data links by 2008, C-5s by 2009, and C-130s by 2016. Thus, MAF execution centralization will increase as the IFM program expands and completes the MAF's transition to a “more centralized style of decision making” which “encompasses the entire planning and execution process.”

Hence, MAF higher command echelons exercise what mobility doctrine calls “execution control,” but what is actually centralizing execution because the MAF has negated many doctrinal aspects of decentralized execution and is trending more so. In short, the Mobility Air Force C2 nodes not only tell aircraft commanders what to do, but how to do it.

⁷⁹ AMC IFM Operation Concept version 7.21, iv.

Chapter 4

Synthesis of Divergence

In practice, this techno-fusion allows the CINC to simultaneously centralize and decentralize his command. He can see everything...The 'chain of command' becomes a de facto 'network of command.'...But if - as is usually the case - distributed military analyses generate fundamentally different interpretations of events, then more analyses inherently mean more disagreements. Lifting the fog of war invariably intensifies dueling analyses that are based on common information...This situation is uniquely different from the past because, ostensibly, more commanders have more immediate access to more information. If they don't, then the RMA is really nothing but a revolution in the recentralization of command. The ultracentralized CINC then becomes explicitly incited to present analysis that justifies his decisions.

-- Michael Schrage, Massachusetts Institute of Technology

This chapter begins by synthesizing the evidence presented in previous chapters, concluding that the MAF command, control, and execution is centralizing. After this short rebuild of the thesis, this chapter transitions to demonstrate that the MAF's current path diverges from the intent of the Goldwater-Nichols Act, ongoing US Military transformation, unity of command and creates strategic vulnerabilities.

Reviewing, USTRANSCOM formed in the wake of the Goldwater-Nichols Act in 1987, charged with the global responsibility of transporting DOD assets via air, land, and sea. It began by merging three previously unrelated commands into one and commanded by the dual-hatted AMC commander. Before 1992, USTRANSCOM's responsibilities only existed in wartime. In 1992, the secretary of defense gave USTRANSCOM combatant command authority during peace and wartime. Also in 1992, AMC replaced MAC, integrating SAC's tankers into the MAF fleet and USTRANSCOM administratively aligned with AMC for TWCF reasons. In 1997, AMC absorbed most ACC C-130's.

In 2003, the secretary of defense designated USTRANSCOM as the global distribution process owner charging it with the responsibility for all DOD logistics reaching from the factory to the foxhole. In response, General Handy created the DDOC. The DDOC has directive authority inside the theater. Also in 2003, AMC's Fifteenth and Twenty-first Air Forces

deactivated and consolidated across the street from AMC and USTRANSCOM into Eighteenth Air Force. The AMC staff is also dual-hatted as the 18AF staff too. This prevented AMC from separating its train, organize, and equip functions from Eighteenth Air Force's operational mission. Thus, the MAF exhibits centralizing command because the authority and responsibility over organization and resources are each consolidating under the AMC/USTRANSCOM commander, satisfying proposition 1. Control is another function of command.

MAF control is centralizing. The Eighteenth Air Force commander centrally controls the majority of airlift capacity; theater commanders centrally control a portion of the remainder. Over 71 percent of US military common-use airlift capacity falls under the operational control of the Eighteenth Air Force commander who centralizes the control of these assets at the TACC. Theater commanders centrally control ten percent of airlift capacity through either an AMOCC or an AMD. Each of these C2 nodes exercises centralized control because a single commander has the responsibility and authority to plan, task, and coordinate airlift missions. Further, as the C-130 fleet retires through wing-box crack-induced attrition and AMC adds new C-17s to its fleet, the percentage of airlift capacity controlled by the Eighteenth Air Force commander should increase. The combination of centralized control and a consolidating trend toward Eighteenth Air Force satisfies proposition 2. Thus, MAF control is centralizing. MAF execution is also centralizing.

The MAF is centralizing in execution for five reasons. First, the MAF does not delegate execution authority as specified in its own instructions and demonstrated by withholding from lower-level commanders the authority to determine airfield and landing zone suitability. Second, MAF aircrews and subordinate commanders do not have the authority to exploit fleeting opportunity, prohibiting aircraft commanders from performing anything not specifically authorized by the "execution authority," a general officer. This manifests itself throughout MAF instructions from minimum equipment waivers to combat offload operations. Third, the TACC manages unit aircrews, MAF instructions dictate to crews the type of approach, departure, and very specific details of tactical maneuvers. Furthermore, the centralized TWG process sets binding policy about terminal area tactics including defensive system switch positions, personal armor, and day/night restrictions. Fourth, the MAF contradicts airlift doctrine which states, "Decentralized execution ensures those who are responsible for executing the airlift mission actually accomplish the detailed planning" using TACC planners and IFM flight managers to do this planning in the place of aircrews. Last, it seems possible that MAF C2 nodes and staff agencies will become far more directive as communications links improve, eventually pushing "actionable" threat reaction countermeasure options to the aircrew as threats emerge. This may

lead to higher headquarters directing tactical operations from MAF control centers like Scott AFB. Thus, the MAF satisfies four of five--the fifth to be determined--criteria derived from Air Force Doctrine indicating that the MAF does not decentrally execute.

Moreover, the number of these criteria the MAF satisfied increased over time. MAF aircraft commanders used to be the decision authority for degraded equipment operations, extending crew day, and takeoff below minimum controlled speeds. The 11-series instruction release in 2000 ended this by pushing these decisions to the general officer level. The IFM program began in 1999, currently manages half of TACC missions, and should manage nearly all TACC missions by the end of 2005. Further, both USAFE and PACAF have growing IFM programs too. The AATS aircrew management program began in 2001. As datalinks are installed in MAF aircraft, more will come under IFM's "more centralized decision making process." Hence, the MAF is centralizing in execution by trending away from decentralized execution over time.

In grand summary, the primary objective of this thesis is to establish an undeniable MAF trend toward centralization. Figure 7 graphically depicts the summation of the evidence presented herein. It uses three timeline axes representing command, control, and execution showing the trend toward MAF centralization. Toward that end, the MAF is centralizing in its command because its *resources* and *organization* are each consolidating under the AMC/USTRANSCOM commander. The MAF is centralizing in its control because all MAF assets fall under the control of a single commander at the theater-level or above, with the AMC commander controlling 71 percent and increasing of common-use airlift capacity. The MAF is centralizing in execution by demonstrating an increasing trend away from decentralized execution, currently exhibiting four of five doctrinal criterions indicative of centralizing execution, and may realize the fifth as the IFM program matures.

Therefore, the Mobility Air Force is centralizing across its command, its control, and its execution functions. This accomplishes the thesis.

*Quod Erat Demonstrandum.*¹

¹ *Quod Erat Demonstrandum*, Latin, commonly abbreviated Q.E.D, meaning, "for which was to be demonstrated."

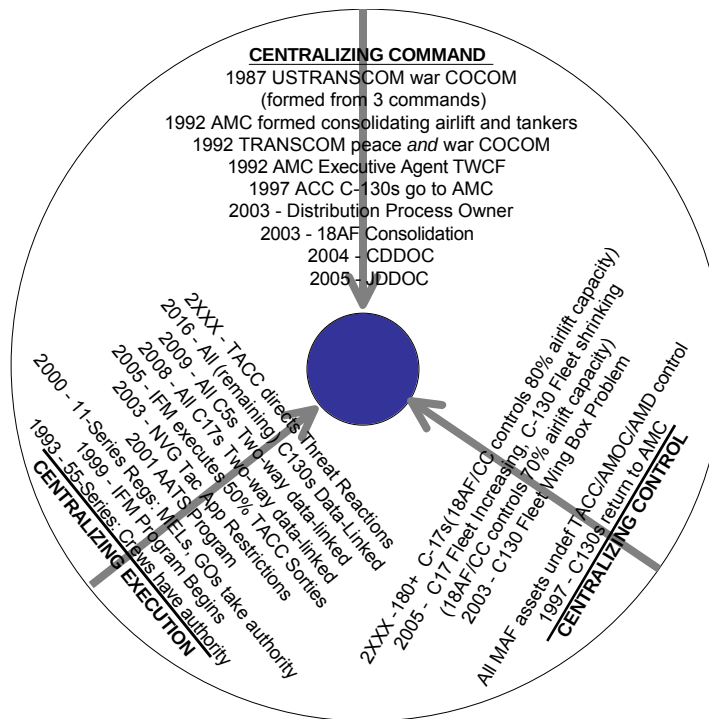


Figure 7 - Centralizing Command, Control, and Execution

The natural follow-on question to MAF centralization is “so what?” The centralization of the MAF raises four significant concerns. It diverges from the intent of the Goldwater-Nichols Act, it creates strategic vulnerabilities, it weakens unity of command, and it charts a divergent course from DOD’s current transformation efforts. The Goldwater-Nichols Act explicitly separated the Title 10 responsibilities of the services to train, organize, and equip forces and the unified commander’s operational responsibilities.² The purpose of this was to improve joint operations and remove undue service influence on warfighting operations.³

A 1985 Senate Report entitled “Defense Organization: The Need for Change” served to explain the rationale and intent behind the Goldwater-Nichols Act. It outlined in detail the consequences of undue service influence caused by “dual-hatting” described therein as “the dual responsibilities of the Service Chiefs—often referred to as “dual-hatting”—to their individual Services and to the Joint Chiefs of Staff [which] is the primary cause of the deficiencies of the

² US Law TITLE 10 > Subtitle D > PART I > CHAPTER 803 > § 8013. Secretary of the Air Force (edited to change format) obtained from

http://straylight.law.cornell.edu/uscode/html/uscode10/uscode10_sec_10_00008013----000-.html and

http://straylight.law.cornell.edu/uscode/html/uscode10/uscode10_sec_10_0000164----000-.html

³ General Carl Mundy, USMC (ret) quoted from “Defense Organization Today” by John P. White available for download www.dtic.mil/doctrine/jel/jfq_pubs/0613.pdf.

JCS system.”⁴ The report claimed the dual-hatted nature of the chief and the integration of operational and administrative chains of command caused the services to neglect important mission areas.⁵ This intermingling resulted in, “service interests rather than strategic needs play[ed] the dominant role in shaping program decisions.”⁶ Moreover, combining responsibility for training, organizing, and equipping, with operational roles has led to an insidious chain of command problem.

The chain of command is...confused by the *de facto* influence that individual Service Chiefs retain over the operational commands. This influence is...derived from the substantial dependence of the operational commanders on the Service Chiefs for resources and for subsequent career assignments.⁷

The organizational concerns expressed by this Goldwater-Nichols report could be applied to the situation that is developing today within the MAF: the Air Force component of USTRANSCOM wields increasing influence on its parent command because it generates the majority of USTRANSCOM’s working capital and because the Air Force component commander is dual-hatted as the commander of USATRANSCOM.

Furthermore, within AMC the chain of command is also mixed. Effectively, AMC has integrated its operational and administrative chains of command into one; a single staff provides significant operational functions for the Eighteenth Air Force (operational) and serves as the AMC (train, organize, and equip) staff, resulting in a confused chain of operational command. The Eighteenth Air Force commander (a major general) has operational control over MAF assets, yet it is the AMC A3 (a lieutenant general) who decides where Eighteenth Air Force aircraft can operate, what tactics and risk levels they employ, and who has waiver authority for most other things operational.

In 1985, the Goldwater-Nichols Act separated service train, organize, and equip functions from operational ones, blaming dual-hatting for many of the deficiencies seen in the DOD at the time. Today, the integration of AMC train-organize-equip functions with the warfighting functions of Eighteenth Air Force onto a single staff combined with the dual-hatted nature of the USTRANSCOM and AMC commander appears to undermine the sorts of changes the Goldwater-Nichols Act mandated.

A second issue with the centralization of the MAF is that it creates vulnerabilities that an adversary could exploit. By definition, centralized and hierarchical organizations create

⁴ Senate Report 99-86. *Defense Organization: The Need For Change. Staff Report to the Committee on Armed Services, United States Senate*, 16 October 1985, 6, 616.

⁵ Senate Report 99-86. *Defense Organization: The Need For Change*, 3.

⁶ Senate Report 99-86. *Defense Organization: The Need For Change*, 3.

⁷ Senate Report 99-86. *Defense Organization: The Need For Change*, 303.

important nodes that direct the system. Indeed, as centralization increases, the number of important nodes decreases. In theory, a completely centralized organization would have a single critical node--running the entire system--without which it ceases to function. By comparison, a decentralized organization has many nodes with near equal importance, absent some of them and the system continues to function. Thus, all other things being equal, a centralized system is more vulnerable than a decentralized one.

MAF centralization makes the global aerial distribution system more vulnerable to both command node attacks and fast-paced wars. Within a hundred yards of USTRANSCOM's control center, the TACC centrally plans, tasks, directs, controls, and executes the majority of common-use airlift capacity. This makes a vulnerable kinetic target. Further, as potential adversaries develop anti-satellite and information warfare capabilities, the MAF's communications networks become more vulnerable. Regardless, even if these central nodes remain unimpeded, a fast-paced war against an adversary that attacks multiple airfields and aerial lines of communication may outpace the TWG's ability to assess, analyze, and disseminate threat mitigation decisions.

Whether by kinetic attack, information overload, or non-kinetic communications denial, temporary decentralized solutions would be problematic. This because tactical commanders are not accustomed to operating with autonomy, do not have established decentralized procedures, and will be making such decisions for the first time in their careers--at precisely the time when such decision-making will be at a premium training. Multi-service risk publications recognize this possibility: "Requiring subordinates to report to the higher commander when a risk decision point is reached during mission execution can result in paralysis."⁸ This means recovering from a lost or isolated TACC or USTRANSCOM facility may be an ad hoc affair with potentially serious consequences. The highly centralized and global nature of MAF control also counters one of the doctrinal principles of war--unity of command. This raises the third implication of MAF centralization.

The history of warfare demonstrates the importance of vesting a military commander with unambiguous command over the assets and resources dedicated to accomplishing his mission. Lacking unity of command, military force is less likely to operate in a joint fashion toward achieving the same objectives. This is only natural since no two men think and value in exactly the same manner. Further, commanders with differing responsibilities and differing

⁸AFTTP(i) 3-2.24. *Army, Marine Corps, Navy, Air Force Risk Management*. February 2001. (Note: there is another document by this same number, not used in this paper: AFTTP(I) 3-2.24. *Multi-Service Procedures for Joint Theater Missile Target Development*, 1 November 2003), III-3.

sources of information sitting in different situations will undoubtedly reach different conclusions about the best course of action.

United States leadership and US Military doctrine both explicitly recognize the military value of unity of command. Joint, Army, Navy, Marine, and Air Force doctrine each recognize this fact and codify it as a principle of war. Air Force doctrine emphasizes its importance as follows:

Unity of command ensures concentration of effort for every objective under one responsible commander...Coordination may be achieved by cooperation; it is, however, best achieved by vesting a single commander with the authority to direct **all** force employment in pursuit of a common objective (Emphasis added).⁹

However, as the MAF retires C-130Es, the airlift capacity controlled by theater commanders will increasingly erode. USTRANSCOM's forces operate "in support" of theater commanders. By definition, forces "in support" are themselves commanded by a separate commander--undermining unity of command. Although recent experience indicates this may not be a significant problem, the doctrinal concept of such non-command relationships has yet to be tested in a severely resource-constrained environment where valid competing needs of commanders may cause divisive friction and imperil the overall unity of effort.

The final significant issue with MAF centralization is that it diverges from the vision outlined by the ongoing DOD transformation and the National Military Strategy. The transformation of the DOD from a platform-centric, threat-based force to an information-centric, capabilities-based force seeks to leverage information to create situational awareness, which in turn permits speed, agility, and flexibility. Network-centric warfare (NCW) forms the cornerstone of the DOD's transformational effort, and NCW is all about decentralization.

Network-centric operations are the Department of Defense and each service's vision for warfare in the information age.¹⁰ The NCW Report to Congress stated that NCW was, "no less than the embodiment of an Information Age transformation of the DoD."¹¹ The secretary of defense created the Office of Transformation to lead this renovation. According to this office, "Network-Centric Operations are a central element of the Department of Defense's ongoing transformation and an emerging American way of war."¹² The secretary of defense directed all

⁹ Air Force Doctrine Document (AFDD) 1. *Air Force Basic Doctrine*, 17 November 2004, 20.

¹⁰ "THE IMPLEMENTATION OF NETWORK-CENTRIC WARFARE" OFFICE OF TRANSFORMATION, 5 JAN 2005, 1. ON-LINE. AVAILABLE FROM http://www.oft.osd.mil/library/library_files/document_387_NCW_Book_LowRes.pdf.

Also see "Military Transformation: A Strategic Approach" published by the Office of Transformation Fall 2003.

¹¹ FIRST SENTENCE OF THE EXECUTIVE SUMMARY OF: *NETWORK CENTRIC WARFARE Department of Defense Report to Congress*. July 2001. Taken from Alberts, *Power to the Edge*, 98.

¹² <http://www.oft.osd.mil/>

services to implement transformation in accordance with his Defense Planning Guidance, Transformation Planning Guidance, National Defense Strategy, and the Joint Operations Concept documents. The Joint-staff included network-centric operations in all of the Joint Operations Concepts, Joint functional and enabling concept documents.¹³ All of these documents direct a future force built on the principles of network-centric operations and network-centric warfare (a subset of NCO).¹⁴ The Joint Oversight and Requirements Council (JROC) explains its concept for command and control (C2) decision-making, “In 2015 Joint C2 will be a joint decision making process that is dynamic, *decentralized*, distributed, deployable, and highly adaptive.” (Emphasis added)¹⁵ The services too have complied; all branches of the military have included NCW concepts in their service and joint transformation roadmaps.¹⁶ So has the Chairman of the Joint Chief whose National Military Strategy also incorporates NCW into its guidance.

The National Military Strategy (NMS) also reflects the principles of network-centric warfare (NCW). The NMS expects a transformed military to conduct “net-centric operations.”¹⁷ The NMS lists the following desired attributes of the force: networked, fully integrated, adaptable, decision superior, and *decentralized*.¹⁸ It also emphasizes organizational adaptation, information sharing, and a “global information grid” to support DOD transformation and “empower distributed command and control.”¹⁹ The NMS further asserts that network centric operations should be conducted through decentralization to provide “integrated capabilities operating in a joint manner at lower echelons.”²⁰ The NMS concludes, “This strategy focuses the

¹³ Department of Defense, *Joint Operations Concepts*, November (OSD: 2003) 14. The Joint Operations Concepts (JOpsC) document is the parent document for each service’s subordinate Joint Operations Concept (JOC), Joint Functional, and Joint Enabling Documents.

¹⁴ 2004 NMS 20.; Department of Defense, *Transformation Planning Guidance* (OSD: 2003) 1.; Department of Defense, National Defense Strategy (NDS) (OSD: March 2005) 14.; The JOpsC is thoroughly penetrated as are its subordinate documents--the JOCs, Joint Functional, and Joint Enabling Concepts. See

http://www.oft.osd.mil/library/library_files/document_129_Transformation_Planning_Guidance_April_2003_1.pdf; <http://www.dtic.mil/futurejointwarfare/>

¹⁵ Joint Requirements Oversight Council (JROC), *Joint Command and Control (C2) Functional Concept Draft 1.0*, (Joint Staff C2 Capabilities Division (J6A): December 2003) 20.

¹⁶ “The Implementation of Network-Centric Warfare” Office of Transformation, 5 Jan 2005, i. The 2004 Air Force Transformation Flight Plan contains 35 significant references to NCW and numerous other references to information superiority, information age warfare, adaptive and collaborative networking etc. The US Army Transformation Roadmap contains 94 references to networks, network-enabled, and network-centric warfare. The Department of the Navy (Marines included) Transformation Roadmap uses the term FORCENet as a “network-centric warfare” buzzword. There are 99 references to FORCENet in their roadmap. United States Navy, *US Navy Transformation Roadmap*. Date. On-Line. n. p. [no pagination], 64. Available from <http://www.chinfo.navy.mil/navpalib/transformation/trans-toc.html>

¹⁷ National Military Strategy (NMS) of the United States of America 2004. *A Strategy for Today; A Vision for Tomorrow*, 13 May 2004, 20.

¹⁸ 2004 NMS, iv.

¹⁹ 2004 NMS, 19, 21-22.

²⁰ 2004 NMS, 15, 20-22.

Armed Forces on winning the WOT and enhancing joint warfighting while supporting actions to create a joint, network-centric, distributed force, capable of full spectrum dominance.”²¹ So it is not a question as to whether NCW is a cornerstone of DOD transformation, but what NCW itself means.

According to the Office for Transformation, a primary intent of NCW is to “increase the opportunity for low-level forces to operate nearly autonomously and to re-task themselves through exploitation of shared awareness and the commander’s intent.”²² The secretary of defense’s Transformation Planning Guidance sets forth a similar expected effect of self-coordination:

Dynamic self coordination increase[s] freedom of low-level forces to operate near autonomously and re-task themselves through exploitation of shared awareness and commander’s intent [to] produce a meaningful increase in operational tempo and responsiveness.²³

Further, the NCW will “eliminate procedural boundaries...so joint operations are conducted at the lowest organizational levels possible to achieve rapid and decisive effects.”²⁴ NCW accomplishes this by merging “capabilities at the lowest possible organizational levels, e.g., joint operations at the company/sub-squadron/task unit level.”²⁵ Consider this statement in the DOD’s Network-Centric Warfare Implementation guide:

NCW enhances the U.S. Armed Forces’ ability to combine into a seamless, joint, coalition warfighting force. When implemented, it takes full advantage of the trust we place in our junior and noncommissioned officers. As information moves down echelon, so does decision-making.²⁶

Clearly, the implied and explicit intent of NCW transformation is to decentralize the force; to empower lower level leaders to make decisions, so as to increase the pace of the battle, and hopefully render the enemy unable to cope. Importantly, NCW is not simply about “shooters.”

NCW is also at the heart of the Joint staff’s logistics transformation plan. In fact, the entire “sense and respond” logistics transformation is based on networking, self-synchronization, and distributed decision-making to replace the current “linear, optimized, monolithic, and hierarchical” system with a “non-linear, effective, distributed, and networked” logistics system.²⁷

²¹ 2004 NMS, 27.

²² DEPARTMENT OF DEFENSE, OFFICE OF FORCE TRANSFORMATION. “THE IMPLEMENTATION OF NETWORK-CENTRIC WARFARE” OFFICE OF TRANSFORMATION, 1.

²³ Department of Defense, Office of Force Transformation. “Transformation Planning Guidance,” 31.

²⁴ “The Implementation of Network-Centric Warfare” Office of Transformation, 10.

²⁵ “The Implementation of Network-Centric Warfare” Office of Transformation, 10.

²⁶ “The Implementation of Network-Centric Warfare” Office of Transformation, 5 January 2005, ii.

²⁷ Department of Defense, Office of Transformation Briefing. “Sense and Respond Logistics: Co-Evolution of an Adaptive Enterprise Capability.” 2 December 2003, slides 3,4,6,13,33,37. On-Line. Available from

In fact, the secretary of defense's sense and respond logistics concept document describes a logistical C2 system characterized by "massively distributed decision-making":

Network-centric Warfare and Joint Adaptive Expeditionary Warfare have significant implications for C2, organizational models, culture, training, and education. Logistics, Intelligence, Surveillance, and Reconnaissance (ISR), Operations and C2 become one continuous process rather than functional and process stovepipes. Individuals will become educated and trained primarily as net-centric warriors who embody the adaptive ethos first, and are functional or technical specialists second. The organizational design implications are those we would design to support: Massively distributed decision-making, Local self-synchronization, Shared situational awareness, and Speed of Command.²⁸

Consider the JROC approved Joint Focused Logistics Functional Concept document:

Transformed logistics capabilities must support future joint forces that are fully integrated, expeditionary, networked, decentralized, adaptable, capable of decision superiority, and increasingly lethal...A logistics system with the capabilities described in this concept will be characterized by a network-centric, distribution-based, anticipatory, demand-driven, performance-based approach to the joint logistics enterprise.²⁹

These types of references are pervasive in "sense and respond" literature.³⁰ Still, skepticism is fueled by a common misperception is that decentralized systems must *necessarily* be inefficient.³¹ However, by sharing information about logistical status from fuels, food, ammunition, parts, or maneuver needs, it is possible to push required goods in anticipation of need rather than waiting for a request to move up the chain and then back down. It is even possible to treat all units on the battlefield as potential suppliers, redistributing existing theater supplies at the unit level rather than pushing new supplies from the factory to the foxhole.³² Dave Alberts continues, "An area where the application of self-synchronization has significant potential is a class of warfighting activities providing supporting services, such as logistics..."³³ In short, sense and respond logistics is NCW for the global distribution system. The US Army is also busy transforming its force to leverage NCW.

The US Army's plan to support DOD transformation is to rebuild its entire organization by 2015 to create a lighter, more autonomous force that can rapidly deploy and employ on a non-

http://www.oft.osd.mil/library/library_files/briefing_256_Sense%20and%20Respond%20Logistics.ppt.

²⁸ Department of Defense, Office of Transformation Briefing. "Operational Sense and Respond Logistics Concept Document (short version)." 6 May 2004, slide 11.

²⁹ Department of Defense, *Focused Logistics Joint Functional Concept version 1*, (Joint Staff: December 2003) i-ii.

³⁰ Conduct a search for "sense and respond logistics" on the Internet.

³¹ Alberts, *Power to the Edge*, 90-91.

³² Office of Transformation, "Operational Sense and Respond Logistics Concept Document," slides 13-19.

³³ Dr. David S. Alberts, John J. Garstka, and Frederick P. Stein. *Network Centric Warfare: Developing and Leveraging Information Superiority*, 2nd Edition. February 2000, 176. On-Line. Available from <http://www.dodccrp.org/research/ncw/ncw.htm>

linear battlefield *via air*. The centerpiece of this transformation is the soldier using a family of common-chassis vehicles called the Future Combat System (FCS).³⁴ The Army is building these vehicles to be transportable in a C-130 to enable rapid movement around the battlefield by air to “vertically envelope” the enemy--similar to Vietnam-era Air Cavalry units, except with tanks.³⁵

Incorporating NCW principles, FCS units “will be delivered into austere environments and operate autonomously or semi-autonomously, allowing [them to be] introduced at multiple points to move over operational distances to converge for an operation.”³⁶ The NCW concept of “self-synchronization” will increase lower-level authority to enable the FCS to fight autonomously if required, “enabl[ing] self-synchronizing forces to respond quickly to changing battlefield conditions.”³⁷ The Army sees a fundamentally different method of analysis:

Today, most analysis is done at corps and division levels...[This will change to] a more robust ability to fuse and analyze data at lower levels...Fighting an adaptive, asymmetric, dispersed enemy drives the requirement for synchronization and analysis down to lower echelons of command.³⁸

Using autonomous and networked systems, the US Army plans to employ its FCS units directly into combat and be able to change and rapidly re-plan intended landing sites while forces are enroute.³⁹ In short, the Army’s plan for transformation is to build a more decentralized force.

The integration of a decentralized and highly mobile Army with a centralized airlift provider will be challenging. Through centralization, the MAF has optimized itself for efficient movement of goods by preventing lower-level commanders from sub-optimizing the system. Army transformation relies heavily on airlift for operational maneuver to autonomously respond on a dynamic, non-linear battlefield. It is hard to imagine how this will work well in an airlift system comprised of tactical commanders who need permission to change things, lack experience making acceptable risk decisions, and cannot authorize their aircraft to land at a new landing zone. Simply put, Army transformation will need a decentralized airlift force that increasingly does not exist.

³⁴ United States Army. *2004 Army Transformation Roadmap*. July 2004, ix. On-Line. Available from <http://www.army.mil/references/2004TransformationRoadmap/4%20ATR%202004%20low%20res.pdf>.

³⁵ TRADOC Pamphlet 525-3-90 *The United States Army Future Operational and Organizational (O & O) Plan* (Draft). 15 December 2004, lines 4806-4807.; US Army, *2004 Army Transformation Roadmap*, 4-4.

³⁶ TRADOC Pamphlet 525-3-90 *The United States Army Future Operational and Organizational (O & O) Plan* (Draft), lines 3224-26. Similar language in United States Army. *2004 Army Transformation Roadmap*. July 2004, 4-1.

³⁷ United States Army. *2004 Army Transformation Roadmap*, 4-2.

³⁸ TRADOC Pamphlet 525-3-90 *The United States Army Future Operational and Organizational (O & O) Plan* (Draft), lines 3349-3353, 3356-3358.

³⁹ TRADOC Pamphlet 525-3-90 *The United States Army Future Operational and Organizational (O & O) Plan* (Draft), lines 3298-3307.

In spite of its recent success in OEF and OIF, the MAF's path divergence represents a strategic crossroads. MAF centralization seems to ignore the watershed Goldwater-Nichols Act by mixing service and combatant command roles. It increasingly substitutes a "supporting" relationship in place of theater unity of command. It creates vulnerabilities to command node attacks and fast-paced wars and it is diametrically opposite of the ongoing Air Force, Army, and Navy transformation to network-centric, decentralized operations. Regardless, MAF performance in recent operations has been spectacular. Referring to recent operations in Afghanistan, the secretary of the Air Force said, "For the first time in the history of war, this country has fought in a land-locked area where every single thing going in and coming out has gone by air. Food, water, ammunition, troops were all transported by air, and that's really incredible."⁴⁰ Thus, it seems that the MAF stands at a strategic decision point: should the MAF continue down the road that thus far has been quite successful, or should it reconsider the design of the global mobility machine.

⁴⁰ Secretary of the Air Force Roche quoted in an Air Mobility Command Public Affairs Office news story by Staff Sgt Scott Leas reprinted in the *Associated Press*, McChord 446th Airlift Wing News Paper May 2002 (mistakenly labeled May 2001 on the front page), 8. Available for download at www.afnews.af.mil/INTERNAL/MEDIACONTEST/2002CONTEST/print/D02-1.pdf. Sec. Roche made a similar statement before Hearings on National Defense Authorization Act for Fiscal Year 2003—H.R. Wednesday, March 6, 2002 where he said, "For the first time in the history of warfare, the entire ground operation in landlocked Afghanistan, infiltration, exfiltrations, sustainment of supplies and support equipment has been accomplished by air."

Chapter 5

Rebuilding the Machine

The surest foundation of eventually being surprised is to suppose that the next war will be like the last war, and that consequently old means will accomplish new ends. The general who slavishly copies former battle tactics is more often than not surprised with his eyes wide open.

-- Col J.F.C. Fuller

If you see a train wreck coming, you oughta to be asking yourself what you're gonna do about it.

-- President George W. Bush

Most of this transformation will be cultural and will happen between our ears.

*-- Gen Richard Myers
Chairman, Joint Chiefs of Staff*

The Mobility Air Force should not allow success to turn into complacency. The National Military Strategy warns us, “We cannot afford to let our recent successes cause us to lose focus or lull us into satisfaction with our current capabilities.”¹ The primary purpose of this entire work is to highlight the need for a thorough, reasoned, and evidenced-based re-evaluation of MAF command, control, and execution processes. The disparity between the MAF, Air Force doctrine, and where the DOD is going is too striking not to. To that end, this chapter proposes a few questions to guide such an assessment and explores a few ideas such an assessment may need to consider. The chapter culminates briefly discussing the introduction-tabled discussion of what may lie between centralized and decentralized control and execution, suggesting a new doctrinal tenet for airlift warfare in the 21st century. The need for change within the MAF is not unrecognized.

Although laudable, the MAF’s ongoing creation of a “warrior culture” may need to overcome centralization that withholds authority from its front-line warriors. The retiring AMC

¹ National Military Strategy (NMS) of the United States of America 2004. *A Strategy for Today; A Vision for Tomorrow*, 13 May 2004, iv.

Vice Commander, Lt Gen John Baker, began a movement to inculcate a more warrior-like spirit.² In the first of a series of official messages entitled “Changing Our Mobility Culture” to AMC, the AMC A3 stated, “We are going from a culture of rules and regulations to a command of tactical thinking warriors who will effectively and safely accomplish missions.”³ Both before and after this decree, the command evidenced some success toward this end.

Recent improvements include the stand-up of the Mobility Weapon’s School (MWS), improvements in NVG operations, and the rewriting of MAF 11-series *instructions*; each point to a new way of thinking. In 2003, the command finally took ownership of what had been ACC’s C-130 weapons school, in the process formed a C-17 weapons school, and consolidated these with the KC-135 Combat Employment School to make the first ever USAF MWS. The weapons school’s overarching commander, Major General Kelley, leaves his post in the summer of 2005 to assume Lt General Baker’s role as the next AMC vice commander. After canceling NVG landings, takeoffs, and ground operations in 1997, the command reversed this position.⁴ Resulting from lessons learned in Afghanistan, the MAF began using NVGs for both formation and single ship ground operations, landings, takeoffs, and soon assault landings on unpaved landing strips. The ongoing rewrite of MAF 11-series operations instructions is another promising sign. In some ways, the rewrite returns these instructions to their 55-series heritage, stripping out tactical guidance and techniques and placing them into a MAF-first 3-3. The goal is to shrink each airframe’s 11-series instruction to less than 200 pages.⁵ The AMC A3’s third message on changing MAF culture concluded:

The combat mobility culture change will enhance MAF operations to place more emphasis on what is required to keep the warfighter trained and equipped to perform the wartime mission. As such, internal culture changes are significant and sweeping. The proper mindset and persistence is critical to the successful

² Lt Col John “Gordo” Gordy, AMC/CVE, interviewed by author 24, January 2005.

³ AMC A3 Message Traffic, “Memorandum for MAF WG/OG/CCs Subject: Changing Our Mobility Culture,” sent out on behalf of Maj Gen Mark Volcheff, HQ AMC/A3, DSN 779-3315. 3 March 2004.

⁴ Col Douglas Kreulen, 374 AW/CV, e-mail correspondence with the author 7 February 2005. Seconded by Col Gerald Szpila, 43rd Operations Group Commander, e-mail correspondence with author 22 February 2005. In 1998, Air Mobility Command’s 21st Air Force commander, Lieutenant General Maxwell Bailey, ended a program called Pathfinder that trained C-130 crews to land at night on infrared-lit assault landing strips and airdrop on unlit drop zones using night vision goggles. Developed under Air Combat Command, then Major Douglas Kreulen spearheaded the creation of a small cadre of aircrews trained in NVG airland operations in 1995.⁴ This program soon expanded to include a larger cadre and the newly formed C-130 Weapons School. The C-130 fleet returned to “mother MAC” in 1997 and the 61st Airlift Squadron realigned under Air Mobility Command’s 21st Air Force. According to Col Kreulen and Col Szpila, the 21st Air Force Commander, Lt General Bailey, cancelled the Pathfinder program because: “the NVG requirement was not in: (1) our doc statements and (2) any Army OPLAN showing that they demanded an NVG capability from its airlifters.”⁴

⁵ Major Kris Norwood, AMC/A37V (Office Responsible for rewriting 11-series instructions) e-mail correspondence 20 May 2005.

adoption of any culture change and this is no different. The command will continue to replace unnecessary training events and evaluation schemes with realistic, effects-based training to maximize use of training time. We will continue to address the way we organize, train and equip our forces to execute combat mobility operations to ensure we are focusing on the proper goal. Stand by for more in the next few months.⁶

These are all positive steps toward moving the MAF into combat operations, yet one must wonder how successful they can ultimately be if they exist inside a highly centralized system that does not delegate authority to its line warriors, oblige subordinate commanders to evaluate threats, or encourage innovation at the tactical level? Additionally, these reforms fail to address the complete MAF divergence from the intent of Goldwater-Nichols and of DOD transformation.

AMC should undertake a serious effort to reevaluate its command, control, and execution methods and the manner in which it is organized. Such a fundamental self-assessment should proceed along structural, procedural, cultural, and transformational avenues. However, vision should set the stage to inform the evaluation.

Fundamentally, what are the long-term ramifications of centralization in the face of future joint operations; do these ramifications lead to an impetus to decentralize? To the degree that the MAF is too centralized, should the MAF make a minor course correction within a centralized and hierarchical system or should it reverse toward decentralized operations leveraging technology to ensure efficiency? The answers to these questions spring from questions related to structure, procedure, culture, and transformation.

Structurally, should USTRANSCOM, AMC, and Eighteenth Air Force reorganize to conform better to Goldwater-Nichols by separating train, organize, and equip (AMC) functions from operational warfighting (Eighteenth Air Force) functions and removing both hats from the USTRANSCOM/AMC commander? To what extent does the geographic centralization of the MAF have adverse effects in terms of vulnerability and culture? Procedurally, does MAF centralizing control and its consequent undermining of theater unity of command matter? Culturally, should the MAF push more authority down the chain to empower front line commanders to make more decisions? This question can be informed by another; does the centralization of the MAF undermine the development of MAF leadership in such a way as to adversely affect its ability to perform the mission? Transformationally, how does the centralization of the MAF support DOD transformation? Should the MAF decentralize--if only

⁶ AMC Combat Mobility Culture Change Message #3 Memorandum for MAF WG/OG/Commanders and unit Personnel Subject: Changing Our Mobility Culture sent on behalf of Maj Gen Mark Volcheff, HQ AMC/A3, DSN 779-3315. No date.

to a degree? With respect the Army transformation, how can the MAF best support and integrate with US Army transformation?

At least two foreseeable paths emerge from such a self-assessment. The first is that the centralization of the MAF is appropriate, resulting from the nature of the mobility mission and the best way to employ airlift airpower. On this path, there may be tweaks here and there that provide minor enhancements to system performance, but largely, the organizational outcome would be “business as usual.” Even still, a thorough self-assessment that would generate an official position explaining why it is acceptable for the MAF to be divergent from Goldwater-Nichols, defense transformation, and perhaps lead to an assessment and exercise of its ability to operate without its C2 nodes: the TACC, AMOCC, and AMD. It may also highlight the limits of the MAF’s ongoing “warrior culture” transformation as a function of withheld decision authority. Thus, even though an honest accounting of the costs and benefits associated with these questions may well lead to a “status quo” solution, that is not bad. In fact, if it does, then the MAF can proceed with confidence, rewrite certain aspects to doctrine, training, and instruction to reflect this strategic realization and continue down its current path. The second foreseeable outcome of a MAF reevaluation may be to decentralize--if only to a degree. To the extent that the answers to these questions point toward changing the way the MAF conducts business, the pages that follow offer further insight.

Disentangling MAF organizations is easy to prescribe, but suffers certain impracticalities. Obviously, one step would be to give the Eighteenth Air Force its own staff capable of conducting operational planning and change the way operational authority flows in AMC. On the first point, manning and office space issues would need to be resolved. On this second point, the Eighteenth Air Force commander would take control of the TWG and become the operational waiver authority. Another step would be to remove both hats from the USTRANSCOM/AMC commander, a move that some speculate may occur in the summer of 2005.⁷ Still, this requires congressional approval since it involves the reassignment and potential creation of a position for another general officer billet.

To resolve unity of command issues resulting from a gradual reshuffling of airlift capacity control to the Eighteenth Air Force commander requires allocating more airlift to theater commanders when needed. Doctrine already allows for this. Still, one compromise might be to CHOP airlift to the theater for the duration of airlift missions flown in direct support of combat objectives--such as large paratroop airdrop or future “vertical envelopment” missions.

⁷ Col (s) John Lipinski, USTRANSCOM J3R, interview with author 21 May 05.

To better align with DOD transformation requires the MAF to empower lower echelons and push authority down the chain. This may require the MAF to change the underlying intent of its instructions and policy. The ongoing rewrite of its 11-series instructions will not accomplish this. These soon to be released versions, although an improvement, were written with the intent of separating them into 11-series volume 3 and 3-3 series instructions--essentially removing tactical techniques from the old 11-series instruction, but leaving intact the centralized nature of their guidance.⁸ Additionally, a move to empower lower echelons would require a thorough revision of MAF command and control instructions, concept documents, policy statements, and programs like the TWG, AATS, and IFM. Decentralized execution requires the delegation of execution authority and so might DOD transformation.

To enable sense and respond logistics, and fully employ under the US Army transformation construct, the MAF may need to delegate execution authority down the chain. Sense and respond logistics requires the ability to rapidly divert airlift in real time to service priority developing logistical movements. Aircraft commanders with the authority to respond to these developing needs without permission from higher headquarters enhance this capability. US Army transformation assumes responsive airlift support able to redirect to new combat objectives on a changing dynamic battlefield. This requires an ability to rapidly assess the risk-benefit calculus, determine the suitability of the intended landing zone/point, and request/direct supporting forces at the tactical level. Senior MAF commanders would monitor developing situations and override them if necessary. However, assuming a well-trained lower echelon, these interventions would only occur for operational or strategic reasons, not because of tactical safety concerns. In short, aircraft commanders would have some level of execution authority to support sense and respond logistics and mission commanders would have execution authority to support the Army's future FCS construct. The authors of DOD transformation recognize the difficulty of re-orienting a large organization such as the MAF toward a flatter, more empowered architecture.

The MAF should understand that network-centric operations are not simply conducting warfare using a computer network. Dave Alberts is a founder of NCW concepts and a contributing author to many of the DOD transformation documents.⁹ Broadly, he describes the

⁸ Major Kris Norwood, AMC A37V, interviewed by author 15 February 2005.

⁹ Alberts is currently the Director, Research and Strategic Planning, OASD (NII). Prior to this he was the Director, Advanced Concepts, Technologies, and Information Strategies (ACTIS), Deputy Director of the Institute for National Strategic Studies, and the executive agent for DoD's Command and Control Research Program. This included responsibility for the Center for Advanced Concepts and Technology (ACT) and the School of Information Warfare and Strategy (SIWS) at the National Defense University. Alberts' recent publications include books: *Power to the Edge*, *Information Age Transformation*, *Understanding Information Age Warfare*, *Network Centric Warfare*, *Unintended Consequences of Information Age Technologies*, *Command Arrangements for Peace Operations*, and *Defensive Information Warfare*. He also

NCW concept of “power to the edge” as the movement of authority to what is currently called lower echelons.¹⁰ Alberts describes edge organizations and the difficulty of reorienting culture and C2:

Edge organizations are, in fact, collaborative organizations that are inclusive, as opposed to hierarchies that are authoritarian and exclusive. In socio-economic terms, hierarchies are socialist and edge organizations are marketplaces. Edge organizations are organizations where everyone is empowered by information and has the freedom to do what makes sense.¹¹

Power to the edge involves a fundamental change in culture. Culture is all about value propositions and behaviors about who and what is valued, and what constitutes appropriate behavior. *Power to the edge* involves changes in the way we think about the value of entities and desirable behaviors and interactions. Ultimately, this involves a redefinition of self and the relationship between self and others, and self and the enterprise. Thus, in order to move power to the edge, we need to do more than redraw an organization chart; we also need to change what is valued and the way individuals think and behave. We need to rethink the way the enterprise is motivated and led. We need to revamp processes and the systems that support these processes. We need to reeducate and retrain.¹²

At any given level, these changes will radically alter the nature of C2 by allowing us to push down more responsibility to what are now lower levels in the organization...NCW offers the opportunity not only to be able to develop and execute highly synchronized operations, but also to explore C2 approaches based upon horizontal coordination, or self-synchronization, of actor entities. In fact, the Marines have adopted Command and Coordination as their preferred term for command and control in future operations.¹³

These are radical changes, not small “course corrections.” Thus, to the extent that the DOD is headed this direction; the MAF should undertake an honest evaluation of the feasibility of such a change and not dismiss them without consideration.

led efforts that produced the NATO Code of Best Practice for C2 Assessment and the Code of Best Practice for Experimentation. Recent honors have included the secretary of defense's Outstanding Public Service Award, Aviation Week and Space Technology's Government/Military Laurel, and the inaugural NCW Award for Best Contribution to the Theory of NCW presented by the Institute for Defense and Government Advancement (IDGA).” source <http://www.dodccrp.org/about/director.htm>.

¹⁰ In an “edge organization,” the descriptor “lower echelon” is almost an oxymoron. By definition, an edge organization is not hierarchical.

¹¹ Dr. David S Alberts and Richard E. Hayes. *Power to the Edge: Command... Control...In the Information Age*. 2003, 177. On-Line. Available from <http://www.dodccrp.org/research/ncw/ncw.htm>.

¹² Dr. David S Alberts and Richard E. Hayes. *Power to the Edge*, 180 – 181.

¹³ Dr. David S, Alberts, John J. Garstka, and Frederick P. Stein. *Network Centric Warfare: Developing and Leveraging Information Superiority*, 2nd Edition. February 2000, 160. On-Line. Available from <http://www.dodccrp.org/research/ncw/ncw.htm>. In this passage Alberts footnotes U.S. Marine Corps, Beyond C2: A Concept for Comprehensive Command and Coordination of the Marine Air Ground Task Force (Washington, DC: Headquarters, U.S. Marine Corps, June 1998).

One of the fundamental challenges of airlift command and control reduces mathematically to a network scheduling optimization problem.¹⁴ A control scheduling method transitioned from a group of people to networked computers could enable more decentralization in the system. Assuming a commander-prioritized list exists electronically on “the network,” networked computers and machine-to-machine interfaces should be able to rapidly produce and distribute the solution to the scheduling problem. This potentiality enables what some might term decentralized control, but what may actually be collaborative control.

Self-synchronization and fused information flows enable collaborative execution. Given an airlift commander’s intent--in far more broad terms than today’s very specified ones--a networked airlift system could exploit the NCW concept of self-synchronization. Commander’s staffs could post prioritized lists of cargo to the net. With commander oversight, machine-to-machine interfaces on the network could automatically negotiate a solution to the scheduling problem--rapidly reaching a collaborative solution. Unit level commanders, empowered with execution authority, could launch their aircraft into the system using this scheduling solution and aircraft commanders could update their mission profiles from it. Aircrews could coordinate directly with each other, CAF C2, and receiving agencies to mitigate the threat, deconflict landing times, parking spots, and configuration changes. This type of horizontal coordination is what “self-synchronization” is about. In other words, self-synchronization is not just for shooters, the airlift mission could implement it too. These are changes the MAF could consider; and, they might lead to a new way of war.

THE INTRODUCTION TABLED A DISCUSSION ABOUT THE POTENTIAL FOR SOMETHING TO EXIST BETWEEN CENTRALIZED AND DECENTRALIZED CONTROL AND EXECUTION. NOW IS THE TIME TO OPEN THIS DISCUSSION. IT MAY BE THAT THE AIR FORCE TENET OF “CENTRALIZED CONTROL, DECENTRALIZED EXECUTION” DOES NOT ACCURATELY REFLECT TODAY’S AIRLIFT SITUATION OR FUTURE NEEDS. ULTIMATELY, THE GOAL OF MILITARY COMMAND, CONTROL, AND EXECUTION IS TO EXTRACT REQUIRED COMBAT EFFECTIVENESS FROM THE RESOURCES AVAILABLE. GIVEN THE DRAMATIC CHANGES IN PRECISION, COMMUNICATIONS, THE THREAT, AND AIRCRAFT PERFORMANCE (TO NAME A FEW), ENTERING THE ARGUMENT WITH A “ONE SIZE FITS ALL” PREDISPOSITION AGAINST OTHER FORMS OF CONTROL AND EXECUTION MAY BE INAPPROPRIATE. IN SOME WAYS, RECENT DOCTRINE ACKNOWLEDGES THIS; “THERE MAY BE TIMES WHEN THE POLITICAL LEADERSHIP ARE INVOLVED IN LOW-END TO MID-LEVEL SPECTRUM ACTIVITIES. THIS HIGH-LEVEL POLITICAL INVOLVEMENT TENDS TO DRIVE A HIGHER LEVEL OF CENTRALIZED COMMAND. DECENTRALIZED EXECUTION IN THESE INSTANCES MAY VARY WITH THE LATITUDE GRANTED BY THE NCA.”¹⁵ AIR FORCE BASIC DOCTRINE ALSO STATES, “NEVERTHELESS, IN SOME SITUATIONS, THERE MAY BE VALID REASONS FOR EXECUTION OF SPECIFIC OPERATIONS AT HIGHER LEVELS, MOST NOTABLY WHEN THE JFC (OR PERHAPS EVEN HIGHER AUTHORITIES) MAY WISH TO CONTROL STRATEGIC EFFECTS, EVEN AT THE SACRIFICE OF TACTICAL EFFICIENCY.”¹⁶ PERHAPS, THE BEST DOCTRINAL DESCRIPTION OF THIS IS IN AFDD 2-8, WHICH RECASTS THE TENET INTO VERTICAL AND HORIZONTAL INFORMATION

¹⁴ Major Victor “El Doctor” Wiley, PhD, Asst Prof of Operations Research, Air Force Institute of Technology, Department of Operational Sciences as author’s graduate research project advisor March-May 2004.

¹⁵ AFDD 2-8, 7.

¹⁶ AFDD 1, 30.

flows.¹⁷ HOWEVER, THE TWO PREVIOUS EXCEPTIONS ONLY DESCRIBE CENTRALIZING AUTHORITY, NOT DECENTRALIZING IT AND THE INFORMATION FLOW DESCRIPTION REMAINS TRAPPED INSIDE THE TENET OF "CENTRALIZED CONTROL, DECENTRALIZED EXECUTION."

IT SEEMS THAT IN SITUATIONS WHERE AIRLIFT RESOURCES ARE NOT AS CONSTRAINED, LIKE AIRLIFT SUPPORT TO COUNTERINSURGENCY OPERATIONS; IT MAY BE POSSIBLE AND EVEN ADVANTAGEOUS TO DECENTRALIZE AUTHORITY--PERHAPS EVEN CHOPING TO A SURFACE COMMANDER. THIS SHOULD IMPROVE TACTICAL RESPONSE AND EFFECTIVENESS BY SACRIFICING STRATEGIC AND OPERATIONAL EFFICIENCY, BUT IF EFFICIENCY IS NOT REQUIRED THEN "WHY NOT?" MOVING BEYOND THIS, EVEN THESE IDEAS REMAIN, LIKE THE TENET, TRAPPED IN A POLARIZING CONSTRUCT NOT RECOGNIZING ANY MIDDLE GROUND, SUCH AS COLLABORATION.

THE MAF IS MISSING TWO MAJOR REQUIREMENTS TO ENABLE A TRULY COLLABORATIVE DISTRIBUTION SYSTEM. THE FIRST IS DELEGATED EXECUTION AUTHORITY. THE SECOND IS *HORIZONTAL* DATA LINKS CONNECTING AIRCRAFT, INDEED EVERYONE ON THE NET, WITH EACH OTHER--SIMILAR TO THE INTERNET. THE LATTER MAY REQUIRE DEVELOPING NEW INFORMATION MANAGEMENT TECHNIQUES. HOWEVER, WITH THESE TWO IN PLACE, THE MAF COULD CREATE A TRULY COLLABORATIVE AERIAL DISTRIBUTION SYSTEM.

A COLLABORATIVE DISTRIBUTION SYSTEM SHOULD IMPROVE EFFECTIVENESS AND REDUCE VULNERABILITY. IT SHOULD LIBERATE COMMAND AND CONTROL AGENCIES TO THINK STRATEGIC AND SPEED THE TACTICAL LEVEL OF WAR. EXPLOITING MACHINES TO DO TEDIOUS NUMBER CRUNCHING SHOULD FREE PEOPLE TO DO WHAT THEY DO BEST--SOLVE UNCERTAIN PROBLEMS. EXPORTING BOTH THE BRAIN AND COMPUTING-POWER REQUIREMENT INTO THE SYSTEM ENABLES BOTH PARALLEL PROCESSING AND PARALLEL DECISION-MAKING, PERHAPS INCREASING THE CAPABILITY OF THE ORGANIZATION TO TRANSLATE INFORMATION INTO ACTION. IT COULD REDUCE VULNERABILITY BY PERMITTING *VIRTUALLY* CENTRALIZED BUT *GEOGRAPHICALLY* DECENTRALIZED C2 NODES. IN SUM, REBUILDING THE MOBILITY MACHINE BASED ON A NETWORK-CENTRIC COMMAND, CONTROL, AND EXECUTION SYSTEM MAY BE JUST AS EFFICIENT, LESS VULNERABLE, AND MORE CAPABLE OF DOMINATING IN COMBAT--POTENTIALLY DEMONSTRATING A NEW MAF TENET: *COLLABORATIVE CONTROL, COLLABORATIVE EXECUTION*.

¹⁷ AFDD 2-8, 6-7.



Figure 8 - Leading from the Front: Operation Dragoon WWII

Epilogue - Suggestions for further research

During the course of this project the following thoughts, ideas, questions, and points to ponder cropped up. Many of these may be worth future study.

(1) Should the MAF, maybe even the Air Force, change its tenet of “centralized control, decentralized execution?”

(2) What effect does centralization have on the cultivation of MAF leadership? The centralization of authority decreases decision-making opportunities during the formative years of an airmen’s career. As these officers reach middle and upper management positions, do they have the requisite experience to effectively lead?

(3) How have airlift operating regulations changed over time with respect the centralization of decision authority? Surprisingly, this is a difficult thing to research. Neither the Air Force nor the AMC publication websites, the Historical Research Agency, the Air University Library, the Air Force History Agency, Air Mobility Warfare Center library, nor the AMC History Office keep outdated airlift operations regulations. In fact, the AMC historian informed the author that such information is locked up, requiring an official freedom of information request to obtain and they are millions of requests behind.

(4) To what extent does USTRANSCOM’s global expansion point the way for the future of the entire US Military? With minor variations and tweaking over a 60-year period, the regional combatant commands have remained largely stable since the end of WWII, yet the world is a much different place both geopolitically and informationally. Perhaps communication systems have advanced permitting a global warfighting command (GLOBALCOM) with combatant command of all US military forces replacing the inherently less efficient geographic “CINCDoms.” Perhaps service components could even be reorganized by mission type instead of medium: a humanitarian/peacekeeping force, a counter-insurgency force, a small regional war force, and a major war force are but a few ideas that come to mind.

(5) What is the best way to manage information on a decentralized battlefield of the future? Assuming the DOD transforms as currently envisioned by people like Dave Alberts the management of real-time information will become more crucial than it already has. How will we process, discriminate, and avoid acting on bad information? Michael Schrage wrote an interesting working paper on this subject entitled “Perfect Information and Perverse Incentives: Costs and Consequences of Transformation and Transparency” in May 2003 that discusses some potential consequences of DOD transformation. His concluded with the following paragraph:

But, an honest, unvarnished view of how individuals and institutions actually behave in information rich environments - as opposed to how we might like them to behave - does not assure that greater quantities of data will lead to better quality results. This paper makes the case that there are excellent reasons for this disconnect. The hard work of examining the economics of information--and the perverse consequences that ‘information abundance’ understandably create--has not yet been done. Capacity is not the same as capability. The National Security community has made enormous investments in providing technical capacity. It has yet to make comparable investments in exploring the economics of how organizations effectively translate that new capacity into new capabilities. That has to change.¹

(6) What are the implications of sharing aircraft commandership between a crewmember and a staff member separated by thousands of miles? There are all sorts of interesting aspects that develop from this concept including legal aspects, organizational design, culture, training, leadership, performance enhancement, combat effectiveness, psychological impacts of differing work schedules, differing personal risk-levels, and also technical aspects of global communications in a combat environment.

(7) What has been the effect of the Transportation Working Capital Fund (TWCF) system on the combat effectiveness of the MAF? Does a system based on “fee for service” and designed to maximize efficiency undermine warfighting capability? What is the impact of the TWCF on training for war? To what extent does the TWCF drive MAF aircraft design and acquisition instead of combat needs?

These are just a few ideas. I hope this thesis has sparked the imagination, provoked one to reconsider where the MAF is going, and to move with purpose on whatever path its leadership decides.

¹ available for download at ebusiness.mit.edu/schrage/Articles/ssp-workingpaper.pdf.

Appendix A - Airlift Doctrine

Doctrinal airlift command and control

Three independent structures. Airlift command and control (C2) consists of three independent structures: intertheater, intratheater, and joint task force (JTF). When integrated, they comprise the overall airlift C2 system. Unity of command is preserved within each structure where a single commander is charged with the responsibility to efficiently and effectively employ their forces and, through disciplined coordination among these structures, achieve unity of effort. AFDD 2-6.1

Airlift is global. While AFDD 1, Air Force Basic Doctrine, acknowledges that aerospace power offers the commander a theater wide perspective, there is both a theater and a global aspect to aerospace power. Herein lies the challenge. It is vital that unity of command within the theaters be maintained while preserving the inherent global capability of airpower, specifically airlift. Equally important, commanders must apply the limited amount of airlift to meet the competing demands of the theaters/JTFs, understanding more than one theater or JTF may be placing demands on the airlift system at any one time. This is done through two mechanisms: (1) force assignment/attachment and (2) direct support, complemented by a DOD-wide airlift priority system. AFDD 2-6.1

THE GOAL: SEAMLESS INTEGRATION. WHEN EMPLOYING AIRLIFT FORCES, IT IS ESSENTIAL AIRMEN HAVE A CLEAR UNDERSTANDING OF THE ASSOCIATED COMMAND RELATIONSHIPS AND CONTROL PROCESSES AFFECTING THE EFFECTIVE APPLICATION OF THESE FORCES. BECAUSE AIRLIFT OPERATES IN THREE VERY DISTINCT BUT INTERDEPENDENT OPERATIONAL ENVIRONMENTS, INTERTHEATER, INTRATHEATER, AND WITHIN A JOINT TASK FORCE'S JOA, IT CAN IN FACT COMPLICATE THE COMMAND AND CONTROL TASK. THE ULTIMATE GOAL OF AIRLIFT COMMAND AND CONTROL IS...TO PRESENT A SEAMLESS SYSTEM TO COMMANDERS, CUSTOMERS, AND AIRLIFT OPERATORS IN BOTH PEACE AND WAR. AFDD 2-6.1

INTERTHEATER AIRLIFT COMMAND AND CONTROL: THE TACC. INTERTHEATER AIRLIFT OPERATIONS ARE GENERALLY GLOBAL IN NATURE AND SERVE THE CONUS-TO-THEATER AIR TRANSPORTATION NEEDS OF THE GEOGRAPHIC CINC. THE VAST MAJORITY OF INTERTHEATER AIRLIFT MISSIONS ARE EXECUTED BY AMC AIRLIFT AIRCRAFT. COMMAND AND CONTROL OF THESE AIRLIFT ASSETS IS NORMALLY EXERCISED THROUGH AMC'S TACC. THE TACC PLANS, COORDINATES, SCHEDULES, TASKS, AND EXECUTES AIRLIFT MISSIONS WORLDWIDE. THE TACC IS THE SINGLE TASKING AND EXECUTION AGENCY FOR ALL ACTIVITIES INVOLVING AMC ASSETS OPERATING TO FULFILL USCINCTrans-DIRECTED REQUIREMENTS. AFDD 2-1.1

INTRATHEATER AIRLIFT COMMAND AND CONTROL ORGANIZATIONS. INTRATHEATER AIRLIFT OPERATIONS MAY BE CONTROLLED USING ONE OF TWO COMMAND AND CONTROL CONCEPTS. IN A MATURE THEATER, WITH A DURABLE AIRLIFT MISSION AND PERMANENTLY ASSIGNED AIRLIFT FORCES, THE CINC MAY ESTABLISH AN AIR MOBILITY OPERATIONS CONTROL CENTER (AMOCC) THROUGH WHICH OPCON OF THEATER ASSIGNED OR ATTACHED FORCES OR TACON OF INTERTHEATER ASSETS (MADE AVAILABLE AS THE SITUATION WARRANTS) IS EXERCISED. THE AMOCC IS THE THEATER AIR COMPONENT COMMANDER'S SINGLE COMMAND AND CONTROL LAYER FOR PLANNING, COORDINATING, TASKING, AND EXECUTING THEATER AIRLIFT OPERATIONS. IN A THEATER IN WHICH AN AMOCC HAS NOT BEEN ESTABLISHED, THE THEATER AIR COMPONENT COMMANDER WILL NORMALLY ESTABLISH AN AIRLIFT CONTROL ORGANIZATION (TYPICALLY, AN AOC) WITHIN THE THEATER C2 STRUCTURE TO PLAN, COORDINATE, TASK, AND EXECUTE THEATER-ASSIGNED AIRLIFT ASSETS. AFDD 2-6.1

INTRATHEATER AIRLIFT C² IN THE AMOCC CONSTRUCT. THE AMOCC IS THE THEATER'S SINGLE COMMAND AND CONTROL LAYER FOR INTRATHEATER AIR MOBILITY OPERATIONS EXTERNAL TO A JOINT TASK FORCE. IT PROVIDES CENTRALIZED PLANNING, TASKING, SCHEDULING, COORDINATION, AND COMMAND AND CONTROL FOR ASSIGNED AND ATTACHED INTRATHEATER AIRLIFT AND AIR REFUELING FORCES IN THE GEOGRAPHIC COMMANDER IN CHIEF'S AREA OF RESPONSIBILITY. THE AIR MOBILITY OPERATIONS CONTROL CENTER INTEGRATES INTERTHEATER AND INTRATHEATER AIR MOBILITY OPERATIONS TO EFFICIENTLY AND EFFECTIVELY ACCOMPLISH THE THEATER AIR MOBILITY MISSION AND ENHANCE THE GOAL OF SEAMLESS GLOBAL MOBILITY. TO FURTHER THESE OBJECTIVES, IT VALIDATES USER REQUIREMENTS, DETERMINES FORCE ALLOCATIONS, AND PROVIDES DEPLOYABLE C² TEAMS. AFDD 2-6

INTRATHEATER AIRLIFT C² IN THE AOC/AMD CONSTRUCT. THE COMAFFOR/JAOC IS RESPONSIBLE FOR COORDINATING AND INTEGRATING JTF AIRLIFT OPERATIONS WITH OTHER ASPECTS OF JTF AIR OPERATIONS. WITHIN THE AOC/JAOC, AN AIR MOBILITY DIVISION (AMD) WILL BE ESTABLISHED TO FOCUS AIR MOBILITY EXPERTISE ON THE NEEDS OF THE JFC AND TO INTEGRATE JTF AIRLIFT OPERATIONS WITH INTRATHEATER AND INTERTHEATER AIRLIFT SUPPORT FOR THE JTF. UNDER THIS CONSTRUCT, COMBATANT COMMAND COMMAND AUTHORITY (COCOM) WILL REMAIN WITH EITHER USCINTRANS OR THE APPLICABLE GEOGRAPHICAL CINC AS DEFINED IN THE SECRETARY OF DEFENSE'S "FORCES FOR UNIFIED COMMANDS MEMORANDUM." THE JFC, HOWEVER, WILL NORMALLY BE DELEGATED OPCON OF FORCES ATTACHED TO THE JTF. AFDD 2-6.1

DIRECTOR OF MOBILITY FORCES (AOC/AMD CONSTRUCT). TO FURTHER ASSIST IN THE EMPLOYMENT OF AIRLIFT FORCES, THE JFC THROUGH THE AIR COMPONENT COMMANDER MAY ESTABLISH A DIRMObFOR TO FUNCTION AS THE COORDINATING AUTHORITY FOR AIR MOBILITY WITH ALL COMMANDS AND AGENCIES BOTH INTERNAL AND EXTERNAL TO THE JTF. THE DIRMObFOR MAY BE SOURCED FROM THE THEATER'S ORGANIZATIONS, OR NOMINATED BY THE AMC COMMANDER. ADDITIONALLY, THE DIRMObFOR, WHEN DESIGNATED, WILL ENSURE THE EFFECTIVE INTEGRATION OF INTERTHEATER AND INTRATHEATER AIRLIFT OPERATIONS, AND EASE THE CONDUCT OF INTRATHEATER AIRLIFT OPERATIONS. OPERATIONALLY, THE DIRMObFOR WORKS DIRECTLY FOR THE JFACC WHILE REMAINING UNDER THE ADMINISTRATIVE CONTROL OF THE COMAFFOR. THE DIRMObFOR PROVIDES DIRECTION TO THE AMD WHILE BEING RESPONSIVE TO THE AOC DIRECTOR AND THE JOINT OPERATION PLANNING AND EXECUTION SYSTEM (JOPES). AFDD 2-6.1

THE DIRMObFOR ALSO HAS A UNIQUE AIRLIFT RESPONSIBILITY. AIRLIFT REQUIREMENTS DO NOT ALWAYS ORIGINATE IN THE AOC. THEY MAY ORIGINATE FROM THE THEATER'S LOGISTICS DIRECTORATE OF A JOINT STAFF (J-4) OR IN THE THEATER'S JOINT MOVEMENT CENTER (JMC), WHEN ESTABLISHED. CONSEQUENTLY, AN ESSENTIAL ROLE FOR THE DIRMObFOR IS TO SERVE AS THE PRINCIPAL INTERFACE BETWEEN THE THEATER AOC AND THE THEATER'S J-4 AND THE JMC TO ENSURE APPROPRIATE PRIORITIZATION OF AIRLIFT TASKS WHILE BALANCING REQUIREMENTS AND AIRLIFT CAPABILITY. AFDD 2-6.1

Appendix B - Glossary

Table 3 - Command, Control, Execution Definitions

Term	Source	Definition
Command	JP 1-02	The authority that a commander in the Armed Forces lawfully exercises over subordinates by virtue of rank or assignment. Command includes the authority and responsibility for effectively using available resources and for planning the employment of, organizing, directing, coordinating, and controlling military forces for the accomplishment of assigned missions.
Control	JP 1-02	Authority that may be less than full command exercised by a commander over part of the activities of subordinate or other organizations.
Control	AFDD 2-8	Control as defined in JP 1-02 is the process by which commanders plan and guide operations [current AF doctrine quoting an old joint definition]. The control process occurs before and during the operation. Control involves dynamic balances between commanders directing operations and allowing subordinates freedom of action.
Execution	Oxford American Dictionary	The carrying out or putting into effect of a plan, order, or course of action.
Command and Control	JP 1-02	The exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of the mission. Command and control functions are performed through an arrangement of personnel, equipment, communications, facilities, and procedures employed by a commander in planning, directing, coordinating, and controlling forces and operations in the accomplishment of the mission.
Centralized	Oxford American Dictionary	Concentrate control of an activity or organization under a single authority
Centralized Command	Not Defined	
Centralized Control	JP 1-02 AFDD 1-2	Placing within one commander the responsibility and authority for planning, directing, and coordinating a military operation or group/category of operations (AF add: by an airmen at the theater level)
Centralized Execution	Not Defined	
Decentralized	Oxford American / Websters Dictionaries	The dispersion or distribution of functions and powers; specific: the delegation of power from a central authority to regional and local authorities. Move departments of (a large organization) away from a single administrative center to other locations, usually granting them some degree of autonomy.
Decentralized Command	Not Defined	
Decentralized Control	JP 1-02	In air defense, the normal mode whereby a higher echelon monitors unit actions, making direct target assignments to units only when necessary to ensure proper fire distribution or to prevent engagement of friendly aircraft.
Decentralized Execution	JP 1-02 AFDD2.	Delegation of execution authority to subordinate commanders.

Selected Acronyms:

AATS - AIRCREW AIRCRAFT TASKING SYSTEM
ACC - AIR COMBAT COMMAND
AF - AIR FORCE
AFB - AIR FORCE BASE
AFDD - AIR FORCE DOCTRINE DOCUMENT
AFI - AIR FORCE INSTRUCTION
AFRC - AIR FORCE RESERVE COMPONENT
AFSOC - AIR FORCE SPECIAL OPERATIONS COMMAND
AGL - ABOVE GROUND LEVEL (TYPICALLY IN FEET)
ALZ - ASSAULT LANDING ZONE
AMC - AIR MOBILITY COMMAND
AMCT - AIR MOBILITY CONTROL TEAM
AMD - AIR MOBILITY DIVISION
AMOCC - AIR MOBILITY OPERATIONS CONTROL CENTER
ANG - AIR NATIONAL GUARD
AOC - AIR OPERATIONS CENTER
AOR - AREA OF RESPONSIBILITY
ASRR - AIRFIELD SUITABILITY AND RESTRICTIONS REPORT
C2 - COMMAND AND CONTROL
CAF - COMBAT AIR FORCE
CC - COMMANDER
CDDOC - CENTRAL COMMAND DEPLOYMENT AND DISTRIBUTION OPERATIONS CENTER
CFACC - COMBINED FORCES AIR COMPONENT COMMANDER
CFLCC - COMBINED FORCES LAND COMPONENT COMMANDER
CHOP - CHANGE OPERATIONAL CONTROL
COCOM - COMBATANT COMMAND
COMAFFOR - COMMANDER AIR FORCES
CV - VICE COMMANDER
DDOC - DEPLOYMENT AND DISTRIBUTION OPERATIONS CENTER
DIRMOBFOR - DIRECTOR OF MOBILITY FORCES
DO - DIRECTOR OF OPERATIONS
DPO - DISTRIBUTION PROCESS OWNER
DZ - DROP ZONE
EMTF - EXPEDITIONARY MOBILITY TASK FORCE
EUCOM - EUROPEAN COMMAND
FCS - FUTURE COMBAT SYSTEM
FM - FLIGHT MANAGER
GAO - GOVERNMENT ACCOUNTING OFFICE
GDSS - GLOBAL DECISION SUPPORT SYSTEM
HQ - HEADQUARTERS
IFM - INTEGRATED FLIGHT MANAGEMENT
IFR - INSTRUMENT FLIGHT RULES
JDDOC - JOINT DEPLOYMENT AND DISTRIBUTION OPERATIONS CENTER
JFACC - JOINT FORCES AIR COMPONENT COMMANDER
JFC - JOINT FORCE COMMANDER
JOA - JOINT OPERATIONS AREA
JOPES - JOINT OPERATIONS PLANNING AND EXECUTION SYSTEM
JP - JOINT PUBLICATION
JROC - JOINT REQUIREMENTS OVERSIGHT COUNSEL
KDDOC - KOREA DEPLOYMENT AND DISTRIBUTION OPERATIONS CENTER
LZ - LANDING ZONE
MAF - MOBILITY AIR FORCE
MAJCOM - MAJOR AIR COMMAND
MCR - MULTI-COMMAND REGULATION

MOG - MAXIMUM ON GROUND
MWS - MOBILITY WEAPONS SCHOOL, ALSO MISSILE WARNING SYSTEM
NAF - NUMBERED AIR FORCE
NCO - NETWORK-CENTRIC OPERATIONS
NCW - NETWORK-CENTRIC WARFARE
NMS - NATIONAL MILITARY STRATEGY
NSS - NATIONAL SECURITY STRATEGY
NVG - NIGHT VISION GOGGLES
OAF - OPERATION ALLIED FORCE
ODS - OPERATION DESERT STORM
OEF - OPERATION ENDURING FREEDOM
OIF - OPERATION IRAQI FREEDOM
OG - OPERATIONS GROUP
OPCON - OPERATIONAL CONTROL
OPORD - OPERATIONS ORDER
PACAF - PACIFIC AIR FORCES
PACOM - PACIFIC COMMAND
PPBS - PLANNING PROGRAMMING BUDGETING SYSTEM
PPR - PRIOR PERMISSION REQUIRED
TACC - TANKER AIRLIFT CONTROL CENTER
TACON - TACTICAL CONTROL
TALCE - TANKER AIRLIFT CONTROL ELEMENT
TWCF - TRANSPORTATION WORKING CAPITAL FUND
TWG - THREAT WORKING GROUP
USAFE - UNITED STATES AIR FORCES EUROPE
USTRANSCOM - UNITED STATES TRANSPORTATION COMMAND
VFR - VISUAL FLIGHT RULES
VRA - VIRTUAL RISK ASSESSMENT
WG - WING

Appendix C - Doctrinal Definitions

Joint Doctrine Definitions:

Intertheater airlift. The common-user airlift linking theaters to the continental United States and to other theaters as well as the airlift within the continental United States. The majority of these air mobility assets is assigned to the Commander, United States Transportation Command. Because of the intertheater ranges usually involved, intertheater airlift is normally conducted by the heavy, longer range, intercontinental airlift assets but may be augmented with shorter-range aircraft when required. Formerly referred to as "strategic airlift."

Intratheater airlift. Airlift conducted within a theater. Assets assigned to a geographic combatant commander or attached to a subordinate joint force commander normally conduct intratheater airlift operations. Intratheater airlift provides air movement and delivery of personnel and equipment directly into objective areas through airlanding, airdrop, extraction, or other delivery techniques as well as the air logistic support of all theater forces, including those engaged in combat operations, to meet specific theater objectives and requirements. During large-scale operations, US Transportation Command assets may be tasked to augment intratheater airlift operations, and may be temporarily attached to a joint force commander. Formerly referred to as "theater airlift."

Command. The authority that a commander in the Armed Forces lawfully exercises over subordinates by virtue of rank or assignment. Command includes the authority and responsibility for effectively using available resources and for planning the employment of, organizing, directing, coordinating, and controlling military forces for the accomplishment of assigned missions. It also includes responsibility for health, welfare, morale, and discipline of assigned personnel.

Combatant Command (Command Authority). Nontransferable command authority established by title 10 ("Armed Forces"), United States Code, section 164, exercised only by commanders of unified or specified combatant commands unless otherwise directed by the President or the secretary of defense. Combatant command (command authority) cannot be delegated and is the authority of a combatant commander to perform those functions of command over assigned forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction over all aspects of military operations, joint training, and logistics necessary to accomplish the missions assigned to the command. Combatant command (command authority) should be exercised through the commanders of subordinate organizations. Normally this authority is exercised through subordinate joint force commanders and Service and/or functional component commanders. Combatant command (command authority) provides full authority to organize and employ commands and forces as the combatant commander considers necessary to accomplish assigned missions. Operational control is inherent in combatant command (command authority). Also called COCOM.

Commander's Intent. A concise expression of the purpose of the operation and the desired end state that serves as the initial impetus for the planning process. It may also include the commander's assessment of the adversary commander's intent and an assessment of where and how much risk is acceptable during the operation.

Control (JP version). Authority that may be less than full command exercised by a commander over part of the activities of subordinate or other organizations.

Control (AF version). Control as defined in JP 1-02 is the process by which commanders plan and guide operations [current AF doctrine quoting an old joint definition]. The control process occurs before and during the operation. Control involves dynamic balances between commanders directing operations and allowing subordinates freedom of action. These processes require strong leadership and assessment/evaluation of follow-up actions. Often time and distance factors limit the direct control of subordinates. Commanders should rely on delegation of authorities and “commander’s intent” as methods to control forces. The commander’s intent should specify the goals, priorities, acceptable risks, and limits of the operation. AFDD 2-8

Execution (MAF 11-series instruction Definition). Command-level approval for initiation of a mission or portion thereof after due consideration of all pertinent factors. Execution authority is restricted to designated command authority.

Execution (Webster’s Collegiate Dictionary). The act or process of executing. Execute defined as “to carry out fully : put completely into effect”

Execution (Oxford English Dictionary). The carrying out or putting into effect of a plan, order, or course of action.

Centralize (Webster’s Collegiate Dictionary). To concentrate by placing power and authority in a center or central organization.

Centralize <centralized> (Oxford English Dictionary). Concentrate (control of an activity or organization) under a single authority.

Decentralization (Webster’s Collegiate Dictionary). The dispersion or distribution of functions and powers; specific: the delegation of power from a central authority to regional and local authorities.

Decentralize <decentralized> (Oxford English Dictionary). Move departments of (a large organization) away from a single administrative center to other locations, usually granting them some degree of autonomy.

Command and Control. The exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of the mission. Command and control functions are performed through an arrangement of personnel, equipment, communications, facilities, and procedures employed by a commander in planning, directing, coordinating, and controlling forces and operations in the accomplishment of the mission.

Supported Commander. 1. The commander having primary responsibility for all aspects of a task assigned by the Joint Strategic Capabilities Plan or other joint operation planning authority. In the context of joint operation planning, this term refers to the commander who prepares operation plans or operation orders in response to requirements of the Chairman of the Joint Chiefs of Staff. 2. In the context of a support command relationship, the commander who receives assistance from another commander's force or capabilities, and who is responsible for ensuring that the supporting commander understands the assistance required.

Supporting Commander. 1. A commander who provides augmentation forces or other support to a supported commander or who develops a supporting plan. Includes the designated combatant commands and defense agencies as appropriate. 2. In the context of a support command relationship, the commander who aids, protects, complements, or sustains another commander's force, and who is responsible for providing the assistance required by the supported commander.

Strategic Level of War. The level of war at which a nation, often as a member of a group of nations, determines national or multinational (alliance or coalition) security objectives and guidance, and develops and uses national resources to accomplish these objectives. Activities at this level establish national and multinational military objectives; sequence initiatives; define limits and assess risks for the use of military and other instruments of national power; develop global plans or theater war plans to achieve these objectives; and provide military forces and other capabilities in accordance with strategic plans.

Operational Level of War. The level of war at which campaigns and major operations are planned, conducted, and sustained to accomplish strategic objectives within theaters or other operational areas. Activities at this level link tactics and strategy by establishing operational objectives needed to accomplish the strategic objectives, sequencing events to achieve the operational objectives, initiating actions, and applying resources to bring about and sustain these events. These activities imply a broader dimension of time or space than do tactics; they ensure the logistic and administrative support of tactical forces, and provide the means by which tactical successes are exploited to achieve strategic objectives.

Tactical Level of War. The level of war at which battles and engagements are planned and executed to accomplish military objectives assigned to tactical units or task forces. Activities at this level focus on the ordered arrangement and maneuver of combat elements in relation to each other and to the enemy to achieve combat objectives.

Operational Control. Operational control is the authority to perform those functions of command over subordinate forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction necessary to accomplish the mission.

Tactical Control. Command authority over assigned or attached forces or commands, or military capability or forces made available for tasking, that is limited to the detailed direction and control of movements or maneuvers within the operational area necessary to accomplish missions or tasks assigned. Tactical control is inherent in operational control.

Centralized Control. 1. In air defense, the control mode whereby a higher echelon makes direct target assignments to fire units. 2. In joint air operations, placing within one commander the responsibility and authority for planning, directing, and coordinating a military operation or group/category of operations.

Decentralized Control. In air defense, the normal mode whereby a higher echelon monitors unit actions, making direct target assignments to units only when necessary to ensure proper fire distribution or to prevent engagement of friendly aircraft.

Decentralized Execution. Delegation of execution authority to subordinate commanders.

General Staff. A group of officers in the headquarters of Army or Marine divisions, Marine brigades, and aircraft wings, or similar or larger units that assist their commanders in planning,

coordinating, and supervising operations. A general staff may consist of four or more principal functional sections: personnel (G-1), military intelligence (G-2), operations and training (G-3), logistics (G-4), and (in Army organizations) civil affairs and military government (G-5). (A particular section may be added or eliminated by the commander, dependent upon the need that has been demonstrated.) The comparable Air Force staff is found in the wing and larger units, with sections designated personnel, operations, etc. G-2 Air and G-3 Air are Army officers assigned to G-2 or G-3 at division, corps, and Army headquarters level who assist in planning and coordinating joint operations of ground and air units. Naval staffs ordinarily are not organized on these lines, but when they are, they are designated N-1, N-2, etc. Similarly, a joint staff may be designated J-1, J-2, etc. In Army brigades and smaller units and in Marine Corps units smaller than a brigade or aircraft wing, staff sections are designated S-1, S-2, etc., with corresponding duties; referred to as a unit staff in the Army and as an executive staff in the Marine Corps.

Joint Staff. 1. The staff of a commander of a unified or specified command, subordinate unified command, joint task force, or subordinate functional component (when a functional component command will employ forces from more than one Military Department), that includes members from the several Services comprising the force. These members should be assigned in such a manner as to ensure that the commander understands the tactics, techniques, capabilities, needs, and limitations of the component parts of the force. Positions on the staff should be divided so that Service representation and influence generally reflect the Service composition of the force. 2. (capitalized as Joint Staff) The staff under the Chairman of the Joint Chiefs of Staff as provided for in the National Security Act of 1947, as amended by the Goldwater-Nichols Department of Defense Reorganization Act of 1986. The Joint Staff assists the Chairman and, subject to the authority, direction, and control of the Chairman and the other members of the Joint Chiefs of Staff in carrying out their responsibilities. Also called JS. See also staff

Staged Crews. Aircrews specifically positioned at intermediate airfields to take over aircraft operating on air routes, thus relieving complementary crews of flying fatigue and speeding up the flow rate of the aircraft concerned.

AFDD 1 Definitions

Centralized Control. Centralized control of air and space power is the planning, direction, prioritization, synchronization, integration, and deconfliction of air and space capabilities to achieve the objectives of the joint force commander. Centralized control of air and space power should be accomplished by an airman at the air component commander level who maintains a broad theater perspective in prioritizing the use of limited air and space assets to attain established objectives in any contingency across the range of operations. Centralized control maximizes the flexibility and effectiveness of air and space power; however, it must not become a recipe for micromanagement, stifling the initiative subordinates need to deal with combat's inevitable uncertainties.

Decentralized Execution. Decentralized execution of air and space power is the delegation of execution authority to responsible and capable lower level commanders to achieve effective span of control and to foster disciplined initiative, situational responsiveness, and tactical flexibility. It allows subordinates to exploit opportunities in rapidly changing, fluid situations. The benefits inherent in decentralized execution, however, are maximized only when a commander clearly communicates his intent.²

² Air Force Doctrine Document (AFDD) 1. *Air Force Basic Doctrine*, 17 November 2004, 28.

Centralized Control and Decentralized Execution. Centralized control and decentralized execution of air and space power are critical to effective employment of air and space power. Indeed, they are the fundamental organizing principles for air and space power, having been proven over decades of experience as the most effective and efficient means of employing air and space power.

Because of air and space power's unique potential to directly affect the strategic and operational levels of war, it must be controlled by a single airman who maintains the broad, strategic perspective necessary to balance and prioritize the use of a powerful, highly desired yet limited force. A single air commander, focused on the broader aspects of an operation, can best mediate the competing demands for tactical support against the strategic and operational requirements of the conflict.

Centralized control and decentralized execution of air and space power provide theater-wide focus while allowing operational flexibility to meet theater objectives. They assure concentration of effort while maintaining economy of force. They exploit air and space power's versatility and flexibility to ensure that air and space forces remain responsive, survivable, and sustainable. Modern communications technology provides a temptation towards increasingly centralized execution of air and space power. Although several recent operations have employed some degrees of centralized execution, such command arrangements will not stand up in a fully stressed, dynamic combat environment, and as such should not become the norm for all air operations. Despite impressive gains in data exploitation and automated decision aids, a single person cannot achieve and maintain detailed situational awareness when fighting a conflict involving many simultaneous engagements taking place throughout a large area. A high level of centralized execution results in a rigid campaign unresponsive to local conditions and lacking in tactical flexibility. For this reason, execution should be decentralized within a command and control architecture that exploits the ability of strike package leaders, air battle managers, forward air controllers, and other front-line commanders to make on-scene decisions during complex, rapidly unfolding operations. Nevertheless, in some situations, there may be valid reasons for execution of specific operations at higher levels, most notably when the JFC (or perhaps even higher authorities) may wish to control strategic effects, even at the sacrifice of tactical efficiency.

AFDD 2-6 Air Mobility Operations and AFDD 2-6.1 Airlift Operations:

Airlift Specific Centralized Control-Decentralized Execution. The airlift system should appear seamless to the user. This system, consisting of intertheater, intratheater, and JTF-dedicated airlift forces, should be centrally controlled and decentrally executed to ensure an integrated flow of forces and sustainment. Centralized control ensures that limited airlift assets are properly assigned against the most important objectives. Decentralized execution ensures those who are responsible for executing the airlift mission actually accomplish the detailed planning and have the requisite authority to exploit fleeting opportunities as required to successfully meet mission objectives. AFDD 2-6.1

Centralized control allows commanders to focus on those priorities that lead to victory while decentralized execution fosters initiative, situational responsiveness, and tactical flexibility. Like all other forms of aerospace power, centralized control and decentralized execution of air mobility operations are essential to mission success. Although it is not necessary for a single global organization to centrally control all air mobility forces, all commanders should envision air

mobility as a global system capable of simultaneously performing intertheater (from one theater to another) and intratheater (within a single theater) missions. Separate but integrated command structures exercise centralized control over CONUS-assigned and theater-assigned/attached air mobility forces. This arrangement ensures a proper focus for global and regional air mobility. The MAF satisfies mobility requirements through common procedures that bridge the functional command structures of theater and CONUS-based forces. Effective support for the geographic commander in chief's (CINC) mobility requirements demands the theater and CONUS-based forces form a global partnership. This partnership must operate as an integrated force with common planning, tasking, scheduling, and command and control (C2) systems. A critical element of this partnership is linking centralized control agencies such as the Air Mobility Command's (AMC) Tanker/Airlift Control Center (TACC) for CONUS-based forces with the Air Mobility Operations Control Center (AMOCC) for theater forces. These MAF partners exercise centralized control to ensure both commanders are supported with responsive, capable, and seamless air mobility. Air mobility commanders practice decentralized execution by delegating execution authority to subordinate commanders. A high degree of tasking and execution control is centralized above the wing level, with an appropriately experienced air mobility commander to direct forces and respond as a system to mobility requirements. However, tactical commanders at the wing, group, squadron, mission, and aircraft levels are vested with the appropriate authority necessary for an effective span of control while fostering initiative, situational responsiveness, and tactical flexibility.

AFDD 2-8 Definitions

Command. same as JP 1-02

Control. Control as defined in JP 1-02 is the process by which commanders plan and guide operations. The control process occurs before and during the operation. Control involves dynamic balances between commanders directing operations and allowing subordinates freedom of action. These processes require strong leadership and assessment/evaluation of follow-up actions. Often time and distance factors limit the direct control of subordinates. Commanders should rely on delegation of authorities and "commander's intent" as methods to control forces. The commander's intent should specify the goals, priorities, acceptable risks, and limits of the operation.

Centralized control of aerospace forces levies a major requirement on US Air Force C2 operations. This requirement is to establish and maintain two-way information flow among commanders, operators, and combat support elements that must be effectively integrated to achieve the desired combat effects. Using timely and available information, commanders make and communicate decisions. A good example is the air tasking order (ATO); it embodies command decisions that must be communicated to the operators.

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