

CONTROL OF MOBILITY AIR FORCES:
SHOULD THE DIRECTOR OF MOBILITY FORCES COMMAND?

BY

ROLANDA BURNETT

A THESIS PRESENTED TO THE FACULTY OF
THE SCHOOL OF ADVANCED AIRPOWER STUDIES
FOR COMPLETION OF GRADUATION REQUIREMENTS

SCHOOL OF ADVANCED AIRPOWER STUDIES

AIR UNIVERSITY

MAXWELL AIR FORCE BASE, ALABAMA

JUNE 2002

Report Documentation Page

Form Approved
OMB No. 0704-0188

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. REPORT DATE 00 JUN 2002		2. REPORT TYPE N/A		3. DATES COVERED -	
4. TITLE AND SUBTITLE Control Of Mobility Air Forces: Should The Director Of Mobility Forces Command?				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Air University Maxwell Air Force Base, Alabama				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release, distribution unlimited					
13. SUPPLEMENTARY NOTES The original document contains color images.					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT UU	18. NUMBER OF PAGES 125	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

DISCLAIMER

The conclusions and opinions expressed in this document are those of the author. They do not reflect the official position of the US Government, Department of Defense, the United States Air Force, or Air University.

ABOUT THE AUTHOR

Major Rolanda Burnett was commissioned through the Reserve Officer Training Corps, North Carolina Agricultural and Technical State University in 1989. Graduating from Specialized Undergraduate Navigator Training and KC-135 follow-on training in 1991, he was assigned to the 912th Air Refueling Squadron, Robins Air Force Base, Georgia. In November of 1993, Major Burnett was reassigned to Kadena Air Base, Japan. There he served as Chief, Navigation Training, Standardization and Evaluation / Instructor Navigator, and Flight Commander / Instructor Navigator. In September of 1998, he was reassigned to the Altus AFB Oklahoma, where he served as a Combat Crew Training Squadron Instructor Navigator, Executive Officer, Flight Commander, and Chief Navigator, Standardization and Evaluation. Major Burnett is a senior navigator with nearly 3000 hours. He has a bachelor's degree from North Carolina Agricultural and Technical State University in Economics, and a master's degree in Economics from Oklahoma State University. He is a graduate of the Command and General Staff College.

ACKNOWLEDGMENTS

First and foremost I would like to thank my Lord and my Savior, Jesus Christ for giving me the strength needed to complete this study. Without him in my life, nothing else would matter.

I would like to acknowledge several people without whose support and help I would never have gotten this study off the ground. I want to thank Dr. David R. Mets, my advisor, and Dennis M. Drew, my reader. Their sometimes scathing, although spot-on, critiques kept me honest and vastly improved the study. I would also like to thank Col Robert C. Owen for his help and guidance.

I would like to thank Mary Burnett, my sister-in-law, who allowed me to concentrate totally on SAAS in the aftermath of my wife's death.

I would like to thank my boys. I truly appreciate their understanding, love, and patience while Daddy was doing his thesis. Finally, I would like to thank my wife, Renee, for blessing me with the best years of her life. Remembering her words of encouragement served as a constant inspiration, especially when I was not sure I would be able to complete this study.

ABSTRACT

Our military enjoys the status of the world's premier fighting force, due, in no small part, to what Air Force mobility provides: global force projection and force multiplication. The Air Force must manage its mobility assets in a manner appropriate to their importance. Doctrinally, the Director of Mobility Forces (DM4) is the manager of those assets during contingencies. Consequently, it is critical that we get it right. Should the DM4 command, and if so what should he command?

This study compares doctrine's answer to the question with how airlift and air refueling were managed before the DM4. It then evaluates the performance of the DM4 in Operation ALLIED FORCE and Operation ENDURING FREEDOM and compares that with doctrine. The evidence suggests that command of mobility forces is not necessarily needed, although in some instances may help the DM4 manage the mobility effort. In general, the benefits of treating air refueling and airlift as one entity may outweigh the incentives of separating them. Doctrinal adjustments, which would improve the flexibility of the DM4, also seem warranted.

CONTENTS

Chapter	Page
DISCLAIMER.....	ii
ABOUT THE AUHTOR.....	iii
ACKNOWLEDGEMENTS... ..	iv
ABSTRACT.....	v
1 INTRODUCTION.....	1
2 THE AIRLIFT EXPERIENCE: A BRIEF HISTORY...	7
3 THE AIR REFUELING EXPERIENCE: A BRIEF HISTORY	27
4 THE DOCTRINAL CONCEPT OF THE DM4... ..	41
5 THE DM4 IN ACTION.....	50
6 CONCLUSIONS AND RECOMMENDATIONS.....	75
BIBLIOGRAPHY.....	80

Illustrations

Figure

1 DM4 Command and Consolidation Options... ..	5
2 Branches of National Command Authority.....	42
3 Command Relationships	44
4 DM4 Links to Joint Task Forces	52
5 Coordination for 10 October U2 Mission	74

Chapter 1

Introduction

Dr. Michael Howard renders a sobering verdict on the effectiveness of military doctrine formulated during peacetime, “they have got it wrong.”¹ Although a stark reality, a corollary of Dr. Howard’s assertion is that there is always room for improvement in doctrine.

Background

This study will look at the doctrinal concept of the Director of Mobility Forces (DM4). The DM4 directs the mobility effort during contingency operations, ensuring both airlift and air refueling assets are used efficiently and effectively in support the Joint Force Commander’s objectives.

Some suggest Operation ALLIED FORCE (OAF) highlighted lessons with direct implications to the DM4 concept. General Michael Short, Joint Force Air Component Commander (JFACC) for OAF, opted to disregard doctrine by choosing not to use a DM4 to direct air refueling in support of the Combat Air Force (CAF). Although OAF was a success, many argue that placing the direct-support tankers under the direction of the Combined Air Operations Center Director (CAOCD) instead of the DM4 led to significant problems such as an

¹ Michael Howard, “Military Science in an Age of Peace,” *Journal of the Royal United Services Institute for Defence Studies*, Vol 119, March 1974, 37.

unsafe airspace plan and grossly inefficient use of tankers. These problems might have been avoided had senior mobility experience been integrated into the Combined Air Operations Center (CAOC) early on. Command authority may have helped the DM4 overcome CAOC resistance to senior mobility guidance, thereby improving overall operations.

Importance

Our military enjoys the status of the world's premier fighting force, due, in no small part, to what Air Force mobility provides: global force projection and force multiplication. Therefore, the Air Force must manage its mobility assets in a manner appropriate to their importance. Doctrinally, the DM4 is the manager of those assets during contingencies. Consequently, it is critical that we get it right—less wrong in Howard's parlance. A focused investigation on the best way to use the DM4 is thus fully warranted.

Research Question

OAF was a microcosm of the conflicting issues concerning the DM4 and forms the basis for our research question: Should the DM4 command, and if so what should he command? Currently, the DM4 is a director, not a commander. He coordinates the mobility operations of both airlift and air refueling. Some think the USAF would be better served if it returned to something like the Commander of Airlift Forces (COMALF). The COMALF was a commander of airlift in the war against Iraq but he did not command air refueling assets. The DM4 and COMALF represent different options in answering our research

question. In essence, this study wants to identify the best option—if there is one—for the DM4.

There is no shortage of literature debating the merit of command for the DM4. However, the studies suffer from a common analytical deficiency, they analyze the issue through the lens of airlift only. For example, Richard T. Devereaux's study, *Theater Airlift Management and Control: Should We Turn Back the Clock to Be Ready for Tomorrow?* concludes the DM4 is a diluted COMALF lacking the effectiveness that command authority gives.² He also makes a compelling case as to why the DM4 should revert to the COMALF based on lessons learned from the Vietnam and Persian Gulf wars. This conclusion is based however, on an airlift-only perspective. He suggests, "the natural blend of strategic airlift and air refueling offers little in a theater environment."³ His treatment of the air refueling issue amounts to removing it from the equation.

Nonie C. Cabana's study, "Total Mobility: A Post-Kosovo Role for the DM4" does not mention the role of air refueling, yet the author lays out a far-reaching vision for the DM4 that does not consider the role of air refueling

² Richard T. Devereaux, *Theater Airlift Management and Control: Should We Turn Back the Clock to Be Ready for Tomorrow?* (Maxwell AFB Ala.: Air University Press, September 1994), 38.

³ Devereaux, 58.

assets.⁴ Implicitly, the message is that even though air refueling makes up a significant portion of the mobility assets under the DM4 they do not warrant consideration when deciding how the DM4 should do business.

Methodology

Historical Investigation. Although air refueling and airlift developed separately and represent different functions, there are striking similarities between the issues and tensions that shaped their development. Consequently, this study looks historically at the organizational structures and operational imperatives of both airlift and air refueling. Investigating the environment in which airlift and air refueling developed may prove useful in two ways: 1) provide a better framework from which to evaluate the questions of command and composition; and 2) avail a more comprehensive body of evidence from which one can draw conclusions and recommendations for adjustments to the DM4 doctrine. Brig Gen John C. Fryer, Jr.'s assessment of *Airlift Doctrine*, by Lt Col Charles E. Miller, strikes at the core of the purpose of this historical perspective. Gen Fryer remarks in the forward, "This is not a history of airlift but rather an investigation

⁴ Nonie C Cabana, "Total Mobility Flow: A Post-Kosovo Role for the DIRMOBFOR," *Aerospace Power Chronicles*, 20 September 2000, n.p., on-line, Internet, 16 October 2001, available from <http://www.airpower.maxwell.af.mil/airchronicles/cc/cabana2.html>

of ideas and concepts as they have evolved and have been applied to warfighting.”⁵ So too is this study’s rationale for looking to history.

The research question has two components: command and composition. There are two command options: 1) The DM4 has command authority over mobility forces; 2) the DM4 does not have command authority over mobility forces. Similarly, there are two composition options: 1) All mobility assets are consolidated under the DM4 ; 2) All mobility assets are not consolidated under the DM4. Thus there are four possible contingency options as depicted in figure 1.

		Command Options	
		Command	Direct
Consolidation Options	Consolidated	Consolidated Command	Consolidated Direction
	Separated	Separated Command	Separated Direction

Figure 1. DM4 Command and Consolidation Options

Evaluating Individual Contingencies. The study categorizes selected contingencies based on the options in figure 1. Then it evaluates its performance

⁵ Charles E. Miller, Lt Col. USAF, *Airlift Doctrine* (Maxwell AFB, Ala.: Air University Press, March 1998), vii.

given the context. The contextual elements are command relationships, length of contingency, and complexity of contingency. Not all the contextual elements will be applicable to every contingency.

Evaluating All Contingencies. The study then analyzes the entire set of contingencies based on the options and the contextual elements. If an option emerges repeatedly with good results regardless of the context that would probably be the one to always use. However, if different options perform well over a varying set of contexts then no one approach is best. As a result, we would have to be somewhat flexible in selecting a DM4 option by considering the contextual elements.

Evaluating Doctrine. This study also categorizes the option our doctrine says we should use. Finally, the study compares the doctrine option to the option or options based on all the contingencies. By comparing the two, we can see how closely doctrine reflects history.

Assumptions and Limitations

The scope of this study does not take into account the many other DM4-related missions such as mobility support that warrant studies in doctrinal issues. Nevertheless, the advantage of highlighting the command issues will pay off in terms of doctrinal insight. In addition, this study's perspective is heavily Air Force-centric, with limited consideration for Joint or Combined implications. The study assumes mobility will continue to be an important element in the way America fights, that mobility assets remain in scarce supply, and that tensions

between the functional and geographic Commanders in Chief (CINCs) over control authority of mobility assets will persist.

The reader should keep in mind the author's mobility bias. Although great pains were taken to paint an unbiased picture, the author's background, and experience affected the conclusions of the study.

Overview

Chapter 2 investigates the developmental challenges from the airlift perspective and establishes a link between the lessons learned by the airlift community and the current DM4 doctrine. Chapter 3 identifies the challenges that faced air refueling during its development to show the similarities of air refueling and airlift. Chapter 4 examines the doctrinal functions and environment of the DM4 in detail. Chapter 5 evaluates the performance of the DM4 based on evidence from OAF and Operation ENDURING FREEDOM (OEF). Chapter 6 draws conclusions based on the evidence from the contingencies. It also recommends doctrinal adjustments based on the conclusions.

Chapter 2

The Airlift Experience: A Brief History

Ever since World War II, Mobility forces have shouldered the burden of living between the worlds of logistics and the world of combat.

—Dr. David R. Mets

This chapter begins with an investigation of the operational and developmental challenges faced by the early thinkers and practitioners of airlift. The chapter then looks at the airlift operational lessons learned from post WWII through the early 1990s to see if there is a link between those lessons and the current DM4 concept.

Prior to WW II

During the 1920's and 1930s, “ideas about air transportation were not in the forefront. Combat was the issue; concerns about support came later, and as a result, airlift struggled to gain recognized status as an integral part of the military machine worthy of serious thought and a commensurate level of the financial resources.”⁶ Even as late as August 1937, “Secretary of War, Harry Woodring, “saw no rationale for buying transports due to their high price. The money saved

⁶ Charles E. Miller, Lt Col. USAF, *Airlift Doctrine* (Maxwell AFB, Ala.: Air University Press, March 1998), 16.

was to be used to buy new bombers; transports would be met by converting old bombers.”⁷ However, as the extreme mobility and flexibility of the airplane became obvious, so too the importance of transportation became an issue.”⁸

Despite the less than optimal developmental environment, the early airlift advocates were determined to see how much of an effect airlift could make on the Air Corps in terms of enhancing its striking power. During the mid-to-late 1920s, a series of maneuvers, culminating in the maneuvers of 1928, which took place between Virginia Beach and Langley Field, validated the concept of airlift’s practicality in supplying the Air Corps by air. In support of a report filed by Major H. H. C. Richards, an Air Corps Tactical School (ACTS) supply officer, recommending there should be a “minimum of transports assigned,” the commander of the 2d Bombardment Group, Major Hugh J. Knerr, claimed that the Air Corps must develop cargo planes to achieve independence. He believed the 1928 maneuvers had demonstrated that air units could be self-sustaining. The ACTS report and Major Knerr’s recommendations helped convince the chief of the Air Corps to establish a transport supply service within each of the four depot control areas.⁹ However, with the increased recognition of the value of air transportation came intense debate of how to organize and employ it.

⁷ Charles E. Miller, 17.

⁸ Charles E. Miller, 5.

⁹ Charles E. Miller, 9-11.

The issue of centralization or decentralization arguably was the single most important organizational issue during the formative years of airlift. In January 1932, individual depot districts owned and operated the aircraft, which made up the newly formed air transport program. Because of this structure, airlift got off to a decentralized—and according to Lt Col. Charles E. Miller—defective start.¹⁰ In October of 1932, only months after the establishment of transport supply program, Lt. Col Albert Sneed, commander of the Fairfield Air Depot, thought that “air transportation should move to its ‘logical destiny’ by expansion ‘to a position of equality with rail and motor transport.’ ” It could not do so, Colonel Sneed maintained, as long as the existing supply machinery lacked centralized control.”¹¹ The Chief of the Air Corps, shortly thereafter, directed the establishment of 1st Air Transport Group (provisional) and four (provisional) transport squadrons. Thus, the organizational position had been established—centralized control of air transportation.¹² This position, however, was not shared

¹⁰ Charles E. Miller, 13.

¹¹ Genevieve Brown, *Development of Transport Airplanes and Air Transport Equipment*, Historical Study (Wright Field, Ohio: Historical Division, Air Technical Service Command, April 1946), 49-50.

¹² Charles E. Miller, 14.

by everyone—namely the General Headquarters (GHQ)—and by 1935, the 1st group was disbanded, and the squadrons put under the GHQ.¹³

A controversial procurement issue highlighted the fact that airlift had the flexibility to perform two broad roles: indirect (cargo carrying missions) or direct support (troop carrying missions). The 1st Air Transport Group's aerial supply system highlighted the inadequacy of the cargo planes (Bellanca Y1C-14 and Y1C-27) and the need for planes designed specifically for the purpose of cargo transport. However, despite a previous approval for production of such a plane, Gen Oscar Westover, Chief of the Air Corps, opted instead to direct Materiel Division to “look to modifying a commercially available transport primarily with an eye to carrying maintenance people for the tactical units.”¹⁴ Ironically, the controversy that surrounded this procurement issue sprung from air transportation's tremendous flexibility; it had the potential to perform two fundamentally different missions: 1) cargo carrying missions; 2) troop carrying missions. Optimizing an aircraft for one of the missions, however, would be at the operational expense of the other. As a result, the chief of staff of the Air Corps authorized the development of two different types of airplanes.¹⁵

¹³ Charles E. Miller, 15.

¹⁴ Charles E. Miller, 14.

¹⁵ Charles E. Miller, 15.

The differing airlift roles led to the development of two cultures:¹⁶ troop carrier (direct support) and air transport aviation (indirect support). Two imperatives emerged: for the direct support role, responsiveness was paramount, and for the indirect role, efficiency seemed to be the dominant operational goal. Each culture had different—and often competing—operational requirements that made for an interesting organizational balance. Quite often, during the formative years of airlift, these differing needs resulted in compromise. The procurement dilemma serves as only one of many challenges posed by the existence of differing missions within the air transportation world. Add to that the fact that all cargo planes, even those optimized for cargo handling, had at least some capability to carry personnel. This led to an environment where control of assets was often disputed because of the potential operational value each airframe could provide to an operational commander.¹⁷

During this period, the airlift control debate emerged and centered on the indirect and direct roles that airlift could fulfill: air logistics (indirect) versus the combat support (direct) weapon.¹⁸ The Air Corps in an attempt to deal with these

¹⁶ David R. Mets, “Between Two Worlds,” *Aerospace Power Journal*, 16, no. 1 (Spring 2002), 44.

¹⁷ Charles E. Miller, 15.

¹⁸ Randy Kee, *The Quest To Improve Today’s Air Mobility System*, n.d., n.p., on-line, Internet, 17 October 2001, available from

tensions, represented by Materiel Division and GHQ Air Force, compromised by consolidating some of its airlift in the 10th Transport Group and at the same time continued to assign transports directly to various units.¹⁹ Thus, from the beginning airlift struggled with the decision of whether to centralize or not based on differing objectives: efficiency sought by proponents of consolidation and responsiveness by the commanders in the field. Going into WWII, at least some of the leadership acknowledged that there was a need to consolidate some transport into a common-user service for the entire Air Corps, but the majority opinion held that this type of consolidated organization could cover all types of missions and all users.²⁰

WW II

During World War II, there were three main arms of airlift: Air Transport Command (ATC), Troop Carrier Command (TCC), and Naval Air Transport Service (NATS). There were also dozens of lesser airlift organizations and units

<http://www.airpower.maxwell.af.mil/airchronicles/cc/research/bridge/keetoc.html>.

¹⁹ Robert C. Owen, Col, USAF, “The Rise of Global Airlift in the United States Air Force 1919-1977: A Relationship of Doctrine, Power, and Policy,” (PhD diss., Duke University, 1992) 13.

²⁰ Owen, 20.

in operation as well. The increased complexity of airlift was accompanied by increased decentralization.²¹

ATC was essentially a military airline, moving individual passengers, patients, mail, and cargo to, from and between the overseas theaters of operation, its focus was intertheater lift. TCC in contrast, delivered large airborne combat forces, by parachute and glider, to objectives behind enemy lines—intratheater airlift. ATC and TCC represented the dual roles of airlift: air logistics and combat airlift support and the way that U.S. Army Air Forces divided airlift. Although discrete on paper, these divisions often became blurred during operations. “By August of 1942, Gen [Harold L.] George, Commander of ATC, felt compelled to report that there had been serious interruptions in scheduled operations based on the erroneous assumption by other commands that transport operations that traverse their areas are under their complete control.”²² Clearly, this was a precursor to the operational control debates raging today.

The Berlin Airlift: Operation Vittles

The Berlin Airlift offers an example a command option for the employment of mobility forces. Following the surrender of the Germans in WW II, the exclusive use of the nonviolent airlift option used by the U.S. to circumvent the Soviet Union’s attempt to cut off Berlin—located deep into East Germany, but

²¹ Owen, 26.

²² Charles E. Miller, 37.

jointly occupied by American, British, French, and Soviet personnel—contains insights into the nature of airlift operations.

Command authority of early airlift forces was only one of many variables that significantly affected the overall success of the Berlin Airlift. The predominant airlift guru during the time made an effective argument as to why an airlifter should command the airlift operation. In the summer of 1948, Gen William H. Tunner, having already proven his worth as an airlift expert and leader during the “Hump”²³ operations, desperately sought to get in on the action in the developing crisis in Berlin. He championed the idea that a contingency centered on airlift should have an “airlifter” for a commander. To that end, he used

²³ In September 1944 Tunner was called to the China-Burma-India Theater to command the India-China division of the Air Transport Command. There he supervised the airlift of supplies and people to China, and it was in China that he showed his exceptional organizational ability to direct a successful airlift with efficiency and safety. This was the legendary “Hump” airlift, so named because the airplanes had to clear the 16,000-foot high Himalayan Mountains. And even though all air traffic had to be channeled over this enormously high range, Tunner and his crews delivered 71,000 tons of material to China, far beyond what had ever been carried by air before.

political maneuvering and the persuasive argument that an airlift operation of this magnitude warranted an operational commander versed in the nuances of airlift. Tunner's extensive airlift experience led to his assignment as operational commander the Berlin Airlift. In Tunner's book, *Over The Hump*, he sums up his argument this way, "I knew both Gen LeMay and the actual commander of the airlift, Joe Smith, and admired and respected them both as combat officers. But this was not combat. In the air transport everything is different—rules, methods, attitudes, procedures, results."²⁴

In the summer of 1948, Tunner made his belated entry, notwithstanding the objections of some powerful players: Gen Lucius D. Clay, United States Military Govenor; Maj Gen Curtis LeMay, commander of USAFE; and Brig Gen Joseph Smith, commander of the military post at Wiesbaden, who had been tapped to run the Airlift as an additional duty. To their credit, they had done a good job with the airlift operation, and were understandably apprehensive about changing what seemed to be working well.²⁵ In an interview with Albert F. Simpson, Lt Gen Smith (Ret) admitted he "was hurt and would have liked to have

²⁴ William H. Tunner, *Over the Hump* (Washington, D.C.: Office of Air Force History, United States Air Force, 1985), 160.

²⁵ Tunner, 158-161.

kept his job.” He went on to say, “I was doing a good job on it.”²⁶ Indeed Gen Tunner built on the foundation Gen Smith started. Gen Smith recalled how Gen Tunner “never changed the basic traffic pattern or method of operation because it was sound.”²⁷

Lessons of the Berlin Airlift are instructive about the benefits and limitations of command. Wielding command authority, Tunner immediately instituted changes consistent with his personal airlift philosophy:

“The actual operation of a successful airlift operation is about a glamorous as drops of water on stone. There’s no frenzy, no flap, just the inexorable process of getting the job done. In a successful airlift you don’t see planes parked all over the place; they’re either in the air, on loading or unloading ramps, or being worked on. You don’t see personnel milling around; flying crew or either flying, or resting up so that they can fly again tomorrow. Ground crews or either working on their assigned airplanes, or resting up so they can work on them again tomorrow. Everyone else is going about their work quietly and efficiently.”²⁸

²⁶ Lt General Joseph Smith, transcript of US Air Force interview by Albert F. Simpson, 22-23 July and 16 November 1976, 234, Air Force Historical Research Agency, Maxwell AFB, Ala., K 239.0512-906.

²⁷ Smith interview, 234.

²⁸ Tunner, 162.

“Successful airlift operations thrive on a precise rhythmical cadence...when it comes to airlifts, I want rhythm.”²⁹ For example, pilots could no longer go to the snack bar between flights, which reduced turn-around time to thirty minutes.³⁰ “Another new rule he put into effect was unconventional, to say the least. It was simply this: If a pilot should happen to miss his landing for any reason whatsoever, he would continue straight out on course and return the two hundred to four hundred miles to his home base.”³¹ Changes like these increased predictability, which is important to maintaining a rhythm. There were many other significant changes relating to maintenance and flight operations that were essential to obtaining predictable and systematic efficiency. Command authority seemed to facilitate Tunner’s ability to make those changes with relative autonomy. Those changes were integral to the increased efficiency, which characterized the early period of his command. A shallow interpretation of the effect of command with regard to the Berlin Airlift might yield the conclusion that command authority of airlift assets is the panacea to effective airlift operations and that everything else being equal, its better to have command than not to have command. However, “everything else” is never equal. That is not to say that command does not help, but it is definitely not an operational cure-all.

²⁹ Tunner, 174-175.

³⁰ Tunner, 171.

³¹ Tunner, 172.

Command Relationships Matter. Arguably, more important than Tunner's mantle of command, was his command relationship with LeMay. "Mutual admirers, LeMay and Tunner worked well together, and LeMay allowed his airlift commander freedom to deal with other headquarters."³² Before LeMay left, he had adopted the philosophy that delegating both the responsibility and the headaches to Tunner and his staff, who had extensive experience in air transport, would be beneficial for his successor, Lt Gen John K. Cannon.³³ However, the working relationship between Cannon and Tunner would be very different from that of LeMay and Tunner.

Cannon made it more difficult for Tunner to exercise his authority the way he did under LeMay. Cannon set the tone by immediately questioning the wisdom in creating the Combined Airlift Task Force (CALTF) consisting of both British and American airlift assets, the brainchild of Tunner and LeMay. Unlike his predecessor, Cannon did not believe the CALTF promise of smooth efficient operations.³⁴ Tunner recounts Cannon's reaction this way, "What the hell is this, Tunner?" He demanded, waving the directive creating the Combined Airlift Task

³² Roger G. Miller, *To Save a City: The Berlin Airlift, 1948-1949* (Washington, D.C.: Air Force History and Museums Program, 1998), 51.

³³ Tunner, 188.

³⁴ Tunner, 186-187.

Force. ‘What are you trying to do to me?’ ” The fruits of this first encounter seriously affected many phases of the airlift. According to Tunner, “the disagreement stemmed from the basic differences between combat people and transport people.”³⁵ Cannon used a letter of instruction to spell out the specifics of their command relationship, as did LeMay. Tunner offers this comparison which brings into relief the fundamental shift that occurred when Cannon became the USAFE commander.

“Under the terms of LeMay’s letter, I [Tunner] was permitted to co-ordinate with my own people, the personnel of the Task Force, base commanders, and the like. I was not specifically authorized to co-ordinate with MATS and the Air Material [sic] Command, but, on the other hand, I was not forbidden to talk to these two organizations, and as it so happened, I was in frequent contact with both of them, with complete awareness of LeMay...my letter of instructions from Gen Cannon changed the situation immediately. From that day on I was specifically forbidden to co-ordinate with MATS, AMC, and just about everybody else. From then on all contact with other commands had to be made through USAFE headquarters.”³⁶

Tunner squarely lays the blame for the decreased efficiency of the operation, during November 1948, on their less-than-optimal working relationship.³⁷ It seems that Tunner’s argument has merit. However, the

³⁵ Tunner, 189.

³⁶ Tunner, 189-190.

³⁷ Roger G. Miller, 52.

worsening weather conditions during this tumultuous period also played a part in reducing the total daily tonnage. “The airlift managed to deliver some cargo everyday, but on many days the deliveries were well below the airlift goals.”³⁸ November proved to be the low point for the operation. “Conquering November became a major turning point in the success of the airlift, and, in Turner’s view, that goal was hampered by the command system and his relationship with Cannon.”³⁹

Tunner thought that the command of Operation Vittles should be handled by the recently formed (1 June 1948) Military Air Transport Service (MATS), which was designed specifically for such an operation. Instead, USAFE was charged with the job, which created what Tunner characterized as an “unsympathetic and divided command.”⁴⁰ The intervention of Secretary of the Air Force Stuart Symington, which provided a conduit for correcting many of the maintenance and logistical difficulties, helped restore the operational swagger enjoyed by the airlift operations before November 1948.

With the operational logjams removed, the value of an expert airlift aviator for a commander could be exploited to the maximum. The tonnage over the next four months steadily increased. The ever-quickenning pace reached its

³⁸ Roger G. Miller, 52.

³⁹ Roger G. Miller, 52.

⁴⁰ Tunner, 197, 218.

crescendo during what some consider the day that broke the back of the Berlin blockade: the Easter Parade. On Easter Sunday, 1949, Tunner orchestrated the delivery of 12,941 tons of coal flying 1,398 sorties, the most in any single day during the entire operation. “A month later, May 21, 1949 the Soviets ended the blockade.”⁴¹

However, there is evidence that shows the Easter Parade had much less of an impact on the Soviets than first thought. In *To Save A City*, Roger G. Miller makes a compelling case that well before Easter Parade the Soviet Union had already decided to end the blockade.⁴²

Level of complexity matters. The airlift-only nature of the operation is another important contextual element to our study. The non-shooting nature of the operation makes it less complex in nature. Simply put, there were not as many moving parts in an airlift-only contingency. Tunner would agree his job was to manage the mundane, to produce efficient predictability; essentially, his job was to create an environment totally opposite from the chaos of combat. In the absence of a combat threat the job of airlift is less difficult, not easy, but nonetheless, less difficult.

Operation Vittles highlights significant elements one may consider when choosing options for the DM4; the significance of command and the nature of

⁴¹ Tunner, 222.

⁴² Roger G. Miller, 103-105.

command relationship. While Vittles was a success it was not without its problems. The operational hiccups resulting from a change in command philosophy have relevance. A lesson taken away from this experience was that command of an airlift intensive contingency could benefit from the experience of an airlift expert. More important however, is that whoever is in charge should have the latitude to wield effective operational control. Command status given to an airlift expert proved successful. Tunner represents a precursor to the COMALF, which is in turn a precursor to the DM4. The evidence suggests that the command relationship—both official and unofficial—can either offset or enhance the inherent benefits of command. Tunner did not have the freedom he thought he needed to conduct efficient operations, one could effectively characterize him as more director than commander. This further highlights the importance of command relationships and their potential effect on operations. Relationships do matter.

Operation Vittles stands as a benchmark, an early standard around which the airlift community could rally and tout the unquestioned worth of an effective airlift operation. It played an integral role in diffusing a highly volatile, politically charged bombshell capable of tilting the world balance of power in favor of the unabashedly ambitious communists of the Soviet Union.

Consolidation: March Toward the DIRMOBFOR

Two primary tensions caused the long struggle over the idea of consolidation. The first was the decision of whether or not the function of

connecting the world together should come under one hat or two. A second tension had to do with whether or not this function should be a command or a staff function.⁴³ Combining these two tensions, one could summarize the issues by asking the question; should there be a centralized commander for airlift?

Airlift in WW II was very decentralized. Penny packets of airlift capability were established as needed by different organizations. As shown earlier, NATS, ATC, and TCC were the major airlift players. However, “there were dozens of lesser airlift organizations and units in operation as well.”⁴⁴ Each theater had its own troop carrier command, and there were literally thousands of transports scattered throughout the military.⁴⁵ There were however, some moves to try and consolidate airlift.

In Europe, there was the Combined Air Transport Operations Room (CATOR) established by the Supreme Headquarters Allied Expeditionary Forces Europe just prior to D-Day. Its function was “to coordinate post-invasion air supply of ground forces other than airborne forces.”⁴⁶ In close conjunction with ATC, they prioritized and allocated airlift for the Army. Although there was a

⁴³ Col Robert C. Owen, interviewed by author, 6 November 2001.

⁴⁴ Owen, 26.

⁴⁵ Owen interview.

⁴⁶ Charles E. Miller, 103.

director of the CATOR, he did not have command authority.⁴⁷ In the Pacific theater of operations there was the Southwest Pacific Combined Air Transport Service. It involved Marine, Navy, and Army operating a scheduled air transport service.⁴⁸ Overall, these initiatives can be characterized as baby steps on the journey towards consolidation. After the war, a laissez-faire attitude about airlift prevailed and decentralization characterized airlift.⁴⁹

Korea

A much larger stride was made during the Korean conflict that rekindled the debate for airlift consolidation, and who better than Tunner to stoke the fires? Tunner was acting as MATS Deputy commander of Operations when chosen to get the airlift house in order for Lt Gen George E. Stratemyer, Far East Air Force (FEAF) commander. Even though MATS was decentralized, Tunner demanded and got operational control of all airlift in theater. This was significant for a number of reasons. Before this arrangement, combat cargo people were making “handshake deals” directly with the wings. The wing commanders were in effect making airlift priorities, and “Tunner wanted his commanders to get out of the priorities business.”⁵⁰ Tunner made the users of airlift go through a priority

⁴⁷ Owen interview.

⁴⁸ Owen interview.

⁴⁹ Owen interview.

⁵⁰ Owen interview.

system. For Tunner, centralization meant he only talked to one person for apportionment then he made the allocation.⁵¹

Vietnam and the 834th Air Division

Before 1962, theater airlift support in Vietnam was decentralized. The theater tactical airlift needs were met by the 315th Air Division headquartered at Tachikawa, Japan.⁵² The Military Assistance Advisory Group Vietnam (MACV) did not have any permanently assigned aircraft. As the scope of operations expanded, this command and control arrangement became inadequate for the increased airlift needs.⁵³ The formation of the 315th Troop Carrier Group was supposed to fix the problem by serving as a conduit between the 315th and MACV; it did not.⁵⁴ The “group was soon overwhelmed by growing tactical airlift requirements and friction with the 315th Air Division.”⁵⁵ Between 1962 and 1966, it was clear that something needed to be done.

⁵¹ Owen interview.

⁵² Ray L. Bowers, *Tactical Airlift* (Washington, D.C.: Office of Air Force History, United States Air Force, 1983), 26-27.

⁵³ Richard T. Devereaux, *Theater Airlift Management and Control: Should We Turn Back the Clock to Be Ready for Tomorrow?* (Maxwell AFB Ala.: Air University Press, September 1994), 7.

⁵⁴ Bowers, 106-107.

⁵⁵ Devereaux, 8.

In 1962, Generals Curtis LeMay and Travis Heatherton found that PACAF's 315th Air Division was an inadequate apparatus for communications and aircraft control.”⁵⁶ As a result, the Joint Chiefs of Staff and HQ USAF set out to reorganize airlift in Vietnam with the purpose of creating a mechanism with enough power and organization to handle Vietnam's high operations tempo.⁵⁷ Seventh Air Force commander, Gen William Momyer helped make that reality. In October 1966, he formed the 834th Air Division, which fell under Seventh Air Force and served as MACV's theater airlift organization. The 834th was responsible for all in-country tactical airlift.⁵⁸ Consolidating theater airlift at Tan Son Nhut proved effective.

Gen Momyer said, the consolidation was “essential for effective management and control of the rapidly expanding in-country airlift mission.”⁵⁹ The impact of the first 834th Air Division commander, Brig Gen William Moore,

⁵⁶ Bowers, 105.

⁵⁷ Gen William G. Moore Jr., Interviewed by Dr. Roy Cross, Headquarters MAC History Office, *Airlift* 12, no. 4 (Winter 1990-91), 17.

⁵⁸ Robert F. Futrell, *Ideas, Concepts, Doctrine Vol. 2 Basic Thinking in The United States, 1961-1984* (Maxwell AFB, Ala.: Air University Press, December 1989), 313.

⁵⁹ Bowers, 190.

went beyond increased sortie rates.⁶⁰ He gave airlift credibility, something that had been lacking before the 834th stood up.⁶¹ A 1968 Corona Harvest study labeled the 834th a model for future airlift operations, a model that would lead to “better planning, particularly of large airlift exercises, and closer coordination between the user and the airlift forces.” However, “the most important lesson learned was that airlift resources must be controlled from one central point.”⁶²

In a 1967 letter to the doctrine division of Headquarters USAF plans and programs directorate, the director of Tactical Air Command’s airlift operations also characterizes the new organizational arrangement as a success.

“There has been a marked improvement in the management of the airlift forces in Vietnam since the reorganization...and we invasion that the airlift achievements can be expected to progressively improve under current command and control arrangements. This assessment of the airlift productivity in RVN is based n...comments of Senior Commanders in SEA and

⁶⁰ Gulf War Air Power Study (GWAPS), “The Logistics of Air Power in the Gulf War: Intratheater Lift,” Chapter 4, 23 November 1992, 4.

⁶¹ Moore interview, 17-18, Bowers, 191.

⁶² “Tactical Airlift,” Corona Harvest Air University Designated Study no. 7, vol. 6, Maxwell AFB, Ala., 15 June 1968, 37. Located in Air University Library, Maxwell AFB Ala., document no. M-U 35582-12.

evaluations made by DOD personnel following a visit to SEA this year.”⁶³

While the early airlift experiences in Vietnam pointed to consolidation as a better way to organize airlift, in Europe the idea of consolidation was also being tested. In 1963, there was an experiment in consolidating command and control called Big Lift. Theater commanders looked at the problems of managing the flow of large scale transoceanic lifts—primarily Army forces—into Rhein-Main and then connecting that to the onward flow by the C-130s and ground flow. It required closer coordination than ever before. So they requested, and MATS agreed, to put a single commander in charge of both the intratheater and intertheater lift; this was the original Commander of Airlift Forces (COMALF).⁶⁴ The experiments of the early 1960s, the success of the 834th Air Division, and the agreement between the 834th Air Division and MATS supported the concept of a consolidated airlift.

⁶³ Director of Airlift Operation, Headquarters Tactical Air Command, to Policy Division, Plans and Programs Directorate, Headquarters United States Air Force, letter, subject: TAC DO Position Concerning Airlift Control Center Organizational Arrangement in SEA (U), 18 July 1967. Located in Air Force Historical Research Agency, Maxwell AFB, Ala., K417.03-16.

⁶⁴ Owen interview.

COMALF and the Gulf War

By April 1974, the Air Force had consolidated its entire fleet under MAC.⁶⁵ The realignment placed intertheater and intratheater airlift under one command. A key position that made this consolidation effort work was the COMALF. “As in Vietnam, the Gulf War experience demonstrated the importance of consolidating airlift operations under a single commander.”⁶⁶ The term commander of forces came into use after Vietnam. “Typically, the COMALF controlled all airlift forces in theater or contingency operation.”⁶⁷ The COMALF was a logical progression from the Airlift Division commander of the Vietnam era. “For large-scale operations,” such as the Gulf War, “the COMALF also commanded an established provisional airlift division.”⁶⁸ The 1610th provisional airlift division stood up on 31 Oct 1990 in support of the Gulf War. The two-hatted position of the COMALF later the DM4 provided a solution for the command and control problem.⁶⁹

⁶⁵ Owen, 277-286, Owen interview.

⁶⁶ Devereaux, 26.

⁶⁷ Devereaux, 34.

⁶⁸ Devereaux, 34.

⁶⁹ Mets, 47.

COMALF to COMMOBFOR to DIRMObFOR

With the end of the Cold War, also came an end to the monolithic threat that shaped US Strategy Policy. As a result, the AF adopted a new strategy emphasizing rapid power projection.⁷⁰ “On 1, June 1992, Military Airlift Command was deactivated and in its place Air Mobility Command stood up, combining most of the Air Force’s airlift and air refueling units.”⁷¹ The air refueling component came from Strategic Air Command, which deactivated 31, May 1992.⁷² The rationale for the consolidation dovetailed into the AF strategy. “Integration of airlift with tankers will better enable the Air Force to provide global mobility and reach while enhancing rapid response and the ability to operate with other nations.”⁷³ The term COMALF was changed to COMMOBFOR to reflect the new composition of the commander’s forces. Brig

⁷⁰ Secretary of the Air Force Donald B. Rice, *The Air Force and U.S. National Security: Global Reach Global Power*, white paper (Washington, D.C.: Department of the Air Force, June 1990).

⁷¹ Deveraux, 37.

⁷² Richard K. Smith, *75 years of Inflight Refueling: Highlights, 1923-1998* (Washington, D.C.: Air Force History and Museums Program, 1998), 76.

⁷³ “Air Mobility Concept of Operations,” Scott AFB, Ill., 1 June 1992, 3.

Gen Edwin Tenoso, COMALF during the Gulf War, attributes the change from COMMOBFOR to DIRMOBFOR as purely political.⁷⁴ Applying the lessons learned from Vietnam, AMC formed a centralized command and control structure to “streamline and reduce redundant layers of command filters and provide a single authority for airlift and tanker tasking authority.”⁷⁵ What resulted was the Tanker Airlift Control Center (TACC). Like the COMALF, the COMMOBFOR served both the theater and strategic systems, and had a reporting chain to both the theater JFACC or AFCC and the equivalent strategic mobility agent (which today would be the TACC commander). When the TACC came on line the Airlift Divisions were no longer needed and were disbanded. The result was that during a contingency there was no longer a division for the COMMOBFOR to command. Thus, the COMMOBFOR became a DIRMOBFOR who coordinated with TACC during contingency operations.

The doctrinal character of the DM4—essentially, an amalgamation of operational and organizational solutions—is a direct outgrowth operational and organizational challenges airlift faced in the post-WW II environment. An

⁷⁴ Lt Gen Edwin E. Tenoso, Commander of Airlift Forces, Operation DESERT STORM, interviewed by author, 23 April 2002.

⁷⁵ Department of the Air Force, “Establishment of the Tanker Airlift Control Center (TACC),” MAC Programming Plan 91-43 (Scott AFB Ill., Headquarters Military Airlift Command, 15 December 1991), 1.

environment characterized by increased liaison between TAC and MAC, a greater reliance on cooperation, and the realization that technology had in effect reduced the world to one operational theater.

Summary

The Berlin Airlift contingency option was consolidated command. The results were successful. However, two important contextual factors affected operations. First, the scope of the mission was very narrow which enhanced the option's effectiveness. Second, although Tunner and LeMay had a good command relationship, which enhanced operations, Tunner and Cannon's command relationship was problematic, resulting in degraded operations. This suggests that command relationships are very important and may transcend command.

During the Vietnam War there were two airlift options used within the theater. From the beginning of the war until October 1966, it was separated direction. There is a widely held view that this was not effective. The increasing scope of operations proved to be too much for this option. After October of 1966, airlift operations improved drastically with the adoption of the consolidated command. The 834th Airlift Division benefited from having years to make the option work. The contextual element enhanced airlift operations.

Much like the experience in Vietnam, the consolidated command worked well. This option was able to handle the large scope of operations and the

increased complexity once the ground war started.⁷⁶ Too, the “fantastic” working relationship between Gen Tenoso and Gen Horner further enhanced this option.⁷⁷

Command of airlift assets by an airlift specialist offers some advantages, but is by no means a guarantee to effective airlift operations. Other factors, particularly command relationships, can have important impacts on the outcome of an operation. Operational lessons learned about airlift, particularly post-WW II, suggest consolidation may be a better construct for the organization of airlift. However, a loss in responsiveness to airlift customers could be a possible downside to consolidation. Inherent to the idea of consolidation is a single individual responsible for airlift during contingencies, an idea that led to the COMALF and eventually the DM4.

The airlift experience, from the Berlin Airlift through the early 1990’s, justifies the current concept of the DM4, and its organizational predecessors. “Since WW II we’ve had a global structure in need of a connecting mechanism, the DM4 provides that.”⁷⁸ The DM4 is the culmination of a series of pragmatic responses by individuals who tried to get the most out of airlift, whether from the direct or indirect perspective. The route to the DM4 was not a direct one; it was fraught with organizational roadblocks and institutional detours. In the end,

⁷⁶ Tenoso interview.

⁷⁷ Tenoso interview.

⁷⁸ Owen interview.

however, operational viability sprinkled with a fortuitous alignment of influential people proved too much to keep the concept from coming to fruition. This is an instance of applying the correct lesson to produce sound doctrine. Based on historical airlift lessons, the DM4 makes sense.

Chapter 3

The Air Refueling Experience: A Brief History

This chapter delves into the operational and organizational development of “passing gas,” focusing heavily on its roles and missions in Strategic Air Command (SAC). At the same time, it considers various contextual factors at the operational, strategic, and grand strategic levels which shaped the role for our air refueling capability.

The Beginning

When one considers the origins of air refueling, the flight of the “Question Mark” (and its two refueling planes, RP1 and RP2) takes the place of primacy. It is no wonder that many of the crewmembers that flew these planes would later become generals and have significant command responsibilities in the Army Air Corps, The Army Air Force and the U.S. Air Force. “Among them were Major Carl “Tooeey” Spaatz, who later became the first Air Force Chief of Staff, Lieutenants Harry Halverson, Elwood Quesada, and Captains Ira Eaker and Ross G. Hoyt.”⁷⁹ These men established an endurance record on January 7, 1929,

⁷⁹ Vernon B. Byrd, *Passing Gas: The History of Inflight Refueling* (Chico, Calif.: Byrd Publishing Company 1994), 26. Harry Halverson would go on to become the famed Candy Bomber during Operation Vittles. Elwood Quesada rose to the rank of Lt Gen and commanded 12th Fighter Command, 9th Fighter Command and he

keeping the Question Mark airborne for 150 hours, 40 minutes, and fifteen seconds.⁸⁰ Deservedly, this episode in air refueling is hailed as the spark that generated widespread interest in air refueling, but this is not the first episode. The success of the Question Mark was built on previous—although less heralded—aviators who also pushed the limits.

World War I. The idea of refueling an airplane in flight dates back to at least World War I. For example, in 1917, Alexander de Seversky, who flew for the Imperial Russian Navy, proposed a method for increasing the endurance of fighter aircraft. After immigrating to the U.S. in 1918, he was the first to apply for a patent for an air refueling system (1921). “In 1918, Lieutenant Godfrey L. Cabot, a U.S. naval reserve pilot, began snaring cans of gasoline positioned on floats as a test of the viability of putting fuel on ships in such a way that aircraft could pick the cans up.”⁸¹ The technique was demonstrated at Washington, D.C. when a U.S. Navy Lieutenant in the rear cockpit of a Huff-Galand HD-4 aircraft

also headed the Joint Technical Planning Committee for the Joint Chiefs. Captain Eaker would eventually, serve as Maj Gen, organize VIII Bomber Command during WWII, and become commander-in-chief of the Mediterranean Allied Air Forces.

⁸⁰ Byrd, 31.

⁸¹ Byrd, 17.

used a grappling hook to snatch a five gallon can of gasoline from a float in the Potomac.⁸²

Post-World War I. In 1919, Ormer Locklear, a former pilot with the U.S. Army Air Service conceived an idea for using inflight refueling to support a transcontinental airline service, but the plan never became reality for lack of interest. The first attempt to transfer fuel from one airplane to another in flight came on November 21, 1921.⁸³ Wesley May carried a five-gallon fuel can from the wing of a Lincoln Standard to the wing skid of a JN-4. Once safely on board, he poured the fuel into the gas tank.⁸⁴ This was typical of the stunts performed during the “barnstorming” era. Both in and out of the military there were many efforts to set any type of aviation related record in an attempt to keep aviation in the public eye.

1923: An Air Refueling year to Remember. The Army Air Service (AAS) prepared a test to determine the operational feasibility of air refueling. Two “tanker” pilots, Virgil Hines and Frank Seifert, flew a DeHavilland DH-4, with a 40-foot hose coiled inside the cockpit, which they would uncoil and trail behind

⁸² Byrd, 18.

⁸³ Byrd, 19.

⁸⁴ James F. Sunderman, *Early Air Pioneers 1862-1935* (New York: F. Watts Inc, 1961), 176, Carroll S. Shershun, “Service Stations In The Sky,” *The Airman*, 7, no. 2 (February 1 963), 40.

them when ready to refuel.⁸⁵ The two receiver pilots, Captain Lowell Smith and Lieutenant John Richter, would grab the whipping hose and attempt to insert it into the fuel plumbing. On the first attempt, the two aircraft remained in contact for forty minutes, but no fuel was transferred. These trials continued for two months, and it was not until June 27, 1923 that the first transfer of fuel actually occurred.

The importance of these trials lay in their dual purpose. In addition to the record-setting and publicity-seeking objectives, these tests focused on air refueling as a remedy to an operational shortcoming. “Both Smith and Richter were combat veterans from the war, and were always running out of fuel during aerial combat. Richter had commented that he had to fly nine sorties during the St Mihiel offensive, and that it seemed he had to return to base for additional fuel each time things were getting interesting. Both of the pilots were engaged in flying air patrols along the U.S.-Mexico border, and they found short flights and frequent landings for fuel an irritant. Smith suggested to his boss, Major Henry H. “Hap” Arnold, the possibility of refueling planes in the air. Arnold, ever ready to try anything to enhance the cause of aviation, told Smith to work out a plan.”⁸⁶ These 1923 tests, represent a profound event in air refueling history, arguably more important than the Question Mark. They represented the first time that air

⁸⁵ Byrd, 20.

⁸⁶ Byrd, 21.

refueling was seriously evaluated in the context of meeting a military need, a need that could directly influence a commander's ability to prosecute the battle. The trial's primary objective was to evaluate the feasibility of air refueling as a force multiplier: the ability can extend a fighter's combat radius, lengthen their loiter time, carry heavier payloads in lieu of fuel, and still return to its operating bases with adequate fuel reserves.⁸⁷

The Modern Airplane Defers Refueling

From 1929 until the late forties, the military showed little interest in air refueling. One would think given the success the 1923 feasibility trials coupled with the Question Mark's triumph in 1929 that the Army Air Corps⁸⁸ would have been motivated to exploit what seemed to be a promising capability. This,

⁸⁷ Major Phillip Iannuzzi, Jr., "50 Years Without Refueling Doctrine," n.d., n.p., on-line, Internet, 17 February 2002, available from <http://www.atalink.org/atq/iannuzzi.html>

⁸⁸ As a result of the Air Corps Act of 1926, the Army Air Service was changed to the Army Air Corps. Among other things, it established the five-year program and provided an assistant secretary of war. Dr. James P. Tate, *The Army and Its Air Corps: Army Policy Toward Aviation, 1919-1941* (Maxwell AFB Ala.: Air University Press, July 1998), 46.

however, was not the case. Richard K. Smith characterizes air refueling during the time period as a “solution in search of a problem.”⁸⁹

Prior to 1933, the airplane was very basic, manufactured from wood and linen fabric. Usually a biplane with a fixed landing gear, its structure had many right angles and other objects that created drag, which increased fuel consumption and limited operational flight ranges. Had the state of the airplane remained at this point, air refueling may have been pursued sooner. “Inflight refueling likely would have become a global phenomenon before WWII. That did not happen because in 1933, practically overnight, everything changed.”⁹⁰

The problem of short ranges disappeared with the advances in aircraft and engine design. All-metal, low-wing, monoplanes, with carefully cowled engines, retractable landing gear, and high-lift devices burst on the scene. Add to that the sudden availability of the controllable pitch propeller—a device that permitted the aero engine to perform with maximum efficiency—and the result was doubled operational ranges.

Improvements in power plants also helped extent operational ranges during the 1930s and early 1940s. Radial engines such as the Wright R-1820; the

⁸⁹ Richard K. Smith, *75 Years of Inflight Refueling: Highlights, 1923-1998* (Washington, D.C.: Air Force History and Museums Program, 1998), 12.

⁹⁰ Smith, 10-11.

Pratt Whitney R-2600, and the Wright R-3350, and the Pratt & Whitney R-4360 allowed aircraft as the B-17, XB-24, B-29, and the B-36 to get ranges of up to 4000 miles.⁹¹ In sum, aircraft and engines improved so much during the 1930s and early 1940s that air refueling simply was not needed. Instead of air refueling, advances in technology were the mechanisms, which improved aircraft performance.

After World War II, the “Cold War” brought with it the need for international operations. This set the stage for air refueling to take its place as an integral part of the military machine.

1946 to Korea

Strategic Air Command. In 1946, the Strategic Air Command (SAC) was formed within the Army Air Forces. A year later, on September 18, 1947, the Department of the Air Force was created as a military service coequal to the Department of the Army and the Department of the Navy. All departments fell under the auspices of the Department of Defense. On July 19, 1948, the U.S. Air Force activated its first air refueling squadrons, the 43rd and the 509th. The squadrons’ primary purpose was to provide an air refueling capability for the bomber force.⁹²

⁹¹ Smith, 12.

⁹² Byrd, 69.

During the initial period of the Cold War, the role for the tanker was mainly strategic in nature. Although its primary mission revolved around refueling bombers in order to get them to the strategic targets, it also served to help preposition assets to world “hot spots.” For example, in response to the Berlin Blockade, in June of 1948, SAC increased the number of pre-positioned bombers at various locations for immediate retaliation if the Soviets committed themselves to armed conflict. SAC moved the 28th and 307th bomb groups from South Dakota and Florida, respectively, to RAF stations in Scampton, Marham, and Waddington.⁹³ Air refueling enabled their direct flights to the destinations. Another example was Operation Longstride. Instituted in 1953, it moved masses of fighters non-stop across the Atlantic, from Turner AFB Georgia to Nouasseur AB, French Morocco.⁹⁴

What can be said about command and control in the first years of air refueling as an integral part of operations? There was no dedicated commander of all air refueling assets per se, and given the narrow strategic focus of what the tankers were asked to do, there almost certainly did not need to be such a person. Air refueling had the primary purpose of supporting the bombers. Almost immediately, the Air Force gave SAC the lion’s share of the tankers, in effect

⁹³ Byrd, 85.

⁹⁴ Byrd, 88.

establishing the notion of centralization of the air refueling capability.⁹⁵

Operations during this period were generally successful, suggesting that the command and control structure was effective.⁹⁶

Korea and Beyond

The Korean War would demand more of air refueling, particularly in the area of reconnaissance. TAC would increasingly become involved in the tanker business that would result in the decentralization of air refueling assets.

On July 6, 1951, the first in-flight refueling over enemy territory occurred, when a KB-29M of the Air Materiel Command, but operated by a SAC crew from the 43rd Air Refueling Squadron, refueled four F-80 shooting stars who were flying reconnaissance missions over North Korea. A few days later, a B-29P of the 91st Air Refueling Squadron refueled an RB-45C on a combat mission over North Korea.⁹⁷

TAC Gets in the Refueling Business. As previously noted the main user of air refueling was SAC. However, by the mid-1950s, SAC was not the sole

⁹⁵ Tactical Air Command also had refueling capability.

⁹⁶ As of December 1948, SAC did not officially have KB-29M assigned to the command, even though the 509th and the 43rd had taken delivery before the end of the year. *The Development of SAC 1946-1986*, 12.

⁹⁷ Byrd, 89.

possessor of air refueling capability. Operation HIGH TIDE, in Korea served as an overture of the usefulness of tankers in servicing aircraft other than heavy bombers. With aircraft discarded by SAC, TAC built its own air refueling capability to meet its needs.⁹⁸ Understandably, TAC wanted its own force so it could be responsive to its needs. TAC pursued the development of the probe and drogue system of refueling for its aircraft. Equipping the F-80 for air refueling was easier and less expensive with the probe and drogue system. As a result, TAC convinced the Air Staff to give the system a full-scale test under combat conditions in Korea. They used the Lockheed F-80 Shooting Star and modified 136 B-50Ds and TB-50Hs that SAC had retired.⁹⁹ Effectively, SAC and TAC operated two distinct air-refueling forces. Although SAC had a significant number of fighter aircraft (568 RF and F-84 assigned in 1955) they opted to use only the boom system.¹⁰⁰ Standardization within the command probably drove

⁹⁸ Smith, 49.

⁹⁹ Smith, 49.

¹⁰⁰ *The Development of Strategic Air Command 1946-1986 (The Fortieth Anniversary History)* (Offutt AFB Nebr.: Office of the Historian, Headquarters Strategic Air Command, 1 September 1986), 53.

this. However, refueling their fighters would not be a concern much longer to SAC because in 1957 SAC disposed of its fighter wings.¹⁰¹

The Navy and Their Bid to Refuel. Major Philip Iannuzzi's treatment of the navy's involvement during this period is excellent. It established again, the multi-faceted nature of air refueling and the reality that there was simply not enough to go around.

The United States Navy was convinced air refueling would significantly increase its operational capability and realized the USAF did not have excess tankers to support Naval air force air refueling requirements. In response to their requirement for air refueling, the Navy conducted air-refueling tests at the Naval Air Test Center and began to either modify existing fighters or to configure production fighter aircraft with probe-drogue equipment. The Navy converted AJ bombers to tankers by replacing the bomb bay with fuel tanks.¹⁰²

In 1957, the Navy replaced the AJ tanker, as its size required a large amount of carrier deck space. The replacement tanker was the AD-6 aircraft that had been converted into a "buddy" tanker role. Under the buddy air refueling concept, a small attack-type aircraft, such as the A-6 Intruder, was configured

¹⁰¹ *The Development of SAC, 1946-1985*, 61.

¹⁰² Dennis K. Ryan, "Significant Events in the Evolution of Air Refueling," *Air Command and Staff College Seminar Lesson Book*, Volume III, Version 10 (Maxwell AFB Ala.: AU Press, 1995), 4.

with a belly-mounted drogue and reel system. Operating as a tanker, however, the KA-6D had limited refueling ability, as compared to SAC's large land-based KC-135 tanker force.¹⁰³

The decade of the 1950s brought about a proliferation of air refueling assets within the Air Force and the Department of the Navy. Unfortunately, each service acted independently without regard to interoperability. The Air Staff realized the problem and in 1959 proposed an alternative solution.¹⁰⁴

Roll SAC Roll. For the remainder of the 1950s SAC increased its air refueling force and updated its tankers to meet the demands of refueling better and faster bombers. By 1953, SAC had 28 air refueling squadrons most with at least some complement of KC-97s, which first flew in December 1950. The E-model version of the KC-97 was a dual role tanker. The G-model went even further. It had all the refueling tanks removed from the main deck and placed below. This released the entire main deck for cargo or passengers. The tanks on the E-model were permanently installed on the main deck and not easily removed. They were convertibles, used primarily as a tanker, but the boom pod could be removed and the internal fuel tanks could be removed to provide room for

¹⁰³ Ryan, 4.

¹⁰⁴ Ryan, 5.

cargo.¹⁰⁵ By 1955, SAC had 39 air refueling squadrons which consisted mostly of KC-97s with some KB-29s. By 1959, the KC-135 had burst on the scene and was an integral part of SAC's 57 air refueling squadrons. SAC was a growth industry, and by association so was air refueling. However there were changes on the horizon.

Option Analysis. Consolidated direction was the initial option used to manage air-refueling assets. There is no evidence that there was a dedicated commander of air refueling. The vast majority of tankers were under the control of one organization, SAC. This option worked well. The primary air-refueling mission during this time was focused and relatively simple: takeoff and refuel bombers that would attack the Soviet Union. This contextual factor enhanced the option's effectiveness.

Change Is On The Way. No longer monopolized by SAC, air refueling had officially expanded to the tactical world. TAC realized the inherent value of air refueling. During the 1950s, TAC sought to guarantee it would have the air refueling assets it needed by developing the probe and drogue system of employment. In doing so however, it unknowingly sacrificed future efficiency from a service-wide perspective for temporary responsiveness. One must judge TAC's actions with respect to refueling as justified and rather resourceful. But with the advantage of hindsight, it becomes clear that if TAC had developed its

¹⁰⁵ Byrd, 93.

capability with the thought of AF wide compatibility, then the problems encountered during the Vietnam War might have been avoided.

1960's and Vietnam

The 1950s saw unprecedented growth for SAC. President Eisenhower espoused the massive retaliation as a national strategy, which placed a premium on SAC's strategic deterrent role. Even though the Korean conflict suggested the importance of theater air refueling, the strategic role of air refueling was still primary. The war in Southeast Asia would serve as the proving ground for air refueling's worth to fighters and fighter-bombers, building on the successes in Korea. Until Vietnam, the KC-135s were viewed as strategic tankers, primarily mated to their emergency war order bombers (B-52s).¹⁰⁶

Shift in National Strategy. The Kennedy administration's flexible response strategy emphasized the notion of getting away from massive retaliation.¹⁰⁷ As the US doctrine of massive retaliation changed it directly

¹⁰⁶ Iannuzzi, n.p.

¹⁰⁷ Flexible response strategy placed greater emphasis on the selection of second-strike counterforce targets as part of a series of graduated options to add flexibility not only in the choice of aim points and timing of attacks, but also in the types of warheads and bombs that would be used. Steven L. Rearden, "U.S. Strategic Bombardment Doctrine Since 1945," in *Case Studies In Strategic*

affected force levels. “It was more sensible to downplay the role of strategic bombers because of their vulnerability and to develop a more survivable second-strike retaliatory capability built around relatively invulnerable weapon systems—Polaris fleet ballistic missile submarines and Air Force ICBMs housed in hardened underground silos.”¹⁰⁸ As consequence, throughout the 1960s there was a decrease in the number bombers in SAC.¹⁰⁹ The missiles simply took on more of the strategic deterrent role. This allowed the tanker and the bomber fleets to function in new roles in Vietnam.

Single Manager System. Well before entry into Vietnam, the Air Force realized that decentralization was having a negative effect on the development of air refueling capability. In 1959, The Air Staff proposed an alternative solution.¹¹⁰ Department of Defense (DOD) Instruction 5160.12 tasked SAC to develop a single manager system that would ensure a standard air refueling system for the Air Force. The Instruction outlined two objectives: eliminate any duplication of effort within the Air Force and improve the efficiency of operations within the DOD. The policy came to fruition in 1961, which set the standard for

Bombardment, ed. R. Cargill Hall (Washington: Air Force History and Museums Program, 1998), 425.

¹⁰⁸ Rearden, 427.

¹⁰⁹ *The Development of SAC 1946-1986*, 124-162.

¹¹⁰ Ryan, 5.

all AF boom-type refueling method. It would be years, however, before the compatibility problems caused by the decentralization would work themselves out of the system.

Effects of Air Refueling Decentralization. As noted earlier TAC and SAC took different approaches in tackling the air-refueling problem with different systems and procedures. SAC used the boom method because the fuel transfer rate of the hoses used in the probe and drogue system was too slow for the large fuel tanks of the bombers. TAC used the probe and drogue system because it was easier to modify their aircraft.¹¹¹ Compatibility was a problem during the Vietnam conflict. Efficiency suffered, for instance, “when a KC-135 would have to be equipped with a drogue for the sole purpose of refueling the F-104 MIGCAP.”¹¹²

Air Force Refueling Operations. SAC had become not only the AF single manager of refueling operations but also DOD’s single point of contact when it came to operational compatibility between the services. SAC owned and controlled all AF tankers. SAC maintained operational control of its tanker force

¹¹¹ The major receiver modification using the probe and drogue system required welding external fuel tanks to each wing tip. However, the boom system required receiver aircraft to be modified internally by adding extensive plumbing.

¹¹² Byrd, 98.

throughout the Vietnam war. As mentioned above there were problems with compatibility. The nine years of conflict provided a long time to improve methods and overcome compatibility problems. Therefore, although the compatibility problem was significant, there was plenty of time to recover. However, when one examines air refueling from a DOD-wide perspective the evidence suggests that air refueling, too, was somewhat decentralized at the higher level.

Naval Refueling Operations. The Navy did its own refueling with Douglas KA-3 tankers and later with Grumman KA-6 tankers. Strike forces launched from aircraft carriers in the Gulf of Tonkin were accompanied by tankers for a final refueling. Tankers were held in standby orbits for the aircraft carrier in the event a returning airplane, almost out of fuel missed its “trap” and had to circle for a second attempt at landing.¹¹³ Because of the extremely focused nature of the naval refueling and its limited numbers, this decentralization, in the grand scheme, did not hamper refueling operations. However, there were certain instances when the limited number naval refueling assets could not respond to emergency situations and Air Force tankers had to save naval fighter assets.¹¹⁴ This glaring gap in air refueling capability suggests that greater cooperation

¹¹³ Smith, 56.

¹¹⁴ Smith, 56-57.

between the Navy and the Air Force theater air refueling would have improved overall tanker operations .

Option Analysis. Between the Korean Conflict and the Vietnam war, TAC and the Navy realized the value of air refueling. The composition of air refueling assets was increasingly divided among the services. Thus, from a DOD perspective the composition option was a separated one. The command option again did not call for a commander. The evidence suggests this option had its problems, but worked nonetheless. Incompatibility between refueling systems sometimes resulted in inefficient operations. TAC and the Navy developed their air refueling aircraft based on a different mission than SAC. Thus, from a DOD perspective the mission was more complex. This increased complexity had an adverse effect on the effectiveness of this option.

By Vietnam DOD had instituted the single-manager concept, which represented a return to consolidation of tankers. There was still no single commander. Despite some lingering compatibility problems, operations were a success. SAC and TAC had nine years to hone the process, undoubtedly that helped make the refueling work. Also the mission centered on combat support. Tankers were able to concentrate on the direct-combat support role since the burden of deterring the Soviet Union increasingly fell on the shoulders of our nation's nuclear missile arsenal. This approach continued through the early 1990's.

In the 9 years and 2 months of operations in Southeast Asia, KC-135s provided 813,878 air refuelings and transferred over 1.4 billion gallons of jet fuel. In support of tactical aircraft alone, KC-135s provided 756,970 air refuelings.¹¹⁵ In general, SAC had centralized control of the bulk of air refueling capability. Problems with compatibility were overcome because of operational and institutional adjustments. In spite of the overall strategic failure of the United States in Southeast Asia, air refueling was a success.

Essentially, air refueling capability is much the same today as it was at the end of the Vietnam War in 1973. Since the objective of this chapter was to show what shaped operational and organizational development of air refueling there is little need to further recount the history.

Summary

This analysis suggests that consolidation of air refueling may be better than dividing it. It also suggests that dedicated command is not necessary for effective air refueling operations. A focused mission and a contingency that was long in duration qualified as important contextual factors, which enhanced effectiveness of air refueling. Consolidated direction worked better than separated direction.

A synthesis of chapters two and three yields the following: the operational commonalities of airlift and air refueling suggest that they could be managed as

¹¹⁵ Ryan, 5.

one entity but not necessarily under a single individual versed in airlift and air refueling, and that command status for this individual is not mandatory for success, although it can enhance effectiveness. Therefore, consolidation seems to be the better composition option, but on the issue of command, both strategies can work depending on the context. Complexity, command relationships, scope, and complexity seem to be the most significant contextual elements.

Chapter 4

The Doctrinal Concept of the DM4

I am tempted indeed to declare dogmatically that whatever doctrine the Armed Forces are working on now, they have got it wrong.

—Michael Howard

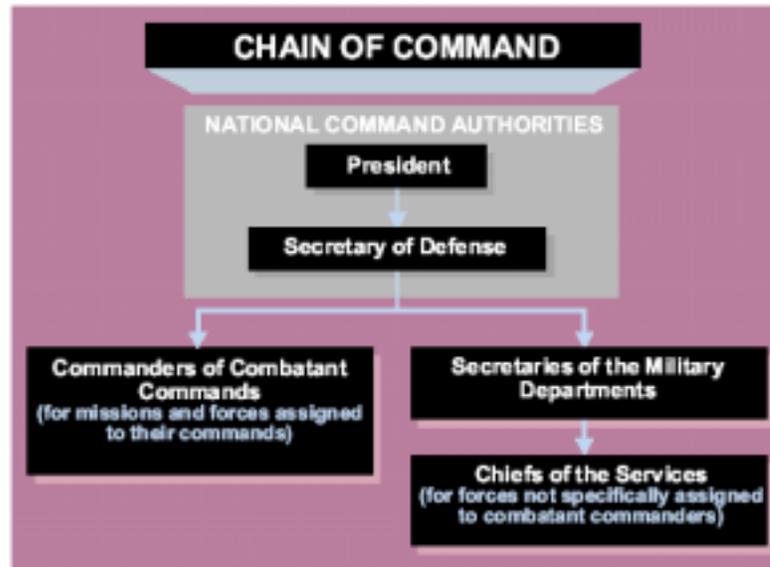
Goldwater-Nichols Act of 1986

National Command Authority (NCA). In 1986, the Goldwater-Nichols Act redefined the Department of Defense (DOD) structure.¹¹⁶ It emphasized joint alignment for operations and, dictated that the services organize, train, and equip the forces. This resulted in the creation of a single chain of command from the National Command Authority (NCA)¹¹⁷ with two branches: The President to the Commanders in Chief (CINCs) of the unified commands and the President to the service secretaries for purposes other than operational matters. The CINCs of the

¹¹⁶ Randy A. Kee, “Bridging the Gulf Between Theater and Strategic Air Mobility,” *Aerospace Power Chronicles*, n.p., on-line, Internet, 17 October 2001, available from <http://www.airpower.maxwell.af.mil/airchronicles/cc/research/bridge/keetoc.html>.

¹¹⁷ This authority comes from the President and is exercised through the Secretary of Defense.

unified commands exercise combatant command (COCOM) over their assigned forces (see figure 2).¹¹⁸



Source: JP 3.0 *Doctrine for Joint Operations*, (10 September 2001):II-5

Figure 2. Branches of National command authority

These unified commands are either functional or geographic in nature. As the name implies the functional command refers to a certain function the command provides, duty that is not necessarily restricted to a geographic region. For example, United States Transportation Command (USTRANSCOM)—the unified command which is important to this study—is a functional command charged with managing the nation’s defense transportation network both in time

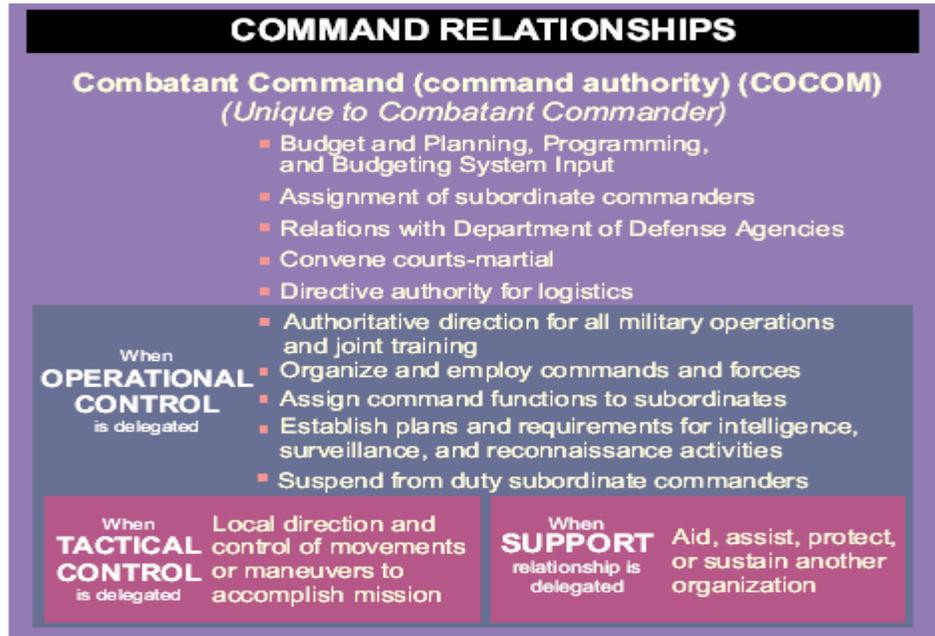
¹¹⁸ Joint Publication 3.0, *Doctrine for Joint Operations*, 10 September 2001, II-5.

of peace and war.¹¹⁹ USTRANSCOM's mission provides air, land, and sea transportation. USCINCTRANS orchestrates transportation services for all CINCs on a global basis. Since this study focuses on the air portion, specifically in the context of contingency operations, the remainder of the discussion of the command structure will be focused on airpower.

COCOM, OPCON, TACON, Other Authorities

Within the command structure, there are different types of command authority designed to meet the needs of commanders at different levels. The commander at the tactical level does not need the same type of authority as the commander at the operational level or at the strategic level. The scope of responsibility and the span of control in most instances determine what type of command is best.

¹¹⁹ James K. Matthews and Cora J. Holt, *So Many, So Much, So Far, So Fast: United States Transportation Command and Strategic Deployment for Operation Desert Shield/Desert Storm* (Washington, D.C.: Office of the Chairman of the Joint Chiefs of Staff and Research Center, United States Transportation Command, 1996), 2-3.



Source JP 3-0 *Doctrine for Joint Operations* (10 September 2001): II-7

Figure 3. Command Relationships

COCOM. Combatant Command provides the full authority to organize and employ commands and forces as the combatant commander deems necessary. COCOM cannot be delegated or transferred, and encompasses the full array of duties and responsibilities of the CINC. Within COCOM there are cascading levels of control that can be delegated by the CINC in order to make his overall command more effective. These levels of control, although still inherent in COCOM, can be exercised in a number of ways: through the component commanders, functional component commanders, a commander of a subordinate

unified command, a commander of a Joint Task Force (JTF), a single-service force commander, and in some instances over specific operational forces.¹²⁰

OPCON. Operational control may be exercised at any echelon at or below the level of the combatant command and can be delegated. OPCON is inherent in COCOM and is the authority to perform those functions of command over subordinate forces involving organizing and employing commands and forces.¹²¹

TACON. Tactical command is command authority over assigned or attached forces that is limited to the detailed direction and control of movements or maneuvers.¹²² The important thing to remember with TACON is its specificity in terms of the when, where, what. Basically TACON is temporary control. A useful analogy may be to think of it in terms of borrowing a friend's car for a specific time and reason. The owner of the car is exercising TACON through the friend. TACON is inherent in OPCON because at anytime the owner could do specific things with the car, but when he lets his friend have it for a specific thing the TACON is temporarily delegated.¹²³

¹²⁰ Joint Publication 3-0, II-6.

¹²¹ Joint Publication 3-0, II-8.

¹²² Joint Publication 3-0, II-9.

¹²³ Captain John Groff, an instructor at Detachment 1, Air Mobility Warfare Center, used this analogy while he taught the Tanker Planner Course, at Hurlburt AFB FL, in April of 2000.

Other Authorities. Administrative control (ADCON), coordinating authority and direct liaison authorized (DIRLAUTH) round out the mechanisms that can be useful in crafting an effective command and control structure.

ADCON is the direction or exercise of authority over subordinate or other organizations with respect to administration and support. Sometimes referred to as “beans, beds, and bullets,” this authority encompasses the resources and duties not included in the operational missions of the command. For example, personnel management, unit logistics, individual and unit training, readiness, mobilization, demobilization, and discipline.

Coordinating authority is a consultation relationship between commanders, not an authority by which command may be exercised. It is delegated to a commander or individual for coordinating specific functions and activities involving forces of two or more Services, joint force components, or forces of the same service. The commander can require the agencies to share pertinent information but he cannot make them come to a consensus or agree on anything.¹²⁴

Finally, there is DIRLAUTH; that authority granted by a commander to directly consult or coordinate an action with a command or agency within or outside of the granting command. DIRLAUTH is a coordination relationship, not

¹²⁴ Joint Publication 3-0, II-11.

an authority through which command may be exercised.¹²⁵ (See Figure 2 for command relationships.)

What is the DM4?

“The DM4 is the JFACC’s designated coordinating authority for air mobility with all commands and agencies both internal and external to the JTF.”¹²⁶ Mobility forces differ from some others because of their global nature. Special attention must be given to balance these resources with national requirements and priorities outside the JTF. Consequently, mobility assets—especially intertheater—are handled differently from most combat air forces. The JFC normally will conduct operations through the JFACC by delegating OPCON of the Air Force component forces to the JFACC. Even though the JFACC provides unity of command, Doctrine Document 2 recognizes—in some instances—the necessity of having to apply a different command and control philosophy for mobility air forces. “However, some US Air Forces and capabilities (such as intertheater air mobility and space assets) must maintain a global focus, thus preventing the transfer of OPCON to the JFC.”¹²⁷

¹²⁵ Joint Publication 3-0, II-11.

¹²⁶ Air Force Doctrine Document 2, *Organization and Employment of Aerospace Power*, 67.

¹²⁷ AFDD2, 51.

Doctrinally, the DM4 works for the JFACC. Doctrine Document 2 states: “To ensure close coordination with the overall theater effort, the DM4 should work for the JFACC.”¹²⁸ The DM4 may have one boss but he also has many allegiances. He serves as coordinating authority for air mobility with all commands and agencies both internal and external to the JTF. Before one can understand and fully appreciate the duties and responsibilities of the DM4, one has to understand the concept of the JFACC. What follows synthesizes its purpose, function, and structure.

Doctrine Document 2 characterizes the COMAFFOR as providing unity of command, which is one of the most widely recognized principles of war.¹²⁹ Given the importance unity of command, then, the COMAFFOR is one of the most important organizational keystones of the employment of aerospace forces. It should be noted that in Doctrine Document 2’s initial explanation of the concept, reference to the JFACC is conspicuously absent. This is critical in understanding the differences between the COMAFFOR and the JFACC.

“The COMAFFOR”—whether dual-hatted as the JFACC or not—“has the responsibility for overseeing the morale, welfare, safety, and security of assigned forces.”¹³⁰ In other words, the COMAFFOR will have ADCON of all assigned

¹²⁸ AFDD2, 67.

¹²⁹ AFDD2, 51.

¹³⁰ AFDD2, 51.

US Air Force forces and specified ADCON of all attached US Air Force forces. Through the A-staff, he manages the service authority issues—the “beds, beans, and bullets.”¹³¹

The responsibilities of the JFACC are essentially the additional duties of the COMAFFOR, only expanded to handle all joint airpower. Thus, the JFACC takes care of the operations-related duties; while the COMMAFFOR handles the logistics and discipline of the AF units.

The DM4 could end up working for the COMAFFOR and the JFACC,¹³² which may not be the same person. In Operation Allied Force (OAF), the DM4 in effect worked for both. The CINC decided to keep the JFACC separated from the COMAFFOR. Therefore, the DM4 did not have the opportunity to work under one roof and one boss.

Doctrine Document 2-6, *Air Mobility Operations*, outlines the authorities and responsibilities of the DM4. It describes the recommended structure of the aerospace operations center (AOC) and the command and control mechanisms the

¹³¹ AFDD2, 37. The A-staff structure is used instead of the more “traditional” US Air Force staff designations (DO, LG, SC, etc.) to more readily identify the Air Force component staff equivalents of the corresponding J-staff functions.

¹³² AFDD2, 67.

DM4 has at his disposal to direct mobility air forces in support of the JFCs overall objectives. Specific authorities and responsibilities of the DM4 include:

1. Direct the integration of intertheater air mobility support provided by USTRANSCOM-assigned mobility
2. Coordinate the tasking of USTRANSCOM intertheater air mobility forces (air and ground) attached (via TACON) to the JFC.
3. Direct the tasking of intratheater air mobility forces (air and ground) attached (either via TACON) to the JFC.
4. Coordinate with the AOC director to ensure all air mobility operations supporting the JFC are fully integrated into the air and space assessment, planning, and execution process and deconflicted with all other air operations
5. Coordinate with AMC TACC, through the air mobility element (AME), all intertheater air mobility missions to ensure the most effective use of these resources in accomplishing the JFC, theater, and USTRANSCOM missions.¹³³

The DM4 is tasked with making sure there are seamless mobility operations across the differing functions that make up the mobility effort. The air mobility division (AMD) is the hub of air mobility operations within the AOC. It is the “home” of the command and control mechanisms that produce seamless

¹³³ Air Force Doctrine Document 2-6, *Air Mobility Operations*, 21.

mobility operations. It plans, coordinates, tasks, and executes the air mobility mission.¹³⁴

Within the AMD, there are four core teams. These core teams are the air mobility control team (AMCT), the air refueling control team (ARCT), airlift control team (ALCT), and air mobility element (AME). The AMD is responsible for the coordination and integration of mobility assets into the air tasking order (ATO).¹³⁵

Command and Control Relationships. The DM4 should ensure that the sometimes conflicting *operational imperatives* of efficiency and responsiveness will be reconciled in a way that yields the highest level of effectiveness. The combination of functional expertise (ALCT and ARCT), focused command and control (AMCT), fused under one director (DM4), and collocated with the theater air boss (JFACC) at the hub of air operations (AOC) appears well-suited to meet the challenge of providing the JFC the mobility support critical to meeting his theater-wide objectives.

Assumptions and Shortfalls

Major Ted Carter points out, “AFDD2 provides excellent guidance in support of a single JTF,” but it falls short when one considers the possibility of multiple JTFs in an AOR. In addition, Doctrine Document 2-6 does not address

¹³⁴ AFDD 2-6, 21.

¹³⁵ AFDD 2-6, 22.

the complexity of the DM4's role in multiple JTFs. Furthermore, Doctrine Document 1's assertion that the JFACC will typically maintain the same joint operating area as the JFC implies that there will be only one JTF in the AOR.¹³⁶ The assumption that the majority of the conflicts will be of the single-JTF variety has yielded doctrine which does not sufficiently address how the DM4 will function in operations that have multiple JTFs and JOAs in a single AOR. OAF could happen again.¹³⁷ The multiple task force organizations established to support different missions led to a separation of the DM4 and the JFACC in order to simplify working relationships.¹³⁸ OAF was an ad hoc relationship that did not follow doctrine.

Doctrinal Option Categorization. The current DM4 doctrine falls into the consolidated direction category. The AF believes the DM4 does not need to command in any circumstance. If this were not the case, there would be doctrinal

¹³⁶ AFDD2, 54.

¹³⁷, Ted E. "Gene" Carter, "Theater Air Mobility: Historical Analysis, Doctrine and Leadership," Research Report no. 00-037 (Maxwell AFB, Ala.: Air Command and Staff College, April 2000), 15.

¹³⁸ Nonie C. Cabana, "Total Mobility Flow: A Post-Kosovo Role for the DIRMOBFOR," *Aerospace Power Chronicles*, 20 September 2000, n.p., on-line, Internet, 16 October 2001, available from <http://www.airpower.maxwell.af.mil/airchronicles/cc/cabana2.html>

scenarios where the DM4 needed command. There are no scenarios, according to Doctrine Document 2-6.2, which require the DM4 to command. The AF also believes the DM4 should have all mobility assets consolidated under his direction. Again, the doctrine never stipulates that there is a reason to separate the mobility assets; they should always remain under the direction of the DM4. The only option doctrine has for the DM4 is consolidated direction.

Chapter 5

DM4 In Action

OAF: A case study in Separated Direction

Context. Many variables entered the calculus that led to Lt Gen Michael Short's decision to keep the Director of Mobility Forces (DM4) and the Air Mobility Division (AMD) from integrating with the Combined Air Operations Center (CAOC) in Vincenza during OPERATION ALLIED FORCE (OAF). However, none was more profound than the short war assumption. "Staff planning was based on the assumption that the Serbs would capitulate quickly, as they had in 1995 in Bosnia in the face of OPERATION DELIBERATE FORCE."¹³⁹ As a result, when the crisis continued past the three-day point many of the short-war tailored theater staffs were overwhelmed as the intensity and pace of operations rapidly increased. Even well established staffs were significantly affected. Gen John Jumper, United States Air Forces Europe (USAFE) Commander, remarked, "many management headquarters functions were suspended until the end of OAF."¹⁴⁰ Add to that European Command's

¹³⁹ United States Air Force, "Air War Over Serbia (Secret NOFORN)" October 2000, Vol 1, 290. Extracted information is unclassified.

¹⁴⁰ Congress, "General John P. Jumper, Statement to Committee on Armed Services, Sub Committee on Military Readiness," 26 October 1999 (Secret). Extracted information is unclassified.

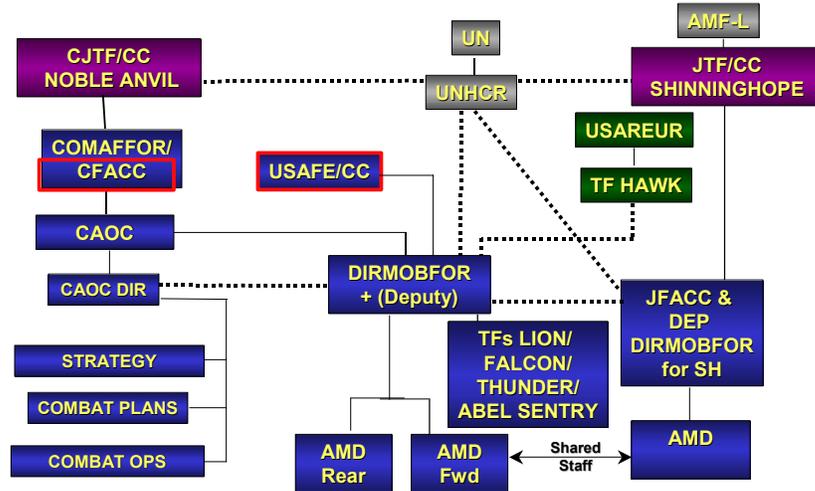
(EUCOM) “propensity for multiple Joint Task Forces (JTF),”¹⁴¹ and what developed was a very complex operation, one that would in hindsight undermine the basic assumption of Lt Gen Short’s decision.

OAF held true to form if the EUCOM contingency standard is multiple JTFs. OAF’s DM4, Col Rod Bishop, was tasked to support demanding and politically sensitive operations which encompassed multiple JTFs. He supported JTF Shinning Hope, Task Force (TF) Falcon, JTF Noble Anvil, TF Hawk, TF Thunder, TF Lion and TF Able Sentry.¹⁴² The command and control arrangement was also complex and made balancing mobility requirements between JTFs difficult and challenging. This chapter will first look at the air refueling operations.

¹⁴¹ Martin Hertz, Maj USAF, “Joint Logistics Component Commander and the Mobility Air Forces,” Graduate Research Project (Wright Patterson AFB, Ohio: Department of the Air Force Air University AFIT, 5 June 2001), 28.

¹⁴² Brig Gen Rod Bishop, Director of Mobility Forces, Operation ALLIED FORCE, briefing, subject: “Director of Mobility Forces (DIRMOBFOR) for EUCOM Lessons Learned, JTF (Joint Task Force) NOBLE ANVIL, 23 March 99 through 7 Jul 99,” Charleston AFB, S.C.: 437th Airlift Wing Commander, n.d.

DIRMOBFOR Link to JTFs



Source: Brig Gen Rod Bishop ALLIED FORCE slide presentation

Figure 4 DM4 Links to Joint Task Forces

Air Refueling

The dynamics of the official and unofficial command relationships between key Mobility Air Forces (MAF) and Combat Air Forces (CAF) personnel strained operations. Before the rapid buildup Lt Gen Short opted to decrease the DM4's role. "The DM4 was given no responsibility for air refueling forces during the employment phase."¹⁴³ Lt Gen Short seemed confident that he and his Combined Air Operations Center Director (CAOCD) were capable of handling

¹⁴³ Briefing, AMC/XOP, subject: "TACON and DIRMObFOR Policy/Doctrine Resolution," 1999. Located in Air Force Historical Research Agency, Maxwell AFB, Ala. K323.01 01 Jan-Dec 1999 Vol 19.

the tanker mission in direct support of combat operations. “The Combined Forces Air Component Commander (CFACC) stated he ‘was satisfied with the planning and staff support for the tanker assets’...he did not want any more help.”¹⁴⁴ In an interview Gen Short said, “He [DM4] wasn’t in charge of my employment tankers, I was running them through my AMD.”¹⁴⁵ He went on to say, “the DM4 doesn’t work for me; I do my own tanking. I had a hundred-eighty tankers to fight the war in Kosovo and my tanker planner in the AMD division worked that for me and put it in the ATO and coordinated it through the ATO process to make sure it was doable.”¹⁴⁶ As a result, “A/R [air refueling] operations were moved from DM4 oversight to AOCD oversight.”¹⁴⁷ A Joint Universal Lessons Learned

¹⁴⁴ Maj Peter Hirneise, airlift planner, Operation ALLIED FORCE to Lt. Col Richard D. Simpson, Policy and Doctrine Division, Air Mobility Command, email, subject: AMD Forward Summary of Discussion, 16 NOV 1999. Located in Air Force Historical Resource Agency, K323.01 Jan-Dec 1999 Vol 19.

¹⁴⁵ Lt Gen (Ret) Michael Short, Combined Forces Air Component Commander, Operation ALLIED FORCE, interviewed by author, 13 Dec 2001.

¹⁴⁶ Short interview.

¹⁴⁷ Headquarters Air Mobility Command, Policy and Doctrine Division, “Premature Movement of Aerial Refueling Air Mobility

(JULLS) long report, characterized the decision to move the air refueling force command and control to the air operations center as premature.

The JULLS report called the CFACC's view as one-dimensional and cited the need for air refueling assets to remain under DM4 guidance regardless of the phase of operation. "A/R operations were viewed, by JFACC, as force enhancement tool, not as air mobility missions when phase of operation moved from deployment to execution." The report goes on to say, "While A/R missions, during employment phase, are primarily flown in support of combat missions the DIRMOBFOR still needs to retain oversight of A/R forces. A key mechanism for this oversight is the A/R planners."¹⁴⁸

The CFACC seemed to find no significant reason to integrate the AMD into his CAOC organization. Although Lt Gen Short repeatedly refers to his "AMD," it is very different from how doctrine outlines an AMD. According to doctrine, an AMD consists of four core teams within the Air Operations Center (AOC), under the DM4.¹⁴⁹ The extent of Lt Gen Short's AMD in the CAOC, was

Division," Joint Universal Lessons Learned (JULLS) Long Report #70752-67607 (00003), 24 November 99. Located in Air Force Historical Resource Agency, Maxwell AFB, Ala., K323.01 Jan-Dec 1999 Vol 19.

¹⁴⁸ JULLS Long Report #70752-67607 (00003), 24 November 99.

¹⁴⁹ Air Force Doctrine Document 2.6, *Air Mobility Operations*, 21.

his Chief of Tanker Plans, Maj Scott Mischo and several other tanker planners.¹⁵⁰

He also considered the Regional Air Movement Control Center (RAMCC) a part of his AMD, but it was not.

“ In actuality, the RAMCC was a NATO organization that happened to be commanded by a USAF officer. As a result of this, the organization was often viewed as a USAF organization however, it technically was in the NATO C2 structure and not the US C2 structure. The RAMCC should not be identified as the AMD forward. It would be more appropriate to designate it as a NATO airlift C2 node that served both the US and its allies. In that capacity it responded to US DIRMOBFOR inputs.”¹⁵¹

A presentation prepared by Lt Gen William J. Bergert, Vice Commander USAFE, points out the RAMCC was something short of an AMD. “ The RAMCC is the closest thing that the CAOC had to an AMD. It served to

¹⁵⁰ Col Robert C. Owen, Chief, Policy and Doctrine Division, Headquarters Air Mobility Command, interviewed by author, 18 April 2002. During OAF, Rob Owen had an additional duty of advising leadership on contingency command and control arrangements. A leading mobility expert, he led the mobility portion of the AWOS report. This interview highlights some of the findings of that study.

¹⁵¹ Lt Col Richard D. Simpson, Headquarters Air Mobility Command, Policy and Doctrine Division, to Robert Brunkow, email, Subject: DIRMOBFOR Forward, 4 April 2000.

coordinate US air mobility operations with our NATO allies and with airfields in the Allied Force area of responsibility (AOR).”¹⁵² Unlike a real AMD, “the RAMCC had no planning role and served mainly to control slot times into Bosnian airfields for the International Stabilization Force.”¹⁵³ Finally, a JULLS long report, submitted by Col Bishop, states “CAOC does not recognize the RAMCC director position as being dual-hatted as a deputy DIRMOBFOR. An AOC has been created without recognition of an Air Mobility Division.”¹⁵⁴

“In February of 1999, Col Bishop advised Lt Gen Short of the need of tanker and airlift presence in the CAOC.”¹⁵⁵ Again, in March, he discussed the need for mobility leadership presence in the CAOC with the CFACC. On both

¹⁵² Lt Gen William J. Bergert, Vice Commander, United States Air Forces Europe, briefing, subject: “Kosovo Lessons Learned: Air Force & Mobility,” n.d.

¹⁵³ Lt Gen William J. Bergert, USAF, “Kosovo and Theater Air Mobility,” *Aerospace Power Journal*, 18, no. 4 (Winter 1999), 17.

¹⁵⁴ Brig Gen (s) Rod Bishop, “RAMCC Chief/Deputy DIRMOBFOR Issues,” Joint Universal Lessons Learned Long Report Number: 82541-23492 (00051), 16 July 1999. Located in Air Force Historical Resource Agency, Maxwell AFB, Ala., K323.01 Jan-Dec 1999 Vol.19.

¹⁵⁵ Hirneise email.

occasions, Lt Gen Short declined, stating that he did not need any help.¹⁵⁶ A request to incorporate a 60-person AMD staff to coordinate mobility issues was also denied.¹⁵⁷ General Short did not want or feel he needed the services of a DM4 and a full AMD in his CAOC.¹⁵⁸ General Short had his reasons.

Lt General Short refers to the doctrinal role of the DM4 as “interesting” but “not reality.” He goes on to say that “it is a great concept, but in reality, the DM4 works for the theater not the JFACC. In Kosovo, the job of the DM4 was airlift-centric...that was not on my plate, not my JTF...why then should he work for me. I get my airlift expertise from my AMD.”¹⁵⁹ He makes the point that during OAF the DM4 had all he could handle without having to worry about the tanker employment piece. “His job from my perspective was an airlift intensive one. The reason he is a theater guy is that there may be four other things going on, as there was in Gen Wes Clarke’s theater.”¹⁶⁰ From this perspective, it is understandable why the CFACC opted to separate the mobility forces along functional lines. Lt Col D. Richard Simpson seems to agree that this separation of direct support tanker role may have been appropriate in this case. “Granted

¹⁵⁶ Hirneise email.

¹⁵⁷ Hirneise email.

¹⁵⁸ Owen interview.

¹⁵⁹ Short interview.

¹⁶⁰ Short interview.

‘effective operations’ during the AWOS were perhaps best achieved by ‘stove-piping air mobility forces by system and function, given the narrow focus of the theatre and JTF.’¹⁶¹ Lt Gen Short does however acknowledge there may be instances when the DM4 could work for the CFACC. “There might be some possibility of there being something going on somewhere in the world that was so narrow and focused that I’d need you [DM4] and you’d only be supporting that operation and that operation only then you might work for me.”¹⁶² His JTF was by and large centered on the tanker combat-support role of mobility, absent any senior mobility leadership. The decision to keep his CAOC devoid of senior tanker leadership would soon be overcome by events, but the JFACC remained firm on his no-AMD no DM4 policies.

The Chief of tanker plans, Major Scott Mischo, and his staff had significant difficulties effectively handling the rapid increase in tanker operations. The chief of Air Mobility Command’s policy and doctrine division, Col Robert C.

¹⁶¹ Lt Col Richard D. Simpson, “Command of Theater Air Mobility Forces During the Air War Over Serbia,” *Aerospace Power Chronicles*, 11 October 2000, on-line, Internet, 16 October 2001.

Available from

<http://www.airpower.maxwell.af.mil/airchronicles/cc/simpson.html>.

¹⁶² Short interview.

Owen, characterized the job Major Mischo was asked to do this way. “Because of the increased complexity of the operations, Major Mischo was asked to do the job of a General officer.”¹⁶³ In the first month of the campaign the tanker cadre was nearly overwhelmed.¹⁶⁴

No Room at the Inn. A significant challenge was finding suitable airfields for the tankers. The “tanker bed down was a huge issue. The operation went from five tanker operating locations and 55 tankers on 24 March to 12 locations and 175 tankers on 8 June.”¹⁶⁵ The operation ended up requiring seven additional bed down locations: Rhein Main, Germany; Mont-de-Marson, France; Fairford, England; Brize Norton, England; Budapest, Hungary, Souda Bay, Greece; and Incirlik, Turkey. Neither Major Misho’s training nor his experience had prepared him to deal with issues on such an international scale, issues requiring the skills of a senior mobility officer. “The inadequately manned cadre lacked a senior tanker officer to provide them “top cover”¹⁶⁶ as they were inundated by questions on tanker operations from numerous outside agencies.”¹⁶⁷ Lt Gen Short, realizing he needed to “fix” the tanker problem, allowed senior mobility leadership—as Col

¹⁶³ Owen interview.

¹⁶⁴ Bergert, 18.

¹⁶⁵ Bergert briefing.

¹⁶⁶ Bergert, 19.

¹⁶⁷ Bergert, 19.

Bishop had previously advised—to shore up his tanker operation. Col Tom Stickford joined the CAOC one month into the campaign to provide that “top cover.” “He quickly became the focal point for justifying and staffing tanker requirements and helping USAFE identify suitable tanker bed down locations. However, the AOCD, Brig Gen Randall C. Gelwix, made it clear to Col Stickford that he was not a DM4, but rather the tanker director who worked for the JFACC.¹⁶⁸ Furthermore, the AOCD restricted Col Stickford from providing input to combat-support operations, responsibility for such operations remained with the AOCD.¹⁶⁹

Airspace Plan. Although the bed down issue was important, arguably the air space problems were even more significant in prompting Lt Gen Short to bring in senior tanker leadership. “The decision to keep the existing airspace structure reflected the expectation that the campaign would be of a short duration.”¹⁷⁰ OAF inherited Deliberate Forge airspace plan, which was designed for much smaller operations. As the operations increased the utility of that airspace plan decreased.

¹⁶⁸ Owen interview.

¹⁶⁹ Col Tom Stickford, Tanker Director Operation ALLIED FORCE, and Major Scott Mischo, Chief, Tanker Plans, Operation ALLIED FORCES, interviewed by Lt Col Richard D. Simpson, 9 June 1999.

¹⁷⁰ Bergert briefing.

“The airspace arrangement could have killed someone.”¹⁷¹ According to a tanker pilot who flew in the first month of the campaign, the “biggest threat to the tankers were [sic] other tankers.”¹⁷² There is some debate as to the significance of Col Stickford’s arrival in theater and the near-simultaneous improvement of the airspace issue. There are those who credit Stickford with fixing the plan. Col Rob Owen characterized his ability this way, “for Stickford it was an easy task.”¹⁷³ On the other hand, Lt Gen Bergert credits Maj Misho and his tanker planner staff for the development of the new airspace plan. In any event the entry of a senior mobility officer was beneficial to the overall operations. It is also probable that had he been in place at the onset of operations some of the difficulties may have been avoided or fixed sooner.

Manning the CAOC. Another difficulty the CAOC faced was getting the right people with the right skills to work in the tanker-planning cell. A senior mobility presence in the CAOC may have helped. “There simply were not enough trained people in the CAOC.”¹⁷⁴ This was not as much a problem with the CAF because they had a senior combat advocate, Lt Gen Short, who was able

¹⁷¹ Owen interview.

¹⁷² AWOS tanker pilot, interviewed by author, 15 April 2002.

¹⁷³ Owen interview.

¹⁷⁴ “Air War Over Serbia (Secret NOFORN)” October 2000, Vol 1, 294. Extracted information is unclassified.

to use his senior officer influence to get specific people he knew had talent to do the job.¹⁷⁵ However, with no senior mobility advocate, the Air Force Personnel Center (AFPC) selected individuals to serve in a combat planning scenario.¹⁷⁶ The people AFPC selected were not the most qualified. “Among those sent to the CAOC as tanker planners were two United States Air Force Academy professors (including a poetry professor and an Airpower studies professor) and a contracting officer from AFMC who had not seen the tanker for years and had no AOC experience.”¹⁷⁷ These were the types of personnel issues that prompted Gen Jumper’s comment, “We fought the Air Force’s premier fight with a “pick-up team” rather than a fully trained and exercised team.”¹⁷⁸

Effectiveness of Tanker Effort. Despite the many challenges, tanker operations in direct support of Noble Anvil were effective. According to Lt Gen Short, “tankers turned the tide of the war.”¹⁷⁹ Tankers provided the backbone of

¹⁷⁵ “Air War Over Serbia (Secret NOFORN)” October 2000, Vol 1, 294. Extracted information is unclassified

¹⁷⁶ Owen interview.

¹⁷⁷ Bergert briefing. One of the academy instructors was an instructor pilot in the KC-135 with over 2000 hours in the plane. Even so, he was sent back within days of arriving at the CAOC.

¹⁷⁸ Bergert briefing.

¹⁷⁹ Bergert briefing.

the air campaign; nearly every combat mission required air refueling. They were the ultimate force multiplier in the air campaign. The tanker presence was absolutely critical in the rescue effort of the downed F-117 pilot and the F-16 pilot. In a briefing by Lt Gen Bergert, he stated that the rescue of these pilots “would not have been possible without tankers.”¹⁸⁰ The tankers not only kept the search and rescue pack airborne for over six and one-half hours, it was actually tanker crews who first spotted Vega 31, the F-117 that went down.¹⁸¹ These are only a few instances that support the notion the tanker effort was a successful one when judged solely by its effectiveness. “Tankers enabled the over 24 thousand combat and combat support missions.”¹⁸²

Efficiency of Tanker Operations. No one disputes the fact that tankers performed admirably during the Air War Over Serbia (AWOS). What concerns many mobility experts however, are the gross inefficiencies that came with the victory.¹⁸³ Inefficiencies, some say could have been avoided with little or no impact on mission effectiveness. The solution to meeting the increased air refueling needs was one-dimensional; get as many tankers as possible to the

¹⁸⁰ Bergert briefing.

¹⁸¹ Bergert briefing.

¹⁸² Bergert, 12.

¹⁸³ Owen interview.

theater as fast as you can.¹⁸⁴ Brig Gen Silvanus Gilbert, Commandant of Cadets at the United States Air Force Academy and former DM4, said this about the tanker buildup. “If you don’t understand how they [mobility assets] are controlled you get into situations like Kosovo, where you get every tanker that’s out on any ramp anywhere that gets deployed to a theater and gets underutilized.”¹⁸⁵ He goes on to give a ramification of operating that way “you strip the rest of the world of what they need to do their job.” Brig Gen Gilbert offers a simple solution, “...get someone who understands air refueling and airlift, who understands those forces, who can help orchestrate and achieve the maximum effectiveness with those forces.”¹⁸⁶ Undoubtedly the OAF tanker plan could have been better.¹⁸⁷ From an efficiency standpoint, the direct-support tankers were underutilized. During a campaign with only 21 days of favorable weather, nearly 20 percent of all strike missions, along with their supporting tankers, were cancelled due to poor weather. Receiver operations tempo was oversold in the campaign. For example, tankers were required to support two daily F-117 strike packages although they eventually ran low on targets and did

¹⁸⁴ Brig Gen Silvanus Gilbert, interviewed by author, 25 April 02, Owen interview.

¹⁸⁵ Gilbert interview.

¹⁸⁶ Gilbert interview.

¹⁸⁷ Bergert, 14.

not fly every day.¹⁸⁸ Had the receiver operations tempo been high enough to keep every tanker gainfully employed the available airspace would not have sufficed for the number of tankers in theater.¹⁸⁹ More than enough tanker support was available to the CFACC anytime he needed it. When it was not needed those additional assets went largely unused. Occasionally, however, Gen Short allowed part of his tanker force to temporarily support air bridge operations.¹⁹⁰

Some of the inefficiencies seem justified. For example, instead of having one KC-10 refuel 12 fighters, which would have been an efficient option, multiple KC-10s were used. This allowed the fighter packages to refuel faster. Having multiple booms decreased the total refueling time for the package, which meant the package had more time to do its primary mission. The planners also used a reliability tanker that orbited for six hours with no scheduled receiver.¹⁹¹ This was not efficient, but proved to be effective since it saved many strike packages and individual missions. Finally, tankers on ground alert did not show up in the sortie count but were effective by covering for tanker maintenance and

¹⁸⁸ Bergert briefing.

¹⁸⁹ Bergert briefing.

¹⁹⁰ Bergert briefing.

¹⁹¹ A reliability tanker provides refueling support that would have been lost because of any number of reasons, tanker maintenance problems, for instance.

emergencies. The rescue of two pilots would not have been possible without this inefficiency.¹⁹² Lt Gen Bergert attributes AMC's criticism of the way tankers were managed during AWOS to a different attitude toward operations.

“AMC approached the tanker utilization issue with its air mobility mindset. Airlift operations require efficiency in order to maximize effectiveness because there are more airlift requirements than assets available to support them. However, combat operations place a premium on effectiveness over efficiency, and there are enough tankers to maximize effectiveness.”¹⁹³

Lt Gen Bergert goes on to say that “tanker planners had to give up some efficiencies to manage the tanker plan effectively. AMC needs to differentiate between tanker and airlift efficiencies and change the way tanker efficiency is measured.”¹⁹⁴

Wrong assumptions with regard to the duration of the AWOS led to significant challenges in managing the combat support air fueling effort. Less-than-ideal command relationships and inadequate manning and training of staffs degraded operational efficiency, however not to the point, which decreased effectiveness. From a theater-wide perspective, however, the virtual monopoly of 75 tankers limited the DM4's ability to provide tanker support to other JTFs. Lt. Col D. Richard Simpson puts it this way. “The seams between the theater and the

¹⁹² Bergert briefing.

¹⁹³ Bergert briefing.

¹⁹⁴ Bergert briefing.

JTF, resulting from not having a fully vested DM4 and AMD in the JTF, somewhat hampered the ability of air mobility forces in the EUCOM AOR to provide mutual support and augmentation.”¹⁹⁵ It is reasonable to conclude that Lt Gen Short could have used the presence of a senior mobility officer in the CAOC fully involved in all phases of operations from the beginning of the war. The effect was particularly noticeable when the small planning cell dispatched from HQ USAFE was nearly overwhelmed by the intensifying pace of combat operations. However, it is debatable how much of a difference he would have made.

In the minds of the air leaders who ran the war, the overriding consideration was effectiveness, even if efficiency had to become a casualty. For the DM4, the issue of effectiveness was also important, however it was important for the whole theater and not just JTF-NA. Most likely the truth lies somewhere between the two views. Given the evidence, it probably leans toward the later. From a theater-wide perspective, the way to achieve that was through efficient use of every available asset to the maximum extent possible, without jeopardizing the effectiveness of any operation. Mobility experts believe the tanker operation of JTF-NA underutilized precious resources under the guise of effectiveness because of a refusal to fully integrate senior mobility expertise.¹⁹⁶

¹⁹⁵ Simpson article, n.p.

¹⁹⁶ Owen interview, Gilbert interview.

Airlift

Col Rod Bishop served as the European DM4 from August 1998 to March 2000.¹⁹⁷ OEF happened during his watch. “He was given the responsibility for airlift between the EUCOM and JTF AORs.”¹⁹⁸ He had the task of providing mobility support for the complex operation, an operation supported by a command and control arrangement that some characterize as “ludicrous.”¹⁹⁹ Col Rob Owen says that had he been tasked develop a command and control structure specifically designed to inhibit the DM4s ability to efficiently and effectively complete the mobility mission, he could have not come close to the level of difficulty that the one Col Bishop had to face.

Multiple JTFs in the AOR, all of which required significant mobility support, drove the complex C2 structure. JTF Shining Hope (humanitarian relief operations) required 264 missions to move 6,422 short tons of cargo and 943 passengers. TF Falcon (Kosovo Forces support) required 253 missions to move 11,886 short tons of cargo and 2,525 passengers. TF Hawk (Apache Helicopter

¹⁹⁷ Bishop briefing.

¹⁹⁸ Briefing, AMC/XOP, “TACON and DIRMOBFOR Policy/Doctrine Resolution,” 1999. Located in Air Force Historical Resource Agency, Maxwell AFB, Ala., K323.01 Jan-Dec 1999 Vol 19.

¹⁹⁹ Owen interview.

deployment to Tirana) required 737 missions to move 22,937 short tones of cargo and a staggering 7,745 passengers.²⁰⁰

“The DM4 had to serve multiple masters with different objectives. This type of environment violates two of the nine principles of war—simplicity and command unity.”²⁰¹ The DM4 coordinated seven JTF/TF via five different links. Noble Anvil required him to deal with the CFACC via the CAOCD. Complicating matters was the fact that the CFACC was not dual-hatted as the Commander of Air Force Forces (COMAFFOR). The COMAFFOR was General John Jumper, who Col Bishop also supported. Gen Jumper had under his purview TFs Lion, Falcon, Thunder, and Able Sentry. Shinning Hope required the DM4 to interface with not only the JTF commander but also UN officials. Finally, TF Hawk demanded significant mobility support to United States Army Europe

²⁰⁰ Col Coy, Deputy Director of Mobility Forces, Operation ALLIED FORCE, “Working Brief,” Air Mobility Warfare Center Course, “DIRMOBFOR” 2000, Air Mobility Warfare Center, Fort Dix, N.J., March 2000.

²⁰¹ Nonie C. Cabana, “Total Mobility Flow: A Post-Kosovo Role for the DIRMOBFOR,” *Aerospace Power Chronicles*, 20 September 2000, n.p., on-line, Internet, 16 October 2001. Available from <http://www.airpower.maxwell.af.mil/airchronicles/cc/cabana2.html>

(USAREUR) via the TF Hawk commander. The DM4 also had to maintain close coordination with United States Transportation Command (USTRANSCOM) and Air Mobility Command (AMC) via the Tanker Airlift Control Center (TACC).²⁰²

For several reasons, the DM4 chose a dual-AMD structure to tackle the challenge. First, Lt Gen Short's decision to limit a full-blown AMD in the CAOC took away the DM4's first choice.²⁰³ He wanted a 60-person team in the CAOC that could plan, task, schedule, and execute all mobility activities from the CAOC.²⁰⁴ Because the DM4 was not allowed to co-locate with the CAOC, he set up an AMD forward in the Regional Air Movement Coordination Center (RAMCC) outside the AOC structure. Initially, the RAMCC had no planning role and served mainly to control slot times into Bosnian airfields. It also ensured that all airlift and commercial traffic were on the daily Air Tasking Order (ATO). However, when OAF expanded so did the RAMCC's responsibilities. As a result, the AMD forward had five primary functions: 1) real-time monitoring of the tactical scenario as related to airlifters; 2) U.S. slot coordination; 3) airspace coordination; 4) ATO input and validation; 5) tactical planning. Even though the RAMCC had an expanded role it could not handle the full complement of duties necessary to provide support to the entire AOR. As a result, Col Bishop decided

²⁰² Bishop briefing.

²⁰³ Herniese email.

²⁰⁴ Herniese email.

to stand up an AMD rear at Ramstein with the USAFE Air Mobility Operations Control Center (AMOCC). This made sense because the AMOCC had the infrastructure to support a robust AMD. In addition, Ramstein was a better location from which to support TF Hawk, operating out of Tirana air field—the primary airlift operation at the beginning of OAF. “In summary, with the refusal of the CFACC to accept more...input/support, the single airfield ops at Tirana, and the limited infrastructure to support a robust AMD, Col Bishop correctly decided to continue with an AMD forward and rear concept.”²⁰⁵

If you look at the results of the airlift operations, it is hard to dispute that they were a success. However, it would be questionable to attribute—in any large measure—that success to the command and control structure, as Lt Gen Bergert does. He characterizes the operations as the “smoothest air-mobility operations in Air Force history.”²⁰⁶ He credits much of the success to the seamless integration of the AMD and the USAFE AMOCC. He goes on to say, “...the DM4’s staff from the 437th Airlift Wing at Charleston AFB, South Carolina, AMC, and air-mobility experts fused into a single, synergistic team, ensuring that intratheater and intertheater mobility efforts were well integrated.” He credits the “improved command and control structure” and the “strong working relationship between

²⁰⁵ Herniese email.

²⁰⁶ Bergert, 12.

AMC and USAFE” as having made command relationships much easier to sort out.²⁰⁷ Lt Gen Bergert’s characterization may be somewhat optimistic.

Col Bishop would probably not characterize October 10, 1998 as smooth. In response to an airlift request to support a U2 mission, he began a validation process that took 19 phone calls and almost nine hours to complete (see figure 5). The DM4 had to coordinate with multiple commands and organizations to get authority to validate the mission and alert the aircrew to support it.²⁰⁸ The request started with a call to the USAFE crisis action team (CAT), to request the validation of the support mission. The request went from the USAFE CAT to European Command (EUCOM)operations and USTRANSCOM before being approved by TACC at AMC. As a result, the mission was delayed 4 hours, new slot times were required to enter another nation’s airspace, and new landing times had to be approved at the destination. The user was also dissatisfied and the host nation did not like the numerous changes they had to make to support the mission.²⁰⁹ Col Bishop, in his briefing notes, that if he had had tactical control (TACON) over the mobility forces the process would have taken only 2 phone calls, thus streamlining the process and preventing a negative impact on the mission. This is not the only instance Col Bishop ran into these type of

²⁰⁷ Bergert, 17.

²⁰⁸ Bishop briefing.

²⁰⁹ Bishop briefing.

coordination challenges. It underlined the difficulties that could arise with limited control over mobility forces in theater. On 15 April 1999 the USAFE commander was given TACON of the Tirana Tanker Airlift Control Element (TALCE) to support intratheater airlift requirements for JTF Noble Anvil and JTF Shining Hope. It was exercised through the DM4.²¹⁰ Similarly, the USAFE commander was given TACON of 12 C-17s and 25 C-17 crews.²¹¹ By most accounts, this increased control over the theater forces made operations a lot smoother.²¹² Brig Gen Gilbert had this to say about the advantages of increased control. “You can more easily move your forces around in the AOR to orchestrate the mobility piece without having to go through the bureaucratic process.”²¹³

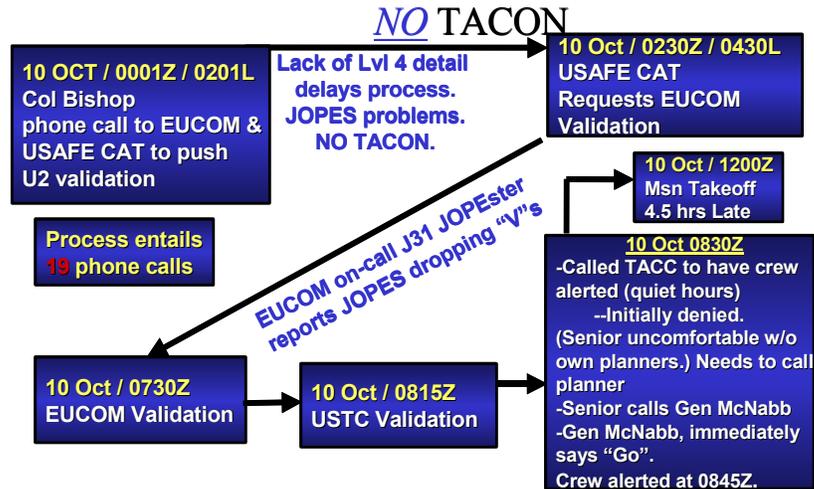
²¹⁰ Message, 191655Z APR 99, to Commander Air Mobility Command and Commander United States Air Forces Europe. Located in Air Force Historical Research Agency, Maxwell AFB, Ala., K 323.01 JAN-DEC 1999 Vol 19.

²¹¹ Message, 251753 JUN 99, Headquarters United States Air Forces Europe, Ramstein AB GE, Vice Commander to Headquarters Air Mobility Command, Scott AFB IL. Located in Air Force Historical Research Agency, Maxwell AFB, Ala., K 323.01 JAN-DEC 1999 Vol 19.

²¹² Bishop briefing.

²¹³ Gilbert interview.

U-2 MISSION (10 OCT) ETAR-LFMI-LIPA



Source: Brig Gen Rod Bishop ALLIED FORCE slide presentation

Figure 5 Coordination for 10 October U2 Mission

There is also evidence to suggest the AMOCC and the AMD were not “fused.” Col Rob Owen, who led the airlift study on OAF referred to the Ramstein arrangement as a wasted effort characterized by redundancy. The organizations were not fused at all. They were separate and distinct entities providing identical C2 functions for different type airframes. “Rod Bishop and his AMD staff directed the C-17 effort while the AMOCC directed the C-130 effort.” The only thing that actually linked the organizations was the fact they shared a building. Even then, they were not on the same floor. Two fully manned staffs performed exactly the same functions. If the organizations had truly been fused, as Lt Gen Bergert writes, the total number personnel could have been

significantly reduced.²¹⁴ The command and control arrangements of the AMOCC were not as dire as Col Owen suggests, however “the complexity of the C2 [command and control] of airlift could have caused Tunner to turn in his grave.”²¹⁵

The command and control relationships of the airlift effort in OAF were not the best ever, and did not produce the smoothest airlift effort the AF has ever seen. Nor were they an absolute waste. However, the C2 environment within which one had to operate presented major challenges. The evidence suggests that had the DM4 had more control of the mobility assets in theater his job would have been less difficult. Giving TACON to the USAFE commander and allowing it be exercised through Col Bishop seemed to improve operations. However the DM4 made airlift work without command. The success of airlift operations, more than anything, was because of the talented mobility experts who adapted, improvised, and overcame problems.

Did the DM4 need command in OAF to get the job done? The obvious answer is no. Would command have made his job easier...probably so. How much of an impact did separating air refueling from airlift have? Efficiency suffered both from Noble Anvil and the theater perspectives; there is no debate about that. What is fiercely debated is the additional level of efficiency that could

²¹⁴ Owen interview.

²¹⁵ Cabana, n.p.

have been gained without losing effectiveness. By thinking of mobility in compartmented terms, Lt Gen Short failed to take advantage of what a full-spectrum mobility expert could have provided. Although he called his tanker experts who worked the combat-support “planners,” they seemed to be more in the scheduling business, generally reacting to the requests of the fighters by matching tankers to the fighter strike packages. They seemed to be guided by the more-is-better rule of thumb. The tell-tale sign that tanker operations were skewed more to scheduling than planning was the fact that the limited airspace would not have allowed the maximum number of sorties we could have generated. We could not have flown all of our tankers if we wanted to. That is an indicator that there may have been a significant number of excess tankers. This excess could have been used elsewhere without affecting Noble Anvil. Therefore, OAF would have benefited from consolidation of tanker and airlift. Viewed as a system, mobility provides the best support to both the indirect-support and the direct-support missions.

OEF: A case study in Consolidated Direction

In an interview with Maj Mark Oechsle, an instructor at the tanker Combat Employment School (CES) at Fairchild AFB, he questioned the worth of a DM4. He is unequivocal. Not only does he think the DM4 should not command, he believes there should not be a DM4 at all. “The function [of the DM4] should reside within the Joint Movement Center (JMC) or within the AOC.” The JMC should handle the intertheater lift, coordination and liaison between the theater

and TACC. As for visibility, prioritization, and synchronization. “The JMC should do that too.” Similarly, the JMC should take care of intratheater lift, “qualified specialists within the JMC and/or the AOC is sufficient.” He says the only reason we have one [DM4] is that “AMC is afraid that airlift is going to be abused.” He questions the validity of that concern, “is there proof in that?” He admits that “there is buffoonery, but there has and always will be some of that.” Maj Oechsle ends the interview with an open-ended question accompanied by what his experience may suggest is the answer. “But the real question is, does the DM4 help [stop any of the buffoonery]? I don’t have any evidence of that.”²¹⁶ Operation Enduring Freedom (OEF) provides some evidence.

What follows is an assessment of the DM4 in OEF based on the experiences of Maj Gen David Deptula who served as the Combined Air Operations Center Director and Brig Gen Richard Mentemyer who served as the DM4 during OEF. OEF is still unfolding at this writing. Thus, any lessons drawn from these experiences are tentative. Nonetheless, the evidence strongly suggests the DM4 concept is not only a “help”—the answer to Maj Oechsle’s question—but potentially indispensable if fully integrated throughout the breadth of operations.

DM4’s Role/Mission in OEF. When asked what his mission was, Brig Gen Mentemyer answered, “to solve the JFACC’s problems.” He emphasized the

²¹⁶ Major Mark Oechsle, interviewed by author, 15 December 2001.

point that he “did not say mobility problems.” He goes on to say, “I solved his [JFACC] problems with mobility solutions if possible.” Brig Gen Mentemyer felt his job was to “let his boss know what mobility could do.” In essence, his role was “a very proactive one.” He did not wait until he was tasked with some mobility mission. Instead, he was constantly involved with the CFACC working his issues and using mobility to solve the JFACC’s problems as much as possible. Critical to that kind of support was having “every mobility asset involved in OEF under the control of the DM4 exercising that control for the CFACC, and the AFOR, and the CINC.”²¹⁷ Maj Gen Deptula said this of his DM4. “As a direct part of the overall campaign plan, he assured that the mobility forces were integrated to accomplish the campaign objectives.”²¹⁸

Role of Relationships. Outstanding relationships, fostered by training, enhanced Brig Gen Mentemyer’s ability perform his job. “One of the things that I found extremely important that paid major dividends is the fact that Gen [Charles] Wald [OEF CFACC] and I had a relationship, an ongoing CFACC/DM4

²¹⁷ Brig Gen Richard Mentemyer, Director of Mobility Forces, Operation ENDURING FREEDOM, interviewed by author, 7 February 2002.

²¹⁸ Maj Gen David Deptula, Combined Air Operations Center Director, Operation ENDURING FREEDOM, interviewed by author, 31 January 2002.

relationship before we ever deployed. When we deployed we had many of those issues already worked out.”²¹⁹ Brig Gen Gilbert adds some perspective. “When AMC went to designated DM4s several years ago that really helped. We exercise a lot together so when it came time to do a contingency everybody knew everybody. We did not need wiring diagram. The great relationships superceded the need for organizational charts.”²²⁰

Fully Integrated AMD. The command relationships during OEF facilitated integration of the AMD into the CAOC like never before by allowing Brig Gen Mentemyer to place key members of his staff under non-traditional directorates. “My tanker planners were part of the MAAP [master air attack plan] cell not the AMD. This is because no one resisted it because of the relationships, and I did not feel like I lost any control by doing that.”²²¹ He elaborated:

“For the first time my tanker planners and my C-17 planners, C-130 planners did not work in the AMD directly under me, they worked in the MAAP [Master Air Attack Plan] cell, and that’s where I wanted them to be. Now they got a lot of direction from me don’t get me wrong. The most important place for a planner to be is the master air attack plan cell. For example, if I had a C-17 air drop mission that required CAS or DCA or a bomb run before hand to clear a

²¹⁹ Mentemyer interview.

²²⁰ Gilbert interview.

²²¹ Mentemyer interview.

ridgeline of possible manpads or something like that, all they needed to do was ask for it because they were right there in the MAAP, and they got it.²²²

Here is Maj Gen Deptula's perspective:

“We worked together in developing the plan for delivering the food into Afghanistan and do it in such a way that we were doing it from the very first day. And then how to integrate that into the operations. They were treated as force application assets. So you had mobility, space, information and force application all being dealt with in integrated fashion.”²²³

So impressive were these results, Gen Mentemyer said, “if I had to highlight anything as being the number one real success of what we did over there, from an AF perspective, it was placing my mobility planners in the master attack planning cell.”²²⁴ Maj Gen Deptula was also pleased with the move. “When you are co-located and you work face-to-face with people you can overcome a lot of misperceptions that would develop if you were separated. If there was an issue, being co-located meant that you could sit down together and explain perspectives and so on and so forth.”²²⁵ When asked what set up would have worked better? Maj Gen Deptula replied, “I don't have that, I can't think of a

²²² Mentemyer interview.

²²³ Deptula interview.

²²⁴ Mentemyer interview.

²²⁵ Deptula interview.

better arrangement than we had in OEF: Co-location of the DM4 with the CAOCD inside the JFACC organization.”²²⁶

Planning vs Scheduling

By integrating the AMD into the CAOC, OEF benefited from a robust planning across the spectrum of mobility operations. “Up until now, tankers have been good at scheduling not planning.”²²⁷ The DM4 promised his CFACC a robust tanker concept of operations, which could only have been achieved with a focus on proactive planning versus reactive scheduling.

“I would promise General Wald a campaign...theater...operational-level refueling plan as opposed to just sticking some folks next to the fighter pilots in the master attack planning cell, that’s nothing more than scheduling. Every time they [OAF planners] would plan a “gorilla” package they would say ‘OK I need tankers against this.’ The tanker guy would punch in tankers to support that. What I had was CES [combat employment school] patch wearers. They not only did scheduling, but also theater-level planning too.”²²⁸

²²⁶ Deptula interview.

²²⁷ Mentemyer interview.

²²⁸ Mentemyer interview.

With the help of the CES planners the DM4 delivered.

“We actually did a plan that I gave to Gen Wald from the mobility perspective and said Sir, here’s how many tankers you need here’s how many I got right now, here’s where I’m going to get them down. On the theater level here is where we are going to build our routes, and here is where we are going to build our anchors, and here’s where we are going to build our tracks, and the orbits, the whole works.”²²⁹

Arguably, by focusing on planning instead of scheduling, OEF avoided what could have been a nightmare bed down problem, as experienced in OAF.

“...the reason it was so important to do theater level planning was that the biggest limitation in OEF is ramp space, tankers take up a lot of ramp space. So what little ramp space we had meant that planning was super critical. Because if we had one more tanker than was not absolutely needed then we are taking up valuable ramp space. So we can’t go by the old every three fighters you get a tanker, which is what I think they did in ALLIED FORCE.”²³⁰

Based on Maj Gen Deptula’s assessment of the number of tankers, “We had just enough”, it is clear that the planning effort was a success in terms of efficiency as well as effectiveness.²³¹

²²⁹ Mentemyer interview.

²³⁰ Mentemyer interview.

²³¹ Deptula interview.

The Lack of Command and its Effect. During Brig Gen Mentemyer's tenure as the DM4, the lack of command authority had no adverse effects on the operation. Quite simply, he did not need command to be effective. The General goes as far as to offer some concern with having command and the impact too many bosses would have. "I'm a little torn about the commander issue because you don't want to have too many bosses."²³² When asked directly if the DM4 needed command he replied "my real answer to that question is that I had every bit of the authority to do my mission that I needed when I was over there which is more personality dependent than lines on paper."²³³ He also characterized the DM4 as just about indispensable whether he is a commander or not. "I never found myself hamstrung by the fact that I didn't have commander in my job title. The reason I can say that is the commander I worked for was the commander of all the assets and I was his mobility guy."²³⁴ Reminiscent of Tunner's experience with differing command relationships during Operation Vittles, Brig Gen Mentemyer thinks it does not matter so much whether you are a commander or a director as long as you are given the leeway to do your job. He reflected; "I could have been a commander and not been given the leeway to do my job."²³⁵ From

²³² Mentemyer interview.

²³³ Mentemyer interview.

²³⁴ Mentemyer interview.

²³⁵ Mentemyer interview.

the CAOCD's perspective, he did not think there was anything his DM4 could not get done because he was not a commander.²³⁶

Maj Gen Deptula sums the OEF experience up well, OEF integrated functions that traditionally had not been thought of as force application or combat. Space, information, mobility, and force applications were part of a synergistic whole to accomplish the campaign objectives. "I would not change the DM4 but I would integrate him into the organization, perhaps to a better degree than they have been in the past. There was a seamless relationship between the DM4 and all the other elements in the CAOC."²³⁷

OAF/OEF Comparison. The leaders of OEF made a decision to consolidate and integrate the mobility forces. They chose to treat mobility as a system. Whereas OAF leadership considered air refueling and airlift as separate entities with only the former being integrated within the CAOC. In the end both approaches worked. It is clear however, that consolidating the MAF under a single entity produced more efficient operations and enhanced the total operations.

A comparison of the command and control relationships is like day and night. The great relationships of OEF helped the effort to integrate. The strained

²³⁶ Mentemyer interview.

²³⁷ Deptula interview.

command relationships in OAF, while not destroying the operation, did nothing to enhance them.

Probably the most significant contextual factor however, was the scope and complexity. OEF benefited from a relatively focused mission in which all theater assets fell under one commander with a single JTF to manage.²³⁸ OAF, on the other hand, was a complex operation characterized by at least a half-dozen JTFs/TFs requiring great effort on the part of MAF leadership to make it a success.

If one subscribes to Brig Gen Gilbert's philosophy that the more complex a contingency the greater need for consolidation and control, it stands to reason that given the complexity of OAF, it might have benefited from consolidation and an increased amount of control by the DM4. Comparing the U2 scenario in OAF with C-17 operations after the DM4 was able to exercise TACON supports that thesis. Consolidated direction seems to have been a better option than separated direction. Notice the only difference in the options is the composition. Therefore, consolidated mobility forces seems to be a better option than separate forces. At least in the smaller scale operation consolidation may produce synergies that further enhance the operation that would otherwise not have been realized.

²³⁸ Mentemyer interview.

Chapter 6

Conclusions and Recommendations

Should the DM4 command, and if so what should he command? In general, the DM4's status as a director of all mobility assets is a good option for the effective and efficient use of our nation's mobility air forces. However, there are instances when that option is not optimal. Thus the answer to the question depends upon the circumstances.

Conclusions

Command. Command of mobility forces is not necessary for successful operations. The evidence shows there have been highly effective mobility operations without a specific mobility commander, especially in narrowly focused and less complex contingencies. However, command of mobility forces may enhance the performance of the mobility effort (particularly efficiency) during large-scale contingencies. The experiences of the Gulf War and Vietnam show that. General Tenoso gives his perspective, "I will guarantee you that if you're are going to have something on the order of a Desert Storm, you are going to need a commander."²³⁹ Nonetheless, both strategies work. Therefore the DM4 does not necessarily need to be a commander, but in some circumstances it would help.

²³⁹ Lt Gen (R) Edwin E. Tenoso, Commander of Airlift Forces, Operation DESERT STORM, interviewed by author 23 April 02.

Composition. More often than not airlift and air refueling assets should be consolidated under a single command and control mechanism during contingency operations. There are two reasons for this. First, airlift and air refueling both have the ability to perform multiple roles in support of either the intratheater or intertheater missions. The airlift experience tends to favor consolidation as the better option. Because of the similarities between airlift and air refueling, consolidation also applies to air refueling. Thus airlift and air refueling should usually be consolidated.

Second, treating mobility as a system may be a better option to harness mobility's full capabilities. Even though "stovepiping" components of mobility may be the best option in some cases, in general the potential benefits of employing mobility as a system offers the most benefits.

Context. Several contextual factors are significant when considering a DM4 option. The most important contextual factor is the command relationship. Nearly all the evidence suggests that good command relationships count for a lot toward making any operation a success. On the other hand, when the relationships are not good, this does nothing to help operations and in some cases has an adverse impact. If there were a common thread to successful mobility operations it would have something to do with command relationships.

Scope and complexity are also important. In general, the larger the scope and complexity the more command is needed. This is because command simplifies one's ability to move forces around, a very important ability to have as

operations grow in complexity. Simply put, as the scope and complexity of the operation increases so does the need for flexibility. Command increases flexibility for the DM4.

Current Doctrine. Michael Howard's assessment of a military's ability to formulate effective doctrine—"they got it wrong"—is actually wrong when it comes to the DM4. The current doctrinal concept of the DM4 is generally sound. The emphasis on consolidation is based on years of operational experience and has proved effective. The recent emphasis on having the DM4 train with his or her would-be Combined Forces Air Component Commander (CFACC) or Joint Forces Air Component Commander (JFACC) during peacetime exercises has had a positive impact during real-world contingencies. However, there are some areas for improvement.

The major shortcoming of the DM4 doctrine is that it does not address multiple-Joint Task Force (JTF) scenarios. This biases the doctrine's applicability in favor of less complex and narrowly focused contingencies. The assumption that the majority of the conflicts will be of the single-JTF variety has yielded doctrine, which does not sufficiently address how the DM4 will function in operations that have multiple JTFs and Joint Operation Areas (JOAs) in a single Area of Responsibility (AOR). Since the doctrine is designed for small contingencies, its flexibility is limited. There are a number of things that could be done to increase doctrine's flexibility.

Recommendations

Allow Command If Necessary. DM4 doctrine should account for a command scenario. It should allow the DM4 to start with or transition to command authority, depending on the complexity and scope of the contingency. The command authority could be either tactical control (TACON) or operational control (OPCON). Debating the merits of each goes beyond the scope of this paper. With this provision, however, there would have to be criteria on which to base the decision to give the DM4 command. For example, if a contingency operation required over 40 percent of a mobility capability, then the DM4 would require command of that mobility capability. For instance, if an operation required 42 percent of US air refueling capability, but only 22 percent of airlift capability then the DM4 would command the air refueling assets. However, he would maintain the traditional director's role with airlift. Only the command and control mechanism for air refueling would change, not the fact that the mobility assets were consolidated. This would give tremendous flexibility to the DM4 doctrine. The DM4's level of control could be tailored to fit the situation.

Multiple DM4s. In a situation with multiple JTFs, doctrine should state each JTF should have its own DM4. Doctrine should be flexible enough to set up multiple DM4s when the scope of the operations is too large for one DM4 to manage. This would ensure each JTF received all the support needed by allowing the DM4 to devote his or her full attention to one JTF.

AMD Organization by Phase. OAF highlighted the fact that the same organizational arrangement for the Air Mobility Division (AMD) may not be appropriate for each phase of the operations (deployment, employment, redeployment). For example, during the deployment and redeployment phases, the mobility planners should be used in the AMD. However, doctrine should state that they be located within the master air attack planning cell during the employment phase. This arrangement helped to fully coordinate and integrate the efforts of the mobility air forces (MAF) and the combat air forces (CAF) during OEF employment. Again, a tailored and flexible doctrine is what we are looking for.

Update AOCD Mobility Responsibilities. Given the possibility of an Air Operation Center Director (AOCD) directing the mobility effort, as was the case during OEF, his mobility responsibilities need to be updated in doctrine.

Continue to Foster Relationships. Every opportunity must be taken to build relationships during training exercises. At least semi-annually, the potential JFACC and his regional DM4 should participate in an exercise to sharpen their working relationship. This would serve to work out a lot of issues before hand and allow them to operate more efficiently in the event of an actual contingency.

Emphasize Planning Over Scheduling. The DM4 was able to provide the JFACC more than just a schedule, he gave the JFACC a “full up” mobility concept of operations. This was because the DM4 had a team of planners that was capable of actually planning and not just scheduling, particularly the graduates of the

tanker Combat Employment School (CES). The CES is a success story and should be expanded and emulated throughout the mobility community.

Further Research

This study suggests the DM4 could benefit from command in certain circumstances, whether it is TACON or OPCON. It does not delve into circumstances that may justify one over the other. There are significant implications and ramifications associated with the differing command relationships. Consequently, a detailed investigation to determine the optimal command relationship given a set of circumstances is in order.

BIBLIOGRAPHY

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

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

Air Force Doctrine Document (AFDD) 2-6-1. *Airlift Operations*, 13 November 1999.

Air Force Doctrine Document (AFDD) 2-6-2. *Air Refueling Operations*, 19 July 1999.

“Air Mobility Concept of Operations.” Scott AFB, Ill., 1 June 1992.

Air Mobility Command Instruction (AMCI) 10-202. *Director of Mobility Forces (DIRMOBFOR) Policy and Procedures*, 1 May 1998.

Air Mobility Warfare Center. *Director of Mobility Forces Handbook*. Ft Dix, N.J.: Air Mobility Command, Air Mobility Warfare Center, September 1998.

Bishop, Rod, Brig Gen. Director of Mobility Forces, Operation ALLIED FORCE. Briefing. Subject: “Director of Mobility Forces (DIRMOBFOR) for EUCOM Lessons Learned, JTF (Joint Task Force) NOBLE ANVIL, 23 March 99 through 7 Jul 99.” Charleston AFB, S.C.: 437th Airlift Wing Commander n.d.

Bishop, Rod, Brig Gen (s). “RAMCC Chief/Deputy DIRMOBFOR Issues.” Joint Universal Lessons Learned Long Report Number: 82541-23492 (00051), 16 July 1999. Located in Air Force Historical Resource Agency, Maxwell AFB, Ala., K323.01 Jan-Dec 1999 Vol.19.

Bergert, William J., Lt Gen. Vice Commander, United States Air Forces Europe. Briefing. Subject: “Kosovo Lessons Learned: Air Force & Mobility.” n.d.

Bergert, William J., Lt Gen, USAF. "Kosovo and Theater Air Mobility," *Aerospace Power Journal*, 18, no. 4 (Winter 1999): 11-21.

Bowers, Ray L. *Tactical Airlift*. Washington, D.C.: Office of Air Force History, United States Air Force, 1983.

Brown, Genevieve. *Development of Transport Airplanes and Air Transport Equipment*. Historical Study. Wright Field, Ohio: Historical Division, Air Technical Service Command, April 1946.

Briefing. AMC/XOP. Subject: "TACON and DIRMOBFOR Policy/Doctrine Resolution," 1999. Located in Air Force Historical Research Agency, Maxwell AFB, Ala., K323.01 01 Jan-Dec 1999 Vol 19.

Brunkow, Robert. *Toward the Air Mobility Command: A Chronology of Tanker and Air Refueling Events*. Scott AFB Ill.: Office of History, Air Mobility Command, 1994.

Byrd, Vernon B. *Passing Gas: The History of Inflight Refueling*. Chico, Calif.: Byrd Publishing Company, 1994.

Cabana, Nonie C. "Total Mobility Flow: A Post-Kosovo Role for the DIRMOBFOR." *Aerospace Power Chronicles*, 20 September 2000, n.p. On-line. Internet, 16 October 2001. Available from <http://www.airpower.maxwell.af.mil/airchronicles/cc/cabana2.html>

Carter, Ted E. "Gene." "Theatre Air Mobility: Historical Analysis, Doctrine and Leadership." Research Report no. 00-037. Maxwell AFB, Ala.: Air Command and Staff College, April 2000.

Congress. "General John P. Jumper, Statement to Committee on Armed Services, Sub Committee on Military Readiness." 26 October 1999 (Secret). Extracted info is unclassified.

Coolidge, Brig Gen. "DIRMOBFOR Function not Understood by CINC Staff." Joint Universal Lessons Learned Long Report No.92-523-10385 (01640). Scott AFB Ill.: Headquarters Air Mobility Command, 21 March 1996.

Coy, Col. Deputy Director of Mobility Forces, Operation ALLIED FORCE. "Working Brief." Air Mobility Warfare Center Course. "DIRMOBFOR" 2000. Air Mobility Warfare Center, Fort Dix, N.J., March 2000.

Department of the Air Force, "Establishment of the Tanker Airlift Control Center (TACC)." MAC Programming Plan 91-43. Scott AFB Ill.: Headquarters Military Airlift Command, 15 December 1991.

The Development of Strategic Air 1946-1986 Command (The Fortieth Anniversary History). Offutt AFB, Nebr.: Office of the Historian, Headquarters Strategic Air Command, 1 September 1986.

Devereaux, Richard T. *Theater Airlift Management and Control--Should We Turn Back The Clock to be Ready for Tomorrow?* Maxwell AFB, Ala.: Air University Press, September 1994.

Director of Airlift Operation, Headquarters Tactical Air Command. To Policy Division, Plans and Programs Directorate, Headquarters United States Air Force. Letter. Subject: TAC DO Position Concerning Airlift Control Center Organizational Arrangement in SEA (U), 18 July 1967.

Fogleman, General Ronald R. "Defense Transportation in a Changing World." *Defense Transportation Journal* 49, no. 3 (June 1993): 14-17.

Futrell, Robert F. *Ideas, Concepts, Doctrine Vol. 2 Basic Thinking in The United States, 1961-1984*. Maxwell AFB, Ala.: Air University Press, December 1989.

Hirneise, Peter, Maj. Airlift planner, Operation ALLIED FORCE. To Lt. Col Richard D. Simpson, Air Mobility Command Policy and Doctrine Division. Email. Subject: AMD Forward Summary of Discussion, 16 November 1999. Located in Air Force Historical Resource Agency, Maxwell AFB, Ala., K323.01 Jan-Dec 1999 Vol 19.

Headquarters Air Mobility Command, Doctrine Division, Plans and Programs Directorate. "Premature Movement of Aerial Refueling Air Mobility Division." Joint Universal Lessons Learned Long Report #70752-67607 (00003), 24 November 99. Located in Air Force Historical Resource Agency, Maxwell AFB, Ala., K323.01 Jan-Dec 1999 Vol 19.

Headquarters Strategic Air Command. *Seventy Years of Strategic Air Refueling, 1918-1988: A Chronology*. Offutt AFB, Nebr.: Office of the Historian, Headquarters Strategic Air Command, May 1990.

Hertz, Martin, Maj USAF. "Joint Logistics Component Commander and the Mobility Air Forces." Graduate Research Project. Wright Patterson AFB, Ohio: Department of the Air Force Air University AFIT, 5 June 2001.

Howard, Michael. "Military Science in an Age of Peace." *Journal of the Royal United Services Institute for Defence Studies*, 119 no. 3 (March 1974): 33-41.

Hupy, Jeffrey L. "Tactical Control of Air Mobility Forces in ALLIED FORCE: Is That the Way Things Should Be?" Research Report no. 00-083. Maxwell AFB, Ala.: Air Command and Staff College, April 2000.

Iannuzzi, Major Philip A., Jr. "50 Years Without Air Refueling Doctrine." n.d., n.p. On-line. Internet, 17 February 2002. Available from <http://www.atalink.org/atq/iannuzzi.html>

Joint Publication 3-0. *Doctrine for Joint Operations*, 10 September 2001.

Keaney, Thomas A. and Elliot A. Cohen. *Revolution in Warfare*. Annapolis, MD: Naval Institute, 1995.

Kennedy, Betty R. *Air Mobility Enroute Structure: The Historical Perspective, 1941-1991*. Scott AFB Ill.: Headquarters Air Mobility Command, Office of History, September 1993.

Kee, Randy A. "Bridging the Gulf Between Theater and Strategic Air Mobility." *Aerospace Power Chronicles*, n.d., n.p. On-line. Internet, 17 October 2001. Available from <http://www.airpower.maxwell.af.mil/airchronicles/cc/research/bridge/keetoc.html>.

Matthews, Dr. James K. and Cora J. Holt. *So Many, So Much, So Far, So Fast: United States Transportation Command and Strategic Deployment for Operation Desert Shield/Desert Storm*. Scott AFB Ill.: Office of the Chairman of the Joint Chiefs of Staff and Research Center, United States Transportation Command, 1996.

Matthews, Dr James K. and Dr. Jay H. Smith. *General Hansford T. Johnson, Commander in Chief, United States Transportation Command and Air Mobility Command: An Oral History*. Scott Air Force Base Ill.: Offices of History, United States

Transportation Command and Air Mobility Command US Government Printing Office, 1992.

Menarchik, Douglas. *Powerlift-Getting to Desert Storm: Strategic Transportation and Strategy in the New World Order*. Westport CT: Praeger Publishers, 1993.

Message. 191655Z APR 99. To Commander Air Mobility Command and Commander United States Air Forces Europe. Located in Air Force Historical Research Agency, Maxwell AFB, Ala., K 323.01 JAN-DEC 1999 Vol 19.

Message. 251753 JUN 99. Headquarters United States Air Forces Europe Ramstein AB GE, Vice Commader. To Headquarters Air Mobility Command, Scott AFB Ill. Located in Air Force Historical Research Agency, Maxwell AFB, Ala., K 323.01 JAN-DEC 1999 Vol 19.

Mets, David R. "Between Two Worlds." *Aerospace Power Journal*, 8, no. 1, (Spring 2002): 41-56.

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

Miller, Roger G. *To Save a City: The Berlin Airlift, 1948-1949*. Washington, D.C.: Air Force History and Museums Program, 1998.

Millander, Major John C. "Improving C2 of Strategic Airlift Forces in Contingencies." Newport, R.I.: Naval War College, 13 June 1997.

Owen, Robert C. "Creating Global Airlift in the United States Air Force 1945-1977: The Relationship of Power, Doctrine, and Policy." PhD diss., Duke University, 1992.

Rice, Donald B., Secretary of the Air Force. *The Air Force and U.S. National Security: Global Reach Global Power*. White paper. Washington, D.C.: Department of the Air Force, June 1990.

Rearden Steven L. "U.S. Strategic Bombardment Doctrine Since 1945." In *Case Studies In Strategic Bombardment*. Edited by R. Cargill Hall. Washington: Air Force History and Museums Program, 1998.

Ryan, Dennis K. "Significant Events in the Evolution of Air Refueling." *Air Command and Staff College Seminar Lesson Book*, Volume III, Version 10. Maxwell AFB, Ala.: AU Press, 1995.

Simpson, Richard D, Lt Col. Headquarters Air Mobility Command, Policy and Doctrine Division. To Robert Brunkow. Email. Subject: DIRMOBFOR Forward, 4 April 2000.

Sunderman, James F. *Early Air Pioneers 1862-1935*. New York: F. Watts Inc, 1961.

Shershun, Captain Carroll S. "Service Stations In The Sky." *The Airman*, 7, no. 2, (February, 1963): 40-45.

Simpson, Lt Col Richard D. "Command of Theater Air Mobility Forces During the Air War Over Serbia." *Aerospace Power Chronicles*, 11 October 2000. On-line.

Internet. Available from

<http://www.airpower.maxwell.af.mil/airchronicles/cc/simpson.html>.

Schatz, Lt Col Rowayne A. "Theatre Airlift Lessons from Kosovo." *Aerospace Power Chronicles*, 10 July 2000, n.p. On-line. Internet, 16 October 2001. Available from <http://www.airpower.maxwell.af.mil/airchronicles/cc/schatz.html>.

"Tactical Airlift." Corona Harvest Air University Designated Study no. 7, vol. 6, Maxwell AFB, Ala.: 15 June 1968.

Tate, Dr. James P., Lt Col, USAF, Retired. *The Army and Its Air Corps: Army Policy toward Aviation, 1919-1941*. Maxwell AFB, Ala.: Air University Press, July 1998.

Tunner, William H. *Over The Hump*. Washington, D.C.: Office of Air Force History, United States Air Force, 1985.

Underwood, Major David C. "The Airlift Lessons of Vietnam—Did we Really Learn Them?" Research Report no. 81-0707. Maxwell AFB, Ala.: Air Command and Staff College, May 1981.

United States Air Force. "Air War Over Serbia (Secret NOFORN)." October 2000, Vol 1. Located at: Air Force Historical Research Agency, Maxwell AFB, Ala. Extracted material is unclassified.

U.S. Department of Defense. "Joint Statement on the Kosovo After Action Review," 14 Oct 1999, n.p. On-line. Internet, 14 November 2001. Available from http://www.defenselink.mil/news/Oct1999/b10141999_bt478-99.html