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by

William C. Thomas
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of
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Fall Semester 2002
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Fairfax, VA

Organizational Change in the United States Air Force

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at George Mason University

By

William C. Thomas
Master of Business Administration
Regis University, 1993

Chair: Susan J. Tolchin, Professor
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Fall Semester 2002
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DEDICATION

Dedicated to America's airmen -- past, present, and future.

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LIST OF ABBREVIATIONS

ACSC Air Command and Staff College
AEF Air Expeditionary Force
AFA Air Force Association
AU Air University
AWACS Airborne Warning and Control System
AWC Air War College
CIA Central Intelligence Agency
CINC Commander-in-Chief
CSAF Chief of Staff of the Air Force
DAL Developing Aerospace Leaders
DoD Department of Defense
DoDD Department of Defense Directive
DR Disaster Relief
EC European Community
GAO General Accounting Office
ICBM Intercontinental Ballistic Missile
MOOTW Military Operations Other Than War
NATO North Atlantic Treaty organization
NEO Noncombatant Evacuation Operation
NGO Nongovernmental Organization
NSAM National Security Action Memorandum
NSC National Security Council report
NSDD National Security Decision Directive
PD Presidential Directive
PDD Presidential Decision Directive
PE Peace Enforcement
PK Peacekeeping
PME Professional Military Education
QDR Quadrennial Defense Review
ROE Rules of Engagement
SAC Strategic Air Command
SLBM Submarine Launched Ballistic Missile
TAC Tactical Air Command
UN United Nations
USAF United States Air Force
USAFE United States Air Forces in Europe

DISCLAIMER

The views expressed in this study are those of the author and do not reflect the official policy or position of the United States Air Force, Department of Defense, or the U.S. Government.

ABSTRACT

ORGANIZATIONAL CHANGE IN THE UNITED STATES AIR FORCE

William C. Thomas

George Mason University, 2002

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The end of the Cold War led to a sudden change in the United States Air Force's task environment that required a degree of organizational change on the part of the Air Force. This exploratory study analyzes the transition between the Cold War and post-Cold War periods to identify key variables in the organizational change process that might be susceptible to policy intervention. In particular, it highlights the importance of an external change agent in the form of a directed change in mission, or an internal change agent in the form of organizational learning, as essential factors in transforming the Air Force's organizational strategy, which is the first step in organizational change. These change agents appeared to be absent following the end of the Cold War, leading to confusion regarding the Air Force's mission and a subsequent reduction in cohesion among airmen. The Air Force's ability to meet national security requirements depends in part on a common understanding of its mission, so an appreciation for methods of organizational change can help policy makers ensure the Air Force's operational readiness.

CHAPTER 1
INTRODUCTION

The national security challenges facing the United States in the years after the Cold War are very different from those of earlier decades. Non-state actors have replaced superpower competition as the primary threat to American security. Peacekeeping and humanitarian relief missions are conducted concurrently with sustained combat in the Balkans and Afghanistan. The same forces that are employed in warfare are also called upon to provide humanitarian assistance. The threats facing the United States and the demands being made of its military are far different than they were during the Cold War. Military personnel and equipment that were organized to address a singular focus on global warfare may not be prepared for the diverse range of missions that have emerged.

Perhaps no service has been more affected than the United States Air Force. The Army, Navy, and Marine Corps have existed since the nation was founded and have experienced a number of dramatic changes in American national security. Born in the aftermath of World War II's strategic bombing campaigns and the development of the atomic bomb, the Air Force has instead faced only one task environment: the Cold War. Since the end of the Cold War the variety and frequency of Air Force missions have grown dramatically, often requiring capabilities neglected during the earlier decades. Is there a difference between the nation's demands of the Air Force and the service's perception of its mission? Do Air Force members have a common perspective that

allows them to effectively prepare for and carry out the diverse range of modern missions? It is reasonable to examine the changes caused by the fall of the Soviet Union and determine if they have affected the Air Force's ability to perform its required tasks.

The demands of the post-Cold War period are different from anything the Air Force has faced before. In addition to being prepared for general war, the Air Force is also tasked to perform a wide range of lower-intensity operations that deter or limit conflict. These missions include both combat and non-combat operations and often require airmen to deploy to remote, ad hoc bases for extended periods, during which time the operations have the potential to change from one type of mission to another. This environment includes a wide variety of threats to national security, requiring the Air Force to conduct many different types of missions with a degree of uncertainty previously unknown.

The individual military services are charged with organizing, training, and equipping their forces. These forces are then made available to joint-service combatant commanders who are responsible for conducting military operations in specific regions. Soldiers, sailors, airmen,* and Marines must be prepared to perform their service's role and complement the functions of the other services. In this way, the full capability of American military force can be realized.

One factor affecting readiness and effectiveness is airmen's understanding of their mission. The basic assumptions that Air Force members have regarding their mission comprise an organizational strategy that provides an operating paradigm for the members. Before an organization can adapt its structure to meet new requirements, it must first

* "Airman" is a generic term referring to an Air Force member and is not used to imply a rank or gender.

transform this organizational strategy. In this regard, the Air Force is no different from other organizations. The existence, or lack, of a common mindset may significantly affect the ability of the Air Force to prepare for current and future contingencies. The services train their forces and provide them with resources based on their role in national security. Conflicts between airmen's perception of their role and the demands of real-world operations may have adverse implications for the Air Force.

If the members of the Air Force do not have a commonly accepted understanding of their service's mission, then effectively organizing, training, and equipping forces may be far more challenging. It is difficult to assign personnel where they are needed when there is no consensus on what types of forces are required. Training standards may be established that are inappropriate in light of commonly undertaken missions. Aircraft and other weapon systems may be purchased that are more appropriate for unlikely operations than for the missions being conducted on a daily basis.

This dissertation examines how the Air Force's organizational strategy can be adapted to facilitate organizational change. The first element of this study involves a series of research questions suggested by recent changes in the Air Force's task environment. These are followed by a review of the literature that defines the boundaries of the study and demonstrates where earlier research into the Air Force is incomplete. A methodology is then discussed that will uncover important variables in the Air Force's organizational change process. An analysis of the transition between the Cold War and post-Cold War task environments is presented that uses the research questions and the themes developed in the literature review as guidelines for data collection. The data from

this analysis are then used to test the hypotheses, and the findings and implications of those tests are discussed. Finally, the conclusions of the research are presented with recommendations for their use by policy makers and future researchers. This provides not only short-term answers regarding the current state of the Air Force but also long-term implications for potential policy intervention.

Research Questions

The Air Force was created in 1947 to use strategic bombers and nuclear weapons to deter an attack by the Soviet Union. This mission reflected the lessons of World War II and the demands of the Cold War, and allowed the Air Force to assume the leading role in national security in the years after World War II. Having been created for the express purpose of exploiting these emerging technologies, the Air Force was designed to focus on the singular goal of deterrence. Though it participated in two conventional wars, and was occasionally called upon to perform low-intensity missions, the Air Force retained a focus on nuclear deterrence.

With the end of the Cold War, the Air Force's primary mission was supplanted by other requirements and a new task environment was created. Though nuclear deterrence remained a function of the Air Force, it could no longer focus almost exclusively upon that one mission. Instead, it now had to be prepared to conduct a wide range of missions on a regular basis, ranging from non-combat, humanitarian operations to full-scale nuclear war. Airmen who were used to operating from their home bases found themselves deploying to remote, ad hoc bases for extended periods to conduct peacekeeping, disaster relief, and other types of unfamiliar operations. Transport aircraft

were no longer merely supporting combat forces but instead had become a primary instrument of airpower, especially in humanitarian assistance and nation-building operations. The Strategic Air Command, which had held the keys to the strategic nuclear weapons, was dissolved, and its combat forces were farmed out to different commands. New organizational structures were proposed, attempted, and discarded as new task requirements continued to emerge in the decade after the Cold War.

The current challenges facing American national security are no less important than were those during the Cold War. The military services must be prepared to accomplish the missions that safeguard American lives and other interests, and the Air Force plays an important part in that area of responsibility. Facing as it does a significant shift in the type and quantity of missions it is being tasked to perform, it is reasonable to ask if the US Air Force is prepared to perform the range of emerging missions. This question, addressing as it does only current concerns, gives rise to a number of broader questions regarding organizational change in the US Air Force, specifically:

- What was the basis for the Air Force's organizational strategy during the Cold War?
- Did the transition between the Cold War and post-Cold War periods represent the next step in an ongoing evolution of the Air Force's task environment, or the creation of a new environment?
- Was an external change agent employed to transform the Air Force's organizational strategy?
- Was an internal change agent available to help adapt the Air Force's organizational strategy?
- How has cohesion changed in the Air Force during the post-Cold War period?

The answers to these questions will help identify important variables in the organizational change process and will aid in further study of the Air Force.

The Basis for Organizational Strategy in the Air Force

Understanding how the Air Force adapts to the introduction of new threats and mission requirements demands an awareness of the basis for its organizational strategy. In order to examine the organizational change process it is important to determine how the basic assumptions regarding the Air Force's mission were developed in an earlier task environment. An appreciation for the conventions that underlie these assumptions will suggest the effects that changes in those conventions will have on the Air Force. What was the basis for the Air Force's organizational strategy during the Cold War? This study hypothesizes that basic assumptions about the Air Force's role in the Cold War were based on a national security policy of containing Soviet expansion.

This hypothesis is evaluated by examining the prevalent national security policies during the Cold War and comparing them with the normative beliefs, regulative structures, and cognitive observations that were the foundation of the Air Force's organizational strategy. This provides a baseline for evaluating changes in the organization and demonstrates the relationship between the task environment and the Air Force's organizational strategy. Addressing this research question provides a better understanding of how assumptions about the Air Force's role are formed and offers insight into interpreting the organizational change process.

Effect of the End of the Cold War on the Air Force's Task Environment

Organizational change may be different after an evolution in an existing task environment than after the creation of a new environment. New technologies, for example, may represent a continuous evolution in the environment, where the same tasks

are required but are performed more effectively and efficiently. The emergence of new threats to national security and new roles for the Air Force, however, suggests that rather than simply performing the same tasks better, the service faces a discontinuous creation of a new environment. Did the transition between Cold War and post-Cold War periods represent an evolutionary or a discontinuous change in the Air Force's task environment? This study offers the hypothesis that the transition from Cold War to post-Cold War periods represented a discontinuous change for the Air Force in the form of a sudden shift from a focus on a single, dominant task to a requirement for a diverse range of tasks.

The hypothesis is evaluated by examining the threats to national security and the role of the Air Force during the two periods. A discontinuous change can lead to operational realities that conflicts with existing normative beliefs and regulative structures. Recognizing the type of environmental change that occurs helps determine how the Air Force has been affected and what degree of organizational change should occur.

Role of External Change Agents in Organizational Change

When a discontinuous change in the task environment leads to a requirement for organizational change, the first step is adapting the organizational strategy consisting of members' understanding of the group's mission. One means of adapting this strategy is direction from an outside authority. Civilian policy makers in the executive and legislative branches are in a position to convey missions and values to military forces. Was an external change agent applied to the Air Force to start the organizational change process? This study evaluates the hypothesis that the President and Congress did not

clearly define the mission of the Air Force. It suggests that external direction did not occur at the same time that new demands were being placed upon the service.

A review of national security strategies and Congressional action during the 1990s is used to determine if a clear sense of mission was communicated to the Air Force. An appreciation for the role of external policy makers will suggest the possible implications of policy intervention following a a significant change in the task environment.

Role of Internal Change Agents in Organizational Change

Another method of changing an organizational strategy is the use of internal policy mechanisms. A system with the ability to engage in organizational learning has the potential to change its normative belief systems by recognizing and incorporating significant changes in its task environment. Did the Air Force employ organizational learning as a change agent? This study proposes the hypothesis that the Air Force does not have the capacity for organizational learning.

This hypothesis is examined by identifying a necessary, though not sufficient, condition for organizational learning to occur and determining if that condition exists. Understanding the Air Force's capability for internal change may suggest organizational and educational options that could maximize the potential for organizational learning.

Effect of Environmental Change on Cohesion in the Air Force

Failure to adapt to environmental changes can disrupt an organization. A lack of a common understanding among a group's members of their mission may adversely affect the organization. Earlier studies suggested that a common understanding of the mission

is essential for maintaining cohesion among airmen. What has happened to cohesion in the Air Force during the post-Cold War period? Following the examination of internal and external change agents, it is possible to develop a set of expected conditions and test a hypothesis to see if those conditions exist. Given the earlier hypotheses that external and internal change agents were absent, this study hypothesizes that cohesion has been reduced in the Air Force. This final hypothesis assumes that, without external or internal change agents, there will be a reduction in cohesion during the post-Cold War period between the Gulf War and the end of the Clinton administration in January 2001.

This claim is evaluated using a set of empirical measures tailored to evaluate cohesion in the Air Force. Though not proving a direct causal relationship between the organizational change agents and cohesion, an outcome that is consistent with predictions demonstrates there is at least a possibility of a causal relationship, suggesting that these variables warrant further study.

These are the important research questions. What was the basis for the Air Force's organizational strategy during the Cold War? Did the transition between the Cold War and post-Cold War periods represent the next step in an ongoing evolution of the Air Force's task environment, or the creation of a new environment? Was an external change agent employed to transform the Air Force's organizational strategy? Was an internal change agent available to help adapt the Air Force's organizational strategy? How has cohesion changed in the Air Force during the post-Cold War period? These questions lead to five associated hypotheses:

- Basic assumptions about the Air Force's role in the Cold War were based on a national security policy of containing Soviet expansion.

- The transition from Cold War to post-Cold War periods represented a discontinuous change for the Air Force in the form of a sudden shift from a focus on a single, dominant task to a requirement for a diverse range of tasks.
- The President and Congress did not clearly define the mission of the Air Force.
- The Air Force does not have the capacity for organizational learning.
- Cohesion has been reduced in the Air Force.

These questions and hypotheses address both immediate and long term concerns.

The first step in this study will be a literature review that examines important organizational concepts as they relate to the Air Force. The research questions suggested the fields of literature that provided a foundation for further study. The results of that review, and the demands of the initial research questions, guided the choice of a policy event for analysis and the collection of data to complete that analysis.

Literature Review

This literature review provides an understanding of the Air Force as it relates to this study. While it may be true that organizations share a common macrolevel model, the nature of a particular agency , such as the Air Force, may be unique to that system. For example, it might be suggested that all military services respond to the demands of a task environment, but the importance of different factors in that environment may vary between services. Many important concepts may be lost in an aggregate model, so it becomes important to unpack the Air Force from the larger organizational forms.

This literature review serves two purposes. First, it identifies critical themes for understanding the Air Force, in particular the relationship between the Air Force and its task environment. These themes guide the collection of data and the presentation of the analysis. Second, the literature review reveals a void in existing research that suggests a

study of organizational change in the Air Force is important at this point. The limited research into organizational change in the Air Force denies policy makers a complete understanding of their role in shaping the service to meet national security needs

This study reviews the literature regarding the Air Force, with an emphasis on the development and the impact of its organizational strategy. Using the broader context of institutionalist theory as a framework, it suggests possible variables in the organizational change process. The review provides an understanding of the function, source, and transformation of the basic assumptions about the Air Force's mission that comprise its organizational strategy. By highlighting the homogenous aspects of the Air Force this literature review offers a starting point for the collection and analysis of data.

Research Methodology

The purpose of this research is to better understand the Air Force and how it adapts to meet emerging requirements. Examining the factors that shape the Air Force and determining the conditions that lead to organizational change offers a first step toward further research and understanding of the Air Force. Such an exploratory study, which seeks to identify important policy variables, is accomplished by analyzing a variety of data that demonstrate not only what occurred, but also why it happened. Properly employed, this approach can lead to an understanding of the Air Force's organizational strategy and the potential effects of policy intervention.

One method of studying the Air Force is an in-depth analysis of a specific event. The research questions and the concepts identified in the literature review provide direction for the collection of data and the structuring of the analysis. Employing this data in a test

of each hypothesis yields a fuller understanding of the system being explored. The results of such an analysis do not have universal applicability but in terms of examining a single agency such as the Air Force, this method offers an effective means of exploring and identifying critical policy variables. The methodology section of this study provides a complete description of the methods of analysis.

Analysis of the Transition from Cold War to Post-Cold War Periods

The analysis examines the effect of the end of the Cold War on the Air Force. Rather than merely providing a historical discussion, the analysis examines policy actions that occurred and explores the reasons for these actions. Understanding contextual details in addition to historical events allows policy makers to better understand the potential effects of their actions on Air Force readiness.

The analysis first examines the national security requirements and Air Force's role during the Cold War. This provides a clearer understanding of the relationship between the task environment and the Air Force's organizational strategy. It then examines the changes in national security requirements and the Air Force's task environment after the Cold War. It goes on to review policy statements made by the Clinton administration and analyzes the reasons for these statements, followed by an exploration of the Air Force's potential for engaging in organizational learning. Finally, it explores the degree of cohesion in the Air Force by examining a series of empirical measures.

Research Findings

The analysis suggests that during the Cold War the Air Force's cognitive observations, normative beliefs, and regulative structures were based on the national security policy of containing Soviet expansion. The end of the Cold War led to the creation of a new task environment in which the Air Force had to address a wide range of threats and missions, rather than maintaining a singular focus as it had for over 40 years. This discontinuous change disrupted the Air Force as cognitive observations of the new environment clashed with normative beliefs and regulative structures left over from the Cold War. The change agents that would start the organizational change process were notably absent in this case. The Air Force failed to adapt its basic assumptions to meet the realities of its new requirements, as evidenced by a reduction in cohesion.

The implications for the Air Force's primary responsibilities -- organizing, training, and equipping forces -- are examined in this chapter. The research results suggest not only the likely effects following the Cold War, but also the potential implications any time a new task environment emerges and organizational change does not occur. The findings suggest a number of important conclusions and policy recommendations.

Conclusions and Recommendations

The final chapter provides a series of conclusions based on the results of the analysis and hypothesis testing. The research shows that discontinuous change destabilizes the Air Force by disrupting the alignment between cognitive observations, normative beliefs, and regulative structures that are the basis for organizational strategy. An external change agent in the form of a clear statement of mission, or an internal change agent in

the form of organizational learning, is required in order for regulative structures and normative beliefs to adapt, allowing for organizational change.

Policy makers would benefit from an improved understanding of the organizational change process as it relates to the Air Force. For this reason, the study emphasizes the exploration and identification of variables that are susceptible to influence by policy makers. This chapter examines how policy makers might employ these variables following future changes, emphasizing the identification of a clear mission for the Air Force and the development of an internal environment promoting organizational learning.

An affirmative test of the hypotheses, though not conclusive, provides some justification for the conclusions and suggests avenues for further research. The final section of the dissertation suggests how research results might facilitate an evaluation of other US military services and of the current task environment.

The analysis presented in this dissertation identifies important policy variables for organizational change in the Air Force. It provides an enhanced understanding of the role of basic assumptions regarding the Air Force's mission and the process by which those assumptions change. This exploratory research fills a void in the literature regarding the Air Force and offers a starting point for future study. The conclusions will allow policy makers to better understand their role and can lead to enhanced effectiveness in the Air Force and a stronger military capability for the United States.

CHAPTER 2
LITERATURE REVIEW

Institutional economists find aggregate models of human interaction useful, but much of the understanding of human behavior is lost when making broad assumptions.[1] Common patterns may exist throughout an organizational field, but basic underlying assumptions will vary between individual organizations.[2] General models may be applicable across a broad range of organizational types, such as bureaucracies, and a tendency toward homogeneity may be the norm for organizational fields, such as the military, but an understanding of a specific agency like the Air Force is best developed by exploring its unique nature.

This literature review provides a framework for examining organizational change in the Air Force. It begins with an analysis of the importance that the bureaucratic nature and history of the Air Force play in creating its identity. It then explores a general model for organizational change and examines how themes from the concept of institutionalism can help explain the development of basic assumptions that serve as the Air Force's organizational strategy. A thorough understanding of the nature of the Air Force allows for the further application of this general model to the specific needs of the service, and provides a starting point for identifying the policy variables that can enable organizational change.

The Air Force's Unique Identity

Each of the military services is organized as a bureaucracy. The growth of the military after World War II sharply increased its bureaucratization. Janowitz wrote

> A great deal of the military establishment resembles a civilian bureaucracy as it deals with problems of research, development, supply, and logistics. Even in those areas of the military establishment that are dedicated primarily to combat or to the maintenance of combat readiness, a central concern of top commanders is not the enforcement of rigid discipline but rather the maintenance of high levels of initiative and morale.[3]

Huntington further described the military profession as being characterized to a large extent by its corporate culture of bureaucracy, associations, schools, and customs.[4] Military organizations are designed to be rational systems. They are assigned a mission and are expected to meet it with minimal cost. They share many traits with other public bureaucracies.

Despite their common attributes, the military services are different from other bureaucratic organizations, and indeed, have individual identities that are distinct from each other. While it is important to understand how they are affected by factors that are common to bureaucracies, it is equally important to recognize how the unique nature of a particular service affects its ability to adapt to significant changes. The Air Force's history and its reliance upon technology as the basis for its identity help to define the service.

Relative to the other services, little has been published about the nature of the Air Force. Studies of the military often focus on soldiers engaged in land warfare. In 2000 and 2001, for example, two major studies that purported to examine the effects of modern missions on the military addressed only the effects on the Army.[5] This is

not surprising; armies have existed for thousands of years, but air forces have only been used in the last century.

The more obvious exceptions to the emphasis on the Army include Wood's 1982 dissertation on Air Force junior officers, which was followed by a number of articles examining Moskos' concept of occupational attitudes within the Air Force. Following the Cold War, both Builder and Smith examined how early Air Force cultural norms developed and what impact they had, analyzing in particular the formation of subcultures and their divisive nature. Builder focused on the development of Air Force culture during the first decades of the Cold War, while Smith examined occupational attitudes, cohesion, and the role of subcultures following the Cold War.

These studies do an excellent job of examining certain aspects of the Air Force during and after the Cold War. No significant work has been done, however, analyzing the process by which the Air Force adapts to the creation of new roles and missions. An understanding of the Air Force's history, the importance of technology, and the development of its subcultures can facilitate a further exploration of its means of transformation.

The Importance of History

History plays a significant role in shaping an organization. An agency's formative experience is important, particularly its original purpose, which provides not only a mission but also an initial set of rules. The personality of original leaders has a strong effect, as founders may be given a free hand to shape their organization

in their own style and recruit individuals who would perpetuate the same values.[6] Another significant influence is an agency's history of operations, which suggests effective strategies and discourages concepts that have previously led to failure. An organization's unique identity is based largely on its corporate memory.

Of the American military services, the Air Force has the weakest historical basis for its identity. The Army, Navy, and Marine Corps each trace their organization's history back to the Revolutionary War, and their conceptual history extends centuries into the past.[7] Sun Tzu's The Art of War, for instance, was written in 500 B.C., and remains on these services' recommended reading lists, as does Thucydides' account of the Peloponnesian War, which he finished at the beginning of the 4th century, B.C.[8] The Air Force, on the other hand, can trace its conceptual history only to the beginning of the 20th century, when aircraft were invented, and its identity as a separate service only to 1947. The oldest book on the Air Force's professional reading list was written in 1973, and all of the others were written after 1990.[9]

The Air Force has fewer operational experiences upon which to draw, so its creation as a separate service in 1947 remains a particularly defining moment. The manner in which the Air Force was created sets it apart from the other services; while the others were created when the nation was born, the Air Force started as branch of the Army, and airmen waged political battles for its independence. The method of its creation set the tone for many of the service's normative beliefs.

The Air Force was created for a specific purpose: the exploitation of a technology that had come of age -- the manned combat aircraft -- as a means of delivering atomic weapons.[10] This purpose reflected the demands of the Cold War and resulted in the

Air Force assuming the leading role in national security in the years immediately following World War II.[11] Other organizations were created at the same time for similar purposes, with the same results. The Central Intelligence Agency, for example, was created on the same date as the Air Force to provide a means of monitoring the actions of the Soviets, and its director became the nation's senior intelligence officer. The creation of a separate Air Force reflected the importance of the independent nature of airpower and the primacy of manned bombers in pursuit of nuclear deterrence.

A unique Air Force identity evolved over time as airpower became better understood, doctrine was developed, and new traditions were started. That identity, however, has always been grounded in the oft-debated presumption that the Air Force should indeed be separate from the Army. Though it has been a separate service for over 50 years, Smith wrote that "the Air Force still remembers its struggle with the Army for independence, and it is sensitive to challenges to that independence or to its attachment to the ground combat mission."[12] Its modern identity rests heavily on the original views of its founders.

The sharp differences between air warfare and land warfare that led to the need for a separate service have prevented the Air Force from simply adopting the Army's organizational history as its own. Indeed, as part of its desire for independence the Air Force has abandoned much of its Army heritage and often finds itself in conflict with the Army over operational issues. Initial Air Force values were based on the belief that independent operations conducted by strategic bombers were the key to winning World War II, leading to a perspective that was very different from that of

the Army or Navy.[13] The emphasis on independence and technology continue to have a significant impact on the Air Force.

The Role of Technology

Unlike the other services the Air Force is premised on a particular technology -- manned combat aircraft -- rather than upon a theory of warfighting. Much of the Army's and Marine Corps' cultures are based on theories of land warfare that have developed over thousands of years, and the Navy's culture draws upon naval theory. Builder pointed out, however, that while many of the Air Force's original values were derived from airpower theory, the Air Force abandoned theory in favor of a focus on technology soon after its inception as a separate service. This occurred in part because the appeal of the Air Force was in what the airplane promised to avoid -- nuclear war -- rather than in what airpower theory promised to deliver.[14]

Success for the other military services generally meant defeating an enemy in battle, but the standard of success for the Air Force was very different. With the advent of nuclear weapons, the consequences of war were so horrible that political leaders did all they could to avoid their use. Even before the Soviets developed a nuclear capability of their own, American leaders recognized that nuclear weapons could not be used as a means of furthering policy in the way that conventional weapons might be.[15] This led to an emphasis on deterrence through the development of superior technology rather than on using that technology on the field of battle.[16] For the Air Force, the service that would be called upon to use these weapons,

success was not determined by having better tactics and strategies than an enemy, but instead by having better technology that ensured an enemy would avoid a war.

Technology ultimately shaped the modern nature of the Air Force. Some of the Air Force's initial values were adopted from early airpower theorists who addressed the manner in which air warfare could be used to meet a variety of needs.[17] Airpower theory was largely abandoned in the 1950s, leading to an organization based instead on the mission of nuclear deterrence and the primacy of the airplane, as the Air Force's elite corps -- combat pilots -- were continuously promoted to positions of leadership from which they could perpetuate these basic assumptions. The Strategic Air Command, which controlled the service's nuclear weapons systems, provided the elite corps for the Air Force.[18] The identification with the mission of nuclear deterrence and the values derived from early experiences provided a common set of assumptions for airmen of the role of the Air Force.

Subcultures in the Air Force

It is interesting to note, as Wilson points out, that even with these common assumptions, there are typically a number of subcultures within an organization that may conflict with each other.[19] Scott also found that informal structures, such as subcultures, tend to arise, potentially disrupting the intended effects of formal structures.[20] DiMaggio and Powell wrote that, without oversight, individuals pursuing subculture interests can thwart the efforts of the organization's leadership.[21] This suggests that bureaucracies, including the Air Force, may experience instability

and difficulty in achieving goals because members of subcultures do not remain focused on the overall goals of the system.

Moskos' model of institutional and occupational attitudes in the military suggests that a weak understanding of the service's mission leads to attitudes that threaten cohesion among subcultures and increases the focus on technical specialties and personal promotion. Moskos' concept of *institutional attitudes* derives from Douglas' view that members of an organization who are bound by a sense of shared values perceive that their identity is defined by their membership in the organization.[22] Other authors suggest that when there is uncertainty regarding organizational values and beliefs, members will look to others outside the organization who exhibit similar qualities, giving rise to Moskos' concept of *occupationalism*.[23] Military members with institutional attitudes focus on their role in the organization, while those with occupational perspectives emphasize market factors, such as levels of pay relative to civilians in the same specialty, rather than focusing on a bond they share with other members of the military.

Occupational attitudes can lead to the growth of clearly defined subcultures in military services that may share more in common with their civilian counterparts than with others in the same uniform. Unclear beliefs reinforce occupationalist tendencies, while a common understanding of basic assumptions restrains them.[24] These tendencies, if left unchecked, can lead to a lack of cohesion in an organization such that members are more focused on the activities of their subcultures or their individual needs than on the demands placed upon their service.

The Air Force's emphasis on technology leaves it especially susceptible to the concept of occupationalism. Moskos and Wood suggested that the more technical the service, the easier it is for technical specialists to relate better to their civilian counterparts than to their fellow military members in different specialties.[25] While infantrymen, submarine crew members, artillery forces, and others in the Army, Navy and Marine Corps may have no civilian equivalent, the Air Force's technical specialists see many others in the civilian world who perform comparable functions. Wood wrote further that

> Because of their extensive use of technology, the Air Force and the Air Force officer corps tend to be most susceptible to increasing specialization and a diffused sense of purpose.[26]

Technical specialists in the Air Force have a tendency to focus on values and beliefs associated with their particular specialty, rather than on those of the Air Force as a whole. The highly technical and occupational nature of the Air Force has given rise to a large number of subcultures, a condition that has significant consequences for the Air Force as a whole.

Subcultures in the Air Force are well defined and are not inclined to mesh well with each other, as shown in Figure 1. These subcultures are identified not only by functional specialization but also by the specific way that technical skill is employed. As a result, rather than simply differentiating between such broad categories as pilots and computer programmers, there are sharp divisions between different types of pilots, different types of computer specialists, and so forth. Smith found that this trend continued, and perhaps increased, in the 1990s, as sharper differences arose among the subcultures.[27]

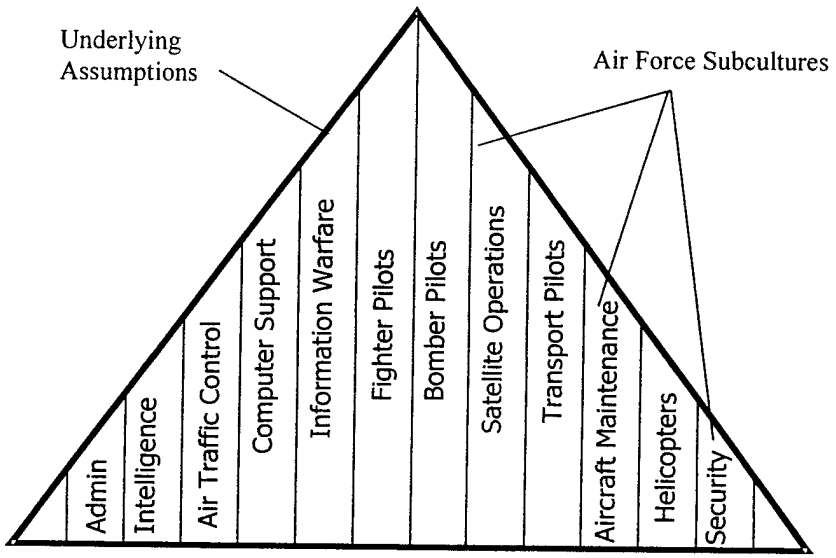

Figure 1
The Binding Effect of Common Assumptions in the Air Force

Cohesion among airmen requires a common sense of purpose that binds subcultures together, and a loss of that cohesion leads to a wider gap between the different subcultures, as suggested in Figure 2.[28] Cohesion is further reduced in times of budget cuts, when divisions between specialties become even sharper.[29] Basic assumptions regarding the mission bind together the fractious subcultures so that they can work together toward the Air Force's objectives. The greater the ambiguity about a military force's mission, the lower its degree of preparedness, so it is highly desirable to maintain an Air Force in which the members have a common understanding of the mission.[30] An underlying set of basic assumptions does not ensure harmony between the subcultures, but it does suggest that they can be focused on a particular goal.

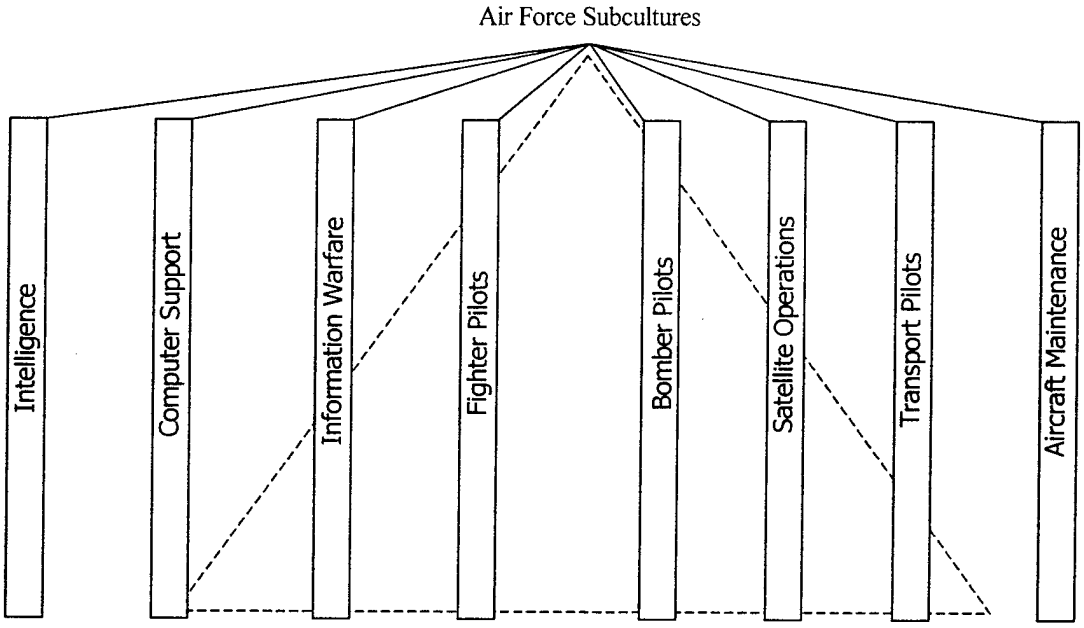

Figure 2
Disruption Resulting From a Lack of Common Assumptions

When that goal is transformed into something new, the types of missions undertaken by the Air Force can change dramatically as well. These missions and their requirements constitute the *task environment* in which the Air Force operates. As the task environment is transformed into something new, the Air Force will need to undergo a process of organizational change so that its structure is appropriate for its new requirements.

Organizational Change in the Air Force

An organization's relationship to its environment will change as the environment changes, or as the nature of the organization's function or membership changes. Wood wrote that

> We are inclined to think of our institutions as eternal but they are not. They constantly undergo the pressures of the society in which they are located. To survive as a growing concern, they change.[31]

Pfeffer and Salancik explained further that "when environments change, organizations face the prospect either of not surviving or of changing their activities in response to these environmental factors."[32] In many cases a threat to an organization's survival provides the incentive to adapt, lest the organization cease to exist. Changes in activities and organizational structures are based on a new understanding of the task environment and the internalization of new beliefs.

The Air Force, therefore, must be able to change. Small changes in its task environment are common and can often be incorporated easily. Significant changes that radically alter the environment, however, are more likely to require broader organizational change. One limitation of bureaucracies is that they are poorly suited to perform tasks that are not a part of their mission.[33] This is particularly true in a "closed bureaucracy" such as the Air Force, where new members are recruited only into entry level positions and are then expected to advance the service's core mission if they wish to be promoted.[34] In a stable task environment a bureaucracy's consistency is a valuable tool, but when uncertainty exists in an environment, this same quality can destabilize an organization.

Walker's study of the General Accounting Office (GAO) suggested a process of organizational change that occurs after the environment changes to such a degree that an agency needs to redefine its goals, its structure, and ultimately, its culture.[35] When the demands on an agency change to the point that existing practices are no longer

appropriate or sufficient, that organization needs to develop a new output. This involves

- A new organizational strategy with appropriate goals and objectives;
- A modified organizational structure, with hierarchical arrangements, planning mechanisms, and a personnel system appropriate for the new goals;
- A transformed organizational culture, with new ideology and rituals that reflect the new demands.

The new organizational culture institutionalizes the changes in strategy and structure.

Walker's point is that only with shifts in strategy and structure can public bureaucracies transform their culture, and thus, their behavior.[36] The goal is an organization that has adapted to the needs of its new task environment. The first step the Air Force would take in that process is transforming its organizational strategy.

The Basis for Organizational Strategy

Every organization, regardless of its size, has a set of beliefs, values, and patterns of behavior unique to that organization. Schein pointed out that any organization that has the opportunity to develop basic assumptions about itself in relation to the surrounding environment will create

> a pattern of basic assumptions -- invented, discovered, or developed by a given group as it learns to cope with its problems of external adaptation and internal integration -- that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to these problems.[37]

It is the unique aspects of these assumptions that differentiate the Air Force from other, similar organizations.

These assumptions serve as a facilitator. They allow members to understand and focus on their role within the larger organization. In this vein they also provide a

guiding motivation, offering a reason for doing different things. The beliefs and values embedded in the Air Force serve as the basis for the actions and behavior of the members.[38] Goffman wrote that the social arrangements developed within an organization facilitate interaction among members, and between members and outsiders. These arrangements serve to encourage desirable interaction while limiting undesirable behavior.[39] Informal myths, in addition to formal requirements, lead to the development of a structure to meet the needs of the organization.[40]

The basis for the Air Force's underlying assumptions is the mission it is given. Weber wrote that bureaucracies are based on the "pursuit of the interests which are specified in the order governing the corporate group" and the attainment of these interests comes through following "a consistent system of abstract rules...[and a] principle of hierarchy."[41] Simon emphasized that a "system of values whereby the consequences of behavior can be evaluated" is essential for rational behavior within a bureaucracy.[42] Halperin wrote that

> Since its inception as a separate service in the early postwar period, the dominant view within the Air Force has been that *its essence is the flying of combat airplanes designed for delivery of nuclear weapons against targets in the Soviet Union.*[43] [emphasis added]

The Air Force's mission is a critical factor in developing a set of shared assumptions that guide its operations.

These assumptions guide the development of values and relationships and help establish priorities among the myriad tasks the organization must accomplish. Schein wrote that values provide a sense of "what ought to be," and as they are articulated and become part of the organization's operating philosophy, they bring the group

together. These become the basic assumptions that are commonly accepted throughout the organization.[44]

In Walker's model, these assumptions serve as the organizational strategy. He defines the strategy as

> an institutional course of action that develops over time. It includes the key values the institution is to embody, the goals and objectives for the institution, and a partially explicit, partially implicit plan.[45]

The inputs to that strategy include organizational experience and the demands of the task environment, the character and beliefs of the leadership and the elite corps, and statutory mandates and Presidential orders.[46]

Walker's organizational strategy construct is similar to the concept of institutionalism. This school of thought suggests that social systems are largely influenced by *institutions*, which North describes as "the rules of the game in a society."[47] These may be formally codified and enforced, or perhaps informally adopted and transmitted by old members to new. They provide guidance to members of a social system, offering constraints that create opportunities, suggest appropriate forms of behavior, and provide reasonable expectations of the actions of individuals and the group as a whole.

Institutions may be grounded in regulative structures imposed from outside the group, the members' cognitive understanding of their environment, and the members' normative beliefs regarding what values are important -- the impact of each institutional form varies with the organization.[48] Though institutional dynamics may be more appropriate for describing a larger social system than the Air Force, Figure 3 shows how the general themes expressed in this school of thought are helpful in

understanding the development and adaptation of organizational strategy. The terms used in institutionalism will be helpful in exploring the transformation of the Air Force's organizational strategy.

Institutionalism	**Organizational Strategy**
Regulative Structures	Statutory Mandates and Presidential Orders
Cognitive Observations	Organizational Experience and the Demands of the Task Environment
Normative Beliefs	Character and Beliefs of the Leadership and the Elite Corps

Figure 3
Institutionalism and Organizational Strategy

Transforming Organizational Strategy

During the Cold War there were no revolutionary changes that demanded adaptation. The wars in Korea and Vietnam were treated as aberrations of the system and largely ignored.[49] The primary mission, nuclear deterrence, remained unchanged. New means of accomplishing that mission, such as intercontinental ballistic missiles, were only adopted unwillingly in response to external demands rather than internal beliefs.[50] With little or no threat to the Air Force's survival, its underlying assumptions were rarely questioned.

When change occurs, however, conflicting inputs resulting from transformation of the task environment quickly cause instability and a sense of disruption in the

organization. Cognitive observations of changing real-world requirements may clash with existing normative beliefs or regulative institutions. In this case, a redefinition of the organizational strategy must occur in which new assumptions are put in place of the old.[51]

Schein suggested a number of processes by which organizations adapt, such as continuous evolution over time, revolutionary change brought on by new leaders or new technologies, and directed change from outside policy makers. Different change processes occur at various stages in the life of an organization.[52] Incremental change is common, but adaptations to a new task environment require a broader transformation of underlying assumptions.[53]

Created as it was for a specific purpose, the Air Force is in the odd position of having moved quickly through Schein's organizational life cycle.[54] During the Birth and Early Growth stage, an organization tries to find its niche, but that niche was carved out for the Air Force with the assignment of its nuclear deterrence mission. The Midlife stage is when an organization develops the means to accomplish its tasks, but the Air Force was created specifically with "means" in mind, in the form of manned combat aircraft. As a result, the Air Force moved early into the Organizational Maturity stage, in which it is unlikely to voluntarily undertake organizational change.

Organizational Change Agents

Mature bureaucracies adapt their organizational strategies in response to a variety of change agents. Very often, leadership for change must come from outside the

organization. Regulative institutions can be changed by formal action taken by those to whom the bureaucracy reports. Often this takes the form of a directed change in mission. Wilson found that the Social Security Administration (SSA) changed dramatically following the addition of two new missions.[55] New requirements for the distribution of benefits conflicted sharply with the existing assumptions about the SSA's role, and ultimately led to a shift in the perspective of the its employees.

Policy makers' values can also be imposed upon agencies through a variety of external methods that affect organizational attitudes. Susan and Martin Tolchin showed how President Reagan managed to impose his pro-business attitudes upon Federal agencies through budgets and other means, leading them to cut back on regulatory efforts and slow their work to a standstill.[56] Clearly, external factors can lead to a transformation of an agency's basic assumptions. In tightly coupled organizations, where activities and informal institutions are closely tied to formal institutions, a directed change in mission or values can lead to a transformation of regulative structures and normative beliefs.

Basic assumptions may also be transformed through an internal learning process. For this to occur the agency must be designed to accomplish organizational learning, possessing the ability to recognize when and how assumptions need to change, and understanding how to implement that transformation. Schein suggested that the key to effective internal adaptation is a psychological "safety net" for those who have to change.[57] Employees need the assurance that their career will not be threatened simply because they are challenging existing assumptions.

Effective internal learning processes do not always exist in bureaucracies. One of the incentives for internal change is the threat to an organization's survival, but Weber points out that public bureaucracies are difficult to destroy.[58] Without an incentive for change such as organizational survival, many agencies will not bother establishing a means of organizational learning. In such cases, external direction is essential.

If neither external direction nor internal change are available, the organizational strategy may remain in a state of disequilibrium when faced with conflicts between cognitive, regulative, and normative factors. When members perceive a change in the environment, their perceptions can lead to new cognitive observations that conflict with existing normative beliefs or regulative structures. In the short term, such a conflict reduces the cohesion made possible by a more coherent organizational strategy, and in the long term, it inhibits the organizational change process.

Lessons From Incremental Change

Though there was no single, major transformation of the Air Force's task environment during the Cold War, there were incremental changes. Understanding how these changes occurred may shed some light on how changes in assumptions and behavior come about. Generally, one of two things must occur for changes in organizational strategy to take place: either there must be a clearly directed change from policy makers, or the Air Force must engage in organizational learning.

A change in mission or values from an outside source, such as Congress or the President, can lead to a change in basic assumptions.[59] This occurred, for example, with the passage of the Goldwater-Nichols Act in 1986, which emphasized

cooperation among the services, a concept that conflicted sharply with the Air Force's interest in independence. Over time this has led the Air Force to send its better officers to work with the other services rather than using such assignments as a place for personnel not targeted for further promotion. A change in mission or values from outside sources can significantly affect the Air Force.

Similarly, organizational learning within the Air Force can lead to a new understanding of roles and missions. This type of normative adaptation led to the change in preeminence from bombers to fighters. Tactical Air Command (TAC), which oversaw Air Force fighter planes, transformed its mission from that of escorting bombers to one of providing "theater airpower" and carrying lower-yield nuclear weapons. This allowed it to appear "strategic" in nature and enabled TAC pilots to assume dominance over the Strategic Air Command's bomber pilots.[60] This incremental change demonstrates how one subculture employed organizational learning to change its relationship with other subcultures. The Air Force as a whole could similarly adapt if such learning were employed Air Force-wide.

The creation of a new task environment can require significant changes in the Air Force. The first step in that change process is the transformation of the service's organizational strategy. Cognitive observations change as airmen perceive a new environment, but further change requires either clear external direction from policy makers or an effective organizational learning process.

The entire organizational change process, of course, may take quite some time, perhaps as long as a generation, before new leaders emerge who have spent their entire careers with an understanding of the new system. Changes in basic

assumptions can be embedded throughout the Air Force by such means as training, professional military education, doctrine, recruiting standards, or the research and development of new weapon systems. Before the change process can begin, a change agent must be used to transform the Air Force's underlying assumptions.

Conclusion

Though it shares common attributes with other bureaucracies and the other military services, the Air Force is a unique organization with its own identity. Its history, particularly the method of, and purpose behind, its creation has established it as a mature bureaucracy with a set of assumptions that are based upon its mission. As that mission is transformed, and the demands placed upon the service change, the conflict between real-world observations and pre-existing structures and beliefs can be disruptive, as demonstrated by a reduction in cohesion between the Air Force's myriad subcultures. The process of organizational change begins with the adaptation of the underlying assumptions that are the service's organizational strategy. These assumptions are unlikely to change on their own, but instead require either external direction or internal organizational learning in order to adapt.

Relatively little research exists regarding organizational change in the Air Force. The themes identified in this review of the literature suggest a framework for exploratory analysis and can aid in identifying areas for data collection. This will facilitate an analysis of a policy event that can further explore and identify important policy variables.

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CHAPTER 3
RESEARCH METHODOLOGY

This chapter discusses the methods used to study and understand the first step in organizational change within the Air Force. It begins by reviewing the goals of the research and their exploratory nature. Following a discussion of the researcher's role as a participant-observer, it explains the construction of an analytical framework and the methods of data collection. Finally, it discusses the testing of hypotheses and the presentation of theoretical conclusions.

Research Goals

The purpose of research generally falls within one or more of the following categories: exploration, explanation, description, or prediction.[1] Exploratory research is designed to identify important variables for subsequent explanatory, descriptive, or predictive studies. It is particularly useful for filling the gaps in the existing literature. Exploratory research of organizational change in the Air Force can yield critical information regarding the variables that are important in that process, allowing for identification of policy variables that are susceptible to influence and better appreciation for the likely effects of policy intervention.

The primary goal of this research project is to understand the process by which the Air Force adapts to significant changes in its task environment. Identifying key change

agents and understanding their effects requires an appreciation for the assumptions that underlie the Air Force's organizational strategy and the relationship between those assumptions and the task environment. A researcher acting as a participant-observer can facilitate an understanding of relationships within the Air Force as well as between the Air Force and its environment.

The Researcher as Participant-Observer

Intimate knowledge of the Air Force can facilitate an understanding of its internal processes. Habermas wrote that the primary field of inquiry in the social sciences is the "socio-cultural lifeworld" defined by a society's rules and the actions of its members.[2] The interpretation of this lifeworld is the basis of a thorough analysis. Walzer suggested that social interpretations extend beyond a recitation of practices and institutions to an understanding of the historical and cultural context that give them meaning.[3] Meaning is expressed not only through verbal and written means, but also through the institutions of a society and the actions of its members. A researcher must illuminate the background in order to make the meaning clearer. Such an illumination may best be achieved by the researcher's immersion in the lifeworld, encouraging a view of the larger context within which individual actions take on more meaning.[4]

This suggests a dual role for the researcher. If interpretive understanding requires knowledge of the rules and practices not only of inquirers, but also of the lifeworld, then Habermas would suggest that the interpreter must belong in some degree to the lifeworld being examined. A critical theory of a society demands that a researcher move between internal and external perspectives. Possessing only an external view limits the

effectiveness of an interpretive analysis, as disturbances in the internal infrastructure are likely to be missed by an observer who does not have a lifeworld member's intuitive knowledge.[5] A critic with an internal perspective has the ability to evaluate a society not only by his own standards but also by the society's standards.[6]

That is not to say, however, that an internal perspective alone will suffice. An observer operating with only an internal perspective is likely to miss distortions in communications with the external world, and will have a limited view of the effects of external factors on the lifeworld.[7] This is especially important in policy studies, where public agencies must be responsive to external demands. A researcher studying a public organization such as the Air Force should possess both an internal perspective as a participant and the external perspective of an observer.

The concept of an internal perspective contradicts the conventional view that social criticism requires an inquirer who remains distant from the society being studied. There are those, however, who challenge the wisdom of that assumption. Walzer suggests that radical detachment is not a requirement for social criticism; instead, he proposes a new model of a critic from within. This internal critic earns authority by arguing with his peers, while using new ideas from outside the lifeworld to add to existing intimate knowledge of the society.[8] Personal experiences and observation can help refine research questions, narrow the focus of a study, and suggest the organization of a theory.[9] Contrary to conventional wisdom, the researcher who can provide the best social interpretation is the one possessing both personal experience in the lifeworld and skills appropriate to an external researcher.

The author of this study is a Major in the United States Air Force with 13 years of active duty experience. That experience includes operational duty as an intercontinental ballistic missile (ICBM) launch control officer during the Cold War, academic duty as an assistant professor of military art and science at the US Air Force Academy, and staff duty as the principal author of Air Force doctrine for modern operations such as peacekeeping, counterterrorism, and humanitarian assistance. During this time the author has served as editor of a professional Air Force journal and as contributing editor of a book on American counterterrorism policy. He has published a number of articles in professional and academic journals on such topics as the professional culture of special operations forces, the effects of legislative policy changes on the military services, and the range of military operations commonly undertaken following the Cold War. The researcher's familiarity with the Air Force's internal processes and with the rules of inquiry facilitate the development of a framework for analysis.

Developing an Analytical Framework

A close examination of a single system can lead to an understanding of the important relationships in an organization. Von Herder wrote that every society is unique, with a distinctive pattern of values and beliefs, and Gadamer suggested that understanding the construction of a particular society, or "lifeworld," would lead to an understanding of the interaction between different elements of that society.[10] These points imply that broad generalizations are unlikely to effectively reveal the unique variables important to the Air Force's organizational change process. Rather than relying upon aggregate models, it is necessary to focus attention on the content of the Air Force's organization strategy.

In order to identify the variables affecting the Air Force's organizational change process, it would be helpful to analyze a particular event, focusing in this instance on changes in the Air Force following the end of the Cold War. The analysis of a single event allows for isolation of the variables unique to the Air Force, offering the potential for improved understanding of the organizational change process, and paving the way for future research into this military service as well as others.

The Air Force, as a clearly defined system with identifiable boundaries, provides an excellent subject for analysis.[11] In-depth study of a single event is a useful tool for an exploratory study because it helps identify variables that may be unique to this organization. Lijphart found such studies to be useful for developing and evaluating theories that provide a step toward understanding the nature of a particular system.[12] By focusing on the anomalies that make the Air Force unique, the researcher can better understand not only the organization under study but also what happens in a broader context when those anomalies do not exist.

Analysis of an event is particularly useful in policy studies because the researcher does not control the environment, as would be the case in a laboratory experiment. This lack of control can be helpful if it demonstrates that a theory is appropriate to the actual policy environment rather than simply to an ideal, hypothetical setting.[13] The effect of the end of the Cold War on the Air Force offers an example that will help identify the independent variables that are susceptible to policy intervention, enabling practical application of the research results.

There are potential limitations to studying a single event that must be understood and, where possible, overcome.[14] First, because the researcher is the primary data collection instrument, there is a potential for bias in gathering evidence. Strict criteria for data collection should be established and followed. Second, although conclusions may be applicable to other propositions within a particular system, care must be taken not to apply them to other populations without ensuring their applicability. In this case, for instance, the research is limited to a particular branch of the military. It would be inappropriate to apply the conclusions to the organizational field of national security organizations, or even to the set of military services, without first accounting for the differences between the individual organizations. Finally, this type of study can take an excessive amount of time, but limiting the time frame of the study can aid in overcoming this concern. Examining specific periods during and after the Cold War provides effective boundaries for the study that enable the researcher to focus data collection efforts where they are most useful. While there are limitations associated with analyzing a single event, their principle effect is to limit this approach to a particular type of project, such as the one presently being conducted.

Alexander George suggests a three-phase approach to studying a particular event.[15] First is the development of a theoretical basis for the study, second is collecting the data regarding the case, and the third involves using the results of the study to assess the ideas developed in the first phase. The theoretical basis stems from the statement of the research questions and a review of appropriate literature, both of which suggest avenues of inquiry in the analysis.

The research questions serve as the basis for analyzing the transition between Cold War and post-Cold War periods. They suggest the importance of understanding the basic assumptions regarding the role of the Air Force during the Cold War, and recognize the need to determine the degree of change brought about by the end of that era. Based in part on the researcher's existing understanding of relationships within the Air Force, the questions suggest potential change agents that might be used in organizational change. The analysis is structured to search for the application of these change agents in the present case. As a final step, the study examines the state of cohesion in the post-Cold War Air Force, which addresses questions of immediate concern while also enhancing understanding of the long-term effects of policies.

Employing a Reason-Action Approach to Understanding

One means of exploring an event is a reason-action approach. Reason-action explanations examine the activities of group members and external actors, and explain the reasons for their actions.[16] Understanding the reasons for actions in the context of a single event can help reveal variables in a policy process and suggest how they came to assume particular values. Weber wrote that this "explanatory understanding," or *verstehen*, extends beyond the mere mechanics of an action to include the cultural and historical context, and it is an important precursor to further understanding of causal relationships among variables.[17] North suggests further that to understand a process, it is important to understand the actor's perceptions and the context in which they develop.[18] The researcher should examine people's attitudes and actions, not merely as individuals,

but within the context of their past and current surroundings. Such an analysis enhances the applicability of a study's results to practical policymaking decisions.[19]

The analysis discusses the Air Force's organizational strategy during the Cold War and explores the reasons it took the form it did. It then examines the changing nature of the Air Force's task environment after the Cold War. Following that is a search for external and internal change agents, and an examination of the policy processes required for those change agents to be employed. Finally, it examines cohesion in the Air Force after the Cold War as it relates to the underlying assumptions of the service's role.

Understanding human action is not a purely causal endeavor, but instead requires a researcher to uncover the rules by which members of a society live and relate to one another. The interpretive measures used to understand a particular society are revelatory in nature and can bring to light heretofore unrecognized concepts.[20] It is important to access unquantifiable facts about relationships among members of a society.[21] The written record and empirical observation are especially useful for allowing a researcher to gain an understanding of the process and the meaning of different events.[22]

Data Collection Through Historical Inquiry and Explanation

One method of determining reasons for actions is historical inquiry and explanation, in which researchers make causal inferences by examining artifacts of social communication.[23] The written record of actions often contains a message that illuminates the reasons behind those actions. In an analysis of a particular event this could include the episodic record addressing the specific case in question, as well as a running record that provides more information as to the context and institutions of the lifeworld.[24]

Official documents can provide a record of events and offer insight into the thought process behind those events. Researchers can examine ideologies, themes, symbols, and similar phenomena to better understand agency activities. In addition, contextual records such as public statements in the media, Congressional testimony, and other means of voicing individual and collective thought offer significant data regarding the reason for official activities. Such latent content is useful for recognizing nonquantifiable factors, while manifest content is important for substantiating the researcher's interpretations. Historical analysis is particularly useful when assessing processes in organizations where public records exist, and can be extremely helpful in exploratory studies.

Historical analysis is particularly relevant for the Air Force. Neustadt and May point out that organizations have histories composed of "events" and "details."[25] Much can be understood about the Air Force and the potential effects of policy intervention if policy makers understand not only the major events in its history but also the contextual details that surround earlier actions. Reviewing official documents and other records of agency activities sheds light on major events, while an understanding of details gleaned through public statements and reviews by those outside the organization can help identify the critical factors in agency actions.

The analysis of the Cold War to post-Cold War transition begins with an examination of the environment as described in basic national security documents from the Truman administration through the end of the Cold War. A content analysis of basic Air Force doctrine during that period provides an understanding of the Air Force's normative beliefs, and is accompanied by an analysis of cognitive observations and regulative

structures. The degree of change inherent in the post-Cold War environment is explored by examining emerging threats and the demands of modern military operations as expressed in Department of Defense studies, multi-service doctrine, and post-mission analyses. A review of national security strategies published during the post-Cold War period provides data regarding the clarity and consistency of the requirements expressed to the military by senior civilian policy makers. This is complemented by an analysis of public statements by civilian and military leaders regarding the process by which those strategies are developed. An examination of the Air Force's professional military education system, using public documents and Congressional testimony, facilitates an appreciation for the Air Force's ability to engage in organizational learning. Empirical data collected from the Air Force Personnel Center, the Department of Defense, the Air Force Doctrine Center, private professional associations, and other sources are used in determining the degree of cohesion in the Air Force after the Cold War.

There are advantages and disadvantages to employing historical inquiry as a data collection tool. Perhaps its most important advantage is that it is virtually unobtrusive. By focusing on the written record, the researcher does not inadvertently affect the process being studied. It is also a cost-effective method in terms of both time and money. Finally, it provides a means of studying processes that occur over periods of time without requiring the researcher to wait and observe the entire process as it is completed.

One potential drawback is that, because the researcher selects the data, there is a potential for bias toward the researcher's *a priori* expectations. In order for subjective interpretations of data to be valid, Holsti makes the point that there must be criteria for

the selection of data. Consistent application of these criteria avoids concern that the investigator might only examine data supporting the theory or hypothesis.[26] Berg suggests that criteria "must be rigidly and consistently applied so that other researchers or readers, looking at the same messages, would obtain the same or comparable results."[27] The other potential weakness lies in the possibility that data relevant to the researcher's questions may not be available, as there is a reliance on messages that are already recorded. This weakness can be overcome, however, by employing document analysis as the primary method, and relying upon an alternative method, such as elite interviews, when the need arises.[28]

Data Collection Through Elite Interviews

Historical analysis offers advantages for this study, and potential disadvantages such as researcher bias or a lack of historical documents can be overcome by employing secondary data collection methods. Interviews are useful when research interests are clearly defined, and they are especially worthwhile when interviewing participants in past events.[29] Elite interviews fill in the gaps in historical inquiry. This allows for further explanation of historical data and offers an opportunity for rebuttal or clarification of data previously collected. As a result, the interviews not only add to the collection of data, they also serve as a check on the objective collection of historical data by the researcher.[30]

Seidman suggests that to be effective, interviews should use common questions to determine thematic connections between respondents.[31] Categories and themes emerge from multiple sources, including the research questions, results of the literature review,

and data collected from documents. Respondents' answers are collected and compared within these categories, and contrary opinions should be highlighted rather than ignored.

Despite the need for some degree of commonality, interviewing requires a flexible research design.[32] Rather than establishing a fixed number of respondents or a rigid set of questions, researchers should develop a general sense of what is required through their historical inquiry. A series of basic questions that allow for digression provides an effective starting point.[33] Questions should be descriptive enough to remain on the topic, but open-ended enough that they elicit the respondent's perspective rather than merely reflecting the interviewer's expectations. Potential respondents should not be randomly chosen, as in a controlled experiment, but instead should be selected based on their experiences and the insight they bring to the topic. It is likely that respondents will suggest other candidates for interviews, and the research design should be flexible enough that these suggestions can be pursued.

The basic questions in this interview process directly address the research questions. This conveyed the topic of interest to the respondent, and helped keep the interview on the relevant subjects. Given the short time allowed for each interview, it was important to keep the questions focused. At the same time, the questions were open-ended enough that the respondent's answers generated additional questions, allowing the interviewer to examine underlying reasons and contexts in a manner not always possible in historical inquiry.

This study solicited interviews from individuals in a position to observe and influence the Air Force's organizational strategy. In particular, they can observe the interaction

between these normative and regulative factors and service members' cognitive observations. The respondents include not only retired Air Force members, but also policy makers in the executive and legislative branches who can directly affect normative beliefs and regulative structures. Based on their position and experiences, the respondents were asked a series of questions drawn from one or more sets of topically-related questions. The lack of anonymity might have prevented some respondents from being completely candid, but the insights they shared can be compared with those gained from other individuals to provide a complete picture. The list of respondents and the question sets that formed the basis for the interviews are found in Appendix A.

The data collected through historical inquiry and elite interviews provided the content of the event analysis and allowed an examination of the events that unfolded and the context in which they occurred. Armed with this understanding, the researcher then employed this data to evaluate the hypotheses.

Evaluating Hypotheses

Hypotheses that can be effectively evaluated increase the confidence in the variables and relationships identified in the analysis. Though it is impossible to conclusively prove a subjective policy theory, an affirmative test of these hypotheses would lead to increased understanding of the factors identified in the theory, suggesting alternative propositions and interpretations for further research.[34] An outcome that is consistent with predictions may not prove a direct causal link between the earlier variables and cohesion, but it demonstrates there is a possibility of a causal relationship, suggesting that the identified variables warrant further study.[35] Such a result would be especially useful in this

exploratory study that attempts to identify important variables for the Air Force, rather than trying to provide a complete causal explanation for behavior.

With an understanding of the validity of these hypotheses, it is then possible to examine their implications. The Air Force has a statutory requirement to organize, train, and equip aerospace forces for operations. This study examines the relationships between different variables and suggests the implications for those statutory requirements when necessary organizational change does not occur. In particular, it explores the effect that a common understanding of mission and values plays in allowing the Air Force to organize, train, and equip its forces. This allows policy makers to understand the implications of action and inaction following a shift to a new task environment.

Theoretical Conclusions

Theory development is an iterative, rather than linear, process. Social phenomena cannot be understood without relating them to other phenomena and to the whole.[36] As a theory develops, and as the whole emerges, it is necessary to revisit the components of the theory and refine it. Data analysis is therefore used not only to evaluate themes but also to further develop them.[37]

Following the examination of the end of the Cold War and the testing of hypotheses and presentation of their implications, it is possible to develop a theory regarding organizational change in the Air Force. These theoretical conclusions describe a relationship among policy variables suggested by the analysis and validated by the testing of the hypotheses. They provide a first step toward further understanding of the Air Force and serve as a starting point for later research. Additionally, they offer policy

makers an understanding of the organizational change process, and may suggest appropriate courses of action.

Specific research questions provide direction and boundaries for a study. A comprehensive literature review suggests important themes that should be evaluated. Historical inquiry, using official documents and public statements, and following consistent criteria for data selection, can help the investigator understand the meaning behind actions that affect an organization. Empirical interview data further explains the actions taken in a particular policy event and sheds light on the reasons for, and effects of, policy alternatives. Evaluation of a series of hypotheses, conducted against rigorous standards that maximize the potential for a negative result, lends further credence to the identification of important variables. With an understanding of the relationships between these variables, it is possible to predict the implications of policy actions and make recommendations to policy makers and future researchers.

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CHAPTER 4
ANALYSIS OF THE TRANSITION BETWEEN THE COLD WAR AND POST-COLD WAR PERIODS

This chapter explores the factors contributing to organizational change in the Air Force by analyzing the transition between Cold War and post-Cold War periods. The first part of this analysis is an exploration of the Air Force's basic assumptions about its mission during the Cold War. Such an analysis will help determine the basis for the Air Force's organizational strategy.

This is followed by an examination of the task environment created after the Cold War, focusing on the threats to American interests and the range of missions the Air Force was suddenly called upon to perform. An understanding of the post-Cold War period will aid in identifying the degree of environmental change and the potential effect on the Air Force.

The analysis continues with a discussion of two organizational change agents that were available after the end of the Cold War: policy direction from civilian leaders and organizational learning within the Air Force. An examination of how these change agents were employed will suggest the potential for organizational change.

Finally, the analysis explores the cohesive effect of the Air Force's organizational strategy after the end of the Cold War. In doing so, it seeks to demonstrate the effects of environmental changes and organizational change agents on the Air Force.

The Air Force During the Cold War

The end of the Second World War and subsequent start of the Cold War represented a discontinuous change in America's national security environment. Isolation from world affairs was no longer an option for the United States. Instead, the US would take the lead in a competition between two superpowers. It was into this environment that the Air Force was born. Established by the National Security Act of 1947, which also created the Department of Defense (DoD) and Central Intelligence Agency (CIA), the Air Force was given the task of using manned combat aircraft and the atomic bomb to deter the spread of communism. Some observers at the time suggested that the reason for using atomic weapons over Japan rather than some other means to end the war was specifically to carve out a role for a new Air Force.[1]

The US government saw two options for containing the spread of communism: economic diplomacy or militarization. In the Soviet Union after World War II, Stalin initially advocated parallel strategies: peaceful outreach toward Europe and a military buildup to counter the United States.[2] He maintained massive armies, even as the US was demobilizing much of its force.[3] By late 1949, he added atomic weapons to the Soviet arsenal.[4] The Warsaw Pact was later established in response to NATO. America's militarization option effectively confronted concerns about national security, European integration, and Third World development; economic diplomacy did not.[5]

Atomic weapons were central to American strategy, but this is not to say that the US did away with conventional warfighting doctrine. Despite the demobilization following the war, it maintained a large standing military force for the first time in history.

American forces were permanently based in Europe to protect against a Soviet invasion through Germany. Still, the strategy of nuclear deterrence became the focus of American policy. A doctrine of massive retaliation led to a rapid buildup of America's nuclear arsenal, an arsenal that could be employed even short of total war.[6] As specific nuclear strategies evolved from counter-force, to counter-city, to assured destruction, the looming specter of the Soviet threat provided the focus for the Cold War.[7]

This analysis of the transition between the Cold War and post-Cold War periods starts with an exploration of the Air Force during the Cold War. It begins with an examination of the task environment that existed during the Cold War, from the time of President Truman through the Gulf War in 1991. This is followed by an analysis of the regulative structures, cognitive observations, and normative beliefs underlying the Air Force's organizational strategy. Through this review the relationship between the task environment and the Air Force's basic assumptions becomes clear.

Cold War National Security Policy

After World War II the United States accepted a leadership role far greater than any it had held before. Not only was much of Europe and Asia in ruins, but America's wartime ally, the Soviet Union, was demonstrating expansionist tendencies. George Marshall, Dean Acheson, Will Clayton, and George Kennan began laying the groundwork for a national security strategy of containment in early 1947.[8] The most significant military crises of subsequent decades -- Berlin, Korea, Cuba, Vietnam -- were grounded in superpower competition. The beginning of the Cold War marked the creation of a new task environment for the fledgling Air Force.

The important characteristics of that environment can be identified by examining basic national security documents from throughout the Cold War. Such documents, emanating from the President and his most senior advisors, illuminate the perception of threats and the mission given to the military, and in particular, to the Air Force. Though the names of these documents changed over time -- including National Security Council reports (NSC), National Security Action Memoranda (NSAM), Presidential Directives (PD), and National Security Decision Directives (NSDD) -- they all had the same purpose. These documents identify the threats to American interests and the means for addressing them. The complete list of documents that were reviewed for this analysis, with their full title and date of publication, are found in Appendix B.

During the Truman administration, in the years immediately following World War II, the concern for the Soviet threat was obvious. Early policies regarding individual countries -- such as NSC 1/1 addressing Italy, NSC 5/1 concerning Greece, NSC 6 addressing China, and NSC 8 regarding Korea -- emphasized the importance of resisting communist influence. America's role as the leader in the battle against communism was laid out in NSC 7, which stated that "[t]he United States is the only source of power capable of mobilizing successful opposition to the communist goal of world conquest."[9] The Soviets were identified as the primary threat in NSC 20, a belief later reaffirmed in NSC 139.

It was NSC 68, in April 1950, that clearly established the strategy of containment that would serve as the foundation for American security policy for forty years. This document offered the first use of the term "Cold War" and identified "atomic war" as the

primary threat to the United States, carrying as it did the risk of the destruction of the nation.[10] NSC 68 established the need to build up America's nuclear capability so that deterrence could be used to hold the Soviets at bay while diplomatic measures and covert operations could be used to thwart communist expansion efforts.

The military's deterrence mission was emphasized in NSC 135/3 and NSC 141 in 1952. The Air Force was highlighted as the primary means of ensuring deterrence in NSC 142, as strategic nuclear weapons at that time were delivered only by aircraft -- intercontinental ballistic missiles (ICBMs) and submarine-launched ballistic missiles (SLBMs) would come later. Strategic air capability was designed specifically to "inflict massive damage on the Soviet warmaking capability."[11] Though certain details would change as the environment evolved, the national security strategy of containment and the military strategy of deterrence would remain in effect throughout the Cold War.

The Eisenhower administration reaffirmed the Soviet threat and the importance of deterrence in NSC 162/2. Deterrence was viewed as a cost-effective means of meeting the Soviet threat, in that it was cheaper than a general war and less expensive than other proactive options.[12] American atomic weapons and the aircraft to deliver them were seen as the keys to national security.

The Soviet threat and the role of the Air Force remained the focus of national security during the Kennedy and Johnson administrations. The importance of airpower was emphasized in NSAM 82, which addressed the buildup of allied air forces. Soviet aggression during these years was met with increased emphasis on Air Force nuclear forces. NSAM 109 directed the development of additional nuclear contingency plans for

the crisis in Berlin, NSAM 58 established that Strategic Air Command was to be capable of maintaining the highest degree of alert for extended periods, and NSAM 147 led to the development of a nuclear cooperation program with NATO allies. Nuclear deterrence remained the primary mission of the Air Force.

The Nixon and Ford administrations brought increased reliance upon nuclear weapons as American biological and chemical weapons programs were terminated. The requirements of NSDM 35 and NSDM 44, which directed the US military to cease the testing, production, and planning for the use of such weapons, left nuclear weapons as the only weapon of mass destruction available for deterrence. In addition, the post-Vietnam military drawdown outlined in NSDM 84 specifically excluded any reduction in nuclear weapon systems. These policies firmly reinforced the Air Force's focus on nuclear weapons and deterrence.

President Carter published a national security strategy in PD/NSC 18 within 7 months after taking office. The 5 goals outlined in the strategy all addressed the communist threat and emphasized the need to counterbalance "Soviet military power and adverse influence."[13] The increased projection of Soviet power into the Middle East led to PD/NSC 62 three years later, which modified the earlier strategy and gave higher priority to deterrence. The nuclear weapons policies outlined in PD/NSC 59 reemphasized the need to increase deterrence systems in the face of growing Soviet nuclear capabilities.

Basic national security documents from the Reagan and Bush administrations remain largely classified and are unavailable for this study. However, those documents that are available emphasize the continuing threat posed by the Soviets and the role of the Air

Force in deterrence. Concern over Soviet expansion is found in such documents as NSDD 21, which addressed the presence of Soviet fighter aircraft in Cuba, NSDD 54, which outlined US policy toward Warsaw Pact countries, and NSDD 100, which advocated support to friendly South American governments fighting externally-supported insurgencies. Prior to publishing a national security strategy, the Reagan administration in 1981 published NSDD 12, a modernization program for nuclear weapon systems. This was followed by NSDD 69, which established a high priority for development of the M-X missile, and NSDD 91, which mandated modernization programs for the Air Force's nuclear systems, including the B-1 and stealth bombers, intercontinental ballistic missiles, and air-launched cruise missiles. Clearly, containment and deterrence were constants during the Cold War.

Non-nuclear actions, such as covert operations and certain low-intensity missions such as counterinsurgency and disaster relief, were used during the Cold War, but such missions were not the focus of the Air Force. Responsibility for planning and conducting guerrilla warfare in peacetime was assigned to the CIA in 1951 by NSC 10/4. In 1955, NSC 5412/1 directed the CIA to be responsible for all covert operations designed to weaken communist influence. The DoD's involvement in low-intensity conflict was expanded during the Kennedy and Johnson administrations by NSAM 2, NSAM 111, NSAM 114, and NSAM 146. These directives, however, were aimed at increasing the Army and Marine Corps' involvement in such missions, and did not address an expanded role for the Air Force. President Nixon explicitly made humanitarian assistance missions a State Department responsibility in NSDM 76, leaving the Air Force in a support role.

The Air Force's task environment in the Cold War was dominated by the perceived threat posed by the Soviet Union and the need to maintain an adequate deterrent capability. The Air Force was charged with the mission of providing deterrence so that other options, such as diplomacy and covert operations, could be employed without significant risk of general war. The importance of technology grew with each successive administration. Deterrence was a task upon which the Air Force focused to the near-exclusion of other mission areas, and an examination of the its regulative structures, cognitive observations, and normative beliefs will demonstrate the relationship between the task environment and the Air Force's organizational strategy.

Regulative Structures in the Air Force

Structures imposed upon an organization by policy makers have a significant impact. They provide the framework that allows an organization to focus its activities. Such regulative institutions may include budgets, organizational structures, specific mission directives, or a host of other requirements. This analysis will examine three aspects of the Air Force's regulative structure: the assignment of the nuclear mission, the unique command relationships of the Strategic Air Command (SAC), and the selection of personnel for senior leadership positions.

Since its inception in 1947, the Air Force has held the keys to the United States' nuclear arsenal. Before the advent of submarine-launched ballistic missiles in the 1960s, the Air Force was responsible for 90% of the nation's nuclear weapons. After that point it still controlled about 70%.[14] Throughout its history it has been assigned the task of strategic nuclear deterrence. Department of Defense Directive (DoDD) 5100.1,

"Functions of the Department of Defense and Its Major Components," was first published in 1954, and even as late as 1987 the first two missions assigned to the Air Force addressed the defense of the United States from air, missile, and space threats, while the third mission is "to organize, train, equip, and provide forces for strategic air and missile warfare."[15]

An understanding of military command structures will shed further light on the regulative institutions shaping the Air Force. Each military service is divided into major commands delineated by either geography or function. These commands are responsible for organizing, training, and equipping their forces, and their commanders report to the chief of their particular service. The commands do not actually conduct military operations, but instead provide forces to combatant commands, of which there are two types. *Unified commands* consist of forces from more than one service, and the commander-in-chief (CINC) of that command reports, not to the chief of an individual service, but to the Secretary of Defense and the President. The second type of combatant command, a *specified command*, is composed of forces from a single service. The CINC of a specified command reports to the Secretary of Defense and the President, just as a unified command CINC would.[16] Specified commands are rare, and reflect a mission of such importance that the forces must be under the direct control of the President and Secretary of Defense.*

The command structure of the Strategic Air Command demonstrates the priority given to the nuclear mission in the Air Force. Rather than being organized solely as a

* At the time of this study, there are no specified commands in the US military.

major command within the Air Force, SAC was a specified command, with a CINC who was responsible not only for organizing, training, and equipping his forces, but also for launching nuclear weapons when ordered. The Military Airlift Command, which oversaw the Air Force's transport planes, was also a specified command, but these forces merely provided support to combat operations. One former senior defense official remarked that SAC was the Air Force's "whole reason for being."[17] The greater responsibility given to SAC's leadership reflected the perceived importance of its mission relative to other types of Air Force combat operations.

Finally, the assignment of personnel to the position of Chief of Staff of the Air Force (CSAF) reflects the primacy of the nuclear deterrent mission. A review of the biographies of the chiefs of staff finds that from 1947 to 1982 every CSAF had an operational background in strategic bombers.[18] Not only were these individuals in a position to perpetuate the emphasis on nuclear deterrence and technology, their selection for the position also suggested to others that the nuclear mission was the path to the Air Force's senior leadership positions.

The regulative structures in place in the Air Force sent a clear message regarding the importance of certain functions within the service. The assignment of nearly all of the nation's strategic nuclear weapons and the authority and responsibility given to SAC and its airmen demonstrate the importance attached to nuclear deterrence. Civilian policy makers were clear in what they expected from the Air Force.

Cognitive Observations During the Cold War

The missions that airmen saw being conducted on a daily basis shaped their perception of the role of the Air Force. Nuclear operations were constantly ongoing at SAC bases, even during conventional wars such as Korea and Vietnam. Bombers were kept on alert and ready to take off on short notice. In periods of increased tension they were kept in the air to shorten their response time. These aircraft alerts continued until 27 September 1991, when President Bush ordered them to stand down. ICBM launch crews manned their command centers 24 hours a day, a function that continues today. From 1961 to 1990, an EC-135 "Looking Glass" aircraft was always airborne to serve as an alternate command post in case the SAC headquarters in Omaha was destroyed.[19] One ICBM launch crew member, who had volunteered to go to Vietnam because he felt the pace would be slower than what he was facing in SAC, noted that "the Cold War was a war that went on twenty four hours a day, seven days a week...There was an awful lot of things that went on, on a day to day basis, twenty four hours a day."[20]

Their observations of the task environment led airmen to see themselves as the first line of defense against communist expansion. A former B-52 pilot demonstrated the common perception within the Air Force of the threats to American security:

> My attitude towards the Russians in those days was we truly perceived them as a threat, to the extent in the early Sixties I recall buying a house and a selection of house with a lot that we could build an underground shelter. We received briefings, intelligence briefings and we truly perceived it as a threat and we felt that our mission was very important, compelled to do our jobs as they were told to us...I believe that we felt that the primary threat was that you could see Communism growing and that threat that when would it become our turn or the when would Communism begin to take over in those areas where we had strategic alliances with. And that's what we were very concerned with and that's why we had this formidable threat against the adversaries, the Russians.[21]

A retired airman who flew reconnaissance missions along the border of the Soviet Union expressed the perception of the role of the Air Force, and of SAC in particular:

> [t]hey could unleash this tremendous war machine that they had and about the only thing that we had on our side to counter that at that particular time in history was the Strategic Air Command. At that time, we had some two thousand B-47s, we had eight hundred B-52s, were bringing on some B-58s into the inventory. We had Titan missiles at that time, we had the Minuteman ballistic missile just coming on line at that time, [and] we were going to get a thousand of them. We had Atlas strategic missiles at that time, in the inventory, but that command [SAC] at that particular time was holding this Russian bear at bay and we knew that and we felt very strongly about that.[22]

The common perception was that the only thing standing between the US and the Soviet threat was the Air Force's nuclear capability

> [I]f it hadn't been for the ICBMs and the nuclear deterrents...if the Soviet Union, controlled under the leadership they had, had seen an opportunity to build their military industrial complex up to the point of making a first strike feasible, they very well would have done it. The only thing that prevented them from doing that was the fact that we had the counter-balancing forces, so that their first strike would never have succeeded.[23]

Airmen saw the threat posed by the Soviet Union and observed the missions the Air Force was routinely called upon to perform. These observations shaped the Air Force's basic assumptions regarding its mission.

Though the feared war with the Soviets never came, many mid- and low-intensity conflicts that affected the United States erupted throughout the Cold War. Often these involved Soviet surrogates and American proxies in conflicts ranging from invasions and wars like the Korean conflict, down to subversion of governments by insurgent forces. The Soviet strategy was designed to wear down opponents in small conflicts while the US focused its attention on its nuclear strategy. Cimbala writes that

> Expecting a global war against the Soviet Union begun in Europe, planners had given little consideration to the possibility of US involvement in limited wars supported by the Soviet leadership but fought by other governments and forces.[24]

American military doctrine, training, force structure, and weapon systems were all predicated on preparing for a global war with the Soviets. The US avoided low-intensity conflicts when it could, and when it could not, it tended to delegate such operations to its special operations forces or to the Marine Corps.

Though the Air Force participated in conventional wars and in low-intensity operations, these did not occur with anything like the degree of frequency of nuclear deterrent missions. Table 1 shows the average frequency of some types of conventional operations during the Cold War.

Table 1
Average Annual Frequency of Conventional Air Force Operations 1947 - 1991[25]

Type of Conventional Mission	Total Missions	Average Annual Frequency (Sep 1947 - Jan 1991)
Major Conventional War	2	.05
Strikes and Raids	3	.07
Disaster Relief	309	7.14
Foreign Humanitarian Assistance	116	2.68
Noncombatant Evacuation Operations	27	.62
Peacekeeping/Peace Enforcement	26	.60

Clearly, cognitive observations favored an emphasis on daily nuclear operations over intermittent conventional missions, suggesting to airmen that nuclear operations were the primary focus of the Air Force.

Evaluating Normative Beliefs in the Air Force

Air Force doctrine is an expression of the Air Force's corporate view regarding the use of airpower. It discusses the role airmen believe the Air Force can play in national security and explains the values and priorities that are important in ensuring the most effective use of airpower. A former senior officer at the Air Force Doctrine Center says that "doctrine is what identifies the Air Force as a separate service – it's our identity."[26]

An examination of Air Force doctrine throughout the Cold War demonstrates the normative beliefs regarding the service's mission. An initial review of the doctrine suggested eight categories of content. They include:

- High-intensity nuclear operations
- Low-intensity nuclear operations
- General discussion of nuclear warfare and deterrence
- Large-scale conventional conflicts
- Small-scale conventional conflicts
- Capabilities of aerospace technology
- Effective use of the aerospace environment
- Other (general discussions of national security, the purpose of doctrine, etc)

This was followed by a detailed examination of the doctrine during which each paragraph was grouped into one of the categories. The list of documents and the data sets are found in Appendix C. The analysis was performed twice to ensure that comparable results would be achieved in separate reviews. To facilitate presentation of the relevant data they are further grouped into larger, aggregate categories including Nuclear Operations, Conventional Operations, Technology, and Aerospace as a Medium for Operations. The results demonstrate the Air Force's corporate understanding of its mission and the values associated with that mission.

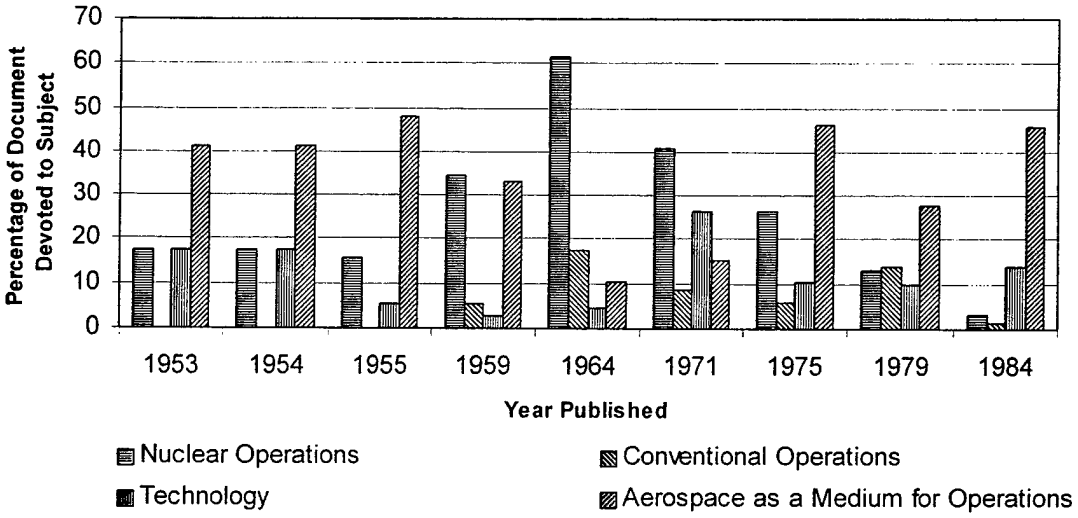

Figure 4
Content Analysis of Air Force Basic Doctrine During the Cold War

As depicted in Figure 4, the content analysis demonstrates a pattern consistent with Schein's model of an organization's life cycle. The first doctrine documents met the Air Force's need to identify its niche within its organizational field. The emphasis on the aerospace medium offered an explanation of the role this relatively new medium for military operations would play. The Air Force having been designed largely to take advantage of certain technology, particularly nuclear weapons, it is not unexpected to see an early emphasis on technology and nuclear operations rather than on conventional missions. By the early 1960s the Air Force entered its organizational midlife and focused on explaining the means by which it would fill its niche, primarily nuclear technology. Finally, as the Air Force reached maturity the importance of nuclear operations over conventional missions was clearly established. During the 1960s and 1970s, entire chapters were devoted to high-intensity and low-intensity nuclear operations.

Conventional operations were mentioned briefly, and low-intensity conventional missions were given little attention.

A natural evolution in normative beliefs is demonstrated by the increasing discussion, starting in 1975, of the use of aerospace as a medium for operations. The lessons learned from the Vietnam War were incorporated into the Air Force's belief system and a new emphasis emerged on the importance of understanding the principles by which aerospace power can be employed effectively, rather than simply on specific missions. It should be noted, however, that much of the discussion of these principles addressed the use of aerospace power in a large conflict. Normative beliefs in the Air Force continued to demonstrate a singular focus on developing the means to prevent, and if necessary fight, a large war, whether nuclear or conventional.

The task environment during the Cold War included an obvious enemy, a recognizable threat, and a clearly defined mission for the Air Force. Containing Soviet expansion through nuclear deterrence was the cornerstone of American security policy and served as the fundamental purpose of the Air Force. Regulative structures imposed upon the Air Force, such as the unique command structure of SAC, demonstrated the importance of nuclear deterrence to airmen throughout the service. Cognitive observations of ongoing operations showed that nuclear operations were continuous, while other types of missions were relatively rare occurrences. Normative beliefs, as demonstrated in doctrine, clearly showed a recognition of deterrence as the fundamental objective of the Air Force. The importance of the Soviet threat and the associated

mission of deterrence during the Cold War suggests that the removal of that threat would lead to significant changes in the Air Force's task environment.

The Air Force's Post-Cold War Task Environment

Scholars have defined a number of points as "the end of the Cold War." For the purpose of this study, that point will be defined as the initiation of Operation DESERT STORM in January 1991. The Gulf War was the first major post-World War II conflict that did not represent an underlying conflict between the United States and the Soviet Union. The war was fought without concern that the Soviets might intervene and potentially escalate the conflict to a nuclear war between the superpowers. This marked a defining moment in national security, and it offers a suitable distinction between the Cold War and post-Cold War periods.

Despite predictions to the contrary, new tensions have emerged following the end of the Cold War. Samuel Huntington suggested that new conflicts would replace old ones when he wrote that

> People and countries with different cultures are coming apart...Cultural communities are replacing Cold War blocs, and the fault lines between civilizations are becoming the central lines of conflict in global politics.[27]

General Michael Dugan, former Chief of Staff of the Air Force, suggested that the dynamic East/West tension of the Cold War kept many potential conflicts in check, and the reduction in that tension has enabled the emergence of very diverse conflicts.[28] The "New World Order" proclaimed by President Bush in 1991 became an environment filled with new threats to American security, new definitions of national security interests, and new demands being placed upon the US military. Dr. Sheila Widnall, who was Secretary

of the Air Force from 1993 to 1997, said of the end of the Cold War, "I believe it represented a transition to an entirely new environment."[29]

A review of the threats to US security and the responses to those threats will reveal much about the new environment. Official publications such as the Secretary of Defense's Bottom-Up Review and Quadrennial Defense Review (QDR) and the National Defense Panel's (NDP) 1997 report offer insight into the threats in the environment. The Secretary's reports provide the administration's official view of the threats to American interests and the need for military capabilities, while the NDP offers further details regarding new security threats. A review of these documents sheds light on the post-Cold War period, which is further defined by an examination of the emerging types of missions used to respond to those threats. An understanding of the range of missions helps identify the demands placed on the military and the subsequent change in focus for the Air Force.

President Bush's 1991 national security strategy declared that

> The bitter struggle that divided the world for over two generations has come to an end. The collapse of Soviet domination in Eastern Europe means that the Cold War is over, its core issue resolved. We have entered a new era, one whose outline would have been unimaginable only three years ago.[30]

The Bush administration had already started examining the changing Soviet threat and devising a means of reducing the size of the US military. The plan, known as the Base Force, proposed a smaller military because of the end of the Soviet threat, but other than the emergence of increased regional tensions, it did not consider the likelihood of a wide range of threats.[31]

The first in-depth DoD analysis of the new environment was published in 1993. The Bottom-Up Review: Forces for a New Era outlined emerging threats as well as new opportunities resulting from "the revolutionary nature of recent changes."[32] These included an expanded danger of attack by nuclear means and other weapons of mass destruction due to the continuing proliferation of such weapons, the increased threat of both internal and international regional conflicts affecting American interests, and threats to reform in many newly emerging democracies.[33] A Defense Science Board report later highlighted the increased risks posed by transnational threats, such as terrorism, illegal narcotics trafficking, and insurgent forces.[34] The DoD's 1997 Quadrennial Defense Review pointed out that the new era brought emerging threats running the gamut from transnational dangers, to regional conflicts, to direct threats against the United States in the form of terrorism, information warfare, and the remaining strategic nuclear arsenals of nations such as Russia and China.[35] The perception of senior policy makers seemed to be that a new era of multiple threats had replaced the earlier focus on a single threat.

Review panels chartered by the DoD offered further understanding of the new task environment. The National Defense Panel released a report, Transforming Defense, in December 1997. It pointed out that geopolitical trends such as new ethnic, cultural and religious polarizations as well as the redrawing of national boundaries and the emergence of strong non-state actors, created challenges very different from those of the Cold War. According to the panel, threats to the US homeland now included not only strategic nuclear attack, but also terrorism, information warfare, cruise missile attacks, and attacks on critical infrastructure such as key computer systems. In addition, increased regional

instability threatened American interests in a period of increased global integration, at a time when American forces had decreased their overseas presence.[36]

Just as relationships with adversaries changed, so too did relationships with allies. One former NSC staff member noted that NATO countries viewed arms control treaties during the Cold War as a means of keeping the Soviets in check. Agreements such as the Strategic Arms Limitation Talks and the Conventional Forces in Europe treaty were used to limit the Soviet military. In the post-Cold War period, multilateral treaties such as the Biological Weapons Convention and a treaty banning anti-personnel land mines were viewed as a means of imposing norms upon American actions.[37]

Policy makers recognized the need for transformation of the military to meet the new challenges of the post-Cold War era. President Clinton noted in his 1998 national security strategy that

> The military challenges of the 21st century, coupled with the aging of key elements of the U.S. force structure, require a fundamental transformation of our military forces. Although future threats are fluid and unpredictable, U.S. forces are likely to confront a variety of challenges across the spectrum of conflict, including efforts to deny our forces access to critical regions, urban warfare, information warfare, and attacks from chemical and biological weapons.[38]

Starting in 1998, each edition of the Secretary of Defense's Annual Report to the President and Congress devoted one or more chapters to the need for the transformation of military forces to meet the demands of the post-Cold War era.[39]

Military Operations Other Than War

The needs of the post-Cold War period demanded a flexible, multifaceted military response. General Ronald Fogleman, former Air Force Chief of Staff, remarked that the

Clinton administration was wary of the military early on, but soon realized how responsive it could be and came to depend on it greatly.[40] This led military planners to develop a concept known as the Range of Military Operations, which is divided into War and Military Operations Other Than War (MOOTW). War is defined by the US military as "open and often prolonged conflict between nations (or organized groups within nations) to achieve national objectives."[41] MOOTW could simply be defined as "everything else," but that would not begin to describe the vast range of operations conducted within this category. An examination of the range of missions commonly undertaken by the Air Force will demonstrate important characteristics of the post-Cold War task environment.

Air Force participation in MOOTW is extensive, resulting in a sharply increased rate of deployment for airmen. In 1989 an average of 3,400 Air Force members were deployed at any given time, compared to an average of 14,600 by 1997. Approximately 750 airmen were required to man open-ended contingencies in 1989, compared to 12,000 in 1997. At the same time, the size of the Air Force was reduced from 566,529 people in 1989 to 373,356 in 1997. The effect on airmen has been dramatic, as demonstrated in Table 2.

Table 2
Air Force Deployment Rates for MOOTW in 1989 and 1997[42]

	1989	1997
% of Air Force personnel deployed on average	.60%	3.91%
% of Air Force personnel required for open-ended contingencies	.13%	3.21%

This development was not totally unexpected. One former Air Force Chief of Staff remarked that the Air Force in the Cold War had an offensive posture, but the post-Cold War period required a defensive posture, and "the problem with defense is, you have to defend everywhere."[43] This resulted in more personnel deploying from their home bases to remote locations, rather than conducting operations from existing bases.[44]

Combat Operations	Overlapping Operations	Noncombat Operations
Enforcement of Sanctions	Combating Terrorism	Arms Control Support
Enforcement of Exclusion Zones	Counterdrug Operations	Domestic Support Operations
Protection of Shipping	Ensuring Freedom of Navigation	Foreign Humanitarian Assistance
Strikes and Raids	Noncombatant Evacuation Operations	Nation Assistance
	Peace Operations	Show of Force
	Recovery Operations	Support of Insurgency

Figure 5
Types of MOOTW[45]

The post-Cold War task environment was typified not merely by the number of deployments, but more importantly, by the wide range of missions undertaken. There are 16 unique types of operations that are considered MOOTW. Some fall into the realm of "non-combat" missions, others generally involve combat, and some overlap between combat and non-combat. Figure 5 shows the different missions.

Though there are some common principles that bind these operations together, there are also significant differences that make each unique. Additionally, there are variations

within many of these mission areas. Peace operations, for instance, can include both peacekeeping, typically a noncombat operation, and peace enforcement, which often entails a significant risk of conflict. Foreign humanitarian assistance might consist of providing immediate relief following a disaster or long term relief addressing chronic conditions. It is clear that all of these operations cannot be treated as equivalent.

An attempt to examine and compare all of these types of operations is beyond the scope of this study. In order to analyze the sharp contrasts between mission areas, it will be useful to examine and compare four different types of operations that are conducted by the post-Cold War Air Force. These include Disaster Relief, Noncombatant Evacuation Operations, Peacekeeping, and Peace Enforcement. Information drawn from joint-service doctrine and published reports of actual operations allows for the development of a model for understanding each mission type. The selection of missions represents the spectrum from noncombat through combat.

Disaster Relief (DR)[46]

One form of foreign humanitarian assistance is the provision of relief immediately following a natural or man-made disaster that is beyond the host nation's ability to respond. American military power can be used to move relief supplies quickly into the region and allow the local government time to coordinate its response efforts. These missions are limited in scope and duration; the goal is not to rebuild the nation but instead to supplement host nation agencies and relief organizations in the immediate aftermath.[47] Both during and after the Cold War, disaster relief has been one of the most common forms of MOOTW conducted by the US military.

Political goals are of limited importance in these operations; American involvement is often driven more by humanitarian interests than security concerns.[48] Military operations are conducted in support of humanitarian objectives, so military commanders can expect to work closely with international relief organizations that in many cases are familiar with the region and the requirements of such an emergency. The risk to forces tends to be low, so in order to avoid provoking a conflict, US forces adhere to strict rules of engagement (ROEs), and find lethal force to be of little, if any, use. In 1991's Operation SEA ANGEL, following a typhoon in Bangladesh, the task force commander ordered that only those Marines guarding secure communication equipment would carry weapons ashore.[49] Force size varies, depending on the needs of the specific operation, but in some cases can be quite large.

Noncombatant Evacuation Operations (NEO)[50]

NEOs are characterized by uncertainty and may be directed without warning because of a sudden hostile threat to US citizens from a force within or external to a host country. They often involve the evacuation of American embassy personnel, who are typically among the last to leave an area during a crisis. NEOs are not extremely common because the US hesitates to abandon an embassy, even during a crisis, though these operations have occurred more frequently since the end of the Cold War in response to the significant increase in intra-state conflict.

US foreign policy objectives are the determining factor in the timing of an evacuation, and thus, NEOs have a uniquely political nature. The dominant objectives, however, are the safety and care of American and allied evacuees. Once an evacuation

begins, these military goals take precedence. Due to the extensive role played by the embassy staff, there will be significant interaction with civilian US government agencies, but interaction with relief agencies and other nongovernmental organizations (NGOs) will generally be limited to those members of NGOs who are being evacuated. The State Department will closely monitor all facets of the operation. The order to evacuate may not be given at the most opportune time, but rather may be delayed until the last possible moment to avoid actions that may be viewed as a tacit admission of political failure. As a result, the environment may often be categorized as uncertain or hostile.

Once initiated, NEOs are fast-paced missions designed to remove noncombatants from danger. The bulk of the evacuation from Tirana, Albania, in 1997 was completed within 48 hours, though forces remained in-country for another week to ensure all noncombatants wishing to leave had the opportunity to do so.[51] One objective of such an operation is to avoid US involvement in any civil unrest or internal conflict, so the evacuation is conducted using a small force, with precise rules of engagement dictating the use of appropriate and proportional force in self-defense. While military forces must be prepared to defend themselves and evacuees, the use of lethal force has the potential to draw the US farther into a conflict. Plans typically call for only limited use of lethal force, though additional force is prepared should the situation deteriorate.

Peacekeeping (PK)[52]

One US definition of peacekeeping, found in the Army's Field Manual 100-23, *Peace Operations*, emphasizes that consent of all the major entities is essential for such an operation:

> PK [peacekeeping] involves military or paramilitary operations that are undertaken with the consent of all major belligerent parties. These operations are designed to monitor and facilitate implementation of an existing truce agreement and support diplomatic efforts to reach a long term political settlement.[53]

Not only does this consent demonstrate the possibility of a peaceful resolution to the conflict, it also increases the safety of the peacekeepers. To ensure this safety and to continue to be accepted by all parties, it is important that the members of the force be impartial, treating all entities in the same fashion. They also avoid provocation of further conflict by maintaining a small force size, especially as compared to peace enforcement, and strictly limit the use of lethal force through restrictive rules of engagement. A significant function of the operation involves monitoring truce agreement rather than enforcing it; the use of force is limited to self-defense, and in many cases peacekeepers will withdraw rather than engage in combat.

The ultimate goal of a peacekeeping mission is to maintain an environment that allows a political resolution to be achieved. The lesser degree of risk that is common in this environment often means that relief agencies will coordinate their activities with military forces, but will require less direct support and interaction.

Peacekeeping missions are often extended in duration as it may take a long time to overcome the difference that led to conflict. Some missions demonstrate very slow progress, if any; operations in Cyprus and the Sinai Peninsula have been underway for decades. While the degree of participation by US forces increased sharply in the 1990s, American forces still do not participate in all of the UN- and regional organization-sponsored peacekeeping operations in the world. Even when US ground forces are not part of a peacekeeping mission, however, the Air Force often supports participating

nations with cargo aircraft, to the point that by 1995 the Air Force had participated in almost as many peacekeeping operations has it did throughout the entire Cold War. The long term nature of such missions and the small degree of risk to peacekeepers generally results in little day-to-day oversight by civilian leaders as diplomatic efforts continue.

Peace Enforcement (PE)[54]

Definitions of peace enforcement vary between different countries and international organizations. According to US doctrine, "[t]he goal of PE operations is to enforce the provisions of a mandate designed to maintain or restore peace and order. In PE the military uses force or the threat of force to coerce or compel compliance with resolutions or sanctions."[55] Force may be threatened or employed to terminate fighting, restore order, and create a peaceful environment conducive to resolving a dispute. These missions are designed not to solve the underlying problems of a conflict but to create conditions in which a political resolution can be pursued. Participation in PE is reserved for times when vital or important national interests are at stake, so they are uncommon, and tend to last for a significant duration. The Implementation Force in Bosnia, for instance, was in place for a year before transitioning to a peacekeeping mission.

Peace enforcers generally have full combat capabilities, although there are likely to be restrictions on weapons and targeting, depending on the operation's mandate and the tactical situation. The rules of engagement for peace enforcement operations are based on the standing ROE for US forces, which are tailored to the requirements of the particular operation.[56] The risk to forces, the potential for combat, and the primacy of political objectives lead to a significant amount of oversight on the part of political leaders.

Peace enforcement operations are typically one component of a larger complex emergency, and as a result the military will not be the only agency involved. Civilian government agencies from many nations, international organizations, and nongovernmental organizations will all be part of the effort. US military guidance for commanders suggests that in peace operations, interagency coordination may be a commander's highest priority.[57]

Distinguishing Factors in MOOTW

Military operations other than war tend to be different not only from warfighting, but also from each other. There are a number of factors that distinguish MOOTW from warfighting, but that does not mean that each of these operations demonstrates these characteristics in the same fashion. While MOOTW may generally involve less sustained conflict than does traditional warfare, that is not to say that peace enforcement and disaster relief share a similar risk of combat. A relative measure of eight characteristics shows how each plays a different role depending on the type of operation.

Frequency

Figure 6
Relative Frequency of Operations Following the Cold War

Foreign humanitarian assistance missions in response to natural disasters were among the most commonly occurring operations for the Air Force in the 1990s, as shown in Figure 6. These operations are often undertaken for humanitarian reasons, rather than just in response those disasters affecting vital or important security interests, and thus, an American response is common. Peace enforcement operations were the most rare, consisting of the Implementation Force mission in Bosnia and the Kosovo Force mission following the war there in 1999. Peacekeeping missions occurred about twice as often as NEOs.[58]

Duration

Figure 7
Relative Duration of MOOTW

Evacuations are immediate in nature, designed to quickly remove noncombatants from harm's way, and as Figure 7 demonstrates they tend to be the shortest missions, often completed within days. The bulk of a disaster relief effort may extend for a month or two, but these missions are expected to provide immediate response, not long term recovery. The commander in Operation SEA ANGEL, for example, directed that the mission last no longer than 5 weeks.[59] While it is not always appropriate to set a specific end-date, this mandate demonstrates the limited duration of these operations. Peace

enforcement missions will, ideally, lead to peacekeeping, which often requires a long period of time before a political solution can be attained.

Primacy of Political Objectives

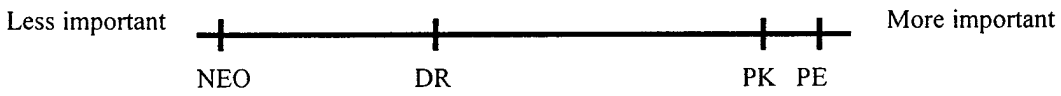

Figure 8
Relative Role of Political Objectives

In short term rescue and relief operations, military objectives such as protection of civilians and the provision of immediate shelter and aid will be among the most essential objectives. Disaster relief missions tend to consider some political requirements such as avoiding infringements on host-nation sovereignty. As Figure 8 shows, in longer-term conflict resolution environments, especially those with an increased risk of combat, the ultimate political goals will remain the focus, with the military objectives designed to provide a supportive environment. In peacekeeping operations, forces will often withdraw rather than engage in combat, emphasizing the importance of personnel safety over political objectives, suggesting that such objectives are slightly less important than they would be in a peace enforcement mission.

Military-NGO Interaction

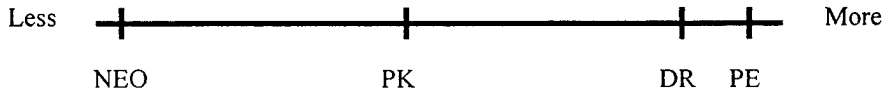

Figure 9
Relative Degree of Interaction Between Military Forces and NGOs

The interaction between military forces and nongovernmental organizations that is depicted in Figure 9 reflects the presence of nongovernmental relief agencies in natural disasters and other, more complex, emergencies. The military role in disaster relief operations will typically be in support of nongovernmental relief agencies that perform this sort of mission as their primary duty. In peace enforcement, the military will work not only with relief agencies, but often with international civilian police and government administration and oversight organizations. Interaction is very limited in evacuation operations, and plays a fairly small part in the observation mission of a peacekeeping operation, where coordination is more common than direct support.

Lethality

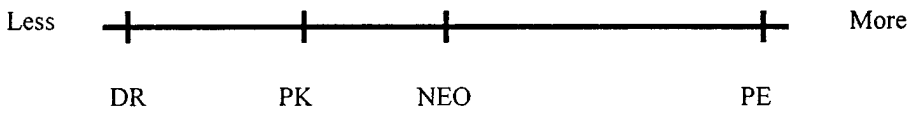

Figure 10
Relative Use of Lethal Force

Figure 10 demonstrates that the threat and use of lethal force will be far more common in higher-risk missions such as peace enforcement. Where possible, however, non-lethal force is still preferred. NEO forces will attempt to complete the evacuation without becoming involved in local conflicts or provoking a response to the evacuation, and so they try to limit the application of force. In non-combat missions such as disaster relief, and in some peacekeeping missions, withdrawal of personnel may be preferred over the introduction of lethal force. The use of lethal force is closely related to the United States' interests in a region; missions undertaken for predominantly humanitarian reasons are far less likely to be completed if the situation requires lethal force.

Rules of Engagement

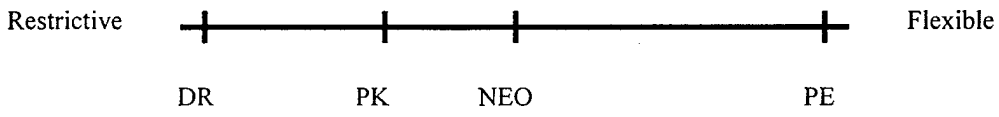

Figure 11
Relative Flexibility in the Rules of Engagement

Rules of engagement constrain the use of force. ROE are more restrictive in noncombat environments, where little threat is expected or where the inappropriate use of force could adversely affect political objectives. Figure 11 shows that ROE are more flexible when the situation is dynamic and unstable or where the threat is known to be greater, whether to US civilians or military forces. Though still more restrictive than the ROE employed in war, the rules in peace enforcement operations allow far more latitude than those in low-risk missions where combat is not expected. In all cases, of course,

military forces maintain the ability to defend themselves.

Force Size

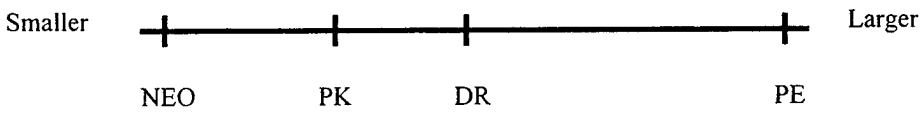

Figure 12
Relative Force Size

Figure 12 demonstrates how the size of a force will be determined by an operation's objectives, the size and location of the area of responsibility, and the threat. NEOs are generally designed to evacuate a small number of people from a concentrated area, and thus require a smaller number of forces. Peacekeeping missions should avoid a large troop presence, which may be provocative. Disaster relief forces will often be large for a short but quick and effective response. PE forces will tend to be large at first, but ideally will diminish over time as the environment becomes more stable.

Political Oversight

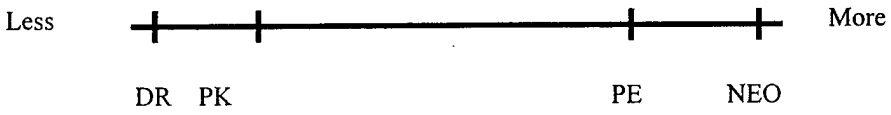

Figure 13
Relative Degree of Political Oversight

As Figure 13 shows, there appears to be little correlation between the primacy of political objectives and the degree of political oversight of an operation. Instead, oversight from the civilian leadership tends to be higher in short term missions with a higher degree of risk to Americans. Peace enforcement missions place US troops into a combat environment, leading to a high degree of political interest and involvement. NEOs not only place military forces at risk, but also are conducted in situations where American diplomats and civilians are threatened. Low-risk operations such as disaster relief receive little political attention. Some peacekeeping missions receive more oversight than others; while there was significant attention given to operations in Bosnia-Herzegovina, there was little political oversight of the US contribution to UN peacekeeping operations in the Western Sahara.

Each type of operation demonstrates various characteristics in different degrees. There is no consistent relationship between them; that is, peace enforcement is not always at one end of the scale, with NEOs at the other. Instead, it becomes clear that each type of operation has a unique nature that is just as different from other MOOTW as from warfighting. It is useful to put these four types of missions on a common scale to compare their relationships in terms of these different factors. Using a graph such as Figure 14 offers a means of comparing the relative weight of each characteristic.

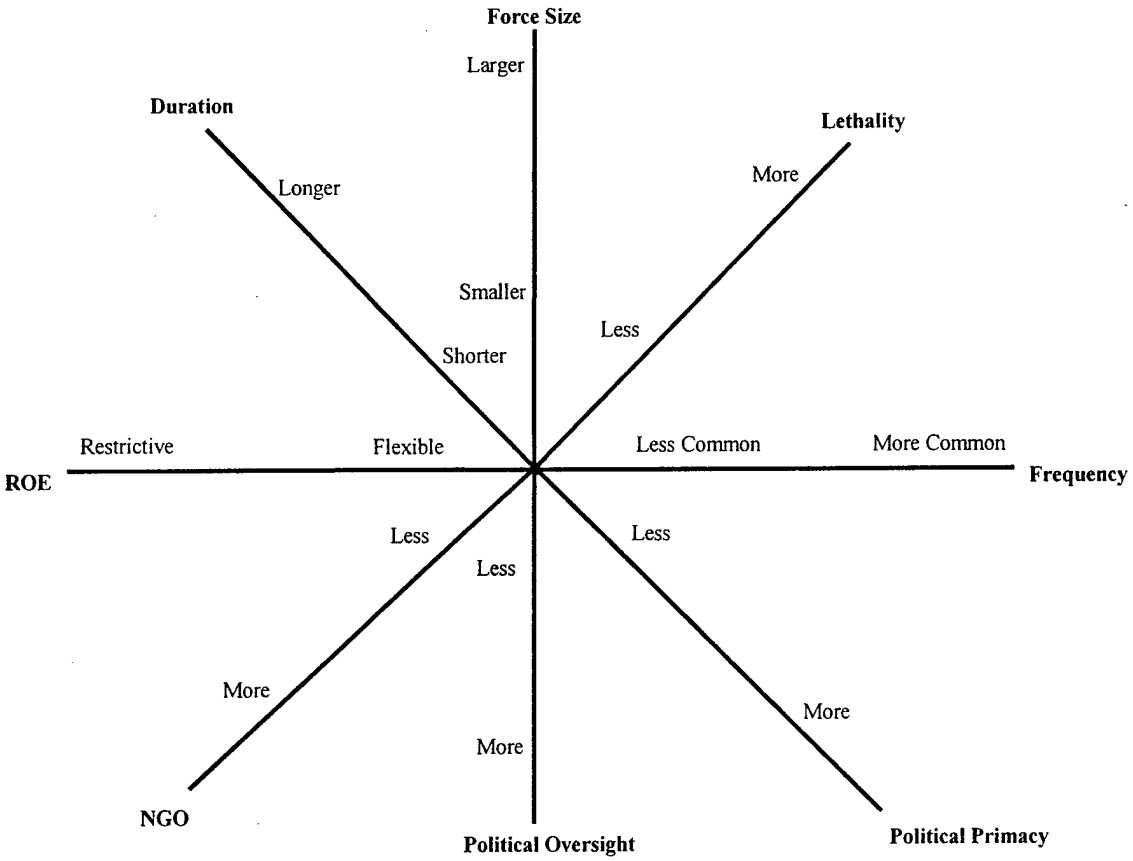

Figure 14
Comparison Graph

Using the information from Figure 6 through Figure 13, it is a simple matter to plot the relative impact of each characteristic in different types of operations. Figure 15 demonstrates the sharp differences between the four mission types.

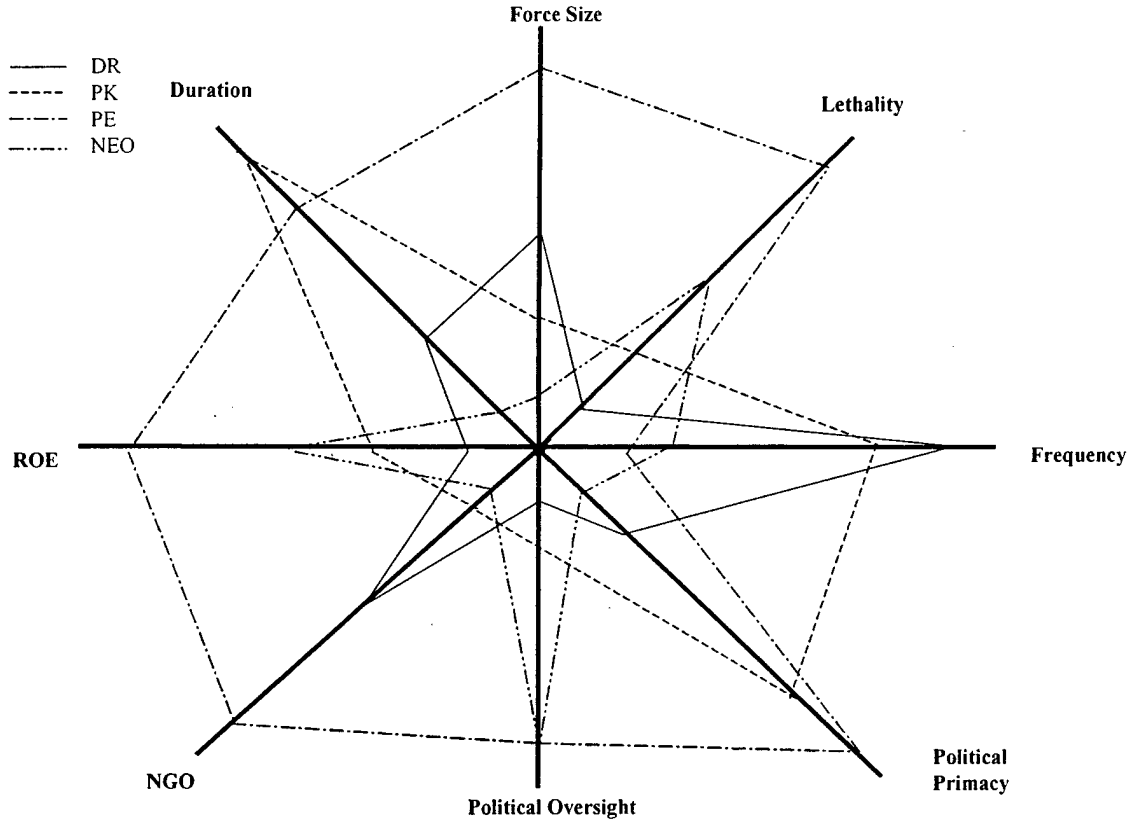

Figure 15
Comparing the Four Types of MOOTW

Figures 16 through 19 show the degree of effect that each characteristic has on the individual mission types. The fact that each shape is markedly different, rather than simply being the same shape on a different scale, emphasizes the fact that there are important distinctions between the missions.

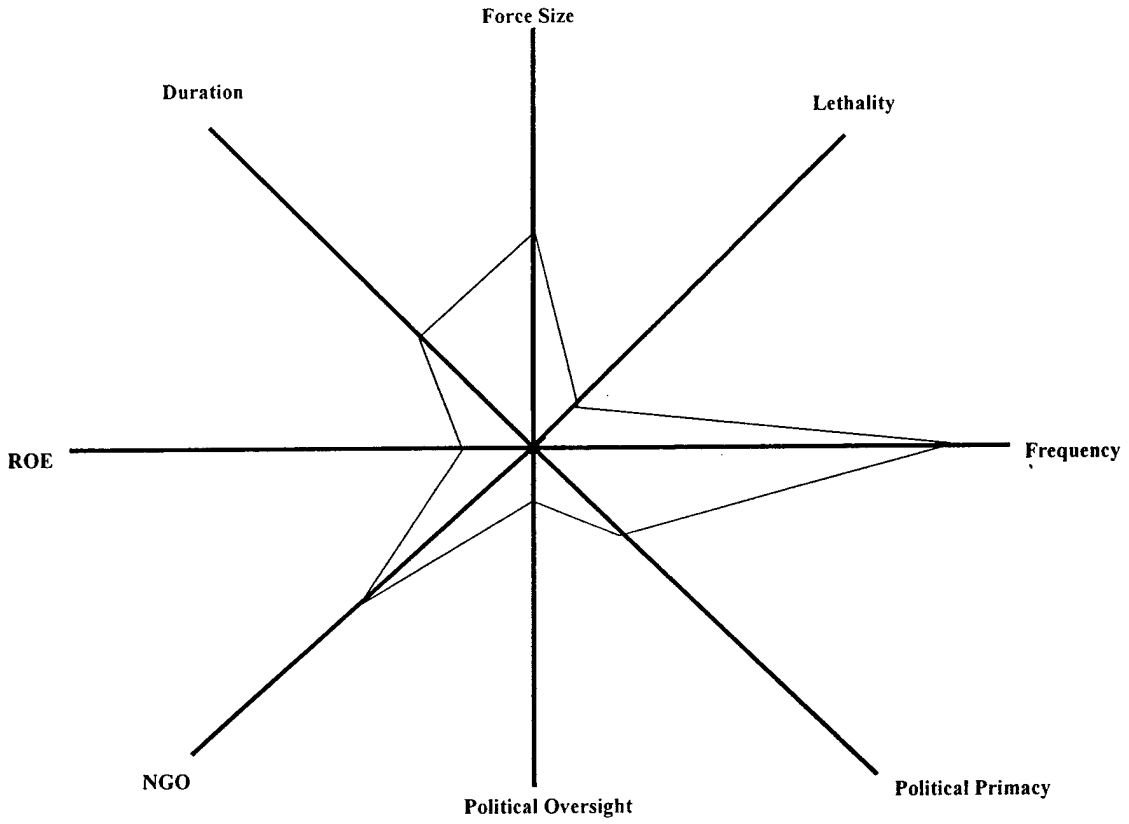

Figure 16
Disaster Relief

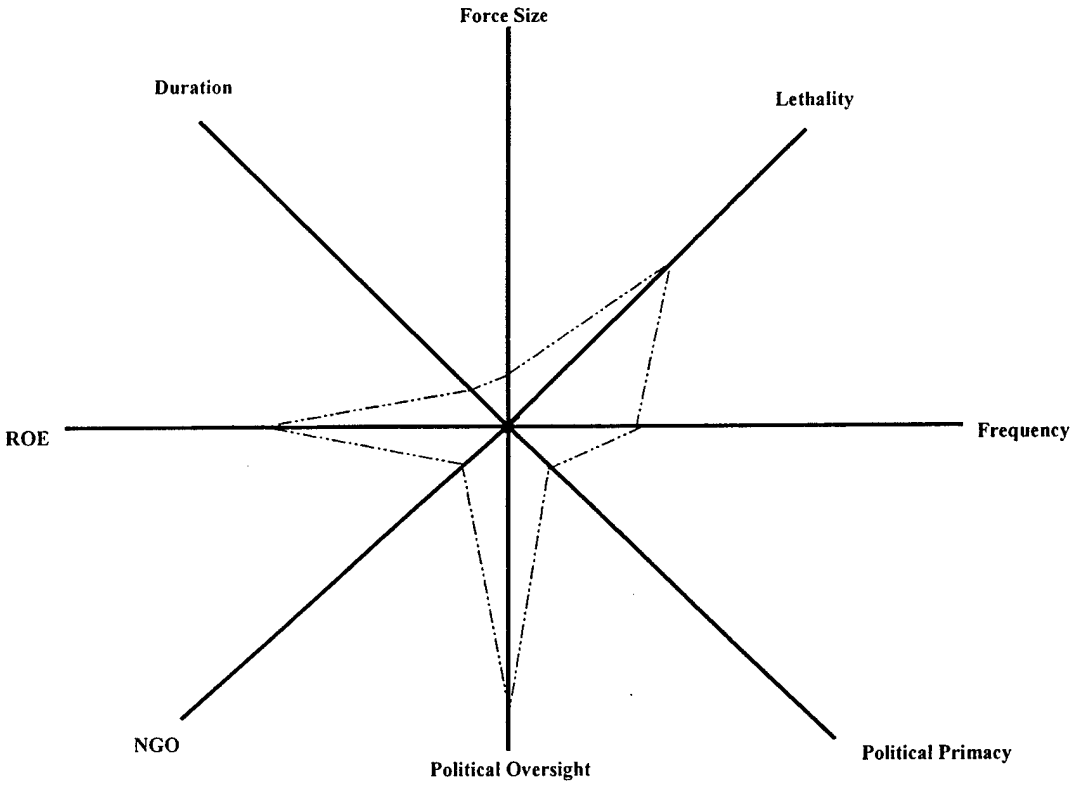

Figure 17
Noncombatant Evacuation Operations

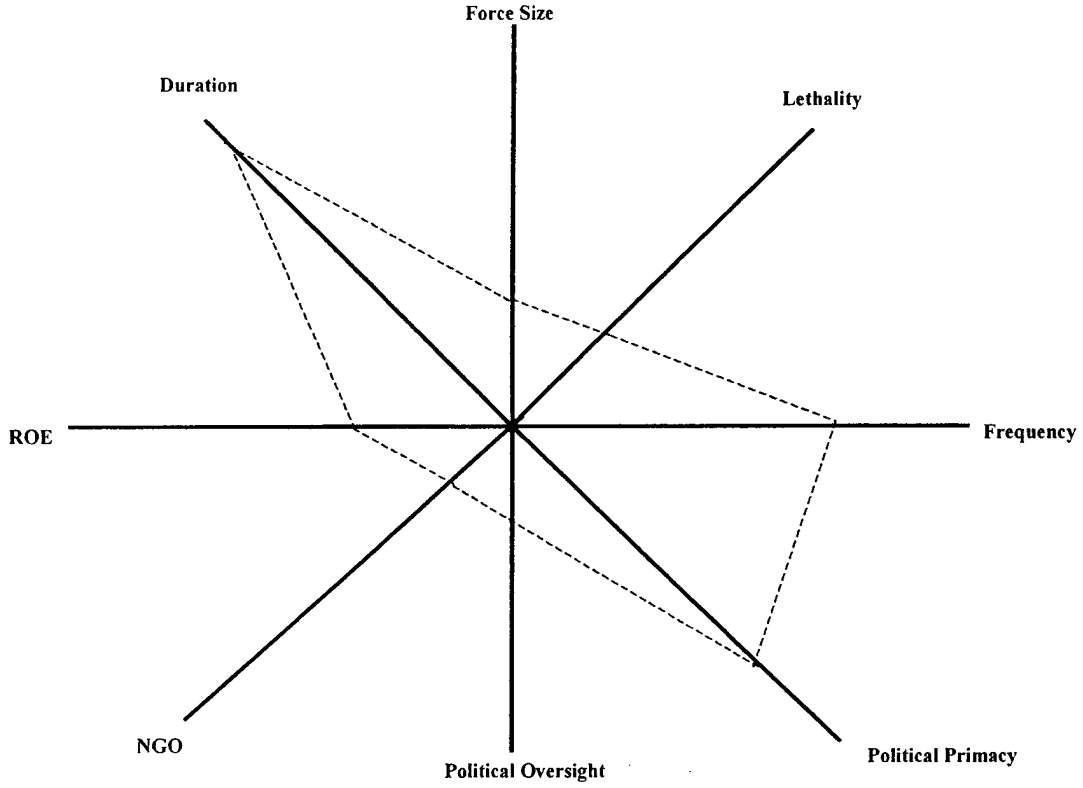

Figure 18
Peacekeeping

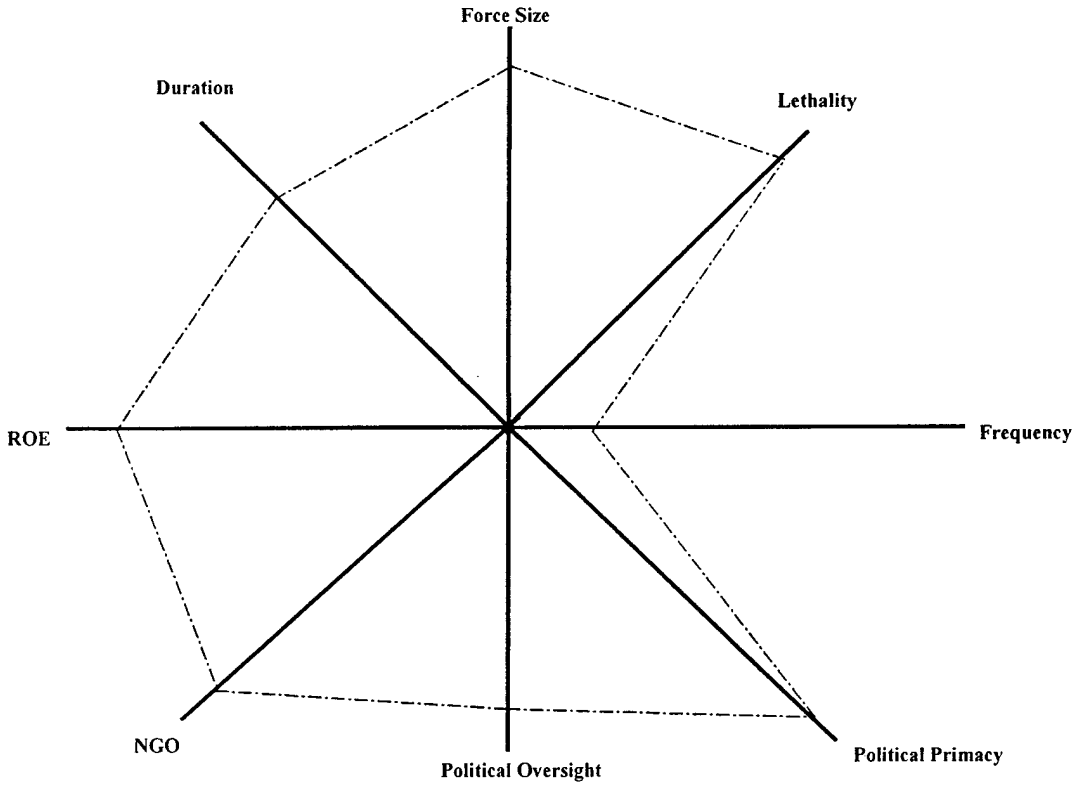

Figure 19
Peace Enforcement

It becomes obvious that these operations, contained within a single category called MOOTW, are in fact very different.

It is important to remember than in addition to being prepared for MOOTW, the Air Force still faces the threat of war. Though the risk of nuclear confrontation is certainly lower than during the Cold War, the fact remains that potential adversaries continue to maintain and develop new strategic nuclear weapons that could be used against the United States. The Air Force must maintain a degree of proficiency among its missile and bomber crews while also being prepared for small-scale contingencies. In addition,

conventional theater warfare, such as the 1991 war in the Persian Gulf and the 1999 war in Yugoslavia, places its own demands upon the Air Force.

The Air Force's post-Cold War task environment includes a host of new threats that have led to a redefinition of America's security interests. New forms of conflict have erupted that are prevented or resolved through a wide assortment of military operations. Airmen observe a range of potential threats and disparate operations that require the Air Force to be prepared for many different types of missions with demands far different from those experienced during earlier decades.

External Policy Direction

Regulative structures, which are important factors in shaping the Air Force, are primarily dictated by policy makers outside the organization. Among these structures are such things as the organizational framework, budgets, and statements of roles and missions. It is this last regulative means that has a particularly strong impact on the Air Force, as such statements provide a common goal upon which airmen can focus the efforts of myriad subcultures. An understanding of the process by which government policy is made will illuminate the development of post-Cold War national security policies that provided a basis for the Air Force's organizational strategy.

Issues for which a solution is being sought comprise the government's *decision agenda.*[60] Public policy issues move onto and off of the decision agenda through the opening and closing of *policy windows*. A policy window is a period of time in which advocates have the opportunity to spotlight their issues and work toward a policy

alternative. Some windows open predictably, say, through the scheduled renewal of a program, whereas others open unpredictably, perhaps in response to a crisis.

The primary participants in this process include elected officials and their appointees, and, to a lesser extent, political parties, candidates, the media, and other interested parties.[61] These participants can use their visibility to generate attention for an issue and force it onto the decision agenda. It is useful to note that an individual or single institution has the ability to open a policy window if enough pressure is applied.

Once windows open, they generally do not stay open for long. Kingdon suggests five reasons why they close:

- Participants may feel they have resolved the issue.
- Participants may fail to get action, and give up.
- The events that prompted the window to open may pass from the scene.
- If a change in personnel opened a window, another personnel change may close it.
- There may not be a feasible alternative available.[62]

While it may be possible for a single participant to open a policy window, nowhere in this model is there any indication that a single actor can close one.

Concurrence among the participants is necessary for a policy alternative to be implemented. Alternatives are generally measured against three criteria:

- Technical feasibility
- Congruence with values of policy community members
- Anticipation of future constraints, including a budget constraint, public acceptability, and political receptivity.[63]

Selecting an alternative and closing a policy window is typically not a matter of the President or another authority merely directing a change.

Though similar to the general policymaking model, national security policymaking has some differences. The amount of time a policy window remains open tends to be shorter, and the balance of power between participants is somewhat different. The nature of a problem determines how it is treated once it is on the agenda. A crisis that demands an immediate resolution leads to a relatively short opening of the policy window. When a quick response is demanded, Congress tends to defer to the President, as it is much easier for one person to make a decision than 535. Even in such cases, however, the compliance of the Congress is ultimately required, especially in situations involving the deployment of US forces. In the case of longer-range problems that do not require an immediate response, Congress prefers to retain more power.[64]

Politics plays a role in setting the national security agenda, and international factors take on new importance. Treaty obligations, the rise and fall of governments overseas, and the role the US plays in international organizations such as the United Nations, all must be considered when opening and closing policy windows. Domestic politics still play a role, as the constituent-driven nature of Congress will lead members to challenge the President on policies that affect their constituents.[65]

Conflict between participants, particularly the President and Congress, is not unexpected. Pfiffner points out that the founding fathers expected Congress to dominate the policy agenda when they wrote Article I of the Constitution.[66] The Cold War, however, was often viewed as a "permanent crisis," and presidents were given much more leeway to act unilaterally. The immediacy of nuclear conflict precluded Congressional or interest group involvement in many crises. Even some long term issues

such as the Korean and Vietnam conflicts were left to the President's discretion, at least initially. One Senate committee staff member noted that after Vietnam Congress grew progressively more involved in national security policy, and the uncertainty of the post-Cold War period afforded more opportunities for members of Congress to introduce options.[67] Some authors disagree over the role of the President and Congress, but one point they agree upon is that neither could dominate the process after the Cold War; in order to close a policy window by implementing an alternative, cooperation was required.

The other participant in this process, the subsystem of interested parties, also has a significant role. In the national security arena fewer domestic groups are active, but other nations and international organizations become involved.[68] Halperin suggests that the military is a critical part of this subsystem, and the support of the military is important to the acceptance of a policy option and the subsequent closing of the window.[69] Resistance from the military toward a policy alternative is likely to result in the policy window remaining open while another option is sought.

To be effective, a policy alternative generally requires agreement among the various actors in the policy process. The same holds true for national security policy, except in the case of a crisis. With the end of the Cold War, the power to implement security policy is typically shared between the policy process participants. Early in his administration President Clinton attempted to close the window on a set of national security problems by unilaterally implementing policies directing the use of military forces in peacekeeping operations.

Clinton Administration Policies Regarding Peacekeeping

Despite his campaign platform emphasizing domestic issues, President Clinton was forced to address foreign policy concerns left unresolved by the Bush administration. He needed policy options to resolve situations such as the ongoing peace operations in Haiti, Somalia, and the Balkans, allowing him to then focus on his domestic agenda. In an attempt to avoid overcommitting US military forces in what was supposed to be a new era of peace, he turned to the concept of multilateral peacekeeping as an effective policy.

The US had participated in multilateral military actions in the recent past, both in informal coalitions such as during the Gulf War as well as with standing organizations such as the UN and NATO. Clinton and senior members of his administration understood this precedent and saw the potential for greater multilateral peacekeeping efforts in the future, an option that would require American support to get underway. Such a policy offered the opportunity to encourage human rights, reduce conflict, and spread democracy, while at the same time preserving the declining resources available to the military.[70] Secretary of State Warren Christopher noted in April 1993 that the administration was placing "new emphasis on promoting multinational peacekeeping and peacemaking."[71] Madeline Albright, the newly confirmed US Ambassador to the United Nations, told Congress that "the time has come to commit the political, intellectual, and financial capital that UN peacekeeping and our security deserve."[72] The Department of Defense, under Secretary Les Aspin, supported this view, at least among the civilian officials. As evidence that a new direction for the DoD was being adopted, the position of assistant secretary of defense for peacekeeping and democracy was created within the

office of the undersecretary of defense for policy. The undersecretary, Frank Wisner, reported to Congress that peacekeeping was no longer an ancillary mission of the military; it was instead the core mission.[73]

1993's Bottom-Up Review suggested that 50,000 personnel would be required to meet US obligations to peacekeeping. These forces were to come from existing units, and no mention was made of acquiring training or equipment that might be better suited to peacekeeping than to traditional combat.[74] Between its public statements, its organizational changes in the Pentagon, and its proposed use of forces outlined in The Bottom-Up Review, the Clinton administration appeared to be making changes to regulative structures that reflected a new role for the military that matched the reality of ongoing situations.

Congress' Opposition to Peacekeeping

The policy of encouraging and participating in multilateral peacekeeping was attractive to the administration because it addressed national security needs while reducing the cost in terms of military resources. However, little attention was given to the technical feasibility. In addition, despite the support of the civilian DoD leadership, there was a great deal of resistance from the uniformed military, which comprised a significant portion of this particular policy community.[75] And finally, this had been essentially a unilateral decision by the executive branch, which ignored potential conflict with Congress.

American national security objectives were no longer shaped by the "permanent crisis" of the Cold War. Members of Congress felt they had a larger role in national

security policymaking than they were being afforded, and they challenged the President's unilateral implementation of a mission for the military. One Senate staff member reported a perception that the President "did not bring Congress along."[76] New problems gave Congress the opportunity to reopen the policy window as military crises erupted during the Clinton administration. Two in particular -- Somalia and Macedonia -- set the stage for national debates concerning peacekeeping in the President's first term.

The US joined the United Nations humanitarian relief mission in Somalia in 1992, but in 1993, the mission expanded to one of armed intervention and an attempt to restore stability. One important factor in the resolution of hostilities was the apprehension of Mohammed Aideed, the most prominent clan leader at the time. A US Army assault on the Olympia Hotel in Mogadishu failed to capture Aideed and unforeseen problems during the raid led to the deaths of 18 US soldiers.[77] The incident sparked public debate and Congressional criticism of the Clinton administration's policies in Somalia. As new questions arose regarding the ability of the United Nations to conduct military operations, Congress demanded clarification of the administration's perception of the US role in peacekeeping and the definition of "national interests." Ultimately, the President was pressured to withdraw American forces from Somalia, and the question of peacekeeping was back on the decision agenda.

Also in 1993, American forces were sent from Germany to participate in a UN peacekeeping mission in the Former Yugoslav Republic of Macedonia. Though the United States still refused to contribute ground forces to the UN mission in Bosnia itself, it was willing to contribute 650 troops to keep the Bosnian conflict from spreading into

Macedonia. As he prepared to go with his unit in October 1995, US Army Specialist Michael New refused to wear the United Nations insignia required for the mission. He claimed that wearing these items was akin to being part of a "United Nations Army" and he refused to do so.[78] While New's unit went to Macedonia for six months, he remained in Germany where he was court-martialed, ultimately receiving a bad-conduct discharge from the Army. New's action was a rallying cry for members of Congress who believed the US was becoming too involved in United Nations missions. Some declared him a hero for his actions, and used his example as a case for disentangling the US from the UN. Debate raged not only over the command relationships between US forces and UN commanders, but also over the contributions by the US to any UN operation. Once again, a peacekeeping crisis forced open the policy window.

Elections in 1992 and 1994 also affected the placement of peacekeeping on the decision agenda. President Clinton's election in 1992 originally shifted attention away from foreign policy to domestic issues, while the election of the 104th Congress in 1994 resulted in Republican majorities in the House and Senate that seemed determined to thwart the President's intentions. Despite the Democratic majorities in the House and Senate, President Clinton's relations with the 103rd Congress were strained at best. His 43% plurality in the presidential election did not establish him as an especially popular president with a clear mandate. The switch to a Republican majority in 1994 resulted in a Congress that was unlikely to support the President's actions, if only for partisan reasons. Evidence of partisanship in both houses showed it to be at the highest level in decades.[79] Members of Congress employed a number of means of attacking the President's

enthusiasm for peacekeeping, including debates over the War Powers Act, withholding of funds for peacekeeping, and legislation restricting the US role in multilateral operations.

Passed in response to the perceived lack of Congressional input into the continuation of the Vietnam War, the War Powers Act requires the President to report military deployments to Congress within 48 hours and gain approval for operations in hostile or potentially hostile areas.[80] With or without the President's request, Congress often takes steps under the Act, such as the Senate's passage of a resolution in February 1993 supporting the use of forces in Somalia.[81] As support in Congress faltered, a September 1993 nonbinding measure passed by the House and Senate urged the administration to seek formal approval of the deployment to Somalia, but this debate was overtaken by the American casualties the following month.[82]

A more concrete means of expressing Congressional opinion and exerting control over military operations is threatening to withhold funds for certain missions. Senator Robert Byrd (D-WV) introduced a measure to cut off funding for the Somalia operation by October 31st 1993, but he was silenced by the joint resolution in September.[83] Following the casualties in Mogadishu, Senator Byrd again threatened legislation to restrict funding, and this time he found greater support among his peers.[84] Once President Clinton agreed to withdraw US forces by March 31st 1994, support for Byrd's proposal dissipated.[85]

As a legislative body, Congress also has the ability to introduce laws that limit how the military can be employed. Some of these bills are attempts to actually limit military activities while others are designed merely to make a point and perhaps spur the President

into another course of action. One such occurrence came in the wake of Specialist New's refusal to wear UN insignia on a peacekeeping mission in Macedonia.

New received vocal support from Republican members of Congress, led by Rep. Roscoe Bartlett (R-MD), who opposed the deployment of US forces to Macedonia.[86] Rep. Bartlett went on to sponsor a concurrent resolution in the House that condemned

> the court-martial of Specialist Michael New of the United States Army in response to his refusal to wear on his military uniform the insignia of the United Nations and calling on the President to vindicate this courageous young man, override his conviction, and restore him to a place of honor in the Army.[87]

Senator Mitch McConnell (R-KY) sent a letter to New's division commander in which he wrote

> It is clear to me that Specialist Michael New was well within his rights, and even his historic duty, to question the order to wear the UN uniform, insignia and badge given the facts surrounding the Macedonia deployment.[88]

House Majority Whip Tom DeLay (R-TX) said that New took a "brave stand" and introduced legislation (HR 2540), with a similar bill being sponsored by Bob Dole (R-KS) in the Senate (S 1370), that would prohibit the President from ordering US forces to wear UN insignia.[89]

Both HR 2540 and S 1370 died in committee, but their true purpose was still achieved. A spokesman for Rep. DeLay said

> We're going to be looking for issues this fall that show the differences between Democrats and Republicans, and this is one of them. Here's a decorated Persian Gulf veteran who really wants to be in the military. You hear his story and the initial reaction is "Why is he wearing a UN uniform?" Really, you couldn't plan a better campaign.[90]

The Republicans' use of Specialist New allowed them to reopen the peacekeeping policy window yet again and attack President Clinton's policies. This forced the President to reevaluate the role of peacekeeping in US national security strategy.

Part of the difficulty in gaining agreement between Congress and the President was the lack of consensus within Congress regarding the role of the new role of the military. Interviews with Congressional staff members suggest that throughout the 1990s there was no agreement within the House or Senate, or even within the parties in those houses, as to what role the military should play in national security. One staff member remarked that the Senate was more proactive while the House of Representatives tended to follow it, and committee staff members preferred to maintain the status quo while personal staff members advanced initiatives.[91] As a result, members of Congress seemed to be promoting the views of uniformed military leaders rather than their own consensus.[92] This added to the pressure being brought by the subsystem of other interested parties.

Pressure From International and Domestic Subsystems

In addition to facing pressure from Congress, President Clinton found himself under assault from the subsystem of peacekeeping practitioners, that is, those who actually conduct such operations. NATO allies and the leadership of the United Nations combined to encourage the President to help take control of unraveling situations in the Balkans and Somalia, while senior American military leaders decried the negative impact they perceived peacekeeping to have on combat capabilities. Unwilling to abandon America's leadership role, but unable to ignore an increasingly outspoken military, Clinton found himself forced to repeatedly reexamine his administration's policies.

In the eyes of the rest of the world, and especially America's closest allies, the end of the Cold War did not relieve the US of its responsibilities around the world; if anything, it increased them. Martin Walker suggested in a January 1993 London *Guardian* commentary that

> The logic here is that the Europeans need the symbolism of American leadership. It is finally sinking home in Washington that just as the Russians are slow to become brisk entrepreneurs because the state spent 70 years crushing individual initiative, so the Europeans are slow to take strategic decisions because the Americans spent 40 years discouraging them from challenging American leadership.[93]

Even as President Clinton was taking the oath of office, Europeans were looking to him to put aside his domestic agenda and focus on the foreign policy crises leftover from the outgoing administration. An editorial in the Glasgow, Scotland, *Herald* warned the new President that international affairs would not wait.

> He will not have to take any immediate decision on Bosnia, but if the peace plan put together by UN and EC [European Community] mediators Cyrus Vance and Lord Owen falls apart, the choice of whether to use force to stop the Serbs will fall upon him.[94]

Any belief that the end of the Cold War meant less American involvement in foreign affairs was sharply rebuked by British Prime Minister John Major within days of Clinton's inauguration.

> The United States is the supreme superpower these days...Its leadership is of immense interest to what happens around the world. Now, that will be a very important part of President Clinton's job in the near future.[95]

The humanitarian disaster and civil war in Somalia demonstrated to the UN just how effective American involvement could be. President Bush's decision to support UN humanitarian relief efforts there allowed aid to get through to famine victims and brought

the beginnings of order and stability. The potential problem was that the UN would become dependent upon US assistance. Simon Tisdall of the London *Guardian* suggested

> The intervention is seen by many here as an appropriate use of American power to do good quickly, and perhaps as the first example of how Mr Bush's much-ridiculed "new world order" might work in practice. They have noted, for example, that after the US troops went in, 17 other countries did so too.[96]

By September 1993, it was clear that a US withdrawal would likely lead to the collapse of the mission. Though the United States had pledged forces only temporarily, no UN force had been structured to replace the Americans, and many nations were reluctant to contribute forces without an American combat presence.[97] President Clinton agreed to fulfill US obligations to help finance peacekeeping operations, but there was intense pressure from the UN and nongovernmental relief organizations to provide a physical presence as well.[98]

While pressure from outside the United States was pushing the President to commit the US to a greater role in multilateral peacekeeping, his own military forces were pulling him the other way. Former Secretary of the Air Force Sheila Widnall noted in an interview that, while Secretary of Defense Perry certainly understood the possibilities for the Air Force

> The real understanding came from within the Air Force itself -- as you would expect -- and was continually communicated to the executive/legislative branch in the setting of priorities and budgets.[99]

Defense bureaucracies have historically been successful at shaping the views of "political elites," particularly in Congress.[100] Due in part to the lessons it learned about the use of

airpower in the Gulf War, the Air Force remained active in trying to shape its role, rather than merely accepting the new mission of peacekeeping.

The notion of peacekeeping seemed an affront to the military's existing normative beliefs regarding its function. General Colin Powell, then the Chairman of the Joint Chiefs of Staff, said in a 1993 speech that

> Notwithstanding all of the changes that have taken place in the world, notwithstanding the new emphasis on peacekeeping, peace enforcement, peace engagement, preventive diplomacy, we have a value system and a culture system within the armed forces of the United States. We have this mission: to fight and win the nation's wars...
>
> Because we are able to fight and win the nation's wars, because we are warriors, we are also uniquely able to do some of these other new missions that are coming along -- peacekeeping, humanitarian relief, disaster relief -- you name it, we can do it...But we never want to do it in such a way that you lose sight of the focus of why you have armed forces -- to fight and win the nation's wars.[101]

Clearly, the President faced competing pressures from the international and domestic players within the subsystem.

The Result: Inconsistent Policy

President Clinton's first new national security strategy, entitled A National Security Strategy of Engagement and Enlargement, highlighted the importance of peacekeeping to the administration. A page and a half was devoted to the importance of peace operations, claiming that

> Multilateral peace operations are an important component of our strategy. From traditional peacekeeping to peace enforcement, multilateral peace operations are sometimes the best way to prevent, contain, or resolve conflicts that could otherwise be far more costly and deadly. Peace operations have served, and continue to serve, important US national interests.[102]

In addition, within days after the inauguration, the administration began a review of peacekeeping, culminating in Presidential Review Directive 13. Signed in February 1993, it posed basic questions regarding the US and UN roles in peacekeeping and laid a framework for a Presidential Decision Directive (PDD) that would reform American participation in such operations.[103]

Faced with competing pressures from outside and inside the US, President Clinton found he was never able to establish a clear statement of mission for the military. Soon after the Somalia crisis, he issued Presidential Decision Directive 25, "The Clinton Administration's Policy on Reforming Multilateral Peace Operations," which looked very different from the drafts that circulated earlier in his administration. Rather than focusing on participation of US military forces, PDD-25 became a template for reform of UN operations.[104] After the incident involving Specialist New, and the resulting pressure from Congress and the military, he issued PDD-56, "The Clinton Administration's Policy on Managing Complex Contingency Operations," which further limited the role of peacekeeping.[105] Successive National Security Strategies gave diminishing attention to peacekeeping, until it finally merited less than a paragraph.

Another important means of communicating roles to the military services is Department of Defense Directive 5100.1, "Functions of the Department of Defense and Its Major Components." Discussed earlier in this chapter, the directive outlines the primary and collateral functions of the services. The military services organize themselves to conduct their primary missions; collateral missions are those that can be undertaken using the capabilities designed for the primary functions. The last change to

DoDD 5100.1 was in 1987, and as a result the roles and missions that were identified for the Air Force during the Cold War are the same roles and missions identified during the post-Cold War period.

A clear statement of the Air Force's mission was not forthcoming during the post-Cold War period. A unilateral attempt to implement a policy emphasizing multilateral peacekeeping met resistance from Congress and other policy process participants. While external change agents such as a clear policy statement can be used to transform the Air Force's organizational strategy, they may not be the only method available. Internal change agents can also be used to adapt the Air Force to a new environment.

Organizational Learning in the Air Force

Organizations are not entirely dependent upon external sources for organizational change. Even if they have little or no control over regulative structures, they can change their normative belief systems through a process known as organizational learning. An agency that engages in organizational learning "is skilled at creating, acquiring, and transferring knowledge and at modifying its behavior to reflect new knowledge and insights."[106] Developing the capacity for organizational learning is one policy option open to agencies facing change, so it is worthwhile to explore the Air Force's ability to engage in learning. A brief introduction to the concept of organizational learning, followed by an analysis of the Air Force's infrastructure for engaging in it, will shed light on one means of initiating organizational change after the Cold War.

Organizations often learn how to perform their missions better within the context of an expected task environment. Over time, as the amount of experience grows, agency

members can learn what works well and what does not within a preconceived set of norms. Tasks can be redesigned to better accomplish the organization's goals. The concept of learning in this case may be thought of as a continuous loop. An action is taken, the results are observed and analyzed, and the action is adapted appropriately before the next implementation, which leads to further observations. To truly be a learning organization, this process must be continuous.[107]

This single learning loop is merely one aspect of organizational learning. To fully undertake organizational learning, an agency must reevaluate not only its methods, but also the norms it follows and the objectives it is trying to achieve. Cook and Bolton stress that "employees should be able to explore assumptions and beliefs."[108] It is this second loop that allows an organization to consider not only its means but also the ends it is trying to achieve.[109] The environment in which it operates may have changed such that the agency requires new objectives, or perhaps a new prioritization of existing goals. Neustadt and May suggest that basic presumptions can change over time as evidence of environmental change builds up.[110] The needs that the organization fulfills, the threats it faces, the technology it employs, or the collaborative opportunities open to it, may change dramatically. If the agency's original mission is no longer relevant, this condition should be identified so the organization can transform itself to meet new needs.

The cognitive theory of organizational learning suggests that individual learning underpins the ability of an organization to learn.[111] Cook and Bolton emphasize that every individual in an organization must be learning and sharing their enhanced knowledge and understanding within a network.[112] Diffusion of experience supplements

the direct experience that individuals gain, suggesting that a formal framework for learning is important.[113] Somerset suggests that a training and development framework provides the basis for any learning organization.[114] A complete and effective framework should include

- a means of learning, consisting of a curriculum designed to explore the operating environment and the opportunity to raise and explore important questions about that environment
- facilitation of learning by an adequate faculty with expertise in the field and a commitment to double-loop learning, and
- a method of diffusion of knowledge not only among those in the development program, but to other members of the organization as well.

Such a framework allows students to engage in effective learning that can be shared outside the formal learning system.

The Air Force has a structured means of learning and development for its officers and enlisted personnel in the form of a professional military education (PME) system. Historically, PME has served the US military well as a laboratory for identifying potential changes in the environment and determining how to adapt to those changes. Between the two World Wars,

> PME at the Naval War College [in Newport, RI] played a critical role in the development of a new strategic outlook and operational focus for the US Navy. Particularly from 1930 onward, the game scenarios and designs tested concepts for large-scale, joint Navy-Army amphibious operations -- long wars fought thousands of miles across the Pacific, made possible by logistics fleet trains and carrier-based aviation operations that were still only notions at the time. The gaming at Newport provided future World War II commanders the opportunity to think through and repeatedly experiment with operational requirements for a war unlike any the Navy had ever planned for or fought.[115]

This analysis will focus on the PME system for mid- and senior-level Air Force officers, as it is this system that produces the service's leadership. The two schools at these levels

– Air Command and Staff College (ACSC) for majors and Air War College (AWC) for lieutenant colonels and colonels – are organized within Air University, the agency that oversees most aspects of the Air Force's professional education.

Air University was founded in September 1946 at Maxwell Air Force Base, Alabama, with the stated purpose of looking beyond a limited view of the Air Force:

> The War Department established Air University (AU) to correct many of the problems and deficiencies of the pre-war military education system. The schools that comprised the old system had operated independently and were poorly coordinated in terms of scope, doctrine, and curriculum. Unlike the architects of previous and existing military educational institutions, the founders of Air University sought to break away from the...rigidity of thought and the doctrine...that had often characterized military education in the past.
>
> The founding fathers, many of whom were graduates of the Tactical School, wanted to establish a progressive, forward-looking institution that could keep the Air Force's thinking fresh and could project at least five years into the future. "We must guard rigorously against ... accepting answers from the past instead of digging them out of the future," Major General Muir S. Fairchild, the first AU commander, explained. "This is not a post-war school system—it is a pre-war school."[116]

The stated rationale for the schools appears to match the concept of organizational learning. They are supposed to provide a means of looking beyond current knowledge and assumptions and encouraging critical thinking about new environments facing the Air Force. As part of the analysis of the transition between Cold War and post-Cold War periods, it would be useful to examine the formal system of learning to determine how well it encourages double-loop learning. This analysis will address the curriculum, faculty, and diffusion of knowledge within these schools. Data will be drawn from the schools themselves, General Accounting Office reports, interviews, and Congressional testimony.

Examining the PME Curriculum

A review of the ten-month curriculum at ACSC in the 2000-2001 academic year, shown in Table 3, reveals a strong emphasis on the development of communication skills, introduction to common leadership practices, and principles of warfighting. While a military commander must certainly understand these subjects, there is relatively little time given to exploration of new ideas. Only the course entitled "National and International Studies" specifically addresses the environment within which the Air Force operates. The bulk of the courses emphasize airpower and joint-service operations, contributing more to the single-loop learning process than to double-loop learning.

Table 3
Air Command and Staff College 2000-2001 Curriculum[117]

Field of Study	Semester Hours	% of Total Semester Hours
Leadership and Command	5	17.24%
Communication Studies	3	10.34%
National and International Studies	3	10.34%
Airpower Studies	3	10.34%
National Planning Systems	1.5	5.17%
Joint Forces	3	10.34%
Joint Campaign Planning	2.5	8.62%
Aerospace Operations	4	13.79%
Aerospace Planning Exercise	1	3.45%
Research or Electives	3	10.34%

At first glance, AWC seems to provide more of an opportunity to engage in learning about the environment, as shown in Table 4. Courses entitled "International Security

Studies," "Regional Studies," and "Future Conflict Studies" appear to offer students the chance to learn about, and explore questions regarding, the environment outside the Air Force. Increased exposure to environmental studies is expected, as AWC focuses on developing strategic leaders who understand the environment, in contrast to ACSC, which emphasizes deeper understanding of Air Force capabilities for leaders at the operational level. However, a closer review suggests that the level of environmental studies is not as great as it first appears. Examining the amount of time spent on each subject in terms of actual classroom hours, rather than in semester hours, demonstrates that the proportion of time spent on environmental studies is less than it first seems.

Table 4
Air War College 2000-2001 Curriculum[118]

Field of Study	Semester Hours	% of Total Semester Hours	Classroom Hours	% of Total Classroom Hours
Leadership and Ethics	3	9.7%	42	7.2%
Future Conflict Studies	3	9.7%	39	6.7%
International Security Studies	4	12.9%	60	10.3%
Strategy, Doctrine and Airpower	4	12.9%	73	12.5%
Joint Force Employment	6	19.4%	144	24.7%
Regional Studies	5	16%	75	12.9%
Research or Electives	6	19.4%	150	25.7%

Retired Major General Charles Link, who served as Commandant of both ACSC and AWC, said in an interview that much of the discussion of national security is done from a public official's perspective rather than an airman's. There is also a heavy emphasis on the role of the military in general rather than the unique contributions of aerospace

power.[119] This would seem to make it difficult to question and reexamine the basic assumptions about the purpose and role of the Air Force.

Despite being called "colleges," these education programs are not as rigorous as formal schools in other professions. The commander of Strategic Air Command told a House subcommittee that he did not feel the schools should have the degree of rigor common to medical or law schools.[120] Some students take the opportunity to earn master's degrees at nearby Auburn University during their year in Alabama, further testament to the lack of difficulty associated with the schools.[121] This lack of rigor may be due in part to the composition and academic qualifications of the faculty.

The PME Faculty

In recent years the percentage of faculty members with doctorates has increased. By the early 1990s the Air War College had increased its percentage of doctorates to roughly 40%, a figure that remains steady today. Air Command and Staff College has a smaller percentage.[122] Some of these faculty members are civilians, others are military officers, and their degrees range from political science to aerospace engineering. They are spread rather thinly throughout the school. Assignment as an instructor at one of the schools does nothing to advance one's career; General Chain of SAC testified that he could not see why a highly competent person would want to take time from his career progression to go teach, as there is never a good time for a "warrior" to do that.[123] As a result, the largest percentage of faculty members are recent graduates who are retained at the school, voluntarily or otherwise, for an additional year. For ACSC, it is common to have up to

40% of the faculty composed of graduates from the preceding year's class. Comparable percentages are found at AWC.[124]

Diffusion of Concepts

The diffusion of new concepts throughout the organization is an important part of organizational learning. The schools, however, admit only a small percentage of eligible Air Force officers. The in-residence programs accept only 18-20% of the officers with the appropriate rank.[125] Non-selected officers who still hope for further promotion will instead complete a distance learning program that can be taken individually or as part of a seminar either online or at their base. Examinations in the distance learning program are multiple-choice in nature, leading to more rote memorization and less development of analytical skills than in the in-residence programs. Despite being considered a substitute for attendance at the schools, the distance learning programs in which the majority of officers participate are far easier and provide less opportunity for evaluation of the Air Force's environment.[126] The small proportion of officers attending in-residence programs limits the diffusion of any new ideas that might be developed there.

To be effective, organizational learning requires an environment in which individual learning can occur and be disseminated. An adequate system for organizational learning allows for an examination of the operating environment and its relationship with basic organizational assumptions. Effective facilitators guide these explorations and encourage the diffusion of new knowledge throughout the system. Members of an organization, especially one with a closed nature and a known path for career advancement, need a "safety net" that allows them to explore and experiment without harm to their careers.

Within the Air Force, the potential arena for that sort of learning is the professional military education system. The focus of Air Force PME, however, appears to be on single-loop learning in which aerospace experts can be developed, rather than on double-loop learning that questions basic assumptions.

Organizational learning provides an useful internal change agent that can transform normative beliefs following the creation of a new task environment. If used, this would allow the Air Force's organizational strategy to adapt and facilitate organizational change. This would provide a degree of stability to the Air Force during a period of change, and such stability would provide cohesion within the organization as airmen frame their actions within a common paradigm. An understanding of the measure of cohesion within the Air Force will offer some insight into how well it adapted following the end of the Cold War.

The Air Force After the Cold War

Conflicting perceptions of the Air Force's role reduces the opportunity for common assumptions to provide cohesion among the myriad subcultures. Major General Link points out that the Air Force has a tendency to emphasize "process" over "objectives," and overcoming that predilection requires some clearly identifiable objective upon which the different functional areas can focus their energies.[127] When the organizational strategy is in a state of disequilibrium conflict, the Air Force's ability to harness the full potential of the various subcultures is limited.

Measuring a common understanding of assumptions in the Air Force is a challenging exercise. How does one measure the degree to which common norms are understood, or

the importance of certain values in a society? Effective measures typically involve something unique to a particular community. The important role that common assumptions about the mission play in providing cohesion in the Air Force suggests a series of empirical indicators.

In a study for the Rand Corporation, Colette van Laar identified measures of a "sense of community" in the military. Her discussion examined some of the aspects of cohesion that could be measured. The original study examined Army programs that provided support to families while soldiers were deployed to operations overseas. With an understanding of the unique nature of the Air Force, some of van Laar's suggested measures can be tailored to evaluate cohesion among airmen. Among the more important measures are:

- participation in military community activities
- attachment to military community and evaluation of self as member of military community
- adoption of military community values[128]

An understanding of these themes as they are represented in the Air Force will help identify trends in cohesion.

Participation in the Air Force Community

Van Laar suggests that participation in military community activities is one indicator of the cohesion in the service. There are many activities at Air Force bases such as the Officers Club, chapel fellowship groups, and intramural sports leagues that constitute part of the military community. Participation in these activities will vary from base to base, depending on such things as the base's location and its proximity to a major city, so these

might not be useful measures of association. Another component of the Air Force's community is the development of professional associations with Air Force-wide membership. Organizations representing the interests of airmen and conducting professional development and social activities are available and are generally unaffected by the location of an Air Force member's assignment, making them a more useful measure of association.

The primary professional organization that offers membership exclusively to Air Force personnel and retirees is the Air Force Association (AFA). The AFA serves as an advocate for Air Force issues in Congress, publishes *Air Force* magazine for its members, and provides professional meetings and social gatherings. There are over 250 local chapters, with one at most Air Force bases.

Membership levels in this organization provide some measure of changes in cohesion. As airmen establish a closer identity with the service, they are more likely to become members of professional associations. Conversely, as the military becomes more of a job than a profession, the desire to join professional organizations should decrease. Reviewing changes in the membership figures for the Air Force's primary professional group will reveal changes in cohesion. Absolute membership figures would be misleading, given the reduction in the size of the force during the last decade, but the percentage of active duty personnel who are members will reveal important trends.

Table 5
Active Duty Membership in the Air Force Association[129]

Year	Active Duty Air Force Personnel	Active Duty AFA Members	Percentage of Active Duty Air Force Personnel Who Are AFA Members
1980	553794	58259	10.52%
1981	566144	60095	10.61%
1982	578362	61568	10.65%
1983	587560	70797	12.05%
1984	592645	80293	13.55%
1985	597001	86933	14.56%
1986	603711	91605	15.17%
1987	602582	98097	16.28%
1988	571982	83320	14.57%
1989	566529	73028	12.90%
1990	530863	69751	13.14%
1991	506022	66694	13.18%
1992	466058	63780	13.69%
1993	440201	58115	13.20%
1994	422320	52741	12.49%
1995	396382	47863	12.08%
1996	384996	42024	10.92%
1997	373356	34969	9.37%
1998	363483	32280	8.89%
1999	356490	31286	8.78%
2000	351383	29673	8.44%

As the data in Table 5 show, the percentage of active duty Air Force personnel who are members of the Air Force Association declined consistently throughout the post-Cold War period. Membership grew during the 1980s as the Air Force shook off the effects of the post-Vietnam period, and the number of active duty members fluctuated toward the end of the Cold War era. Starting in 1992, however, the drop has been continuous, finally settling at a point approximately one-half that found in 1987. The data

demonstrate that participation in this aspect of the Air Force's community has consistently decreased since 1992. This suggests that airmen had a diminished propensity to participate in professional activities with fellow airmen after the Cold War than during it.

Self-Identification With The Air Force

Self-identification with the Air Force is another significant measure of cohesion. Huntington points out that there is a strong sense of corporateness between members of the military, and commitment to the military as a profession rather than merely an occupation is a critical aspect of a military organization.[130] One's commitment to remain in the Air Force for a career demonstrates a high degree of self-identification with the service relative to an airman who does not plan to remain for at least 20 years, or who is uncertain. One means of identifying trends in identification with the military is to examine changes in airmen's career intentions over time.

Air Force survey data provide insight into retention trends. Actual retention figures may be misleading, as the Air Force conducted a number of involuntary separation programs as part of its reduction in force during the 1990s, and implemented "stop-loss" programs that prevented personnel from separating during the wars in the Persian Gulf and Yugoslavia. However, survey data that demonstrate airmen's intentions offer an effective means of evaluating the desire to remain a part of the Air Force.

Table 6
Career Intentions[131]

Rank/Term of Enlistment	1989	1993	1996	1999	2000
2nd Lieutenant - Captain (Company-Grade Officers, 0 - 12 years)					
% Stay	64	72	59	45	56
% Separate	24	14	28	40	29
% Undecided	12	14	13	15	15
Major - Lieutenant Colonel (Field-Grade Officers, 12+ years)					
% Stay	93	89	89	82	83
% Separate	4	9	9	13	11
% Undecided	3	2	2	5	6
Enlisted – First Term (0 - 4 years)					
% Stay	33	n/a	29	24	31
% Separate	51	n/a	53	52	48
% Undecided	16	n/a	18	24	21
Enlisted – Second Term (4 - 8 years)					
% Stay	62	n/a	50	36	43
% Separate	36	n/a	41	48	37
% Undecided	8	n/a	9	16	20
Enlisted - Career (8+ years)					
% Stay	96	n/a	89	81	84
% Separate	3	n/a	8	10	10
% Undecided	1	n/a	3	9	6

Table 6 provides survey data regarding the career intentions of Air Force officers and enlisted personnel between 1989 and 2000. It shows how respondents answered the question "do you plan to remain in the Air Force for at least 20 years?" The data

regarding intentions closely matches airmen's actions. Since the 1980s, 80% of airmen who indicated a preference for making the Air Force a career actually did so, and of those who indicated they were separating prior to retirement, 70% of officers and 77% of enlisted personnel followed through on that intent.[132]

The surveys demonstrate a dramatic decrease in the number of Air Force personnel intending to stay in for a career following the end of the Cold War. Junior officers, who had almost a 3 to 1 preference for staying over separating near the end of the Cold War, and who showed even more desire to stay after the Gulf War, were almost evenly split by 1999. The number of majors and lieutenant colonels planning to separate tripled, which is especially surprising considering they have invested at least 12 years toward their 20-year retirement point. First-term enlisted members reportedly were more uncertain about their futures, while second-term enlisted personnel reversed their earlier preference for staying over separating by 1999. Meanwhile, the number of senior enlisted members who plan to separate prior to 20 years of service tripled.

Airmen demonstrated a small increase in their propensity to remain for a career in 2000. The reasons for this upturn are still unclear. The 1999 war in Kosovo may have offered a cognitive example that more closely matched normative beliefs and regulative structures, possibly increasing cohesion. Conversely, the restoration of certain retirement benefits in the 2000 National Defense Authorization Act may have reduced the economic attractiveness of civilian employment. Whether there was an increase in cohesion or a decrease in economic incentive to separate is unclear, and there is also no data yet to determine if 2000 was a fluke or if it represents the beginning of a new trend. Future

retention data can help determine the direction of the trend and identify the reasons for it.

Retention surveys have yielded insight into the reasons that airmen choose to remain in the Air Force for a career. Throughout the 1980s, "Patriotism" was consistently near the top of the list for both officers and enlisted members. Following the 1989 survey it was removed from the list of possible responses because it was assumed to be one of the top reasons, though it returned to the list in 2000 and was the number one reason for making a career of the Air Force.[133] Secretary Widnall said that airmen need a reason for "putting up with more" than they would as a civilian, and it helps if all airmen share that reason.[134] The opportunity to contribute to a mission that is important to the nation is the most consistently strong reason for identifying oneself with the Air Force.

The top reasons for leaving fluctuate a bit more, but the availability of comparable civilian jobs is most consistently at or near the top of the list.[135] This suggests that separating airmen have a tendency to identify with a particular field of work rather than with the Air Force, which Moskos suggested would be a natural consequence of a technology-focused service.

When separating airmen look to comparable civilian jobs, the biggest draw seems to be increased salary rather than a slower work tempo. For example, among non-pilot company grade officers who said in 2000 that they expected to leave the Air Force,

- 28% said they expected to work fewer hours per week
- 50% said they expected to receive less vacation time
- 94% said they expected to make more money

The emphasis on salary rather than the work tempo is intriguing. Officers in the US Air Forces in Europe (USAFE) demonstrated almost the strongest intention of making the Air

Force a career among all the major commands in a 1997 survey.[136] USAFE, it should be noted, is responsible not only for European operations such as Bosnia and Kosovo, but also for operations in Africa and Operation NORTHERN WATCH in Iraq. They are among the busiest Air Force commands, yet career intent is very high.

If higher salaries are the attractive factor in comparable jobs, it is useful to note the differences in changes in military pay relative to changes in civilian pay since 1989 to see if the gap between military and civilian pay grew substantially. Using the Employer Cost Index as a measure of civilian pay, Figure 20 shows military pay raises were not much different from civilian increases during that period.

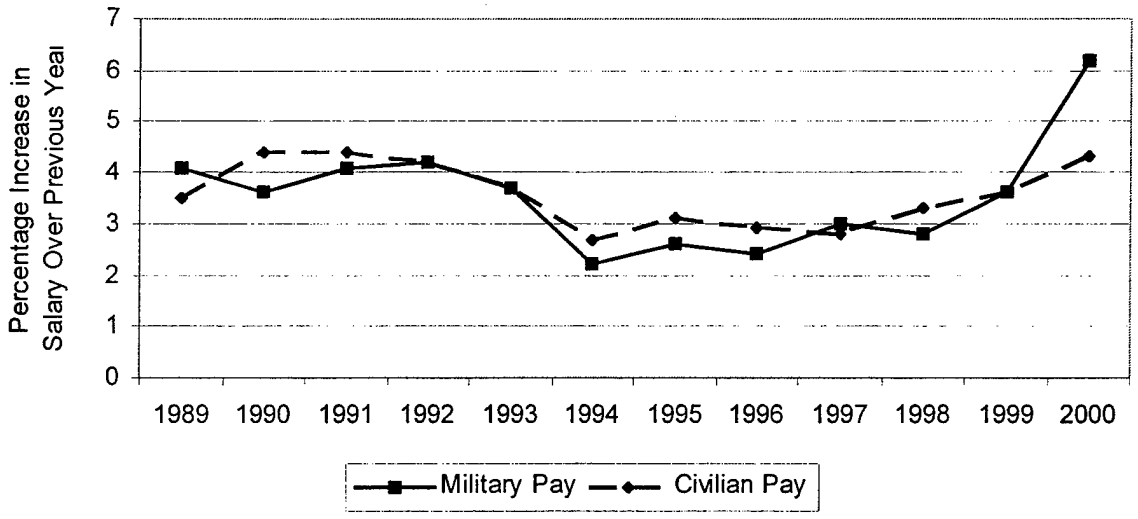

Figure 20
Increases in Military and Civilian Pay 1989 - 2000[137]

The attraction of civilian positions relative to the military has not gotten substantially greater since the end of the Cold War. The decrease in retention does not appear to be matched by a comparable increase in civilian salaries relative to military salaries.

Further examination of compensation data reveals more about relative levels of compensation for airmen and their civilian counterparts. Information provided by the Department of Defense can be used to compare military pay rates with compensation levels for civilians of similar age, gender, and education. Expressing military pay as a percentile of civilian pay in Table 7, it seems that relative to their civilian counterparts, pay for male junior enlisted members and junior officers has been relatively stable.

Table 7
Military Pay Expressed as a Percentile of Civilian Pay[138]

Year	First-term Enlisted vs 22-26 year old, high school education	First-term Enlisted vs 22-26 year old, some college	Captain with 8 years of service vs 27-31 year old, 4+ years of college
1989	56	50	62
1990	61	54	63
1991	60	55	64
1992	63	60	67
1993	68	63	71
1994	68	63	67
1995	66	62	69
1996	68	63	68
1997	65	61	64
1998	67	63	69
1999	71	65	64

While there continues to be a significant gap between military pay and civilian pay levels, that gap did not grow during the post-Cold War period. Pay for junior enlisted members actually closed the gap somewhat, while the gap for junior offices fluctuated but by 1999 was at roughly the same level as at the end of the Cold War. This suggests

that the primary reason for which airmen separate from the Air Force -- higher salaries in comparable jobs -- did not get noticeably stronger.

It is interesting to note that a sharp decline in career intention, especially for junior officers, comes after 1996. This is the same point at which the Air Force began undertaking significant retention efforts, including the use of financial incentives for selected career fields. One would think that if economic conditions were the cause of retention problems then retention would increase after this point, but the reverse appears to be true. One possible explanation for this is that many of the retention initiatives were targeted at pilots and other undermanned career fields. Substantial bonuses were offered and other incentives were provided. While this might have had a positive effect on pilot retention, it may have divided the Air Force community further due to the selective nature of the offers.

Another possibility is that something other than economic factors is the driving cause behind the decrease in retention. Separating airmen indicate that they do not necessarily perceive military salaries to be inadequate. Figure 21 shows that both officers and enlisted personnel who are separating have a better opinion of military pay than do those staying in. The figure shows the percentage of airmen responding "Always" or "Almost Always" to the statement, "There is enough monthly military income to cover basic expenses with money left over."[139] This suggests that separating airmen are not trying to make up for inadequate compensation, but instead simply find that other aspects of service no longer compensate for lower pay. In fact, most separating airmen reported in 1999 that they would not stay even if given financial incentives, suggesting that

something was missing from their Air Force experience other than money.[140] The decrease in retention may largely be due, not to increased external pressure pulling airmen away from the Air Force, but to an unclear mission that no longer offers a reason to stay in.

Self-identification with the Air Force is an important measure of cohesion and helps demonstrate the degree of equilibrium within the Air Force's organizational strategy. Career intentions suggest the degree of self-identification with the service has decreased.

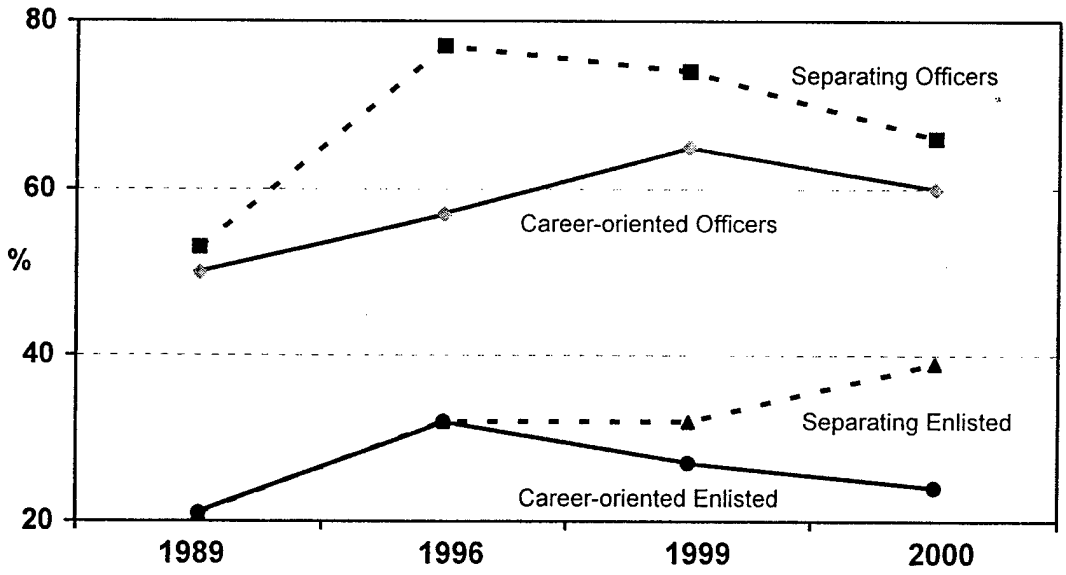

Figure 21
Adequacy of Military Pay

In addition to examining whether airmen intend to remain in the Air Force, it is also important to understand the interaction between airmen. Acceptance within the Air Force of a basic set of assumptions should allow for the use of informal norms and standards to govern behavior. Changes to these norms provide another measure of cohesion.

Adoption of Informal Norms and Values

Informal norms and values provide members of a group with a means of setting standards for behavior and performance. They reduce decision making time by allowing group members to reasonably expect how another member will act. They reduce costs by limiting the need for formal enforcement mechanisms. Within the Air Force, informal norms became more important following the Cold War because of the increasingly dispersed nature of operations and the reduction in force that reduced the size of the infrastructure that oversees behavior.

Behavior in the Air Force is based in part upon informal norms and shared values that result from common experience, member self-selection, and formal standards of conduct. These norms relate to an understanding of a service member's willingness to perform arduous duty, often at great risk, and do so to the highest standards of performance. It would be useful to determine if adherence to informal standards that were understood in the Cold War was practiced in the years that followed.

Some high-profile incidents during the 1990s, such as the accidental shootdown of two US helicopters over Iraq by Air Force fighters, the crash of a B-52 aircraft piloted by a senior officer with a history of recklessness, and the crash of a CT-43 aircraft that killed the Air Force crew and civilian passengers in Bosnia, sparked calls for a renewed emphasis on values and norms. A number of measures were taken in the years following the Cold War to formally state and communicate previously informal values and standards of conduct. The reasons given for this increased formalization suggest that the Air Force was responding to a "crisis" in terms of values. The former Secretary of the

Air Force who oversaw much of this formalization said she "was astounded at some of the breakdowns in discipline I saw."[141]

Formal "values education" was instituted at all levels of professional military education, from the 18-year olds at the Air Force Academy to the colonels at the Air War College. A 4-week program, the Aerospace Basic Course, was created in 1997 to provide a common experience for all new second lieutenants, regardless of their commissioning source. The Air Force Academy's Center for Character Development was created to instill in cadets the Air Force's core values of "integrity first, service before self, excellence in all we do."

The Chief of Staff of the Air Force at that time, General Ronald Fogleman, felt the changing task environment and resulting uncertainty about the Air Force's mission had led to an erosion of values and behavioral norms throughout the service.

> These big ticket scandals grew out of a climate of ethical corrosion. Because we believe our operating procedures or the requirements levied upon us from above are absurd, we tend to "cut corners," "skate by," and "get over." As time goes by, these actions become easier and they become habitual until one morning we wake up and can no longer distinguish between the "important" taskings or rules and the "stupid" ones. Lying on official forms becomes second nature. Placing personal interests ahead of the mission seems sensible. And we develop a "good enough for government work" mentality.[142]

General Fogleman saw a clear link between new missions, the disequilibrium between those missions and existing assumptions about the Air Force's role, and a breakdown of cohesion. He saw that personal interests were taking precedence over service interests, a clear indication of the occupationalist tendencies of which Moskos warned.

To combat the decline in adherence to shared, informal values, the Air Force published USAF Core Values, often referred to as "the little blue book." USAF Core

Values was a means of formally stating the values and standards that are critical to efficiency and effectiveness in the Air Force. According to General Michael Ryan, who at the time was serving as commander of US Air Forces in Europe, this was the first step in "making sure we wrote them down and taught them."[143]

The core values were adapted from the stated core values of the Air Force Academy as a means of providing formal guidance to the rest of the Air Force during troubled times. A student at the Air War College wrote in 1997 that

> [p]art of the "re-valuing" of the Air Force involves the distribution of the "little blue book" to all Air Force members. This book, which was printed on 1 January, is a 25-page pamphlet designed to serve as a core values guide for the Air Force "family." The first section of the book outlines the basic definitions of the core values and how they apply in the workplace. The second section addresses why core values are important to the Air Force and how a "climate of ethical corrosion" has led to incidents like the crashes of the Fairchild B-52 and the Ramstein CT-43. Finally, the "little blue book" outlines a core values strategy that will hopefully fix the corrosive ethical climate in today's Air Force.[144]

The Air Force Academy's core values were, for the first time, expressed formally as values important for the entire Air Force. The "little blue book" represented not merely a training tool for new Air Force members, but a reminder for personnel at all levels.

Other programs and documents were created to formalize behavior and understanding that had previously been transmitted informally among airmen. Rather than expecting senior airmen to mentor their juniors as a matter of course, Air Force Instruction 36-3401 was revised to mandate mentoring for all personnel, and Air Force Instruction 36-2406 requires written verification of performance feedback and counseling between commanders and subordinates.[145] In 1998 the Air Force approved the development of Air Force Doctrine Document 1-3, Leadership and Command, a document that is still

being written at the time of this study. This is the first time the Air Force has developed separate doctrine for leadership, and the focus of the document appears to have shifted from a general document for all airmen to a doctrine designed for senior leaders.[146] This suggests that the lack of adherence to informal norms is not limited to new recruits.

Informal norms are important to an organization because they provide an efficient means of controlling behavior. Norms that are enforced by members among themselves do not require formal oversight, which is often costly and adds no direct value to the organization's service or product. Following the end of the Cold War there arose a number of formal means for describing, teaching, and enforcing norms that replaced the earlier informal acceptance.

Conclusion

The end of the Cold War was a significant event affecting American national security policy. An analysis of this event facilitates an understanding of the effects of such a change on the Air Force and identifies certain policy variables that will have a further impact on the organizational. An examination of the end of the Cold War offers the opportunity to spotlight certain key factors that may be susceptible to policy maker intervention.

During the Cold War the Air Force's task environment required it to focus on deterring the Soviet nuclear threat. The end of the Cold War led to new requirements that demanded the Air Force be capable of addressing a wide range of dissimilar missions. These new missions served as the source of the cognitive observations that help shape airmen's underlying assumptions about the Air Force's mission. The ability to transform

regulative structures in the Air Force was based on the national security policy process, particularly during the Clinton administration. Another method of change -- adaptation of normative beliefs through organizational learning -- depended in part upon the ability of the Air Force's professional military education system to encourage airmen to reconsider their role in the new environment. The effects on the common beliefs regarding the Air Force's mission after the Cold War can be measured by evaluating changes in cohesion during the ensuing years.

One advantage of analyzing an event, including the conditions that were present before and after the event occurred, is that it provides a wealth of data with which hypotheses may be evaluated. The data derived from this analysis can be used to test a set of hypotheses that address the original research questions underlying this study. The use of a reason-action approach allows for better interpretation of the results of hypothesis testing, enabling policy makers to better understand why certain results occurred and how they might be influenced in the future.

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CHAPTER 5
ANALYZING THE FINDINGS

The preceding analysis presents a series of events that occurred during and after the end of the Cold War. It establishes a baseline for understanding the basis for the Air Force's organizational strategy during the Cold War; evaluates the new demands created by the end of the Cold War; analyzes the application of external and internal change agents; and, examines cohesion within the Air Force during the post-Cold War period. In doing so, the analysis provides data useful for testing the hypotheses addressing the original research questions.

The analysis of findings begins with a restatement of each original research question and its associated hypothesis. It then explains the means for testing that hypothesis and the anticipated result. It goes on to provide the results of that test and their relevance. Following an evaluation of the five hypotheses, the chapter offers a discussion of the ramifications of the results in terms of their implications for Air Force effectiveness.

The Basis for the Air Force's Organizational Strategy

What was the basis for the Air Force's organizational strategy during the Cold War? Understanding the effect of sudden task changes on the Air Force first requires an understanding of the basis for its underlying assumptions. An appreciation for the

conventions that underlie the Air Force's basic assumptions will suggest the effects that changes in those conventions will have on the organization.

Applying the framework of institutionalism, the Air Force is shaped by cognitive observations, regulative structures, and normative beliefs, all of which are based on the service's task environment. This implies that the Air Force's mission is the key factor affecting the underlying assumptions that are central to its structure. The importance of the service's mission suggests the hypothesis that the Air Force's organizational strategy during the Cold War was based on its mission of containing Soviet expansion.

This hypothesis can be evaluated by examining the prevalent national security policies during the Cold War and comparing them with the regulative structures, cognitive observations, and normative beliefs in the Air Force at that time. Common themes throughout key national security policy documents explain the task environment and demonstrate the primary mission assigned to the Air Force. Organizational and command relationships provide insight into regulative structures. A review of commonly undertaken missions and first-hand accounts from airmen of that period will reveal cognitive observations. Meanwhile, a content analysis of basic Air Force doctrine can be used to identify normative beliefs. Agreement between the assigned mission and the Air Force's corporate understanding of its mission would suggest that a clear organizational strategy was based on the assigned mission. Lack of agreement between the assigned mission and the Air Force's assumptions regarding its mission would imply that some other factor played the primary role in shaping the Air Force's organizational strategy. Based on the author's experience in the Air Force during the Cold War and a general

understanding of the history of that period, the *a priori* assumption is that the mission of deterrence provides the basis for the Air Force's organizational strategy.

An examination of the data in Chapter 4 suggests that the hypothesis is indeed valid. From 1947 until the Gulf War, which defines the Cold War for the purposes of this study, basic national security policy documents identified the spread of communism as the primary threat to American security. This led to a national security strategy of containment, and a military strategy centered on deterrence, the purpose of which was to enable the use of various methods of containing communism while minimizing the risk of general war. The Air Force was identified in many of these documents as the critical agent of nuclear deterrence, first through manned bombers, and later through ICBMs and nuclear-armed tactical aircraft as well.

Further data reveal that the Air Force's basic assumptions were shaped by this mission of deterrence. In terms of regulative structures, SAC had a special degree of authority unknown to the Air Force's other combat forces. In addition, the Air Force's leadership was drawn from among the ranks of the nuclear pilots. Cognitive observations also suggested the importance of nuclear deterrence to the Air Force. Airmen observed the day-to-day missions of the Air Force, including nuclear-armed bombers on alert and ready to take off on a moment's notice; ICBM crews manning launch command centers 24 hours a day; radar and satellite operators continuously monitoring early-warning systems; and, the presence of at least one command-and-control aircraft in the skies 24 hours a day. First-hand accounts from airmen suggest that the Cold War was viewed by many as an ongoing operation. Other, low-intensity missions, such as peacekeeping and

humanitarian assistance, were the exception rather than the norm, and deployments to these missions were generally undertaken from established bases -- a former Air Force Chief of Staff said that "we were fundamentally an in-garrison force."[1] Finally, Air Force doctrine demonstrated normative beliefs that embraced the role of nuclear deterrence far more strongly than any other mission. The Air Force's assumptions about its role were clearly in agreement with the task environment, and this agreement suggests an organizational strategy within the Air Force during the Cold War that was based upon the mission it was assigned.

A retired Air Force general disputes the implication that the Air Force had a single set of assumptions, suggesting instead that there were only multiple subcultures, each with their own beliefs. While SAC may have received the bulk of the attention and resources for its nuclear deterrent role, other functional specialties such as fighter and transport aircraft developed very different subcultures.[2] The prevalence of subcultures has been noted earlier in this study, and the general's point is well taken. Each subculture may be drastically different from the others; the general points out that SAC was focused on global interests, while fighter pilots aligned themselves more closely with the Army forces they would support in ground combat.

It should be noted, however, that while these subcultures had different traits, they were still bound together by a focus on deterring Soviet aggression. The fighter pilots who supported Army forces, for example, developed doctrine for doing so in response to a Soviet invasion of western Europe. Though many subcultures existed, and still do, the mission of deterring the Soviet Union provided an overarching goal that allowed different

types of capabilities to be used to achieve a common objective, regardless of the traits or attitudes of the practitioners of different functions. Common, underlying assumptions allowed the diverse subcultures to focus their energies on a common goal.

Another retired Air Force officer said that, ideally, the Air Force's basic assumptions about the organization should be independent of national security requirements. These requirements can change and affect the force structure, he suggests, but the basic assumptions underlying the Air Force should not change.[3] While that might be ideal, the fact that the Air Force was created for a certain mission, and based its beliefs and values on that mission, implies that a significant change to that mission would have ramifications for the Air Force. This might not be the case if the Air Force's organizational strategy was based on something else, such as airpower theory. As the discussion of Walker's model of organizational change showed in Chapter 2, drastic changes in the task environment require the Air Force's basic assumptions to adapt before appropriate structural changes can be made.

Effect of the End of the Cold War

A sudden, drastic shift away from accepted norms and conventions results in a discontinuous, rather than an evolutionary, change in the environment. Immediate, dramatic changes, are not part of the normal evolution of the task environment and can disrupt the basis for the Air Force's organizational strategy. Given the relationship between the task environment and the Air Force that was found in the earlier analysis, it is important to determine if the end of the Cold War represented a discontinuous change in that environment.

It should be noted that the beginning of the Cold War was itself a discontinuous change in the national security environment. America's possession of atomic weapons, its demonstrated resolve to use them, and the fact that many other nations had a long recovery ahead of them, left the United States with a leadership role to which it was unaccustomed. The new environment led to the creation of new organizations, such as the Department of Defense, the Central Intelligence Agency, and the United States Air Force. It would be reasonable to presume that the end of this period would provide an equally disruptive effect, suggesting the hypothesis that the end of the Cold War was a discontinuous change leading to the creation of a new task environment for the Air Force.

Evaluating this hypothesis requires an analysis of post-Cold War demands upon the Air Force. The Cold War imposed upon the Air Force a singular focus that emphasized nuclear deterrence. A simple change from one threat to another might be considered a mere evolution in the environment. A sudden change from a singular focus, however, to a diverse range of requirements, would represent the creation of a new task environment, much as the start of the Cold War did. The *a priori* expectation is that there has been a shift to a multiple-focus environment. Data regarding the post-Cold War threats and the types of missions facing the Air Force will indicate the demands of the environment.

The data indicate that the perception of the threats to American national security is vastly different from that of the Cold War. From 1947 through the Gulf War, national security documents consistently addressed the threat posed by the Soviet Union and the spread of communism. Post-Cold War threat analyses, on the other hand, emphasized threats to national interests that barely registered in earlier decades. The wide range of

threats, such as regional unrest, terrorism, narcotics, and transnational crime, represented a sharply different threat paradigm from that which focused almost solely upon the communist threat.

Earlier missions still exist, suggests one former Air Force Chief of Staff, but the Air Force needed greater flexibility to respond to the increased uncertainty of the post-Cold War period.[4] The many threats have been met with extremely varied methods. The types of military operations other than war that were commonly undertaken after the Cold War ranged from non-combat, humanitarian missions, to operations with the potential for combat, to missions where combat is considered likely. The diagrams in Chapter 4 demonstrate particularly clearly the sharply contrasting demands among four common types of operations. In addition, the Air Force had to be prepared to participate in regional wars, such as the Gulf War. Furthermore, the Air Force needed to maintain forces to counter the remaining, though far less likely, threat of nuclear war. It was no longer possible to identify "the" primary role of the Air Force in the post-Cold War period, as the Air Force faced an environment that demanded a varied focus. The combination of diverse threats and a range of military operations created a new task environment for the Air Force.

Observations of events unfolding in the world and deployments to overseas operations provided airmen with a new set of cognitive observations that differentiated the new environment from the old. Air Force members discovered great differences in the post-Cold War environment. For example, airmen found the frequency and duration of post-Cold War deployments to be sharply different from that experienced during the

Cold War. The General Accounting Office found that, while airmen are used to engaging in some temporary duty, the repetitive temporary duty in excess of 90 days that was common after the Cold War is considered a hardship.[5] Additionally, the decrease in bases and personnel overseas meant that stateside, rather than forward-based, units were being used in contingencies. The reduction in forward-basing also required more use of ad hoc bases, such as Tuzla Air Base in Bosnia, and Prince Sultan Air Base in Saudi Arabia. Though some old tasks still remain, many new ones have emerged, and Table 8 captures some of the more dramatic changes airmen have observed in their task environment.

Table 8
Cold War and Post-Cold War Air Force Task Environments

	Cold War	**Post-Cold War**
Task Focus	Singular	Wide range of missions
Frequency of MOOTW	Rare	Daily
Role of Nuclear Weapons	Primary	Minimal
Role of Bombers	Strategic nuclear attack	Conventional attacks with cruise missiles and precision-guided munitions, air support to ground forces
Role of Fighters	Air-to-air combat	Sharp increase in air-to-ground combat
Role of Transports	Supporting combat forces	Primary airpower force in many non-combat operations
Basing	Operating from established bases	Operating from ad-hoc contingency bases
Combat Organizations	Operate as part of established organizations	Operate in ad-hoc, provisional organizations
Personnel Deployed	Uncommon	6-fold increase
Personnel in Open-Ended Contingencies	Minimal	25-fold increase

Not everyone agrees that a discontinuous change occurred. Senator Mary Landrieu (D-LA) suggested that "a new environment was not 'created,' it was dormant through the Cold War struggle and slowly rises to the surface more each day."[6] Roger Philipsek of the Air Force Doctrine Center says further that "the creation of a new environment can only occur when our civilian leadership recognizes the need to have coherent national security objectives and then uses all instruments of national power to achieve those objectives."[7] They seem to suggest that the post-Cold War period is simply an ongoing evolution of the environment. However, it is the emerging conflicts that previously lay dormant and the difficulty in defining national objectives that created a new environment of uncertainty that replaced the singular focus of the Cold War. The defining characteristics of the task environment that were obvious in the Cold War were not so clearly in evidence afterwards, but that lack of clarity and the resulting uncertainty and need for flexibility are defining characteristics in themselves.

The new demands placed on the Air Force represented distinctly new means of operating rather than merely an evolution of an old mission. The new cognitive understanding of the environment clashed with existing, Cold War-era regulative structures and normative beliefs, resulting in a disequilibrium in the Air Force's organizational strategy. Without a transformation of the underlying regulative systems and normative beliefs, this sense of cultural dissonance would be likely to remain.

External Policy Change

When discontinuous changes in the task environment lead to conflicting interpretations of the Air Force's mission, a transformation process is required to adapt

the organizational strategy and facilitate organizational change. One means of initiating that transformation is direction from an outside authority. Civilian policy makers in the executive and legislative branches are in a position to convey missions and values to military forces. Was an external change agent applied to the Air Force to start the transformation? This study hypothesizes that the national security policy process did not provide a clear mission for the Air Force during the post-Cold War period.

A review of national security strategies and Congressional action during the 1990s can be used to determine if a clear sense of mission was communicated to the Air Force. A consistent statement of national security interests and military roles would suggest that a clear role for the military was identified. Agreement between the executive and legislative branches would further validate this result. Conversely, disagreement between the administration and Congress, and inconsistent or unclear statements in national security documents, would imply that a new mission for the military in general, and the Air Force in particular, was not stated. The *a priori* assumption is that the post-Cold War national security strategies are inconsistent.

American national security strategy was inconsistent during the post-Cold War period. Soon after the end of the Cold War it became clear that a statement of the military's role was required. The old task environment, emphasizing nuclear deterrence, was gone, and the emerging environment demanded new missions and new skills. President Clinton attempted to implement a policy that would clearly lay out a central role for the military in the post-Cold War environment, but his attempts to unilaterally implement this policy resulted in continuing conflict between the President and the other

participants in the policy process. The result was inconsistent policy statements that did not establish a clear mission for military forces in general or the Air Force in particular.

Beginning in 1993 President Clinton attempted to implement a national security policy emphasizing peacekeeping as a primary role for the military. Despite attempts to clearly state this mission, it appeared to change over time as successive national security strategies gave less and less emphasis to this mission without making another mission consistently obvious. Presidential Decision Directives that were originally expected to define the military's role instead focused on restricting the functions the military would provide. The continually changing guidance left military members, especially airmen, unclear as to exactly what their mission was in the post-Cold War period.

The inability of the policy process to produce a new statement of missions is further reflected in DoD Directive 5100.1. As noted in Chapter 4, this directive outlines the missions of the various components of the Defense Department, including the primary and collateral functions of each of the services. The most recent version of this directive was published on 25 September 1987. Since the Cold War ended, there has not been an official statement of the functions of the services expressed through this critical directive. This suggests that recognition of changes in the Air Force's mission, as expressed by the adaptation of important regulative structures, did not occur.

The reasons for this outcome can be explored by examining the statements and actions of administration and Congressional participants, as demonstrated by legislation and Congressional resolutions, testimony before Congressional committees, and public statements in the media. President Clinton's attempt to unilaterally resolve the issue of

peacekeeping was thwarted by the other participants in the policy process. New problems forced the President to revisit his policies again and again and Congress, loath to allow the President to unilaterally remove an issue from the agenda, seized upon these crises to force a reopening of the policy window. Political changes in Washington, leftover policy windows from the Bush administration, and pressure from domestic and international interests forced peacekeeping to remain an unresolved issue throughout the Clinton administration.

Domestic political considerations probably played a critical role in the failure to develop a clear statement of mission. Dixon points out that, not surprisingly, periods of divided government in which one party controls the Presidency and the other controls the Congress tend to see the most conflict over the setting of the decision agenda.[8] Pfiffner asserts that with opposing parties in charge of the two institutions, each has an incentive to criticize and thwart the other's policy initiatives.[9] Sarkesian, however, suggests that the opposite assertion cannot be made; party support in Congress does not necessarily lead to support for presidential initiatives.[10]

To be effective, a policy alternative generally requires agreement among the various actors in the policy process. The same holds true for national security policy, except in the case of a crisis, during which other participants often defer to the President. With the end of the Cold War, the power to implement security policy is typically shared between the policy process participants. President Clinton, who appeared to be operating in the context of the Cold War's "permanent crisis" paradigm, attempted to implement policies directing the use of military forces in peacekeeping and humanitarian operations. His

attempts to unilaterally implement a policy option were undermined by the realities of the modern policy process, however, leading to a lack of clear direction for the Air Force.

Senator Landrieu of the Senate Armed Services Committee points out that the President outlined clear goals for specific operations. He apparently recognized that "it's not enough to 'beat the bad guys,' try to get them to come to the negotiating table to compromise or sign a treaty, and then leave and expect them to follow through."[11] While critical to the success of a particular mission, this sort of direction is short term in nature, and does not address long term roles and requirements for the Air Force.

One concept that became clear during the interview process was a common belief that the Air Force did not wait for direction from civilian leaders but instead explained its existing capabilities to policy makers. Rather than being given a mission and then having to reexamine its assumptions about its role, the Air Force simply tried to try to apply those existing assumptions to the new environment. This emphasized what the Air Force *could* do, but not what it *should* do. In doing so the Air Force was denied a reevaluation of its role in national security. Major General Link remarked that being directed to do something, rather than quickly volunteering to do it, offers more time to think about it.[12]

The lack of clear policy direction hampered organizational change in the Air Force. Former assistant secretary of defense Lawrence Korb made the point that large bureaucracies like the Air Force typically require a change to be forced upon them from external sources.[13] The lack of external direction meant that any transformation of the Air Force's organizational strategy would have to result from an internal change agent.

Professional Military Education as an Indicator of Organizational Learning

Internal change agents can also be the driving force behind organizational change. This sort of change, mostly addressing normative beliefs, commonly takes the form of organizational learning, a process in which an organization not only learns how to perform its role better, but also recognizes when new roles emerge. Did the Air Force use organizational learning to transform the basic assumptions regarding its role?

Despite its relative youth, the Air Force is a mature bureaucracy, suggesting that changes to normative beliefs will primarily need to come from those inside the organization. It found its niche early on at the start of the Cold War and quickly developed the means to fill that niche. As a closed bureaucracy it is buffered somewhat from the introduction of new ideas about its role. The Air Force would need to have the capacity for organizational learning in order to engage in the "double-loop" learning that would allow it to evaluate its role in a changing task environment.

To determine whether or not the Air Force is organized to be a learning bureaucracy, it is useful to determine if it has the institutional capacity to learn. A necessary, though not sufficient, component of this institutionalization is a formal education system that offers an essential "practice field" upon which to make mistakes.[14] Such a system is especially important for a closed bureaucracy like the Air Force, in which advancement is tied to adherence to prevailing attitudes about its core mission. Organizational learning in such a bureaucracy requires a specific means of questioning basic assumptions that does not harm one's chances for promotion. If the Air Force is a learning bureaucracy, it should have a professional educational system that will forge an understanding of the

operating environment and effectively "strive to communicate that knowledge with organization members who may benefit from it."[15] Not facing a risk to its survival, however, the Air Force has little incentive to be a learning bureaucracy, leading to the hypothesis that the it is not equipped to engage in organizational learning. The *a priori* assumption is that it does not provide an effective means of formal learning and diffusing experience.

An examination of the Air Force's intermediate and senior professional schools suggests that the formal arena for individual learning and diffusion of knowledge provides less of an opportunity than is necessary for a learning bureaucracy. Over the decades, Air Force PME has become more of a requirement to be fulfilled for promotion than a serious intellectual exercise, and it fails to provide a foundation for organizational learning.[16] While it may do an excellent job of preparing airmen to be airpower experts in a joint operational environment, it does not encourage them to reevaluate the role of the Air Force in a changing national security environment. This belief is bolstered by a review of the curriculum, faculty, and means of diffusion.

The quality of the curriculum does not support the kind of reevaluation of Air Force assumptions that is the key to a learning bureaucracy. The courses emphasize development of personal skills and continued single-loop learning regarding airpower's capabilities. Relatively little time is devoted to exploring the national security environment and the basic assumptions underlying the Air Force. Though learning from history is important, double-loop learning requires exploration of the present and future to a degree not found in Air Force PME schools. Major General Link points out that

"PME moves way too slow" and the curricula need to keep pace with the changing environment. He suggests further that the Air Force offers a very wide range of capabilities appropriate to different operations but "if you can do those things, you have to think about them."[17] The Air Force's education system has selected the cream of the crop but does not challenge them to expand beyond the paradigms that have built up around them over the years.

The faculty, while certainly dedicated, is not adequately prepared to facilitate double-loop learning. A large percentage of faculty members are not permanent instructors but instead are officers taking a few years during their career to teach. In many cases they will be returning to their primary career fields upon completion of their teaching assignment, reducing their incentive to "rock the boat" by challenging basic assumptions. The impact of this is demonstrated in Davis and Donnini's study of Air Force PME:

> Most faculty members have been recent graduates of the schools – thus, they are peers of their students – have little teaching experience, and serve for only a few years. Consequently, they are unlikely to have the academic credentials, subject-matter expertise, or instructional skills necessary to be effective in the classroom. Civilian universities allow graduate students to teach, but they do not permit them to dominate the educational process.[18]

This tends to perpetuate the syllabus from year to year rather than encouraging the introduction of new ideas and concepts from outside the school. Most faculty members have spent their career in an operational environment where they may question how to do things better but rarely ask exactly what things they should be doing. This significantly affects the ability of the education system to encourage double-loop learning that is essential to organizational learning.

Diffusion of knowledge is another requirement for effective organizational learning. The limited number of officers afforded the opportunity to attend the mid- and senior-level schools significantly restricts the proliferation of new assumptions and beliefs throughout the Air Force. Officers at this level are important to the development of common attitudes in the Air Force. General Fogleman makes the point that shaping beliefs and values is a responsibility that extends throughout the entire chain of command rather than lying only with the senior leadership.[19] The distance-learning programs do not offer students the interaction and critical thinking necessary to challenge basic assumptions. New ideas developed in the PME schools will be difficult to disseminate to airmen in the field.

If the Air Force was truly organized as a learning bureaucracy it would have a system for providing essential learning tools such as a suitable curriculum, appropriate faculty members, and a means of diffusing that knowledge. Senior Air Force leaders "expect graduates of these schools to be well versed in applying the capabilities of the Air Force to a variety of military operations."[20] The curricula and faculty of the schools seem to be designed to meet that goal, but to truly engage in organizational learning the year-long academic environment offered to the Air Force's future senior leaders should provide them the opportunity to step back and evaluate the environment in which they operate. The fact that this opportunity is not fully taken advantage of supports the hypothesis that the Air Force is not organized to be an effective learning bureaucracy.

Since the Air Force appears to lack an environment supporting organizational learning, it could then be presumed that such learning did not occur following the end of

the Cold War. Air Force studies regarding the new environment did not lead to a transformation of normative belief systems because an effective mechanism for the diffusion of those ideas did not exist, though the establishment of the Air Force Doctrine Center in 1997 offers a possible means of communicating normative changes to airmen in the future. General Fogleman points out that the Air Force created the first post-Cold War vision statement of any of the services after the fall of the Berlin Wall, a document called Global Reach, Global Power. He goes on to say that few people in the Air Force read it and internalized its concepts.[21] Major General Link agrees that this initial vision statement had the potential to greatly influence the Air Force, but it was poorly implemented, with combat forces adopting the "Global Power" portion while transport forces emphasized only the "Global Reach" component.[22]

Effective organizational learning did not take place in the Air Force after the Cold War. The changes in cognitive observations brought about by the transition between Cold War and post-Cold War periods disagreed with the existing normative beliefs. These disagreements resulted in continuing instability in the Air Force's organizational strategy, limiting the potential for organizational change.

Cohesion Following the End of the Cold War

Finally, did the Air Force have a common understanding of its role in the 1990s? The significant change in the task environment led to new cognitive observations among airmen. The lack of external and internal change agents left regulative systems and normative beliefs out of alignment with cognitive observations. This disagreement

between factors in the organizational strategy suggests the hypothesis that the Air Force lacked a common understanding of its mission during the post-Cold War period.

How does one measure common attitudes? The suggestion in the literature that a common understanding of the mission plays a significant role in maintaining cohesion within the Air Force makes it likely that a lack of common understanding will lead to reduced cohesion. Certain empirical measures that are good indicators of cohesion, including participation in the military community, self-identification with the Air Force as a profession, and the existence of informal norms of behavior. The *a priori* expectation is that these measures declined throughout the post-Cold War period.

One important form of military community is the role of professional associations, such as the Air Force Association. Membership in the AFA fluctuated in the years leading up to the end of the Cold War, but during the post-Cold War period the association's membership showed a steady decline below the levels seen in the Cold War. In fact, current Air Force guidance suggests that membership in professional associations related to an airman's career field or technical specialty are important, but it makes no mention of professional associations designed for airmen in general.[23] The reduction in participation in the primary professional association of the Air Force may be one indicator of reduced cohesion as airmen feel less desire to participate in professional activities with fellow airmen. This measure of cohesion is higher when a mission is more clearly defined, as seen during the Cold War. In addition to reflecting a decrease in cohesion, it is important to note that reduced membership limits the development of cohesion in the future, as the AFA provide an important means of diffusing experiences

and increasing an airman's understanding of the Air Force.

The significant reduction in career intentions implies a decrease in the identification of the Air Force as a profession. When airmen have a common sense of mission they are more likely to focus on their role in the Air Force as a profession, but with no clear mission -- and less cohesion -- it is easier to view the Air Force through the lens of one's particular subculture, leading to increased recognition of comparable job opportunities in the civilian sector. Major General Link suggests that junior airmen need to see where they will be able to contribute in the future, and when they get conflicting guidance from their leaders, they often turn to the civilian sector where their future potential may be more obvious.[24]

A decrease in career intentions suggests that either the reasons for staying in have gotten weaker or the reasons for getting out have gotten stronger. The primary reason for separating appears to be the availability of comparable civilian jobs with better salaries. The data show that the gap between military and civilian pay did not increase substantially during the post-Cold War period. This suggests that, rather than the reasons for separating getting stronger, the reasons for staying in have gotten weaker. The primary reason for staying in -- patriotism -- has likely been weakened by the lack of a common understanding of the Air Force's mission in the post-Cold War environment. Lawrence Korb suggests that as the younger generation of airmen sees the organization diverging from their vision of it, they leave the service.[25]

Finally, cohesive organizations find it easier to develop informal norms that guide behavior. Secretary Widnall points out that "core values are a unifying force in the Air

Force."[26] General Ryan noted that these values -- service, integrity, excellence -- were understood during the Cold War but were not formally stated by the Air Force's leadership.[27] As cohesion decreases, members find they must formalize previously informal standards of conduct in order to maintain the same behavior in the organization. Air Force leaders observed a breakdown in the norms and values that characterized the service through the Cold War.

New training documents, such as the Air Force doctrine for Leadership and Command and General Fogleman's "little blue book," formalized norms of behavior that were previously understood informally. These two documents, along with the increase in values curricula at the Air Force's professional schools and the regulations regarding the importance of mentoring, demonstrate a formal institutionalization of previously informal norms. Secretary Widnall felt that publishing the core values formally was important for getting the subcultures to work together.[28]

The Air Force considered the possibility that demographic factors affected the ethical climate. General Ryan pointed out that one initial thought was that new airmen might be entering with different values based on their family structure and the values they inherited from their "baby boomer" parents. They concluded, however, that problems existed at all levels in the Air Force, not just among new recruits.[29] The fact that values that were understood to be part of the Air Force now had to be taught in a formal setting suggests that cohesion may have weakened.

Any of these measures by themselves might be dismissed, but the fact that all three have declined suggests that cohesion was reduced during the Cold War period. Airmen

who separate from the Air Force appear to do so not because of the hardships of military service but instead because they find themselves less attached to the profession, and to their fellow airmen, than they did during the Cold War. The evidence suggests that, as per expectations, the Air Force lacks the common vision necessary to provide cohesion within the service.

This lack of vision indicates that the Air Force did not adapt its organizational strategy following the end of the Cold War. The disagreement between new cognitive observations on the one hand, and old regulative structures and normative beliefs on the other, led to uncertainty regarding the Air Force's mission. A February 2001 *Wall Street Journal* article about the Air Force's strategy for recruiting reported that

> On consecutive mornings in October, teams of executives from Bozell and GSD&M were invited to tell an Air Force panel of two women and seven men how the service could use advertising to engage three target audiences -- potential recruits, *existing airmen*, and the public...They had begun six months earlier with the Air Force's 78-page request for bids. The document detailed formats and procedures, but its thematic guidance boiled down to a statement that Americans "need a deeper understanding of the role and mission of the Air Force." *The nature of that mission was left to the agencies to puzzle out themselves.* [emphasis added][30]

A common understanding of the Air Force's mission appeared to be lacking. This deficiency had serious implications for the effectiveness of the Air Force.

Implications

An accepted set of basic assumptions about the Air Force's mission has a strong influence on the effectiveness of its operations and on the efficient allocation of its resources. Commonly understood norms of behavior and shared values that help airmen focus their efforts allow airpower to be a powerful tool for national security.

Organizational strategy shapes not only the organization of the Air Force and its use of resources, but also the perspectives of the airmen themselves. Disagreement over the Air Force's role will have a very negative effect on its contribution to joint military operations, due largely to the impact on its ability to organize, train, and equip its forces.

Operational Effectiveness

The effectiveness of airpower is sharply reduced by a lack of understanding of its mission. One of the most important tenets of using airpower is that its power is enhanced by synergy between various types of forces.[31] Common understanding of the Air Force's mission allows the different elements of the service to focus their efforts on preparing for and achieving the same goals. Failure to have a common understanding can lead to each subculture focusing on what it does best, rather than on what is required of it by a given situation. Division between forces sharply reduces the capabilities of the Air Force.

Researchers have suggested that national security organizations can be effective only when their members are motivated by a feeling that what they do promotes the national interest.[32] Senior Air Force leaders also recognize the importance of a sense of mission to operational effectiveness. Secretary Widnall notes that airmen's morale is affected by how their work "contributes to national goals in a visible way."[33] General Dugan suggests that airmen are motivated to focus the subcultures on a common goal by "participating in something bigger than oneself."[34] Allowing airmen to focus on a common mission is critical to getting the most out of aerospace power's capabilities.

Flexibility and speed are also among the capabilities that make aerospace power such an important tool. Cohesion encourages trust between members of an organization,

enabling members to work together better and increasing the flow of information. For the Air Force, greater trust allows for less oversight and a leaner command and control structure. These enable aerospace power to be a highly responsive tool that can quickly address emerging targets and opportunities. That responsiveness, however, is diminished when greater oversight and additional layers of command slow down the flow of information. Reduced cohesion leads to a more hierarchical command structure and centralized execution of missions, limiting the important advantages of airpower.[35]

Lack of consensus and focus within the Air Force increase the difficulty of working with those outside the service. In almost every case, US military operations today are joint in nature, involving at least two services. As airmen find it more difficult to work with each other, those difficulties will be magnified when working with another service or nation. There already exist significant doctrinal disputes between the services. Airmen who identify more with their subculture than with the Air Force as a whole are even less likely to identify closely with their colleagues from other services. Interaction between airmen and their sister services and foreign colleagues will become much more difficult when internal cohesion is reduced.

Efficiency will diminish and resources will be wasted on non-value adding tasks when cohesion disappears. One of the key economic advantages of cohesion is that it reduces "transaction costs," allowing organization members to make decisions more quickly by following norms and encouraging the development of trust, which reduces the need for oversight. For the Air Force, this oversight takes the form of regulations, headquarters staffs, inspection teams, and robust command and control facilities. While

each of these has some utility, there is a point beyond which each adds little value to mission success, and simply absorbs resources. Operations could be accomplished just as effectively at lower cost if there were commonly understood norms for performance that airmen knew would be followed. This would allow for smaller planning staffs, fewer regulations that inhibit innovation, and a reduction in resources devoted to inspections. As cohesion is reduced, however, the need for these institutions rises, leading to resources being spent on oversight rather than on mission accomplishment.

Air Force officials note that, once an operation begins, airmen will typically break down the barriers of subcultures and work together toward the common goal now in front of them.[36] The problem lies not so much in their ability to work together once a mission starts, but rather in the capabilities they have developed beforehand. The Air Force is responsible for organizing, training, and equipping forces for operations, and the lack of understanding of real-world demands can lead to inappropriate or ineffective preparation. General Dugan makes the point that the Air Force interprets the national security strategy and organizes, trains, and equips its forces based on that.[37] This would suggest that a failure to understand the Air Force's role will have adverse consequences.

The lack of organizational change in the Air Force and its impact on readiness have been noted within the service. The Air Force Scientific Advisory Board concluded that

> The Air Force contributed greatly to winning the Cold War, but that war is over and the world is a different, and in many ways, more dangerous place. Nevertheless, because Cold War-type missions, such as response to an MTW [major theater war], still exist, the Air Force still maintains many of the same organizational constructs of the past. The increasing need to respond quickly to many locations with relatively small forces has not been a priority in the organization, training, or equipping of the Air Force. The Committee believes this

> can and should change and that such change will have a positive impact on the Air Force ability to respond to conventional MTW missions.[38]

Differences between the reality of the national security environment and traditional beliefs and regulative structures affect the Air Force's ability to prepare its forces for the entire range of military operations. Adapting the organizational strategy is the first step toward effectively organizing, training, and equipping Air Force personnel to meet current and future needs.

Organizing Air Force Forces

The Air Force's organization is based on the mission defined by the national security environment. During the Cold War, for example, SAC had the forces and bases necessary to carry out the mission of deterrence, and other major commands were structured to best support that mission. A common understanding of the mission leads to an appropriate organization of combat and support forces. Lack of agreement the mission can limit the Air Force's ability to organize effectively for modern operations.

Following the end of the Cold War, the Air Force was called upon to conduct a wide range of operations with vastly different requirements. Normative beliefs and regulative structures based on the Cold War's singular focus robbed the Air Force of the flexibility and versatility needed to tailor its forces for a particular operation. An appreciation for the needs of the national security environment, on the other hand, could aid in the effective organization of forces that can respond to a range of contingencies.

Joint Vision 2010, a vision for the future of the military published by the DoD, suggested that "America's strategic nuclear deterrent, along with appropriate national

level detection and defensive capabilities will likely remain at the core of American national security."[39] Such an emphasis on the Cold War mission in the post-Cold War period demonstrates the failure to adapt normative institutions. Creating an effective organizational structure that could respond to a wide range of threats rather than being prepared for one primary threat requires transformation of normative beliefs to match the reality of cognitive observations.

In 1997 the Air Force Scientific Advisory Board recommended the development of on-call Air Expeditionary Forces (AEF), each of which would be a collection of rapidly deployable units from which appropriate forces for a particular contingency could be drawn. This was a radical departure from existing organizational constructs, where forces were designed to deploy with their entire unit and be prepared to conduct a major war.

> Fast, global response to diverse and unpredictable CINC needs is the essence of the AEF concept. However, today's Air Force units have inherited a Cold War culture and generally think about deployed operations in terms of significantly longer timelines and far more developed and provisioned bases than those contemplated in this study. [40]

The Board concluded that the Air Force would need to change its organizational strategy before it could adopt a new organizational framework, as did the Chief of Staff, General Michael Ryan:

> We must focus our efforts on developing the process, the structure, the procedures, and most importantly the mindset to be expeditionary...Our cold war concept transitioning to our two regional war scenario has ill-prepared us for the expeditionary demands of these lesser regional contingencies...We have been stuck in a cold war basing paradigm that had, as its basis, that if we need to fight a theater war we would deploy the forces and support, win the conflict, and return victorious. Meanwhile the bases we stripped of support for our deployed forces would just have to make do. But the security demands of the world we live in are not cooperating with the paradigm and will not in the foreseeable future.[41]

Clearly, an understanding of the demands of the task environment plays a critical role in developing the most effective organizational structure for Air Force operations. When common assumptions disagree with real-world requirements, forces may be organized for a mission defined by normative beliefs and then used in operations with entirely different requirements.

Lack of appreciation for modern mission requirements left the Air Force with a shortage of available forces. For example, the Air Force has only half of the crews it needs to man its Airborne Warning and Control System (AWACS) planes. This aircraft is in extremely high demand across the range of military operations, with the result that 20-25% of the crews exceed the Air Force's deployment limit of 120 days per year.[42] This high rate of deployment for undermanned aircraft increases stress on airmen, reduces training time for other missions, and contributes to retention problems that will exacerbate manning and organizational problems in the future.

An effective organizational structure means nothing without qualified personnel to fill critical positions. The identification of oneself as "an airman" is one of the associational aspects that define service in the Air Force as a profession, not merely a job. A lack of norms of behavior and shared values diminishes the strength of this identity and will reduce the commitment of airmen to the Air Force as a profession, leaving them more likely to be lured away by other jobs that may offer better pay, location, or working conditions.

Lawrence Korb points out that the Air Force typically has the least recruiting problems but the worst retention problems. These difficulties are exacerbated by a lack of

consensus regarding the mission and values. Korb points out that as new members come into the Air Force, they are likely to leave when they see the organization's beliefs and structures digressing from their perceptions of the environment.[43] This has not only an immediate impact on readiness but also a long term effect on organizational change, as the airmen who rise to senior leadership positions will be those who have accepted the prevailing normative beliefs.

Retention difficulties lead to a high degree of turnover, resulting in experienced personnel leaving the service and being replaced. This reduces unit effectiveness as qualified personnel are replaced by inexperienced airmen. The high turnover also increases the amount of resources devoted to recruiting and training as new airmen must be trained to replace those who left before them. As the gap widens between operational requirements and out-of-date assumptions, the service's ability to retain airmen for a career will be reduced, leading to high turnover costs and a loss of corporate knowledge.

Disagreement between normative and regulative factors and the reality of the environment can lead to organizational constructs that do not meet national security requirements. Senior members of the Air Force have identified the importance of a new form of organization, but also recognize that attitudes need to change before this structure can be implemented effectively. Manning of the positions in the new structure will be difficult because of the Air Force's retention problems, and funding may need to be drawn from operations and maintenance accounts to pay for additional recruiting and training efforts. These problems will have a long term impact on Air Force readiness for modern operations.

Training

A lack of recognition and acknowledgment of the Air Force's mission and its requirements inhibits the ability to adequately train forces. Certain regulative structures, such as lists of essential tasks, training standards and schedules, and education programs, should address the requirements that airmen will have to meet when conducting operations. As a result, these regulative systems should agree with airmen's cognitive observations of their task environment. Not understanding the mission leads to not preparing for the mission.

The new task environment demanded that airmen be trained to apply their skills across a spectrum of operations rather than emphasizing the single mission of deterrence. Major General Link pointed out that without a common objective, training tends to be oriented toward specific functions without an appreciation for how those functions interact with others.[44] As airmen focus on merely one application of aerospace power they reduce the ability to use the Air Force across the range of military operations.

Air Force doctrine recognizes that "education programs that emphasize limited aspects of aerospace power reduce its effectiveness by limiting the decision-making capabilities of the individual."[45] Andrew Krepinevich wrote in 2000 that

> In short, the glaring flaw in the U.S. military today is not its readiness, but its strategy. America's armed forces find themselves struggling to maintain readiness for increasingly unlikely conflicts, while short shrift is given to any preparation for emerging threats.[46]

The difficulty in adequately preparing forces for modern operations most likely comes not from the differences between warfighting and lesser contingencies, but instead from the sharp contrasts between the different types of small contingencies, as discussed in

Chapter 4. A singular focus in training will sharply reduce the effectiveness of airpower.

During the Cold War, training emphasized the mission of warfighting. Unique operations, such as conducting peacekeeping missions, happened rarely and with enough advance warning that forces could receive special training during the pre-deployment process. The frequency and relative speed with which such missions now occur, however, often leaves little time for effective pre-deployment training. This requires that airmen be able to apply their skills in a variety of capacities.

Standards by which unit readiness is measured are less appropriate when operational realities disagree with organizational assumptions. Typical means of measuring readiness evaluate a unit's ability to complete its wartime mission. This does not appear to match the reality of current types of operations. If a unit is unprepared for war, is it prepared for the many lesser contingencies that are more likely? If it is ready to perform its wartime mission, does this indicate it also has the ability to effectively conduct smaller operations? Existing readiness measures are the same as those used during the Cold War and do not reflect new concerns such as the number of days that airmen have been deployed, the higher potential for biological and chemical weapon attacks, or the high personnel turnover caused by retention difficulties.[47]

Airmen must be prepared for the missions they are assigned. This requires an understanding of mission requirements, programs that encourage a flexible use of airpower, and standards that effectively measure readiness for likely operations. When assumptions about the mission do not agree with the reality of the Air Force's task environment, the ability of airmen to contribute effectively to military operations suffers.

Equipping the Air Force

Understanding the mission of the Air Force and the requirements for accomplishing that mission is a first step toward acquiring the proper equipment. During its formative years it became obvious that the Air Force would pursue and procure only those weapon systems that it felt contributed to its core missions.[48] Only when the service recognizes the demands it will face can it procure the right types, and adequate numbers, of systems. A lack of a common focus can lead the Air Force to purchase systems more appropriate to an earlier environment than to the current one. Subculture interests may dominate service interests, resulting in an imbalance between the systems needed and the systems available. The post-Cold War Air Force appeared to face this dilemma.

General Fogleman points out that the military's focus on being able to fight two nearly-simultaneous Major Theater Wars meant retaining many of the same types of systems as during the Cold War, simply in fewer numbers. As a result, many forces were maintained in the 1990s that were not used.[49] Acquisition programs continued to emphasize combat aircraft, though the GAO found in 1995 that US airpower was already the most formidable in the world with no emerging peer competitor.

> The changed security environment appears to have lessened the need to proceed with some programs as planned. For example, despite the United States' unmatched air-to-air combat capabilities, the Air Force plans to begin production of its next generation fighter -- the $111 million F-22 -- in 1998, with rapid increases in the production rate to follow. The F-22 program was initiated to meet the projected Soviet threat of the mid-1990s. The severity of the threat in terms of quantities and capabilities has declined and potential adversaries have few fighters that could challenge the F-15, the current US frontline fighter.[50]

Eliot Cohen suggested that the service was continuing to modernize based, not on current assessments of roles and capabilities, but instead on Cold War models:

> Despite the dizzying pace at which civilian technology moves, the Pentagon continues to buy systems designed 10 years ago and first conceived 10 years before that. Thus, the Air Force plans an enormously costly buy of F-22 fighter planes, despite two undeniable facts: (1) There is no enemy air force on the horizon remotely comparable to the US Air Force. (2) It is the delivery of ordnance against surface targets, and not virtuosity in air-to-air combat, that is the primary role of air power.[51]

Indeed, as a former assistant secretary of defense pointed out, the Air Force has touted the F-22 as a "transformational" weapon system, yet the program began in the 1980s.[52]

This is not to say that new combat systems are not worthwhile. Some combat aircraft, such as the F-15 and F-16 fighters, were developed in the 1970s, and may require replacement rather than merely being upgraded. It should also be noted that simply because an aircraft was designed for the Cold War does not mean that it is useless once the Cold War has ended. Bombers that were developed to penetrate the Soviet Union can also be used in other places, as 1999's air campaign in Yugoslavia demonstrated.

However, there are also transport aircraft, such as the C-141 and C-5, which are even older than existing fighters, and the emergence of new missions suggests a change in priorities might be appropriate. These aircraft are now in much greater demand, and the lack of aircraft is taking its toll on existing systems that are tasked at a much more demanding rate. Modern contingencies often rely heavily on airlift, yet in 1989 the Air Force's airlift capability was already more than 25% short of its goal, and the increased demands of the post-Cold War environment made the situation much worse.[53] Remote, ad-hoc bases require new logistical systems for support.

> Continuously using the aircraft to support Desert Storm, Somalia, and Bosnia operations, along with counterdrug operations, affected the reported readiness of Air Force units during this period. Particularly affected were the airlift units required to transport personnel, equipment, and supplies. For example, in fiscal

> year 1991, the C-141 fleet flew 58 percent over the planned flying hour program, and the C-5 fleet flew over by 175 percent...These aircraft are an integral part of air operations and are in constant demand by the commanders in chief.[54]

Long term and open-ended contingencies demand a much higher volume supply flights.

The deployment rates for aircraft led to lower mission-capable rates and higher demand for maintenance and spare parts. Inconsistent funding for maintenance and spare parts has contributed to a decrease in operational effectiveness.

> We reported in 1995 and again in 1999 that the C-5 had not been achieving the 75-percent mission capable rate, in part, because it lacked spare parts. DoD responded to the 1995 report by saying that Air Force initiatives to fully fund C-5 operations, provide increased spare parts funding, and fund modifications would improve the aircraft's readiness, but not visibly until 1997. The Air Force increased C-5 spare parts funding from 76 percent of requirements in fiscal year 1994 to 100 percent in fiscal year 1996. However, funding then decreased to 80 percent of requirements in fiscal year 1997.[55]

An organizational strategy based on an outdated task environment can lead the Air Force to not purchase the appropriate weapon systems, ultimately resulting in degraded effectiveness and higher costs.

Though airmen may work together and overcome the differences between their subcultures when participating in an operation, their effectiveness will be reduced if they do not have the appropriate equipment. When prevailing attitudes and budgetary structures in the Air Force conflict with operational realities, the result will be too few weapon systems for modern missions and an abundance of systems for less likely scenarios. Following the end of the Cold War the demand for such things as airlift and AWACS increased dramatically, yet the Air Force continued to focus most of its attention on procuring combat systems designed for the Cold War. While such combat aircraft can also be used in the post-Cold War environment, the lack of emphasis on

important systems resulted in higher maintenance costs and diminished capabilities, not to mention the effect on the personnel who fly these aircraft. The lack of organizational change in the Air Force contributed to the misallocation of resources for emerging missions.

Conclusion

The analysis presented in Chapter 4 provided a great deal of data regarding the transition between the Cold War and post-Cold War periods. This data allowed for the testing of a series of hypotheses addressing the policy variables affecting organizational change in the Air Force. The results of these tests suggest that there is some merit to the original hypotheses, providing a better understanding of the process by which organizational change occurs in the Air Force.

The implications of organizational change are significant. The Air Force's effectiveness depends in large measure on agreement regarding its mission. Lack of agreement makes it more difficult for airmen to focus on a common mission because there is no consensus on what that mission is. Though they may rally to the cause and come together when a specific operation provides some measure of focus, their effectiveness is likely to be reduced because their preparation for that mission was affected by disagreements between organizational attitudes and structures and the realities of the operating environment. The Air Force's inability to effectively organize, train, and equip its forces when faced with outdated assumptions reduces the capabilities that airmen bring to an operation.

[1] Interview with General (ret.) Ronald Fogleman, 2 June 2002.
[2] Interview with Major General (ret.) Charles Link, 6 June 2002.
[3] Interview with Colonel (ret.) Roger Philipsek, 14 May 2002.
[4] Interview with General (ret.) Michael Dugan, 3 June 2002.
[5] United States General Accounting Office. Impact of Operations Other Than War on Services Varies. (NSAID 99-69) Washington, DC: GAO, May 1999, p. 52.
[6] Written statement from Senator Mary Landrieu, 24 May 2002.
[7] Written statement from Colonel (ret.) Roger Philipsek, 14 May 2002.
[8] Dixon, James H. National Security Policy Formulation. Lanham, MD: University Press of America, 1984, p. 194.
[9] Pfiffner, James P. The Modern Presidency. 3rd Ed. Boston: Bedford/St. Martin's, 2000, p. 169.
[10] Sarkesian, Sam C. US National Security: Policymakers, Processes, and Politics. Boulder, CO: Lynne Rienner Publishers, 1995, p. 172.
[11] Written statement from Senator Mary Landrieu, 24 May 2002.
[12] Interview with Major General (ret.) Charles Link, 6 June 2002.
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CHAPTER 6
CONCLUSIONS AND RECOMMENDATIONS

The final chapter presents a series of conclusions based on the results of the event analysis and hypothesis testing. These conclusions provide some answers to the original research questions. The chapter then examines how these conclusions might be used by policy makers and offers a series of recommendations. Finally, it suggests avenues for further research using the results of this study.

Research Results

This study first evaluated the Air Force's task environment during the Cold War and compared that with its basic assumptions regarding its mission. This allowed for an understanding of the relationship between the task environment and the Air Force's organizational strategy. An examination of the emerging requirements after the Cold War led to an appreciation for the degree of change in the demands placed on the Air Force. That change significantly altered airmen's cognitive observations of the mission of the Air Force, leading to a disequilibrium between that cognitive understanding and the existing normative beliefs and regulative structures. A review of potential change agents -- external policy directives and internal organizational learning -- revealed much about the application of these measures after the Cold War. The final component of the analysis was an examination of cohesion in the Air Force after the Cold War. Given the

importance of a common sense of mission in maintaining cohesion within the Air Force, this review provided insight into the effectiveness of organizational change in the post-Cold War period.

An analysis of a series of hypotheses led to a number of conclusions regarding organizational change in the Air Force. First, the analysis demonstrated a close relationship between the demands of the task environment and the Air Force's organizational strategy. During the Cold War, the task environment was dominated by the Soviet threat, and the Air Force was the preeminent force for addressing that threat. The cognitive observations, regulative structures, and normative beliefs that shaped airmen's assumptions about the role of the Air Force were all based on the mission of deterring the Soviet Union. This understanding offered a baseline for analyzing the subsequent transformation of the Air Force's task environment.

The research suggests that changes to organizational strategy result from of three independent variables:

- discontinuous environmental change
- external change agent
- internal change agent

Each of these variables affect assumptions about the Air Force's misison and play a role in the organizational change process.

The first variable, discontinuous environmental change, is essentially outside of policy makers' control. Though their actions can contribute to such a change, sudden transformations of the task environment generally do not result from conscious action but instead from a combination of many factors. The creation of a new task environment

directly affects airmen's cognitive observations. They know things are different because they see events unfolding, they deploy more often, and they are placed in new situations with new demands. New members enter the service with a different set of expectations than those held by existing members because their observations are of the present environment, not the past. A change that creates a new environment in which the Air Force must function disrupts airmen's understanding of their mission by creating disagreement between cognitive observations and the existing normative beliefs and regulative structures. Once this state of disequilibrium exists, the process of transforming organizational strategy depends upon external and internal change agents.

A key change agent from external sources is a clear and consistent explanation of the Air Force's mission. A lack of understanding of the role of the Air Force, or a statement of mission that clearly conflicts with the realities of the task environment, does little to help transform regulative structures such as unit organization, training standards, and equipment procurement. Airmen need to understand what role they play in national security, and in the United States that direction comes from the civilian leadership. Whether communicated through national security policy documents, defense budgets, legislation, or some other means, a clear understanding of the mission is necessary.

Though external directives primarily affect regulative structures, they may also help shape normative beliefs over time. While civilian leaders cannot direct airmen to think a certain way, they can impose certain regulative structures that communicate the importance of certain concepts, which with time can be incorporated into the belief system.

Most of the change to normative beliefs will come through an internal change agent such as organizational learning. Promoting such learning allows airmen to evaluate the role of the Air Force in a changing environment and challenge the basic assumptions underlying traditional beliefs. The development of new assumptions about the expectations being placed upon the service allows leaders to shape the beliefs of airmen through training, education, and other methods of imparting beliefs and values.

Some internal changes will also affect regulative systems. As senior leaders recognize the new role of the Air Force, they may change those structures that are within their purview. They might adjust the way in which squadrons are organized, they may choose individuals for promotion with an eye toward different requirements than in the past, and their budget requests may reflect modern needs. Due to the amount of control held by civilian leaders outside the Air Force, however, the biggest impact of internal change is likely to be the effect of organizational learning on normative beliefs.

Following the Cold War, neither an external nor internal change agent was effectively applied to the Air Force. Cognitive observations of new mission requirements clashed with existing regulative mechanisms and normative beliefs. However, there was not a clear statement of the Air Force's new mission by external authorities such as the President or Congress. At the same time, there was no adaptation of beliefs and values through a process of organizational learning, for the simple reason that the Air Force is not designed to be a learning bureaucracy. The lack of external and internal change agents left the Air Force's organizational strategy in a state of disequilibrium with no

movement being made toward reconciling the conflicting attitudes so that further organizational change could occur.

The effects that these variables have on airmen's understanding of their mission can be measured by examining cohesion in the Air Force. Cohesion is one by-product of a common focus upon which airmen can target their efforts. Lack of agreement or understanding among airmen is likely to weaken that cohesion, which can be evaluated using a number of different measures. Those measures show a reduction in cohesion in the Air Force in the years following the end of the Cold War, demonstrating a lack of understanding of the Air Force's role that has significant implications for the service's effectiveness.

A common understanding of the service's mission is especially important to the Air Force because of the degree of cohesion it conveys. Maintenance of that cohesion after a discontinuous change requires a transformation of organizational strategy so that airmen have an understanding of their mission that reflects the demands of their task environment. The organizational change process will take time, but it cannot even begin until the appropriate change agents are applied to adapt the organizational strategy. Though it would help if policy makers were familiar with all the factors affecting organizational change, they should be particularly aware of the influence they have over external and internal change agents.

Use of the Research Results by Policy Makers

The critical role played by the Air Force in national security suggests that policy makers would benefit from an improved understanding of the organizational change

process. For that reason, this study emphasized the exploration and identification of variables that are susceptible to influence by policy makers. This section examines how policy makers might employ these variables in the future, with emphasis on defining a clear mission for the Air Force, developing an environment that promotes organizational learning, and recognizing the effects of disequilibrium within the organizational strategy.

Influencing Organizational Change from Outside the Air Force

The post-Cold War experience suggests that a lack of clear direction from civilian policy makers may adversely affect the Air Force's effectiveness. It would follow, then, that an expression of the expectations that civilian leaders have for the Air Force could lead to changes in the service that help bring it into line with the operational demands of the task environment. When airmen are assigned missions that are vastly different from their expectations, the result is confusion. Policy makers' words need to match their actions.

This study addressed the development of a national security strategy and the expectations for the use of military forces found therein. There are, of course, other forms of external direction. Budgets and acquisitions, for instance, say a lot about what is expected of the military. A secretary of defense who states that peacekeeping and humanitarian intervention are primary roles for the military, but who then requests new types of fighter aircraft in the budget while ignoring the plunging readiness rates of overextended cargo aircraft, can miss an opportunity to reshape beliefs and norms in the Air Force. A strategy for developing and acquiring systems that meet the needs of a new task environment is essential. This not only ensures that the proper equipment is

available, it also sends a message regarding the role the Air Force is to play in national security.

The years immediately after the end of the Cold War, especially early in the Clinton administration, saw a diminished recognition of foreign policy and national security concerns. This is not surprising, as it was easier to see the demise of a traditional enemy than it was to note the emergence of new threats. One reason for the unilateral declaration of peacekeeping as the key military function might have been the desire to address leftover foreign policy issues so the administration could move on to domestic concerns. In the modern global economy, however, domestic policy and national security policy are closely intertwined. Though conflict in Africa or the Balkans might not directly affect vital American security interests, it can disrupt important economic interests such as the unimpeded flow of goods and the emergence of new markets. Meanwhile, economic and other policies in the United States can significantly affect the economies of other nations, particularly key trading partners and emerging democracies. Neither domestic nor national security policy should be ignored in favor of the other.

The post-Cold War period demonstrated many new characteristics in the national security environment, among them the demise of the "permanent crisis" and an increased expectation within Congress that they would be active in shaping national security policy. Though this has been increasing since the Vietnam War, it became the rule in the post-Cold War period. Other interested parties have more of a voice now than before, among them the uniformed military, NATO and other allies, and the United Nations. National security policy should not be a unilateral statement by the President but instead should

result from a collaborative effort in which various perspectives are solicited. While some collaboration among agencies does exist, the examples of the early Clinton administration suggested that it was not enough. An improved process could help not only to create a better policy, but also to reduce the active opposition to that policy after the fact.

Creating Change Through Organizational Learning

If the Air Force is to be a learning bureaucracy, organizational learning will have to be a conscious effort. Airmen must have an opportunity to examine their role in maintaining national security and question their basic assumptions about the Air Force. The closed nature of this bureaucracy and the prescribed path for advancement make it difficult for career-minded individuals to challenge normative beliefs.

There are certain structures in a bureaucracy that can facilitate organizational learning. This study focused on a formal education process, which is a necessary condition for learning to occur. If the Air Force seeks the ability to change normative beliefs as the environment changes, it first needs to identify who shapes those beliefs and then give them the opportunity to learn and then diffuse that knowledge. The professional military education system offers an excellent means of doing that. This could be the place where assumptions are challenged, new ideas emerge, and the wishes of Air University's founders are carried out. This opportunity is presently marred by competition for "Distinguished Graduate" honors, a feeling by some that they are "filling a square" on their personal career path by attending school, and by a faculty and curriculum that are designed to create airpower experts but not to challenge airmen to think about their role. If the Air Force desires the capacity for organizational learning, it

will need to examine the role that education plays and perhaps change that system to better accommodate a reevaluation of normative beliefs.

While necessary, an effective education system is by no means sufficient to create significant organizational changes. Airmen who have spent 12 years or more in an environment that does not encourage the challenging of assumptions cannot be thrust into a 10-month school and be expected to change their behavior. There are other structural changes that would need to be made to encourage organizational learning. An analysis of these changes is beyond the scope of this study, but it is important to note the work done by the Air Force's Developing Aerospace Leaders (DAL) office in recent years. DAL's mission has been to develop the means to create leaders for the Air Force who are appropriate for the current environment, with the ability to adapt to new environments. Many of the structural changes advocated by the DAL program office seem designed to facilitate organizational learning, and it would be worthwhile to monitor the progress this office makes in implementing those changes.

Recognizing the Effects of Disequilibrium

Air Force leaders should recognize that some problems they face after the task environment changes may be caused to some degree by a lack of understanding of the Air Force's role. For example, the retention problems that arose in the Air Force in the 1990s are often attributed primarily to improved economic conditions in the civilian sector that encouraged airmen to leave the service for comparable jobs. It may instead be the case that retention problems are the result of diminishing incentives to remain in the service.

Improvements in the economy are the easy culprit for retention concerns, but other issues, including organizational strategy, should be considered.

This realization could affect the solutions to such problems. Turning again to retention, the best answer might not be financial incentives -- which would weaken the reason for leaving the service -- but instead might be a reinforcement of a shared Air Force mission, which would strengthen the primary reason for staying in. Other problems in military effectiveness, such as concern over training time and the availability of equipment, might be addressed by recognizing the role that a lack of understanding of the Air Force's mission may play in these concerns.

Using the Results in Future Research Efforts

This study was not intended to provide a comprehensive understanding of the Air Force. The goal was merely to identify important variables in its organizational change process. With this initial identification complete, the door is open to further exploration not only of the Air Force, but also of the other services and their task environments. In particular, these results can be used as a starting point for further research into the importance of each change agent, the impact of the end of the Cold War on the other services, and the possibility that a new task environment has arisen to supplant the post-Cold War environment.

Having identified critical external and internal change agents, it would be worthwhile to explore the importance of each. How much of an effect does an external mission statement or internal organizational learning have on organizational change? Do internal changes naturally follow external changes? Are internal changes alone sufficient to cause

an adaptation in relevant regulative mechanisms? It is possible that a disruption caused by new cognitive observations might be resolved simply by the application of one or the other change agent. Conscious changes to normative beliefs might lead to natural changes in regulative systems, while new regulative structures might lead to new belief systems over time. It is also possible that both change agents must be applied in order for organizational change to occur. Having identified the most likely means of change, it now would be possible to examine the effect and importance of each on the overall transformation process.

For a variety of reasons, such as its relative youth and the importance of cohesion among many highly technical subcultures, the Air Force may be more susceptible to disruption from a discontinuous change than other services. Had the Air Force adapted in the post-Cold War period, it is likely that the other services would, too. Since it appears, however, that the Air Force failed to adapt, it would be worthwhile to ask if other, perhaps less susceptible, services were similarly affected. An understanding of the differences between the services is essential for developing a model of those other services and the impact upon them of the end of the Cold War.

As noted before, recognition of a discontinuous change often occurs in hindsight. Scholars are already questioning whether the terrorist attacks of September 11, 2001, might constitute the kind of discontinuous change that leads to a new task environment for the Air Force. This questioning will continue for some time as the results of those attacks are examined and compared to the expectations and threats identified in the post-Cold War period. If the attacks represent the creation of a "post-9/11" environment that

is substantially different from the decade that followed the Cold War, it may be that the change agents identified in this study will again need to be applied so that airmen share a common understanding of their mission that agrees with the demands of their task environment. This could have just as much of an impact on effectiveness as the end of the Cold War had, so this question should not be dismissed casually.

Original research often does not provide answers to broad, overarching questions, but instead suggests steps toward further conclusions. This study identified important variables, but an understanding of how those variables work and the application of these results outside of this limited context require additional research by future scholars. The conclusions reached in this research are merely a starting point, not an end.

Conclusion

Though it may have been the first major change to the Air Force's task environment, the end of the Cold War was certainly not the first such change in the history of the US military. Authors often cite the Civil War, World War I, and the start of the Cold War as events that created environments with new threats, new opportunities, and new responsibilities for the United States and its military forces. The Army, Navy, and Marine Corps have faced discontinuous changes before and have learned from each.

The fact that it has happened before strongly suggests that it will happen again. Though some may suggest there has been an "end of history," the likelihood exists that the future holds many changes for American security. The September 2001 terrorist attacks demonstrate that new threats continue to arise. This study attempts to start filling

the void in the research regarding the Air Force so that future transformations of the environment can be met with effective organizational change.

There is a final, important point that should be made, and that is that this study does not in any way seek to criticize any agency or cast blame for the failure to initiate organizational change in the Air Force during the 1990s. As noted earlier, the end of the Cold War was the first shift of this scale for the Air Force, so it is not surprising that it lacked the tools for change. Policy makers in both the executive and legislative branches found themselves in a transitional period that was new to them as well, and they were unlikely to know what the Air Force required in terms of clear direction. The Clinton administration's efforts to unilaterally implement new policies reflected an earlier paradigm that unbeknownst to them was no longer agreed upon by other policy participants. This study merely captures some of the lessons of that period and identifies key variables that policy makers can potentially influence following future changes.

APPENDIX A
INTERVIEW PROCEDURES

This appendix lists the respondents in the interview process and the sets of questions used in the interviews. Questions were developed that addressed the major themes of the study. These questions were designed to help evaluate the selection of data and provide further examination of the results of the hypothesis testing. Respondents were selected based on their professional experience and their familiarity with the subjects addressed by the questions. Where possible, respondents were selected whose experience allowed them to address multiple Question Sets. The interview procedures were approved by the George Mason University Human Subjects Review Board on 2 May 2002 as protocol number 3455.

Question Sets

The Question Sets were developed to address the research questions in the dissertation. They provide factual information regarding historical events beyond that found in public documents. They also provide attitudinal data that help describe the context in which policy decisions were made. Different Question Sets were used based on an individual's position and experience. Additionally, the respondent's answers and professional experience often suggested follow-on questions that are not included here.

Question Set 1: Air Force Culture and Cohesion

- What is the relationship between a common Air Force culture and cohesion within the Air Force?
- What are some of the implications of a weak or unstable culture with regard to operational effectiveness and readiness?
- What are some signs of reduced cohesion that might be observed?
- Does external direction play a role in developing a common culture?
- Does the Air Force have the capacity for organizational learning?

Question Set 2: The End of the Cold War

- During the Cold War, was the Air Force focused on nuclear deterrence, or did the culture encompass multiple threats?
- Did the end of the Cold War reflect an evolution in the existing environment, or a new environment?

Question Set 3: The Post-Cold War Air Force

- Was there a clear understanding of the Air Force's mission in the years following the Cold War?
- Did collaboration between subcultures increase, decrease, or remain stable after the Cold War? (particularly within emerging subcultures, such as Special Operations, Space Operations, Air Mobility, and Information Warfare)

Question Set 4: External Policy Changes

- Was there a common understanding within the executive/legislative branch of the role the military would play following the Cold War? Of the role of the Air Force?
- Did the administration communicate a clear mission to the Air Force?
- Did Congress communicate a clear mission to the Air Force?

- Were Congress, the administration, and the subsystem of interested parties prepared to collaborate to define a mission for the Air Force?

Respondents

This list includes those individuals identified as respondents based on their professional experience. The list of Question Sets from which appropriate questions were drawn are included for each respondent.

- General Michael J. Dugan (USAF, ret.), former Chief of Staff of the Air Force, June 1990 - December 1990 [QS 1,2,3] *Telephone Interview, 3 June 2002*
- Robert Filippone, Deputy Staff Director, Senate Select Committee on Intelligence [QS 2,4] *Telephone Interview, 15 May 2002*
- General Ronald Fogleman (USAF, ret.), former Chief of Staff of the Air Force, 1994-1997 [QS 1,3,4] *Telephone Interview, 2 June 2002*
- Dr Michael Hartzel, Majority Staff Member, Senate Foreign Relations Committee [QS 2,4] *Personal Interview, 15 May 2002*
- The Honorable Lawrence Korb, Ph. D., former Assistant Secretary of Defense (Manpower, Reserve Affairs, and Logistics), 1981-1985 [QS 2,4] *Telephone Interview, 20 May 2002*
- Senator Mary Landrieu (D-LA), Chair, Subcommittee on Emerging Threats, Senate Armed Services Committee [QS 2,4] *Written Statement, 24 May 2002*
- Major General Charles Link (USAF, ret.), former special assistant to the Chief of Staff for the National Defense Review and special assistant to the Chief of Staff for roles and missions, presently the Director of the US Air Force Developing Aerospace Leaders Program Office [QS 1,2,3] *Personal Interview, 6 June 2002*
- Colonel Jeffery McCausland, Ph. D. (USA, ret.), former Director, Office of Arms Control and Defense Policy, National Security Council, 1999 [QS 2, 4] *Telephone Interview, 4 June 2002*
- Alan McCurry, Military Legislative Assistant for Senator Pat Roberts (R-KS) [QS 2,4] *Personal Interview, 15 May 2002*

- Colonel Roger Philipsek (USAF, ret.), former Vice Commander, Air Force Doctrine Center [QS 2,3] *Written Statement, 14 May 2002, and Telephone Interview 20 May 2002*

- General Michael Ryan (USAF, ret.) former Chief of Staff of the Air Force, 1997-2001 [QS 1,3,4] *Telephone Interviews 1 July 2002 and 15 July 2002*

- Bill Suety, Legislative Assistant for Senator Bill Nelson (D-FL) [QS 2,4] *Telephone Interview, 24 May 2002*

- The Honorable Sheila Widnall, Ph. D., former Secretary of the Air Force, 1993-1997 *Written Statement, 14 May 2002, and Telephone Interview 20 May 2002*

In addition to the identified respondents who discussed these questions on the record, two personal staff members of Senate Armed Services Committee members, and one member of the Senate Armed Services Committee permanent staff, provided background information but asked not to be identified in this study.

APPENDIX B
NATIONAL SECURITY POLICY DOCUMENTS

The following is a list of basic national security policy documents that were reviewed to develop an understanding of the Air Force's task environment during the Cold War.

NSC 1/1 The Position of the United States With Respect to Italy 14 November 1947

NSC 5/1 The Position of the United States With Respect to Greece 2 February 1948

NSC 6 The Position of the United States Regarding Short-Term Assistance to China 26 March 1948

NSC 7 The Position of the United States With Respect to Soviet-Dominated World Communism 30 March 1948

NSC 8 The Position of the United States With Respect to Korea 2 April 1948

NSC 10/4 Responsibilities of CIA(OPC) With Respect to Guerrilla Warfare 16 January 1951

NSC 20 Appraisal of the Degree and Character of Military Preparedness Required by the World Situation 12 July 1948

NSC 68 United States Objectives and Programs for National Security 14 April 1950

NSC 114 Status and Timing of Current US Programs for National Security 27 July 1951

NSC 135/3 Reappraisal of United States Objectives and Strategy for National Security 25 September 1952

NSC 139 An Early Warning System 31 December 1952

NSC 141 Reexamination of United States Programs for National Security 19 January 1953

NSC 142 Status of United States Programs for National Security 31 December 1952

NSC 162/2 Review of Basic National Security Policy 30 October 1953

NSC 5412/1 Covert Operations 12 March 1955

NSAM 2 Development of Counter-Guerrilla Forces 3 February 1961

NSAM 5 Study of Office of Civil and Defense Mobilization 3 February 1961

NSAM 41 Military Planning for a Possible Berlin Crisis 25 April 1961

NSAM 58 NSC Evaluation of Proposals for US Approaches to the Berlin Problem 30 June 1961

NSAM 61 An Effective Countertheme to "Peaceful Coexistence" 14 July 1961

NSAM 62 Joint Program of Action With the Government of Vietnam 11 August 1961

NSAM 82 Allied Military Buildup 28 August 1961

NSAM 100 Contingency Planning for Cuba 5 October 1961

NSAM 109 US Policy on Actions in a Berlin Conflict 23 October 1961

NSAM 111 First Phase of Vietnam Program 22 November 1961

NSAM 114 Training for Friendly Police and Armed Forces in Counter-insurgency, Counter-subversion, Riot Control and Related Matters 22 November 1961

NSAM 119 Civic Action 18 December 1961

NSAM 124 Establishment of the Special Group (Counter-insurgency) 18 January 1962

NSAM 147 NATO Nuclear Program 18 April 1962

NSDM 35 US Policy on Chemical Warfare Program and Bacteriological/Biological Research Program 25 November 1969

NSDM 44 US Policy on Toxins 20 February 1970

NSDM 76 The New US Foreign Assistance Program 10 August 1970

NSDM 84 Defense Program FY 72-76 11 September 1970

NSDM 114 Bolivia 20 June 1971

PD/NSC 13 Conventional Arms Transfer Policy 13 May 1977

PD/NSC 18 US National Strategy 24 August 1977

PD/NSC 59 Nuclear Weapons Employment Policy 25 July 1980

PD/NSC 62 Modifications in US National Strategy 15 January 1981

PD/NSC 63 Persian Gulf Security Framework 15 January 1981

NSDD 12 Strategic Forces Modernization Program 1 October 1981

NSDD 13 Nuclear Weapons Employment Policy 1 December 1981

NSDD 21 Responding to FLOGGERS in Cuba 29 January 1982

NSDD 54 United States Policy Toward Eastern Europe 2 September 1982

NSDD 69 The M-X Program 22 November 1982

NSDD 91 Strategic Forces Modernization Program Changes 19 April 1983

NSDD 100 Enhanced US Military Activity and Assistance for the Central American Region 28 July 1983

NSDD 186 Installation and Operation of the Direct Communications Link (DCL)/"Hotline" Between Washington and Moscow 4 September 1985

NSDD 284 US Military Capabilities in Support of NATO 15 October 1987

APPENDIX C
CONTENT ANALYSIS OF AIR FORCE DOCTRINE

The following is a list of basic Air Force doctrine documents that were reviewed when exploring the basic doctrine of the Air Force during the Cold War in Chapter 4. It is followed by an explanation of the coding process and the data sets showing the coding of each paragraph in each document.

Air Force Manual 1-2. United States Air Force Basic Doctrine. 1 April 1953. 17 pages.

Air Force Manual 1-2. United States Air Force Basic Doctrine. 1 April 1954. 19 pages.

Air Force Manual 1-2. United States Air Force Basic Doctrine. 1 April 1955. 10 pages.

Air Force Manual 1-2. United States Air Force Basic Doctrine. 1 December 1959. 13 pages.

Air Force Manual 1-1. United States Air Force Basic Doctrine. 14 August 1964. 20 pages.

Air Force Manual 1-1. United States Air Force Basic Doctrine. 28 September 1971. 17 pages.

Air Force Manual 1-1. United States Air Force Basic Doctrine. 15 January 1975. 12 pages.

Air Force Manual 1-1. Functions and Basic Doctrine of the United States Air Force. 14 February 1979. 72 pages.

Air Force Manual 1-1. Functions and Basic Doctrine of the United States Air Force. 5 January 1984. 42 pages.

An initial review of Cold War-era doctrine documents suggested eight categories of subjects into which content might fall. Each document was then reviewed carefully, and each paragraph was assigned a code based on its topic sentence and supporting information. After completing the first review, a second review was conducted to ensure comparable results would be achieved. Coding that differed between the first review and the second was carefully studied a third time to determine which code should be assigned. The final results are presented in this appendix, using the following codes:

1 - High-intensity nuclear operations
2 - Low-intensity nuclear operations
3 - General discussion of nuclear warfare and deterrence
4 - Large-scale conventional conflicts
5 - Small-scale conventional conflicts
6 - Capabilities of aerospace technology
7 - Effective use of the aerospace environment
8 - Other (general discussions of national security, the purpose of doctrine, etc)

Some documents use a numbering system for paragraphs that is common to Air Force publications, which greatly facilitated the review. Where this is the case, some numbered paragraphs are in fact nothing more than one line, and would simply be part of a bulleted list in an unnumbered system, so they are not included as separate paragraphs for the purpose of this analysis. Some documents do not use the traditional numbering system, and in these cases, the analyst has assigned numbers to the paragraphs to facilitate the review process. Finally, the documents dated 14 February 1979 and 5 January 1984 have a hybrid system in which the initial paragraph in a section is numbered while subordinate paragraphs are not. The data sets for those documents list the initial paragraph number and then the codes for all the subordinate paragraphs within that section.

Document: Air Force Manual 1-2, 1 April 1953

Paragraph	Code
1-1	8
1-2	8
1-3	3
1-4	8
2-1	8
2-2	8
2-3	8
2-4	7
2-5	8
2-6	7
2-7	8
2-8	8
2-9	6
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5-2	3

Document: Air Force Manual 1-2, 1 April 1954

Paragraph	Code
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4-18	7
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5-2	3

Document: Air Force Manual 1-2, 1 April 1955

Paragraph	Code
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4-3	7
4-4	7

Paragraph	Code
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Paragraph	Code

Paragraph	Code

Document: Air Force Manual 1-2, 1 December 1959

Paragraph	Code
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3-16	8
3-17	3

Paragraph	Code
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Paragraph	Code

Paragraph	Code

Document: Air Force Manual 1-1, 14 August 1964

Paragraph	Code	Paragraph	Code	Paragraph	Code	Paragraph	Code
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1-2	7	3-5b	1	4-3c	2		
1-3	8	3-6	1	4-3d	2		
1-3a	8	3-6a	1	4-3e	2		
1-3b	1	3-6b	1	4-4	2		
1-3c	3	3-6c	1	4-5	2		
1-3d	3	3-7	1	4-6	2		
1-4	8	3-7a	1	4-7	2		
1-5	3	3-7b	1	4-8	2		
1-5a	3	3-7c	3	4-9	2		
1-5b	3	3-7d	1	4-10	2		
2-1	7	3-8	1	5-1	4		
2-2	7	3-8a	1	5-2	4		
2-2a	7	3-8a(1)	1	5-2a	4		
2-2b	7	3-8a(2)	1	5-2b	4		
2-2c	7	3-8a(3)	1	5-2c	4		
2-2d	7	3-8a(4)	1	5-3	4		
2-3	6	3-8b	1	5-4	4		
2-3a	3	3-9	1	5-5	4		
2-3b	6	3-10	1	5-6	4		
2-3c	6	3-10a	1	5-7	4		
2-3d	6	3-10b	1	5-8	4		
2-3e	6	3-10c	1	5-9	4		
2-4	7	3-10d	1	5-10	4		
2-4a	7	3-10e	1	6-1	5		
2-4b	7	3-11	1	6-2	5		
2-4c	7	3-12	1	6-3	5		
3-1	1	3-12a	1	6-4	5		
3-2	1	3-12b	1	6-5	5		
3-3	1	3-12c	1	6-6	5		
3-3a	1	3-12d	1	6-7	5		
3-3b	1	3-12e	1	7-1	3		
3-3c	1	4-1	2	7-2	7		
3-4	1	4-2	2	7-3	8		
3-4a	1	4-2a	2	7-4	8		
3-4b	1	4-2b	2				
3-4c	1	4-3	2				
3-5	1	4-3a	2				

Document: Air Force Manual 1-1, 28 September 1971

Paragraph	Code	Paragraph	Code	Paragraph	Code	Paragraph	Code
1-1	8	2-1a	7	2-3d	6	5-3a	1
1-1a	8	2-1a(1)	7	2-4	6	5-3a(1)	1
1-1b	8	2-1a(2)	7	2-4a	6	5-3a(2)	1
1-1c	8	2-1a(3)	7	2-4b	6	5-3a(3)	1
1-1d	8	2-1a(4)	7	3-1	5	5-3b	1
1-2	8	2-1a(5)	7	3-2	5	5-3c	1
1-2a	8	2-2	7	3-2a	7	5-4	1
1-2b	8	2-2a	7	3-2b	7	5-4a	1
1-2b(1)	3	2-2a(1)	7	3-2c	7	5-4b	1
1-2b(2)	3	2-2a(2)	7	3-3	6	5-5	1
1-2b(3)	3	2-2a(3)	7	3-4	6	5-5a	1
1-2b(4)	8	2-2b	6	3-4a	6	5-5b	1
1-2b(5)	3	2-2c	6	3-4b	6	5-5c	1
1-2c	5	2-2d	6	3-4c	6	5-5d	1
1-2d	8	2-2d(1)	6	3-4d	6	5-5e	1
1-2e	8	2-2d(1)a	6	3-4e	6	5-5f	1
1-3	3	2-2d(1)b	6	4-1	2	6-1	5
1-3a	3	2-2d(1)c	6	4-2	2	6-1a	5
1-3b	3	2-2d(2)	6	4-2a	2	6-1b	5
1-3b(1)	3	2-2e	6	4-2b	2	6-1c	5
1-3b(2)	3	2-2e(1)	6	4-2c	2	6-1d	5
1-3b(3)	2	2-2e(1)a1	6	4-2d	2	6-1e	5
1-3b(4)	3	2-2e(1)a2	6	4-3	2	6-2	5
1-3b(4)a	3	2-2e(1)a3	6	4-3a	2	6-3	5
1-3b(4)b	3	2-2e(1)a4	6	4-3b	2	6-4	5
1-3b(4)c	3	2-2e(1)b	6	4-3c	2		
1-3b(4)d	3	2-2e(2)	6	4-3d	2		
1-3c	3	2-2e(2)a1	6	4-3e	2		
1-4	7	2-2e(2)a2	6	4-4	2		
1-4a	8	2-2e(2)a3	6	4-4a	2		
1-4b	3	2-2e(2)a4	6	4-4b	2		
1-4c	3	2-2e(2)a5	6	4-5	2		
1-5	7	2-2e(2)b	6	4-5a	2		
1-6	7	2-2f	6	4-5b	2		
1-6a	3	2-2g	6	4-5c	2		
1-6b	7	2-3a	6	5-1	1		
1-6b(1)	7	2-3b	8	5-2	1		
1-6b(2)	7	2-3c	6	5-3	1		

Document: Air Force Manual 1-1, 15 January 1975

Paragraph	Code
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1-6d	3
1-6e	3
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1-8a	3
1-8b	8
1-8c	8
1-8d	3
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2-2a	7
2-2b	7
2-2c	7
2-2d	7
2-3	7
2-3a	7
2-3b	7
2-3c	7
2-3d	7
2-3e	7
2-3f	7
2-3g	7
2-4	7
2-5	7
2-5a	7
2-5b	7

Paragraph	Code
2-5c	7
2-5d	7
2-5e	7
2-5f	7
2-5g	7
2-6	8
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2-6b	8
3-1	3
3-2	7
3-3	7
3-3a	7
3-3b	6
3-3b(1)	6
3-3b(2)	6
3-3b(3)	6
3-4	6
3-5	6
3-5a	3
3-5b	7
3-5b(1)	7
3-5b(2)	7
3-5c	7
3-5d	7
3-5e	7
3-5e(1)	7
3-5e(2)	6
3-5f	7
3-5f(1)	7
3-5f(2)	7
3-5f(3)	6
3-5g	7
3-5g(1)	7
3-5g(2)	7
3-5h	5
3-5i	6
3-6	3
3-6a	3

Paragraph	Code
3-6b	3
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3-6b(1)a	1
3-6b(1)b	1
3-6b(1)c	1
3-6b(2)	2
3-6b(3)	4
3-6b(4)	5
3-6b(4)a	5
3-6b(4)b	5
3-7	7

Paragraph	Code

Document: Air Force Manual 1-1, 14 February 1979

Paragraph	Code
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1-6c	2
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1-6e	3
1-6f	3
1-6g	5
1-6h	5
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1-6j	5
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2-6a	8
2-7	8
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2-8a	1

Paragraph	Code
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2-8d	6
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2-8j	4
2-8k	4
2-8l	4
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2-8n	4
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2-8p	4
2-8q	4
2-8r	4
2-8s	4
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2-8u	6
2-8v	3
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2-8z	5
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2-11e	7
2-11f	7
2-11g	3
2-11h	6

Paragraph	Code
2-11i	6
2-11j	6
2-11k	7
2-11l	7
2-12	7
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2-12b	7
2-12c	7
2-12d	7
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3-2b	7
3-2c	7
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3-3j	7
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3-4c	8
3-4d	8
3-4e	8
3-4f	8
3-4g	8

Paragraph	Code
3-4h	8
3-4i	8
3-4j	8
3-4k	8
3-4l	6
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3-4n	8
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4-5c	8
4-5d	8
4-5e	8
4-5f	8
4-5g	8
4-5h	8
4-5i	8
4-5j	4
4-5k	4
4-5l	4

Document: Air Force Manual 1-1, 14 February 1979

Paragraph	Code
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5-3g	8
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5-4b	7
5-4c	6
5-4d	7
5-4e	6
5-4f	7

Paragraph	Code
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5-4h	7
5-4I	7
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6-5b	7
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6-6d	3
6-6e	8
6-6f	3
6-6g	7
6-7	8

Paragraph	Code

Paragraph	Code

Document: Air Force Manual 1-1, 5 January 1984

Paragraph	Code
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1-4c	8
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2-4a	6
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2-4c	6
2-4d	6
2-4e	6
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2-6f	8
2-6g	8
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2-6j	8
2-6k	8
2-6l	8
2-6m	8
2-6n	8

Paragraph	Code
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2-7f	7
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2-7bb	7
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2-7dd	7
2-7ee	7
2-7ff	7
2-7gg	7
2-7hh	7
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Paragraph	Code
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4-2b	7
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4-2d	7
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4-2f	8
4-2g	8

Paragraph	Code
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4-4a	8
4-4b	8
4-4c	8
4-4d	8
4-5	7
4-5a	7
4-5b	7
4-5c	7

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