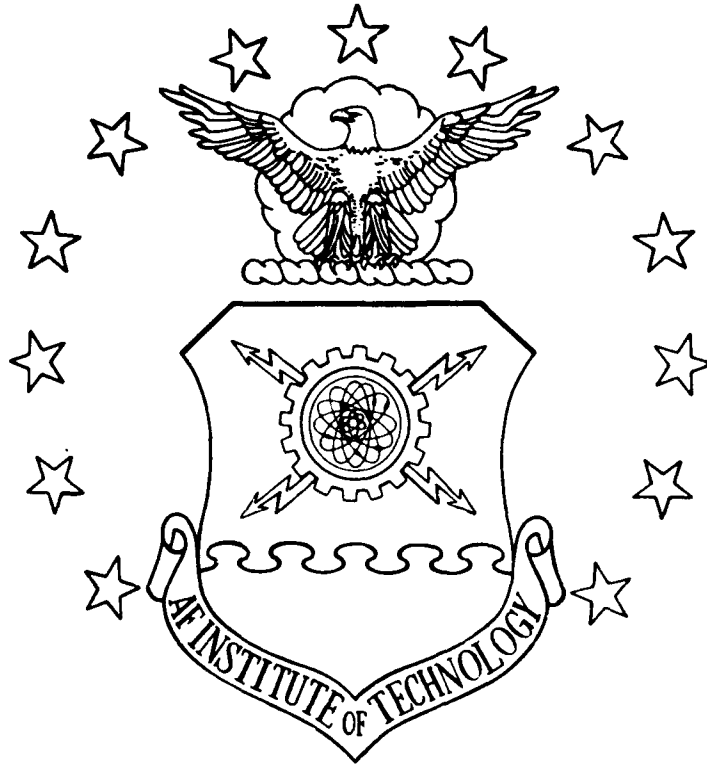


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AERIAL PORTS IN LOW INTENSITY CONFLICT:
VIETNAM, GRENADA, AND PANAMA

THESIS

David J. Parker, Captain, USAF

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AERIAL PORTS IN LOW INTENSITY CONFLICT:
VIETNAM, GRENADA, AND PANAMA

THESIS

Presented to the Faculty of the School of Systems and
Logistics of the Air Force Institute of Technology
Air University

In Partial Fulfillment of the
Requirements for the Degree of
Master of Science in Logistics Management

David J. Parker, B.S.
Captain, USAF

September 1990

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Table of Contents

	Page
Acknowledgements	ii
List of Figures	v
List of Tables	v
Abstract	vi
I. Introduction and Methodology	1
Background	1
General Issue	5
Specific Problem	5
Investigative Questions	7
Scope	8
Methodology	9
Overview	11
II. Background	13
Development of United States Conflict Paradigm	13
Building the LIC Definition	20
LIC and the Spectrum of Conflict	26
Categories of LIC	31
LIC and Logistics	33
Summary	36
III. Aerial Ports in LIC	38
Historical Background	38
Vietnam	40
Grenada--Operation Urgent Fury	65
Panama--Operation Just Cause	78
Summary	90
IV. Conclusions and Recommendations	94
Assumptions	95
Analysis	97
Conclusions	103
Alternatives	105
Recommendations	109
Suggestions for Further Research	112
Bibliography	115
Vita	122

List of Figures

Figure	Page
1. Spectrum of Conflict Model Featuring Military Response Measures	27
2. Spectrum of Conflict Model Utilizing Probability, Criticality, and Preparedness Factors	28
3. Spectrum of Conflict Model Utilizing Risk and Probability Factors	29
4. Aerial Port Organization in the Early to Mid Stages of the Vietnam War	45
5. Current CONUS-Based MAPS Force Distribution	68
6. Current CONUS-Based APS Force Distribution	101
7. Proposed CONUS-Based APS/MAPS Force Distribution	108

List of Tables

1. Alternate Terms For LIC	22
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Abstract

This study investigated the role of aerial port forces in low intensity conflict (LIC). The Vietnam War through 1968, operation Urgent Fury in 1983, and operation Just Cause in 1989 were analyzed to determine the role and effectiveness of aerial ports in LIC.

LIC was defined according to the Department of Defense (DoD). Within the DoD definition of LIC, four broad categories were identified, and among them insurgency/counterinsurgency, peacetime contingency operations and peacekeeping were singled out as most probable to require aerial port logistics support.

After examining the counterinsurgency period of the Vietnam War and peacetime contingency operations in Grenada and Panama, the results of this research indicate that aerial port forces in LIC must be prepared to provide extremely mobile, combat ready units. These aerial port forces must also be prepared to function under austere conditions, and operate specialized equipment. LIC is not business as usual.

Another finding indicates that the tactical and strategic role differentiation between aerial port forces that developed after the Vietnam War is no longer logical nor valid. Aerial port forces are not currently fully

capable of successful involvement in LIC because of geographic, doctrinal and functional divisions that exist. Options are presented that, if implemented, could successfully improve aerial port capabilities to participate in LIC operations.

AERIAL PORTS IN LOW-INTENSITY CONFLICT:
VIETNAM, GRENADA, AND PANAMA

I. Introduction and Methodology

Background

Difficult to define and similar in some respects to a chameleon, low intensity conflict (LIC) is the dominant form of warfare exercised by mankind during the 30 years from 1960 to 1990. The Air Force's Air University produced a short definition that describes LIC as "an ever-expanding realm of threats and response measures that fall short of engagement between conventional military forces (Blank, 1988:165). According to one researcher this ever-expanding realm numbered approximately 1,000 low intensity conflicts between the years 1945 to 1985 (Rylander, 1985:76). While the United States has not been involved in this many small conflicts, it can be drawn in if and when they affect National Security Objectives. One such objective states that the United States seeks to "...deter any aggression that could threaten its security", and if deterrence fails, will then "...repel or defeat military attack and end conflict on terms favorable to the United States, its interests, and allies" (United States, 1990:2).

This unconventional war environment poses unique challenges for military operational and support elements.

The logistics support functions (or logistics functions) play a different role in LIC when compared to their traditional role carried out in conventional war. A 1986 military research panel describes the role of logistics in LIC as follows:

Logistics takes on an added dimension. No longer is it in its traditional and more passive role of the supporting force. Rather, it takes on an active role as the lead element into the theater, becoming the supported force or the logistical "nose" as opposed to the traditional logistical "tail". (Joint Low Intensity Conflict Project, 1986:Ch 13, 4)

A 1987 study by the Army-Air Force Center for Low Intensity Conflict expounds upon the new "lead" role played by logistics in LIC.

In LIC, logistics elements may precede other forces into the area of operations or may be the only military forces deployed. Logistics preparation of the battlefield as a specific task or as a collateral benefit of assistance to a host nation can be critical to the successful prosecution of a current or future LIC operation. Within the political constraints governing U.S. involvement, logistics systems must have the flexibility to tailor support to the local situation. Logistics support in LIC involves not only providing material and supplies to U.S. and host nation combat forces but also working to develop host nation logistics systems. (Ayers, 1987:4)

Airlift plays an important role in carrying out the lead element role of logistics in LIC. Because speed, flexibility, and mobility are key factors in responding to LIC scenarios, airlift is viewed as a key element for successful logistical support. The 1988 Department of Defense (DoD) Logistics Strategic Planning Guidance describes the overall requirement in the following manner:

Struggles for dominance and influence will spawn small, undeclared conflicts in many locations and environments. The need for mobile and flexible forces will increase as a consequence. (DoD, 1988:7)

Mobile and flexible forces are possible through the use of airlift. Lt Col Dennis E. Welch states in his study "Does an Achilles Heel Exist in Movement Control For a Theater of War?" that "...routine sustainment of LIC operations by airlift operations is envisioned by most CINC planners" (Welch, 1989:29). The early years of the Vietnam War (prior to the major force buildup in 1965) and the invasions of Grenada and Panama underscore the importance of airlift operations in LIC environments and lend credence to Lt Col Welch's claim.

In order to provide responsive and flexible logistics support during LIC operations, the airlift assets employed frequently require the services of aerial port personnel and equipment. Responsible primarily for cargo and passenger processing, loading, and unloading, the contributions of aerial port units represent an important ingredient in LIC logistical support. In 1970, Brigadier General John Herring, 834th Air Division Commander at Tan Son Nhut Air Base, South Vietnam, articulated his thoughts on the importance of aerial port services to overall airlift support:

The aerial port units scattered throughout the Republic of Vietnam...represent a vital and necessary ingredient which turns aircrews and aircraft into an airlift system. (Herring, 1970)

The need for responsive airlift forces is more urgent now than ever before. Secretary of the Air Force Donald Rice expressed his view on future threats and requirements in these words:

The likelihood that the U.S. military will be called upon at some time and place to defend U.S. interests in a lethal environment is high-but now, more than ever, the time and place are difficult to predict. ("Cold War", 1990:A1)

Secretary Rice's prediction is not a new one. Twenty eight years ago, President John F. Kennedy delivered these prophetic words before the West Point Academy graduating class of 1962.

No nuclear weapons have been fired. No massive nuclear retaliation has been considered appropriate. This is another type of war, new in its intensity, ancient in its origin--war by guerrillas, subversives, insurgents, assassins, war by ambush instead of by combat; by infiltration, instead of aggression, seeking victory by eroding and exhausting the enemy instead of engaging him. It is a form of warfare uniquely adapted to what has been strangely called 'wars of liberation' to undermine the efforts of new and poor countries to maintain the freedom that they have finally achieved. It preys on economic unrest and ethnic conflicts. It requires in those situations where we must counter it, and these are the kinds of challenges that will be before us in the next decade if freedom is to be saved, a wholly different kind of force, and therefore a new and wholly different kind of military training. (Kuster, 1987:25)

In his own unique terminology, he described the phenomenon referred to in modern-day military and political circles as low intensity conflict. President Kennedy's comments point out at least one key fact regarding United States military involvement in LIC: it is not business as usual. And in relation to the United States Air Force, this

equates to new and unique challenges for those who fly and those who support the flying.

General Issue

The probability of United States involvement in LIC versus conventional war is high. Nuclear deterrence, the decline of colonialism, and warming East-West relations have together worked to reshape several aspects of modern military force structure. Conventional war is no longer the "rule", having been displaced by LIC and relegated to the role of the "exception". Logistics plays an important role in supporting military operations in LIC, and airlift is a key ingredient in providing the flexible and responsive support that is required. Working in unison with aircrews and aircraft are the aerial port units, providing key cargo and passenger services in an environment that is not "business as usual".

If it is true that LIC is not business as usual, and if LIC is the dominant form of warfare for the future, what are the ramifications of aerial port involvement in LIC operations?

Specific Problem

The 1962 quote by President Kennedy was indeed an accurate description of the years to follow. He did not live to see the full extent of United States involvement in Vietnam, nor did he witness events in Grenada and Panama.

The "...wholly different kind of force, and therefore a new and wholly different kind of military training" he spoke of never materialized. What continued was a persistent focus on the threat of conventional warfare on the continent of Europe. After over 30 years of preoccupation with fighting another conventional war in Europe, attention is finally being directed toward handling the "small, undeclared conflicts" described by Air Force Secretary Rice. The changing threat assessment led to the formation of the Special Operations Command and the Army-Air Force Center for Low Intensity Conflict (CLIC). Doctrinal manuals are now under development to fill the void left by the preoccupation with Europe, but the doctrine is slow in development. Col Albert Barnes, commander of the CLIC, summarized the situation in October 1989 in this way:

We pretty much have our response to a nuclear or massive conventional threat down to an art and even a science. Yet when it comes to LIC, we don't even have a doctrine yet. (Kitfield, 1989:24)

What explains the lack of doctrine pertaining to LIC?

One military researcher, Major Dennis Barnett, concludes that history is a key missing ingredient.

"...one reason for this doctrinal void is the USAF has ignored historical data regarding the use of airpower in LIC. By ignoring history, the USAF has omitted a critical ingredient...Without a thorough study of history, successful military doctrine cannot be developed. (Barnett, 1988:19-20)

Has the doctrinal void helped to maintain a military force that is less than optimally prepared to provide

consistently responsive and flexible logistics support in a LIC scenario? In a short summary of the problem, the authors of the Joint Low Intensity Conflict Project Final Report declare:

Traditionally, we have planned and programmed for a high-intensity threat--an approach that has successfully deterred war. In low-intensity conflict, however, we have simply made do as we could, witness the virtual invisibility that low-intensity conflict has in the military planning documents. This imbalance must be rectified. (Joint Low Intensity Conflict Project, 1986:Ch 16, 2)

Clear doctrine is not available for use by units to guide the training and preparation for involvement in LIC, but historical accounts are. In the absence of firm doctrine, historical study can fill the doctrinal void and provide insights for use in future LIC's. History can shed new light on understanding an important aspect of logistics support in a LIC environment. What can historical accounts reveal about the role of aerial port operations in LIC?

Investigative Questions

To determine the role of aerial port operations in LIC, the following investigative questions provided guidance and direction for the research effort.

1. How does the United States Department of Defense define LIC?
2. Within the accepted definition of LIC, what types or categories will aerial port units most likely support?

3. What problems were encountered by aerial port units during LIC experiences in Vietnam, Grenada, and Panama, and how did these problems affect the support provided?
4. What unique factors differentiate aerial port support for LIC from support provided during conventional operations?
5. Based on historical data, what areas should aerial port planners and managers concentrate on to improve performance in future LIC involvement?

Scope

While all branches of logistics involved in supporting LIC operations merit study, this research focuses on aerial port activities only. Other branches of transportation, such as vehicle maintenance and traffic management, are also excluded, except for cases where they had a significant impact on aerial port units. In addition, this study does not address aerial port involvement in all categories of LIC. This limitation is addressed in further detail in Chapter II. This research document is unclassified, and therefore limited significantly by the availability of unclassified data. The focus of this study is on aerial port operations in high visibility LIC operations, and seeks to identify unique operational factors and future implications.

Methodology

In order to identify the role of aerial port operations in providing logistics support in LIC, an historical analysis was conducted. The historical research method is applicable when information is needed to describe something over a period of time. In other words, a present problem can be solved by studying past events (Davis, 1989).

"Historical research is the systematic and objective location, evaluation, and synthesis of evidence in order to establish facts and draw conclusions concerning past events" (Borg and Gall, 1971:260). Gathering sufficient information for this study required an extensive review of many literature sources. The research data for an historical analysis is collected by means of a complete and thorough literature review (Borg and Gall, 1971:263).

Because of problems in limitations encountered in obtaining unclassified documents related to LIC operations in Grenada and Panama, telephone interviews were utilized to gather information from key managers and operation participants. In addition, personal interviews were conducted, and where permitted, conversations were recorded to enhance accuracy.

Problems. In trying to solve a problem utilizing the historical research method, the researcher can encounter serious difficulties. Due to the nature and availability of the information required for this study, there is a heavy

dependence on secondary data. Secondary data may be inaccurate or inappropriate for the study at hand. It may also be irrelevant because of time period differences (Emory, 1985:136). In addition, the historical method is frequently subject to criticism for lack of rigor, judgmental data analysis, and uneven data synthesis (Davis, 1989). As a means of overcoming this difficulty with secondary sources, two topic sources were used and then, where possible, confirmed by information obtained from interviews.

Local Sources. Some literature was initially obtained from the AFIT and Wright State University libraries. Success in this area was extremely limited. Fruitful results were obtained from searching the Defense Technical Information Center (DTIC) and DIALOGUE Information Retrieval Service. The DTIC produced the majority of the sources related to background information on LIC.

Long-Distance Sources. Finding documents that detail aerial port experiences in Grenada and Panama was difficult. For this reason, personal and telephone interviews were used to gather data related to these two operations. Written accounts of aerial port operations are easily overshadowed and diminished by details of flying operations or combat ground maneuvers--hence the need for interviews. A personal visit to the Air University Library at Maxwell AFB, Alabama, did reveal several useful documents related to aerial port

operations in Vietnam. These were located in the archives of the Air Force Historical Research Center.

Other useful documents related to Panama and Grenada were obtained through the Military Airlift Command History Office at Scott AFB, Illinois. This office also provided some names of individuals who agreed to provide interview information concerning aerial port operations in Grenada and Panama.

Overview

In order to set the foundation for the rest of this thesis, Chapter II provides a brief review of LIC definitions and categories, as well as some material on the spectrum of conflict. This information is important in order to understand how and why aerial ports are tasked to support LIC operations, and how support during LIC differs from support during conventional conflict. Chapter II tracks the LIC definition process, points out reasons for problems encountered in establishing a common definition, and examines how these definitions apply to logistics. The discussion then centers on categories of LIC, and examines in greater detail those categories most applicable to this study of the role of aerial ports.

Chapter III describes the findings obtained from research of three LIC operations involving aerial port units. Background information is provided for each operation, drawing upon information from the LIC discussion

in Chapter II. Discussion includes problems encountered during the support of the LIC and the effect of these problems on the aerial port units involved in each operation. Attention is also given to the unique factors that surfaced from each operation.

Chapter IV synthesizes the findings of Chapter III. This chapter points out the commonalities between the three operations, and ties them together with common threads. This chapter also makes note of where and how the three operations differ significantly. By tying the three cases together, it is then possible to observe and understand trends or patterns, and make assumptions about future aerial port involvement in LIC. Chapter IV accomplishes this by discussing findings, examining the findings and recommendations of two previous research efforts, summarizing conclusions, and providing recommendations for further research.

II. Background

There is an abundance of literature on the topic of low intensity conflict (LIC). In order to set a foundation in place for the subsequent chapters of this thesis, it is necessary to present a brief review of some of the major concepts and features related to LIC. This review is organized to discuss the following topics: the historical development of United States methods of conflict resolution; developing a definition of LIC; the spectrum of conflict; categories of LIC; and finally, some logistics relationships within each category of LIC.

Development of United States Conflict Paradigm

Before examining the modern day concept of LIC, it is helpful to first briefly explore the historical development of the American military method of conflict resolution. The natural place to begin is with the war that led to the establishment of the United States, the American Revolutionary War.

Revolutionary War to World War I. In the Revolutionary War, the American forces led by George Washington faced a larger, better equipped, trained and disciplined British opponent. The probability of battlefield success against the British, under equal terms and conditions, never happened. The American armies always faced shortages of men and armaments. Faced with certain defeat on the open

battlefield, General Washington turned to a "strategy founded upon weakness" (Wiegly, 1973:5), or what is called a strategy of attrition. He avoided open confrontations with the British forces, protected geographic points of interest as best he could, but above all else he shielded and protected the existence of his army (Wiegly, 1973:1-17). He employed hit-and-run tactics, and relied upon a network of spies for information concerning the British. Conflict resolution in this war required the mobilization of the American citizen army and patience while waiting for the political opposition in Great Britain to force the British Ministry to abandon the war.

The American Civil War brought about a different conflict paradigm. Both sides, especially the North, underwent industrial mobilization, taking away the possibility of a quick, decisive victory. This war resulted in a shift from the Napoleonic focus on a decisive battle to the mass national industrial war of the twentieth century (Dixon, 1989:6-7). After the war, the size of the military was rapidly drawn down, which left the nation in a precarious position when the American Indian uprisings began.

The United States' military fought the Indian Wars with little or no training, mainly in an "ad hoc" fashion (Dixon, 1989:8). Few military leaders knew how to successfully fight this war with limited objectives against an enemy who

fought with non-traditional tactics. An exception was Brigadier General George Crook, who employed skillful "guerrilla" warfare tactics and brought the Indian Wars to an official close in 1890 (Wiegley, 1973:153-163).

The major wars of this period worked together to build the traditional American conflict paradigm, a method of conflict resolution marked by several dominant characteristics. After the Revolutionary War, the American military placed great emphasis on firepower and conventional tactics. These conflicts gave rise to a military that placed extreme faith in technological solutions to conflict. In addition, the wars of this period highlighted the importance of getting the American citizenry involved prior to any military involvement (Dixon, 1989:8-10).

World Wars I and II. These two great wars reinforced the reliance on traditional methods of conflict resolution. The Soviet Union emerged as the enemy, and the United States responded by designing, structuring, and equipping military forces to fight an European style conventional war. Dr. Sam Sarkesian, in his book The New Battlefield, asserts that as a result of the prevailing concern for containing the Soviet Union, the United States entered the post-World War II era unprepared to participate effectively in conflicts smaller in magnitude than conventional wars (Sarkesian, 1986:105-106).

Korean War. The United States continued to place reliance on the traditional methods of conflict resolution that had proved so successful during the World Wars. However, during the Korean War, the adversary confronted the American military with unconventional tactics, while American society confronted the American government with changing political mores. American society found it more difficult to identify with or internalize the war effort due to the distant location of Korea and perceived and real cultural differences.

The United States government continued to stress its commitment to defend and maintain international peace and security. These commitments were articulated through the provisions of the Monroe Doctrine, Truman Doctrine, and the Eisenhower Doctrine. The method of military conflict resolution was again direct military intervention, using conventional warfare methods. In his work entitled The Counterinsurgency Era: U.S. Doctrine and Performance, Douglas Blaufarb concludes that during this period of time American military and political leaders mistakenly placed greater emphasis on the use of military force to resolve international conflict. His analysis does not diminish the importance of military operations, but rather indicates there is a danger of choosing to apply a military solution to a political problem. He suggests the Korean War is one

example where military instruments of power could not solve a conflict with deep political roots (Blaufarb, 1977).

Vietnam War. Again, the American military and political leaders failed to correctly recognize the roots of insurgency, or organized rebellion, and applied the conventional war paradigm throughout most of the conflict (Dixon, 1989:14-17). The American military took a step back in time, and fought a variation on the Indian Wars. Americans wanted a quick solution to the conflict, and the government employed the military instrument of power to bring about the desired results.

The American military and political leaders of the time overlooked several crucial factors during the Vietnam War. They did not recognize the need for simplicity, and continued to stress the positive attributes of technological superiority. They emphasized military victory versus political victory, and thus were unprepared to carry out a costly and protracted military operation in a distant Asian, Communist-threatened country. Robert Osgood, in a book published in 1979, recognized the need to develop a LIC strategy, but concluded public opposition to Third World (developing countries) conflicts would undermine efforts to produce the required strategy (Osgood, 1979).

The American public opposition to Third World conflicts came about for several reasons. These were usually protracted affairs, which differed from the American ideal

of using firepower and technology to swiftly destroy the enemy and then quickly return to peaceful existence. During these protracted Third World conflicts, the overall goals became muddied over time. The American citizenry found it difficult to identify with a struggle occurring thousands of miles away, and felt little or no threat from the activities of the opponent. Another unpalatable side effect of Third World conflicts was the tendency for them to spread across the borders of neighboring countries. These factors, which were strengthened and nourished by the Vietnam War, led to what the authors of the Joint LIC Project labeled as the "Vietnam syndrome--a deep-seated belief that the United States should not become involved in situations that might lead to such [Third World] conflict" (Joint, 1986:Ch 3, 4).

Post-Vietnam. The United States continued to focus attention on the Soviet Union and the conventional battlefield in Europe. The past wars, especially World Wars I and II and the Korean War, shaped the doctrine, strategy, and force structure of the military. Nuclear deterrence and conventional strength effectively negated the offensive capabilities of both the United States and the Soviet Union. Both countries focused more attention on Third World countries.

The Vietnam War ushered in a distinct aspect of the American conflict resolution paradigm with the entrance of the Guam Doctrine (or Nixon Doctrine) in 1969. The Doctrine

was first revealed during a Presidential speech, and was timed to precede the upcoming American withdrawal from South Vietnam. While reaffirming many of the commitments of earlier statements of policy (Monroe, Truman, Eisenhower Doctrines), the Guam Doctrine differed in that "the principal burden of dealing with regional and internal threats would rest with the ally and not with the United States (Joint, 1986:Ch 3, 1).

Col Howard Dixon, a researcher at the Army-Air Force Center for LIC, points to 1982 "as the time when serious and systematic development of low intensity conflict began" (Dixon, 1989:17). He states the push for doctrine came about after the failed Iranian rescue attempt and was reinforced by the successful (but still debated) military operation in Grenada.

The American war paradigm continued to shift from conventional and nuclear war to other forms of conflict resolution. Recognizing the need to focus more on types of unconventional warfare, the Army-Air Force Center for LIC was established in 1986. On a larger scale, in 1987 the Congress created the position of Assistant Secretary of Defense for Special Operations and LIC, and at the same time created the Special Operations Command and placed a four-star general in charge (Kitfield, 1989:56-59).

Current Status. The American military conflict resolution paradigm is changing. Comments delivered by the

Secretary of Defense in his Annual Report to Congress for Fiscal Year 1988 identify three reasons for the increased use of the various forms of LIC, and stress the importance of understanding and managing LIC. First, he declares "nuclear weapons have made great power confrontations highly dangerous" (Furr, 1989:17), and then identifies the second reason as the unchallenged conventional deterrent forces in Europe. He describes the current state of affairs as one in which:

...the very success of our efforts in deterring nuclear and major conventional aggression has driven Soviet efforts, and those of other hostile states, toward more ambiguous forms of aggression. (Furr, 1989:18)

The Secretary describes the third reason as :

...the comparatively recent proliferation of Third World states that coincided with the decline of the great European empires following World War II. (Furr, 1989:18)

LIC is now at the center of attention in defense issues. Before discussing the various forms of LIC, or "ambiguous forms of aggression" as the Secretary of Defense referred to them, it is necessary at this point to examine the literature and point out some of the works undertaken to provide a working, unanimously agreed upon definition of LIC.

Building the LIC Definition

The term "low intensity conflict" first appeared in the 1950's, with credit for first use of the term going to Sir F. Reginald Farmer, who used it in relation to risk-safety

and the use of nuclear reactors (Dixon, 1989:4). The term LIC suggests other levels of conflict, and in fact other researchers proceeded to develop the concept of LIC into a spectrum of conflict, which will be discussed. Defining LIC is important as a starting point in understanding and managing it:

No single issue has impeded the development of policy, strategy, doctrine, training, or organization more than the lack of an approved definition of low-intensity conflict. (Joint, 1986:Ch 1, 2)

Definitional Problems. Defining LIC is problematic because, as the writers of the Joint Low-Intensity Conflict Project point out:

Low-intensity conflict has more to do with the nature of the violence--the strategy that guides it and the way individuals engage each other in it--than with level or numbers. (Joint, 1986:Ch 1, 2)

These researchers also point out that LIC is an ambiguous, enigmatic concept, resembling:

...neither war nor peace. It is an improbable compilation of dissimilar phenomena that, like the Cheshire cat--which seems to fade in and out as you look at it, leaving only its mocking smile--bedevils efforts at comprehension. (Joint, 1986:Ch 16, 1)

Prior to 1987, the only LIC related matter that government officials could agree on is that no agreement existed as to an acceptable and accurate government-wide definition. The disagreement extended even to the question of whether or not to hyphenate the term (Furr, 1989:1).

Debate surrounding the definition of LIC continued up through 1986, as scholars and policy makers sought to arrive

at a unanimous, workable definition (Fulton, 1986:60-67). The job of narrowing the vast territory covered in the multitude of definitions in existence was a significant one because, as one researcher remarked, the term LIC was "turned into a catchall" (Paschall, 1985:33).

The degree to which LIC has been turned into a "catchall" term is best illustrated by viewing some of its alternate terms. In all, over 50 substitute expressions have been or are currently used to describe all or a portion of LIC (Dixon, 1989:20). The problem here is that each alternate expression carries with it its own unique meaning, and not all expressions are interchangeable with each other. Thus in the absence of an approved and agreed upon definition, government policy makers and military planners might use the term LIC, but instead have in mind one of the alternate terms listed below in Table 1.

TABLE 1
ALTERNATE TERMS FOR LIC

Dark Wars	Shadow War	Marginal Military Ops
Special War	Ambiguous War	Subterranean War
Peripheral War	Violent Peace	Strategie Oblique
Surrogate War	Sublimited War	Attenuated Conflict
		(Furr, 1989:2)

Despite these definitional problems, a working, unanimously agreed upon definition was completed in 1985 by

the Joint Chiefs of Staff (JCS). However, this definition was preceded by numerous "prototype" definitions. The next section of this study will examine some of these prototypes. The purpose here is not to list and describe all possible definitions, but rather to delineate significant characteristics of the definitions that have impacted the military community and to present the definition currently in use by the DoD community.

LIC Definitions. In 1983, the Center for Aerospace Doctrine, Research, and Education (CADRE), Air University, Maxwell AFB, Alabama, provided broad and specific guidelines for LIC involvement in the following definition:

Low-intensity conflict. Nonnuclear conflicts ranging from coercive diplomacy through local, internal terrorism and crises to the guerrilla warfare stage of insurgencies and revolutions. Such conflicts generally involve the use of social, economic, political, psychological, and/or military actions by or against irregular armed combatants to conquer, control, or defend a population, group, or territory. Military actions are localized, generally within Third World countries, and require specialized countermeasures by host governments and their supporters. Responses by the United States and other allies usually entail not only limited political commitments, but also restricted military actions, primarily in conjunction with host countries. (Jones, 1986:9-10) [underlining added]

This definition focuses on the multidimensional elements of LIC, with special mention given to Third World countries. In addition, the CADRE definition highlights the feature of limited or restricted military actions.

As previously mentioned, the JCS produced the first joint-services definition in 1985. The definition reads:

Low intensity conflict is a limited politico-military struggle to achieve political, social, economic, or psychological objectives. It is often protracted and ranges from diplomatic, economic, and psychological pressures through terrorism and insurgency. Low intensity conflict is generally confined to a geographic area and is often characterized by constraints on the weaponry, tactics, and level of violence. (Motley, 1987:16)

This definition of LIC took two full years to construct, which underscores the difficulties associated with determining the exact composition of LIC, and in turn problems in determining doctrine, training, and force structure to support LIC operations. The 1985 JCS definition brings out the characteristic of protracted warfare, and, like the CADRE definition, covers a broad range of activities, while again making mention of limitations or constraints on military actions.

In his 1986 Air University Review article entitled "War, Doctrine, and the Air War College", Col (USAF Ret) Thomas Fabyanic expounded upon the 1985 JCS definition, and differentiated LIC from other forms of conflict in these words:

It [LIC] is a conflict that encompasses several distinct types of hostilities and would include wars of national liberation, insurgency, revolution, and guerrilla warfare. In addition to these traditional types of combat, low-intensity conflict would include sabotage, counterterrorism, and hostage-taking and rescues. Thus there are several points on the spectrum at the level of low-intensity conflict, and each has its distinctive characteristics. Additionally, each has its own grammar and logic, although again considerable overlap exists. For example, wars of national liberation, insurgency, revolution, guerrilla war, and civil war normally would have a similar objective, i.e., overthrow of an existing government and thus they would employ similar means. The

government's objective, by contrast, would be survival and elimination of the threat. Its means, however, could differ significantly from the opposing force because established governments do not ordinarily maintain irregular forces as central elements of their force structures. And unless a threatened government wishes to fight with dissimilar forces, modification becomes necessary [underline added].
(Fabyanic, 1986:11)

The force "modification" mentioned in this definition is manifested by changes in military doctrine, training, and force structure. Col Fabyanic points out that LIC is complicated and multi-faceted, but characterized by considerable overlap in overall objectives and goals.

The defining and redefining process continued until 1987 when, after additional research and study, the JCS adopted the definition currently in use, and presented below:

Political-military confrontation between contending states or groups below conventional war and above the routine, peaceful competition among states. It frequently involves protracted struggles of competing principles and ideologies. Low intensity conflict ranges from subversion to the use of armed force. It is waged by a combination of means employing political, economic, informational, and military instruments. Low intensity conflicts are often localized, generally in the Third World, but contain regional and global implications. (Furr, 1989:10)

This definition serves as the cornerstone for current guidance, and again refers to protracted struggles for the hearts and minds of people, with mention made again to Third World countries. The most significant change is the added element of conflict between multiple states, rather than just internal conflict.

Although the approved and current definition is presented here, it is not satisfactory for the purposes of this study to stop without examining other important aspects of LIC. LIC is a broad topic composed of many types and variations, and is frequently arrayed against other forms of conflict on a spectrum or magnitude distribution. It is useful at this point to take the approved definition of LIC and place it in such a conflict spectrum.

LIC and the Spectrum of Conflict

Use of the term LIC implies or suggests the existence of other forms or degrees of conflict. For if low intensity forms of conflict exist, then mid and high intensity levels can also exist. This implication or suggestion is obviously a true one, as evidenced by the types of conflict resolution that worked together to form the American conflict resolution paradigm. This section will now discuss three conflict spectrum models, and the importance of each to the development of military force structure and doctrine.

Response Model. Lt Col David Dean developed a model for grouping conflicts by military response in his work Low Intensity Conflict and Modern Technology in 1986. His model is presented⁴ in Figure 1.

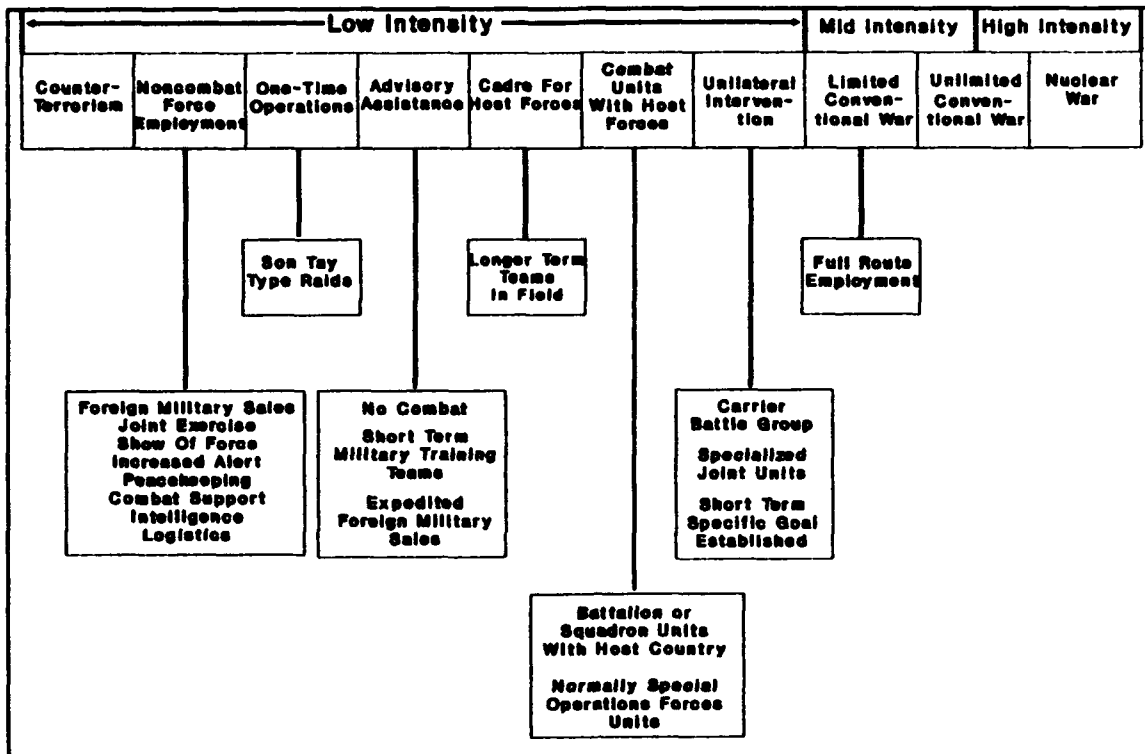


Figure 1. Spectrum of Conflict Model Featuring Military Response Measures (Dean, 1986: 177)

This model divides conflict into three sections or levels: low, mid, and high intensity--and then describes a suggested range of appropriate military responses for each level. His model is useful in that it provides a good descriptive means for viewing the full range of possible military actions. It is lacking in that it does not address the issues of probability, risk, or preparedness, as the next two models do.

Four Level Model. Mr. Gregory Foster designed a model, shown in Figure 2, that incorporates into it the factors of criticality, probability of occurrence, and U.S. military preparedness. Mr. Foster equates criticality with risk, or

the immediate threat a conflict poses to national survival. Probability is a measurement of the likelihood of a specific type of conflict taking place.

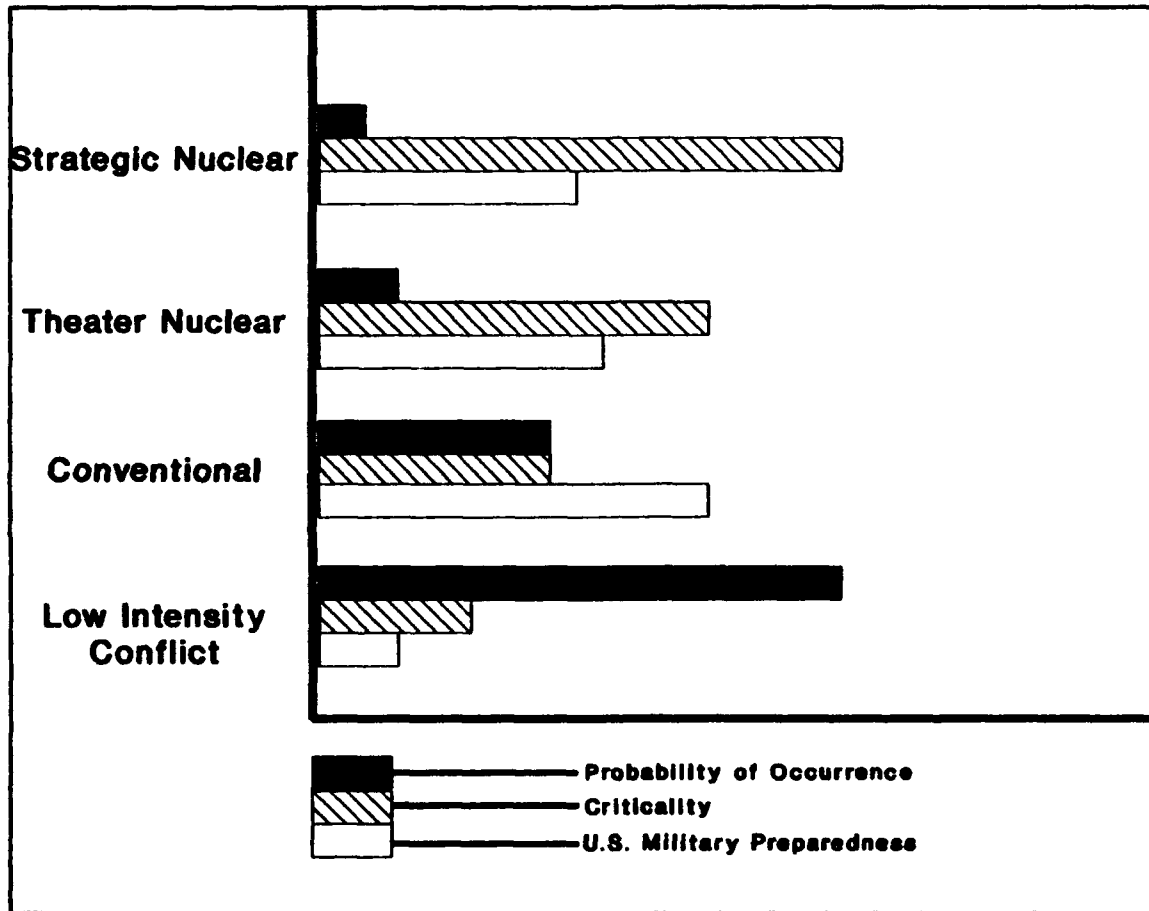


Figure 2. Spectrum of Conflict Model Utilizing Probability, Criticality, and Preparedness Factors (Foster, 1985: 26)

This model supports the claim that the United States is prepared to respond to the threat of strategic nuclear, theater nuclear, and conventional forms of warfare--the three forms of warfare which represent the least probable of

the four levels of conflict resolution. The element of criticality is an item of open debate in the literature because the concept is nebulous and difficult to quantify.

A model designed at the Army-Air Force Center for Low Intensity Conflict (CLIC) is presented in Figure 3.

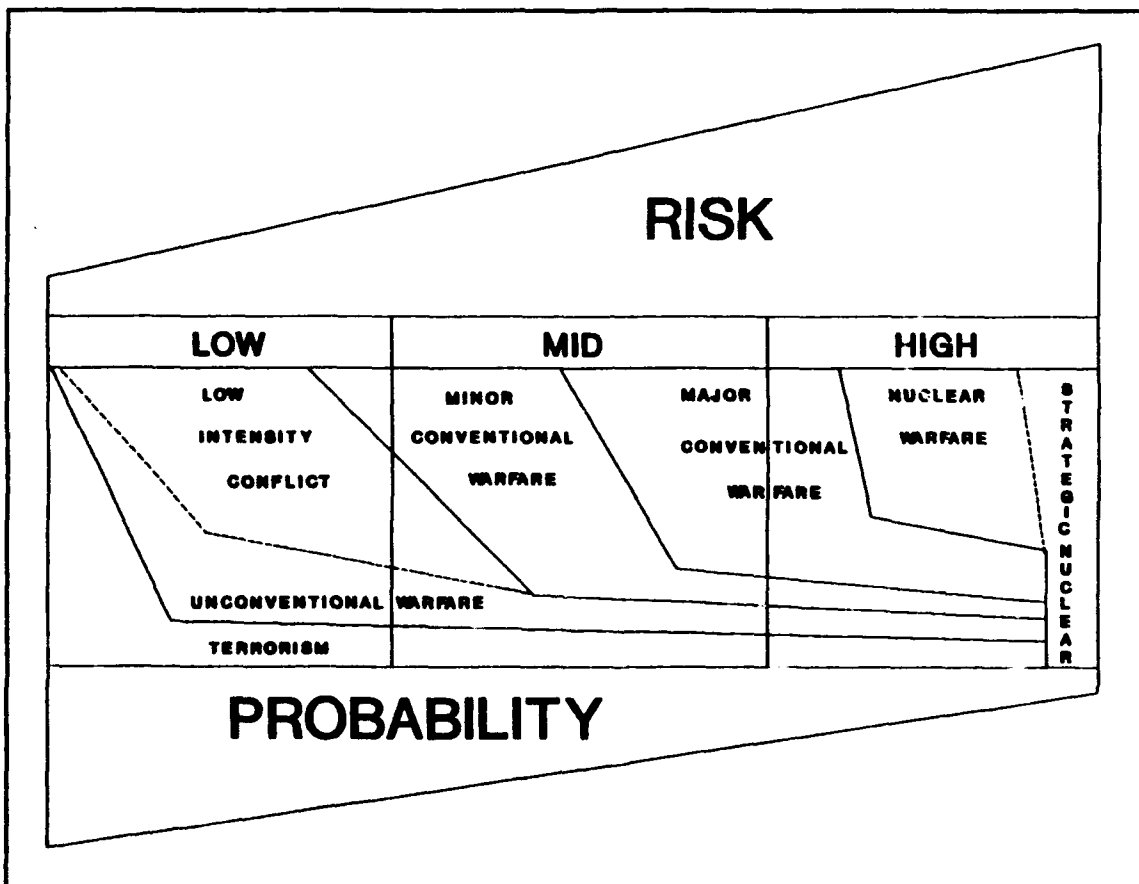


Figure 3. Spectrum of Conflict Model Utilizing Risk and Probability Factors (Dixon, 1989: 4)

This model is a variation on a work first developed by Sir Reginald Farmer (Dixon, 1989: 4). It incorporates features of both previously mentioned models, in that it provides

three categories of applicable military responses that are overlaid against risk and probability factors.

This CLIC model is in common use in defense circles. The CLIC model again depicts LIC as a high probability, low risk occurrence, which is a hazardous position to take if not tempered somewhat. This was recognized in 1985 by Mr. Lynn Rylander, then Deputy Director for Special Planning, Office of the Assistant Secretary of Defense for International Security Affairs, when he stated his following view on the threat of LIC to American interests:

Unless we are willing to accept the erosion of our interests around the world, we must recognize this insidious threat. And we must recognize that the strategy and forces to deal with it are as important to our national security as the strategy and forces we have developed and maintained against the more violent but far less likely eventuality of conventional or nuclear war. (Rylander, 1985: 75)

While the previous discussion was not designed to present an exhaustive review of all existing conflict spectrum models, it does serve to illustrate the position LIC takes on commonly used spectrums. The position of LIC on the spectrum makes it an item of lower priority than conventional and nuclear threats--a position that provides substantial explanation for the American preoccupation with conventional and nuclear war. LIC has a low level of risk or criticality, a high probability of occurrence, and represents the level of conflict the U.S. is least prepared to deal with militarily.

Categories of LIC

The background study of LIC is not complete without a review of the categories of LIC. The complex definition of LIC and the spectrum of conflict both lend evidence to the fact that LIC is a multifarious concept. As one military researcher states, "LIC's are not easy to categorize and are therefore difficult for the American mind to fathom" (Barnett, 1988: 12).

LIC's are not easy to categorize. In the words of Major Thomas Kuster, taken from his article entitled "Dealing With the Insurgency Spectre":

Unfortunately, the abstract factors abounding in the realm of insurgency are not compatible with our propensity for systems analysis, quantifiable measures of evaluation and an overall quest for tangible results that can be presented on multicolored graphs. (Kuster, 1987: 24)

However, despite numerous complexities, LIC is categorized into four broad areas: insurgency/counterinsurgency; peacetime contingency operations; counterterrorism; and peacekeeping operations (Furr, 1989: 25-29). Categorizing LIC was viewed as important by the federal government in order to better understand and manage LIC. The Cohen-Nunn Amendment to the National Defense Authorization Act for Fiscal Year 1987 mandated the inclusion of a special section addressing LIC in the President's Annual Report to the Congress, entitled "U.S. Capabilities to Engage in Low Intensity Conflict and Conduct Special Operations" (Furr, 1989: 25-26). Additionally, the Cohen-Nunn Amendment led to

the requirement for the Secretary of Defense to include a section addressing LIC in the Secretary of Defense's Annual Report to the Congress. In the Fiscal Year 1989 Report the Secretary divided LIC into the four previously mentioned categories or mission areas (Furr, 1989:25-29). These categories are defined below. Later, logistics and areas of applicability to aerial port operations in each category will be described.

Insurgency/Counterinsurgency. These are defined in JCS Publication 1 as:

Insurgency is an organized movement aimed at the overthrow of a constituted government through the use of subversion and armed conflict. Counterinsurgency is those military, paramilitary, political, economic, psychological, and civic actions taken by a government to defeat subversive insurgency. (DoD, 1987: 187, 93)

Peacetime Contingency Operations. The currently proposed definition in JCS Publication 3-07 (still in draft) describes peacetime contingency operations as:

Normally, the short-term, rapid projection or employment of military forces in conditions short of war. Such employment can also require a large, highly visible buildup of U.S. military forces over extended periods of time. (Dixon, 1989: 36)

Counterterrorism. This category of LIC is differentiated from other forms of LIC in JCS Publication 1 as:

Actions, including antiterrorism (defensive measures taken to reduce vulnerability to terrorist acts) and counterterrorism (offensive measures taken to prevent, deter, and respond to terrorism) taken to oppose terrorism throughout the entire threat spectrum. (DoD, 1987: 94)

Peacekeeping Operations. These are described in a proposed definition in JCS Publication 3-07 (draft) as:

Efforts taken with the consent of the civil or military authorities of the belligerent parties to a conflict to maintain a negotiated truce in support of diplomatic efforts to achieve and maintain peace. (Dixon, 1989: 34)

Segmenting LIC into these four categories creates some unique challenges and problems in designing doctrinal guidance, strategy, and force structure for the military. Providing logistics support, especially airlift support, in a LIC operation entails the consideration of special requirements which are addressed in the literature.

LIC and Logistics

LIC was defined for the defense community by the JCS in 1987, placed on a variety of spectrums, and broken down into four categories of response measures. These response measures require varying amounts and types of logistical support, but some common characteristics are evident. In a 1987 CLIC paper entitled Logistical Considerations in a Low Intensity Conflict, general and specific requirements are detailed. Among the general characteristics mentioned, airlift is singled out as an extremely important element because: airlift is the most secure mode of transportation; forces are usually widely dispersed; a high degree of transportation is required to keep stock levels at forward areas at an absolute minimum ; timely evacuation of casualties is important; and economical and efficient means

of resupply must be provided (Furr, 1987: 2). The four categories of LIC are now examined in briefly for possible logistical responses that require airlift and aerial port participation.

Insurgency/Counterinsurgency. Logistics efforts in this category are marked by rapid deployment of forces. The U.S. will play an advisory or military instructor role, with emphasis on strengthening the position of the host country. Logistic support in this category often includes humanitarian assistance (Furr, 1987: 7-9) and typifies the logistic efforts undertaken during the early years of U.S. involvement in the Vietnam War. The airlift and aerial port activities in that war are discussed in detail in Chapter III of this study.

Peacetime Contingency Operations. This category of LIC places great reliance on the military crisis action system to ensure rapid response all situations. The nature of these activities require the utilization of strategic airlift (Furr, 1987:11), and frequently the use of aerial port personnel and equipment. A prerequisite to successful rapid response involves the inclusion of logistics functions in the planning processes that occur prior to any military actions (National, 1986: Ch 7, 4-5). Failure to include logistics experts, especially airlift and aerial port experts, in the planning process can lead to less than desirable results, as occurred during the Grenada invasion.

A broad range of activities can fall in this category, including humanitarian assistance, noncombatant evacuations, military show of force, raid or attack, and various aspects of the military security assistance program (Ayers, 1987).

Counterterrorism. In this category, conflict is occurring in the area the U.S. agrees to support. The concern to logistics personnel and operations is to create an awareness of being a prime target for terrorist attacks, especially at air fields in addition to the normal problems of supporting strategic airlift. Awareness should focus on taking measures to reduce vulnerability, and if possible to enhance operations security and communications security (Furr, 1987: 9-10).

Peacekeeping. These actions are frequently characterized by the development of austere bases, often through the formation of an active contractor support structure, as occurred in the early years of the Vietnam War (United States Army, 1987: 5). A dominant feature of peacekeeping is restraint in the use of force with the ability to rapidly reinforce is necessary. U.S. peacekeeping forces must be moved to the area, sustained primarily by airlift, and augmented by airlift. As a result, logistics and aerial port support play a key role in the success of any peacekeeping effort. The inclusion of logistics in planning is again a prerequisite for success (Ayers, 1987: 8).

Logistics and airlift play a key role in the overall success or failure of a military response to the challenges of LIC. Logistics participation in planning is critical, as airlift support requirements must be taken addressed.

Summary

Any review of the literature on LIC will uncover numerous definitions, spectrums and categories. This chapter focused on definitions, spectrums, and categories relevant to the subject of this thesis. The United States conflict resolution paradigm was traced; the official Department of Defense definition was presented; LIC was placed on risk, probability, and preparedness spectrums; and the categories of LIC most likely to require logistics and aerial port services were examined.

Success in dealing with LIC requires effective preparation. The LIC categories defined in this chapter are the most likely to be used throughout the world for conflict resolution. U.S. involvement in conflict will be most probable in one or more of these categories. Preparation for each category is equally important as is preparation for the higher levels of conflict. President Bush reflected on the importance of preparing for LIC in these words:

It is not possible to prevent or deter conflict at the lower end of the conflict spectrum in the same way or to the same degree as at the higher. American forces therefore must be capable of dealing effectively with the full range of threats found here, including insurgency and terrorism. Special Operations Forces have special utility in this environment, but we will also pursue new and imaginative ways to apply flexible

general purpose forces to these problems. (United States, 1990:28) [underlining added]

Chapter III will next examine logistical support provided by aerial port units during LIC experiences in Vietnam, Grenada, and Panama.

III. Aerial Ports in LIC

In order to determine the role of aerial ports in LIC operations, it is necessary to study actual instances of aerial port forces involved in supporting LIC. This chapter is organized to first present background information that traces the development of the first aerial port units. Following that section, discussion turns to aerial port operations during the early years of the Vietnam War and then to the military operations in Grenada in 1983 and Panama in 1989. Discussion of each of these LIC operations includes background information on the military operation, actual aerial port execution, lessons learned, and a brief synopsis of each operation. In addition, background information is included in each of these three LIC sections to point out major aerial port developments and events, and thus provide a continuous historical picture of aerial port changes and maturation. Major findings are discussed in the closing summary section.

Historical Background

World War II. During World War II, Army C-46 and C-47 aircraft began aerial delivery of food, medical supplies, small arms ammunition, and small vehicles such as motorcycles, directly to airdropped units preparing to engage in combat. Airlift of this type was limited by airframe design and payload capacity, and the cargo loads

were commonly sectioned into "bundles". Army Quartermasters performed rigging and loading tasks (USAF, September 1967:v).

Post World War II. Following World War II, larger and more capable aircraft were developed and produced, including the C-82 and C-119. These aircraft were loaded from the rear of the fuselage, and prompted the development of new platform loading techniques, including various types of parachute extraction systems. At this time the Army organized Quartermaster Packaging Companies, responsible for assembling support material and rigging equipment and supplies for airdrop (Meyer, 1989:13). Large pieces of equipment such as artillery pieces and rolling stock were airdropped to airborne forces in a combat environment for the first time during the Korean War.

Korean War. During the time of the Korean War, the Quartermaster Companies also furnished personnel known as "dropmasters" or "kickers", who assisted in the actual extraction or ejection of airdropped cargo. The Far East Air Command activated the 1st Combat Cargo Command in 1950 at Ashiya, Japan, in order to receive and process combat logistics in forward base locations in Korea. At this time the Services recognized the need for a "coordinated tactical combat oriented air supply system", and proceeded to redesignate the 1st Combat Cargo Command as the 6127th Air Terminal Group. The 6127th was tasked to maintain and

support detachments throughout the Far East Command (USAF, September 1967:vi).

In 1952, Tactical Air Command (TAC) activated the 1st, 2nd, and 3rd Aerial Port Squadrons (APS). These units were formed to merge all aspects of "tactical supply logistics" by air under one agency. These APS units were designed and trained to be flexible, self-sustaining units capable of quick worldwide deployment. They practiced setting up and maintaining field air terminals, assisted in the loading and offloading of entire unit moves, and participated in various Army and Air Force joint field exercises (USAF, September 1967:vi-vii).

Post Korean War. Major changes took place in 1958 when aerial port squadrons were reduced in the continental United States for budgetary reasons (Meyer, 1990). At this juncture in time (1958), the United States was already deeply involved in supporting the government of South Vietnam, and aerial port units were utilized in the early years of involvement to provide logistics support required during the initial counterinsurgency efforts.

Vietnam

This discussion of aerial ports in the Vietnam War centers on the early years up through approximately 1968. The United States started a transition in 1965, from using American military combat and logistics forces in a counterinsurgency type of low intensity conflict to

participating in minor and major conventional types of battles. By 1968, major developments relevant to aerial ports in Vietnam were recognized and addressed by aerial port managers. This study focuses on the "learning curve" time period, although some later events are briefly mentioned.

Operation Background. The United States began providing aid to Vietnam after World War II, beginning in 1950 with the creation of a Military Assistance Advisory Group (MAAG) that was established for the nations of Laos, Cambodia, and Vietnam. The Geneva Agreements of 1954 were implemented to begin shifting all three nations from French colonial rule to independence. Vietnam was divided roughly in half along the 17th Parallel into North and South. As the French withdrew in 1955, the U.S. MAAG took over responsibility for training the South Vietnamese Army. In 1956, 350 U.S. personnel were added to the MAAG to help recover abandoned French equipment and subsequently stayed to assist in training. This brought the total number of U.S. military personnel in the country to almost 700 (Hinrichs, 1984:5-1 to 5-4).

The training was geared toward the type of war fought in Korea. It concentrated on preparing the South Vietnamese for a conventional attack by the Communists across the 17th Parallel. In 1960, the number of U.S. advisors and trainers grew to 685, and in 1961 the U.S. tasked Special Forces

units to assume control of a Central Intelligence Agency program called Civilian Irregular Defense Group Plan. In this same year, the U.S. began providing direct combat support to the South Vietnamese Army (Hinrichs, 1984:5-5 to 5-7). In 1962, U.S. helicopters and pilots were flying combat missions, and the Military Assistance Command, Vietnam (MACV), was formed to focus the efforts of all U.S. forces (except the MAAG) under one command (Hinrichs, 1984:5-9 to 5-11). Up to this point in time, the U.S. was supporting a counterinsurgency effort through advisory assistance, special training teams, and foreign military sales.

Aerial Port Organization. In July 1962, the aerial port system available to support the U.S. efforts in South Vietnam consisted of four detachments of the 7th Aerial Port Squadron (APS) with headquarters located at Tachikawa Air Base (AB), Japan. The detachments were at Pleiku, Nha Trang, Tan Son Nhut, and Da Nang (Humphries, 1970:4). Figure 4 depicts the changes and growth that took place in the South Vietnam aerial port system. On 1 January 1963, an event took place which impacted the structure of aerial ports, when TAC deactivated its aerial port squadrons because of manpower reductions. It was at this point that "loadmasters" (dropmasters or kickers) were incorporated into the troop carrier wings and became part of the actual

aircrew, negating the limited air terminal capability then in existence (USAF, September 1967:vii).

Severe cargo marshalling and loading difficulties were encountered in 1963 during a series of maneuvers conducted under the code name "Swift Strike", which involved the Dominican Republic. These problems helped focus attention on the need for aerial port capabilities within the tactical elements of the Air Force (Meyer, 1989:14; Meyer, 1990). The tactical (intra-theater) and strategic (inter-theater) aerial port workload in Southeast Asia continued to increase as a result of the growing U.S. commitment to win the counterinsurgency war in South Vietnam.

In 1963, Pacific Air Forces (PACAF) operated two aerial port squadrons as subordinate units of the 315th Air Division (AD). The 8th APS was created at Tan Son Nhut AB, with nine detachments in South Vietnam and several detachments in Thailand. The 7th APS stopped all operations in South Vietnam, but continued to manage aerial ports in Japan, Korea and Okinawa (Peoples, 1967:18).

Also occurring in 1963, the Worldwide Aerial Port Conference held at HQ USAF examined the feasibility of forming standard aerial port squadrons throughout the Air Force. As a result of the conference, HQ USAF directed TAC to reactivate aerial port units based in the continental U.S. under the control of the 1st Aerial Port Group (APOG) at Langley AFB, Virginia (USAF, September 1967,viii). This

action was effective 1 July 1964. Aerial port functional areas were expanded to include all aspects of cargo and passenger processing, and standards were created for manning and equipment levels (Meyer, 1990).

As the level of U.S. involvement continued to rapidly grow in the mid-1960s, the demand for aerial port services led to the activation of additional aerial port squadrons. As shown in Figure 4, the 6th APS was formed, and tasked to meet all port requirements in Thailand. The 14th APS and 15th APS were added in early 1966 to meet requirements in South Vietnam, raising the number of squadrons in-country to three. The 8th APS, still located at Tan Son Nhut AB, covered the southern portion of the country. The 14th APS situated at Cam Ranh Bay handled the central part, while the 15th APS at Da Nang took the northern section.

In March 1966, the three Vietnam squadrons were placed under the operational control of the 315th Air Commando Wing, 315th AD, Tan Son Nhut AB, Vietnam. The 6th APS and 7th APS were placed under the operational control of the newly formed 2nd APOG with its headquarters at Tachikawa AB, Japan.

Then in October 1966, more reorganization took place. The 2nd APOG was aligned as a subordinate unit of the new 834th AD (it replaced the 315th AD, which moved to Clark AB, Philippine Islands) and assigned at Tan Son Nhut AB. The three South Vietnam aerial port squadrons were placed under

Unit	Year 1962	1963	1964	1965	Mar 1966	Oct 1966	1968
6th APS				Activated. Under 316th AD. Managed all Aerial ports in Thailand	Now aligned under 2nd APOG	Reassigned under 318th AD	
7th APS	HQ: Tachikawa AB, Japan. Four Dets in South Vietnam	Dropped aerial ports in South Vietnam. Had aerial ports in Japan, Korea, Okinawa, Taiwan			HQ moved to Naha AB, Okinawa. Aligned under 2nd APOG	Reassigned under 318th AD	
8th APS		Activated, HQ: Tan Son Nhut AB, South Vietnam. Nine separate Dets in South Vietnam	Nine Dets in South Vietnam. Six Dets in Thailand. 400 personnel	14 fixed aerial port locations in South Vietnam only. Under 318th AD. Utilized first mobility teams	Managed all aerial ports in southern portion of South Vietnam	Aligned under 2nd APOG	20 total Dets and operating locations
14th APS					Activated, HQ at Cam Ranh Bay AB, S. Vietnam. Under 2nd APOG. Managed central region of South Vietnam	Aligned under 2nd APOG	eight total Dets and operating locations
16th APS					Activated, HQ at Da Nang AB, Under 2nd APOG. Managed northern region of South Vietnam	Aligned under 2nd APOG	14 total Dets and operating locations
1st APOG		Conus-based aerial ports deactivated. Loadmasters became part of aircrew	Reactivated. Controlled Conus-based 1st, 2nd, 3rd APS units				
2nd APOG					Activated, HQ at Tachikawa AB, Japan. Controlled all five squadrons. Aligned under 318th AD. 1744 personnel	HQ moved to Tan Son Nhut AB. Aligned under new 834th AD. Controlled 8th, 14th, and 16th squadrons	2,600 personnel

Figure 4. Aerial Port Organization in the Early to Mid Stages of the Vietnam War

the operational control of the 2nd APOG, while operational control of the 6th APS and the 7th APS was transferred to the 315th AD at (USAF, September 1967:1-2). This organizational structure remained in effect for the duration of the war.

Execution. Early in the Vietnam War, aerial port units were kept busy largely by supporting aircraft flying for the Military Air Transport Service (MATs), the precursor of the present Military Airlift Command (MAC). In 1960, the 315th AD operated two C-124 squadrons and three C-130 squadrons, which were supported by one APS. The workload coming into Vietnam at this time was relatively light (Kerby, 1975:7).

In 1961, heavy Viet Cong attacks on South Vietnamese government positions prompted the formation of a special fact-finding team, headed by General Maxwell Taylor. The team delivered a recommendation to the U.S. government, calling for increased aid to South Vietnam and President Diem's counterinsurgency effort in the form of supplies, logistical units, air transports, and other support and combat items (Hinrichs, 1984:5-8 to 5-9).

The American military presence grew in October 1961 when the 13th Air Force opened the first Air Force detachment at Bien Hoa AB. During the following month, Air Force detachments were opened in Bangkok, Thailand, at Tan Son Nhut AB, and in the city of Saigon. Also in November 1961, a detachment from the 1st Air Commando Wing was flown

to Bien Hoa AB under the code name "Jungle Jim", a name that was later redesignated "Farmgate". These new units commenced to train the South Vietnamese in counterinsurgency tactics and methods. Another significant development in 1961 was the arrival of the first two U.S. Army helicopter companies (Kerby, 1975:9-11).

In 1962, "Mule Train" C-123s from the 346th Squadron flew their first logistical missions, and dropped their first South Vietnamese paratroopers into combat. By February 1962, the "Mule Train" aircraft were flying missions into six major South Vietnam ports, as well as several dirt and steel-planked airstrips (Kerby, 1975:11). While "Mule Train" flying originated out of Tan Son Nhut AB, "Ranch Hand" aircraft (C-123s equipped to perform defoliant spraying) were moved from Tan Son Nhut to Bien Hoa, where they joined "Farmgate" assets. The logistical support required by the infusion of new military units into South Vietnam is reflected by the cargo figures. In the last half of 1962, aerial ports in the Southeast Asian region handled 25,789 tons of inbound cargo; C-123s alone delivered 12,528 tons of cargo and paradropped 812 tons within South Vietnam. By 1963, the Southeast Asia Airlift System boasted the largest tactical transport system in the free world (Kerby, 1975:12).

The aerial port units faced a two-fold challenge in meeting the demands of the growing airlift system in South

Vietnam. They first encountered a steady stream of personnel and supplies flown into established ports like Tan Son Nhut. These were strategic resupply missions. Missions of this type usually originated in the U.S. and then entered the Pacific region controlled by PACAF. The second and equally difficult challenge dealt with the tactical delivery of supplies, munitions and personnel within South Vietnam and bordering countries. Throughout these early years, dependence was growing ever stronger on air transport for air assault operations as a means of carrying out the U.S. counterinsurgency strategy.

Organization. In 1964, the 8th APS managed active detachments at Da Nang, Pleiku, Nha Trang, Bien Hoa, Qui Nhon, Can Tho, Bangkok, Thailand, and the extremely busy operation at Tan Son Nhut AB (USAF, December 1964:35-51). Three new aerial port detachments were opened at Vien Long, Ban Me Thout, and Hue to support newly arrived U.S. military units and the increased number of tactical operations. Midway through 1965, the 8th APS supported 12 detachments in South Vietnam and eight in Thailand (USAF, June 1965:iii). The detachments in Thailand were subsequently transferred to the 6th APS. In 1965 the commander of the 8th APS, Lt Col R. E. Butler, described the aerial port experience in the counterinsurgency environment of South Vietnam:

We continue to learn more each day about aerial port operations under hostile fire conditions and our experience is unique in view of the rapid build-up of U.S. Forces and the expansion of the U.S. war effort in Vietnam. Our past experience and efforts must be used

as the basis for future planning and programming of aerial port activities, as well as openmindedness [sic] and flexibility, as we continue to grow and expand in our vital role as members of the Southeast Asia airlift team. The success or failure of our combat forces in the field are dependent on our aerial resupply which demands a "CAN-DO" attitude and a maximum effort on our behalf under all circumstances. (USAF, June 1965:iiii)

The mission statement of this early 8th APS illustrates the dual nature of the aerial port responsibilities, going beyond the fixed port onload and offload of supplies and personnel. The unit was also tasked to "provide fixed and mobile intertheater [sic] air terminal capability", and to "maintain a degree of combat readiness that will insure the success of war plans" (USAF, June 1965:1). The squadron commander's responsibilities, as outlined in an excerpt from the Squadron mission statement, make frequent reference to mobility and combat, tasking the commander to:

Develop and maintain both fixed and mobile air terminal and aerial delivery capabilities for support of unit moves and emergency operations of all intratheater PACOM [Pacific Command] units, in the area of responsibility. (USAF, June 1965:1)

In carrying out these responsibilities and taskings, the Squadron's Freight Services Section:

...participated in four mobility exercises. To provide faster reaction capability, three mobile freight teams, complete with necessary support equipment, were established. These teams are maintained in a combat ready status and in actual exercises can be deployed on two hours notice. (USAF, June 1965:21)

This is the first found reference to the formation of mobility teams within an APS, a development that arose from the need to handle airlift requirements generated by

tactical unit moves. The unit moves in Vietnam were characterized by rapid insertion of forces by air, and in many instances rapid extraction by air.

The unit's emphasis on combat readiness was not without reason. On 7 Feb 1965, the detachment at Pleiku (also called Camp Holloway) was attacked by Viet Cong forces. Eight Americans were killed and 107 wounded, none of them aerial port personnel. Shortly after the attack, the working environment changed at this "fixed" aerial port location, as reported by the detachment commander:

As a result of this attack the men now keep their individual weapons and ammunition in the barracks and carry them to and from work. Also, each man had his field pack ready with medical supplies, canteen, mess kit, extra clothing, and 120 rounds of ammunition. Defense positions have been erected around the compound and our new barracks. (USAF, June 1965:32)

On 28 June 1965, the detachment at Nha Trang experienced its first mortar attack. Aerial port personnel were pressed into service loading and unloading flare ships, and some detachment personnel flew on missions as "flare kickers" (USAF, June 1965:34).

With the establishment of the 2nd APOG in 1966, the Group mission statement continued, in the same manner as the 8th APS did in earlier years, to place emphasis on responding to tactical airlift requirements. Specific mention is made in reference to the provision of "tactical air terminal teams at advanced or landing zones" and to the availability of "qualified personnel to supervise aircraft

loading and unloading at fixed and forward bases" (USAF, September 1967:2).

Aerial Delivery/Mobility Sections. A significant development took place in 1966 when the 2nd APOG, as a result of the increasing number of unit moves and dependence on air assault operations, created a new section in each squadron to concentrate on tactical operations and air drops:

The three squadrons had largely been left to devise their own program of support of unit moves. Concurrent with the arrival of the moves would be planned [sic] for execution in the shortest possible period of time. As a result, policy was issued that, when necessary, mobility requirements would take priority over normal port activities. To standardize the squadrons in this function, action was taken to establish an aerial delivery/mobility section in each squadron to provide a hard core of loadmaster trained personnel. In addition, criteria was published for determining the number of personnel and equipment to be provided on mobility operations. (USAF, September 1967:25)

The formation of the aerial delivery/mobility sections enabled the aerial port squadrons to respond to the airlift demands created by the frequent U.S. involvement in direct combat with communist forces. In this regard, many of the operations the aerial port squadrons supported crossed over the line separating LIC from minor and major conventional warfare (see Figure 3, p. 29). The squadrons supported numerous mobility operations, including "Junction City" (support from a Bien Hoa AB detachment mobility team) and "Attleboro" (three mobility teams from 8th APS), and provided aerial port services under extremely hostile and

austere conditions (USAF, September 1967:Annex B, 5). Mobility teams from the 2nd APOG supported operation "Birmingham", which featured 1,000 sorties carrying a payload of 10,000 tons of cargo and supplies (Berger, 1977:174-175). In 1968, during operation "Delaware-Lamson", mobility teams accompanied 600 troops and 3,088 tons of cargo into the Viet Cong-controlled A Shau Valley. During the same year, mobility teams from the 8th APS and 15th APS supported operation "Locust Green" by processing and moving 5,768 passengers and 1,520 tons of cargo (Humphries, 1970:33). Some of the mobility operations, because of the sheer size of the move, required the management assistance of the 2nd APOG staff; in some instances mobility teams from two of the squadrons would be combined to handle an operation, as happened during the siege of Khe Sanh when the 8th and 15th squadrons teamed to provide support.

Mobility teams in the 14th APS were extremely busy in 1967. One mobility operation took place at Dak To from 13 to 16 November, which

...was terminated due to hostile fire, which destroyed a 10,000 lb rough terrain forklift, as well as all other mobility equipment and personal gear of the five man mobility team. The team escaped [sic] uninjured. (USAF, December 1967:5)

Khe Sanh. Probably the best known mobility operation occurred at the Marine base at Khe Sanh in 1968. The base and adjacent hills came under attack on 21 January, and for the next 70 days, the 6,000 encircled defenders held

off approximately 20,000 North Vietnamese attackers (Nalty, 1973:103). The U.S. forces were able to survive largely because of the steady stream of supplies and personnel delivered by air transport. A detachment from the 15th APS was in place at Khe Sanh when the siege began, but the status of the operation was changed to a "mobility operation" to allow for the rotation and replacement of personnel (Nalty, 1973:192). The aerial port force at Khe Sanh eventually consisted of personnel from both the 8th and 15th squadrons (Pollica, 1980: Exhibit 25, 4-5). Conditions at Khe Sanh tested the abilities and endurance of the mobility teams. One of the Air Force mission commanders at Khe Sanh, Lt Col Lewis Dunagan, described the working conditions:

The west turn around, and the freight ramp are registered by enemy artillery, rockets, and mortars. They are shell-packed and patched with dirt. Their base is extremely unstable. Casualties are moderate to heavy among aerial port personnel working these areas. (Pollica, 1980:Exhibit 41, 1)

Lt Col Dunagan continues his description later in the same report:

Aerial port personnel, trained primarily to operate in secure rear areas must perform their duties above ground on an unprotected, insecure ramp and airstrip, under constant artillery, rocket, and mortar fire...Bare survival is difficult. Survival while accomplishing Air Force Mission requirements cannot be guaranteed...A job which could be done in an hour at Cam Ranh Bay may require an entire day at Khe Sanh due to the lack of equipment and intense enemy fire. (Pollica, 1980:Exhibit 41, 4)

Qui Nhon. In February 1969, in another test of aerial port combat capability, the detachment at Qui Nhon fought for its survival when approximately 300 Viet Cong soldiers attacked the base in the darkness of early morning. The Qui Nhon defenders fired off roughly 30,000 rounds of small arms ammunition in the course of driving off the attackers. One aerial port person was killed, one lost a leg, and three others were wounded, two seriously. The detachment commander's emphasis on combat readiness effectively minimized the loss of aerial port personnel (USAF, 14th APS March 1969:9-14; Sledge, 1990).

Early Problems. Efforts to provide effective aerial port support during the early phases of the U.S. counter-insurgency struggle were hindered by several significant problems. As the war effort escalated, so too did the severity of the problems. The aerial port structure under the 2nd APOG expanded to 42 detachments in 1968, and included support for mobility operations at approximately 105 useable airstrips in South Vietnam alone (USAF, March 1969:15, 51).

Planning. The first and probably most significant problem was the overall weakness in the area of planning that characterized U.S. military involvement. One military historian, Jerome G. Peppers, Jr., described the absence of planning in these words:

Once again, we entered the war with no buildup time. The logistics problems, for quite some time, stemmed from this lack. There was no logistics staff,

and no logistics organization in country or available for deployment to Vietnam. What existed in logistics was overwhelmed for years as the US involvement in Vietnam grew. (Peppers, 1987:180-181)

The aerial ports were plagued by congested and overcrowded conditions. Lack of planning generated other serious problems. There were insufficient quantities of personnel, materials handling equipment (MHE), and facilities.

Personnel. Personnel shortages were severe. The extract below, from a 2nd APOG historical report, vividly describes the consequences of the shortage:

The 2nd Aerial Port Group has suffered chronically from a lack of sufficient authorized, assigned, and trained personnel since activation...While the group realized a significant increase in numbers of personnel assigned, authorizations consistently [sic] lagged behind the workload...The Group Headquarters has been very active in reviewing the manpower picture commensurate with increases in workload and requesting augmentation to meet mission requirements. Thus far, these efforts have been less than rewarded. (USAF, September 1967:6, 8)

The demands placed on the large squadrons and detachments were difficult to meet. The smaller detachments and operating locations were affected in much the same way. The account given the detachment at Qui Nhon illustrates the impact of the problem:

The Detachment lost 4 enlisted men without replacements during May and June. The detachment [sic] is at present down to nine enlisted personnel and one officer with an increase in tonnage from 862.8 tons for May to 2,501.8 tons in June 1965. (USAF, June 1965:38)

Training. The manning problem spilled over into the area of training, creating a related and equally serious problem for the aerial ports to overcome. Personnel were

transferred from other career fields with little or no training, and expected to provide the immediate solution to the problem. In fact, untrained personnel seriously impeded the airlift system during at least one point in time:

One of the most pressing problems experienced by the group during this time period was a lack of qualified personnel. It reached the point in the early stages of this period where mission effectiveness was jeopardized. It generated the need for a mammoth training program within units that were already overburdened with an excessive workload.

The majority of personnel assigned to the aerial ports in RVN [Republic of Vietnam] were cross trainees from supply and administrative career fields into the transportation field. Of the remainder, only a few qualified personnel were available to provide on the job training instructions to trainees. (USAF, September 1967:31)

In addition to large scale training programs, the 2nd APOG petitioned for and received temporary assistance from CONUS based units. Various temporary duty programs were implemented to ease the burden of the Vietnam aerial ports. Under the program codenamed "Top Dog", three teams totaling 67 personnel augmented the 8th APS for 120 days per team. In a similar program named "Twobuck", one officer and 15 enlisted personnel were sent from Sewart AFB, Tennessee, to assist the 8th APS (USAF, June 1965:10).

Manning consistently lagged behind requirements until the latter years of the war.

By June 1970, serious shortages in authorization [sic] and manning, as well as trained personnel, seemed to be a feature of the past. With the phasing down of the war in RVN, commanders had time to provide training programs designed to refine and polish skills as opposed to having to teach them first principles. Humphries, 1970:30

The training problem was compounded even further by additional manning requirements in Thailand, throughout the other PACAF ports, and in the U.S., especially at newly designated aerial ports of embarkation (APOE) like Norton AFB and Kelly AFB. However, the needs of the 2nd APOG were unique in that personnel were required to serve both tactical and strategic missions, versus primarily strategic needs for other Air Force aerial ports.

Material Handling Equipment Shortages. The performance of aerial ports early in the war was adversely affected by problems associated with material handling equipment (MHE). Again, war planning did not take into consideration the environmental and climactic factors connected with operating MHE in Southeast Asia. The first and most immediate problem was the lack of sufficient numbers of assets. The 2nd APOG reports:

One of the most serious problems the group faced last November was the deplorable condition of the materials handling equipment (MHE), both from the standpoint of numbers assigned and in-commission rates...In October 1966, 423 pieces of MHE were authorized with 279 assigned. (USAF, September 1967:12-13)

Items such as MHE were procured by means of vehicle buys, which means they were bought based on forecasts for

requirements one and two years into the future (Peoples, 1967:19). The increased involvement in Vietnam was never planned, and as such, aerial port units entered the escalation period with peacetime allocations of equipment. The shortages were worsened by acquisition problems. Most government forecasts called for a quick end to the war, in and around 1967. Many businesses were simply not interested in trying to increase capacity and production for what was sure to be a short term war. Full mobilization was never declared, and as a result the Defense Production Act of 1950 was rarely used to "direct" civilian industries to increase production. Sole source vendors found it frequently impossible to meet the increasing production demands generated by the military and did not desire to expand production for a less profitable and temporary war effort (Heiser, 1974:28-29). It took a great deal of high level attention to finally overcome the problem. Even as late as January 1967, the situation was still poor, as described by Brig Gen William G. Moore, Jr., then the commander of the 834th AD:

Our greatest limitation in the airlift system now is the lack of MHE, that is, the equipment that the aerial ports must have to load the pallets on and off aircraft. Right now we are operating with approximately 39 percent of the forklifts which we need to do our job and some 42 percent of the k-loaders... (Humphries, 1970:13)

MHE Maintenance. The MHE problems went far beyond simple shortages. Maintenance was a serious limiting factor

for MHE assets. Major bases such as Tan Son Nhut and Cam Ranh Bay reported incommission rates averaging 40 percent (Mrozek, 1988:83). In 1967, HQ PACAF collected incommission rates in South Vietnam that ranged from 20 percent to a seldom reached high of 50 percent (Peoples, 1967:13). Again another manning shortage, this time for vehicle mechanics, contributed to the problem. No special identifier had been developed yet to differentiate an MHE mechanic from a general purpose vehicle mechanic, resulting in unsatisfactory support from host vehicle maintenance units. And again, temporary relief was gained by the periodic insertion of Air Force Logistics Command and PACAF maintenance teams (Humphries, 1970:18-19). Maintenance and spare parts support did improve somewhat in the later stages of the war--as did most aerial port problems.

MHE Design. The design of MHE used in Vietnam created additional difficulties for the aerial ports. Almost all MHE initially used in the war was designed for commercial use. It was purchased and supported the same as any commercially designed warehouse equipment rather than as equipment that had to perform under combat conditions (Peoples, 1967:12). Tactical support early in the war was hampered by this aspect of the MHE fleet, as reported by Brig Gen Moore in 1967:

The MHE which we have was not designed for continuous operation or for operation in the dirt, sand, and mud in which we now operate the equipment at

many of our isolated and dirt airstrips. (Humphries, 1970:14)

Over time, it became more apparent that the Vietnam environment and accompanying combat conditions could not be effectively supported by commercially designed assets. In 1968, the 10,000 lb adverse terrain (10k AT) forklift was introduced. This particular model of MHE, a modified version of a front end "scoop" loader, was manufactured by the Euclid Division of General Motors Corporation and pressed into service in the detachments, operating locations and within the mobility teams (Humphries, 1970:15-16). Brig Gen John H. Herring, former commander of the 834th AD, succinctly summarized the early experiences with MHE in Vietnam when he commented in 1970:

We have used 463L MHE to satisfy requirements never envisioned by its designers. What we need to do now is develop equipment to meet the kinds of requirements we have discovered in RVN and which we expect in future contingencies...In the development of new airlift aircraft, related MHE and cargo handling procedures should be part of the package. (Humphries, 1970:18)

Facilities. The need for building facilities created a formidable set of problems. The lack of planning and rapid war escalation generated facility needs in two main areas. The first need was for covered areas for general cargo buildup and protection for weather sensitive cargo, and a covered area or building for passenger processing and holding. The second need was for real estate. Aerial ports require land for buildings, work areas

and cargo storage areas. Unfortunately these needs were not programmed or planned.

Facility needs among aerial ports varied naturally with the size of the unit. Major ports like Tan Son Nhut had a requirement to process and move up to 3,000 passengers and 1,000 tons of cargo per day, and thus required substantial allotments of real estate and buildings. Medium sized locations like Vung Tau and Chu Lai were required to process up to 1300 passengers and 220 tons of cargo per day, and also required considerable amounts of acreage and buildings. The small (less than 10 person) units like Kontum were basically left to fend for themselves for both space and buildings (Humphries, 1970:4-6).

All units, regardless of size, were in one way or another affected by the lack of facility buildup planning. The headquarters personnel for the 8th APS at Tan Son Nhut AB were working in tents in 1963, while the Vung Tau unit ran its operation from a small metal storage container and a tent (USAF, December 1964:51). Even when real estate was made available for aerial port use, it was usually unpaved, unlevel, and thoroughly incompatible with the MHE available in the early years.

Air Base Design. Just as MHE design was poorly constructed for the environment in Vietnam, so too was air base design. While logic dictates keeping freight operations a safe distance from heavily targeted flight-

lines, MHE and personnel authorizations were not designed for that type of operations. Air freight personnel at Cam Ranh Bay drove their cargo laden, slow moving MHE almost two miles to get from the freight terminal to the aircraft parking ramp. At Phan Rang, this same maneuver required a nine mile round trip utilizing a tractor and trailer combination (USAF, January 1973:29). Tan Son Nhut freight personnel grappled with cargo stored in three separate areas on the base (Humphries, 1970:10-11).

Complicating matters further, those ports fortunate enough to have sufficient buildings and real estate were frequently plagued by insufficient lighting and security. At the First Annual Tactical Airlift Symposium in 1969, the panel members concluded that:

History of airlift operations has proved that aerial ports rarely are afforded adequate real estate to sufficiently accomplish the assigned mission when deployed in support of contingency operations/exercises...Additional requirements for real estate and structural facilities are not normally made available to the aerial port without considerable realignment of various support functions throughout the area of deployment. (USAF, November 1969:71)

Lessons Learned. The Vietnam War marked the first concentrated use of aerial ports in a wartime scenario. One vital lesson drawn from the Vietnam experience is the necessity to plan logistics support for both short term LIC and minor/major conventional war. The escalation and buildup of the U.S. war effort in Vietnam caught most logistics functions by surprise, and as a result the

solutions to the myriad of problems were reactive rather than proactive.

Vietnam drove home the point that air transportation provides the most secure means of movement in a LIC operation. As such, aerial port forces will undoubtedly be utilized in forward operating areas. In this forward operating area, aerial ports will not be involved in "business as usual" types of activities. LIC operations in Third World countries like South Vietnam required the presence and function of specialized equipment for use on austere bases and unimproved tactical landing strips. Equipment like the AT forklift proved durable, dependable, and able to operate for long hours in harsh environmental conditions. Vietnam also stressed the importance of MHE maintenance and adequate stocks of spare parts and equipment. Shortages in any of these items jeopardized mission accomplishment. Airbase design is different than that commonly utilized at CONUS bases during peacetime, and different types of vehicles are required if long haul cargo operations are expected.

The LIC experience in Vietnam highlighted the need to organize and train aerial port forces capable of operating under combat conditions. Aerial port personnel found that normal daily activities turned into major accomplishments in combat. Aerial port leaders in Vietnam also recognized the necessity for developing highly mobile units, and in doing

so created mobility sections in each squadron. Each aerial port was also given responsibility for supporting tactical operations within a specific geographic region. The 2nd APOG performed as a policy making and governing body, and frequently intervened to pool resources among the three squadrons in order to overcome shortfalls.

Synopsis. Aerial port operations in the early years of the Vietnam War and up through 1968 were hampered by serious but avoidable problems. Despite the many obstacles, the 834th AD transported more than 4.5 million passengers in 1969 alone, or the equivalent of the combined 1969 populations of Boston, Detroit, Cincinnati, Dallas, Oklahoma City, Omaha, and Honolulu. During the same year, the 834th also transported 1,341,000 tons of cargo (Humphries, 1970:36). From 1962 to 1973, the cargo totals surpassed seven million tons (Berger, 1977:185). In spite of the lack of planning and subsequent problems with manning, MHE, and facilities, an enormous airlift undertaking was accomplished.

The advent of air assault operations and limited ground war in the counterinsurgency effort sparked the development of mobility teams and aerial delivery/mobility sections, as well as the introduction of the 10K AT forklift. Tactical airlift operations were conceived, refined and practiced throughout the war, and the unique support required for

these operations led to further refinements in aerial port force structure in the post-war period.

Grenada--Operation Urgent Fury

Aerial Port Development. Following the end of American involvement in the Vietnam War in 1973, airlift force structure and organization were changed. In 1974, tactical (C-130) airlift wings, divisions and aerial ports in TAC were transferred to MAC and then assigned as subordinate to either 22nd AF (west of the Mississippi River) or 21st AF (east of the Mississippi River). Approximately 1000 "tactical" aerial port manpower positions were transferred to MAC. The 1st APOG, with headquarters and a squadron at Langley AFB, Virginia, was part of the transfer along with its other squadrons at Dyess AFB, Texas, Little Rock AFB, Arkansas, Pope AFB, North Carolina, and a detachment at Fort Campbell, Kentucky (Russo, 1988:4).

In 1975, the 1st APOG was deactivated, along with the 4th APS at Langley AFB and a squadron left over from the Vietnam War, the 6th APS. Manpower positions from these two deactivated squadrons were used to form "combat mobility branches" (CMB) within squadrons at Elmendorf AFB, McChord AFB, Rhein-Main AB and Clark AB. The CMB concept was developed because late in the Vietnam War the "aerial delivery/mobility" section responsibilities for the 2nd APOG's squadrons grew to an unmanageable size. The solution was found by dividing each aerial delivery/mobility section

into two branches--a CMB for mobility functions, and an "aerial delivery support branch (ADSB) for aerial delivery functions (Quirk, June 1990).

Also in 1975, aerial port squadrons at Dyess AFB, Little Rock AFB, Pope AFB, and Mildenhall AB were redesignated "mobile aerial port squadrons", creating the unit known as a "MAPS". This redesignation was not accompanied by any apparent mission change (Meyer, 1989:16; Meyer, 1990).

At this juncture in time, each individual aerial port was organized to function as either a MAPS (tactical unit) or an APS (strategic unit). However, the differentiation between the two came to be based more on geographic and environment issues rather than cargo and personnel movement categories. The mission doctrine for the strategic ports states that APS units are tasked to "deploy trained personnel" and provide "support of airlift operations at established airheads and/or fixed terminals" (Meyer, 1989:10). This guidance is designed to complement doctrine written in 1971, AFM 2-21, Strategic Airlift (Russo, 1989:3). The MAPS units, on the other hand, are tasked to deploy and support "air landed or aerial delivery operations at high threat or austere forward airheads and/or fixed terminals" (Meyer, 1989:11). This guidance is the MAC complement to 1966 doctrine found in AFM 2-4, Tactical Airlift (Russo, 1988:3). MAPS units were linked to the

intra-theater "tactical" mission of C-130s, while APS units were positioned to support the inter-theater "strategic" mission of bases with C-141Bs and C-5As.

This structural and doctrinal division was in effect at the onset of the invasion of Grenada in October 1983. The limited CONUS-based MAPS presence within MAC in 1983, especially within 21st Air Force which was responsible for Grenada support, is depicted in Figure 5. This arrangement was somewhat different from the situation in Vietnam where the 2nd APOG possessed squadrons with individual mobility capability and responsibility for a specific geographic region. As Figure 5 illustrates, only one CONUS-based MAPS unit was under the command of 21st AF prior to and during the invasion of Grenada.

Operation Background. The small island of Grenada is located approximately 100 miles north of Venezuela, in the southernmost chain of the Windward group of the West Indies Islands. Grenada gained independence from Great Britain in 1974, and Eric Gairy was appointed Prime Minister. The nation subsequently suffered from corruption, economic debt, and a myriad of other serious problems. A coup in 1979 brought Maurice Bishop to power, a leader with reportedly strong communist tendencies (Dunn, 1985:1-5).

A series of events transpired that led to the eventual U.S. military action. In 1979, following the coup, Grenada established diplomatic ties with Cuba, received arms

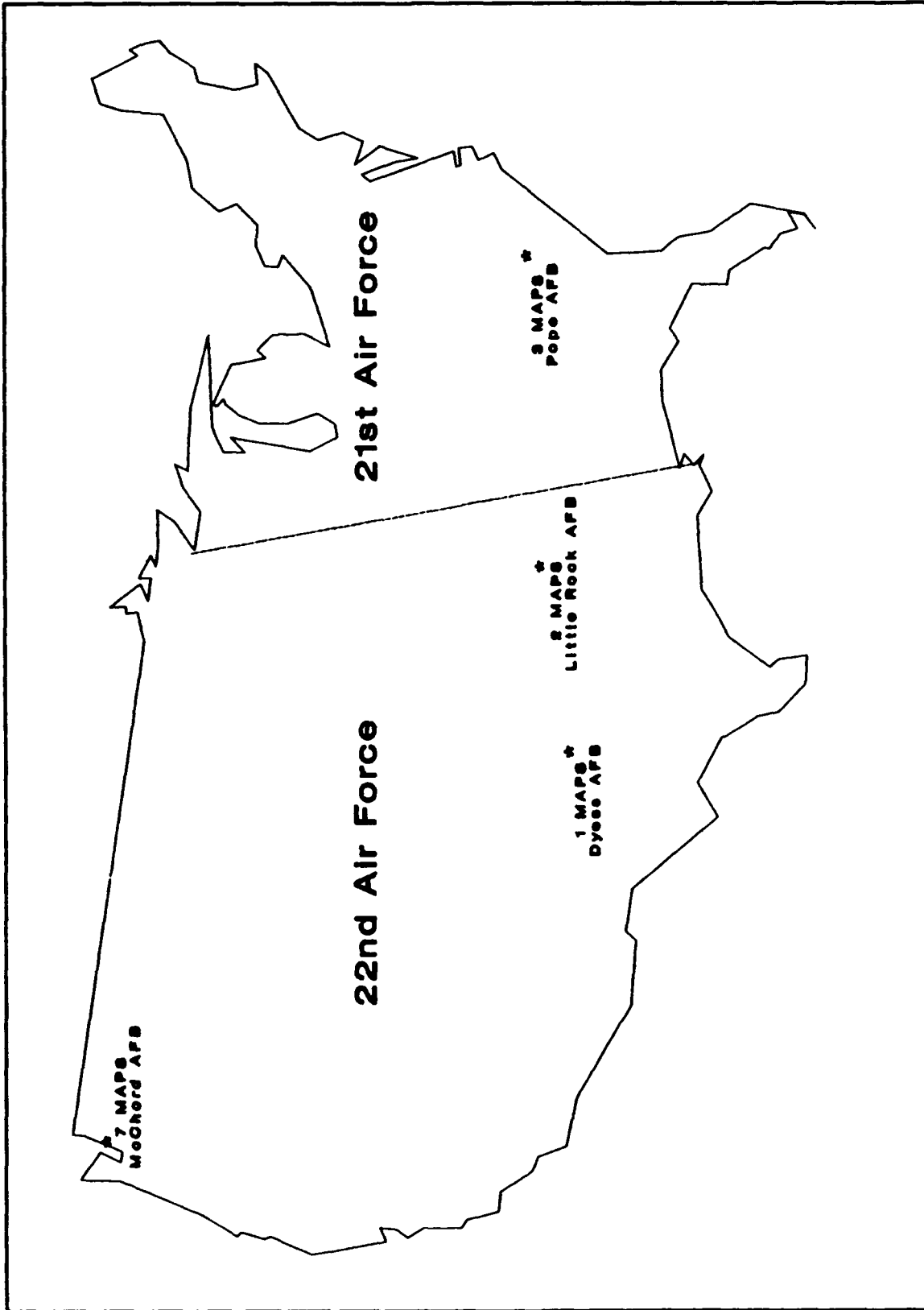


Figure 5. Current CONUS-Based MAPS Force Distribution

shipments, and arranged a \$52 million aid package with Cuba to finish a new 10,000 foot runway at Point Salinas. In 1980, a military assistance agreement was signed with the Soviet Union, providing Grenada with large amounts of military arms. In 1982, Prime Minister Bishop visited Moscow, and granted Soviet access to Grenada in exchange for additional military arms shipments valued at 10 million rubles. April 1983 brought an agreement with the North Korean government for \$12 million in military aid.

Then in September 1983, Bishop was forced by the Grenadian Central Committee to share governmental power with the Deputy Prime Minister Bernard Coard, another leader with strong communist ties. The final events occurred in October 1983 when demonstrations broke out, Bishop was arrested and then assassinated, and the main airport at Pearls was closed (Dunn, 1985:152-162). Given the high level of instability, the Organization of Eastern Caribbean States (OECS) asked Barbados, Jamaica and the U.S. to intervene. Acting upon the OECS request, the U.S. Atlantic Command began the planning for operation Urgent Fury on 23 October 1983 (U.S. Atlantic Command, February 1984:1).

The invasion was deemed necessary and carried out for three main reasons. The first related to the safety of Grenadian citizens and the apparent lack of a legitimate governing body. The second reason, and probably most important to the U.S., was the safety of approximately 1,000

U.S. citizens, of which 800 were students at St. George's School of Medicine near the capital city, St. George's. The third reason originated in the request for help by the OECS, a request based on the collective security of the member nations (Kilburn, 1984:5-7).

At this point, the stage was set for a peacetime contingency operation. The planned attack called for a Marine amphibious assault at Pearls Airport, and air insertion of an Army assault force at the unfinished Pt. Salinas Airport. There was to be limited use of force in order to minimize casualties to both the enemy forces and civilians (U.S. Atlantic Command, February 1984:5).

Execution. Time constraints weighed heavily on the effectiveness of planning. The invasion was to begin on 25 October, only two days after the OECS request for assistance. The requirement for speed and mobility, combined with the characteristics of the invasion plan, necessitated the use of MAC airlift forces.

Aerial port planning was delegated by HQ MAC to 21st AF at McGuire AFB, New Jersey (Wigginton, 1990). Maj Gen Patterson from 21st AF became the commander of airlift forces (COMALF) for the operation, and participated in a hastily assembled Atlantic Command planning session. He was accompanied, in one account, by operational planners only (Cowan, May 1990). In another account, he did have one "airlift specialist" during the one hour long session where

"few logistical issues were raised" (Duffy, 1985:20). No reference was found to any aerial port participation in the planning session.

Aerial port representatives in the 21st AF crisis action team (CAT) tasked the 3rd MAPS from Pope AFB to handle the reception of forces into Grenada, while the 437th APS was tasked to support strategic delivery into Barbados. The plan called for using Barbados as a staging point for the delivery of aircraft, munitions, supplies and helicopters. At this point, a source reports that personnel from the Air Staff at the Pentagon intervened, and directed the use of only MAPS units in "forward areas" (which was expanded to include strategic delivery into Barbados) until the fighting was finished (Cowan, May 1990).

Organization. 21st AF was not able to support the operation with MAPS personnel on such short notice from its own resources. The only MAPS in 21st AF was at Pope AFB, North Carolina. It was busy deploying Army units from the 82nd Airborne Division. A parochial problem existed in the relationship between the 21st and 22nd Air Force headquarters units, in that one would not go to the other and ask for help to cover a shortfall like 21st AF was experiencing with MAPS forces (Wigginton, 1990). At the beginning of the operation the only mobile aerial port squadron in 21st AF was immobilized by strategic aircraft outloads. It was tasked to perform home station, fixed base

duties instead of duties involving combat conditions in Grenada.

Personnel. In order to provide some type of aerial port support for the operation, aerial port personnel from the 437th APS were diverted from an exercise ongoing at the time, called Ocean Venture, to work in Barbados as part of an enroute stop team. However they were then diverted again and sent to Pt. Salinas to support the force reception. These people were low on personal supplies, clean clothing, and basically unprepared to take part in a major operation (Cowan, June 1990).

Opinions vary as to which aerial port forces--APS or MAPS--were the first to arrive in the combat environment of Grenada. A written account in the Air Force's Airman magazine credits the 3rd MAPS with supporting the operation at Pt. Salinas ("Grenada", 1984:41), and is substantiated by information offered in some interviews (Byrd, 1990; Etzel, 1990). However, information obtained from several other interviews suggests strongly that personnel from the 437th APS were the first in (Meyer, 1990; Wigginton, 1990; Cowan, June 1990; McClung, 1990). This viewpoint is substantiated by a written account in which Brig Gen Lindsey, then Deputy Chief of Staff for Air Transportation at HQ MAC, made the following comments at a "Grenada: Lessons Learned" briefing:

About three days into the operation, Gen Ryan [then CINCMAC] asked me why we didn't have a mobile aerial port squadron at the forward locations since

this was exactly the kind of operation they train for. Quite frankly, I didn't know the answer... (Lindsey:4)

Brig Gen Lindsey went on to research the problem; some aspects of his conclusions will be discussed in a later section. Based on the available information, the conclusion is drawn that MAPS personnel were not the first to arrive in Grenada by a period of several days.

Early Problems. The operation was fraught problems, but the end result was a success. Speaking on the topic of problems, Brig Gen Lindsey commented:

I know I've mentioned a lot of problems and some of our solutions, but in spite of it all, I can't speak too highly of our people and what they did to make this operation work. I'm convinced all our aerial porters belong to a very special family. "No, or we can't do it" just isn't part of their vocabulary. (Lindsey:11)

Some of those problems are discussed here.

Training. Tactical MHE was delivered into Pt. Salinas but the strategic aerial port personnel (437th APS) were not familiar with nor qualified to drive tactical equipment. These same aerial port personnel arrived wearing green fatigues instead of the usual uniform for combat environments, the battle dress uniform (BDU). This would have been incidental if not for the fact that the Cubans wore an almost identical green fatigue uniform. In addition, these aerial port people were inserted into a combat environment without weapons or weapons training (Wigginton, 1990; Meyer, 1990) or any other combat gear like helmets and flak vests (Cowan, June 1990).

Due to construction debris and incomplete sections in ramp and apron areas, the airfield at Pt. Salinas was limited to a maximum on the ground (MOG) of one aircraft. An enormous backlog of aircraft formed in the airspace over Grenada, with some aircraft circling in a landing queue for up to six hours. The backlog was worsened by occasional sniper fire on the airfield, which brought all aircraft ground servicing operations to a halt (Duffy, 1985:23). This was the combat environment the APS personnel found themselves in--without weapons, combat training, or familiar equipment.

Personnel. The Urgent Fury operation plan called for a Marine amphibious assault near Pearls Airfield and a simultaneous Army Ranger and Special Forces airborne assault at Pt. Salinas Airfield (U.S. Atlantic Command, 1984:4-5). Because of these simultaneous military operations, the need arose to deploy aerial port personnel and equipment to Pearls to support additional airlift. However, the aerial port force at Pt. Salinas could not support Pearls with aerial port resources, so the decision was made to send more APS personnel and equipment from Barbados (the location of the Aerial Port Control Center for the operation) to Pearls. Personnel from the 437th APS flew in on the first daily aircraft into Pearls, and came out on the last. They also wore green fatigues and lacked essential combat gear. Additionally, they suffered a flat tire on their forklift

and did not deploy with a spare. On one occasion, two aerial port personnel and one mechanic were left behind after the last aircraft departure, and were finally extracted from the dark and unsecure airfield some time late in the evening by an Army Blackhawk helicopter (Cowan, 1990). The APS (strategic) personnel were definitely not operating in an "established airhead and/or fixed terminal" as was envisioned in aerial port doctrine. They were not trained or equipped for the operation they were tasked to accomplish.

Equipment Shortages. MHE assets became an important issue at one point. Parochial problems between 21st AF and 22nd AF were overcome by one MAC CAT transportation member who intervened and unilaterally obtained MHE from 22nd AF for use in the operation (Wigginton, 1990). Spare tires also became a critical issue in the operation, as some MHE assets were deployed without spares.

The MAPS unit at Pt. Salinas deployed without communications equipment and could not effectively communicate with the airlift control element (ALCE). The communication problems worsened when the MAPS and ALCE set up operations on opposite ends of the runway at Pt. Salinas (Cowan, 1990).

Lessons Learned. Many lessons applicable to aerial port forces were learned from the Grenada invasion. Brig

Gen Lindsey placed special emphasis on one when he stated "The most important lesson we learned is that we must select the appropriate aerial port package and units to send to austere locations" (Lindsey:4). The wrong aerial port unit was tasked initially due in part to what he describes as "insufficient visibility of the workload and locations involved" (Lindsey:4). This reflects on the forced absence of aerial port personnel in operation planning. Another reason for the unit tasking problem had to do with the home station outloads 3 MAPS was tasked to support at Pope AFB.

Grenada reinforced the lesson learned from Vietnam that highly mobile, quick force insertion operations require specialized equipment and combat trained and equipped personnel. The strategic aerial port personnel in Grenada deployed without flak vests, helmets, camouflaged fatigues, weapons, or weapons training. They did so because combat items such as these were not required, nor were they available through squadron supply sources.

Another valuable lesson re-learned during Grenada was the importance of utilizing the appropriate type of MHE, and deploying with spare parts such as tires and hoses. Functioning equipment and available spares are crucial in an airfield operation with a MOG of one. Without adequate offload capability, the entire force reception operation can come to a complete halt, as it almost did in Operation Urgent Fury.

Brig Gen Lindsey summarized the lessons of Urgent Fury with these comments:

Looking toward the future first and foremost is to make our mobile aerial port squadrons more mobile and allow them to train for their wartime mission. To do this, we must disengage them as much as possible from their heavy peacetime and fixed port type workloads. These mobile aerial port squadrons should be mobilizing and going to the field on a regular basis. Resources must be identified to insure that the current peacetime workloads continue to be accomplished. (Lindsey:9)

Synopsis. Although this study focused on problems and difficulties, the aerial port personnel involved in the invasion of Grenada did an admirable job--especially those who were not trained or equipped for the combat environment. Including large portions of the redeployment, the aerial ports moved approximately 13,000 passengers and 10,000 tons of cargo ("Grenada", 1984:41). Total figures for the operation, covering 991 missions, list 35,911 passengers and 15,373.7 tons of cargo moved between 23 October 1983 and 8 Nov 1983 ("Talking", 1987:1). This was indeed an impressive undertaking on such short notice.

Yet the overall success of the operation was diminished somewhat by the "ad-lib" performance of most logistics functions (Duffy, 1985:20). Grenada should have taught MAC a valuable lesson about the limitations of the aerial port force structure and its capability to respond to LIC scenarios. Michael Duffy captured some of this general concept in an article entitled "Grenada: Rampant Confusion", published in Military Logistics Forum:

Indeed, Grenada opened many officer's eyes to the risks of low-intensity conflict. Several commanders said that the U.S. military, for all its talk of being prepared for unsophisticated enemies, can easily trip over itself-both in doctrine and in equipment. (Duffy 1985:28)

It appears evident from available data that this accurately describes the experience of aerial ports in operation Urgent Fury. James B. Motley, in an article written shortly after the invasion, looked with remarkable intuition into the future when he penned these words:

Within constrained resources, U.S. armed forces must be prepared for rapid deployment to support stability in areas prone to trouble without reducing U.S. deterrent strength required for the security of NATO, South Korea, and other key allies...The low-intensity battlefields of the future will require smaller, more strategically responsive and flexible forces organized to respond to a broader spectrum of combat operations and a wider array of contingencies. (Motley, 1984:233)

Following the Grenada invasion, aerial ports underwent another period of change, fostered by an apparent effort to increase the response capabilities of both MAPS and APS units. These capabilities would be tested again during the invasion of Panama in December 1989.

Panama--Operation Just Cause

Aerial Port Development. Following the invasion of Grenada, the deployment capability of 3 MAPS became a topic of real concern to HQ MAC. The absence of 3 MAPS at the beginning of the contingency formed the nucleus of a problem statement requiring immediate attention by air

transportation managers. The report from HQ MAC describes the required staff action:

As a result of URGENT FURY, CINCMAC directed that: "We need to employ our command-wide resources so that MAPS remain mobile and do not get tied up supporting deployment activity at staging bases.
(Military, 1985:1)

Some key MAPS units were hindered from performing their primary mission of rapid deployment by home station upload requirements and host wing or group training requirements. This was certainly the situation confronting 2 MAPS at Little Rock AFB and 3 MAPS at Pope AFB. The 82nd Airborne Division required the services of 3 MAPS for deployment support, while the 34th Tactical Airlift Training Group levied weighty demands on 2 MAPS. Key CONUS MAPS units were also required to support large scale exercises like Team Spirit, draining manpower and resources from actual contingency response capability.

One solution that was considered was to locate an APS unit with the MAPS unit to handle the home station requirements and free the MAPS to deploy. In February 1985, the problem was closed out without a formal solution because of limited manpower and funding problems. HQ MAC air transportation managers were instructed to maintain close surveillance on the problem in the absence of a firm solution (Military, 1985:Atch 1-3).

Combat training was developed and made available to MAPS personnel because of the discovery of significant

weaknesses in combat readiness during Urgent Fury. The training was administered at Little Rock AFB under the Volant Scorpion training program. Included among the numerous lesson plans utilized by the air transportation cadre are titles like "Operating MHE Under Fire", "Performing ERO's [engine running offloads] in a Hostile Environment", "Tactical Vehicle Employment/ Deployment", "Evacuation by Aircraft Under Fire", "Methods of Destroying or Disabling Equipment", and "Individual Tactical Movement Techniques". Few APS personnel have attended this training since the school began--only about 25 since 1984 (McClung, 1990).

The year 1986 featured the conversion of the four remaining combat mobility branches to three new and separate MAPS units and one mobile aerial port flight (MAPF), for the purpose of enhancing combat readiness capability of aerial port forces (Russo, 1988:4; Meyer, 1989:17). This time frame also brought about increased interest in developing mobility capability of CONUS APS units. A driving factor in this development was the poor showing of several APS units in operational readiness inspections in the late 1970s and early 1980s. As a result of efforts to improve mobility capability, strategic aerial ports became more involved in mobility activities. In the absence of applicable guidance or doctrine they naturally followed MACR 76-1, Chapter 23--guidance specifically designed for MAPS units

(Russo, 1988:4). APS units were getting more and more into the business of mobility and followed the only guidance and doctrine available.

Another change took place during this time period when seven aerial port squadrons were created from existing aerial port forces that were embedded within military airlift support squadrons (MASS). As an example, the aerial port element within the MASS at Howard AFB, Panama, was expanded to create a separate squadron under the 61st Military Airlift Group. In this case, the 6th APS was reactivated.

In 1988, the 314th APS was activated at Little Rock AFB in order to free 2 MAPS from home station requirements. This idea of dual aerial ports (APS and MAPS at the same base) originated at Pope AFB, yet for some unknown reason an APS unit was never created and activated to augment 3 MAPS (Meyer, 1990).

Operation Background. Trouble first started in Panama in the early 1900s, with the signing of the Hay-Bunau-Varilla Treaty. This treaty gave the U.S. free license and open rights to do whatever was necessary to build the Panama Canal. Panamanian national sovereignty was diminished by the American presence and the circumstances under which the treaty was signed (Nyrop, 1981:21-23). In 1936 the Hull-Alfaro Treaty was signed, strengthening to some degree Panama's sovereign stature. An additional treaty was signed

in 1955, bringing economic benefits to Panama while granting broad military base rights to the U.S. (Nyrop, 1981:28-34). The large American presence and Panamanian sovereignty were key issues in future events.

Serious unrest marked by periods of rioting and violence took place in the 1960s. Panamanian sovereignty remained the main issue, leading to the signing of the Panama Canal Treaty of 1977 (Nyrop, 1981:46-49). This treaty states the U.S. and Panama "have decided to terminate the prior Treaties pertaining to the Panama Canal and to conclude a new Treaty to serve as a basis for a new relationship" (United States, 1977:1). The new treaty arrangement called for the U.S. to turn complete control of the Panama Canal over to the Panamanians, incrementally and then completely by 31 December 1999. The driver behind the creation of the new treaty was General Omar Torrijos, a leader immortalized by many Panamanians. Following the death Gen Torrijos in an aircraft accident, General Manuel Noriega eventually took over control of the Panamanian Defense Force (PDF) and extended his control to include all military and political arenas. General Noriega subsequently set himself up as a dictator. He kept a "puppet" president for appearances only, and carefully chose members of the Panamanian National Assembly. With control of the military and political structure, General Noriega removed or

neutralized all forms of opposition to his leadership, and utilized the PDF to enforce his decisions and policies.

Matters started to heat up between the U.S. and Panama in 1987. U.S. citizens and military personnel were subjected to numerous cases of harassment and beatings. Threats and accusations were made by both sides. Frequently General Noriega would deliver speeches calling for the removal of all American presence from Panamanian soil. He claimed that the U.S. had no real intention of honoring the provisions of the Panama Canal Treaty of 1977, the treaty created largely by the efforts of revered General Torrijos. He also accused the U.S. of numerous violations of the treaty provisions, and stirred up the patriotic energies of his Panamanian supporters by creating a common enemy for all "true" Panamanians to fight--the Americans.

U.S. negotiations with Panama called for a return to a true democratic form of government. These proved to be fruitless and the situation worsened. General Noriega was indicted on drug trafficking charges, and sought for criminal prosecution in the U.S.

In 1989 the situation exploded. Panamanian elections in May were rigged and violence broke out in the capital city. A large contingent of U.S. military forces was flown into Panama during preparatory exercises. Portions of these forces remained in the country and provided a good in-place force to support the subsequent invasion. On 15 December

General Noriega declared himself "Maximum Leader" and Panama's National Assembly declared a "state of war" existed between the U.S. and Panama. On 16 December a U.S. Marine was killed by PDF personnel. A Navy officer and his wife witnessed the killing, and were themselves detained and terrorized. President Bush ordered the attack on 17 December and final plans were drawn up for an invasion to occur on 20 December.

A U.S. Army lieutenant shot and wounded a PDF corporal on 18 December, creating additional tension and animosity. In the late evening hours of 19 December, MAC aircraft started landing at Howard AFB, Panama, in ten minute intervals. In the early morning hours of 20 December, operation Just Cause was underway as U.S. forces attacked PDF concentrations throughout Panama (Magnusen, 1990:24-27).

President Bush addressed the American people on the day of the invasion, and stated his reasons for ordering the attack:

General Noriega's reckless threats and attacks upon Americans in Panama created an eminent danger to the 35,000 American citizens in Panama. As President, I have no higher obligation than to safeguard the lives of American citizens. And that is why I directed our armed force to protect the lives of American citizens in Panama, and to bring General Noriega to justice in the United States. (Bush, 1990:194)

Execution. Preparations for Just Cause differed from Urgent Fury in that very similar deployments into Central America took place in previous years: the Golden Pheasant deployment into Honduras in 1987, Nimrod Dancer into Panama

in 1988, and other deployments in 1989. All of these exercises provided excellent practice in rapid force deployment.

Planning. Planning at the JCS was heavily compartmentalized. Although individuals did not know the whole scheme of the operation, air transportation concerns were articulated by a senior air transportation manager (Wang, 1990). The same compartmentalized planning took place at HQ MAC. Again, no one person knew the entire operational plan, but enough information was provided to the right people to allow the completion of an air transportation support package days before the actual invasion (Payne, 1990).

The initial plan called for MAPS support for all aspects of the operation in Panama with the exception of the heavy flow of aircraft handled by the 6th APS stationed at Howard AFB. 3 MAPS was selected to support the operation because of its relation to the 82nd Airborne Division. Other CONUS MAPS units were not deployed to Panama because of time requirements and availability of airlift (Payne, 1990).

Organization. In 1989, the year when operation Just Cause took place, MAC strategic aerial port forces consisted of 17 APS units and four MASS units. Mobile forces consisted of seven MAPS units and one mobile aerial

port flight (MAPF). CONUS-based MAPS units were still distributed as depicted in Figure 5.

Prior to and during the invasion of Panama, the only CONUS based MAPS unit in 21st AF territory was 3 MAPS--still linked to the strategic outload of the 82nd Airborne Division at Ft Bragg, North Carolina. The first aerial port activity took place on 10 December, when 3 MAPS deployed a 12 person team to Lawson Army Airfield (AAF) at Ft Benning, Georgia (Register:1), to support another exercise. The 437th APS at Charleston AFB had at this time deployed a 14 person team to Hunter AAF, Ft Stewart, Georgia, to assist with other exercise uploads. The 3 MAPS force at Pope AFB was very busy with home station aircraft departures on 18, 19, and 20 December. The Lawson AAF team, with assistance from 2 MAPS (Little Rock AFB) personnel, launched 26 aircraft on 19 December. Also on 19 December, 3 MAPS deployed six joint airdrop inspection (JAI) qualified loadmasters to Charleston AFB (Register, July 1990).

Early Problems. A 35 person team from 3 MAPS was prepared and ready to deploy. Included in the team were three passenger service specialists from the 317th Transportation Squadron at Pope AFB. The team was waiting for a prearranged MAC aircraft to arrive on 19 December and transport the team to Tocumen Airport, Panama. The aircraft designated to pick up the 3 MAPS team was near Greenville, South Carolina, when it was diverted by 21st AF to return to

22nd AF control, enter crew rest, and fly a mission to lift elements of the 7th Infantry Division (ID), Ft Ord, California. The mission detour occurred before the 21st AF CAT was fully activated, and despite attempts by 3 MAPS personnel to keep the aircraft on its scheduled mission, it flew west, leaving the 3 MAPS team without airlift support (Register, July 1990).

By the time of the mission diversion, airlift was not available to take the team to Hunter AAF, another location where aircraft were flying routes into Tocumen Airport. The 3 MAPS team considered the possibility of driving in vehicles to Hunter AAF, but weather and road conditions rendered this idea impractical (Register:2). With the 3 MAPS stranded, the 437th team at Hunter AAF joined the initial assault force and flew into Panama.

Lt Col Robert Byrd, operations officer for 3 MAPS during operation Urgent Fury, was on duty at the Joint Special Operations Command (JSOC) at Ft Bragg. He heard about the predicament the 3 MAPS team was in and proceeded to make room for the 35 person team and some of their equipment on a JSOC C-141B mission destined for Tocumen Airport. Room was made by taking JSOC cargo off the aircraft. The 3 MAPS team arrived in Panama at approximately 1900 hours, 20 December. The 437th APS team had already been on the ground at Tocumen Airport for 18 to 20 hours (Register, July 1990).

When the 3 MAPS team arrived, they did not initially know about the 437th APS team. Work was performed in complete darkness and only later, after performing a combat reconnaissance of the area, did the team learn that there was an APS contingent on the ground. The Charleston aerial port team did not possess helmets, flak vests, or weapons (Register, July 1990). APS personnel had, as in Grenada, entered a combat zone without essential combat equipment and training.

MHE was in short supply. The tasking order for 3 MAPS called for bringing a minimum amount of equipment, including MHE. Enough assets were on hand to perform the mission because of the MHE brought by the 437th APS team. If only one team had been present, there would not have been sufficient MHE to offload the heavy flow of aircraft (Register, 1990).

The APS and MAPS contingent at Tocumen deployed a team with members from both squadrons to another Panamanian airfield at Rio Hato on 26 December. They deployed a second integrated team to an airfield at the city of David on 27 December. Back at Pope AFB, the heavy workload continued in the form of resupply and redeployment missions. Between 21 December 1989 and 17 January 1990, 3 MAPS worked 148 Just Cause missions (Register:2-3).

Synopsis. Operation Just Cause was a success in that all the major objectives were met. The operation in Panama

is viewed by many as the type of war the U.S. will likely face in the future. In an article in Jane's Defence Weekly entitled "Panama: Training Ground For Future Conflict," the author states:

In the face of a perceived diminished Soviet threat and falling budgets, the U.S. Army will reshape itself into a fast-reaction home-based fighting force.

The author then quotes U.S. Army Chief of Staff General Carl Vuono to validate his point:

A growing challenge to U.S. interests and national security strategy is so-called low-intensity conflict...The nature of U.S. interests around the world will require that U.S. forces be globally deployable, often with little or no warning.
(Lopez, 1990:61)

Supporting this type of rapid Army deployment is the current mission of aerial port forces. Although no major "glitches" were reported in the overall operation, the same cannot be said for the aerial port involvement. The aerial port forces trained and equipped to perform under combat conditions were again not utilized because of a decision to divert an aircraft to haul additional troops rather than essential deployment reception forces. The 3 MAPS team was left to fend for itself. Fortunately a means was provided (from an unlikely source) for the team to enter the operation, but not until untrained and ill-equipped 437th APS personnel were inserted to make up for the 3 MAPS shortfall. It is indeed fortunate that none of the unarmed 437th APS personnel were casualties during the operation.

Lessons Learned. Planning for the Panama invasion incorporated lessons learned from the Grenada invasion. The correct type of aerial port force package was tasked to support the operation. Planning included air transportation specialists and passenger service specialists in the MAPS deployment team. MHE was provided in sufficient numbers to get the job done, but only as a result of extremely long work hours by the aerial port personnel and the singular vehicle mechanic. HQ MAC viewed the amount of MHE as adequate because no aircraft delays were reported. More MHE could have been carried on numerous aircraft that arrived at Tocumen Airport only partially loaded, including one C-5A loaded with only eight pallets (Register, July 1990).

While planning was adequate, the same execution problems occurred in the Panama invasion as occurred in the Grenada invasion with only a small variation on the theme taking place. Home station requirements, weather, aircraft diversions, or any of numerous possible circumstances worked together to again prevent MAPS units from completely performing their primary job of supporting combat operations.

Summary

Aerial support during LIC operations is different from support required during conventional confrontations in several respects. The discussion in this chapter has pointed out that aerial ports in LIC must be ready to

respond to extremely short notice deployment taskings. The forces required for such taskings must be combat trained and equipped.

Specialized equipment is required and available in the form of tactical loaders and AT forklifts. However, this equipment requires trained operators. MAPS units possess the vast majority of the available tactical and adverse terrain equipment and trained operators.

Aerial port forces in Vietnam developed the capability to simultaneously support both tactical operations and strategic missions. They did so by creating a specialized section within each squadron, and exercising responsibility to support tactical operations in a specific geographic region.

The aerial ports in Vietnam had the luxury of time. Workload and combat intensity escalated slowly, allowing the evolution of this effective organization. The Grenada and Panama operations, however, are more representative of LIC operations as described in Chapter II. They originated in the CONUS, were fast developing, required insertion of forces at full combat intensity, and required forces to be optimally organized at the onset of operations without a benefit of slow escalation.

During Grenada and Panama, aerial port forces were divided into APS and MAPS units with strategic and tactical responsibilities respectively. The data collected and

presented in this chapter highlights problems with this division. The location of CONUS-based MAPS units is less than optimal. MAPS units are still positioned exclusively at C-130 bases--a linkage that began in 1967 when tactical or mobile aerial port manning positions were first justified based on a flying hours and training formula. This linkage still exists. However, as in Grenada and Panama, LIC scenarios do not necessarily allow for extra time to task a geographically distant MAPS unit, or a MAPS unit of choice that must first finish deploying home station forces. Future LIC operations will require combat and support forces that are capable of rapid deployment on a global basis. The geographic division between CONUS-based APS and MAPS units proved to be a serious limiting factor during operations Urgent Fury and Just Cause.

The doctrinal and functional divisions that developed during the Vietnam War were carried over into Urgent Fury and Just Cause, but in the form of distinctly different APS and MAPS units. The APS doctrine emphasized equipping and training forces to operate in relatively safe areas; MAPS doctrine emphasized equipping and training forces to operate at austere forward locations under combat conditions. From the separate doctrines came separate functions. The APS units were primarily responsible for inter-theater CONUS outbound movements; MAPS units were responsible for intra-

theater activities such as initial force reception and in-theater unit moves.

Aerial port forces are not optimally organized or distributed to successfully participate in LIC operations. The successes of aerial ports in the Vietnam War were lost over time due to geographic, doctrinal, and functional divisions.

IV. Conclusions and Recommendations

This research addressed the research problem of determining the role of aerial ports in LIC. Historical data was provided for use in judging the overall effectiveness of aerial ports in three specific LIC operations. In order to answer the main research problem, several investigative questions were examined. LIC was first defined, and then grouped into four broad categories. Within these categories, peacetime contingency operations and insurgency/counter-insurgency operations were identified in Chapter II as most probable to require the services of aerial port forces. It was noted that logistics in a LIC requires specialized, combat trained forces ready for quick deployment on a global basis. Aerial port forces in LIC are frequently positioned at the battle front, rather than in the traditional position in rear, relatively safe areas. Reliance upon mobility and air transportation place aerial ports into the forefront of LIC operations.

Aerial port involvement in three LIC operations was examined. Problems and force structure developments were presented. Mobility along with specialized combat training and equipment were identified as unique logistical factors for LIC operations. Aerial port unit organization evolved into strategic or fixed base forces (APS) and tactical or mobile forces (MAPS). These two types of aerial ports were

in most cases separated geographically and divided along doctrinal and functional lines. The data presented in the previous chapter leads to certain conclusions and recommendations. The discussion in this chapter will first center on specific assumptions upon which subsequent conclusions and recommendations are grounded. Next follows a brief section on analysis of aerial ports in the three LIC operations discussed in this study, followed by specific conclusions. Recommendations are then provided as a means of providing a solution to the specific research problem. Finally, recommendations for further research are identified.

Assumptions

Several assumptions about the future U.S. military environment form the foundation for the ensuing analysis and conclusions. First, for the foreseeable future, the portion of the federal budget allotted for defense will continue to shrink. This will discourage the implementation of plans or changes requiring military expansion.

Based on basic reductions and the currently perceived lower probability of large scale conflict, a second assumption is continued reductions in force size, including military support and logistical functions. Growth in support functions, like aerial port forces, is not likely to occur. As of August 1990 the total defense budget for Fiscal Year 91 will be reduced significantly, with

reductions predicted for ensuing years. Aerial ports will be limited by this constraint.

In direct relation to aerial ports, a third assumption that is derived from the first two states that aerial port budgets and forces will contract in size. The first phase of this contraction is already underway, as evidenced by port deactivations and force redistributions recommended by a HQ MAC air transportation research report from 1990 entitled "Optimal Airlift Distribution Study" (Military Airlift Command, 1990), commonly referred to as "OADS".

The fourth assumption, again directly related to aerial ports, is that the strategic and tactical differentiation between aerial port forces, aerial port squadrons (APS) and mobile aerial port squadrons (MAPS) respectively, will continue to diminish in the future. Currently APS units are performing MAPS duties, and MAPS units are employed performing APS duties. The differences between the two types of aerial port units are blurred further by the tactical air delivery capabilities of the strategic C-141B fleet and the dual capabilities of the new C-17A.

The fifth assumption is that future LIC operations will be supported on an increasing basis by CONUS based aerial port forces. The permanent presence of American military forces on foreign soil is and will be viewed as less desirable than in the past. Increasing pressure by nations desiring complete territorial and national sovereignty will

ruel a continued deactivation of U.S. military forces on foreign soil. Forward deployed aerial ports will not be available or properly positioned to support LIC operations.

The final assumption, based on historical events, is that LIC will happen fast. The requirement for a fast military response will necessitate the use of active duty forces. The use of Air Force Reserve units in the initial response force package will be limited to individual volunteers rather than the call up of full units. This assumption is supported by recent experience in the White House and Pentagon during operation Just Cause (Panama), where political reservations and pressures caused all requests for Reserves by the U.S. Southern Command to be denied (Willis, 1990:8, 75).

With these assumptions forming a background for future LIC operations, focus is now directed toward an analysis of the aerial port LIC involvement presented in the previous chapter.

Analysis

In Chapter II, it was asserted that LIC is now the primary method of conflict resolution. It was also asserted that the probability of major conventional warfare, specifically the threat of a major NATO versus Warsaw Pact confrontation, is diminishing. However, it was also pointed out that the probability of "dirty little wars" is increasing and the impact of any protracted involvement in

these conflicts can have global implications. U.S. military forces must be trained, prepared, mobile, and ready to deploy from CONUS stations into combat environments on short notice.

Whereas the traditional role of aerial ports in major conventional warfare is--as with many other support functions--to provide essential support in relatively secure rear areas of the battle field, the role of aerial ports in LIC is different. There will be no clear differentiation between front and rear battle areas in LIC. The role of aerial ports in LIC, as derived from the information presented in Chapter III, is to deploy forces from CONUS stations and then to support strategic and tactical missions in the theater of operations. The task of force reception in LIC requires the presence of aerial port forces that are combat trained and equipped, and proficient in operating tactical and other specialized equipment.

Aerial ports in the Vietnam War combined strategic and tactical missions in one unit. Each squadron unit was responsible for a specific geographic region, and the squadrons were directed and guided by the governing entity known as the aerial port group (APOG). In Vietnam, aerial port guidance and direction came from the 2nd APOG. The 2nd APOG directed the squadron units to create a specialized section dedicated to providing combat ready mobility teams in support of tactical operations within its region. In the

LIC setting of the early to mid 1960s, aerial port structure and organization produced units capable of simultaneously handling both strategic and tactical taskings. This structure made effective use of limited manpower, equipment, and facilities. The importance of specialized material handling equipment (MHE) was learned in tactical operations. The MHE workhorse of LIC operations, the all-terrain forklift was developed and fielded during the Vietnam War to meet the demand generated by tactical movements.

Although the early aerial ports in Vietnam were under the tactical air forces (Pacific Air Forces-PACAF) command rather than MAC, they did nonetheless develop the first doctrine and methods for providing simultaneous strategic and tactical support. Aerial ports in Vietnam provided for strategic force reception, and then onward movement of forces during tactical unit moves and operations.

By the time of operation Urgent Fury (Grenada), aerial ports were divided in their performance of strategic and tactical duties. Specialization placed tactical responsibilities within MAPS units, while strategic duties were theoretically the responsibility of APS units. This specialization and dividing of aerial port forces was determined in large part by the type of aircraft assigned to a given CONUS MAC station. MAPS units were assigned only at "tactical" C-130 bases, as shown in Figure 5 on page 68. APS units were assigned to "strategic" C-141B and C-5A bases

as shown in Figure 6 on the following page. Aerial port forces were split by primary role, geographic location, and aircraft. The intent of this split was to create highly mobile and responsive aerial port forces.

However, during the combat environment of Urgent Fury, the combat oriented MAPS assets were not utilized until the third day of the operation. Strategic aerial port personnel were on the ground, without proper equipment or combat training. This operation revealed a role reversal at work, due largely to home station strategic deployment requirements that effectively neutralized the MAPS unit of choice for the operation. Further analysis of this operation reveals the less than optimal distribution of CONUS-based MAPS units, with only one unit, 3 MAPS, available for use within 21st AF.

Aerial ports were still divided by strategic and tactical roles during operation Just Cause (Panama) in 1989. The logical choice for participation in the operation, 3 MAPS, was still tied to home station requirements. Following operation Urgent Fury (Grenada) in 1983, 3 MAPS remained strongly tied to home station deployment activities despite the creation and dissemination of after-action reports that identified the problem in explicit detail. The same problem that plagued the Grenada invasion now hindered the invasion of Panama. Matters worsened when inclement weather conditions hit the eastern part of the U.S., and the

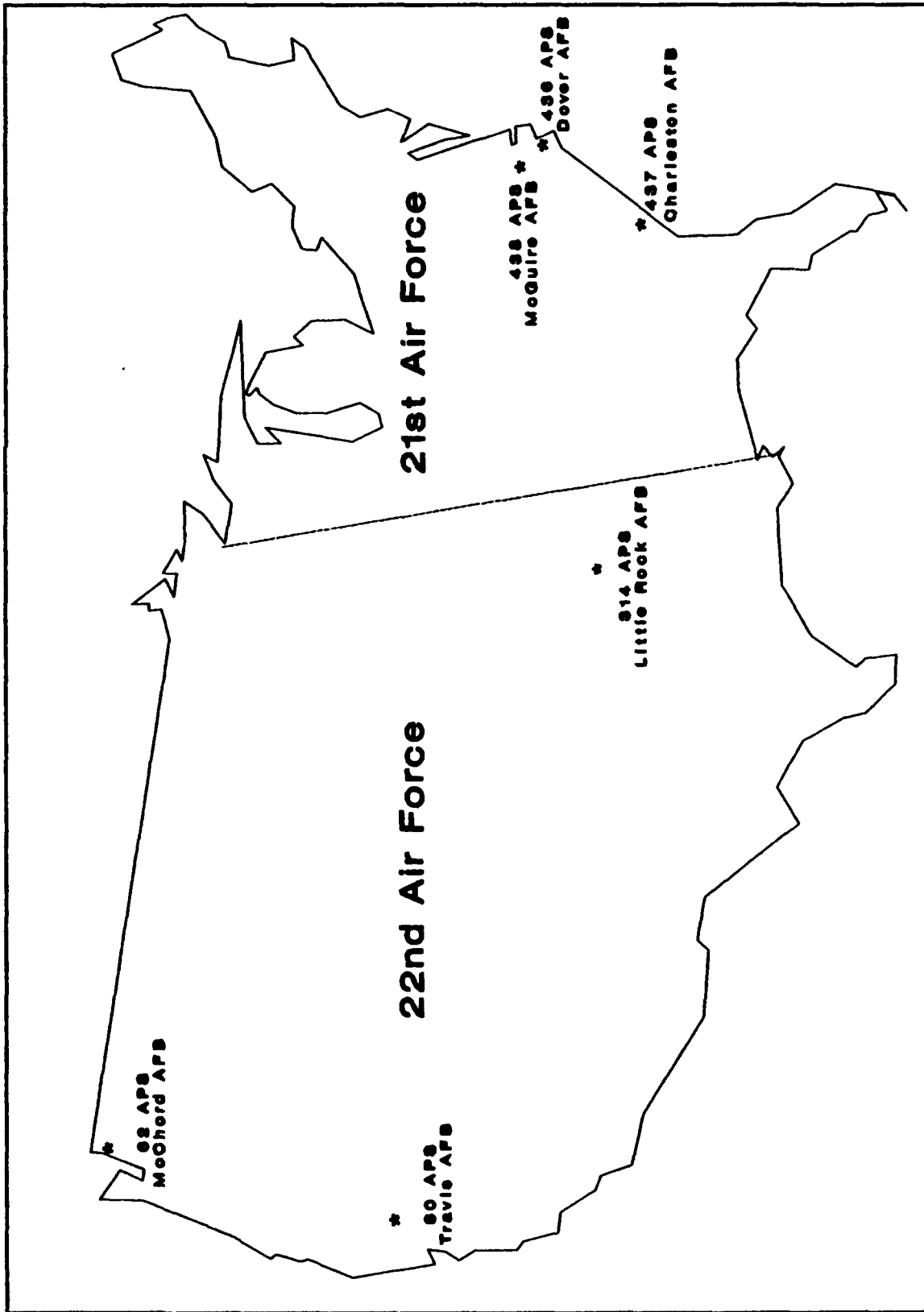


Figure 6. Current CONUS-Based APS Force Distribution

aircraft mission scheduled to deploy the 3 MAPS was diverted. When this happened, the only MAPS unit in 21st AF was again unable to support a LIC operation from beginning to end. Despite identification of the problem in 1983, MAPS units throughout the Air Force were still bonded to tactical C-130 bases in 1989--a condition typical of current force distribution.

Aerial ports in Vietnam were effective in providing support for both tactical and strategic operations. The only change in the role of aerial ports between Vietnam and Grenada was the increased emphasis on force projection from CONUS stations. This effectiveness was largely lost when aerial ports were divided geographically, doctrinally, and functionally.

The CONUS geographic division, shown in Figures 5 and 6, was a result of locating MAPS units at C-130 bases, and APS units at C-141B and C-5A bases. When aerial port and C-130 assets were assigned to Tactical Air Command (TAC), they were naturally located together. In 1974 tactical airlift responsibilities and assets (aerial ports and C-130s) were transferred to Military Airlift Command (MAC) in a consolidation of all airlift missions. At that time APOGs were dissolved. In 1975, several former TAC aerial ports were redesignated as MAPS units, and remained at C-130 bases where they are as of the time of this writing.

Doctrinal divisions still exist. Although all aerial ports are under MAC control, the two types follow different regulatory guidance. MAPS units support aircraft operations doctrinally influenced by AFM 2-4, Tactical Airlift, last updated in 1966. On the other hand, APS units support doctrinal flying operations in AFM 2-21, Strategic Airlift, last updated in 1971. MAPS units developed training programs and procured equipment for use in combat operations at forward bases. APS units followed doctrine describing operations in relatively safe rear areas, and developed appropriate training and equipment programs.

The functional division is significant. Only MAPS units are trained to perform rapid deployments into austere environments involving combat. Only MAPS units are trained and equipped to support tactical in-theater movements at forward bases. APS units are tasked by function to provide support at fixed terminals or established airheads.

History teaches that the geographic, doctrinal, and functional areas of division have had detrimental effects on the overall ability of aerial ports to perform their mission and role in LIC.

Conclusions

The analysis indicates that tactical and strategic roles are not completely separate in LIC. These two roles must be blended together to improve performance in future LIC involvement. Col John Quirk, an aerial port veteran of

the Vietnam War currently serving as Director of Passenger and Traffic Management at HQ MAC, succinctly summarized the dilemma currently facing aerial ports in the present world environment:

LIC is different. The challenge is for aerial ports to adapt, either through organization or process. With the coming reduction in forces, aerial ports in the CONUS must focus on force projection into areas with little or no infrastructure. Our set of assumptions changes, and we must adapt to the new rules. (Quirk, May 1990)

Aerial ports must learn to play by the new rules. The role of aerial ports in LIC is not the same as the role in conventional war. In LIC, aerial ports have high probability of being in the battle front lines, in the combat zone. There is typically no traditional rear area, where support functions can be carried out in relative safety over protracted periods of time. The role of aerial ports in LIC is to provide an extremely mobile, combat ready force. Aerial ports in LIC must be able to deploy, receive, and provide onward movement of U.S. forces from CONUS stations to virtually any global location. In addition, aerial ports in LIC must be prepared to provide this support at locations involving conditions of austerity, unsophisticated airfields and facilities, and combat.

Aerial port forces must be shaped into a complete package that meets the requirements for successful participation in LIC. This complete package includes considerations for training on combat conditions and

specialized equipment, MHE requirements for both tactical and strategic missions, and optimal aerial port force placement.

History of the latest involvements indicates that aerial port forces are not currently fully capable of successful involvement in LIC because of the geographic, doctrinal, and functional divisions that exist. Options are available that could successfully improve aerial port capabilities to participate in LIC operations.

Alternatives

Several options are available to improve the performance of aerial ports in LIC. Before discussing these options that require action, it must be stated that one legitimate option involves doing nothing--maintaining the status quo. With the present turmoil in budgets and force structure this may be the most probable option. However, this option does nothing to solve the problem, ignores reality, and leaves aerial ports to repeat the mistakes of the past in future conflicts.

Col Richard Meyer (Ret) identifies several alternative courses of action in his 1989 study entitled "Aerial Port Combat Resource: Direction into the Future". He suggests collocating a separate MAPS at every APS location, or an entire APS at every MAPS location. This provides a simple and obvious solution to the problem, but is not feasible according to the funding and force size assumption mentioned

earlier. Col Meyer disqualifies these options based on what he calls the perception of "force building" or "layering" (Meyer, 1990). In an era of constrained resources, this option is simply not possible.

For the same reason, another alternative calling for placing strategic capability within each MAPS is viewed as unrealistic. There are not simply not enough strategic aerial port resources to provide a strategic manning presence (less than a full squadron) at each MAPS location. Placing strategic aerial port forces in locations where strategic capability is not required would certainly be viewed as wasteful. Force expansion is required to implement this alternative--an unlikely event under the earlier assumptions.

Lt Col Peter Russo, in his 1988 report entitled "MAPS Enhancement Study," calls for a somewhat different alternative course of action when he writes:

The most successful wartime structure for MAPS units is the Aerial Port Group. This was used during Vietnam with outstanding results in the combat zone and for CONUS-based units. The structure fostered the strong, centrally directed development required for CONUS units who train separately, but who must fight together in similar units overseas...The doctrinal problems have led to mobile strat [strategic] ports and immovable MAPS, resulting in confusion on whom to deploy on what occasions. (Russo, 1988:5)

While it is true the aerial port structure during the Vietnam War produced excellent results, it is also not feasible to consider this option as a plausible solution given the set of guiding assumptions. Any attempt to form

APOG organizations would be perceived as force building or layering. His proposal does merit consideration in that it calls for a return to the successful doctrine and structure of aerial ports in the Vietnam War.

Shortly after the invasion of Grenada, Brig Gen Lindsey recognized the need to return to the structure and doctrine of the early aerial ports in Vietnam when he stated:

We need to get our mobile units out of the business of major home station taskings during both peacetime and wartime operations. We have to get the mobiles mobile again and return to some of the doctrine developed for our mobile aerial port units when they were under the Tactical Air Command in the early 50s, 60s and even into the early 70s. (Lindsey:6)

The findings of this study identified the need to combine tactical and strategic aerial port capability. Brig Gen Lindsey and Lt Col Russo both called for a return to the Vietnam structure and doctrine. One alternative course of action that does this combines APS and MAPS forces at all locations. Vietnam aerial ports utilized combat mobility branches (CMB) to handle tactical missions and operations. Placing a CMB at each current CONUS-based MAPS and APS would create new capability to operate in LIC. This alternative is sponsored by Col Meyer. He suggests dissolving MAPS units as separate organizations and placing a 35 person (approximate figure) mobility section or CMB in each major strategic port (Meyer, 1989:32-38). Figure 7 on the following page displays this alternative as it relates to CONUS-based aerial port forces. Col Meyer's study also

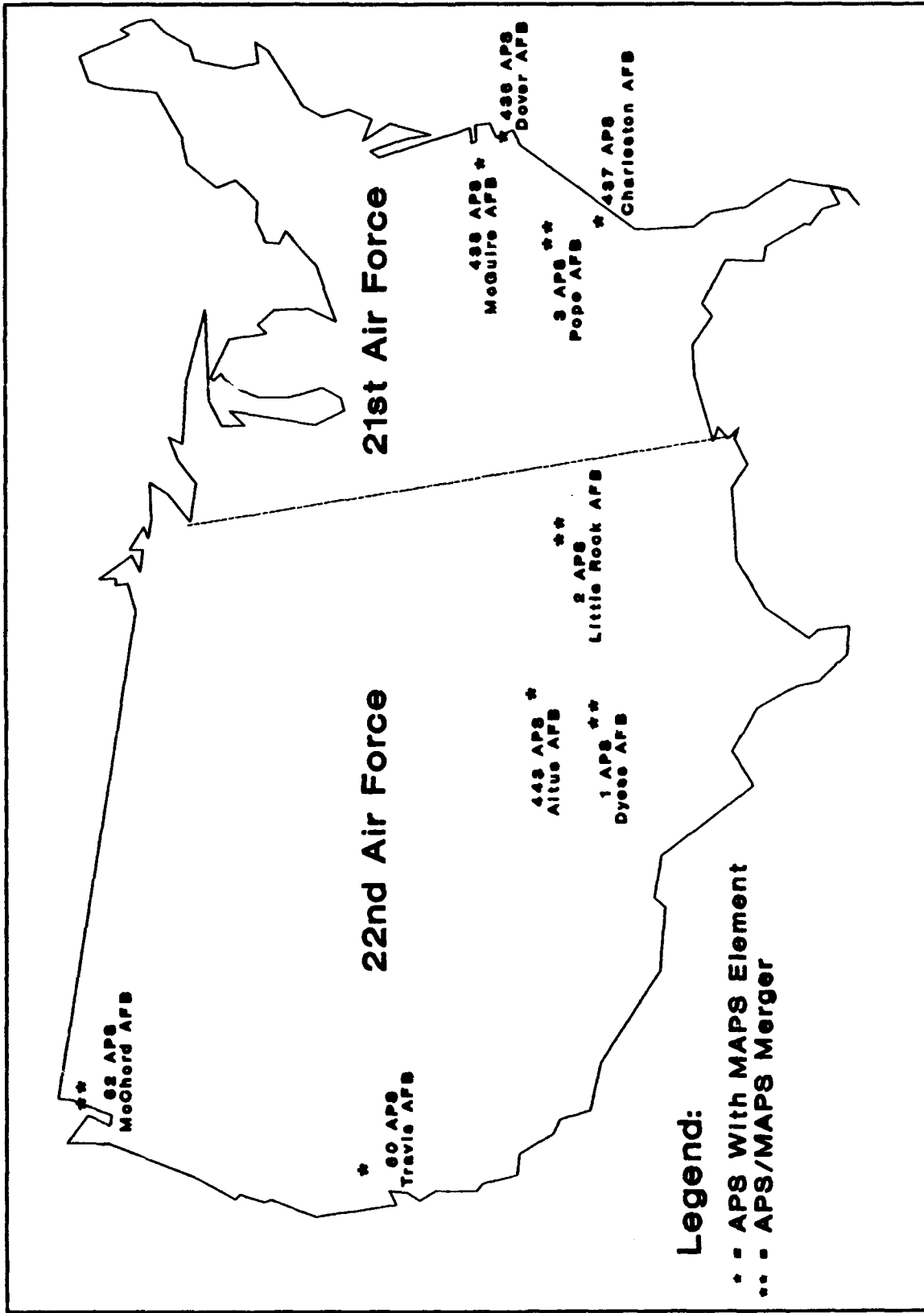


Figure 7. Proposed CONUS-Based APS/MAPS Force Distribution (Meyer, 1989)

addresses combining MAPS and APS units at overseas locations, a proposal beyond the scope of this study.

This alternative forms APS units in those locations where MAPS units exist alone without any strategic port presence. Using the MAPS unit at Dyess AFB as an example, the MAPS portion of the unit would shrink in size but it would gain strategic capability after redesignation as an APS. The result of implementing this alternative would be the re-creation of aerial ports with both tactical and strategic capability, at various sites where strategic and tactical aerial ports are currently located.

Recommendations

The data collected in Chapter III combined with the assumptions from the beginning of this chapter lead to the recommendation to provide every APS with mobile capability. This solution returns aerial port force structure to the combined form found during the Vietnam War, with the exception of the APOG element. In this recommended solution, 21st AF and 22nd AF continue to govern and monitor the activities of the aerial ports and thus take the place of the APOG element.

By implementing this recommendation the geographic problem is tempered. As shown in Figure 7, 21st AF would have four aerial port locations manned and equipped to perform both tactical and strategic missions versus the present split of one tactical and three strategic units.

The geographic placement of these new dual-capability aerial ports continues to provide strategic outload of Army units and provides better placement for movement of the tactical units to the LIC theater.

The doctrinal differences would be reduced. Each combined aerial port would be forced, by necessity, to assimilate and adhere to both strategic and tactical operational guidance. The creation of combined aerial ports would serve to formalize the doctrinal union which has been proven necessary in the blurred roles of LIC operations.

Functional differences would dissipate as well. Each aerial port, equipped with a 35 man combat mobility branch, would possess the capability to function under strategic and tactical taskings. Cross training on equipment and operations in combat would be possible. The development of this capability becomes more important as the C-17A acquisition program gets closer to full production and deployment to bases. The C-17A is designed to perform both tactical and strategic airlift missions, and current plans call for its placement at MAC strategic bases. The aerial ports at proposed basing locations are not trained or equipped for tactical operations.

The aerial port successes in the early stages of the Vietnam War came about largely because of organization and the combining of functional and doctrinal operations. Innovative managers saw the need to develop tactical and

strategic capabilities within each squadron and even in some of the larger detachments. They successfully created aerial ports capable of operating under difficult combat conditions while also performing more traditional, strategically-oriented duties. The system recommended in this study closely resembles the successful system used in South Vietnam.

Implementation of this recommendation is consistent with the assumptions provided earlier in this chapter. No additional forces are required, no future force growth is anticipated, and no extra funding would be necessary. CONUS-based aerial ports gain response capability for tactical operations, while retaining strategic outload capability.

The time to make these changes is now. The geographic, doctrinal, and functional differences serve no beneficial purpose other than to justify the existence of certain squadron commander positions and manning positions. Other aerial port changes are taking place under the findings of the Optimal Airlift Distribution Study and the future promises to usher in an era of more changes and transitions. As an example of coming changes, there are efforts underway to possibly combine the aerial port forces of MAC and AFLC, and create one total aerial port force--one that might possibly feature strategic aerial port squadrons furnished

with combat trained, equipped, and deployable mobility branches.

Implementation of the recommendation presented in this study will produce an aerial port force capable of performing its assigned role in LIC. This recommendation also realistically takes into account realities and assumptions related to probable future military constraints.

Suggestions for Further Research

Due to time limitations imposed on this study, several promising areas revealed in the research were not examined in full detail. Additional research in these areas might produce data that provides additional insights into aerial ports in LIC operations.

First, the doctrinal split between tactical and strategic airlift forces should be studied further. Study should center on regulatory guidance from the early 1960s to the present, with special emphasis given to doctrinal guidance for aerial port forces. Results of this study would track the evolution of aerial port doctrine with changes in airlift assets.

It would be beneficial to undertake a thorough study of the history of all MAPS units. Study in this area should center around the advent of MAPS units in the Air Force to capture the LIC experiences from operations smaller in size and less publicized than those in this study. Examples in this area might include U.S. aerial port assistance during

the Arab-Israeli War of 1973 and the British Falkland Islands War. Other contingencies and humanitarian airlift operations have taken place over the years that might produce relevant data.

A third important area of further study should concentrate on the aerial port forces in the Air Force Reserve (AFRES) and the Air National Guard (ANG). Of the total aerial port manpower resources available for use by the Air Force (17,000 personnel), approximately 65 percent are in the AFRES and ANG (11,000 personnel). In addition, 37 percent of the AFRES and ANG forces or approximately 4,000 personnel are in MAPS units (Meyer, 1989:12). Additional research should be conducted to determine the feasibility of combining these APS and MAPS units in the same manner as recommended in this study. In addition, this study could determine the feasibility of aligning the AFRES and ANG units under a type of APOG structure to provide enhanced capability to utilize these forces to augment active duty aerial ports during LIC operations.

One final area of recommended study includes a detailed examination of the CONUS-based APOG organizations during and immediately after the Vietnam War. This study examined APOG structure and activities, primarily in Vietnam. Study of CONUS-based APOG units could identify strengths and weaknesses of aerial port squadrons with strategic and tactical capability, and identify areas of concern for

aerial port managers at 21st AF, 22nd AF, and HQ MAC. This study could also examine the relationship between in-theater aerial ports and the theater Commander of Airlift Forces (COMALF) organization, mission, and structure. Special emphasis should include the impact of future COMALF force reductions (examples might include the U.S. European Command and Pacific Command), specifically in relation to mission readiness and capability.

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13. ABSTRACT (Maximum 200 words) This study investigated the role of aerial ports in low intensity conflict (LIC). The Vietnam War through 1968, operation Urgent Fury in 1983, and operation Just Cause in 1989 were analyzed to determine the role and effectiveness of aerial ports in LIC. LIC was defined according to the Department of Defense (DoD). Within the DoD definition of LIC, four broad categories were identified, and among them insurgency/counterinsurgency, peacetime contingency operations, and peacekeeping were singled out as most probable to require aerial port logistics support. The results of this research indicate that aerial port forces in LIC must be prepared to provide extremely mobile, combat ready units. They must also be prepared to function under conditions of austerity and operate specialized equipment. Another finding indicates that the tactical and strategic role differentiation between aerial port forces that developed after the Vietnam War is no longer logical nor valid. Aerial port forces are not currently fully capable of successful involvement in LIC because of geographic, doctrinal, and functional divisions that exist. Options are presented that, if implemented, could successfully improve aerial port capabilities to participate in LIC operations.			
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