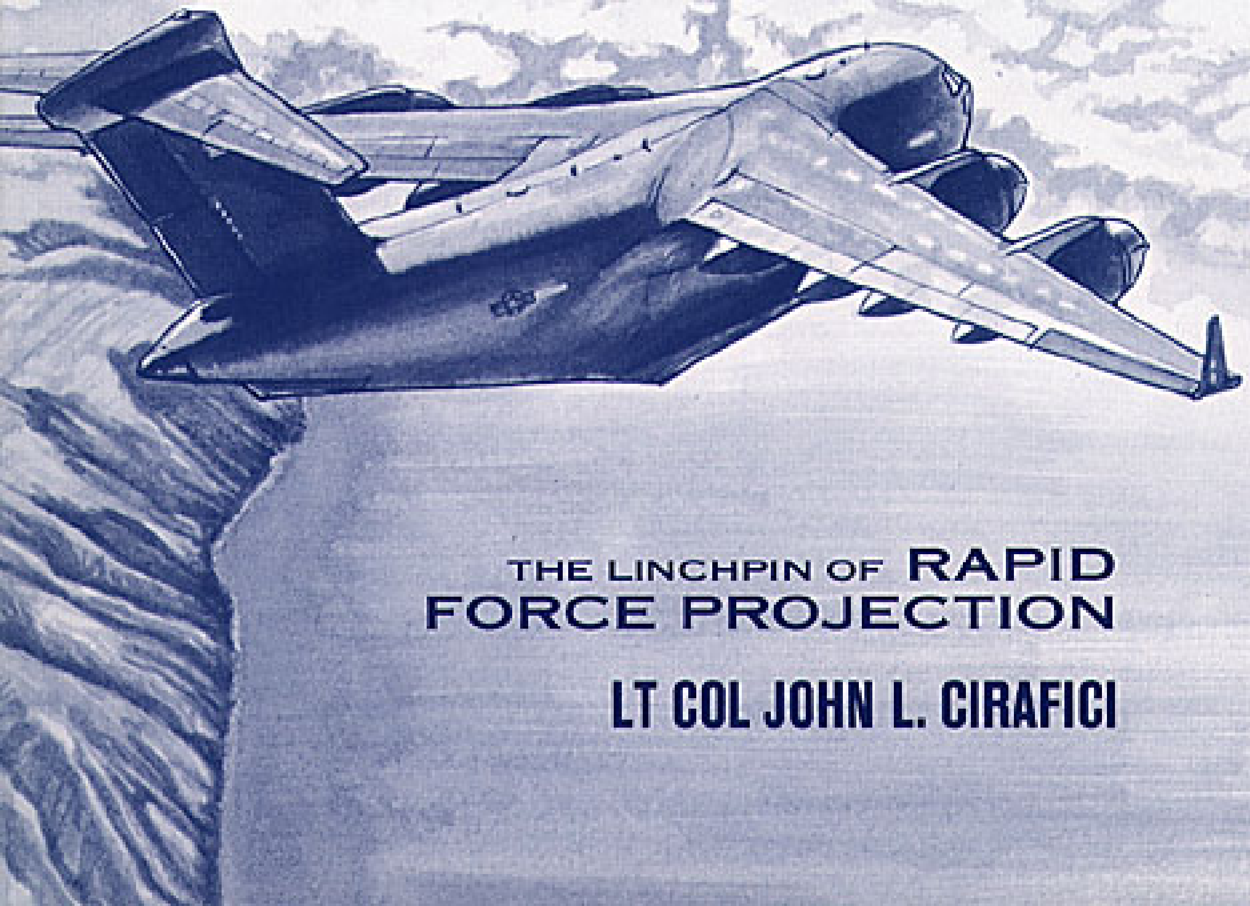
Airhead OPERATIONS

WHERE AMC DELIVERS



THE LINCHPIN OF RAPID FORCE PROJECTION

LT COL JOHN L. CIRAFICI

Airhead Operations—Where AMC Delivers

The Linchpin of Rapid Force Projection

JOHN L. CIRAFICI, Lt Col, USAF

Research Fellow
Airpower Research Institute

Winner of the Air Force Historical Foundation's 1994 Colonel James Cannell Memorial Award

Air University Press
Maxwell Air Force Base, Alabama

March 1995

Library of Congress Cataloging-in-Publication Data

Cirafici, John L., 1945—
Airhead operationis—where AMC delivers : the linchpin of rapid force projection / John L. Cirafici.
p. cm.
Includes bibliographical references and index.
1. United States. Air Mobility Command. 2. Airmobile operations (Military science) 3. Operation Restore Hope, 1992–1993.
I. Title.
UD493.C56 1995
356'.166'0973—dc20 95-6191
CIP

ISBN 1-58566-057-4

Disclaimer

This publication was produced in the Department of Defense school environment in the interest of academic freedom and the advancement of national defense-related concepts. The views expressed in this publication are those of the author and do not reflect the official policy or position of the Department of Defense or the United States government.

This publication has been reviewed by security and policy review authorities and is cleared for public release.

To my wife

Sally

THIS PAGE INTENTIONALLY LEFT BLANK

Contents

Figure *Page*

Illustrations

Foreword

Credible force projection has been essential to this country's national policy because of our geostrategic relationship with the rest of the world. The ongoing downsizing of US military forces and their return to the Continental United States (CONUS) have placed increased emphasis on the structure for rapidly and effectively moving forces from the United States to an operational theater.

Lt Col John L. Cirafici's research is timely. Air mobility forces in the airhead are crucial to the combatant commander's theater operations. He relies on them to introduce forces to the theater, to sustain them, to support intratheater movement, and to redeploy forces to the CONUS.

Colonel Cirafici provides a clear picture of theater air mobility forces structure, their capabilities, and limitations. He has identified problem areas, and recommended improvements. Colonel Cirafici has looked to the future and examined how ongoing changes in theater air mobility forces and equipment will increase the combatant commander's options in the theater. The greatest value of his study is to create a clearer understanding of how theater air mobility forces act to enhance operations and support the battlefield.

Robert M. Johnston

ROBERT M. JOHNSTON, Colonel, USAF
Director, Airpower Research Institute

THIS PAGE INTENTIONALLY LEFT BLANK

About the Author

Lt Col John L. Cirafici

Lt Col John L. Cirafici conducted this study while serving as the Air Mobility Command-sponsored research fellow for 1993–94 at the the Airpower Research Institute, Air University College of Aerospace Doctrine, Research, and Education (CADRE), Maxwell Air Force Base, Alabama. He is a master navigator with 7,000 hours of flying time in the C-5 Galaxy, C-130 Hercules, and C-141 Starlifter. He is also a master parachutist.

Colonel Cirafici was born in Brooklyn, New York. He graduated with honors from City University of New York, where he received undergraduate and graduate degrees in European history. Colonel Cirafici is an in-resident graduate of Squadron Officer School and Air War College.

He has served in the Air Force as an enlisted member and commissioned officer. His combat experiences stretch from Khe Sanh to Kuwait and include Vietnam, Somalia, Just Cause, the Dominican Republic, Bosnia, and Desert Storm.

Colonel Cirafici was an assistant professor and chairman of the European History Department at the United States Air Force Academy. He has received a National Endowment for the Humanities fellowship. Colonel Cirafici is the 1988 recipient of the Mackay Trophy. In 1989, as team commander, he established the official world record for an air-dropped load.

Colonel Cirafici is married to the former Sally Ann Paull of Baltimore, Maryland. They currently live in Milford, Delaware.

Acknowledgment

Rarely does an author express ideas as clearly as possible without the assistance of others. I was most fortunate to have superlative individuals who provided support throughout the process of researching, analyzing, and writing.

Dr James Titus, a long-time friend and fellow historian, contributed many hours discussing, reviewing, and critiquing my efforts. His aid was invaluable. Likewise, Dr Lawrence ("Buck") Grinter made valuable comments and provided needed support. Members of the Center for Aerospace Doctrine, Research, and Education were generous in sharing their expertise, especially in the joint staff arena. My fellow command-sponsored researchers kindly contributed their time, support, and insight. Dr Richard Bailey provided invaluable editorial assistance from beginning to end, and I am grateful for his efforts.

The AMC headquarters staff and especially the historian's office were enormously helpful. I am most grateful to Col Walt Evans, Lt Col Jim Donovan, Dr John Leland, Betty Kennedy, and Kent Beck. Gen Ronald R. Fogleman was most generous in allowing me to serve as the 1993–94 AMC-sponsored researcher. I appreciate the time he spent sharing his vision for the future of global reach.

Most of all I am fortunate to have had the full support and able assistance of my wife Sally. Her contributions go well beyond reading and discussing my work. The enormous amount of time I was away on wide-flung contingencies and operations was time not spent at home. Consequently, the experiences used to develop this study came at no small expense. To her I owe my greatest appreciation.

THIS PAGE INTENTIONALLY LEFT BLANK

Introduction

Airhead operations have been an important feature of modern warfare since Gen Francisco Franco, in 1936, air-landed his Moroccan forces in southern Spain during the opening phase of the Spanish Civil War. The concept gained currency during World War II, especially as an element of airborne operations. In that context it denoted an assault zone(s) employed during vertical envelopment maneuvers. In current usage airhead is defined in Joint Pub 1-02, *Department of Defense Dictionary of Military and Associated Terms*, this way:

> 1. A designated area in a hostile or threatened territory which, when seized and held, ensures the continuous air landing of troops and materiel and provides the maneuver space necessary for projected operations. Normally it is the area seized in the assault phase of an airborne operation. 2. A designated location in an area of operations used as a base for supply and evacuation by air.[1]

Airhead has become a significant part of nearly all contingency operations. Operations Urgent Fury, Just Cause, Desert Shield/Storm, Restore Hope, among others, demonstrate the airhead's criticality in almost every phase of mission execution. It is, therefore, essential for potential participants in any contingency, be it a low-intensity conflict, humanitarian, or any other form of force projection, to possess a conceptual understanding of the airhead, as it applies to air mobility operations. This study educates and recommends, where needed, improvements in the conduct of air mobility airhead operations.

The educational goal responds to a need for users of air mobility forces in contingency, humanitarian, and other similar missions to garner the greatest benefit from their in-theater operations. The goals also respond to a need for users to fully appreciate the challenges faced by those elements of Air Mobility Command (AMC) operating in their support within the airhead environment. No less important, elements within AMC must more fully appreciate the dynamics of airhead operations and their effect on the theater operations.

My involvement with airhead operations began in late 1964 as an Air Force combat control team member. As a combat controller I participated during 1966 in Operation Power Pack, the military intervention in the Dominican Republic, and subsequently served from 1967 to 1968 in the Republic of Vietnam. There, I operated airheads throughout several corps areas. I was in Khe Sanh while it endured heavy siege; in the A Shau Valley during Operation Delaware; in the central highlands; in the Delta; and in the Parrot's Beak region adjoining Cambodia. Later, as a combat control team commander, I was responsible for operations in Europe and in much of Africa. A subsequent tour in an airlift control squadron greatly broadened my experiences in operating aspects of airhead operations from the airlift perspective. I commanded operational locations during Operation Desert Storm in Kuwait. In a second "desert" tour as director of the theater airlift control center, I was responsible for locations throughout the United States Central Command (USCENTCOM) area of responsibility (AOR). During Operation Restore Hope I established and commanded initial operations at Mogadishu, Somalia, and then, while assigned to the air force component commander's air mobility element, directed air mobility support activities at several other Somali airfields. The key lesson I have learned from these cumulative experiences is to recognize the vital importance of air mobility airhead operations to overall mission objectives. My perspective here results from operational experience at the point of mission execution and as a member of various theater staffs.

A war-fighting commander depends on the airhead to introduce combat forces in the shortest time possible and to sustain them during the initial, and, probably, the most critical phases of operations. This study describes how the airhead's air mobility forces fit into the overall scheme of force deployment, reassembly, employment, and sustainment. It describes and examines the structure and capabilities of theater mobility support forces. It also discusses areas in need of improvement, looks at new generation equipment coming into the inventory, and notes how they will increase flexibility in a theater and enhance operations.

Notes

1. JCS Pub 1-02, *Department of Defense Dictionary of Military and Associated Terms*, 1 December 1989, 17.

THIS PAGE INTENTIONALLY LEFT BLANK

Chapter 1

Air Mobility in a New Era

Air mobility forces play a key role in the force projection equation. They serve as a demonstrative instrument in the expression of national policy; they have acquired, when viewed within the context of ongoing worldwide geostrategic change, a role of growing consequence. Air mobility is a significant factor in foreign policy decisions. Where a threat of force is necessary, concerned parties must realize that the means to project force is as credible as the force itself. Consequently, air mobility is the centerpiece of the defense transportation system and the key to effective force projection.

Two major developments—the emerging post–cold war world, which is fraught with uncertainties, and the present restructuring and posturing of the military forces of the United States—have had an overriding impact on the importance of air mobility capability.

The collapse of the iron curtain has been heralded as the precursor of a new era. With the passing of the old order, a serious challenge to the survival of the United States has passed. In the absence of a global threat, however, the new era brings with it a redirected focus on world regional problems. The *National Military Strategy of the United States* states that the American defense posture has "[shifted] from containing the spread of communism and deterring Soviet aggression to a more diverse, flexible strategy which is regionally oriented and capable of responding decisively to the challenges of this decade."[1] This natural development reflects traditional international concerns of the United States.

The refocusing of strategy directs attention to a factor which has been fundamental to diplomatic and economic intercourse between the United States and other nations: the relative physical isolation of the United States from those regions having significant impact on its economic, political, and security interests. This geostrategic determinant is of key and fundamental importance to the shaping of America'sforeign policy. In this context, where this country's vital interests are concerned, the necessity for substantial force projection capability becomes evident. To meet challenges to these interests, the military instrument (in support of national policy) should not only maintain credible military strength in terms of structure and firepower but must equally possess the means to project this formidable military power unequivocally and rapidly. Air mobility forces hold the key to rapid force projection capability, and the robustness of the air mobility system will determine if America's forces can be rapidly brought to bear when national policy requires it.

Since the cold war's conclusion, a second major development has mandated further reliance on air mobility for force projection. Former Secretary of Defense Les Aspin's 1993 *Bottom-Up Review* advocates major changes in force structure, basing, and force size.[2] His plan proposes a significant reduction of each service component to its essential elements and envisions the posturing of the majority of remaining military forces on bases within the continental United States (CONUS). Because of its dependence on force projection, the Aspin strategy makes a compelling argument for maintaining and exercising a fully prepared and highly capable air mobility system. A number of considerations will dictate the actual size and capabilities of air mobility forces. The key factor, however, is the *Review*'s basic premise that the armed forces will be structured for nearly simultaneous response to two major regional conflicts. In the absence of substantial forward-based forces, the success of a two-layer MRC strategy is dependent largely on air mobility for rapid projection and as a force multiplier. The vital importance of a fully capable air mobility force is strongly endorsed in former Secretary of the Air Force Donald B. Rice's *Global Reach—Global Power: The Evolving Air Force Contribution to National Security*, where he defines mobility as the "sinew of global reach."[3] Secretary Rice further states that "our national security strategy calls on us to be able to deploy substantial forces and sustain them in parts of the world where prepositioning equipment may not always be feasible, where adequate bases may not be available, and where there is less-developed industrial base and infrastructure to support our forces once they have arrived."[4]

Basic aerospace doctrine, expressed in Air Force Manual 1-1, explicitly recognizes the fundamental force enhancement nature of airlift and states that "airlift's key enhancement of the campaign is its ability to place properly concentrated combat forces where and when needed."[5]

The crucial importance of air mobility forces to national military strategy draws attention to limitations which the force operates under, especially in numbers of airframes, capacity in terms of ton miles per day, and, where this paper is concerned, the capabilities of mobility support forces. These limitations, in turn, strongly suggest a clear need for both air mobility's customers and its service providers to employ the asset effectively and efficiently. Thus, to best utilize vital but finite resources both the customers and the providers of air mobility must be fully cognizant of how the overall machinery functions as an operational tool, especially in support of contingency forces. This study focuses on a key component of the air mobility process: airhead operations.

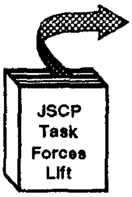
Almost all contingency operations employ air mobility forces for force deployment, sustainment, intratheater movement, and redeployment. The airhead plays a significant role in each of these phases. To fully appreciate air mobility's dynamic role in contingencies, especially at the airhead, the mechanism for rapid force projection from home base to forward location needs to be understood. To see the airhead in its proper perspective, while surveying the air mobility system, observers must look at it as one component, albeit a vital one, of the entire mechanism. To provide an appropriate model, which simplifies the overall structure for the purpose of discussion, the air movement of forces is characterized here as an "air bridge." To use the air bridge effectively to move forces and materiel, one must understand how it operates.

The "Air Bridge"

The phrase "air bridge" figuratively welds the various stages in the air mobility process into a seamless conduit. Beneath its smooth surface, the air bridge is much more dynamic than a traditional bridge and can be viewed as a complicated piece of machinery, comprising a number of moving parts. At its initial point of operation, a processing mechanism exists to translate customer airlift requirements into a concrete plan to match airlift and air refueling aircraft to the mission. Physical components of the bridge include airfields which anchor either end of it and, where necessary, along its en route portion. Vital supporting elements are positioned at key points to facilitate upload, download, and aircraft servicing. These elements provide materials handling equipment (MHE); a command, control, and communications (C^3) network; aircraft support equipment; and, most important of all, specialists. The air bridge is notionally structured around the user's airlift requirements and shaped by factors specific to a contingency's political, military, and geographic nature.

From the user's perspective, the process commences with either deliberate (or peacetime) planning, which anticipates possible future operations, or with short notice, time-sensitive crisis action planning (CAP).[6] In the case of deliberate planning, each commander in chief (CINC), when tasked by the chairman of the Joint Chiefs of Staff (CJCS) to develop a contingency plan, formulates a strategic concept. Once the CJCS approves a CINC's strategic concept, the United States Transportation Command (USTRANSCOM) analyzes transportation movement requirements for units to be moved, the nature and quantity of cargo and passengers, the destination(s), and the time constraints anticipated for the actual movement. USTRANSCOM's analysis of existing lift results in a realistic plan for movement, which is then incorporated into the final operational plan. The deliberate planning process is illustrated in figure 1.

Crisis action planning moves the process at a greatly accelerated rate, with USTRANSCOM producing a deployment



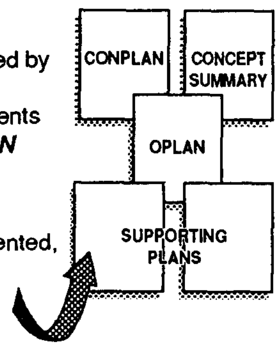
PHASE I **INITIATION**
CINC recieves planning task and guidance from CJCS
Major forces and strategic lift assets available for planning are apportioned

PHASE II **CONCEPT DEVELOPMENT**
Mission statement is deduced
Subordinate tasks are derived
Alternative courses of action are analyzed
Concept of operations is developed and documented
THE PRODUCT: CINC'S STRATEGIC CONCEPT

PHASE III **PLAN DEVELOPMENT**
Forces are selected and time-phased
Support requirements are computed
Strategic deployment is simulated
Shortfalls are identified and resolved
Operation Plan is documented
THE PRODUCT: A COMPLETED PLAN

PHASE IV **PLAN REVIEW**
Operation Plan is reviewed and approved by CJCS
CINC revises plan IAW review comments
THE PRODUCT: AN APPROVED PLAN

PHASE V **SUPPORTING PLANS**
Supporting plans are completed, documented, and validated
THE PRODUCT: A FAMILY OF PLANS



Source: Armed Forces Staff College Publication 1, *The Joint Staff Officer's Guide 1993* (Washington, D.C.: Government Printing Office, 1993).

Figure 1. The Deliberate Planning Process

estimate which corresponds to those courses of action (COA) the supported CINC has identified. When the national command authorities (NCA) select a specific COA from those submitted by the CINC, they develop the COA into an operation order (OPORD) with complementing supporting OPORDs. The CAP process is depicted in figure 2.

In either planning scenario USTRANSCOM, based on the specific supporting OPORD, will task (when strategic airlift is specified) its air component—Air Mobility Command—to fulfill requirements.

SUMMARY OF TIME-SENSITIVE PLANNING PHASES

Phase I	Phase II	Phase III	Phase IV	Phase V	Phase VI
Situation Development	Crisis Assessment	Course of Action Development	Course of Action Selection	Execution Planning	Execution
Event					
• Event occurs with possible national security implications	• CINC's REPORT/ ASSESSMENT received	• CICS publishes WARNING ORDER	• CJCS presents refined and prioritized COAs to NCA	• CINC receives ALERT ORDER or PLANNING ORDER	• NCA decide to execute OPORD
Action					
• Monitor world situation • Recognize problem • Submit CINC's ASSESSMENT	• Increase awareness • Increase reporting • JCS assess situation • JCS advise on possible military action • NCA-CJCS evaluation	• Develop COAs • Evaluate COAs • Create, modify JOPES database • CINC assigns tasks to subordinates by evaluation request message • CINC reviews evaluation response messages • USTRANSCOM prepares deployment estimates • JCS reviews Commander's Estimate	• CJCS gives military advice to NCA • CJCS may publish PLANNING ORDER to begin execution planning before formal selection of COA by NCA	• Adjust JOPES database • Identify movement requirements • Identify and assign tasks to units • Convert COA into OPORDs and supporting OPORDs • Resolve shortfalls and limitations • Begin SORTS reporting • JCS monitors OPORD development	• CJCS publishes EXECUTE ORDER by authority and direction of SECDEF • CINC executes OPORD • JOPES database maintained • JPEC reports execution status
Outcome					
• Assess that event may have national implications • Report the event to NCA/CJCS	• NCA/CJCS decides to develop military COA	• CINC publishes Commander's Estimate with recommended COA	• NCA selects COA • CJCS publishes COA selection by NCA in ALERT ORDER	• CINC publishes OPORD	• Crisis resolved

Source: Armed Forces Staff College Publication 1, *The Joint Staff Officer's Guide 1993* (Washington, D.C.: Government Printing Office, 1993).

Figure 2. Crisis Action Planning Process

When the NCA respond to a crisis with the military option, the supported CINC will receive an execute order from the CJCS to implement the approved OPORD. In turn, the CINC will direct that supporting OPORDs be executed. Thus, forces and their equipment are assembled, based on the OPORD's time-phased force and deployment data (TPFDD), and moved to their designated ports of embarkation. In the specific case of the air bridge the initial destination will be aerial ports of embarkation (APOE), which are airfields selected primarily because of their aircraft handling and supporting characteristics; reasonable proximity to the supported forces' originating bases; and marshalling area availability. The airfields are the entry points to the air bridge.

The customer of airlift depends upon AMC assets to carry forces expeditiously to their destination. AMC is equally dependent on the user's preparedness for the movement to assure that schedules are met and that the finite resource of aircraft and their aircrews are employed efficiently. How quickly and smoothly a deploying force moves through the APOE is often a function of how well it has been trained under the Air Mobility Command Affiliation Program (joint combat airlift training).7 This program familiarizes air deployable units with the planning for and execution of airlift operations. More specifically, it identifies the supported force's responsibilities and provides the spectrum of training for cargo and passenger preparation and handling.

The process at the APOE culminates with uploading of cargo and/or passengers on board designated aircraft. The period during which a particular aircraft is scheduled on the ground at the APOE, in support of a unit's movement, is a function of preestablished upload times, aircraft servicing, and aircrew requirements. The driving factors are, however, the supported unit's earliest date of departure and its required delivery date (RDD) at destination (the aerial port of debarkation or APOD). The RDD is established by the supported CINC.

The actual en route portion of the air bridge, from APOE to APOD, is determined by a number of factors including international airway structures, aircraft characteristics, length of aircrew duty day, en route landings (if unavoidable), air refueling rendezvous, and, especially, geopolitical considerations.

The entire air bridge process seeks to deliver the airlifted forces to its APOD, in the airhead, at the bridge's end point. The APOD, in striking contrast to the APOE, will likely be located within a fundamentally different and much more exacting environment. At the originating airfield, forces and materiel were assembled under benign and relatively ordered conditions, enhanced by a fully developed supporting infrastructure. In most potential scenarios for force projection, the landing airfield will be situated within a remote airhead, where austere conditions prevail. The situation there may be further exacerbated by hostile or threatening forces, unusual operational limitations, and the virtual nonexistence of infrastructure. The airhead (in which the APOD is located) may prove to be, operationally, the most vulnerable phase in the projection of force, because of inherent and exploitable weaknesses. Consequently, the theater commander must maximize efficiency of operations there and conversely minimize vulnerability. The key units within the airhead which will optimize support of airlift operations for the theater commander include the air mobility support forces (MSF). The capabilities, requirements, and structure of these forces must be understood and optimized by the supported forces.

Notes

1. *National Military Strategy of the United States* (Washington, D.C.: The Pentagon, January 1992), 1.
2. Secretary of Defense Les Aspin, *Bottom-Up Review: Forces for a New Era* (Washington, D.C.: Department of Defense, 1 September 1993).
3. Secretary of the Air Force Donald B. Rice, *Global Reach—Global Power: The Evolving Air Force Contribution to National Security* (Washington, D.C.: Department of the Air Force, December 1992), 2.
4. Ibid.
5. AFM 1-1, *Basic Aerospace Doctrine of the United States Air Force*, vol. 1, March 1992, 13.
6. *Air Mobility Command Air Mobility Master Plan*, 15 October 1993, v, vii. The expressed AMC goal by fiscal year 2006 is to achieve a 57 million ton-miles-per-day (57 MTM/D) capability. A similar goal is expressed by a former secretary of the Air Force. See Donald B. Rice, *Reshaping for the Future* (Washington, D.C.: Government Printing Office, February 1992), 1. Here, Rice iterates the Mobility Requirements Study recommendation of a 57 MTM/D capability by the end of the present decade.
7. Military Airlift Command (MAC) Pamphlet 50-13, *MAC Affiliation Program Airlift Planners Course*, 23 December 1991.

Chapter 2

The Air Mobility Command Structure within the Theater

In the vision of global reach—global power, the key role of AMC is to provide air mobility assets to move forces effectively. To support that task, the tanker airlift control center (TACC) of AMC notionally generates and deploys personnel in specially tailored modules into operational theaters and in support of joint task forces (JTF) by using unit type codes (UTC) as basic building blocks. When deployed, these modules comprise AMC's mobility mission support forces and perform many functions. These funtions include command and control (C^2); theater air movement planning and execution; aeromedical evacuation; airfield security; airfield operations, including cargo handling; processing and control; aircraft maintenance; communications; intelligence; weather information; and others as required by mission objectives. Using the AMC perspective this chapter describes functional areas in-theater and the manner in which they are operationally wired together. The structure depicted in this chapter is not absolute. Instead, it varies and is based on theater-specific situations and requirements.

When assigned in-theater, air mobility assets are placed, operationally, under the theater Air Force component commander's (AFCC) air operations center (AOC). In humanitarian and similar contingencies, operations may be conducted without an AOC.[1] Functionally, most operational elements in support of AMC's theater mission report to the director of mobility forces (DIRMOBFOR), the theater air component commander's primary focal point for the resolution of air mobility issues and for the management of air mobility operations, theaterwide. The director "assists the theater staff in planning air mobility force employment operations for the Air Force Component Commander."[2] The mechanism for fulfilling the DIRMOBFOR's responsibilities is the air mobility element (AME).

Air Mobility Element

The Air Mobility Command maintains an air mobility operations squadron (AMOS) in each of its numbered air forces.[3] From these units AMEs are constituted, as required. Each squadron includes a cadre of highly experienced individuals who bring their expertise to the theater. An AMOS, when tasked, provides the core resources (approximately 35 percent) of an air mobility element.[4] At the time that an air mobility operations squadron is directed to form an AME, it receives the necessary augmentation from other active duty sources and air reserve component (ARC) forces.[5] The air mobility operations squadron commander normally doubles as the DIRMOBFOR while in deployed status.

Primarily, an air mobility element provides its theater with the means to track, coordinate, and direct air mobility assets. Secondarily, it assists AMC's tanker airlift control center by monitoring and reporting US Transportation Command's strategic air mobility missions into the theater. The AME centralizes direction of in-theater AMC resources and maintains control over them. Those resources may include airlift and tanker assets change of operational control to the theater.

The AME is structured to represent functional areas that support air mobility operations. Those functions which will be subsequently described in greater detail include the following:

- Command and control (DOC)
- Airlift operations (DOO)
- Mission monitoring section (DOCC)
- Combat operations (DOX)
- Tactics (DOXT)
- Combat control team
- Mission support cell (MSC)
- Aerial port control center (APCC)
- Intelligence (IN)
- Theater airlift liaison officers (TALD)
- Logistics operations center (LOC)
- Airspace management element (ASM)
- Ground liaison officer (GLO)
- Communications (SC)
- Tanker operations element (DON)

The command and control element (DOC) "monitors and manages the execution of all airlift and strategic tanker operations within or transiting the theater . . . DOC monitors execution of the daily airlift tasking order, recommends airlift diversions/reroutes, and disseminates threat advisories."[6]

Airlift operations (DOO) "plans the day-to-day use of airlift resources in-theater. DOO is responsible for recommending the detailed commitment of airlift resources for conduct of theater airlift operations. This is accomplished through preparation of daily tasking orders."[7]

The mission monitoring section (DOCC) executes the published airlift schedule and its tracking.

Combat operations (DOX) continually assembles, updates, and disseminates data on theater airfields, assault zones, and drop zones. Based on its assessment of factors impacting on theater airlift and tanker operations, DOX suggests tactics for employment. The combat operations element also monitors the status of in-theater combat control team assets. DOXT is the tactics branch of DOX. The combat control team (CCT), also subordinate to DOX, "monitors, supports, and coordinates CCT activity within the theater and maintains the assault zone status record."[8]

The mission support cell coordinates the employment of in-theater tanker airlift control elements (TALCE) in support of theater air mobility on-load and off-load locations.

The aerial port control center provides command and control for the air transportation function. It assures effective movement of in-theater cargo and passengers and maximizes utilization of assets.

The intelligence (IN) division's chief, as the AME's senior theater intelligence staff officer, assesses threats to air mobility in-theater activities.

Theater airlift liaison officers (TALO) "advise Army users of airlift capabilities. They assist and coordinate airlift requests between the Army user and the air mobility element."[9] The TALO is normally collocated with the supported Army organization.

The logistics operations center (LOC) provides overall management within the theater of the logistics function. It is responsible for "monitoring, controlling, and expediting movement and/or repair of tanker and airlift mission aircraft."[10]

The airspace management element assures "close coordination and integration with service and theater airspace managers."[11] The DIRMOBFOR, as director of the air mobility element process, is assisted on a day-to-day basis by the air mobility element chief.

The AME and the functions described in the previous paragraphs are usually collocated with the joint task force headquarters. When requirements warrant the chopping of airlift assets to the theater, a wing operations center (WOC) will be deployed with the airlift package. The WOC functions as a command post and is manned by the organizational commander and his staff and possesses C^2 capability. The AME tasks the WOC's airlift assets based on theater requirements. A WOC operates independently in those situations where a joint task force requires organic airlift support but cannot justify a theater AME. Operation Provide Relief, as detailed in chapter 3, offers one example where there was no major flow of forces. A WOC rather than an AME was subordinated to the joint task force for daily in-theater airlift requirements.

Two key theater air mobility organizations—the TALCE and the CCT—while receiving their guidance from the AME, are physically located on those airfields and assault zones that conduct operations in direct support of theater forces and strategic air mobility. The TALCE and the CCT operate where the "rubber meets the ramp." TALCE and CCT facilitate safe, timely, and effective movement of aircraft through the airhead. In an austere or threatened environment, the respective responsibilities of TALCE and CCT are important to supported forces.

Tanker Airlift Control Element

Like the air mobility element, the tanker airlift control element is a composite organization, notionally constituted from its respective cadre unit, the airlift control squadron (ALCS) or air reserve component airlift control flight (ALCF), augmented with mission support elements, and comprised of specialists from both active and air reserve component forces. The organizational structure of the TALCE roughly "mirrors that of a typical airlift wing," and, in an operational sense, possesses the same fundamental capabilities.[12] The TALCE is to "provide[s] . . . the flexibility to operate where no airlift [and tanker] support exists. As a critical extension of the [AMC] C^2 network, the [T]ALCE cadre provides command leadership and management of deployed [AMC] Mission Support Forces (MSF)."[13] A TALCE provides a spectrum of support to air mobility forces where AMC operational support is either nonexistent or inadequate. It includes functional elements for aircraft maintenance; aerial port operations; crash, fire, rescue (CFR); command, control, and communications (C^3); weather observations; and airfield security. The support equipment of a TALCE allows it to stand alone in its mission functionally in most situations. Materials handling equipment for the uploading, downloading, and handling of airlifted cargo are part of the TALCE package and may include 25,000- and 40,000-pound handling capability, respectively, for transporting cargo and equipment, forklifts, aircraft steps, and wide-bodied aircraft loaders.

In support of the aircraft, the TALCE introduces to the airfield power generators, air carts, lighting units, support packages for aircraft maintenance (e.g., tire-change kits and spare components), and CFR vehicles. For command, control, and communications, the TALCE normally erects its own mobility air reporting and communications (MARC) module. The MARC is a collapsible module with controlled environment that is fully air transportable (C-130 or larger aircraft). Its expandable shell contains an array of communications equipment. It is equipped with a detachable mobilizer (carriage) for towing during overland movement. The MARC conducts ground-to-air communications in both the VHF-AM, UHF-AM, and HF/SSB ranges. It possesses secure SATCOM (satellite communications) and HF data-link (GYC-8). The MARC module can operate in all but the most extreme environments.

Like the air mobility element, tanker airlift control elements are functionally manned by using UTCs as building blocks. Referring to figure 3 as an example, the UTC depicted (i.e., 7E1AB0 Mob C^2 Element, TALCE MOG 6 or less) is the command and control element of a TALCE, where the operating location will have six or fewer air mobility aircraft

* UNCLASSIFIED *

PREPARED 93 MAR 19 MANPOWER FORCE ELEMENT LISTING AS OF 93 MAR 19 PCN SA200-

UTC - 7E1AB0 TITLE - MOB C2 ELE TALCE MOG 6 OR LESS STRENGTH - OFF 003 AMN 011 CIV 000 TOTAL 0014 CHANGE DATE - 93021

SEQ NR MISSION CAPABILITIES STATEMENT

1 UTC CONTAINS MANPOWER AND EQUIPMENT. MANAGES, MONI-
2 TORS, AND CONTROLS AIRCRAFT GROUND OPS FOR ACTIVI-
3 TIES REFLECTED IN THE TITLE. CAPABLE OF SUSTAINED AMC
4 MSN SUPPORT OPERATIONS FOR OPERATIONS GREATER
5 THAN 30 DAYS. REQUIRES BOS. CAPABLE OF OPERATING AT
6 MB, LB, SB, AND BB. USE UTC 7E1BA OR 7E1BB FOR AIR-
7 CREW STAGE. USE UTC 7E1AG, 7E1CF, OR 7E1CH FOR COMM.
8 USE UTC 7E1AL AND 7E1AM FOR BB OPS. MANNING REFLECTS
9 TOTAL DIRECT REQMT REGARDLESS OF IN-PLACE PERSONNEL.
10 CAPABLE OF SUSTAINED 24 HOUR-A-DAY OPS. TANKER
11 OR AIRLIFT OFFICER AFSC 14XX, 15XX, 22XX, 10XX, AND
12 19XX INTERCNGBLE REGARDLESS OF SUFFIX. AFSC
13 274X0 MAY BE SUBSTITUTED FOR 271X1, 304XX FOR 453X2,
14 542X2 FOR 454X1, 732X0 FOR 702X0, AND A112X0 FOR
15 A114X0. ALL PERS MUST MEET TALCE QUALIFICATION
16 STANDARDS IAW AMCR 55-3 VOL IV. MANPOWER BASED ON AMCR
17 28-2 REQUIREMENTS FOR SUSTAINED OPS OF 30 DAYS OR
18 MORE. THIS IS A DIRECT COMBAT SUPPORT DEPLOYED COM-
19 MAND AND CONTROL UTC.

MANPOWER DETAIL

FAC CODE	FAC CODE TITLE / POSITION TITLE	AFSC	SEI	GRADE	QUANTITY	SEQ NBR	DUTY CODE	CRM	TLK	LINE NUMBER
1310K0	ALFT CON EL ALCE									
	AIR OP OFF PLT TR/AL	01425J		05	1	1				005
	AIR OP OFF PLT TR/AL	01425J		04	2	2				001
	ACFT. LOADMASTER TECH	A11470			3	3				003
	AIRFLD MGMT SUPV	27171			3	4				002
	ACFT COMM AND NAV SY	45372			2	5				007
	AEROSPACE GRND EQUIP	45451			1	6				006
	INFORMATION MNGT TEC	70270			2	7				004

FUNCTION TOTAL 014

* UNCLASSIFIED *

Source: Manpower Force Element Listing, 19 March 1993, 392.

Figure 3. UTC 7E1AB0 Mob C^2 Element, TALCE MOG 6 or Less

on the ground at any time. Operations can be conducted 24 hours a day for greater than 30 days at a time. As shown in figure 4, unit type code 7E1AG0 provides the tanker airlift control element MARC and associated manpower for equipment maintenance. The mission capabilities statement included with each UTC identifies additional UTCs to round out a package. Separate UTCs may be utilized to create an aircraft maintenance package to match the type of aircraft in the flow and the maximum (aircraft) on the ground (MOG). The same utilization holds true for other functional areas needed to operate an airfield. Where an airfield possesses such organic assets (as fire-fighting equipment), those associated UTCs are not tasked. UTCs may be pared down or built up to meet specfic needs. In the case of operations in an environment where there exists no organic capability, one may assemble UTCs for a totally self-contained operation. In the case where an airfield either lacks competent air traffic control (ATC) capability or the facility is unable to support the traffic associated with a contingency's air mobility air flow, an Air Force combat control team is tasked to perform ATC duties.

Combat Control Team

Combat control teams are manned by fully qualified air traffic controllers. They are capable of tactical insertion into an airfield environment under opposed or unopposed conditions. These teams are trained parachutists and scuba divers. Their tactical insertion skills are as broad as those of the US Army's Special Forces and of the US Navy's SEALs. They are equipped with a full array of man-portable communications and navigational aids equipment and can coordinate and control close air support and AC-130 gunship fire. Their primary mission within the airhead is to control both fixed-wing and rotary airflow into designated airfields. In Operation Restore Hope, the combat controllers established air traffic control at Mogadishu's airport soon after H-hour and maintained continuous operations until relieved by a US Marine Corps unit three weeks into the

***** ************************** UNCLASSIFIED **************************

PREPARED 93 MAR 19 MANPOWER FORCE ELEMENT LISTING AS OF 93 MAR 19 PCN SA200-18

UTC - 7E1AG0 TITLE - MOB C2 MOB AIR REP COMM (MARC) STRENGTH - OFF 000 AMN 005 CIV 000 TOTAL 0005 CHANGE DATE - 930224

SEQ NR	MISSION CAPABILITIES STATEMENT
1	UTC CONTAINS MANPOWER AND EQUIPMENT. THE MOBILITY AIR
2	REPORTING AND COMMUNICATIONS (MARC) SYSTEM DEPLOYS TO
3	SUPPORT AMC TALCE OPS. UTC MAY BE DEPLOYED WITH ANY
4	TALCE UTC (7EXXX). THIS UTC MAY BE DEPLOYED IN SPT OF
5	OTHER AMC COMMAND AND CONTROL (C2) UTCS, BUT ONLY WHEN
6	RELEASED BY THE TACC/DOOZ OR TACC MSN SUPPORT CELL
7	(MSC). UTC IS CAP OF SELF-SUSTAINED 24-HOUR SPT OPS
8	FOR 30 DAYS OR MORE. REQS BOS. UTC IS CAP OF OPS AT MB
9	LB, SB, AND BB. USE UTC 7E1AL AND 7E1AM FOR BB OPS.
10	MANNING REFLECTS TOT DIRECT REQ REGARDLESS OF IN-PLACE
11	PERSONNEL. AFSC 304XX MAY BE SUBSTITUTED FOR AFSC
12	453X2. AFSC 542X2 MAY BE SUB FOR 454X1. ALL PERSONNEL
13	MUST MEET MARC QUAL STANDARDS IAW AMCR 55-3 VOL IV.
14	MANPOWER BASED ON AMCR 28-2 REQ FOR SUSTAINED OPS OF
15	30 DAYS OR MORE. THIS IS A DIRECT COMBAT SUPPORT DE-
16	PLOYED C2 UTC. THE MARC IS AIR TRANSPORTABLE IAW AFR
17	76-6 AND AMC 55 SERIES REGS AND IS GND MOBILE WITH THE
18	USE OF M1022 SERIES MOBILIZERS AND MAY BE TOWED FOR
19	LIM DISTANCE WITH USE OF ISO LOADING JACK SYSTEM
20	(ILJS).

MANPOWER DETAIL

FAC CODE	FAC CODE TITLE / POSITION TITLE	AFSC	SEI	GRADE	QUANTITY	SEQ NBR	DUTY CODE	CRM	TLK	LINE NUMBER
1310K0	ALFT CON EL ALCE									
	ACFT COMM AND NAV SY	45352			2	1				002
	ACFT COMM AND NAV SY	45372			1	2				001
	AEROSPACE GRND EQUIP	45451			1	3				004
	AEROSPACE GRND EQUIP	45471			1	4				003

FUNCTION TOTAL 005

****************************** UNCLASSIFIED ************************

Source: Manpower Force Element Listing, 19 March 1993, 396.

Figure 4. UTC 7E1AG0 Mob C^2 Air Rep Comm (MARC)

operation. Combat controllers performed ATC duties throughout the theater with CCT elements positioned on airfields used by US assets. Their presence assured safe and smooth airflow in an otherwise chaotic and uncontrolled environment.

Operationally, a combat control team maintains close liaison with the collocated tanker airlift control element and coordinates its activities to permit unimpeded flow into and out of the airfield and the safe and rapid movement and parking of landed aircraft. TALCEs establish a parking plan which optimizes the use of available ramp and results in MOG at any given time. The CCT integrates this parking plan into its procedures so that aircraft are smoothly sequenced into and out of parking without conflict or hazard. For the theater commander of CCT/TALCE operations, the key consequence is the rapid downloading and reconstituting of forces deployed into the theater. At the same time it minimizes the time which crucial air mobility assets are exposed to threats while on the ground. Another key Air Mobility Command activity on the airfield is the aeromedical evacuation function.

Aeromedical Evacuation

The theater aeromedical evacuation (AE) function provides for patient airlift to medical facilities in-theater or, when in-theater medical support is inadequate, to the rear area. On a day-to-day basis the aeromedical evacuation control center (AECC) is the focal point for aeromedical evacuation requests from the theater components. The requests are validated by the joint medical regulating authority and tasked through the AECC. The request is forwarded to the AME as a requirement for coordinating airlift. When required, the AECC generates an AE crew and associated life support equipment to assist patients while in transit between the pickup point and delivery to a receiving facility.

Conclusion

The air mobility effort in-theater is supported and controlled by the air mobility element, the tanker airlift control element, and combat control teams. Along with the aeromedical evacuation function, these functional organizations comprise the Air Mobility Command force structure assigned to the theater. They respond to the theater commander's requirements and provide the necessary support to assure timely, effective, and safe movement of airlifted forces.

Notes

1. *Air Mobility Command Air Mobility Master Plan*, 15 October 1993, 3–31.
2. Ibid.
3. The 701st AMOS is collocated with Twenty-first Air Force at McGuire AFB, New Jersey, and the 702d AMOS is with Fifteenth Air Force at Travis AFB, California.
4. Lt Col Springer, "Position Paper on Air Mobility Element," Air Mobility Command/ XOOM, 7 July 1993.
5. Lt Col Springer, "AMMP Operational Task Evaluation: ARC Air Mobility Element Stand Alone Capability," AMC/DOOCM, 13 July 1993. Air reserve component forces have the capability to field two AMOSs. The ARC squadrons would provide the augmentation to flesh out AMEs.
6. *Director of Mobility Forces (DIRMOBFOR) Handbook* (Scott AFB, Ill.: Air Mobility School, March 1993), 31.
7. Idid.
8. Ibid., 32.
9. Ibid., 35.
10. Ibid.
11. Ibid.
12. MACR 55-3, *MAC Airlift Control Elements (ALCE)*, vol. 4, 21 May 1991, 1.
13. Ibid.

Chapter 3

Operation Restore Hope (Somalia)

A Case Study for Airhead Operations

Operation Restore Hope, Somalia, is the largest contingency operation conducted by the United States since Operation Desert Shield/Storm. It holds a special significance for Air Mobility Command as the first major projection of forces by air mobility assets following command activation on 1 June 1992.

The Background

For the purposes of a case study, Restore Hope is ideal because it is a microcosm of air mobility contingency airhead operations under austere conditions in an exacting environment. The airhead functioned at the end of tenuous lines of communication (LOC), with a certain degree of threat always present. Many uncertainties and compounding difficulties were present in the operating area, and it was a combined, joint operation requiring flexibility, adaptability, and a great deal of patience. When concerns which go beyond strictly operational matters—the problems of disease, potable water, messing, sanitation, and bedding down the troops—are brought into the equation, most of the ingredients of a fully taxing operation are present.

This chapter recapitulates why and how the operation came about. It examines the situation in-theater, how problem areas surfaced, and what solutions were applied. Chapter 3 also explores organizational structure of AMC's in-theater assets along with the procedures followed in support of the theater commander's operations. Finally, this chapter illustrates the interface between air mobility forces and the supported combatant forces.

Operation Restore Hope began with the television images of emaciated Somalis, many of them not much more than walking skeletons, struggling to reach emergency food distribution centers before they succumbed to hunger. The actual causes of the Somali tragedy are rooted, however, in a civil war which, in the end, caused a country to self-destruct by precipitating a nearly total collapse of Somali society.

Somalia's disintegration began in 1978 following defeat in its war with Ethiopia. The Somalis had contested their neighbor for sovereignty over Ethiopia's Ogaden region, an area traditionally inhabited by pastoral Somali clans. In the aftermath of the war, hundreds of thousands of refugees, from the Somali clans in the Ogaden, poured into Somalia, overtaxing a nation already exhausted by years of war. Government favoritism towards some clans at the expense of others further exacerbated difficult conditions. This condition led in 1988 to civil war—which amplified the suffering of civilians, who perished by the thousands—and promoted nationwide chaos. By January 1991 the government of Somalia had crumbled, and each of the various rebel factions began vying for a commanding position in a possible coalition administration.

Conflicting goals, shortsightedness, greed, and fear acted against a practical compromise and plunged the factions into renewed strife. In the midst of fighting, the International Committee of the Red Cross, Britain's Save the Children Fund, and France's Doctor's Without Borders assisted the people of Somalia. The destructive struggle between clans totally disrupted the country's fragile economy and drove farmers from their lands. The result was general malnutrition and the isolation of entire communities from relief supplies. International organizations—the United Nations (UN), the Organization for African Unity, the Arab League, and the Organization of the Islamic Conference—had attempted, with little success, to implement a cease-fire and the widespread distribution of humanitarian assistance.[1] Within a year of intensified fighting, the thousands who died in battle paled in comparison to the hundreds of thousands who perished as a consequence of a famine precipitated not by nature but through the callous actions of the warring factions. Secretary-General of the United Nations Boutros Boutros-Ghali recognized that only the presence of UN peacekeepers could protect the aid sent to Somalia from thugs and clan gunmen and could assist the humanitarian aid organizations in delivering food and medicines. In August 1992 the United Nations took two significant steps towards those goals. It established an emergency airlift of aid to Somalia and the deployment of a UN contingent to Mogadishu to protect supplies in and around the capital.

Initial Operations: Provide Relief

On 14 August President George Bush, in response to an appeal from the UN secretary-general, directed that the United States Air Force provide aircraft to assist in the airlift. Within three days a site survey team, airlifted by a C-141 from MacDill Air Force Base (AFB), Florida, was in Kenya to prepare the way for C-130s and C-141s. The relief effort, code-named Operation Provide Relief, was to operate out of President Daniel Moi airport in Mombasa, Kenya, located roughly 200 nautical miles southwest of the Somali border and approximately two hours' flying time by C-130 transport from Mogadishu's airport. Air Mobility Command's aircraft, equipment, and personnel began arriving in Mombasa on the 18th day of August and flew their first relief mission on the 21st. The initial mission, flown by two C-130s operated by the 314th Airlift Wing, Little Rock AFB, Arkansas, delivered humanitarian supplies to Wajir, Kenya. The community—located close to a military airfield which maintains a 9,200-foot-long asphalt runway—is situated conveniently in the vicinity of a Somali refugee center, which had been established by the Kenyan government. C-141B Starlifters joined in the relief airlift to Wajir, delivering 1,567 metric tons and flying 57 missions.[2]

United States Central Command, which had responsibility for conducting the operation, elected to discontinue C-141 operations in early September and to utilize C-130 assets only. The full complement of C-130s (14) for Operation Provide Relief were in place by 20 September. Airlift missions into Somalia began in late August with delivery of supplies at Belet Uen (figs. 5A-B). Operations into Somalia were flown in a completely uncontrolled environment where

LANDING ZONE SURVEY	1. LZ NAME Belet Uen	2. LOCATION Belet Uen, Somalia
	3. MAP SERIES / SHEET NUMBER / EDITION / DATE OF MAP Series 1501 Sheet NB 38-15 Edition 1-GSGS 1971	

4. SURVEY APPROVAL/DISAPPROVAL DATA

4A. DATE SURVEYED	TYPED NAME AND GRADE OF SURVEYOR	PHONE NUMBER (AUTOVON)	UNIT
23 Aug 92	John C. Cummings Maj	AV579-4245	720 STG
4B. DATE REVIEWED	TYPED NAME AND GRADE OF REVIEWER	PHONE NUMBER (AUTOVON)	SIGNATURE
	UNIT AND LOCATION		
4C. DATE	TYPED NAME AND GRADE OF APPROVING AUTHORITY	PHONE NUMBER (AUTOVON)	SIGNATURE
APPROVED ☐ DISAPPROVED ☐	UNIT AND LOCATION		

5. COORDINATING ACTIVITIES

LZ CONTROLLING AGENCY OR UNIT	PHONE NUMBER (AUTOVON)
None	N/A
RANGE CONTROL	PHONE NUMBER (AUTOVON)
None	N/A

6. LZ DIMENTIONS (Feet)

A. LENGTH	B. WIDTH	C. APPROACH END OVERRUN LENGTH	D. DEPARTURE END OVERRUN LENGTH
5700 feet	79 feet	Rwy 23 1000ft	Rwy 05 100ft
E. LEFT CLEAR ZONE	F. LEFT SHOULDER	G. RIGHT CLEAR ZONE	H. RIGHT SHOULDER
35 feet	0	35 ft	0

7. LZ AXIS DATA

A. MAGNETIC	B. GRID (UTM)	C. TRUE	D. DATE OF VARIATION DATA
045/225			
8. GROUND POINT ELEVATION FOR RUNWAY	A. APPROACH END	B. DEPARTURE END	C. HIGHEST 556

9. LZ COORDINATES

A. SPHEROID	B. GRID ZONE	C. EASTING	D. NORTHING
E. LZ CENTERPOINT — UTM COORDINATES	LATITUDE (D/M/S) 04.43.98 N	LONGITUDE (D/M/S) 045.11.28 E	

10. LZ SURFACE DATA

A. SURFACE	B. CBR	C. METHOD USED TO DETERMINE CBR	D. DEPTH OF READINGS
crushed rock and hard packed sand			

11. LZ CLEARANCE AND GRADIENT DATA FOR RUNWAY

A. GLIDE SLOPE RATIO	B. LATERAL SAFTY ZONE SLOPE RATIO	LONGITUDINAL RUNWAY GRADIENT

D. TRANSVERSE SECTION GRADIENTS

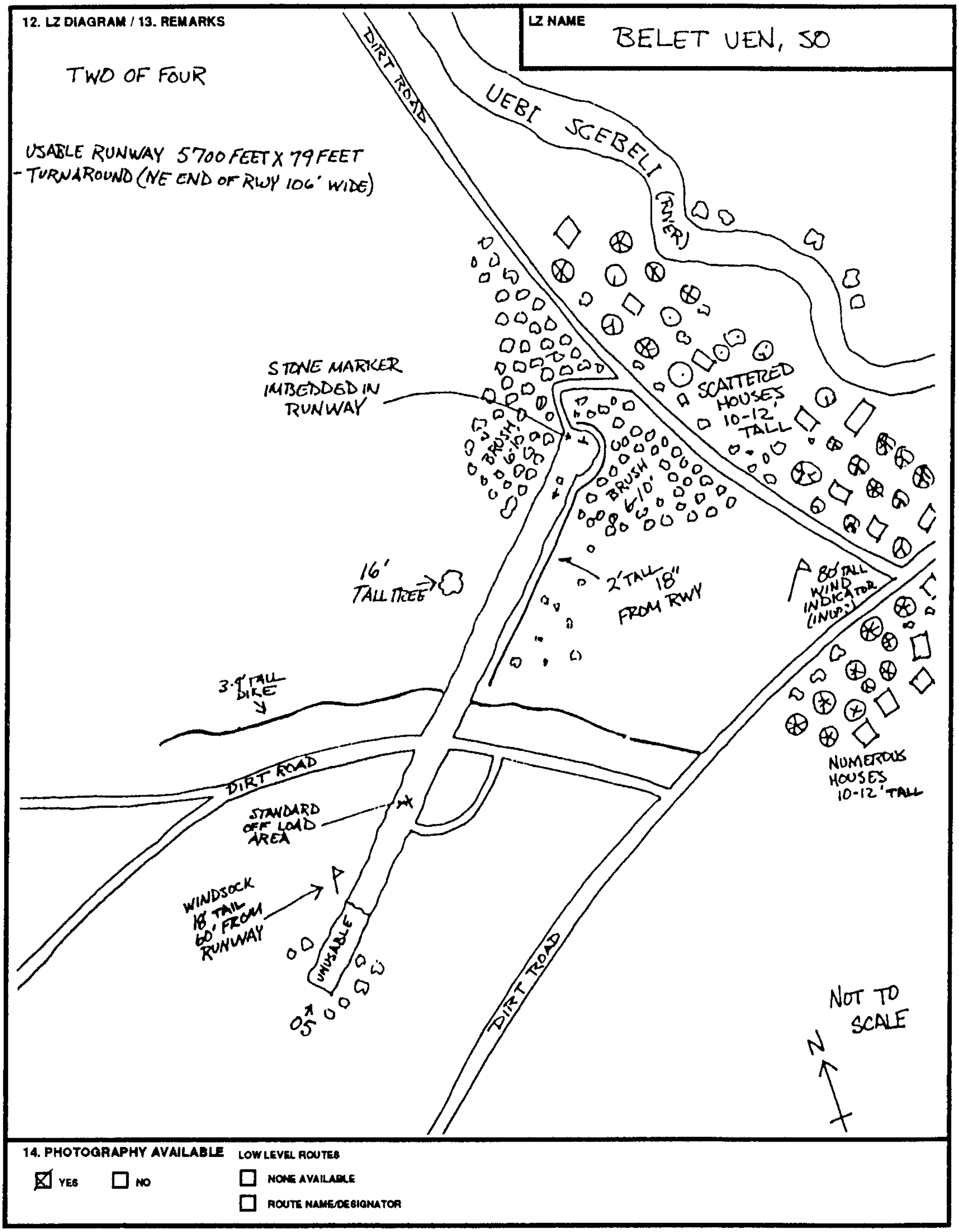
LEFT CLEAR ZONE	LEFT SHOULDER	RUNWAY	RIGHT SHOULDER	RIGHT CLEAR ZONE

E. PENETRATIONS

1. Numerous 6-10 foot trees/brush penetrate the clear zone for a standard approach to runway 23. Recommend displaced threshold 500 feet, no waiver required.
2. Numerous 6-10 foot trees/brush penetrate the clear area for the first 1500 feet of runway 23. Nearest trees approximately 60 feet from centerline. Recommend approval of waiver for day C-130 use.
3. An 18 foot tall wind sock is located approximately 60 feet from end of runway marker rwy 23 (approach 05). The ICRC representative agreed to move this windsock 100 meters west. If moved, no waiver required.
4. Trees/brush described in #2 above penetrate lateral safty zone. Recommend a waiver for day C-130 operations

Source: MAC Form 340, Landing Zone Survey, 23 August 1992.

Figure 5A. Belet Uen Airfield, Somalia (Landing Zone Survey)



Source: MAC Form 340, Landing Zone Survey, 23 August 1992.

Figure 5B. Belet Uen Airfield, Somalia

AMC aircraft operated alongside German Air Force C-160 Transalls, nongovernment organization relief aircraft, and many small, privately operated aircraft. The last group provided transportation for those who could afford it to and from the outlying areas, and provided a conduit for the daily delivery of fresh qaat. Qaat, a regionally grown plant, is a popular mild narcotic openly sold and used throughout the Horn of Africa. While many thousands were dying for want of food and medicines, the qaat always got through. Belet Uen airfield, located 160 nautical miles north of Mogadishu, is typical of Somalia's outlying airstrips. Its 5,700-foot-long runway is surfaced with hard-packed dirt and is rutted. The airfield was minimally maintained by the International Committee of the Red Cross and often had camels and people wandering along the runway.[3] Whatever its shortcomings, the airfield was near many famished Somalis, who would otherwise probably die. This scenario was equally true for the other airfields used by Provide Relief C-130s.

Somalis gathered in outlying relief centers collocated with airstrips, because they were physically unable (hostile clans blocked their passage) or unwilling to travel to Mogadishu, where the port's warehouses were being filled with relief supplies. By 5 September C-130s began to airland at Baidoa, where another major relief center was established, as shown in figures 6A-B.

Baidoa was one of a few hard-surfaced runways built in the 1970s by Soviet engineers during Somalia's honeymoon with the Soviet Union. Somali MiGs operating from Baidoa attacked targets in the nearby Ogaden while Somalia was at war with Ethiopia. The 6,400-foot-long asphalt runway had suffered from years of neglect and had begun to show signs of deterioration soon after the C-130s made regular deliveries there. The problem of runway breakup increasingly influenced operations as the emergency airlift continued.

Violence in the port area severely handicapped relief operations in Mogadishu. Clans vied for control of the relief supplies, because they were a source of power over rival clans which were unable to secure foodstuffs for their own needs. Convoys leaving the port were often attacked and hijacked. Although the Provide Relief airlift was helping to

LANDING ZONE SURVEY	1. LZ NAME Baidoa	2. LOCATION Baydhabo, Samalia
	3. MAP SERIES / SHEET NUMBER / EDITION / DATE OF MAP Series TPC Sheet L-6D edition 2-GSGS Sept 86	

4. SURVEY APPROVAL/DISAPPROVAL DATA

4A. DATE SURVEYED	TYPED NAME AND GRADE OF SURVEYOR	PHONE NUMBER (AUTOVON)	UNIT
19 Aug 92	John C. Cummings	AV579-4245	720 STG/DO
4B. DATE REVIEWED	TYPED NAME AND GRADE OF REVIEWER	PHONE NUMBER (AUTOVON)	SIGNATURE
21 Aug 92	Adam M. Mlot	AV731-3988	Adam M. Mlot
	UNIT AND LOCATION 314 AW, Little Rock AFB, Ar		
4C. DATE	TYPED NAME AND GRADE OF APPROVING AUTHORITY	PHONE NUMBER (AUTOVON)	SIGNATURE
26 Aug 92	George N. Williams, Col	486-4564	George N. Williams
APPROVED ☒ DISAPPROVED ☐	UNIT AND LOCATION 317 AW, Pope AFB, NC		

5. COORDINATING ACTIVITIES

LZ CONTROLLING AGENCY OR UNIT	PHONE NUMBER (AUTOVON)
None	N/A
RANGE CONTROL	PHONE NUMBER (AUTOVON)
None	N/A

6. LZ DIMENTIONS (Feet)

A. LENGTH	B. WIDTH	C. APPROACH END OVERRUN LENGTH	D. DEPARTURE END OVERRUN LENGTH
10,007 Ft	131 Ft	None	None
E. LEFT CLEAR ZONE	F. LEFT SHOULDER	G. RIGHT CLEAR ZONE	H. RIGHT SHOULDER
None	None	None	None

7. LZ AXIS DATA

A. MAGNETIC	B. GRID (UTM)	C. TRUE	D. DATE OF VARIATION DATA
040°/220°			

8. GROUND POINT ELEVATION FOR RUNWAY	A. APPROACH END	B. DEPARTURE END	C. HIGHEST
			1520 Ft

9. LZ COORDINATES

A. SPHEROID	B. GRID ZONE	C. EASTING	D. NORTHING
Not available	38N	34	34

E. LZ CENTERPOINT	UTM COORDINATES	LATITUDE (D/M/S)	LONGITUDE (D/M/S)
		03.06.00 N	43.39.00 E

10. LZ SURFACE DATA

A. SURFACE	B. CBR	C. METHOD USED TO DETERMINE CBR	D. DEPTH OF READINGS
Asphalt/loose gravel			

11. LZ CLEARANCE AND GRADIENT DATA FOR RUNWAY

A. GLIDE SLOPE RATIO	B. LATERAL SAFTY ZONE SLOPE RATIO	LONGITUDINAL RUNWAY GRADIENT

D. TRANSVERSE SECTION GRADIENTS

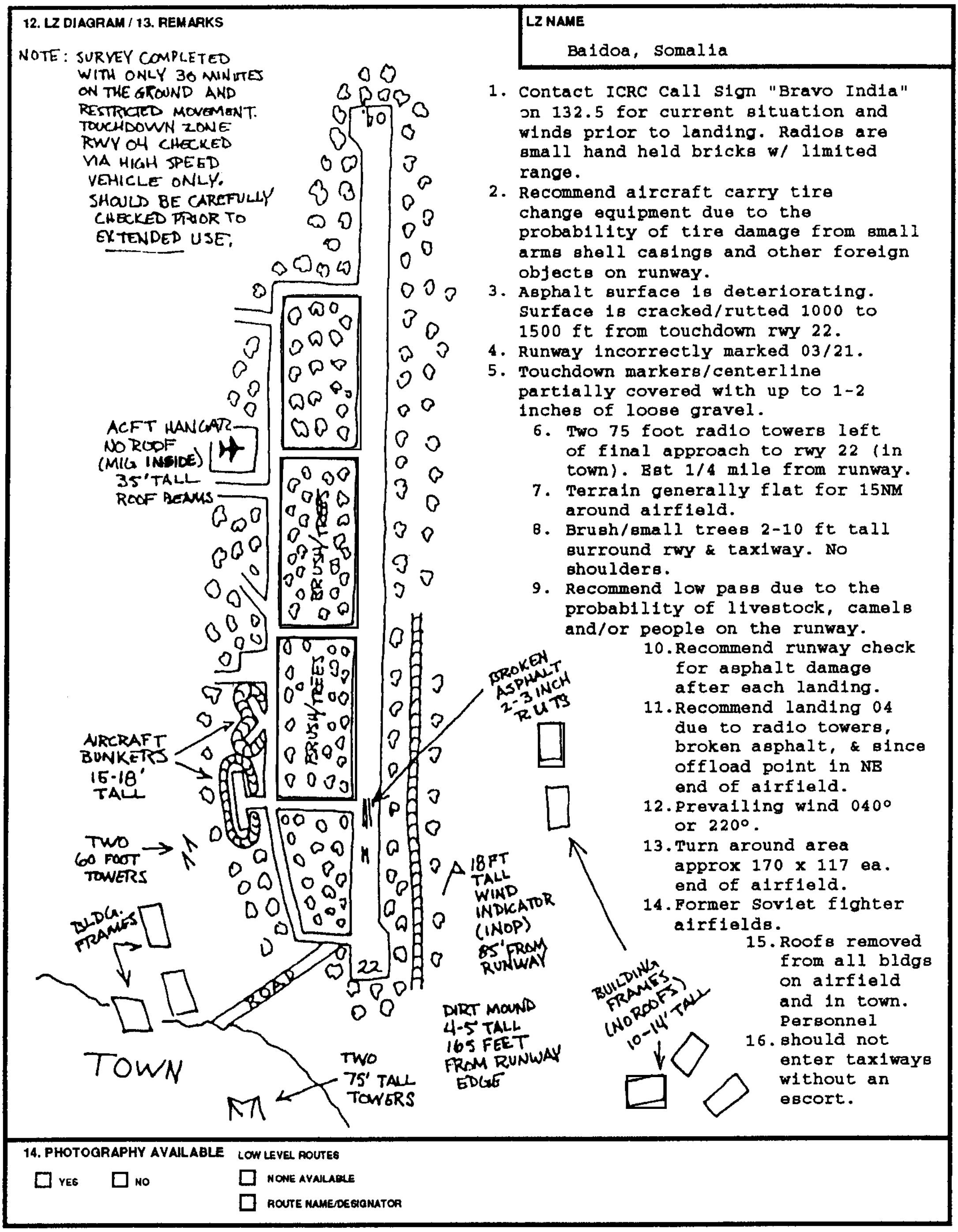
LEFT CLEAR ZONE	LEFT SHOULDER	RUNWAY	RIGHT SHOULDER	

E. PENETRATIONS

1. Trees/brush 2-10 feet tall penetrate runway clear zones both directions.
2. Aircrew should displace landing as required to avoid trees. No waiver required due to usable runway length.
3. Trees/brush 2-10 feet tall penetrate lateral safety zones on both sides of the runway. Recommend waiver for day VFR C-130 landings.
4. Two 75 foot towers penetrate the runway approach zone for landings on runway 22. Recommend waiver approval. (Towers are painted red and white and are approximately 500-600 feet left of centerline approach.)

Source: MAC Form 340, Landing Zone Survey, 19 August 1992.

Figure 6A. Baidoa Airfield, Somalia (Landing Zone Survey)


12. LZ DIAGRAM / 13. REMARKS

LZ NAME

Baidoa, Somalia

1. Contact ICRC Call Sign "Bravo India" on 132.5 for current situation and winds prior to landing. Radios are small hand held bricks w/ limited range.
2. Recommend aircraft carry tire change equipment due to the probability of tire damage from small arms shell casings and other foreign objects on runway.
3. Asphalt surface is deteriorating. Surface is cracked/rutted 1000 to 1500 ft from touchdown rwy 22.
4. Runway incorrectly marked 03/21.
5. Touchdown markers/centerline partially covered with up to 1-2 inches of loose gravel.
6. Two 75 foot radio towers left of final approach to rwy 22 (in town). Est 1/4 mile from runway.
7. Terrain generally flat for 15NM around airfield.
8. Brush/small trees 2-10 ft tall surround rwy & taxiway. No shoulders.
9. Recommend low pass due to the probability of livestock, camels and/or people on the runway.
10. Recommend runway check for asphalt damage after each landing.
11. Recommend landing 04 due to radio towers, broken asphalt, & since offload point in NE end of airfield.
12. Prevailing wind 040° or 220°.
13. Turn around area approx 170 x 117 ea. end of airfield.
14. Former Soviet fighter airfields.
15. Roofs removed from all bldgs on airfield and in town. Personnel
16. should not enter taxiways without an escort.

14. PHOTOGRAPHY AVAILABLE ☐ YES ☐ NO

LOW LEVEL ROUTES ☐ NONE AVAILABLE ☐ ROUTE NAME/DESIGNATOR

Source: MAC Form 340, Landing Zone Survey, 19 August 1992.

Figure 6B. Baidoa Airfield, Somalia

alleviate the hunger, the various relief agencies needed, for the long term, to bring shiploads of supplies into the ports and then move them by road into the hinterland.

In August 1992 the United Nations negotiated an agreement with the warring factions to allow a UN force to enter Somalia and protect relief supplies. The Pakistani army battalion selected for the mission in Mogadishu required airlift for its troops and equipment, including armored personnel carriers. The airlift, code-named Operation Impressive Lift, was flown by Air Mobility Command C-5 Galaxys and C-141s into Mogadishu International Airport, as illustrated in figures 7A-B. Between the 13th and 16th of September and from the 21st through the 29th of September, 974 passengers and 1,168 tons of equipment were airlifted in 94 missions.[4]

The Pakistani forces soon proved unable to do much more than secure the airport and port facilities. They were practically under siege by Somali clan forces and were unable to have much impact on the movement of relief supplies. The death rate for refugees increased to 300 each day, while the images of their suffering was shown nightly on televisions around the world. UN Secretary-General Boutros-Ghali appealed to President Bush to commit protective forces to Somalia before millions perished of malnutrition.

On 26 November the president ordered up to 30,000 troops in support of relief operations in Somalia. The UN Security Council, on 3 December, passed its resolution on Somalia authorizing military intervention. The resolution stated, in part, that "Dismayed by the continuation of conditions that impede delivery of humanitarian supplies . . . within Somalia, and . . . reports of looting of relief supplies destined for starving people [and] attacks on aircraft and ships . . . welcomes the offer by a member state [the United States] concerning the establishment of an operation to create . . . a secure environment."[5]

The Crisis Action Process

The troubling developments in Somalia held special interest to the United States Central Command (USCENTCOM) because the country is located within its AOR, as portrayed in

LANDING ZONE SURVEY	1. LZ NAME	2. LOCATION
	Mogadishu International	Mogadishu, Somilia
	3. MAP SERIES / SHEET NUMBER / EDITION / DATE OF MAP	
	Y921/N/A/4-DMA/1985 Mugdisho 1:12,500	

4. SURVEY APPROVAL/DISAPPROVAL DATA

4A. DATE SURVEYED 11 Sep 92	TYPED NAME AND GRADE OF SURVEYOR Roger L. Hoggatt MSGT	PHONE NUMBER (AUTOVON) 968-	UNIT 62 CCS McChord
4B. DATE REVIEWED	TYPED NAME AND GRADE OF REVIEWER Adam M. Mlot CAPT	PHONE NUMBER (AUTOVON) 731-3988	SIGNATURE Adam M. Mlot
	UNIT AND LOCATION 314 AW OSS/OSX		
4C. DATE	TYPED NAME AND GRADE OF APPROVING AUTHORITY	PHONE NUMBER (AUTOVON)	SIGNATURE
APPROVED ☐ DISAPPROVED ☐	UNIT AND LOCATION		

5. COORDINATING ACTIVITIES

LZ CONTROLLING AGENCY OR UNIT Mogadishu TWR	PHONE NUMBER (AUTOVON) N/A
RANGE CONTROL N/A	PHONE NUMBER (AUTOVON) N/A

6. LZ DIMENTIONS (Feet)

A. LENGTH 10,335 ft	B. WIDTH 164 ft	C. APPROACH END OVERRUN LENGTH 300 ft	D. DEPARTURE END OVERRUN LENGTH 300 ft
E. LEFT CLEAR ZONE 30 ft	F. LEFT SHOULDER NONE	G. RIGHT CLEAR ZONE 30 ft	H. RIGHT SHOULDER NONE

7. LZ AXIS DATA

A. MAGNETIC	B. GRID (UTM)	C. TRUE 056°/236°	D. DATE OF VARIATION DATA
8. GROUND POINT ELEVATION FOR RUNWAY	A. APPROACH END 16.4 ft	B. DEPARTURE END 20 ft	C. HIGHEST 20 ft

9. LZ COORDINATES

A. SPHEROID Clark 1880	B. GRID ZONE 38	C. EASTING 5	D. NORTHING 2
E. LZ CENTERPOINT — UTM COORDINATES	LATITUDE (D/M/S) 02°01'00"N	LONGITUDE (D/M/S) 045°18'00"E	

10. LZ SURFACE DATA

A. SURFACE Cement	B. CBR N/A	C. METHOD USED TO DETERMINE CBR N/A	D. DEPTH OF READINGS N/A

11. LZ CLEARANCE AND GRADIENT DATA FOR RUNWAY

A. GLIDE SLOPE RATIO	B. LATERAL SAFTY ZONE SLOPE RATIO	LONGITUDINAL RUNWAY GRADIENT

D. TRANSVERSE SECTION GRADIENTS

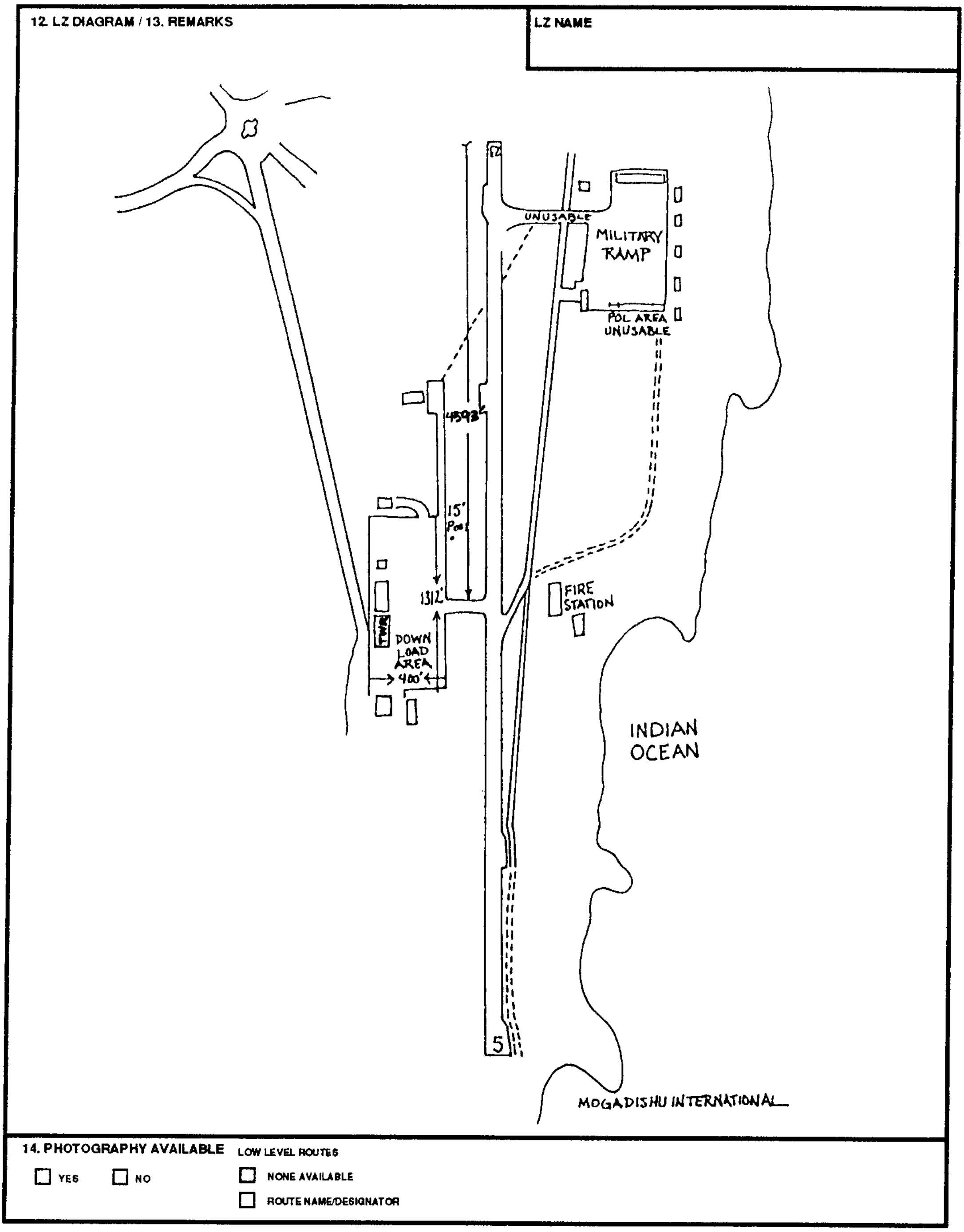
LEFT CLEAR ZONE	LEFT SHOULDER	RUNWAY	RIGHT SHOULDER	

E. PENETRATIONS

1. Vegetation along both sides of LZ 6 ft-8 ft tall.
2. 15 ft light pole between runway and parking ramp approx. 150 ft from runway edge.

Source: MAC Form 340, Landing Zone Survey, 11 September 1992.

Figure 7A. Mogadishu Airport, Somalia (Landing Zone Survey)


12. LZ DIAGRAM / 13. REMARKS

LZ NAME

14. PHOTOGRAPHY AVAILABLE

☐ YES ☐ NO

LOW LEVEL ROUTES

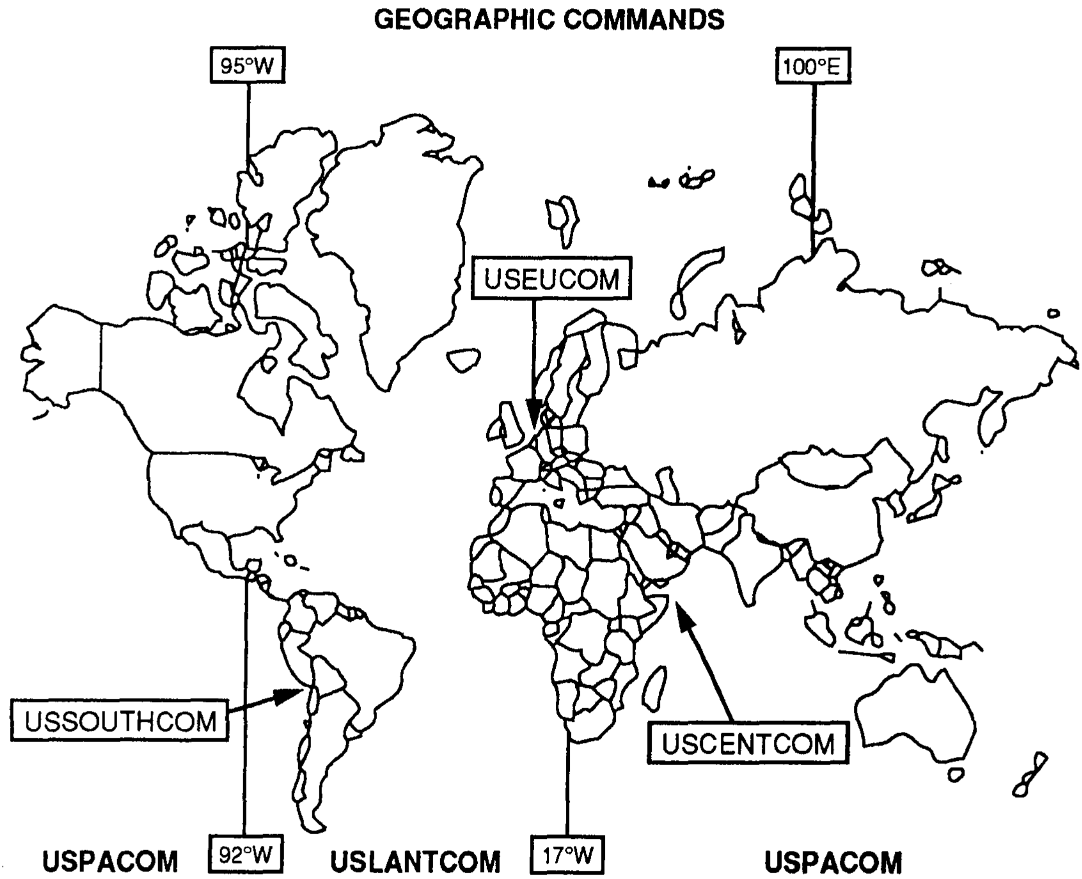
☐ NONE AVAILABLE

☐ ROUTE NAME/DESIGNATOR

Source: MAC Form 340, Landing Zone Survey, 11 September 1992.

Figure 7B. Mogadishu Airport, Somalia

figure 8. Events there had been under continuous review as part of the command's situation monitoring, and USCENTCOM's concerns were reported to the National Military Command Center (NMCC). The difficulties in Somalia were perceived "[A]s potentially having an adverse impact on United States national interests and national security."[6] One of the specific objectives of US national security strategy is the "global and regional stability which encourages peaceful change and progress."[7] It was within the context of this strategy that the commitment of military forces and resources were being considered. As a consequence, phase one (i.e., situation development) of the Joint Planning and Executive Community's (JPES) crisis action procedures were initiated early on.[8]



Source: Briefing, Lt Gen Martin L. Brandtner, Maxwell AFB, Ala., subject: The National Military Command Structure, 15 March 1993, slide 9.

Figure 8. Theater Areas of Responsibility

Commander in chief, US Central Command (CINCCENT), who was the combatant commander if a military operation were directed, communicated, as a part of the process, his assessment of the situation to the JCS and included the COA he was considering. During phase one the CJCS informed the national command authorities of his assessment. In the last week of November, crisis assessment entered phase two. The time-critical planning process was begun in earnest, and communications between the Joint Staff and USCENTCOM increased significantly. At this time the NCA "identified the national interests at stake, the national objectives related to those interests; and possible [o]ptions to achieve the objectives."[9]

On 1 December phase three, the Course of Action Development phase, was initiated. The CJCS published his warning order in which he "established command relationships; defined tasks, objectives, and constraints."[10] CINCCENT Gen Joseph P. Hoar was formally tasked to develop possible courses of action and to submit his Commander's Estimate of the Situation.[11] The following day (i.e., phase four, the Course of Action Selection phase), the CINC's COA was presented to the NCA and approved. In the early afternoon, Gen Colin Powell, CJCS, issued his planning order and tasked CINCCENT to complete his OPORD.[12] Five hours after issuing his planning order, General Powell directed initial deployments with a deploy order (with a date-time group of 022335Z Dec 92).

Execution Planning, phase five of crisis action planning, was completed late on 4 December, when General Hoar issued his OPORD (050100Z Dec 92) for Operation Restore Hope. The final phase, Execution, was completed when the NCA authorized and CJCS issued an execute order (051823Z Dec 92) and forces began moving. This phase was the formal commencement of Operation Restore Hope. General Hoar designated Lt Gen Robert B. Johnston, United States Marine Corps, as commander of Joint Task Force Somalia (Operation Restore Hope). He was assigned elements of his own unit, the First Marine Expeditionary Force, based at Camp Pendleton, California; units of the 10th Mountain Division, based at Camp Drum, New York; and the 15th

Marine Expeditionary Unit (Special Operations Capable)—the 15th MEU(SOC).

Brig Gen Thomas R. Mikolajcik, commander of the 437th Airlift Wing, Charleston AFB, South Carolina, was appointed as commander, joint task force (CJTF) and commander, Air Force Forces (COMAFFOR). General Mikolajcik, who proceeded on 30 November to General Johnston's headquarters at Camp Pendleton, was to command AMC personnel deploying to Somalia and Kenya as members of CJTF Somalia. The 1701st Mobility Support Squadron, McGuire AFB, New Jersey—redesignated the 701st Air Mobility Operations Squadron on 1 January 1993—was alerted on 1 December for possible deployment to the Horn of Africa.

Restore Hope: Operations in the Theater

General Hoar's initial concept of operations for Operation Restore Hope envisioned four phases (fig. 9):

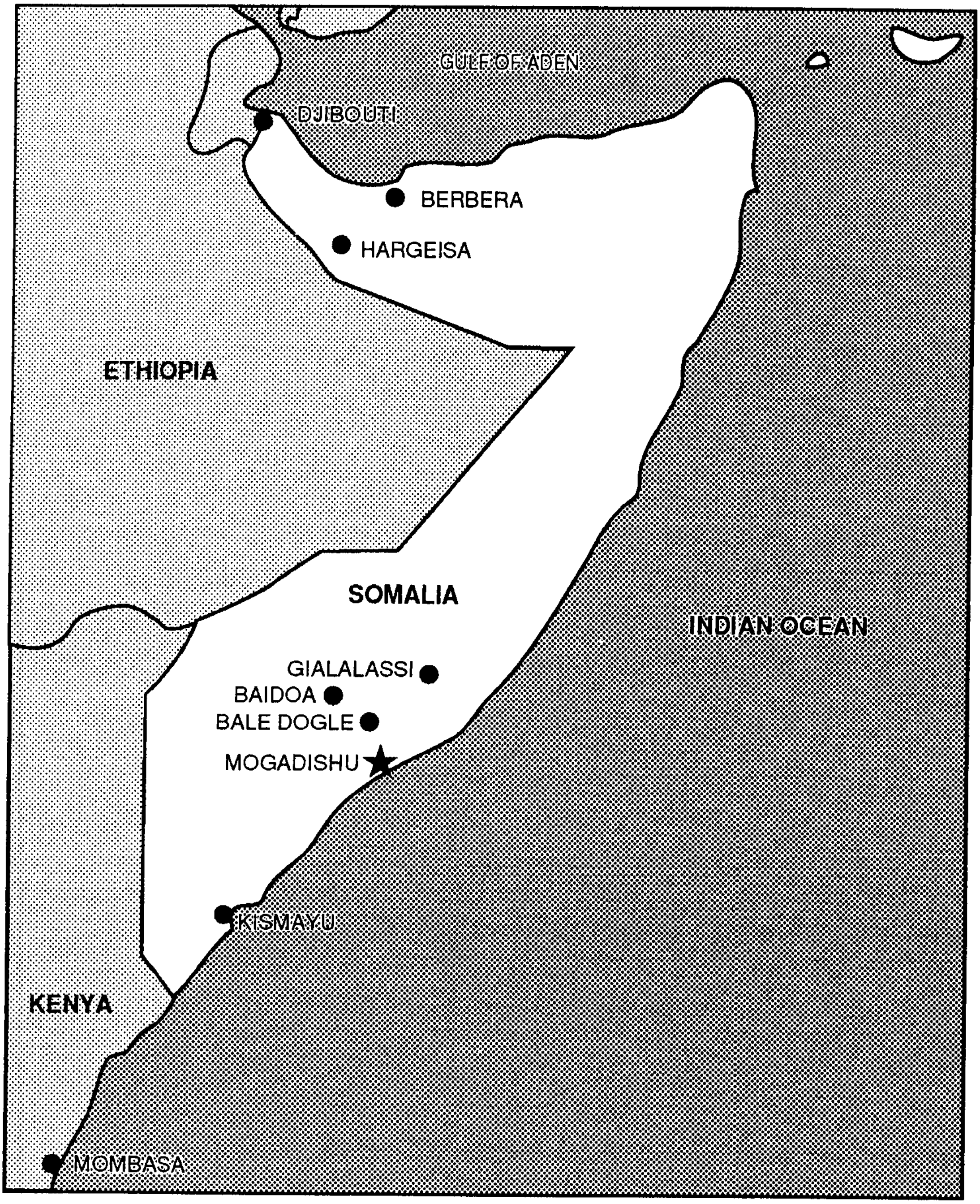
Phase 1: Secure Mogadishu airfield and seaport with afloat Marine forces and secure Baidoa.

Phase 2: Deploy United Task Force, Somalia (UNITAF) forces into Baidoa and expand security operations into central Somalia.

Phase 3: Expand security operations to the south to include Kismayo and Badera.

Phase 4: Transition from UNITAF to United Nations Operation, Somalia II.[13]

Each of the phases required major airhead activity. Aside from the initial landing from off-shore naval vessels, most of the forces and a significant amount of equipment would be airlanded. Gen Thomas Mikolajcik was responsible for maintaining "reliable airlift in support of US military, United Nations and nongovernmental humanitarian relief operations."[14] The 1701st MOBSS and subordinate TALCE would be the key theater air mobility units in support of this tasking.



Source: Briefing, Lt Gen Martin L. Brandtner, Maxwell AFB, Ala., subject: The National Military Command Structure, 15 March 1993, slide 9.

Figure 9. Operation Restore Hope

The Deployment of Forces

The crisis action planning process, as mentioned previously, was in phase four on 2 December, when the deploy order was issued late in the evening. The 1701st MOBSS, which would form the core of the theater's AME, needed to be in-theater as early as possible to assure that the theater-end of the air bridge was operated effectively. An especially important requirement for the 1701st's TALCE cadre was the establishment of airhead operations on Mogadishu airport in time to cycle inbound aircraft through quickly and safely.

The deploying elements of 1st Marine Expeditionary Forces already were being prepared at Camp Pendleton and would soon be directed to March AFB, California, for processing and loading on aircraft. In the early hours of 3 December, the 1701st's advanced party of 57 personnel and mission-essential equipment was loaded on board two 438th Airlift Wing C-141Bs. They departed McGuire AFB, New Jersey, at 0600 local and, after nearly 16 hours of flight and two en route air refuelings, arrived at Mombasa, Kenya.

Col Walt Evans, the 1701st commander and the theater's director of mobility forces (DIRMOBFOR), began almost immediately to prepare for operations in Somalia. Joint Task Force Provide Relief had been operating out of Mombasa since August and had amassed data on airfields and conditions inside Somalia. Colonel Evans, with his chief of AME operations and TALCE division chief, used available information to develop a plan of action in support of the impending airlift. The team then traveled to different airfields within Somalia to gather firsthand impressions of the operating environment. From research, onsite inspections, and intensive planning, Colonel Evans was prepared to commence operations immediately upon arrival in Mogadishu. His TALCE division chief mapped out an inclusive plan for Mogadishu airport. This plan maximized hard surface utilization, accommodated air mobility support functions, and identified and anticipated problem areas and obstacles to safe operations.

Mogadishu Airhead Operations

On 8 December Colonel Evans received confirmation that his air mobility element would be inserted into Mogadishu the following morning. The AME's attached combat control team (CCT) element already had been flown by helicopter out to the USS *Tripoli*, an amphibious assault ship carrying 23 helicopters, waiting offshore with the 15th MEU(SOC) on board. In the early hours of 9 December, the 15th MEU, commanded by Col Gregory S. Newbold, came ashore to secure the airport and then control points within the city. The Air Force CCT element, led by TSgt Pat Moulton of the 624th Combat Control Squadron, was transported by a US Marine Corps CH-46 Sea Knight helicopter onto the airport ramp, where they immediately established air traffic control over the airfield. Within a few hours the AME, on board the two C-141s they had first flown to Mombasa, airlanded on Mogadishu airport.

The two TALCE cadre quickly downloaded the aircraft with a 10K forklift they had brought in and then cleared wreckage from the ramp area and knocked down obstacles to taxiing aircraft. Under normal airport operating procedures, the obstacles would not have hindered taxiing aircraft. With the planned maximum use of hard surfaces, however, the wingtips of C-5s, 747s, and other large aircraft would be swung out, well over the adjacent dirt surfaces, into an area blocked by lampposts erected parallel to the ramp edges. SSgt Joe Santor, the AME's staff combat controller, and the TALCE officer then ran the length of the runway to check for damage, debris, and obstacles. Shortly after returning to the ramp the two marshalled in the first of the French C-130s arriving with French Foreign Legionnaires from Djibouti.

Operations at the airport were sorely tested by the presence of thousands of Somalis, who gathered on the ramp out of curiosity and the hope that interclan fighting would be brought to an end. Despite the efforts of the Marine security forces, Somalis were soon walking across the runway and every corner of the airport. Later that morning the Somalis were pushed back to the airport wall, where they would no longer pose an immediate threat to operations. In the afternoon two C-5s arrived from Rhein-Main Air Base, Germany, with the 362d Airlift Control Squadron's TALCE on board. They brought with them materiels handling equipment, aircraft generators, light carts, and a complete and self-contained command and control module: the MAC Airlift Control Element Reactions Communications.

Attached to the TALCE were aircraft maintenance personnel for C-141s, C-5s, and KC-10s. Within a day they had measured out parking spots and taxi routes and developed parking plans for a mixture of the various strategic airlift aircraft and commercial 747s and DC-10s and C-130s. Aerial port personnel set up a freight yard as a holding area for cargo removed from aircraft but awaiting pickup. A passenger-holding area was designated, and procedures for movement on the ramp were established. When CFR trucks and crews arrived, they too were integrated into the airfield operation. Airfield operations were quickly extended to 24 hours, when the combat controllers set a temporary lighting system for the runway.

While the Rhein-Main TALCE was establishing its operation, the AME TALCE officer visited with Col Gregory S. Newbold, Marine forces commander, to address requirements. The air mobility population was dependent upon the host military force for replenishment of rations, potable water, and fuels. The last item was critical to continued airlift support operations on the airfield. The forklifts and aircraft loaders each consumed between one and two gallons of diesel fuel per hour of operation. CFR trucks and ramp vehicles added to the diesel requirements. Additionally, a few pieces of equipment consumed gasoline.

Colonel Newbold was primarily concerned, at that point, with area security. His Marine expeditionary unit, the 15th MEU(SOC), manned by approximately 1,800 Marines, was primarily responsible for pushing into Mogadishu, where it was to seize the former US Embassy compound. The reinforcements inbound from Camp Pendleton, which were needed if the operation were to continue unimpeded, were dependent, however, upon a TALCE operation which rapidly processed aircraft through the airport. Newbold, focusing immediately on the importance of keeping the airfield fully operational, had his S-4 respond to the TALCE's needs. A less responsive commander would have soon asked why the inbound forces were not flowing in on schedule. Gasoline was not stored on board the support ships. For this requirement he secured a drum in Mogadishu from one of the local merchants. The other important issue was coordination for emergency medical evacuations. There was, incredibly, no formal mechanism preplanned for evacuating wounded personnel to facilities outside the theater.

Colonel Newbold had access to in-theater medical facilities on the USS *Tripoli*, an amphibious assault ship standing offshore. He extended his tactical radio net to include Air Force operations on the airfield so that air mobility personnel would have rapid access to medical evacuation helicopters and medics. The only FM-compatible radio available to the air mobility forces was a PRC-77 possessed by the CCT. Therefore, wounded or injured air mobility personnel could be helo-evacuated by Marine CH-46s to the ship, and if marines needed to be evacuated on an AMC medical evacuation configured aircraft to full medical facilities outside the theater, they could coordinate with the TALCE. The offshore facilities, onboard task force naval vessels, provided valuable support in one other way.

Two 316A Cochran loaders, a prerequisite to download KC-10 Extender aircraft, arrived in Mogadishu with a bracket missing from each one. Fortunately, the absent brackets were identical to others shipped with the equipment. A Marine helicopter crew chief took the remaining brackets out to the USS *Tripoli*, where perfect copies were fabricated in the ship's machine shop.

The airflow into Somalia, in support of the force deployment, required substantial runways to accommodate strategic airlift and commercial aircraft; accessible and sizable hard-surfaced ramps to facilitate rapid movement and offload; and a degree of certainty that aircraft could land and depart on or near scheduled time. Mogadishu airport presented several challenges to operations. It possessed a single, concrete runway, 10,335 feet in length and 150 feet in width. Runway, taxiway, and ramp lighting no longer existed. The airport commercial ramp, extended just a few years before by an Italian construction company, was large enough for the low level of commercial jet activity before the Somali civil war. Its size (roughly 1,300 by 400 feet with structures on one side) allowed one jumbo-sized aircraft (C-5, 747, or DC-10) to operate on it at the same time as two C-141s and a few light aircraft. It was, however, limited by a single entry and exit taxiway. Another ramp, on the northeast end of the runway, was serviced, likewise, by a single taxiway, which had begun to show signs of deterioration. If an aircraft were unable to depart a ramp area because of maintenance, or any other problems, the number of aircraft which could then transit the airfield would be reduced, thus seriously impacting a tightly structured flow.

Additional limiting factors acted to handicap the planned airflow. There were no airport navigational aids to assist the crews in locating the airfield or in executing the approach. Nor did an en route air traffic control network exist to separate aircraft over Somalia. In addition, neither aircraft fuels nor ground support equipment were available. The dirt surfaces along the hard surface edges were overgrown in many places with large, bush-sized vegetation. Just outside the airport, bands of clan fighters armed with AK-47s and crew-serviced weapons posed a threat to airfield operations. The initial strategic airflow into Somalia coincided with the rainy season, which had a real potential to interfere with aircraft traffic approaching the airport environment. Activities at the airport, on the first day of Restore Hope operations, were capped off in the evening with a torrential downpour, which halted the airflow.

The austereness of the airfield environment precipitated another problem area. As units poured into Mogadishu, many, out of necessity or convenience, established their operations on the airport proper, closing in around the runway and hard surface areas. From the perspective of airland operations, air mobility activities needed to have primacy on the airport. From the viewpoint of many other organizations the ramp areas and airport environment offered easy communications with transiting aircraft and a sense of security. For rotary-wing aircraft, the hard-surfaced ramps provided a clean environment and a relatively easy area from which to operate. Unfortunately, fixed-wing aircraft and helicopters do not operate together well. The helicopters tend to blow debris into engine intakes, and jet blast is threatening to helos. Where space is limited, the fixed-wing aircraft cannot operate without adequate hard surface but the helicopters can land, take off, and park on soil. The most sensible resolution of the helicopter problem was to move them away from the ramp areas, which was done soon at Mogadishu.

With so many units establishing operations at the airport, a single manager of real estate was necessary. Col Charles Russell—a Headquarters Air Mobility Command logistician who arrived a few days after commencement of the operational phase of Operation Restore Hope to Mogadishu—quickly grasped the mushrooming problem. General Mikolajcik, who had arrived with General Johnston on the 10th, already had recognized this same problem and appointed Colonel Russell, soon after his arrival, to be "mayor" of Mogadishu airport. Colonel Russell mapped out land use and then, with a touch of diplomacy and a strong shove when necessary, began to realize effective use of his real estate. As other participating nations sent their forces into Mogadishu, Colonel Russell integrated them into his plan. He soon had personnel and units from Turkey, Italy, Saudi Arabia, Kuwait, Zimbabwe, Tunisia, Morocco, Australia, Belgium, Great Britain, New Zealand, Canada, Pakistan, Botswana, Nigeria, and France making the best use of a limited asset. Besides the air mobility units, there were several US Marine support units, one US Navy construction battalion, and US Army and civilian agencies. Another area of concern was the billeting of air force personnel. When the AMC units first arrived on the airfield, they took shelter in a derelict hangar filled with the debris of what had been Air Somalia. As the air force community grew from the first 57 personnel on 9 December to hundreds within the next two weeks, the acquisition of a tent city and sanitary facilities became a priority. Colonel Russell—working with General Mikolajcik—secured shelters from US Air Forces, Central Command, resources. Not until nearly Christmas did everyone deployed to the theater receive reasonable shelter.

Airhead Operations outside Mogadishu

The US Army's 10th Mountain Division, a light infantry unit, began moving equipment and troops to Griffiss AFB, New York, from Camp Drum in preparation for their deployment into airheads at Bale Dogle and Kismayu (figs. 10A-B and 11A-B). In anticipation of their insertion, US Marine forces moved overland and by helicopter to Bale Dogle to secure it on 13 December. In the 1970s Bale Dogle served as a Soviet fighter air base and probably had not been repaired since. Through deterioration, its 10,500-foot-long asphalt runway had been reduced to a usable length of 6,000 feet, barely enough for C-141 operations.[15] Immediately after the airfield was secured, C-141s, which had departed Travis AFB, California, with a 60th Airlift Control Squadron TALCE on board, airlanded. The TALCE then began operations in support of C-141s arriving from Griffiss AFB, New York, with elements of the 10th Mountain Division. On 16 December the Marine forces continued on to secure Baidoa, another former Soviet fighter base. As a consequence of the rapid forward movement of US Marine forces, humanitarian relief sectors were established, and Phase I of the CINC's concept of operations was completed (fig. 12).

In preparation for Phase II, Air Force CCT survey teams evaluated Belet Uen, Gialalassi, and Oddur airfields. On 17 December the AME TALCE officer inspected Kismayu and certified it for use by C-5 and C-141 aircraft. Navy Seabees came ashore with equipment and scraped away the heavy growth of vegetation, which hugged the runway edges and taxiways.

The Air Mobility Element

Lt Gen Robert B. Johnston had selected the grounds of the former US Embassy as the site for his headquarters in Somalia. The COMAFFOR, General Mikolajcik, would locate his staff and the AME there as well (fig. 13). Until the embassy compound was declared secure, the AME operated out of a derelict hangar on Mogadishu airport, where they maintained satellite communications (SATCOM) with AMC's tanker airlift control center (TACC) at Scott AFB, Illinois.

LANDING ZONE SURVEY	1. LZ NAME: Bale Dogle LZ	2. LOCATION: Bale Dogle Airfield, Somalia
	3. MAP SERIES / SHEET NUMBER / EDITION / DATE OF MAP: TPC, L-6D, 2-GSGS, 1986	

4. SURVEY APPROVAL/DISAPPROVAL DATA

4A. DATE SURVEYED	TYPED NAME AND GRADE OF SURVEYOR	PHONE NUMBER (AUTOVON)	UNIT
10 Dec 92	Jack King, MSgt		314 CCS
4B. DATE REVIEWED	**TYPED NAME AND GRADE OF REVIEWER**	**PHONE NUMBER (AUTOVON)**	**SIGNATURE**
	UNIT AND LOCATION		
4C. DATE	**TYPED NAME AND GRADE OF APPROVING AUTHORITY**	**PHONE NUMBER (AUTOVON)**	**SIGNATURE**
15 Dec 92	Evans, Walter S. Col	N/A	Walt S. Evans
APPROVED ☒ DISAPPROVED ☐	UNIT AND LOCATION: 1701 MOB AME Mogadishu SO		

5. COORDINATING ACTIVITIES

LZ CONTROLLING AGENCY OR UNIT	PHONE NUMBER (AUTOVON)
None	N/A
RANGE CONTROL	**PHONE NUMBER (AUTOVON)**
None	N/A

6. LZ DIMENTIONS (Feet)

A. LENGTH	B. WIDTH	C. APPROACH END OVERRUN LENGTH	D. DEPARTURE END OVERRUN LENGTH
6000' useable	131'	300'	300'
E. LEFT CLEAR ZONE	**F. LEFT SHOULDER**	**G. RIGHT CLEAR ZONE**	**H. RIGHT SHOULDER**
35'	10'	35'	10'

7. LZ AXIS DATA

A. MAGNETIC	B. GRID (UTM)	C. TRUE	D. DATE OF VARIATION DATA
040°/220°	N/A	040°/220°	1989
8. GROUND POINT ELEVATION FOR RUNWAY	**A. APPROACH END**	**B. DEPARTURE END**	**C. HIGHEST**
	300' MSL	300' MSL	300' MSL

9. LZ COORDINATES

A. SPHEROID	B. GRID ZONE	C. EASTING	D. NORTHING
International	38N	4	2

E. LZ CENTERPOINT	UTM COORDINATES	LATITUDE (D/M/S)	LONGITUDE (D/M/S)
	MT766957	02° 41' 00" N	44° 47' 00" E

10. LZ SURFACE DATA

A. SURFACE	B. CBR	C. METHOD USED TO DETERMINE CBR	D. DEPTH OF READINGS
Asphalt	N/A	N/A	N/A

11. LZ CLEARANCE AND GRADIENT DATA FOR RUNWAY

A. GLIDE SLOPE RATIO	B. LATERAL SAFTY ZONE SLOPE RATIO	LONGITUDINAL RUNWAY GRADIENT
35:1	7:1	0%

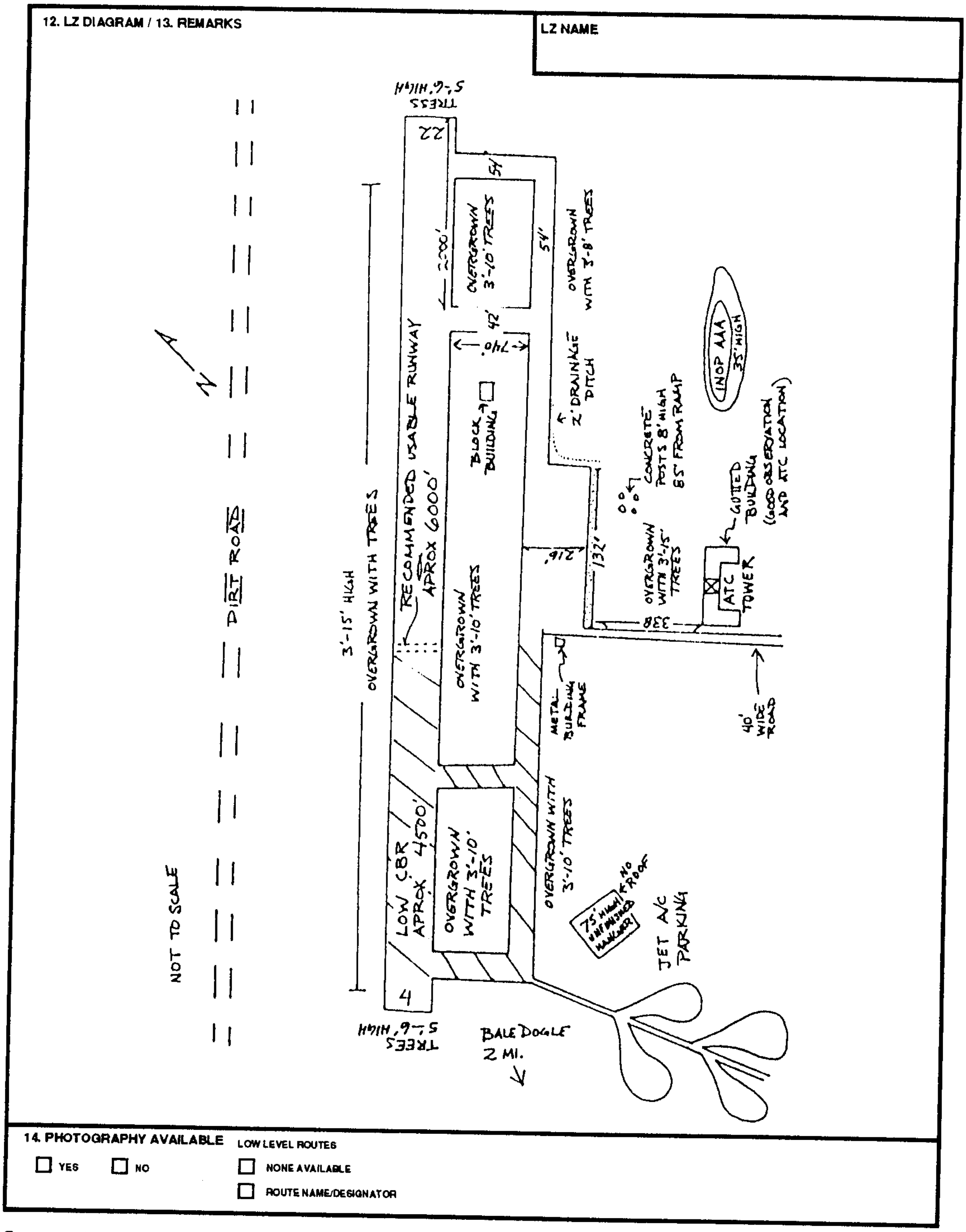
D. TRANSVERSE SECTION GRADIENTS

LEFT CLEAR ZONE	LEFT SHOULDER	RUNWAY	RIGHT SHOULDER	RIGHT CLEAR ZONE
0%	0%	0%	0%	0%

E. PENETRATIONS

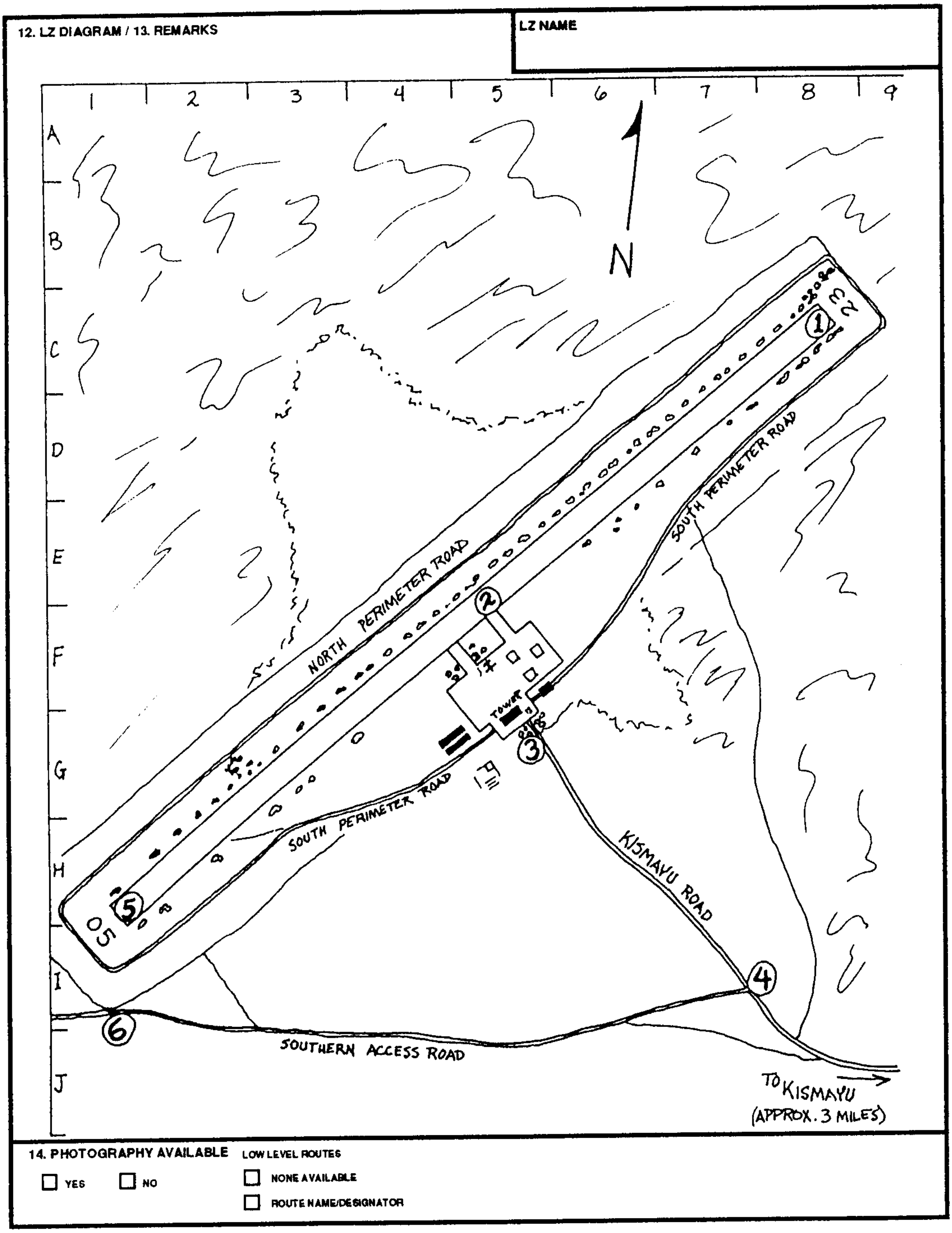
Source: MAC Form 340, Landing Zone Survey, 10 December 1992.

Figure 10A. Bale Dogle Airfield, Somalia (Landing Zone Survey)



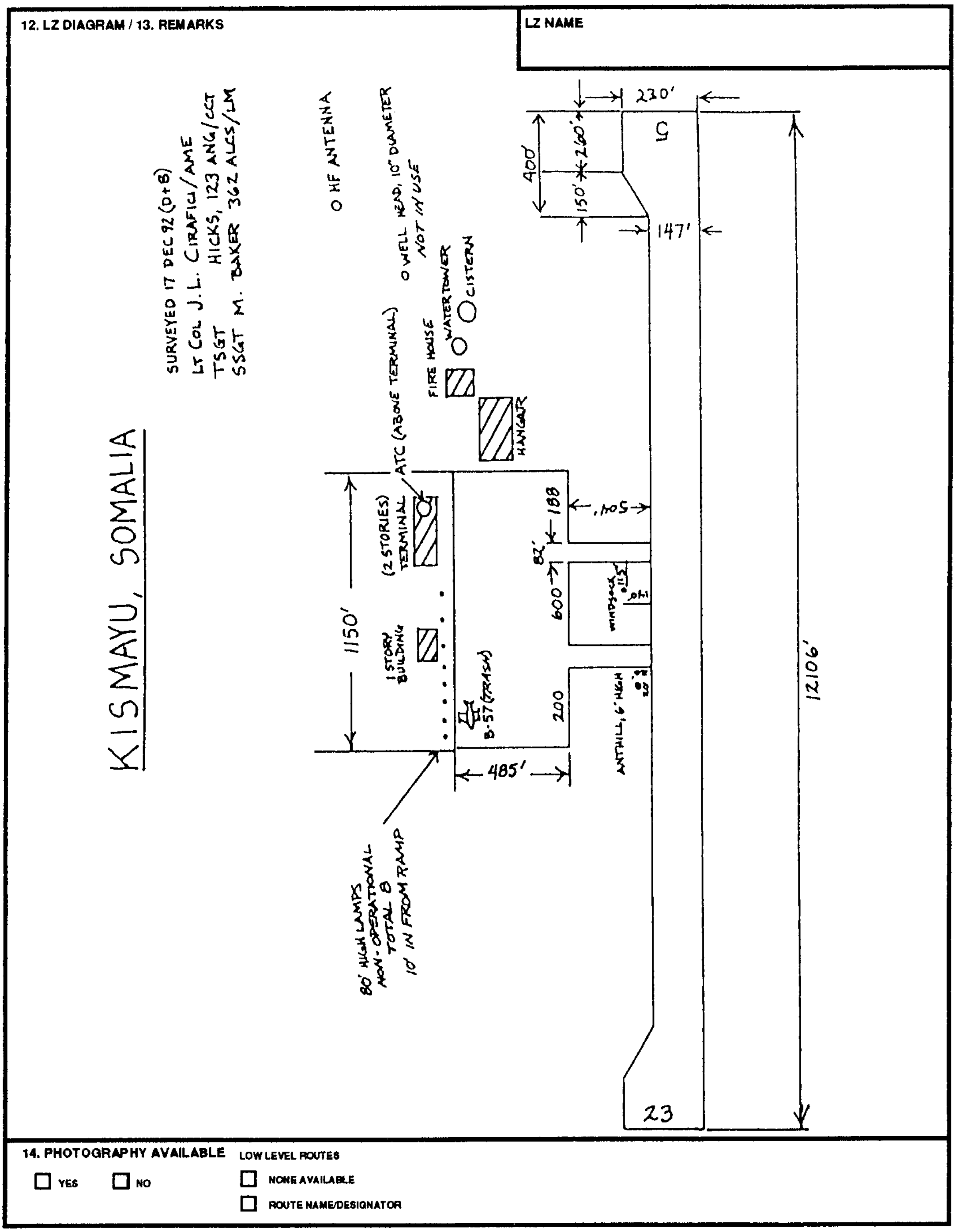
Source: MAC Form 340, Landing Zone Survey, 10 December 1992.

Figure 10B. Bale Dogle Airfield, Somalia



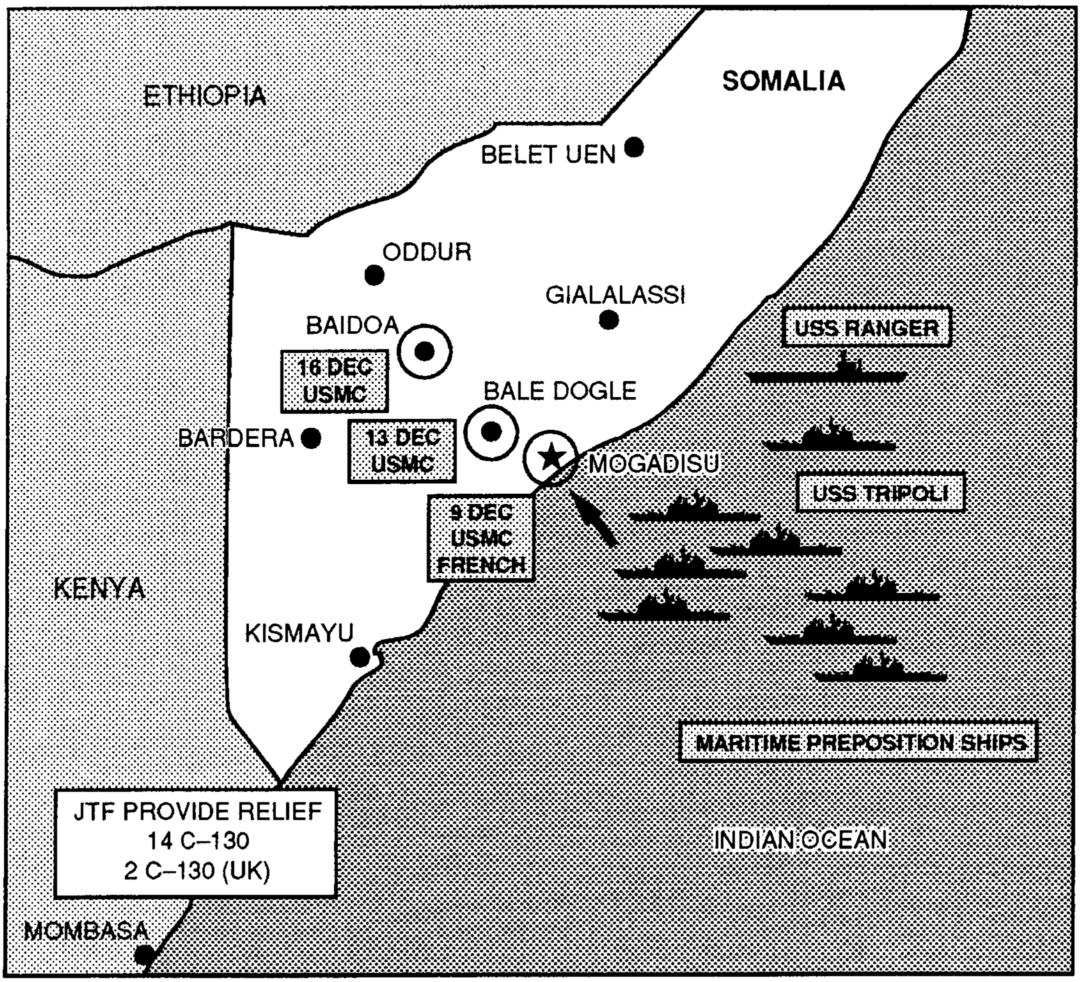
Source: MAC Form 340, Landing Zone Survey, 17 December 1992.

Figure 11A. Kismayu Airfield, Somalia



Source: MAC Form 340, Landing Zone Survey, 17 December 1992.

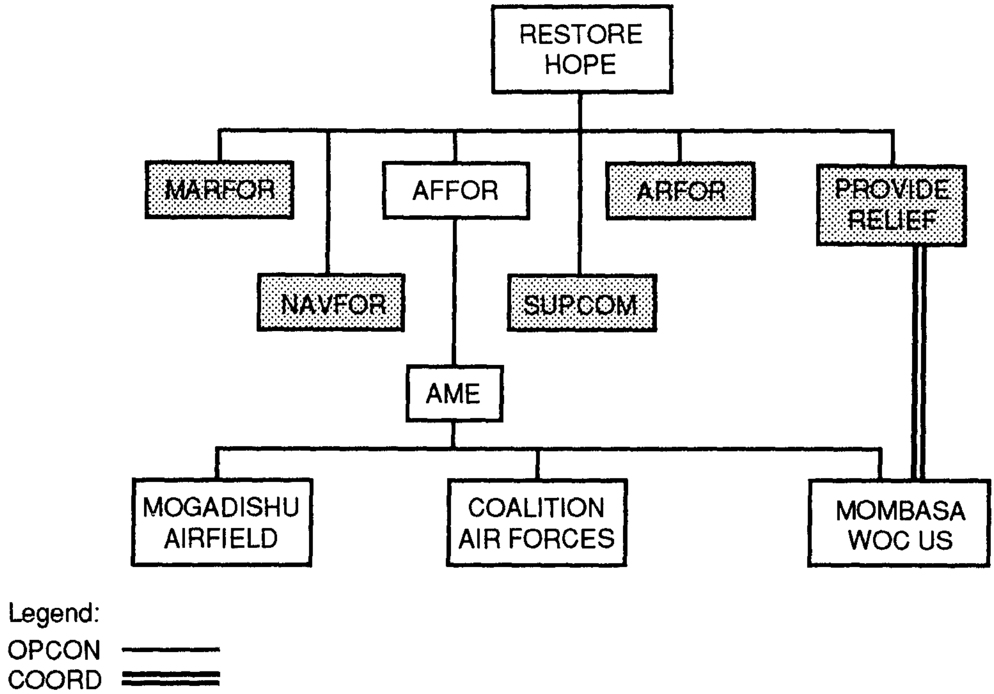
Figure 11B. Kismayu, Somalia (Landing Zone Survey)



Source: Briefing, Lt Gen Martin L. Brandtner, Maxwell AFB, Ala., subject: The National Military Command Structure, 15 March 1993, slide 31.

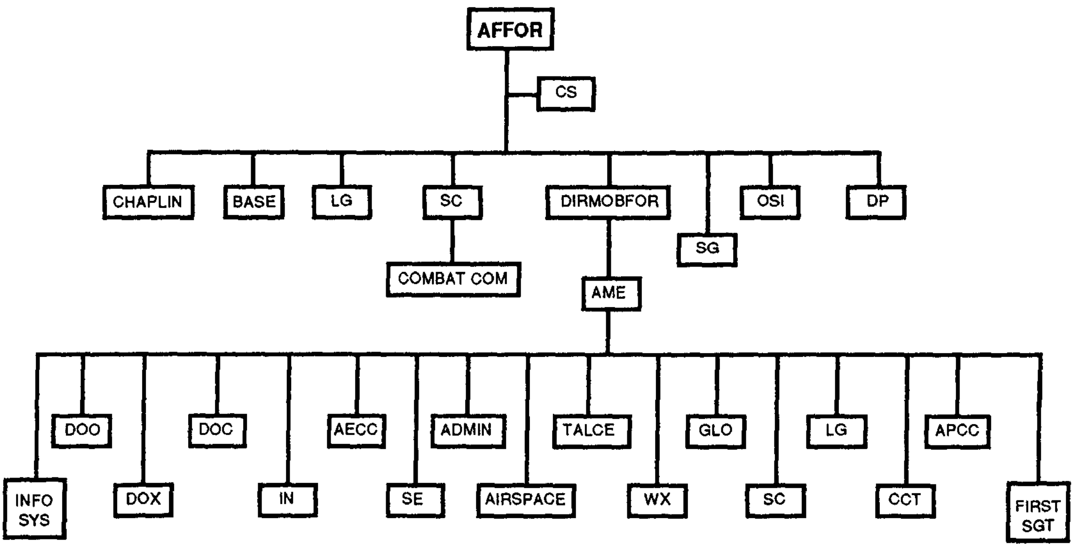
Figure 12. Restore Hope: End of Phase I, 16 December 1992

On 12 December the embassy compound, which had been used by clan leader Gen Mohommed Farrah Aidid, was declared secure. The main body of AME personnel, which had arrived by C-5s on 10 December, brought with them a MARC module and expandable shelters for the AME operations center. The equipment was towed to the embassy grounds and quickly erected next to the combined joint task force headquarters. The organizational arrangement placed Col Walter Evans, as DIRMOBFOR, directly under the AFFOR (figs. 14 and 15). Evans'



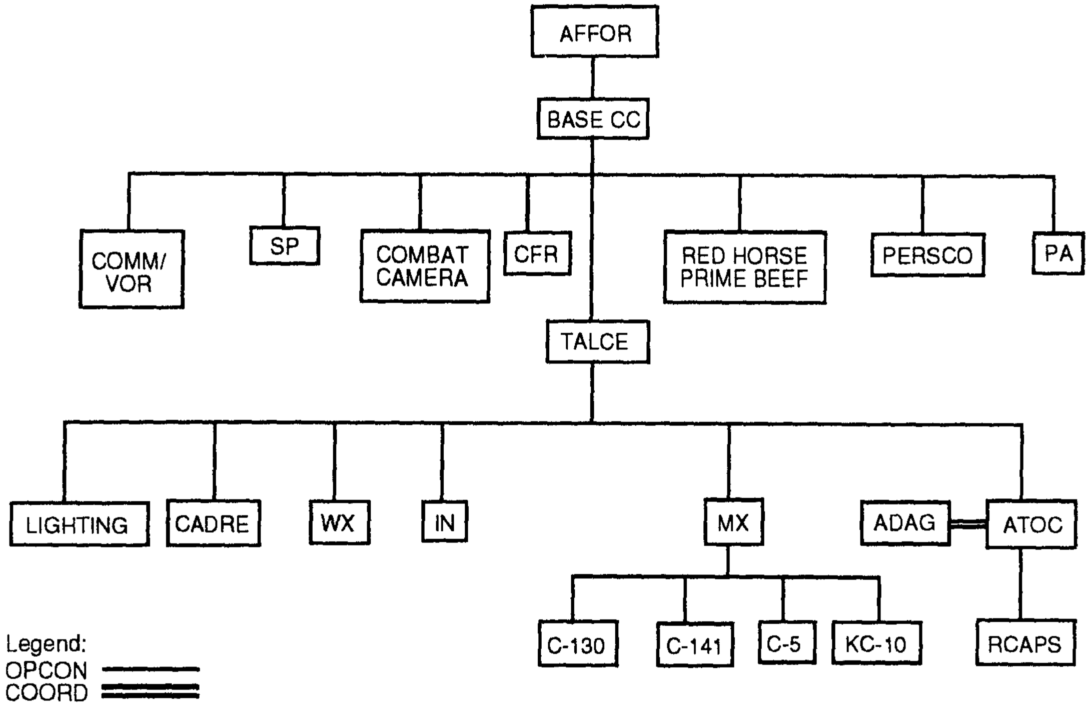
Source: Briefing, Col Walter Evans, Air Mobility School, subject: Restore Hope Somalia, 29 July 1993, slide 15.

Figure 13. Restore Hope AFFOR Organization



Source: Briefing, Col Walter Evans, Air Mobility School, subject: Restore Hope Somalia, 29 July 1993, slide 17.

Figure 14. Mogadishu Embassy Organization



Source: Briefing, Col Walter Evans, Air Mobility School, subject: Restore Hope Somalia, 29 July 1993, slide 16.

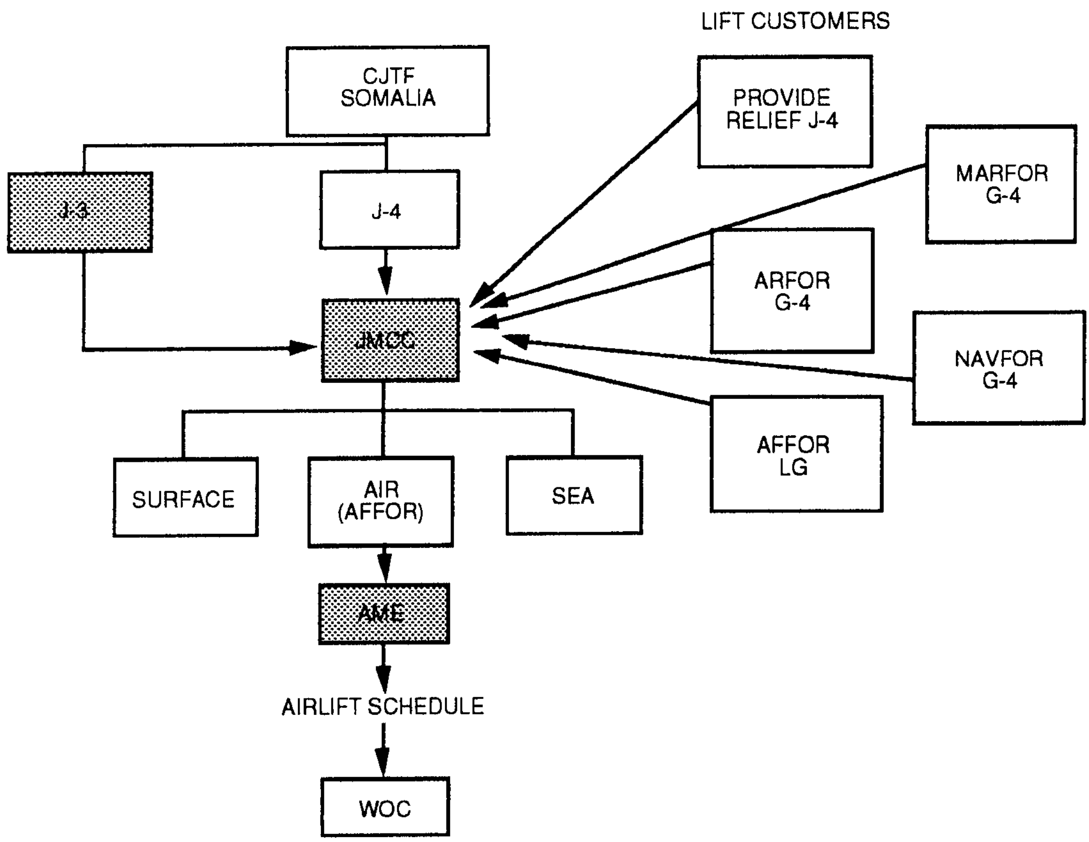
Figure 15. Mogadishu Airport Organization

AME controlled air mobility operations for the entire theater. Among them were the aeromedical evacuation control center; the aerial port control center; command and control for AMC assets (and certain attached coalition assets); and aircraft scheduling for eight USAF and two British C-130s based at Mombasa, Kenya, and three New Zealand Air Force C-748 Andover aircraft operating from Mogadishu. Subordinate to Colonel Evans were his division chiefs for theater combat control activities and TALCE operations throughout the theater. Assisting Colonel Evans was Col Dayre Lias, the deputy DIRMOBFOR. Other functional areas included tactics, the ground liaison office, logistics, safety, weather, and intelligence.

C-130 intratheater airlift heretofore had been scheduled by JTF Provide Relief's wing operations center (WOC), located on Mombasa's Daniel Moi airport. JTF Provide Relief was made subordinate to CJTF Somalia, and the responsibility for scheduling and command and control of the aircraft was assumed on 14 December, by the AME. On 19 December a TALCE team, detached from the Mogadishu TALCE, established operations at Kismayu.

On the 20th, C-5s and C-141s began arriving with Belgian commandos and elements of the 10th Mountain Division. As operations progressed, CCT elements and aerial port forklifts with operators were sent into Bardera and Baidoa to facilitate aircraft movement and to download. In a short time the AME was able to control airfield operations throughout central and southern Somalia and to support the arrival of approximately 21,000 US troops and the forces of Belgium, Botswana, Nigeria, Zimbabwe, Tunisia, Turkey, and other participating nations.

As the tempo of operations increased, the demands on intratheater airlift increased as well. A key purpose of forces in-theater was to make possible the safe overland transportation of relief supplies. The transition period between initial force employment and the eventual realization of reasonably secure land routes placed heavy demands on the available airlift. The theater C-130s continued their original mission by delivering relief supplies and added the transportion of forces to their taskings. Those who felt that delivering relief supplies took priority over troop movements were not pleased when aircraft were tasked to shuttle units to various locations. Pressure from the different users of intratheater airlift to commit aircraft to their specific tasks emanated from misunderstandings on how aircraft are allocated. General Mikolajcik tried, with limited success, to force users to use properly the CJTF Somalia joint movement control center (JMCC), which was controlled by the task force's J-4 (fig. 16). In theory, components should first validate and prioritize their requests for airlift internally and then forward them to the JMCC. The JMCC should then act as the single agency for collecting, prioritizing, and validating transportation requests. The result would be assignment of airlift, where it is necessary, in order of priority. However, what happened too often was that "organizations submitted air movement requests with no real validation process; each request was validated for air movement even though, from our perspective [the COMAFFOR] alternate means of transportation would have been more efficient."[16]



Legend:
JMCC—Joint Movement Control Center
AME—Air Mobility Element
WOC—Wing Operations Center

Source: Briefing, Col Walter Evans, Air Mobility School, subject: Restore Hope Somalia, 29 July 1993, slide 19.

Figure 16. Lift Requirements Process (JMCC)

Intratheater Airlift

To meet the needs of units located near the various airfields, the AME current operations division designed a shuttle system. Each day, channel STAR missions would be scheduled through the different airfields for opportune cargo and/or passenger movement (fig. 17). Aircraft were no longer committed to carrying nonpriority cargo and troops at the expense of other units' needs—they would be moved on a first-come, first-serve basis. The result was that the limited number of aircraft were utilized more effectively. The system also encouraged units to move their nonpriority assets more economically overland. The AME had operational control over the three New Zealander Andovers, the two British C-130s, and the USAF C-130s at Mombasa, Kenya (increased on 16 December to 12 and eventually to a high of 14). The various aircraft allowed current operations schedulers a degree of flexibility in meeting taskings. As the AME solved problems in one area, however, other problems soon surfaced.

Daily Itinerary
Channel STAR Missions
Load Type: Opportune Cargo or Passengers
REACH 163 MORNING STAR

ETA L/Z	FLY	ICAO	GRND	ETD L/Z
		HKMO		0301/0001
0500/0200	2+00	HCMM	1+00	0600/0300
0615/0315	0+15	HC1X	0+30	0645/0345
0700/0400	0+15	HCMB	0+30	0730/0430
0800/0500	0+30	HCMM	1+00	0900/0600
1000/0700	1+00	HCMK	0+30	1030/0730
1145/0845	1+15	HKMO	TERM	

REACH 00340 EVENING STAR

ETA L/Z	FLY	ICAO	GRND	ETD L/Z
		HKMO		1200/0900
1315/1015	1+15	HCMK	0+30	1345/1045
1445/1145	1+00	HCMM	1+00	1545/1245
1600/1300	0+15	HC1X	0+30	1630/1330
1645/1345	0+15	HCMB	0+30	1715/1415
1745/1445	0+30	HCMM	1+00	1845/1545
2045/1745	2+00	HKMO	TERM	

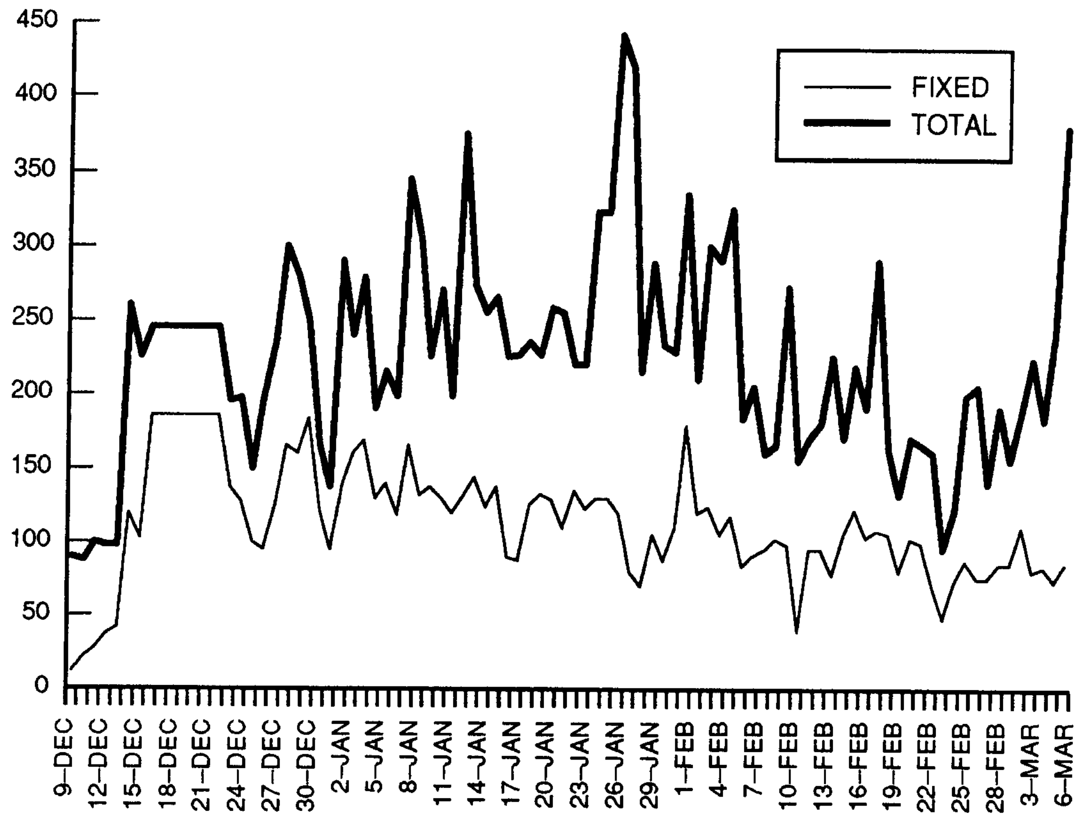
Figure 17. Intratheater Airlift: A STAR Schedule

Runway Deterioration

The repeated landings of heavy C-141s at Bale Dogle had a telling impact on the runway surface. En route C-141s had to be redirected into Mogadishu, adding to the taxing flow already coming into that airfield. The developing situation exacerbated a problem which was already evident.

Flow Control

Aircraft flowing into the theater from various CONUS bases and overseas locations were arriving without consideration for the limited ramp space and the single runway. Through a Herculean effort, the Mogadishu TALCE was able to turn around aircraft in incredibly short ground times; occasionally, they had to direct inbound aircraft on to supporting airfields outside Somalia because they could not accommodate them (figs. 18 and

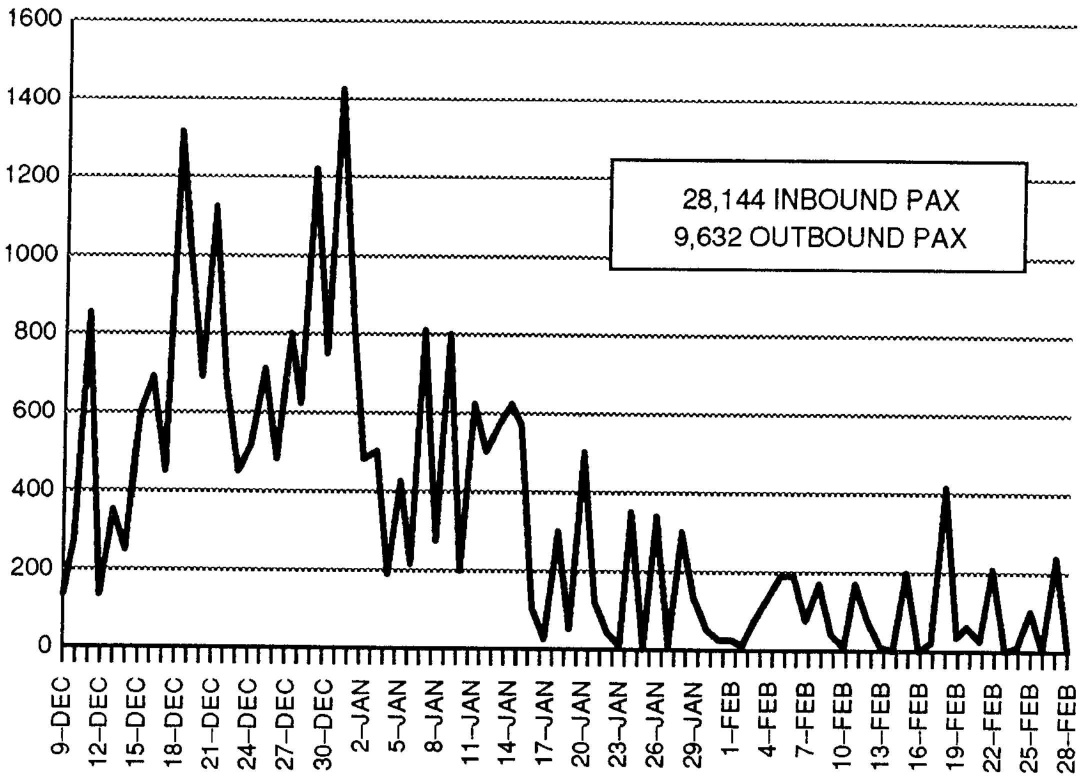


Source: Briefing, Col Walter Evans, Air Mobility School, subject: Restore Hope Somalia, 29 July 1993, slide 30.

Figure 18. Air Traffic at Mogadishu Airport

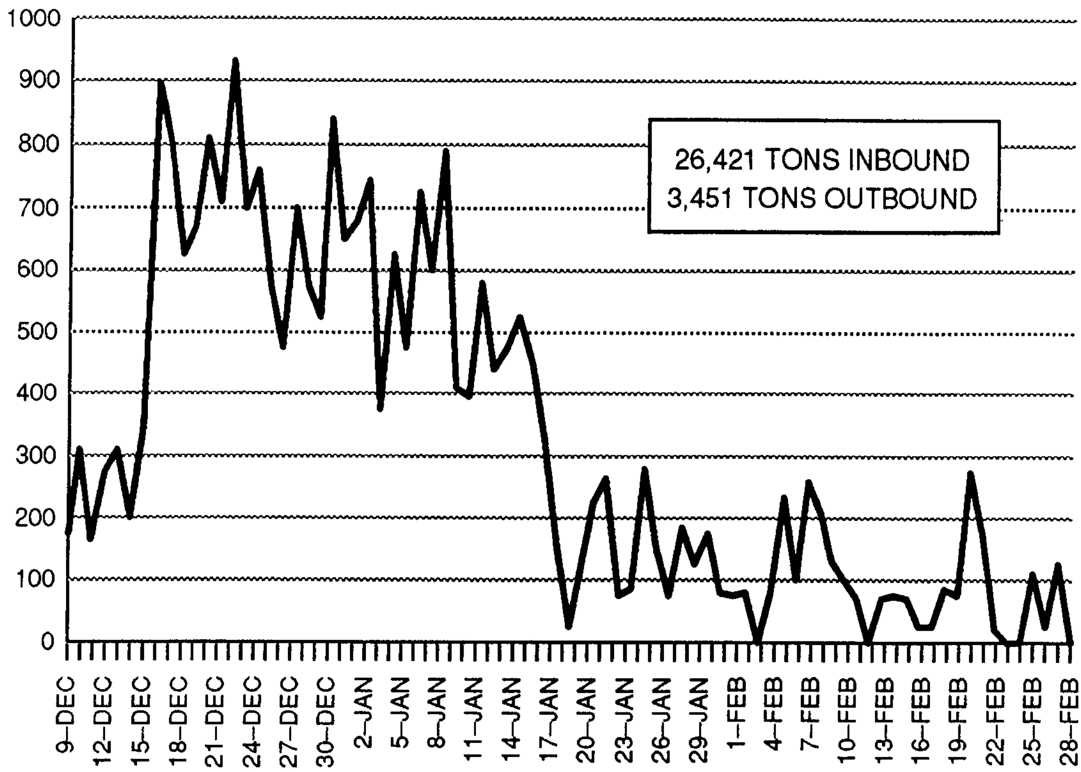
19). Jet fuel was unavailable in late January for aircraft that ran short while holding above the airport. Thus, the schedule of inbound aircraft was disrupted further by having aircraft return from fields outside the theater for a second try at landing.

In response to the problem, the COMAFFOR brought together a collective agreement between TACC, AME, and the en route bases that the AME, with inputs from the Mogadishu TALCE, would assign arrival slot times. The solution was timely because 22 December would be the peak day for intertheater cargo airlift with 923 tons delivered (fig. 20). The peak day for passenger delivery occurred nine days later, when 1,470 troops arrived. In the last weeks of December, Oddur, Gialalassi, Belet Uen, and Bardera were secured by ground forces, and Phase II of the CINC's plan was achieved (fig. 21).



Source: Briefing, Col Walter Evans, Air Mobility School, subject: Restore Hope Somalia, 29 July 1993, slide 23.

Figure 19. Passengers Moved Intertheater—Per Day

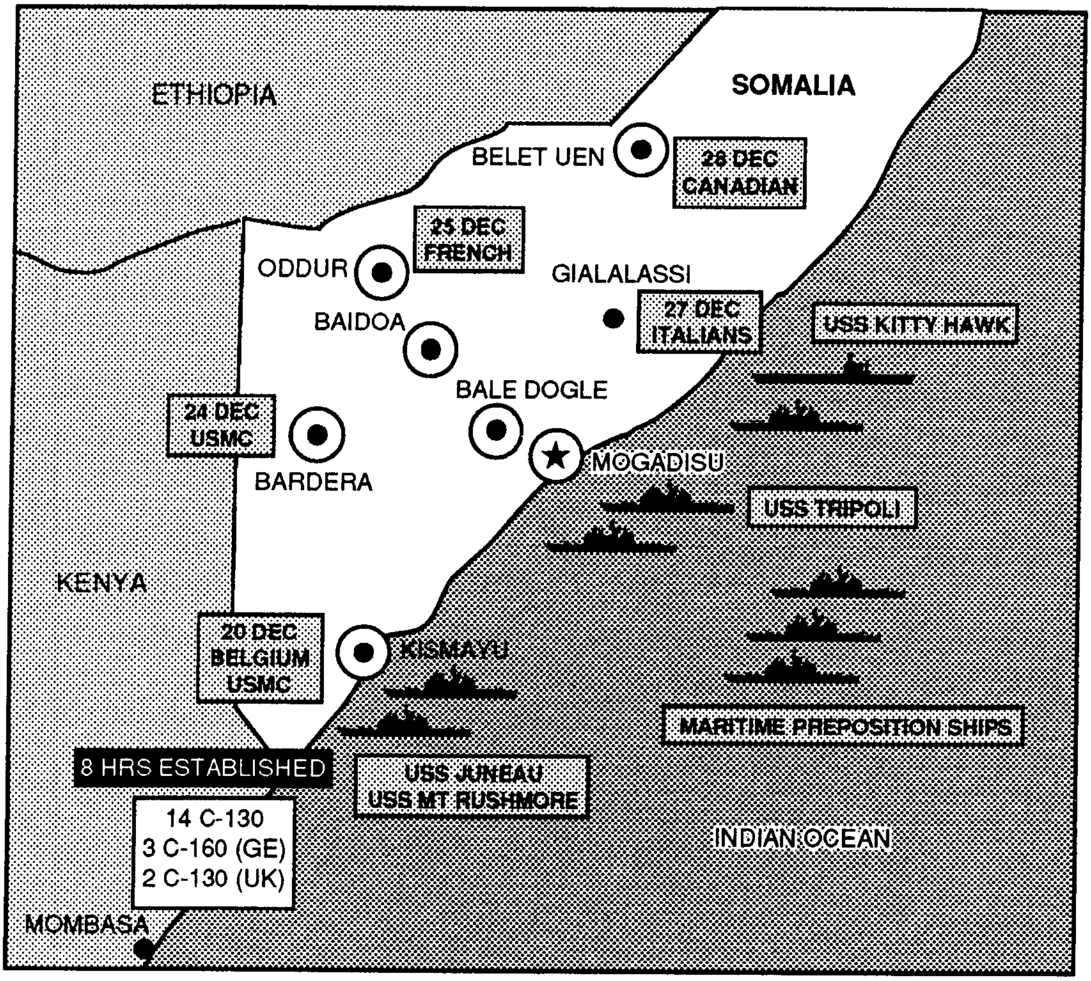


Source: Briefing, Col Walter Evans, Air Mobility School, subject: Restore Hope Somalia, 29 July 1993, slide 22.

Figure 20. Intertheater Airlift—Tons Per Day

Mission Accomplishment

With the rapid achievement of the CINC's phases and the arrival of contingents from coalition nations, General Johnston began a drawdown of US forces. On 19 January the first contingent of Marines were airlifted to March AFB for their return to Camp Pendleton. The number of C-130s operating in-theater, which had reached 14 in late December, were reduced to 10 in late January. By the third week of February, the number had decreased to six and to two by the end of the month. The role of the AME decreased correspondingly as US forces were withdrawn. A majority of its functions was transferred to the WOC at Mombasa and to the Mogadishu TALCE. The Bale Dogle TALCE had returned to Travis AFB only weeks after coming into theater, and Mogadishu's TALCE handled airfield operations in the theater. The TALCE returned to Rhein-Main at the end of March and were replaced by a much smaller contingent from Charleston AFB, South Carolina. The air mobility element ceased operations on 10 March and redeployed to the CONUS.



Source: Briefing, Lt Gen Martin L. Brandtner, Maxwell AFB, Ala., subject: The National Military Command Structure, 15 March 1993, slide 32.

Figure 21. Restore Hope: End of Phase II, 28 December 1992

Notes

1. The chronology is derived from Rakiya Omaar, "Somalia at War with Itself," *Current History* (Africa Issue) 91, no. 565 (May 1992): 230–34.
2. Data provided by Kent Beck, Headquarters AMC/HO, 19 January 1994.
3. MAC Form 340, Landing Zone Survey for Belet Uen, 23 August 1992.
4. "The Air Mobility Command: Historical Highlights," Headquarters AMC/HO, 1992.
5. For the text of the UN Security Council Resolution on Somalia, see *New York Times*, 4 December 1992, 1, 14.
6. Armed Forces Staff College (AFSC) Pub 1, *The Joint Staff Officer's Guide 1993*, 7–9. *Event* is defined as that which is reported to the NMCC and initiates planning procedures.
7. President George Bush, *National Security Strategy of the United States* (Washington, D.C.: The White House, January 1993), 3.
8. Briefing, Lt Gen Martin L. Brandtner, Maxwell AFB, Ala., subject: The National Military Command Structure, 15 March 1993, slide 15.
9. AFSC Pub 1, 7–12.
10. Ibid., 7–17.
11. Joint Pub 1-02, *Department of Defense Dictionary of Military and Associated Terms*, 1 December 1989, lists the commander's estimate of the situation.
12. Ibid., CJCS Planning Order and OPORD.
13. Brandtner briefing, slide 22.
14. Briefing, Col Walter Evans, Air Mobility School, subject: Restore Hope Somalia, 29 July 1993; and Col Walter Evans, "Operation Restore Hope After Action Report," 7 April 1993.
15. MAC Form 340, Landing Zone Survey for Bale Dogle, 15 December 1992.
16. Evans, "After Action Report," 7.

THIS PAGE INTENTIONALLY LEFT BLANK

Chapter 4

Restore Hope: Lessons Learned

Many lessons are learned in a contingency. Their applications in the planning and execution of subsequent contingencies should not only preclude repetition but prevent an otherwise unresolved problem area from precipitating a larger failure. As Restore Hope has illustrated, contingency operations are frequently conducted at the end of tenuous lines of communication. The margin for error is much finer because resources must be projected great distances with a degree of difficulty and expense. The limited resources which are introduced into an otherwise austere environment are essential to mission success. When problems go unresolved, they tend to deplete or abuse resources. An example would be an aircraft flying to a theater airhead but unable to land because of poor flow control. The consequence of the scheduling error is that the onboard forces would not flow in on time to the theater, and the aircraft would not be available for its next scheduled event in the airlift sequence. The aircraft is a limited resource, and the forces and materiel on board are, likewise, limited. In an unchallenged operation, the handicap of wasted resources may impact mission objectives; those same obstacles, left unresolved in a contingency where a capable enemy possesses the means to exploit weaknesses, may be costly. For these reasons we must detect, analyze, and solve them.

Lessons learned in Somalia, from the theater air mobility forces perspective, tend to contain elements of the following two areas: (1) operational and (2) sustainment and support for deployed air mobility forces. The first area includes those items which have a direct impact on mission objectives: command and control, management of airfield infrastructure, aircraft flow control, communications, and ground security. The second area deals with logistical issues and quality of life.

Operational Problems

Two important problem areas which appeared in Restore Hope were the uncertain lines of operational control and the confusion over how air mobility units in-theater were to interface. A deploying unit that is unaware of its position in the theater organizational structure and is unaware of its lines of operational control (OPCON) is less likely to be effective and inadvertedly may become obstructive. A deploying unit also needs to know its formal relationship with other component forces and the channels through which it is supported and replenished.[1] If a unit is "attached for support," it must know to whom it should turn for logistical support.[2] Not to know the answers to these questions may prove annoying to those who exercise OPCON and frustrating to the subordinate units which experience difficulty in carrying out their mission. In a contested environment the confusion may compromise the mission and prove fatal to the unit.

Command and Control

Bale Dogle stands out as an example in Somalia where a less-than-adequate understanding in relationships occurred. The deploying TALCE arrived in-theater, apparently unaware of its OPCON relationship with the theater air force component commander and the AME. The unit bypassed the AME and communicated directly with the TACC (i.e., outside the theater). This predicament left the theater commander's AME out of the loop, just as a major insertion of troops from Fort Drum were about to arrive in-theater.

Management of Airfield Real Estate

Airhead administrative control should be addressed prior to actual deployment of forces into a theater. Once forces enter the airhead, they adopt an operational focus. Confusion over utilization of infrastructure and real estate lessen the effectiveness of forces if it causes a struggle between units and components. A danger exists, especially during the critical initial phase of insertion, that disagreements over control of hard surfaces will hinder strategic airlift into an airhead and the handling of cargo on the ramp. Strategic aircraft occupy considerable ramp area. Another unit may view control of ramp use by air mobility forces as an intrusion on its own use of available hard surface.

Operation Desert Storm provides an example of the difficulties which arise when a unit managing airfield real estate is not the organization with the largest operation on the field. In the Kuwait theater of operations (KTO), the single largest user of the Kuwait airhead was Military Airlift Command (MAC) aircraft. A minor flying organization on the airfield, which had little or no understanding of MAC requirements and did not possess the expertise (which the TALCEs do) of airfield operations, asserted initial control. That unit became an unnecessary "middleman" while performing no useful function from the perspective of airfield operations. The controlling unit, which flew helicopters within the KTO, was reluctant to move its minuscule operation to another area on the airport where it did not interfere with jumbo-sized airlifters.

The decision to use Kuwait International Airport existed long before the actual seizure of the airfield; therefore, the issue of control could have been properly resolved before any forces landed there. At Mogadishu the problem of airfield control was resolved before the competition for real estate was allowed to interfere with the conduct of operations. In future operations the requirement for a single manager of the airfield structure should be determined as part of the contingency's detailed planning.

Flow Control

The problem of flow into the airhead(s) has been addressed earlier. In a future contingency, a theater commander's operational plans may be seriously hindered if the commander depends on unrealistic flow expectations, which may falter in the face of what should have been predictable bottlenecks. Contesting the entry of US forces will cause a transitional period when the forces inserted have not yet reached the level necessary to offer a fully capable defense. The theater commander should pass through that phase quickly. If inbound aircraft run into a logjam and needed forces are delayed because the aircraft must depart the theater without landing, the impact may be worse than the impact of a slower and more measured flow. Therefore, a preliminary assessment of flow into an airfield based on runway(s), taxiway(s), ramp(s), and maximum (aircraft) on the ground should be fully addressed during the planning stage. Airhead operations are a key component of force projection. The planners who assess airfields should possess the level of expertise needed to realistically appraise the potential flow into a theater. Their assessment will allow the combatant commander to estimate the risks involved and adjust his course of action. Aircraft held over an airfield also increase risks to air assets. Aircraft which must linger in threatened airspace may be lost to hostile action; aircraft on the ground which exceed the parking MOG and therefore block taxiways and runways may place forces and assets at unnecessary risk. In a contingency where there is no opposing force, an unrealistic flow can cause preventable delays and possibly exceed the supported commander's required delivery date. In an austere environment, where aircraft are operating at the end of long LOC, there is a penalty for arriving over an airhead which is already operating at its MOG limit. The time spent in returning the aircraft to a staging base, servicing it, and placing a fresh crew in the cockpit is time lost. The aircraft and aircrew are finite resources. The additional time needed to return the aircraft to the theater and to complete its original mission is lost for follow-on missions, causing a loss in airlift capability.

Communications

The theater AME and the TALCEs possess an extraordinary communications capability. They maintain satellite communications (SATCOM) high frequency (HF) voice and data link, and very high frequency (VHF) and ultra high frequency (UHF) ground-to-air linkage. They are not, however, equipped with radios for integration into the ground forces' tactical frequency modulation (FM) net (described in chapter 3, in the example at Mogadishu). For the purpose of ground security linkage, for accessing ground forces emergency medical support, and for communicating support requirements in general, the TALCE needs this capability. The Army and Marine Corps communicate on an FM VHF network (the PRC-77 is an example of a standard radio which provides this capability). The Air Force combat control teams and tactical air control parties possess radios which operate in that part of the communications spectrum. TALCEs and the AME normally do not. Air Mobility Command may wish to rectify this shortcoming so that the TALCEs and other theater air mobility support forces can more fully integrate with the supported forces.

On the other side of the coin, where the TALCEs and AME do possess great capability—for example, with SATCOM and HF—the associated communications networks appear to be overworked. This may be the product of increased information flow. It is often, however, the result of substandard radio discipline and/or an attempt to overcome the confusion resulting from poor information flow prior to deployment. Once in-theater, units are often compelled to fill the vacuum created by an absence of real information through the communications net. During Operation Restore Hope the communications networks were saturated. Routine traffic of marginal value overwhelmed the SATCOM and GYC-8 (HF data) systems. As a result high-value, time-sensitive messages were delayed.

Strong command emphasis on timely and focused information flow to deploying units and disciplined use of the networks will improve net communications. Unit training should focus on procedures and clarity of expression. Succinct and clear transmissions should minimize transmission times and condense traffic. Thinking about an issue after the microphone is keyed adds to the problem of unnecessarily long transmission times. This is true also on the data link. Messages should have a clear and succinct format. Users get the best performance from communications if they use voice nets for time-sensitive, mission-essential communications. Net saturation results when deployed units attempt to use the net to acquire a clearer understanding of their mission and theater OPCON. TACC should access a complete understanding of the role and OPCON of units that they task to go in-theater and present them with a comprehensive briefing. The payback will mean improved performance in the theater.

Ground Security Integration

Theater air mobility forces need to establish seamless ground security with collocated units. A breakdown in communications with collocated forces can cause problems. A TALCE, unaware or uncertain of its relationship to other units, may not properly integrate into a ground force's defensive plans. Consequently, the TALCE might react inappropriately to a penetration of the perimeter, causing confusion or worse. If a theater commander were to direct an evacuation of an airhead by airlift, or other means, how would a TALCE quickly coordinate a common evacuation plan and its execution when it is operating autonomously? In future airhead operations, uncertainty may compromise an operation. This problem area may be corrected easily through an educational process during unit training and reinforced through periodic exercises. It can be precluded in future contingencies by flowing information, prior to deployment, to participating units to define their relationship with other forces clearly.

Sustainment and Support

Fuel consumption by air mobility ground equipment is a critical operational factor. After the first day of continuous TALCE operations on Mogadishu's airfield, the organic fuel supply was depleting quickly. In response to the situation an ad hoc arrangement was established by the AME TALCE officer (who was the acting Mogadishu TALCE commander) with the Marine landing force (the 15th MEU[SOC]) commander and his S-4 (battalion logistics staff officer). Had the 15th MEU(SOC) not provided the needed fuels, the TALCE would have soon exhausted its own supply.

Sustainment

Fuel requirements can be estimated and incorporated in a contingency operation plan. With few exceptions all ground equipment consumes diesel or diesel equivalent fuels (i.e., JP-8 jet fuel). A typical 40K aircraft loader has a 37-gallon fuel tank. The loader consumes approximately one gallon of fuel per hour of operation. At that rate the 40K would require refueling on the second day of continuous operation. A 25K loader has a 43-gallon tank and also consumes about one gallon of fuel per hour. A 10K Hyster forklift has a 15-gallon tank and consumes nearly one gallon of fuel per hour. Because the consumption rates and fuel capacities are known, it is possible to anticipate the in-theater fuel requirements based on type and total number of equipment and planned periods of operation. These estimates should include CFR and other ground vehicles. Air mobility forces need not enter the theater, as they did at Mogadishu, without an established sustainment schedule. A more refined matrix based on specific equipment consumption rates should be created and made available to planners and operators.

The Joint Operation Planning and Execution System's (JOPES) automatic data processing application program—the movement requirements generator (MRG)—computes requirements for resupply.[3] The MRG or a compatible system should incorporate the matrix described above to accommodate the needs of deploying air mobility forces during the planning stage.

Fuel requirements for theater air mobility forces need to be identified in the contingency operation plan, logistics annex. Air mobility forces need to be appraised of the plan and told which units are tasked to provide support to them.

Speaking for a moment to a parallel fuel requirement, the few types of equipment that consume gasoline present an additional problem. The transport of gasoline is hazardous, and the fuel is not commonly used by US Army and Marine forces. If local gas stations are not accessible to air mobility forces, the requirement for gasoline may not be sustained, thereby impacting the use of affected equipment. One solution eliminates gasoline-consuming vehicles and equipment from the inventory.

Logistical Support

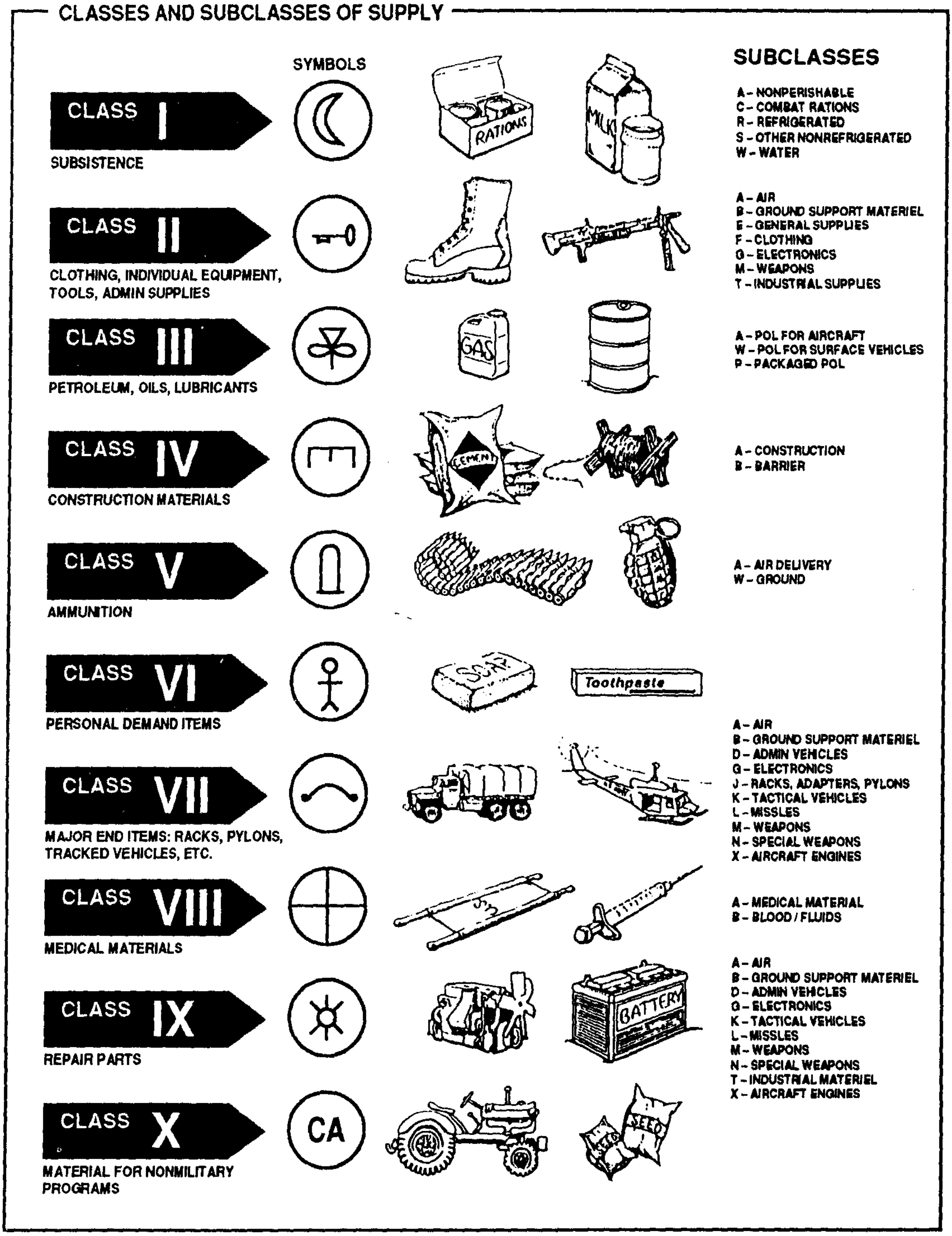
The same TALCE which had command and control problems at Bale Dogle also experienced difficulties in the area of sustainment and support. The TALCE unit nearly exhausted its organic potable water resources before replenishment channels were established at Bale Dogle. The problem developed because of confusion over interface between units and an unclear understanding of what unit the TALCE was attached to for support. The TALCE failed to establish a replenishment schedule with its collocated ground force (i.e., elements of the 10th Mountain Division) and fell into a strained relationship with them. The dimension of the problem became evident when the TALCE sent an urgent message, by way of the GYC-8 data linkup to the AME, stating that it was down to a few bottles of water per unit member. At the time that the message was sent, thousands of gallons of potable water were available at Bale Dogle for the TALCE to use. The breakdown in communications would have been more significant if the events had occurred in a less benign environment, where an enemy had the capability to challenge the airhead.

US Army and Marine forces use a simple system to request supplies. Items in the Federal supply system are divided into 10 major classes and several subclasses. Figure 22 illustrates the classes. Air Force personnel are generally unfamiliar with this system. When air mobility forces in-theater are attached to US ground forces for logistical support, they must know this system to clearly articulate system requirements. Air Force members in mobility units should learn the classes of supply to expedite requests and to minimize confusion.

Shelters

The Somalia experience demonstrated that AMC did not possess the means to shelter its deployed forces. The lack of tentage and related support equipment made austere conditions even more difficult for the troops. The impact on morale and health could affect the mission adversely. TACC should assure that a bare-base laydown package accompanies its airhead packages. The troops will have confidence that the command has their basic needs in mind while they attend to mission requirements. Air mobility personnel should be trained to erect the tentage so that its use is not tied to the availability of civil engineers.

Operation Restore Hope provided a learning experience for the newly activated Air Mobility Command and its tanker airlift control center. While the problem areas which surfaced



Source: FM 101–5–1, *Operational Terms and Symbols*, n.d.

Figure 22. Supply Classes

did not seriously jeopardize the mission, they had the potential to do so. AMC has learned a lot from its experience in Somalia. Most problems have relatively easy fixes that can be realized with little difficulty. The payback ensures greater certainty of mission success.

Notes

1. *Marine Corps Capability Plan (MCP)* (Washington, D.C.: United States Marine Corps, 26 June 1992), 2, II-5-9. Air Force personnel who depend on collocated Army and USMC units for replenishment should acquaint themselves with their logistic capabilities. Also, they should be aware of the days of supply (DOS) possessed by the collocated ground forces. A US Marine expeditionary unit, for example, initially deploys with 15 DOS.

2. "Attached for support" indicates the logistical relation between the attached unit (i.e., an air mobility unit, in the context of this chapter) and the supporting unit. The supporting unit has logistical responsibilities but not operational control over the supported unit (i.e., unless otherwise stated).

3. Armed Forces Staff College Pub 1, *The Joint Staff Officer's Guide 1993* (Washington, D.C.: Government Printing Office, 1993), I-29.

Chapter 5

Where Are We Going from Here?

This paper argues that airhead operations provide a critical element in the force projection equation. Ongoing changes in US military strategy increasingly have stressed force projection and the important supporting role of air mobility forces. They must, however, be organized, equipped, trained, and properly integrated to excel when the combatant commander needs them.

Present United States military force structure stresses the capability to confront opponents in two major regional conflicts in a manner which concedes advantage to its forces. To execute plans which are the product of that strategy, the United States must project substantial military power outside its borders. It must do so while relying on fewer combat and support assets than were possessed prior to recent major force restructuring and downsizing. The leaning out of force structure practically dictates that the optimum use of forces available is no longer just a virtue but is a necessity. While the emerging force structure is presently viewed as sufficient for its objectives, the overall strategy, to be effective, must rely on the force multiplying effect of air mobility. The thrust of this concluding chapter examines from the air mobility airhead operations perspective how ongoing changes in support forces' structures and their equipment and the acquisition of the C-17 Globemaster III will enhance air mobility's effectiveness as a force multiplier. Additional focus will be placed on areas still in need of improvement.

The ideal situation for the supported combatant commander is for his forces to flow into theater airheads timely and be positioned where they are needed so that units can quickly and effectively reconstitute in anticipation of employment. Some significant factors of concern during the insertion of forces into the theater already have been mentioned. While arriving forces are insufficent or relatively immobile, they can be destroyed by an opposing force. The airhead that the theater commander relies on for rapid introduction of forces and equipment is by its nature an area of vulnerability and, potentially, a bottleneck. Because of its critical importance to force insertion, sustainment, and extrication, it becomes a center of gravity. A viable enemy can be expected to respond to this lucrative target. Success, realized by enemy forces acting against the airhead, may neutralize any force multiplier advantage originally garnered and actually force the issue before the combatant commander is fully prepared to respond. Air mobility forces, through internal improvements, can reduce the vulnerability of forces in the airhead. The introduction of new generation support equipment and aircraft will accelerate the process at the airhead, thus minimizing exposure of forces. New capabilities will expand the number of airfields from which to conduct operations. Consequently, commanders will benefit directly from improvements in the air mobility arena. In many cases, those places where air mobility operations can be improved have come under discussion because of the Operation Desert Shield/Storm and Operation Restore Hope experiences. Those two contingencies, probably more than others, have served Air Mobility Command well in highlighting that which has worked well and those areas which have proved deficient or counterproductive. Careful analysis of recent experiences has focused on the role of the C-17 in contingencies, on ground operations support equipment, the restructuring of MSF, the timely flow of information, and on the ground environment and its impact on operations, personnel, and equipment.

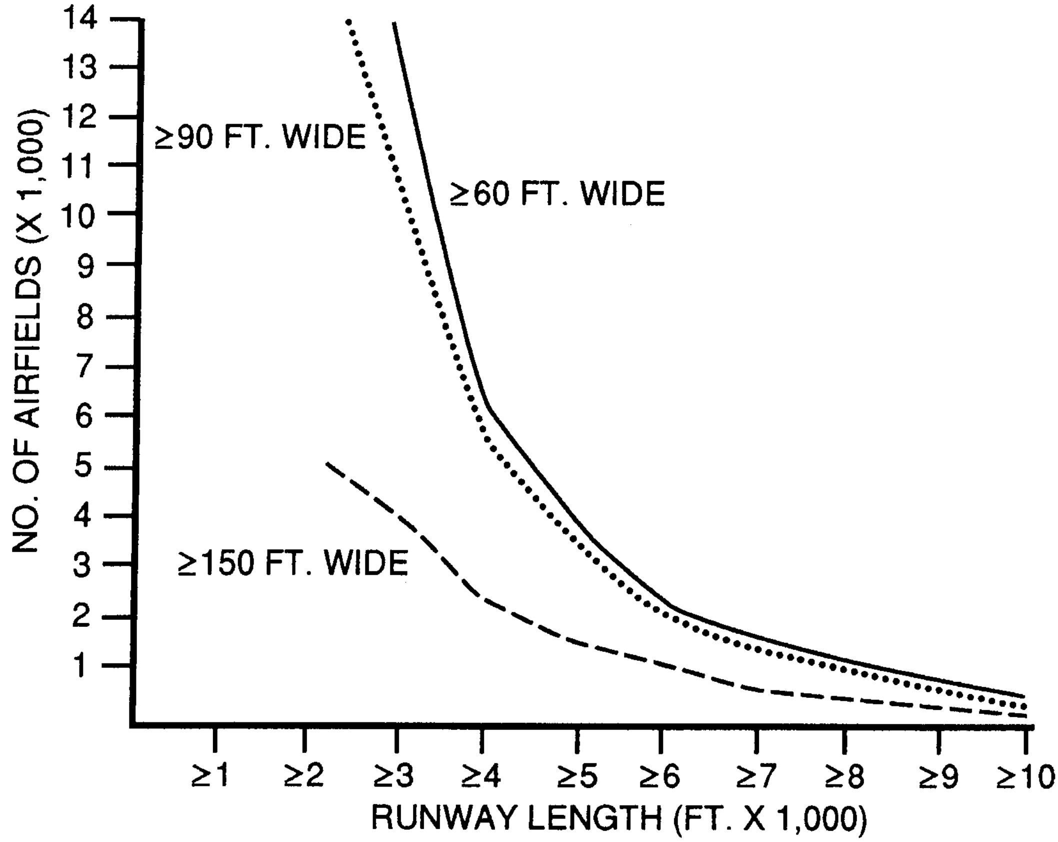
The C-17 Globemaster III

The centerpiece of air mobility airhead operations is the aircraft. The rapid introduction of forces into the theater and their in-theater air movement is essentially a function of aircraft capability. Specifically, the number and choice of airfields; the throughput of aircraft; and the flexibility of movement is determined largely by the operational limits of airlifters. The combatant commander's flexibility on the battlefield, indeed, may be curtailed by the inability of airlift to place forces where they have the greatest effectiveness or utility. The C-17 "Globemaster III," now entering into service with operational flying units, best illustrates what theater enhancements air mobility will provide.

When the C-17 was originally designed, planners envisioned its utility primarily in a mature theater, specifically Central Europe. They wanted the C-17 to act as both an inter- and intratheater airlifter, with the capability to operate into airfields not suitable for C-141s and C-5s but usually associated with the otherwise less capable C-130. The cold war has passed, and it is less likely that future operations will be conducted within a highly developed and sophisticated environment. The capabilities that the C-17 possesses, however, make it uniquely capable of enhancing the theater commander's options in the arenas where future contingencies more likely will be conducted. Until the arrival of the C-17, the theater commander had to rely on C-5, C-141, and KC-10 aircraft to introduce forces rapidly into the theater; the commander used C-130s primarily to conduct intratheater, small-field airlift. The C-17 has combined the best airlift qualities of those aircraft into one, highly capable machine. From the theater operations' perspective, the areas which best illustrate the strengths of the C-17 are its small-field capability, its efficient use of airfield ramp, and its impressive throughput (the amount of cargo which can be delivered in a given ground time).

The C-17's ability to operate on short, and relatively narrow runways for delivery of forces increases the options of the theater commander. A C-17 is "capable of safe and routine landings on a 4,000 feet long by 90 feet wide paved runway . . . with a payload of 160,000 pounds and fuel to [continue on] 500 nautical miles."[1] In contrast, the C-5 Galaxy is normally restricted to runways with a minimum length of 6,000 feet long by 147 feet wide, and the C-141, to 6,000 feet by 98 feet.[2] Third world runways, in contrast, are commonly 90 feet long by 130 feet wide. The exceptions are the large, international airports, which are usually 150 feet in width. Aside from the international airfields, runways are often in the range of 3,000 to 5,000 feet in length. Figure 23 illustrates runway distribution by length and width. Nations with a highly developed infrastructure have many runways which C-17s can use. The Federal Republic of Germany (West Germany) was assessed in a 1990 report for suitability of airfields. The results make a clear point. The number of airfields suitable for C-5s was 47, while for the C-17 the number increased to 132.[3] The less restrictive airfield requirements for the C-17 will have a measurable impact on operations anticipated in a major regional conflict.

The increased selection of airfields provides for the commander greater latitude in placing his forces in-theater. The larger the number of usable airfields, the greater the air flow into the theater. Access to smaller airfields will permit the delivery of forces to sectors previously unaccessible by inter-theater airlift, which should lessen in-theater repositioning by committed theater assets. More airfields mean that forces



Source: Lt Col Charles E. Miller, *Airlift Doctrine* (Maxwell, AFB, Ala.: Air University Press, 1988), 395.

Figure 23. Free World Runway Distribution (without the United States)

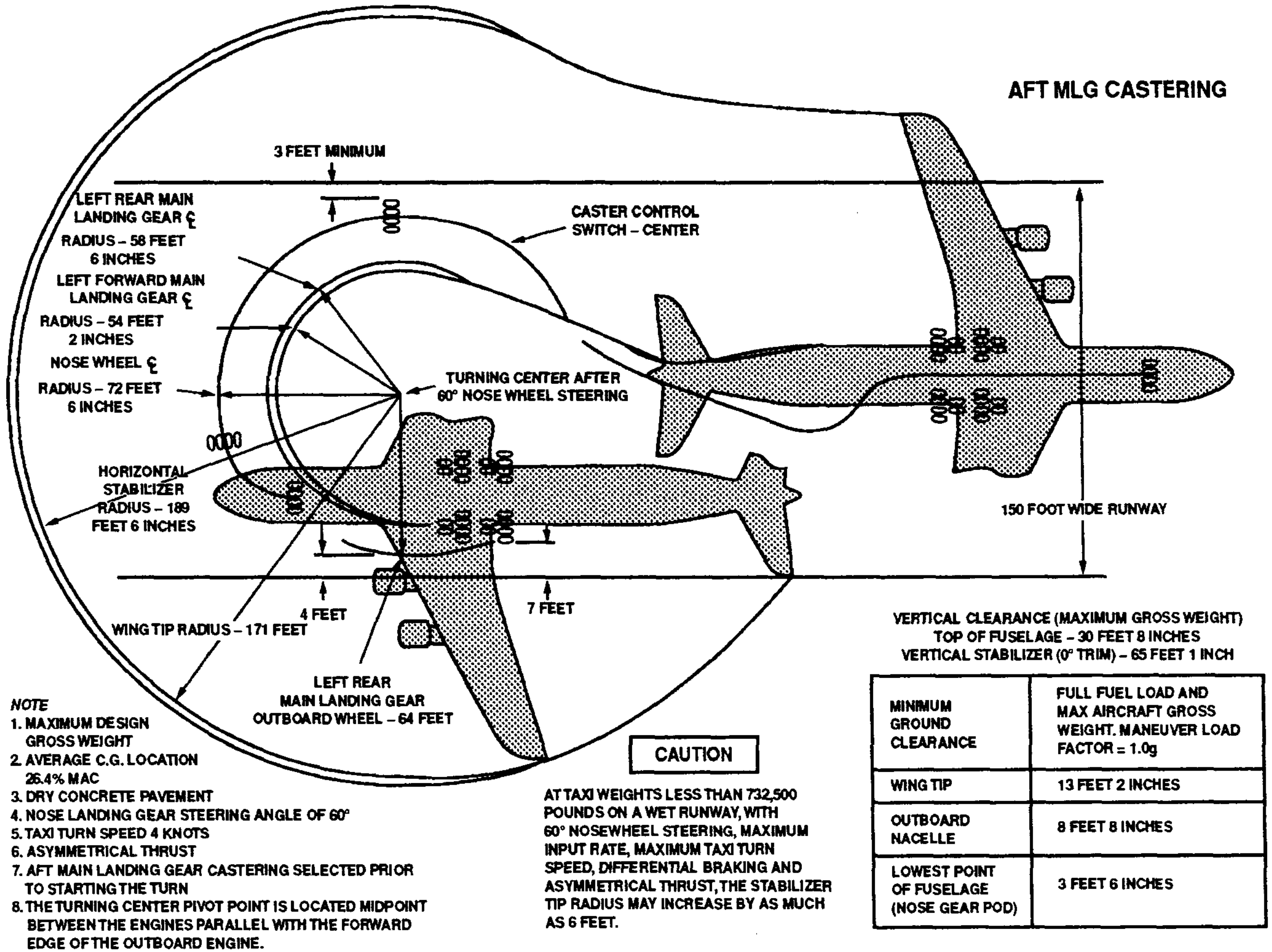
can move through and be dispersed from the airheads much more quickly. Additionally, the increased number of airfields will complicate denial operations by an opposing force. An enemy would have to anticipate and be prepared to react to movement through airfields. The alternative, where few airfields are usable, are exploitable chokepoints. When the combatant commander has more airfields to incorporate in his plans, his options increase, and he may have the luxury to employ some as part of diversionary tactics.

The C-17 at the Airfield

The C-17's agility increases the usability of small fields, where constricted maneuver surfaces limit or prohibit their use by other intertheater airlifters. The Globemaster III can make 180 degree turns within the confines of a 90-foot-wide runway by using the three-point star maneuver.[4] Because of its aft main gear castering, a C-5 is also fairly maneuverable on the ground, but it requires a 150-foot-wide runway to turn around (fig. 24). The C-17's agility results primarily from its backup capability (figs. 25A-B and 26A-C). The aircraft is "capable of backing up a 1.5 percent grade on paved surface with [a] 160,000 pound payload and fuel for 1,000 [nautical miles of follow-on flight]."[5] The turnaround maneuver means that aircraft can be taxied on an airfield without having to enter taxiways already occupied by other aircraft. Thus, as the usable area at the airfield increases, the number of aircraft on the ground can be maximized, and departing C-17s can be back-taxied on the runway proper and positioned for takeoff without requiring separate taxiways. At the tip of the spear, this translates to a greater usability of otherwise marginal or unsuitable airfields and an increased throughput. The latter advantage emanates from the aircraft's maneuverability.

Throughput

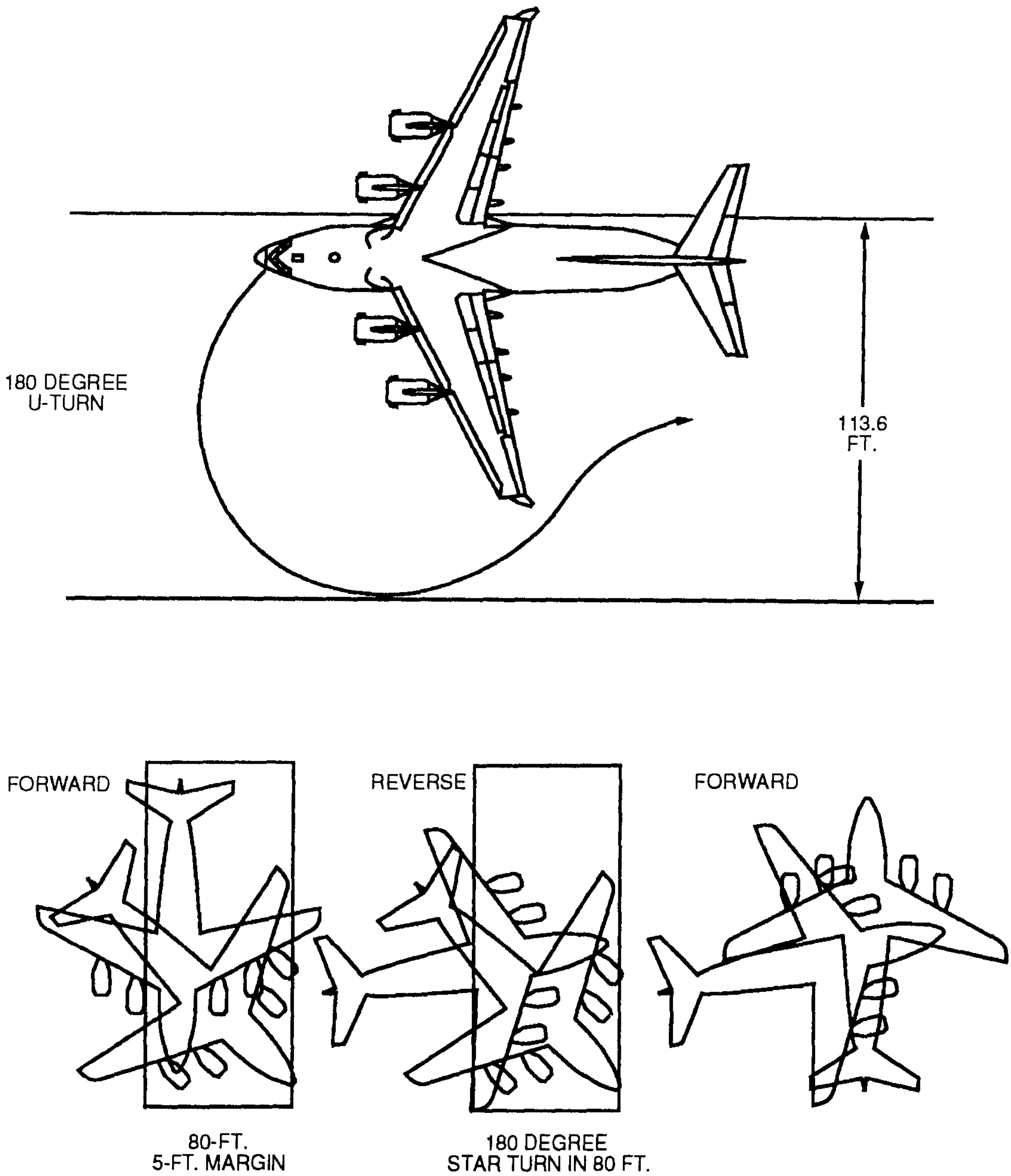
A hypothetical situation, using the airfield ramp at Howard Air Force Base, Panama, is shown in figure 27. The illustration considers the Casa 212s and the C-130s normally located at



MINIMUM GROUND CLEARANCE	FULL FUEL LOAD AND MAX AIRCRAFT GROSS WEIGHT. MANEUVER LOAD FACTOR = 1.0g
WING TIP	13 FEET 2 INCHES
OUTBOARD NACELLE	8 FEET 8 INCHES
LOWEST POINT OF FUSELAGE (NOSE GEAR POD)	3 FEET 6 INCHES

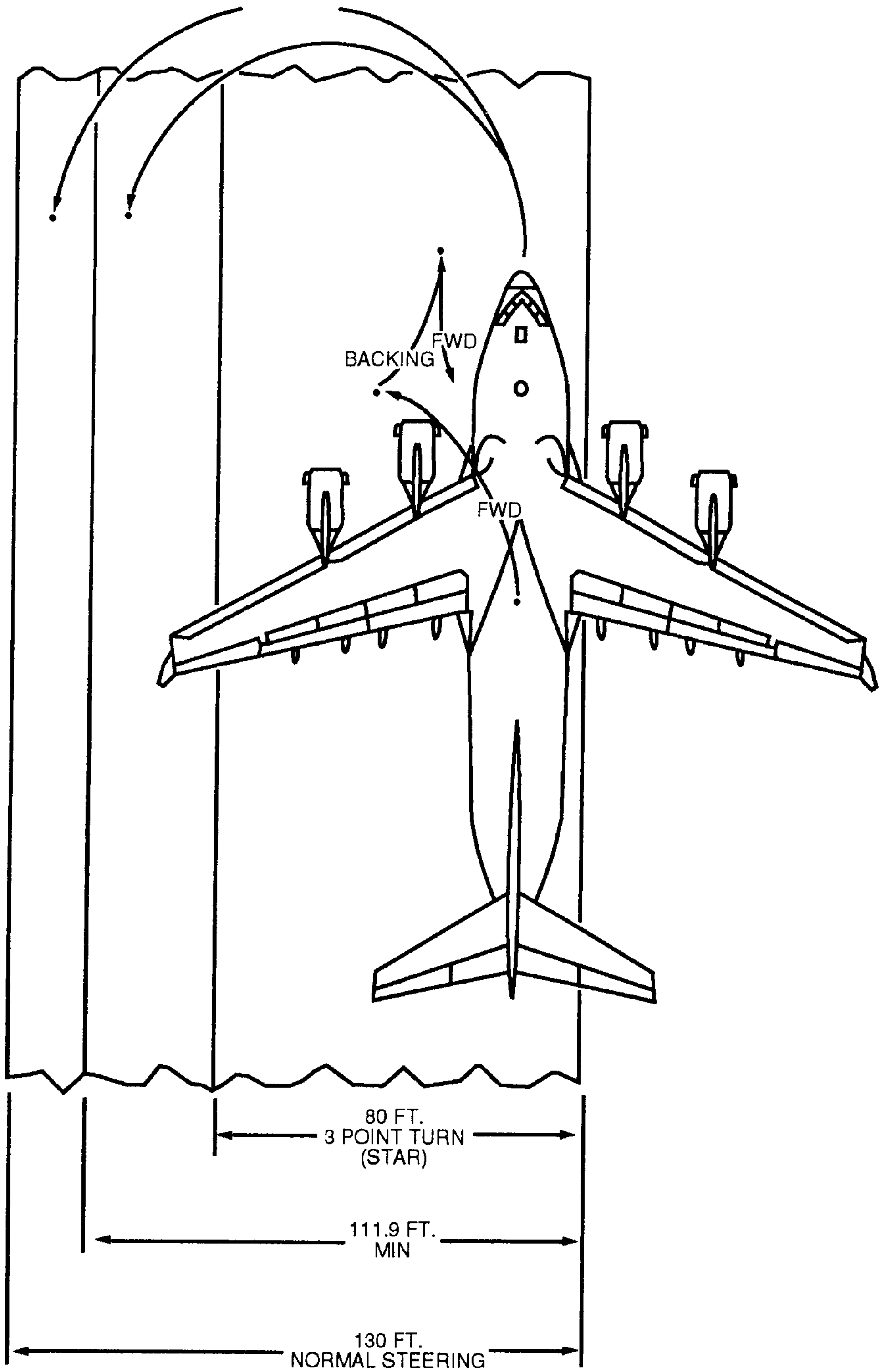
Source: Flight Manual C-5-1, 2 December 1992, 2a-108.

Figure 24. C-5 Turning Radius and Ground Clearance



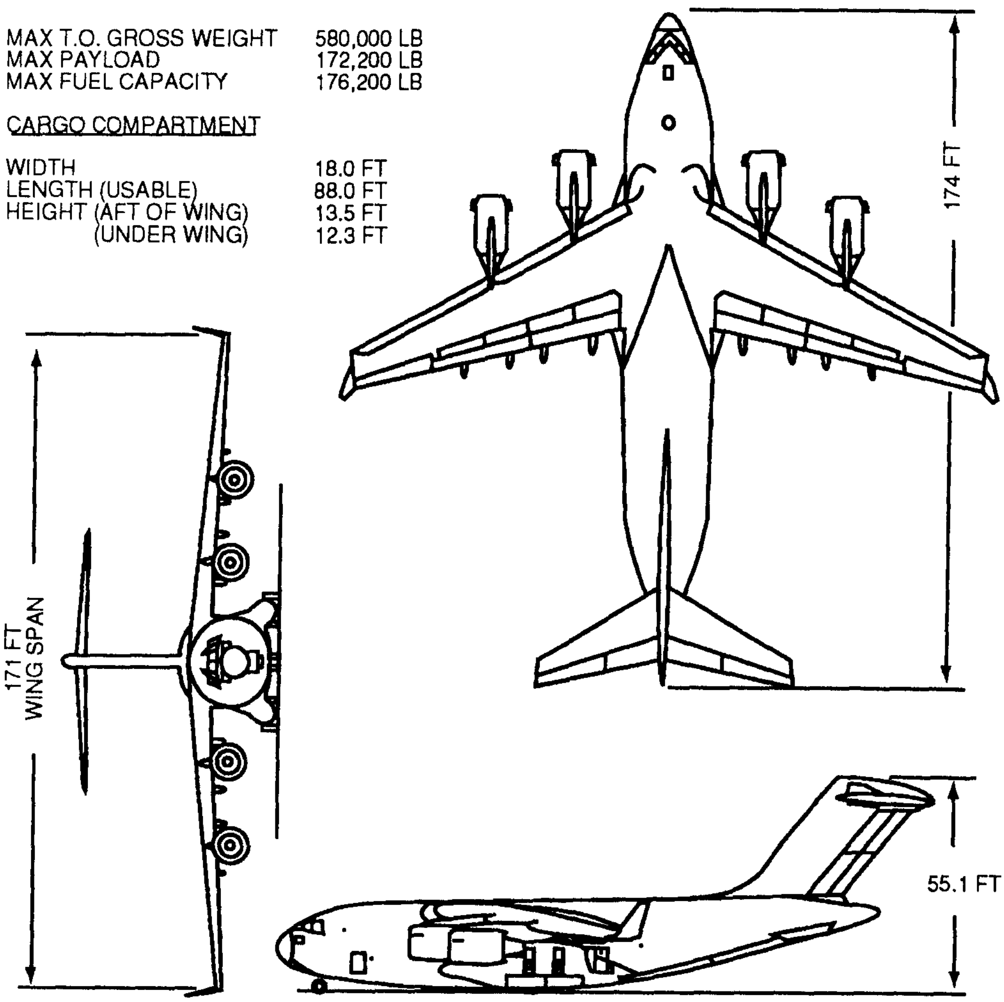
Source: Lieutenant Colonel Skelps, *Multi-Service C-17 Employment Concept* (Scott AFB, Ill.: United States Air Force Airlift Concepts and Requirements Agency, 12 December 1990).

Figure 25A. C-17 Turnaround



Source: Lieutenant Colonel Skelps, *Multi-Service C-17 Employment Concept* (Scott AFB, Ill.: United States Air Force Airlift Concepts and Requirements Agency, 12 December 1990).

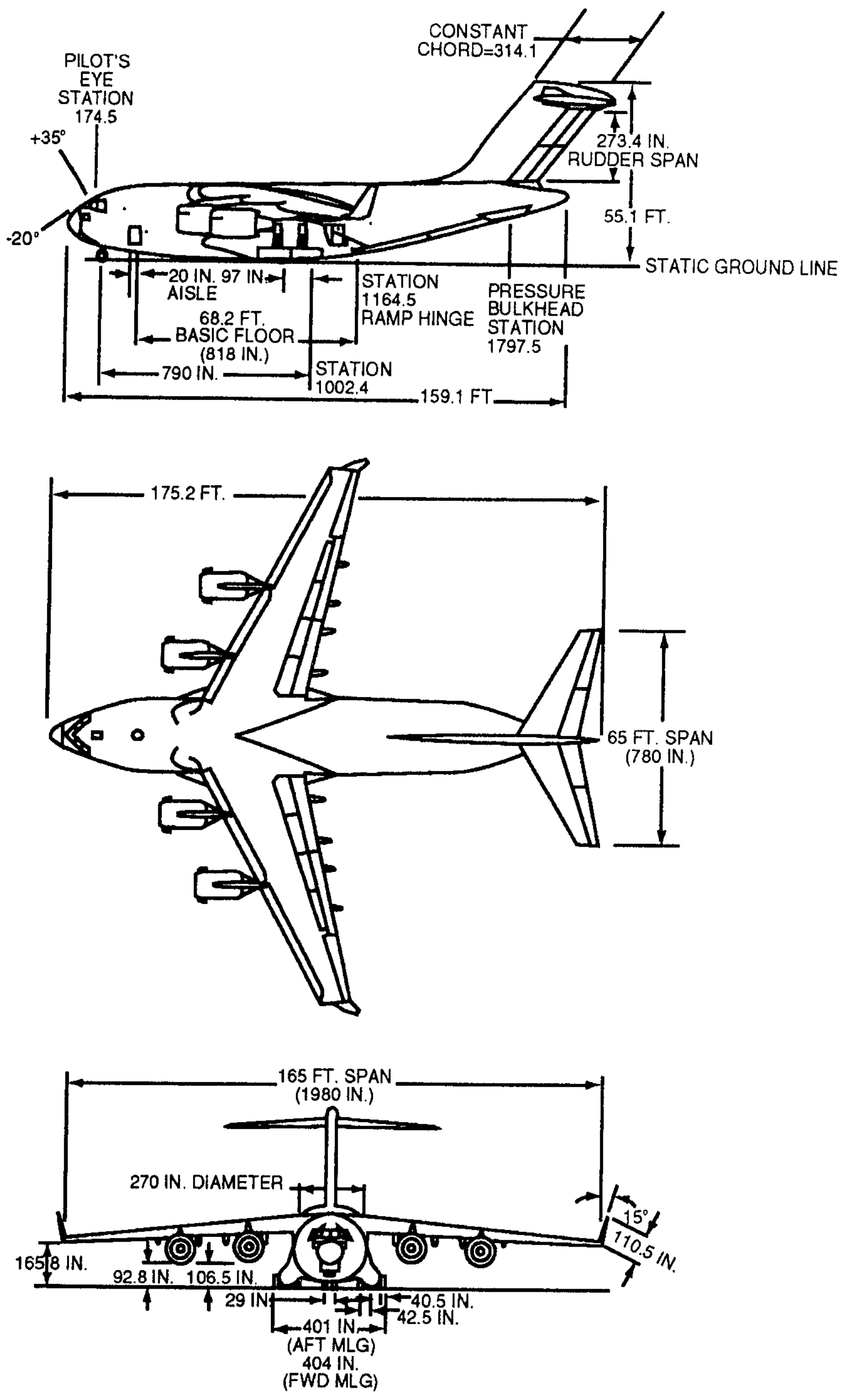
Figure 25B. C-17 Turning Radius and Ground Clearance



Source: Lieutenant Colonel Skelps, *Multi-Service C-17 Employment Concept* (Scott AFB, Ill.: United States Air Force Airlift Concepts and Requirements Agency, 12 December 1990).

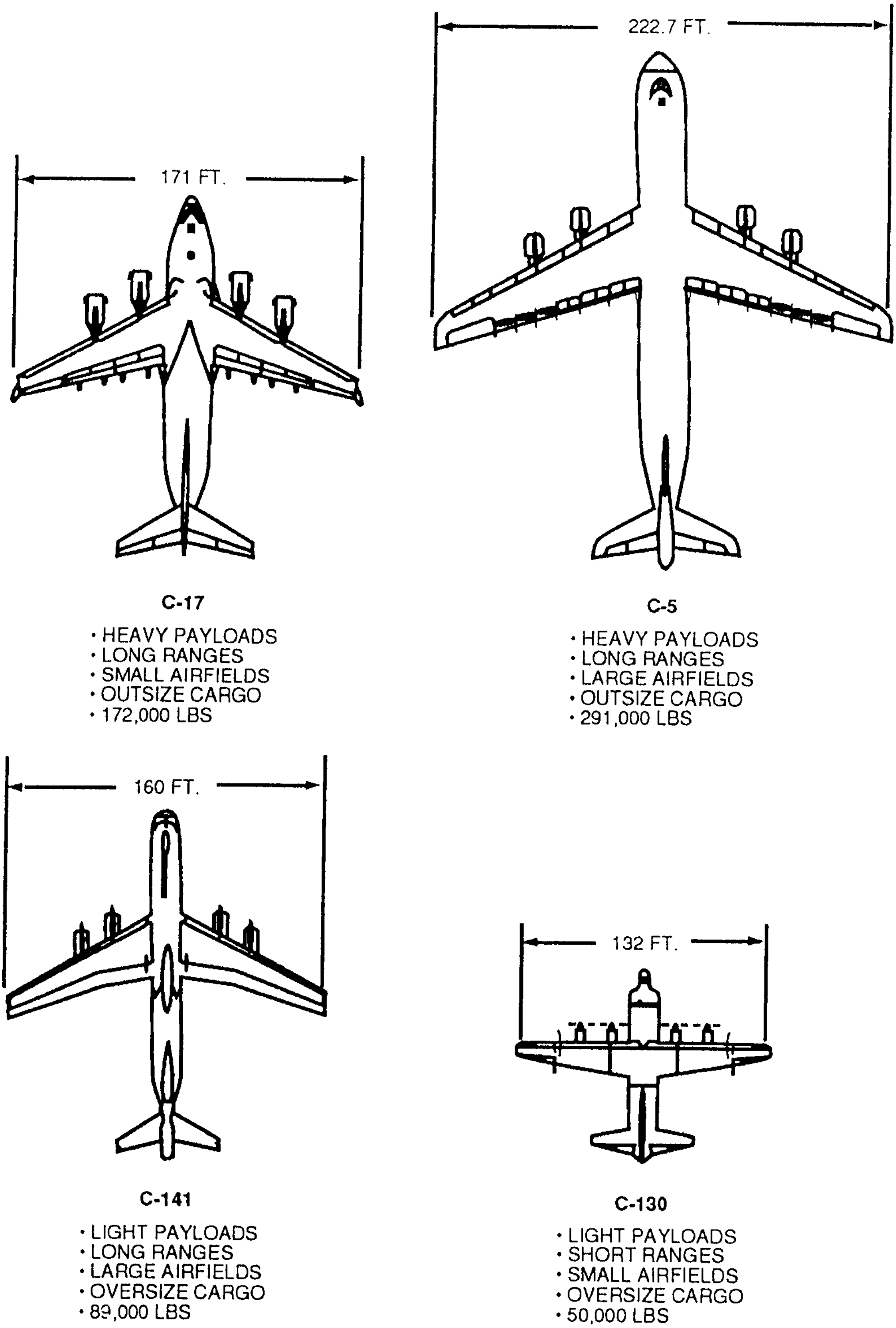
Figure 26A. USAF/McDonnell Douglas C-17A

the station. The example compares flow and delivered cargo for the C-5 and C-17. In a given 24-hour period, the C-5 flow could deliver 1,864 tons, and the C-17 flow, 6,002 tons. The result is a 3.2:1 advantage of the Globemaster III over the Galaxy.[6] Complementing the C-17's ability to exploit limited ramp space is its high technology multipurpose cargo area which significantly simplifies and accelerates cargo upload and download in contrast to other airlifters. The C-17's advanced cargo area enhances airhead operations by its speedier handling



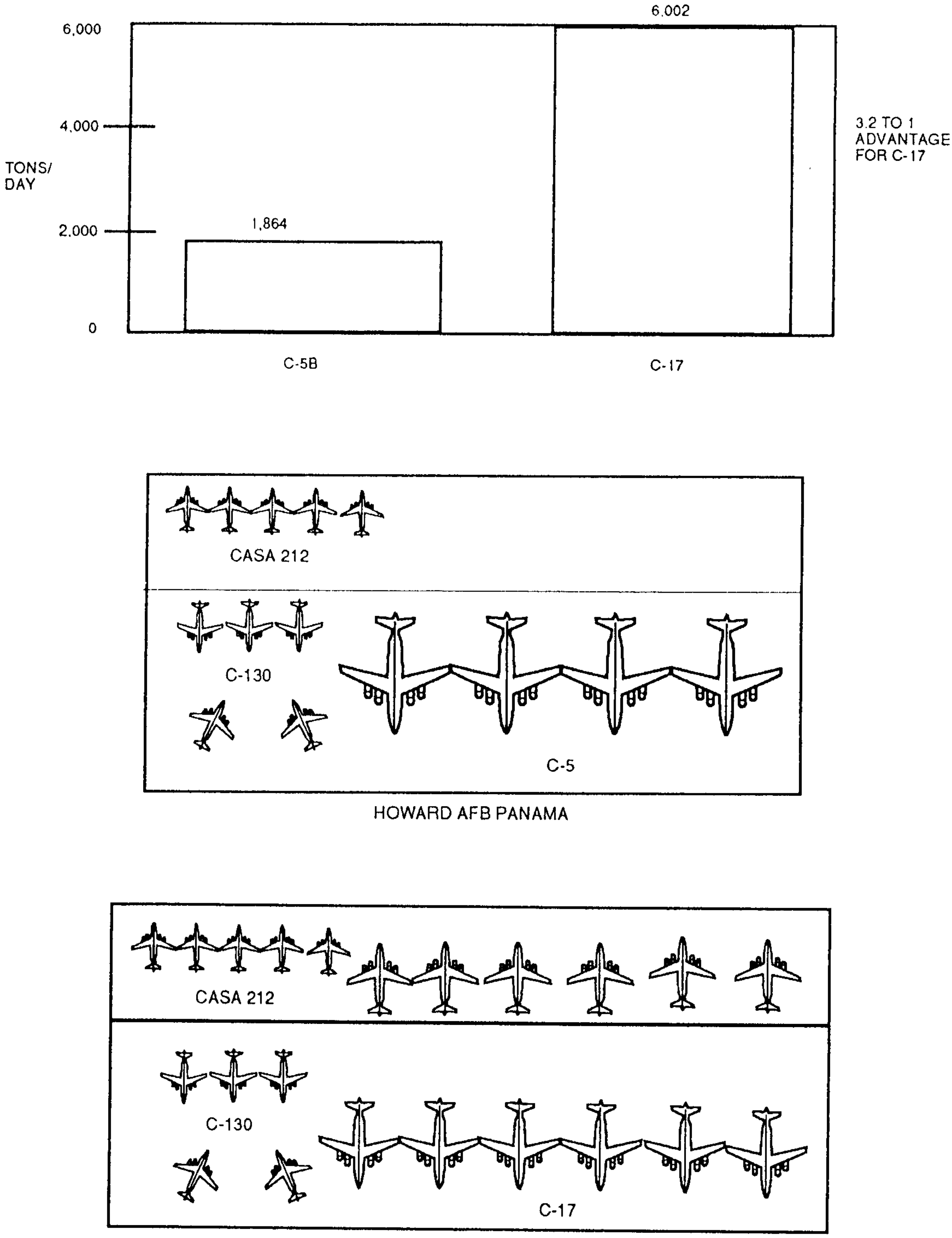
Source: Lieutenant Colonel Skelps, *Multi-Service C-17 Employment Concept* (Scott AFB; Ill.: United States Air Force Airlift Concepts and Requirements Agency, 12 December 1990).

Figure 26B. C-17 General Aircraft Dimensions



Source: Lieutenant Colonel Skelpes, *Multi-Service C-17 Employment Concept* (Scott AFB, Ill.: United States Air Force Airlift Concepts and Requirements Agency, 12 December 1990).

Figure 26C. C-17: Small on the Outside



Source: Maj Peter Fucci, subject: C-17 Program Status, position paper, Headquarters AMC/XPQC, 11 February 1994.

Figure 27. Throughput—The Key to Operational Capability

of cargo. The additional benefit of rapid upload and download allows for reduced exposure of the aircraft, its cargo, and ground personnel to threats. The advances which the C-17 will bring to airhead operations parallel the flexibility and increased capability, which the next generation materials handling equipment (MHE) promises.

Materials Handling Equipment

Air Mobility Command is in the final stages of selecting for production the 60K (60,000-pound load capability) large capacity aircraft loader. The 60K capacity will increase considerably the cargo handling at the airhead and minimize the amount of MHE needed. Previous generation MHE (25K and 40K) could handle a maximum of three pallets and 25,000 pounds (one type is capable of 36,000 pounds) and five pallets and 40,000 pounds, respectively.[7] The 60K will transport a maximum of six pallets and 60,000 pounds. Additionally, the 60K will support all cargo-carrying aircraft in the air mobility fleet. This capability presently is not possible with the MHE. The 60K can download a C-17's full load of pallets (18) in three passes; a 25K would require at least six passes (the variable being pallet weight); and a 40K, four passes. Another enhancing characteristic of the 60K is the relative ease in airlifting it. Unlike other loaders, the 60K can be placed on board the C-5, C-17, and C-141 aircraft without shoring. Built up sections of sturdy lumber, shoring kits must be available whenever and wherever previous generation aircraft loaders are airlifted to decrease the approach angle of aircraft cargo ramps, to protect the aircraft floor, and to distribute loading.[8] Consequently, the 60K's rapid download and upload, without the need of shoring, especially in operations where aircraft minimum ground time is essential or highly desirable, will contribute greatly to mission success. The 60K can exit its aircraft in the airhead and immediately support arriving aircraft. In addition to the 60K's enhancement of cargo handling, the KC-10 Extender is undergoing modification to improve movement of cargo into an austere environment.

The KC-10 Self-Contained Loading Platform

Onboard loaders are being installed on KC-10s, equipping them with a self-contained loading platform.[9] The KC-10 Extender was limited by its dependence on specialized MHE, required at each serving airfield to facilitate cargo handling. The modification permits far greater flexibility to airlift planners, especially to the theater commander. In the event that inbound KC-10s must be diverted for download at a different airfield than originally planned, a greater confidence will prevail that the cargo will be deliverable to where it's needed without the need for specialized equipment. The theater commander's confidence in placing cargo and troops where they should be is further enhanced by the in-transit visibility (ITV) concept.

In-Transit Visibility

ITV seeks to provide a high degree of certainty that cargo and troops in transit can be located at any given moment. Using the supporting system of ITV, the theater commander can "reach out and touch" his forces while they are progressing towards the theater.

The crisis nature of contingencies often compels the combatant commander to modify plans while forces are in the deployment process. ITV will not only locate specific in-transit forces and equipment, it will identify the specific aircraft and mission number. If plans call for a change in delivery point, ITV will make it highly possible to redirect affected forces.

The "loss" (the inability to track) of airlifted cargo was a continual problem in Desert Shield/Storm. The problem caused some concern for the user and amplified the work load of air mobility support forces, who expended countless man-hours tracking down cargo. For a combatant commander, the loss of essential materiel, especially at a critical juncture in operations, is untenable. Force downsizing has considerably reduced or eliminated redundancy in force structure. Consequently, the importance of and the accountability for any in-transit materiel increases because it may not be easily replaced. The systems now on-line—or being introduced—enhance confidence that there will be almost immediate accountability and that forces and materiel moving through the airbridge will be delivered where and when needed. Those systems include the remote consolidated aerial port system (RCAPS) and the aerial port documentation and management system (ADAM III), and RCAPS II.[10]

The Remote Consolidated Aerial Port System

RCAPS is used for cargo and passenger manifesting. Information on passengers and cargo is processed and fed through long-haul communications into the main Air Mobility Command computer system. Hence, through USTRANSCOM's Global Transportation Network (GTN), it is sent to downline stations, including the US Army's Logistics Intelligence File. The Military Standard Transportation and Movement Procedures provides a data base for tracking cargo.[11] The key elements for tracking in-transit forces are their unit line numbers (ULN) and transportation control number (TCN). The ULN identifies each force requirement separately in the time-phased force and deployment data, a product of the planning process. The TCN identifies a particular shipment of cargo.

RCAPS and related systems help to dispel the "fog of war," which tends to envelop the early stages of force deployment and employment. The information flow from the systems lessens the overall confusion which an already overburdened commander and supporting staff must sort through. RCAPS is an integral part of the theater commander's air mobility support forces' capability. The supporting forces are undergoing restructuring and equipping for improved responsiveness and capability.

Global Reach Laydown

The experiences of recent contingency operations have demonstrated that air mobility forces must be deployed with organic capability if they are to operate in an austere, bare-base environment. Forces must be tailored and equipped to conduct effective operations with minimum or no support from their respective theaters. The concept which responds to these objectives is Global Reach Laydown (GRL).[12]

Global Reach Laydown soon will become the standardized structural mechanism for erecting an air mobility air bridge. Consisting of five fundamental force modules—onload, contingency tanker task force, stage/en route, hub/transload, and spoke/offload—an actual package will be notionally generated to fit specific contingency requirements.[13] The last two modules—hub and spoke—are normally positioned within a theater and operate out of airheads. Mobility support forces, previously discussed in chapter 2, will operate, under the GRL concept (based on specific location requirements) at each functional location in the air bridge structure and will be generated from air mobility operations groups (AMOG) and air mobility support squadrons (AMSS). The building blocks used to functionally tailor capability to specific mission needs are the unit type codes (UTC).

Air Mobility Operations Groups

Two AMOGs, one on the West Coast and the other on the East Coast of the United States, will maintain a ready core of Air Mobility Command mobility forces to provide leadership and much of the air mobility support assets necessary to assure rapid, flexible response to contingencies.[14]

Under the reorganization of MSFs, the AMOGs will assemble under one commander the capabilities needed to erect an air bridge's support structure. The functional areas are divided among the group's subordinate squadrons. An AMSS, collocated with its AMOG, possesses command and control, an aerial port flight (the cadre for cargo and passenger handling operations), a maintenance flight (providing cadre for en route aircraft maintenance), a communications flight (providing rapid response deployable communications capability), and a combat control flight. Other geographically separated air mobility support squadrons replicate the same functional capabilities (except combat control) and are based with immediately accessible airlift assets. All AMSSs are successors to the airlift control squadrons, which heretofore have been tasked to provide the TALCE. The airlift control squadrons will standdown upon activation of AMSS units. Each AMOG will possess a collocated air mobility operations squadron (AMOS). The AMOS concept, described in chapter 2, remains essentially the same under reorganization. Other AMOG squadrons are geographically separated units. A combat camera squadron and a combat control squadron provide combat photography and terminal air traffic services, respectively.

The end product of reorganization will be able to "project from [the] CONUS and 'lay down' a tailored en route structure in response to any contingency."[15] The innovative AMOG concept will have even greater effectiveness when subjected to long-term operational demands and if two additional structural changes are incorporated. First, this positioning will allow manpower and organic assets assigned under the present plan to subordinate GSUs and to be consolidated at one geographic location with their respective group. Second, it organizes the group's operational elements into a tier structure for more effective management and utilization. Tier architecture can take a number of forms. The one suggested here follows a three-tier organization.

Briefly, three flights are created from the group's mobility manpower. Each flight has the capability to fulfill tasking requirements as defined in the unit mission statement. Tier one is maintained in ready status to respond on short notice to taskings. Tier-two personnel conduct periodic unit training, participate in scheduled short-term exercises, and perform home station duties. Those in tier-three status can take ordinary leave, arrange such base appointments as periodic physicals, medical and dental care, testing, meet flight crew requirements (this could be placed in tier two), and so forth. Flights are periodically rotated through each tier. Adjustments to flight manning may be made to maintain a rough balance among individuals for actual time spent on temporary duty. The structure is tailored to fit a specific unit's manning, requirements, and manageability. A tier system restores predictability to an individual's schedule, thereby enhancing quality of life. It enables the commander to utilize limited manpower more effectively and gives the commander increased confidence in his ability to rapidly and capably respond to taskings. The tier concept has been described here to encourage its incorporation in AMOG structuring.

Conclusions and Recommendations

The ongoing changes and the introduction of new capabilities to air mobility forces are much more than a desirable development; they are necessary if United States' military strategy, which relies heavily on force projection capability, is to be credible. Force projection is the motivation behind national policy; air mobility is the means to make it feasible; and the airhead is the linchpin, where force confronts the points of friction.

Advancements made in equipment and force structure will provide air mobility forces with the wherewithal to fulfill their role in contingencies, humanitarian relief efforts, or any other situation requiring the movement of forces, and materiel to distant places. An important variable in the equation is the preparedness of personnel. The conditions under which operations are conducted are frequently far more taxing than is normally experienced on CONUS air bases. The presence of threats, an unforgiving environment, and marginal living conditions tend to magnify the difficulties inherent in almost all contingencies. Add to that cauldron short notice changes in taskings, which require nothing less than a total refocusing of effort. Mission success under those circumstances is best answered by forces which have been properly prepared. The forecast for the future is clear. Mobility support forces often will consume just one part of a theater commander's overall effort. The commander depends on the full integration of the forces into theater operations. As battlefields become more fluid and force sustainment becomes essential to success, MSF must be flexible and support the theater effort completely.

Past mobility support forces, especially the TALCEs, have been "orphan children." They did not train properly for integration into the in-theater mechanism. Instead, they worked aircraft transiting their location as if in a vacuum and minimized interface with collocated ground forces. They enjoyed their autonomy and preferred to interact at "arm's length." This unnatural relationship with theater forces should be rectified through more realistic training and interactivity emphasized.

Mobility support forces operations officers should become familiar with US Army and Marine Corps force structure, unit capabilities, and functions. Checklists for the conduct of MSF operations in the airhead or for any joint environment should include direct, formal communications with collocated ground forces. Establishment and dissemination of security procedures, use of force (and, where applicable, rules of engagement), emergency medical procedures, tasking of CFR assets, and replenishment procedures (for rations, fuels, ammunition, and other requirements) should not be left to chance or to informal channels. Once channels of communications and common operating procedures have been established between air mobility forces and collocated ground forces, MSF personnel should be briefed to permit full compliance. These recommendations may appear to be at the common sense level, but experience has reflected otherwise. Future operations may be conducted under hostile or very difficult conditions. Under those circumstances, events may amplify any weaknesses in the procedures listed above to the point where critical operations are compromised. Training and exercises which promote "jointness" at all operational levels will enhance the support that mobility support forces provide to the combatant commander. Training should also emphasize rapid redeployment of MSF assets, once in the theater. TALCEs, in particular, should be better prepared to execute hasty movements from one airfield to another while in a threat environment. To emphasize, airheads are chokepoints and make lucrative targets.

Air mobility support forces, overall, have done well in contingencies and in operations other than war. New equipment will enhance even more the support which MSF can provide to a theater or to any type of operation. Mobility support forces should not rest on their laurels. With force downsizing, a growing spectrum of threats, and an increasingly challenging environment in which to conduct operations, mission accomplishment will require greater effort with limited resources. Mobility support forces tasked with the airhead mission must look beyond past successes to gauge more accurately preparedness for the future. Built on a clear vision of future operations, training will assure continued success in the airhead arena.

Notes

1. Maj Peter Fucci, *FINAL Operational Requirements Document* (Scott AFB, Ill.: Headquarters AMC/XPOC, 15 September 1993), 6.
2. MACR 55-2, *C-5 Strategic Airlift Operations* (Scott AFB, Ill.: 1 June 1992), chapter 5, 6. C-5 minimum runway length is waiverable down to 5,000 feet.
3. *Multi-Service C-17 Employment Concept* (Scott AFB, Ill.: Airlift Concepts and Requirements Agency, 12 December 1990), 3, 4. Hereafter referred to as ACRA.
4. Fucci, 7.
5. ACRA, A-1; Fucci, 7; *The C-17 in Desert Shield/Desert Storm: Update* (Scott AFB, Ill.: Headquarters MAC/Public Affairs, 13 March 1991), 7, 8.
6. Lt Gen Herb Temple, Retired, "C-17 Globemaster III," *Officer Review*, January 1994, 3–5; Maj Peter Fucci, subject: C-17 Program Status, (Position paper, Headquarters AMC/XPQC, 11 February 1994).
7. MAC Pamphet 50-13, *MAC Affiliation Program Airlift Planners Course* (Scott AFB, Ill.: 23 December 1991), 39.
8. Ibid., 49.
9. Report on materials handling equipment, transmitted by Headquarters AMC/XOP, 28 February 1994. Report is undated and lists no author.
10. Lori Farnsworth, subject: In Transit Visibility (ITV) (Point paper, Headquarters AMC/XOST, Scott AFB, Ill., 22 December 1993).
11. Ibid.; Tony Fornasier, subject: Remote Consolidated Aerial Port Subsystems (RCAPS) (Point paper, Headquarters AMC/XOST, Scott AFB, Ill., 11 January 1994).
12. "Base Plan to AMC Programming Plan (PPLAN) 94-4" (draft), Scott AFB, Ill., Headquarters AMC (1 April 1994), 2.
13. *Air Mobility Command Air Mobility Master Plan* (Scott AFB, Ill., Headquarters AMC, 15 October 1993), 3–17.
14. Ibid.; Lt Col Denny Alford, subject: Global Reach Laydown Packages (Concept paper, AMCOS/XPXO, Scott AFB, Ill., 31 December 1992).
15. *PPLAN 94-4*, 1.

Bibliography

Books

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

Periodicals

Antal, Maj John F., and Capt Robert L. Dunaway. "Peacemaking in Somalia: A Background Brief." *Marine Corps Gazette* 77, no. 2 (February 1993): 38–43.

Lynch, David J. "The C-17 Fights the Headwinds." *Air Force Magazine*, July 1993, 36–40.

Omaar, Rakiya. "Somalia at War with Itself." *Current History* (Africa Issue) 91, no. 565 (May 1992): 230–34.

Taylor, Lt Col John M., et al. "Somalia, 1993." *Marine Corps Gazette* 77, no. 11 (November 1993): 73–88.

Newspaper Items

Lorch, Donatella. "Marines Escort Food to Hungry." *New York Times*, Thursday, 17 December 1992, A11.

_____. "A Walk in the Sun, Where the Heat is the Enemy." *New York Times*, Friday, 18 December 1992.

Perlez, Jane. "Somali Capital Mostly Peaceful; Gunmen Retreat from Marines." *New York Times*, Thursday, 10 December 1992, A1.

Schmitt, Eric. "Somali Welcome Aside, the Marines Are Jittery." *New York Times*, Friday, 11 December 1992, A22.

Unit and Staff Office Histories

Headquarters Air Mobility Command (AMC/HO). "The Air Mobility Command: Historical Highlights." 1992.

_____. "Operation Provide Relief."

Reports

AMC/CV Staff Study. "Global Reach Laydown Packages." Scott AFB, Ill.: 15 January 1993.

"AME Operation Restore Hope Airfield Summary." CJTF Somalia, Mogadishu, Somalia. 8 January 1993.

Aspin, Les, secretary of defense. *The Bottom-Up Review: Forces for a New Era.* Washington, D.C.: Department of Defense, 1 September 1993.

"Daily Itinerary, Channel STAR Missions." CJTF Somalia (Restore Hope), Air Mobility Element, Mogadishu, Somalia, January 1993.

Evans, Col Walter, DIRMOBFOR, CJTF Somalia. "Operation Restore Hope After Action Report." Mogadishu, Somalia, 7 April 1993.

Lund, John, et al. *Project Air Force Analysis of the Air War in the Gulf: An Assessment of Strategic Airlift Operational Efficiency.* Study no. R-4269/4-AF. Rand Corporation, Santa Monica, Calif.: 1993.

Powell, Gen Colin L., chairman of the Joint Chiefs of Staff. *The National Military Strategy of the United States.* Washington, D.C.: Government Printing Office, January 1992.

Rice, Donald B., secretary of the Air Force. *Global Reach—Global Power: The Evolving Air Force Contribution to National Security.* Washington, D.C.: Department of the Air Force, December 1992.

Skelps, Lt Col, AMC/XOOCM. Position paper. "Affiliation Training." 14 July 1993.

______. Position paper. "C^2 Connectivity with TACC (TALCE)." 14 July 1993.

______. Position paper. "On TALCE Capability." 14 July 1993.

______. Position paper. "Theater-Strategic Interface." 14 July 1993.

Springer, Lt Col, AMC/XOOM. Position paper. "Air Mobility Element." 7 July 1993.

______. Position paper. "AMMP Operational Task Evaluation; ARC Air Mobility Element Stand Alone Capability." 13 July 1993

"Summary—Operation Restore Hope." JULLS Long Report, JULLS title listing. 17 June 1993: B-2 through B-7 and 88–167.

United States Air Force Airlift Concepts and Requirements Agency (ACRA), MAC-TRADOC-MCCDC. *Multi-Service C-17 Employment Concept.* Scott AFB, Ill., 12 December 1990.

"USAF Combat Control Provide Relief Airfield Summary." Mombasa, Kenya, 27 November 1992.

Public Documents

The White House. *National Security Strategy of the United States.* Washington, D.C.: Government Printing Office, August 1991.

Plans

Air Mobility Command (AMC). *Air Mobility Command Air Mobility Master Plan.* Scott AFB, Ill., 15 October 1993.

US Marine Corps. *Marine Corps Capability Plan (MCP).* Washington, D.C., 26 June 1992.

Manuals, Regulations, Directives, and Other Publications

Air Force Manual (AFM) 1-1. *Basic Aerospace Doctrine of the United States Air Force.* 2 vols. March 1992.

Air Mobility School. *Acronym Dictionary.* 22d ed. US Air Force AMS/DTC, Scott AFB, Ill.: April 1993.

Armed Forces Staff College (AFSC) Pub 1. *The Joint Staff Officer's Guide 1993.* Washington, D.C.: Government Printing Office, 1993.

Flight Manual Technical Order 1C-5A-1. "USAF Series C-5A and C-5B." 19 September 1990. Change 2. 15 January 1992.

Joint Pub 1-02. *Department of Defense Dictionary of Military and Associated Terms.* 1 December 1989.

MAC Pamphlet 50-13. *MAC Affiliation Program Airlift Planners Course.* Scott AFB, Ill., 23 December 1991.

MACR 55-3. *MAC Airlift Control Elements (ALCE).* Vol. 4. Scott AFB, Ill.: 21 May 1991.

MACR 55-25. *Operations, Airlift Control Element.* Scott AFB, Ill.: 6 June 1983.

Manpower Force Element Listing, US Air Force, 19 March 1993:
UTC 7E1ABO
UTC 7E1ACO
UTC 7E1AEO
UTC 7E1AFO
UTC 7E1AGO
UTC 7E1AHO
UTC 7E1AJO
UTC 7E1AKO

Technical Order 1C-17A-2 00GV-001 (preliminary). Change 1. McDonnell Douglas Aerospace Transport, Long Beach, Calif., 2 November 1993.
United States Army Intelligence and Threat Analysis Center (USAITAC) Handbook ATC-RM-1100-065-93. *Restore Hope: Socaliinta Rajada Soldier Handbook*. December 1992.

Briefings

Brandtner, Lt Gen Martin L., Joint Staff, director for Operations. Briefing. "The National Military Command Structure." Maxwell AFB, Ala., 15 March 1993.
Evans, Col Walter, commandant, Air Mobility School. Briefing. "Restore Hope Somalia." Air Mobility School, Scott AFB, Ill., 29 July 1993.
Ford, Maj Gen Phil, Directorate of Plans and Programs. Briefing. "USAF AMC Airlift Operations." Maxwell AFB, Ala., 27 October 1993.

Index

☆U.S. GOVERNMENT PRINTING OFFICE:2000-533-007/22080

THIS PAGE INTENTIONALLY LEFT BLANK

THIS PAGE INTENTIONALLY LEFT BLANK