REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	2 Jun 00	Master's Thesis 6 Aug 99--2 Jun 00

4. TITLE AND SUBTITLE
IS ARMY AVIATION DOCTRINE ADEQUATE FOR MILITARY OPERATIONS OTHER THAN WAR?

5. FUNDING NUMBERS

6. AUTHOR(S)
MAJ Mark A. Tolmachoff, USA

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
U.S. Army Command and General Staff College
ATTN: ATZL-SWD-GD
1 Reynolds Ave.
Ft. Leavenworth, KS 66027-1352

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING/ MONITORING AGENCY NAME(S) AND ADDRESS(ES)

10. SPONSORING/MONITORING

11. SUPPLEMENTARY NOTES

20001115 074

12a. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution is unlimited.

12b. DISTRIBUTION CODE
A

13. ABSTRACT (Maximum 200 words)

This thesis is a study of Army aviation doctrine and its suitability for military operations other than war (MOOTW). It uses four case studies of operations in which Army aviation played a significant role: Operation Restore Hope in Somalia, United Nations Operations in Somalia (UNOSOM II), Operation Uphold Democracy in Haiti, and Operations Joint Guard and Joint Endeavor in Bosnia-Herzegovina. The case studies analyze the missions conducted during these operations and highlight the challenges encountered as well as the applicable doctrine, where it exists. The thesis continues with an analysis of aviation doctrine and its guidance for operations other than war.

This thesis concludes that Army aviation doctrine is only partially adequate for MOOTW. It provides a sound basis but is lacking in some respects. Many doctrinal combat missions are easily employed in a MOOTW environment. Some, however, are executed so differently that the doctrinal guidance proves to be inadequate. Further still, there are missions for which there is no doctrinal basis. The thesis recommends updating doctrine to reflect the realities of military operations other than war.

14. SUBJECT TERMS
Army aviation doctrine, military operations other than war (MOOTW), Operation Restore Hope, Somalia, UN Operations in Somalia (UNOSOM II), Operation Uphold Democracy, Haiti, Operations Joint Guard and Joint Endeavor, Bosnia-Herzegovina

15. NUMBER OF PAGES
88

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	UL

NSN 7540-01-380-5500

Standard Form 298 (Rev. 2-89)
Prescribed by ANSI Std. 239-18
298-102

IS ARMY AVIATION DOCTRINE ADEQUATE FOR MILITARY OPERATIONS OTHER THAN WAR?

A thesis presented to the Faculty of the U.S. Army Command and General Staff College in partial fulfillment of the requirements for the degree

MASTER OF MILITARY ART AND SCIENCE
General Studies

by

MARK A. TOLMACHOFF, MAJ, USA
B.S., United States Military Academy, West Point, New York, 1986

Fort Leavenworth, Kansas
2000

Approved for public release; distribution is unlimited.

IS ARMY AVIATION DOCTRINE ADEQUATE FOR MILITARY OPERATIONS OTHER THAN WAR?

A thesis presented to the Faculty of the U.S. Army
Command and General Staff College in partial
fulfillment of the requirements for the
degree

MASTER OF MILITARY ART AND SCIENCE
General Studies

by

MARK A. TOLMACHOFF, MAJ, USA
B.S., United States Military Academy, West Point, New York, 1986

Fort Leavenworth, Kansas
2000

Approved for public release; distribution is unlimited.

MASTER OF MILITARY ART AND SCIENCE

THESIS APPROVAL PAGE

Name of Candidate: MAJ Mark A. Tolmachoff

Thesis Title: Is Army Aviation Doctrine Adequate for Military Operations Other Than War?

Approved by:

_____, Thesis Committee Chairman
LTC Carl E. Fischer, M.P.A.

_____, Member
COL Christopher L. Sargent, M.S.

_____, Member
Harold S. Orenstein, Ph.D.

Accepted this 2d day of June 2000 by:

_____, Director, Graduate Degree Programs
Philip J. Brookes, Ph.D.

The opinions and conclusions expressed herein are those of the student author and do not necessarily represent the views of the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

ABSTRACT

IS ARMY AVIATION DOCTRINE ADEQUATE FOR MILITARY OPERATIONS OTHER THAN WAR? by MAJ Mark A. Tolmachoff, USA, 78 pages.

This thesis is a study of Army aviation doctrine and its suitability for military operations other than war (MOOTW). It uses four case studies of operations in which Army aviation played a significant role: Operation Restore Hope in Somalia, United Nations Operations in Somalia (UNOSOM II), Operation Uphold Democracy in Haiti, and Operations Joint Guard and Joint Endeavor in Bosnia-Herzegovina. The case studies analyze the missions conducted during these operations and highlight the challenges encountered as well as the applicable doctrine, where it exists. The thesis continues with an analysis of aviation doctrine and its guidance for operations other than war.

This thesis concludes that Army aviation doctrine is only partially adequate for MOOTW. It provides a sound basis but is lacking in some respects. Many doctrinal combat missions are easily employed in a MOOTW environment. Some, however, are executed so differently that the doctrinal guidance proves to be inadequate. Further still, there are missions for which there is no doctrinal basis. The thesis recommends updating doctrine to reflect the realities of military operations other than war.

CONTENTS

Page

APPROVAL PAGE ii

ABSTRACT iii

LIST OF TABLES vi

LIST OF FIGURES vi

LIST OF ABBREVIATIONS vii

CHAPTER

1. INTRODUCTION 1
   The Research Question 1
   Background 1
   Assumptions 4
   Definitions 4
   Limitations 7
   Delimitations 7
   Significance of the Study 7

2. LITERATURE REVIEW AND RESEARCH DESIGN 10

3. ANALYSIS 16
   Operation Restore Hope 17
   United Nations Operations in Somalia II (UNOSOM II) 21
   Operation Uphold Democracy 28
   Operations Joint Guard and Joint Endeavor 34
   Case Studies Summary 40
   Doctrine 44
   Higher Doctrine 45
   Subordinate Doctrine 49
   FM 17-95, *Cavalry Operations* 52
   Draft FM 1-114, "Air Cavalry Squadron and Troop Operations" 54
   FM 1-112, *Attack Helicopter Operations* 57
   FM 1-113, *Utility and Cargo Helicopter Operations* 59
   Military Operations in Urban Terrain 60
   Doctrine Summary 61

4. CONCLUSIONS AND RECOMMENDATIONS 63
   Terminology 63

Missions 64
Nonlethal Munitions 68
Military Operations in Urban Terrain 69
Recommendations for Further Study 69
Conclusion 70

APPENDIX A. MOOTW/OOTW/SASO CROSS REFERENCE 71

REFERENCE LIST 73

OTHER SOURCES 76

INITIAL DISTRIBUTION LIST 78

LIST OF TABLES

Table Page

1. Operation Restore Hope Missions and Conditions 21
2. UNOSOM II Missions and Conditions 28
3. Operation Uphold Democracy Missions and Conditions 34
4. Operations Joint Guard/Joint Endeavor Missions and Conditions 40
5. Doctrinal Missions and Categories 45
6. FM 1-100 Missions Compared to Case Study Missions 47
7. Subordinate Doctrine Missions Compared to Case Study Missions 51
8. FM 17-95 SASO Missions Compared to Case Study Missions 53
9. DRAFT FM 1-114 Missions Compared to Case Study Missions 56
10. Sample Graduated Response Matrix 58

LIST OF FIGURES

Figure Page

1. Research Design 14
2. Research Flow 15
3. AH-64 Camera Photo 37

ABBREVIATIONS AND ACRONYMS

ADA	Air Defense Artillery
AOR	Area of Responsibility
ARFOR	Army Forces
CALL	Center for Army Lessons Learned
COLD	Weapon systems turned off
CS	Combat Support
CSAR	Combat Search And Rescue
CSS	Combat Service Support
FM	Field Manual
FWF	Former Warring Faction
HOT	Weapon systems armed
IFOR	Implementation Force
Joint Pub	Joint Publication
JTTP	Joint Tactics, Techniques, and Procedures
LZ	Landing Zone
METL	Mission Essential Task List
MOOTW	Military Operations Other Than War
MOUT	Military Operations in Urban Terrain
MSCA	Military Support to Civilian Authorities
MSR	Main Supply Route
NAI	Named Area of Interest

OOTW	Operations Other Than War
PADS	Position and Azimuth Determining System
PLUGGER	(PLGR) Position Locating, Grid Reference
PZ	Pickup Zone
QRF	Quick Reaction Force
Recon	Reconnaissance
ROE	Rules of Engagement
SASO	Stability and Support Operations
SNA	Somali National Alliance
TIS	Thermal Imaging System
TTP	Tactics, Techniques, and Procedures
UN	United Nations
UNOSOM II	United Nations Operations in Somalia II
USAAVNC	United States Army Aviation Center
VIP	Very Important Person
ZOS	Zone of Separation

CHAPTER 1

INTRODUCTION

This study will analyze briefly the history and development of current Army aviation doctrine and identify its primary focus and purpose. Next, it will explore missions Army aviation units are conducting today and the missions they can expect to perform in the future. Finally, this study will compare these to determine if doctrine provides an adequate foundation for today's mission execution. If doctrine is found to be inadequate, the study will further provide suggested changes or additions to the doctrine.

The Research Question

Is Army aviation doctrine adequate for conducting military operations other than war (MOOTW)? To answer this the following question must be answered first: What is doctrine and what is its purpose? What does current Army aviation doctrine say? What missions are units executing now? Does doctrine explain clearly how to execute these missions or is current doctrine flexible enough to adapt to MOOTW missions? Can units execute doctrinal missions under peacetime rules of engagement (ROE)? If they cannot apply doctrine to the execution of these missions then it is not adequate. If that is the case, what changes should Army aviation make? If the doctrine does not exist for these missions then it should be created. What should that doctrine say?

Background and Context of the Problem and the Research Question

During a recent seminar, Command and General Staff College students asked U.S. Army Aviation Center (USAAVNC) representatives why the Aviation Branch was not matching the Infantry School's effort to write doctrine for military operations in

urban Terrain (MOUT). The answer was that they simply did not have the manpower. Informal discussion afterwards revealed that many units are performing missions other than MOUT for which there is no precise doctrinal reference. This conclusion was based on collective experience in different units and from observations of many Combat Training Center rotations.

The 1995 edition of Joint Publication 3-07, *Joint Doctrine for Military Operations Other Than War,* states that "all military personnel should understand the political objectives and the potential impact of inappropriate actions" (Joint Pub 3-07 1995, vii). Actions even at the lowest levels in a MOOTW scenario may have significant political implications. The publication also describes the six MOOTW principles: objective, unity of effort, security, perseverance, restraint, and legitimacy. The last two principles may pose great challenges for aviation commanders employing armed aircraft.

Employing combat forces in a MOOTW environment may require a high degree of mental agility by commanders and soldiers alike. Joint Publication 3-07, *Joint Doctrine for Military Operations Other Than War*, and Army Field Manual 100-5, *Operations*, both define restraint as the prudent application of appropriate military capability. Since a single act could cause significant military and political consequences, judicious use of force is necessary. Excessive use of force, however, "antagonizes those parties involved, thereby damaging the legitimacy of the organization that uses it while possibly enhancing the legitimacy of the opposing party. . . . If an operation is perceived as legitimate, there is a strong impulse to support the action. . . . In MOOTW, legitimacy is frequently the decisive element" (Joint Pub 3-07 1995, II-5). To ensure forces use restraint, thereby sustaining legitimacy, commanders use rules of engagement (ROE).

"ROE in MOOTW are generally more restrictive, detailed, and sensitive to political concerns than in war" (Joint Pub 3-07 1995, II-4). Generally, ROE limit the use of lethal force to self-defense and defense of others.

How then does an aviation unit execute doctrinal missions that, by definition, call for lethal force against an enemy? How does an aviation unit provide security to a convoy blocked by angry, rock throwing locals? How does an aircrew protect soldiers at a supply point from a mob of hungry refugees? In general, does current Army aviation doctrinal guidance adequately cover scenarios likely to be encountered under MOOTW conditions?

A review of documents from operations in Haiti revealed after action reports and mission requests concerning missions, such as "show of presence," not well defined in aviation doctrinal manuals. A Center for Army Lessons Learned (CALL) publication highlighted a costly lesson learned in Bosnia due to a lack of common doctrinal terminology.

> An OH-58D was providing overwatch during a security mission when the local crowd got boisterous and was threatening harm to the convoy. The OH-58D crew was unsure exactly what to do, so they flew low over the crowd hoping that would disperse them. Upon their ascent, the helicopter hit wires, damaging the aircraft and causing injuries to the aviators . . . giving an aviation battalion a Show-of-force mission resulted in confusion. There are no tasks defined to provide standards of what is expected. This would leave the unit to define the mission as they see fit. This can also be dangerous and was the primary reason the helicopter hit the wires as mentioned above. The air crews were briefed to "protect friendly forces," but were given no reasonable means to do that. The crew couldn't shoot and reacted in desperation by "buzzing the crowd" of local nationals. (Sargent and Millerd 1998)

Evidence from informal interviews and preliminary research indicates there is something lacking in aviation doctrine.

Assumptions

This study is based on the assumption that America's recent history of military involvement is an indication of future military operations; the U.S. military will continue to participate in military operations other than war.

Definitions

For clarity this study will use the description of MOOTW found in Joint Publication 3-07, *Joint Doctrine for Military Operations Other Than War*. Army doctrine refers to MOOTW as operations other than war (OOTW) as well as stability and support operations (SASO). Although Joint and Army publications differ slightly in their description of MOOTW, this study will use the terms interchangeably. Appendix A is a cross reference for doctrinal descriptions of military operations other than war.

Arms Control. A concept that connotes: (a) any plan, arrangement, or process, resting upon explicit or implicit international agreement, governing any aspect of the following: the numbers, types, and performance characteristics of weapon systems (including the command and control, logistics support arrangements, and any related intelligence-gathering mechanism); and the numerical strength, organization, equipment, deployment, or employment of the Armed Forces retained by the parties (it encompasses disarmament); and (b) on some occasions, those measures taken for the purpose of reducing instability in the military environment.

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

Department of Defense (DOD) Support to Counterdrug Operations. Support provided by the Department of Defense to law enforcement agencies to detect, monitor, and counter the production, trafficking, and use of illegal drugs.

Enforcement of Sanctions/Maritime Intercept Operations. Operations which employ coercive measures to interdict the movement of certain types of designated items into or out of a nation or specified area.

Humanitarian Assistance. Programs conducted to relieve or reduce the results of natural or man-made disasters or other endemic conditions, such as human pain, disease, hunger, or privation that might present a serious threat to life or that can result in great damage to or loss of property. Humanitarian assistance provided by U.S. forces is limited in scope and duration. The assistance provided is designed to supplement or complement the efforts of the host nation civil authorities or agencies that may have the primary responsibility for providing humanitarian assistance.

Military Operations Other Than War (MOOTW). Encompasses the use of military capabilities across the range of military operations short of war. These military actions can be applied to complement any combination of the other instruments of national power and occur before, during, and after war.

Military Support to Civil Authorities (MSCA). Those activities and measures taken by the DOD components to foster mutual assistance and support between the DOD and any civil government agency in planning or preparedness for, or in the application of resources for response to, the consequences of civil emergencies or attacks, including national security emergencies.

Nation Assistance/Support to Counterinsurgency. Civil and/or military assistance rendered to a nation by foreign forces within that nation's territory during peacetime, crises or emergencies, or war based on agreements mutually concluded between nations. Nation assistance programs include, but are not limited to, security assistance, foreign internal defense, other U.S. Code Title 10 (DOD) programs, and activities performed on a reimbursable basis by federal agencies or international organizations.

Noncombatant Evacuation Operations (NEO). Operations conducted to relocate threatened noncombatants from locations in a foreign country. These operations normally involve U.S. citizens whose lives are in danger and may also include selected foreign nationals.

Peace Enforcement. Application of military force, or the threat of its use, normally pursuant to international authorization, to compel compliance with resolutions or sanctions designed to maintain or restore peace and order.

Peace Operations. Encompasses peacekeeping operations and peace enforcement operations conducted in support of diplomatic efforts to establish and maintain peace.

Peacekeeping. Military operations undertaken with the consent of all major parties to a dispute, designed to monitor and facilitate implementation of and agreement (cease fire, truce, or other such agreement) and support diplomatic efforts to reach a long-term political settlement.

Peacemaking. The process of diplomacy, mediation, negotiation, or other forms of peaceful settlements that arranges an end to a dispute, and resolves issues that led to conflict.

Show-of-force. An operation, designed to demonstrate U.S. resolve, which involves increased visibility of U.S.-deployed forces in an attempt to defuse a specific situation, that if allowed to continue, may be detrimental to U.S. interests or national objectives.

Limitations

One of the limitations of this study is the lack of extensive documentation on how leaders employed Army aviation in recent operations other than war. There is no comprehensive compilation of tactics, techniques, and procedures from these events. There are, instead, numerous after action reports and lessons learned publications that highlight significant challenges and successes. This study will take advantage of those publications and reports as well as original operational to mitigate the limitation.

Delimitations

Since this study is concerned with the adequacy of current Army aviation doctrine it will only analyze military actions since the fall of the Berlin Wall in 1989. It is recognized that the digitization of the Army and the accompanying weapon advancements, such as the RAH-66, may create a need for further doctrinal refinement. This study will not try to predict those changes, but will postulate that U.S. military actions in the next decade will be similar to those of the previous ten years; thus, comments on the relevancy of doctrine will be pertinent until modernization dictates further change.

Significance of the Study

The introduction to Field Manual (FM) 100-5, *Operations*, the Army's capstone doctrinal manual, outlines the evolution of doctrine. In the 1976 version the doctrinal

paradigm known as "active defense" focused on the defense of Europe against Warsaw Pact forces. The Army then shifted to the AirLand Battle doctrine of the mid-1980s, which focused on fighting deep. The current (1993) FM 100-5 embraces the Army's evolution into joint operations conducted across the full spectrum of military operations. It describes this doctrine as "*the authoritative guide to how Army forces fight wars and conduct operations other than war*" (emphasis mine). As the cornerstone of Army doctrine, FM 100-5 provides direction for all other Army doctrinal manuals. Soldiers should therefore assume aviation manuals to be authoritative how-to guides for conducting operations other than war. The 1999 draft FM 1-114, *Air Cavalry Squadron and Troop Operations*, describes how to conduct screening operations in a combat scenario. Later, the manual addresses peacekeeping operations: "These operations support diplomatic efforts to maintain peace in an area of potential conflict. Peacekeeping differs from peace enforcement in that it is conducted with the consent of all parties involved. Air and ground assets are normally employed in screening a demilitarized zone" (p. 4-5). Since there is no mention of differences between screening a demilitarized zone and a combat zone, the passage implies units should use the same methods for both. This raises the question, Is the doctrine flexible enough to execute in both environments? What changes, if any, should be made for operations other than war? Similarly, FM 1-112, *Attack Helicopter Operations,* states the following concerning stability and support operations (SASO): "The current attack helicopter doctrinal roles and missions as outlined in this manual also apply in an SASO environment. The attack helicopter commander will have to tailor his mission and assets as the situation requires" (p. 6-1). The pages following that paragraph imply that a "show-of-force" mission

equates to the doctrinal mission of security. The manual goes on to provide examples of actions that a crew may take during a show-of-force mission, one of which is "press the target" (FM 1-112 1997, 6-5). Unfortunately, there is no definition for press the target. This is typical of much of the doctrinal literature on MOOTW.

A review of documents from Haiti shows repeated employment of Army aircraft in "show-of-presence" missions. Written lessons learned from Bosnia, however, describe the conduct of a show-of-force mission. It may be that these missions are the same, but there is no doctrinal reference explaining in detail how to execute either one. If they are indeed the same, the doctrinal manuals should use common terminology.

One can put these doctrinal deficiencies into two categories. In the first category are the MOOTW missions for which there are no doctrinal tactics, techniques, or procedures (TTPs). In the second category are the doctrinal missions that are applicable in MOOTW scenarios but cannot be executed fully in accordance with existing doctrine due to rules of engagement. This study will address both and recommend new TTPs or changes to fit within commonly used ROE.

With just a cursory review one may suspect that the evolution of Army aviation doctrine has not kept pace with the environment in which it is employed. Perhaps, though, the doctrine is still valid, but it needs to better explain how it can be adapted to operations other than war. In other words, units need directions for fitting the "square peg into the round hole." At a minimum, doctrinal manuals should use the same terms and definitions to avoid confusion.

CHAPTER 2

LITERATURE REVIEW AND RESEARCH DESIGN

Literature Review

Is Army aviation doctrine adequate for military operations other than war (MOOTW)? To answer this, four subordinate questions must be answered first.

1. What is doctrine and what is its purpose?
2. What is the focus of current aviation doctrine?
3. What guidance does doctrine give for military operations other than war?
4. What missions are units conducting today and how are they being executed?

Three major categories of information serve to answer these questions: doctrinal manuals, original documents from recent military operations, and professional publications. Doctrinal manuals (field manuals) answer the first three questions.

In the hierarchy of U.S. military doctrine joint doctrine takes precedence over service doctrine. This study, therefore, begins with the joint manual for MOOTW: Joint Pub 3-07, *Joint Doctrine for Military Operations Other Than War.*

Joint Pub 3-07 states, as all joint publications do: "The guidance in this publication is authoritative; as such, this doctrine (or JTTP [Joint Tactics, Techniques, and Procedures]) will be followed. . . . If conflicts arise between the contents of this publication and the contents of Service publications, this publication will take precedence" (Joint Pub 3-07 1995, i). As the joint doctrine MOOTW this publication explains how MOOTW differs from large-scale, sustained combat operations. It outlines

purpose, principles, types of operations, and planning considerations and provides a doctrinal basis for joint tactics, techniques, and procedures.

The Army's keystone doctrinal manual is FM 100-5, *Operations*. As stated earlier, "It is the authoritative guide to how the Army forces fight wars and conduct operations other than war" (1993, v). It addresses the application of force at the strategic, operational, and tactical levels for operations in war and operations other than war. As the Army's capstone doctrinal manual it provides the "authoritative foundation for subordinate doctrine . . . and individual and unit training" (1993, iv). It does not, however, prescribe tactics, techniques, and procedures (TTPs); it offers philosophy and broad guidance.

Field Manual 1-100, *Army Aviation Operations*, is Army aviation's guiding doctrinal manual. "It prescribes doctrine above the level of tactics, techniques, and procedures," and hence "provides general guidance concerning the employment of Army aviation on the modern battlefield" (1997, v). Concerning the focus of Army aviation it states "Although we emphasize and have soundly demonstrated our versatility and proficiency in stability and support operations (SASO), Army aviation's primary focus remains with combat operations" (FM 1-100 1997, 1-2).

These higher level doctrinal publications provide a foundation upon which to build. They in no way, nor should they, attempt to explain down to the lowest level how to execute all the operations under their purview. One must read subordinate manuals to find TTPs (how to fight).

Current publications, such as FM 1-112, *Attack Helicopter Operations,* and FM 1-114, *Air Cavalry Squadron and Troop Operations*, describe the TTPs that aviation

units should be employing today. Many have recently incorporated minor additions reflecting the implications of MOOTW on aviation missions. These field manuals will be the primary sources for determining Army aviation's doctrinal focus and for ascertaining how doctrine addresses MOOTW. This study will also use draft manuals to highlight possible emerging doctrine. It is understood, however, that drafts are not accepted doctrine, but they do serve to highlight doctrinal changes being considered.

There is not an extensive amount of literature available to answer the last question, What missions are being executed today? There are reams of after action reports on recent MOOTW operations. Likewise, there are countless original source documents from these missions. The amount of information directly related to the employment of Army aviation, however, is somewhat limited. The study will glean this information primarily from professional publications, such as Center for Army Lessons Learned (CALL) newsletters and initial impressions reports. These publications provide, in condensed form, the significant challenges or successes of the participants. The initial impressions reports, in particular, give an excellent summary, by operation, in the familiar Army format of issue, discussion, recommendation. Some of the writings even recommend changes to specific doctrinal manuals. These CALL publications are invaluable for separating the wheat from the chaff when determining what needs to be changed in doctrine versus other areas (training, equipment, organization). Original sources, on the other hand, are not as neatly packaged. The 10th Mountain Division's after-action report for Operation Restore Hope comes the closest. It is written in executive summary style and is broken down by components (aviation operations being one of the components). It is a good source to elaborate on or corroborate the CALL

publications. Original sources from operations in Haiti include mission request forms, planning documents, and smaller after action reports. Although not as comprehensive as other sources, they do provide valuable insight to some of the missions conducted there and some of the problems encountered in that environment.

Research Design

This thesis will examine the suitability of aviation doctrine for conducting military operations other than war. To this end it will use comparative analysis. The analysis will identify the purpose of doctrine and will subsequently highlight aviation missions and their purposes as defined in doctrinal manuals. The study will then determine the missions actually executed by aviation units in MOOTW. By comparing the doctrinal missions with those actually performed the study will determine the adequacy of aviation doctrine. Since not every MOOTW scenario is the same the study will focus on trends (missions) that are common to most. Finally, if the analysis identifies doctrinal inadequacies it will offer potential solutions.

The research process will resemble a flow chart. Each box on the chart is a question that must be answered by the research data. Each oval is a question that must be answered by comparative analysis. The whole process is summed up in Figure 1. A more detailed diagram follows (Figure 2).

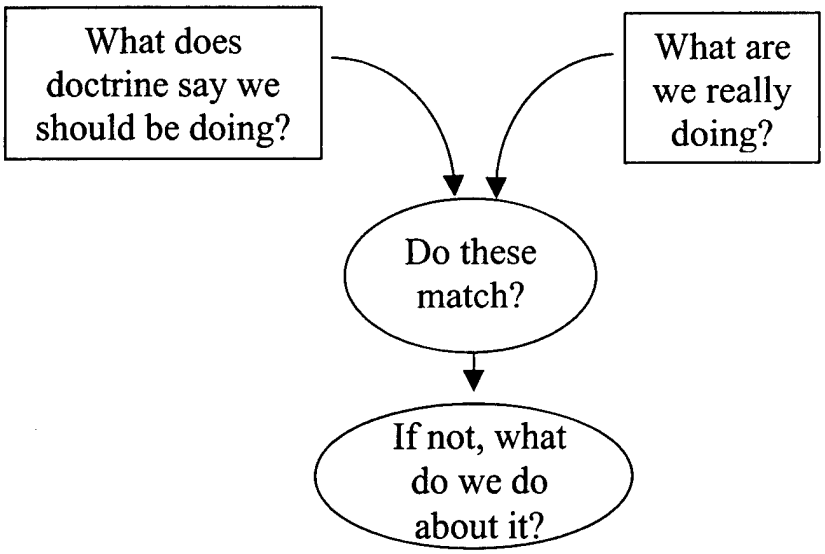

Figure 1. Research Design

A more detailed diagram of the research flow is shown in Figure 2.

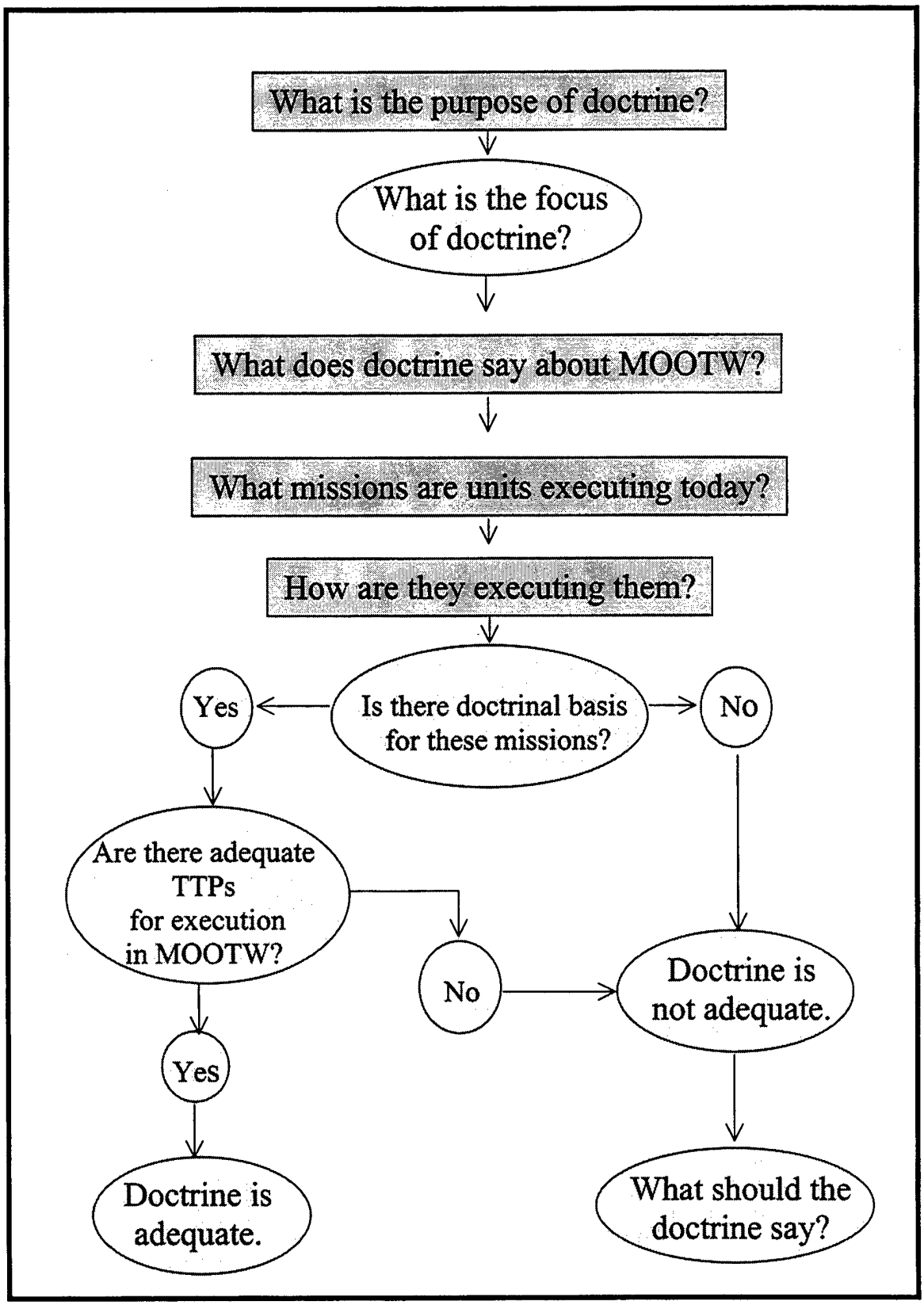

Figure 2. Research Flow

CHAPTER 3

ANALYSIS

Case Studies

This chapter begins with brief case studies of operations other than war in which Army aviation played a prominent role:

1. Somalia--Operation Restore Hope
2. Somalia--United Nations Operations In Somalia II (UNOSOM II)
3. Haiti--Operation Uphold Democracy
4. Bosnia-Herzegovina--Operations Joint Guard and Joint Endeavor

The intent is to highlight the missions aviation units conducted, the conditions under which they operated, and the applicable doctrine. Additionally, these studies will focus on commonality between the operations to identify trends. The rationale is that if certain missions, conditions, or problems occur in most operations other than war, there is a stronger case for ensuring those things are adequately addressed in doctrine.

The case studies will also address situations where the technology available was inadequate or inappropriate. Although this thesis is about doctrine, there is such a close relationship between doctrine and technology that it bears mentioning. Ideally, the U.S. military develops doctrine that will enable it to defeat all possible threats. It then develops and acquires the technology that allows it to execute that doctrine. The military must always be prepared to fight a major war so its technology is designed accordingly. With the restrictive rules of engagement for MOOTW, however, the U.S. military often finds itself sent to kill a fly with a sledgehammer. Following the case studies, the thesis

will examine current and emerging doctrine in greater detail. The intent is to determine what guidance doctrine gives aviation units for conducting operations other than war.

Operation Restore Hope

The first case study concerns missions conducted in Somalia during two distinct operations: Operation Restore Hope and United Nations Operations in Somalia (UNOSOM II). The study addresses Operation Restore Hope first using the "ARFOR [Army Forces] After Action Report for Operation Restore Hope" as the primary reference. Restore Hope includes actions from December 1992 to May 1993. During this time the aviation brigade from the 10th Mountain Division provided the headquarters for Army air assets. Aviation operations centered around air assault, attack, reconnaissance, and security missions. The following paragraphs highlight various aspects of these missions.

> The major impact of attack helicopters in the Somalia AOR [area of responsibility] was their psychological effect. This, combined with a judicious use of the weapons systems under the Rules of Engagement (ROE), combined to make the aircraft an enormously valuable combat multiplier for the commander. On several occasions, the mere presence of the attack helicopters served as a deterrent and caused crowds and vehicles to disperse. Scout-weapons teams [Author's note: A scout-weapons team is a combination of reconnaissance (scout) helicopters and attack helicopters, usually in pairs. In this case they were comprised of OH-58C or OH-58D scouts and AH-1 attack helicopters] provided the commander the flexibility to accomplish several types of mission. Armed reconnaissance, night reconnaissance of MSRs [main supply routes], convoy security, and fire support for the ground forces were the primary missions. (10th Mountain Division 1993, 62)

Attack (Fire Support)

Field Manual 1-112, *Attack Helicopter Operations*, defines the mission to attack as "an offensive operation characterized by movement supported by fire. The purpose is to destroy, delay, disrupt, or attrit the enemy" (FM 1-112 1997, 1-16). Doctrinally,

attack helicopter units execute this mission using engagement areas and battle positions to focus and mass the effects of lethal munitions. In accordance with doctrine, attack helicopter battalions employ their assets such that one, two, or three companies are attacking the target at any given time. The forces in Somalia, however, operated differently.

The "AH-1 attack helicopters served important fire support roles during Operation Restore Hope. . . . The attack aviation provided the mobile, discriminatory firepower required for this environment" (10th Mountain Division 1993, 9). These statements refer to the use of attack helicopters to protect friendly forces. The aircraft responded to radar indications of hostile mortar fire as well as threats to soldiers and civilians on the ground. Because many of the threats encountered were in populated areas, U.S. forces could not strike back with artillery fire. The resulting collateral damage would have been unacceptable. Attack aircraft on the other hand, could move rapidly to the threat, identify it, and employ accurate fires. Though it was designed to and its crews taught to engage from a maximum stand off distance, the attack helicopter became the default weapon of choice for close-in fire support in the cities. The after action report refers to this type of mission as "fire support" or "counterfire," but the doctrinal aviation term is "hasty attack." Based on the after action report and other sources, this appears to have been a common mission. Attack helicopters also conducted attacks on and destroyed numerous technical vehicles (also known as a "technical," this refers to a truck with a machine gun mounted on it) and other threat equipment (10th Mountain Division 1993, 56).

Reconnaissance and Security

Reconnaissance is a mission to gain information by visual observation, or other detection methods, about an enemy, his resources, or about the terrain. By doctrine, reconnaissance is conducted using stealth (avoiding physical contact) or by fighting for information. Security operations also obtain information about the enemy, but their purpose is to protect friendly forces. Security forces do this by providing early warning, and when the mission calls for it, by blocking or defeating enemy elements that may threaten the protected force (FM 17-95 1996, 3-1, 4-1).

Reconnaissance and security missions during Operation Restore Hope were similar to the doctrinal descriptions with the exception that it was sometimes difficult to tell who the "enemy" was. Whenever possible, aircraft were often employed in conjunction with other assets to determine the disposition and intentions of the various Somali factions. On one occasion aircrews "conducted a screen of an airfield being utilized in drug trading" (10th Mountain Division 1993, 62). Scout weapons teams also provided security for ground forces conducting weapons searches. Additionally, they provided route reconnaissance and security for convoys moving along main supply routes. "The teams cleared the route ahead of the advancing convoys and maintained a clear presence throughout the operation insuring the safe completion of their mission" (10th Mountain Division 1993, 62). U.S. forces discovered that this presence alone (for the time being) served to "block" enemy forces. Instead of shooting the opposing forces, the aircrews merely had to be seen by them.

Night Operations

Operations at night were the norm. The aviation task force made effective use of infrared spotlights, laser pointers, and laser aiming devices to overcome the difficulties inherent with night operations in urban terrain. Conventional aviation units are not specially equipped or trained to search for or engage targets in urban areas. This is particularly true when the targets may be individuals or small groups of people. This difficulty, complicated by the imperative to minimize collateral damage, made the additional devices invaluable.

Show of Force

Show of force at the aircrew level is not well defined in Army aviation doctrine. The current FM 1-112 lists some of the actions an aircrew may take in this mission, such as being visible from stand-off distance, video taping all actions, and "press the target." There is no real guidance beyond that. These recommended actions were not in doctrine, however, prior to the operations in the case studies.

As mentioned earlier, the mere presence of attack helicopters served as a deterrent. Though not mentioned specifically, it is implied that aircrews conducted missions for that exact purpose. The after action report mentions the value unmanned aerial vehicles would have provided by saving "limited assets such as helicopters for more valuable attack and show of force operations" (10th Mountain Division 1993, 62). The report does not discuss these show of force operations per se, but alludes to them. As an example: "The psychological effect of attack helicopters in this low intensity style conflict established the aircraft's value--frequently without firing a shot" (10th Mountain

Division 1993, 8). Additionally, "Their presence also provided a psychological effect that helped to intimidate potential threats" (10th Mountain Division 1993, 9).

Table 1 summarizes the tactical aviation missions performed during Operation Restore Hope.

Table 1. Operation Restore Hope Missions and Conditions

MISSIONS	CONDITIONS
Reconnaissance (route, probably zone and area as well)	Predominately night Urban Areas, hostile forces mixed with friendly or neutral populace Restrictive ROE (limit collateral damage, lethal force as last resort)
Security (screen, convoy security, overwatch weapons searches)	
Attack (hasty attack a.k.a. fire support, support by fire, deliberate attack)	
Show of Force (presence, intimidation, crowd dispersal, deterrence)	
Air Assault (often in support of infantry "cordon and search")	

United Nations Operations in Somalia II

United Nations Operations in Somalia (UNOSOM II) took place between 4 May 1993 and 31 March 1994. As hostilities increased during this period, the nature of operations changed. The charter to conduct humanitarian assistance expanded to include peace enforcement. As such, U.S. and coalition forces were required to conduct combat actions more frequently. The following significant events are presented as points of reference.

1. 5 June 93--Somali National Alliance (SNA) (Aideed) ambush Pakistani forces
2. 8 August--Four U.S. military policemen killed by command detonated mine
3. 25 September--Quick reaction force (QRF) helicopter shot down
4. 3-4 October--Task Force Ranger raid to capture SNA officials
5. 1 December--U.S. forces begin withdrawal

The aviation task force was located at Mogadishu International Airport. Its headquarters was initially built around an assault helicopter battalion. In August 1993 an attack helicopter battalion became the controlling headquarters, and in January 1994 a command aviation battalion took over as the headquarters. During this time the task force conducted missions almost exclusively within the city limits of Mogadishu (*U.S. Army Operations in Support of UNOSOM II, 4 May 93--31 Mar 94* published by the Center For Army Lessons Learned, hereafter cited as UNOSOM II, I-5-3). The primary missions Army aviation conducted fall in these categories:

1. Air assault
2. Attack
3. Reconnaissance
4. Air traffic control
5. Aeromedical evacuation
6. Aerial resupply
7. Combat search and rescue (CSAR) (UNOSOM II, 11)

The *UNOSOM II Lessons Learned Report* mentions two additional missions which it did not categorize: "cordon and search" and "continuous aircraft presence over the city as a deterrent measure." It offers no detailed discussion of these missions. It is

likely, however, that the tactics, techniques, and procedures did not change radically between Restore Hope and UNOSOM II. One can therefore assume cordon and search, as in Restore Hope, primarily involved air assault, reconnaissance, and/or security tasks for aviation units. "Continuous presence as a deterrent measure" is, in all probability, the show of force mentioned in the 10th Mountain Division after action report for Restore Hope. Similarly, this presence may have been a by-product of other missions or, when there were no other missions, it may have been directed as a stand-alone operation. Its importance, however is clearly indicated in the UNOSOM II report: "Without the deterrent presence of the aviation forces over Mogadishu, it would have been extremely risky for Coalition forces to conduct operations in the city" (UNOSOM II, I-5-2).

Countering Air Defense

In addition to the peculiarities of city fighting, coalition forces also faced hostile factions that fought in unexpected ways. Because these factions had limited resources and were not professional soldiers, they often resorted to unconventional tactics and weapons. One example is the unorthodox air defense techniques they employed in Mogadishu. As is typical in any conflict, small arms fire on aircraft was prevalent. The Somalis discovered, however, that their tracer rounds quickly gave away their position and allowed aircraft to zero in on them. They eventually stopped using tracers so they could fire on aircraft with a greater degree of impunity (UNOSOM II, I-5-6). The most successful air defense weapon was the rocket-propelled grenade. Though designed to destroy vehicles, it proved quite effective against helicopters. With guidance from fundamentalist Islamic soldiers, the Somalis replaced the point detonators with timing devices. This allowed the grenade to explode in midair, thus delivering a crippling blow

to a helicopter without a direct hit (Bowden 1999, 110). Twenty-three millimeter anti-aircraft guns were used occasionally from rooftops, but they were used sparingly and generally kept hidden. The most unorthodox weapons used were slingshots and kites. Though relatively ineffective, one rock from a slingshot did go through the cockpit of a scout aircraft. Kites, which were left flying at night, posed a hazard to low flying aircraft as well. "Several task force aircraft aborted missions because of kite string wrapped around tail rotors" (UNOSOM II, I-5-6). The aviation task force eventually countered these threats by raising flight altitudes to 1,000 feet in mid-October 1993.

Combat Search And Rescue

One of the more difficult missions for which the aviation task force was ill-prepared was combat search and rescue (CSAR). As with many other missions, the difficulties were magnified due to the nature of urban fighting. It was easy for a small, hostile force to defend tenaciously within the city. Buildings provided defensive cover and countless ambush sites and presented hazards to air assault landings. Additionally, nearly 70 percent of the city was in the hands of hostile forces who could readily incite the populace to take action against coalition forces. Lastly, "there was no guarantee that support would be provided in areas of the city that were controlled by factions which were less hostile" (UNOSOM II, I-5-7). U.S. training and equipment shortcomings exacerbated the problem. The 9 millimeter pistol proved inadequate and was augmented with the M4 carbine. Most of the aviators did not have extraction harnesses sewn into their survival vests. The survival vests were also found lacking because they were designed for survival in a nonthreatening environment; they were not fighting vests. Likewise, the task force had no extraction system for the aircraft and was compelled to

develop its own (UNOSOM II, I-5-7). Lack of equipment was not the only problem. Most task force members were not trained in CSAR or survival, evasion, resistance, and escape. Since there were no dedicated, trained CSAR forces available at this time, the task force assumed the mission itself. It maintained one aircraft on thirty minute standby, but found that diverting an aircraft already flying over the city on another mission to be the best procedure. Consequently, each UH-60 flying over the city carried the newly developed extraction system. With regard to this difficult mission, the *UNOSOM II Lessons Learned Report* lists as its first recommendation: "Develop Army CSAR doctrine for aviation and maneuver units that describes responsibilities for planning, organizing, and executing CSAR" (UNOSOM II, I-5-8).

Air Assault in MOUT

The city of Mogadishu offered few suitable landing zones or pickup zones (LZ/PZs). The task force most often used streets or alleys. Besides the obvious hazard of landing between buildings, the aircraft, crews, and passengers were subjected to gunfire, flying debris, and wires. As an alternative, they analyzed the possibility of using rooftops. Bearing in mind that current air assault doctrine does not address MOUT, the following is a summary of their considerations and recommendations.

> When evaluating a rooftop for use as a LZ/PZ, several factors should be considered. Will the roof support the full load of the aircraft? Should pilots keep aircraft light on their skids or wheels? Is the size of the rooftop adequate? What obstacles, if any, exist around the rooftop, including approach and departure routes? Load bearing capacity is also important when conducting sling-load operations to a rooftop. Rooftops also frequently have antenna and wires. Determining the location and height of wires or antennas is a must. Finally, a rooftop may not be large enough to land a single aircraft. In this case, fast roping, repelling, or landing by placing a wheel or skid on the roof while the aircraft hovers may be necessary to allow soldiers to get on/off the aircraft.

RECOMMENDATIONS: Ground and aviation staffs consider above factors in assessing suitability of LZ/PZs. Add rooftop factors noted above to doctrine; include as TTP in light infantry and aviator MOUT training programs. (UNOSOM II, I-5-17)

Aerial Gunnery in MOUT

As mentioned previously, the primary threat to aircrews was personnel with small arms and rocket-propelled grenades. Engaging them, and the occasional technical vehicle, with attack helicopters proved to be challenging. "The close proximity of houses and the need to restrict collateral damage, numerous walls around the structures, and the difficulty in marking and tracking targets from stand-off distances challenged aircrews" (UNOSOM II, I-5-18). Task force aviators resorted to techniques pioneered in Vietnam: running and diving fire. This proved to be quite effective and often the only method available to engage a target. Cycling aircraft into the engagement proved crucial as well. Since only one or two aircraft could engage a target at a time, it was no use to employ attack helicopters in mass as in a typical doctrinal attack. Other unique factors inherent in MOUT affected attack helicopter engagements as well: dust from the dirt streets, wires, kites, antennae, and searchlights. The task force recommended that FM 1-140, *Helicopter Gunnery*, incorporate the techniques found to be effective in MOUT. They also recommended the teaching of diving fire during attack helicopter qualification courses. "Diving fire may be the most appropriate firing technique for low intensity MOUT" (UNOSOM II, I-5-18). Lastly, crews suggested the development of nonlethal weapons for attack aircraft for use in operations other than war.

Night Operations

One area in which the U.S. military dominates most, if not all, other countries is night operations. Once again, however, the city of Mogadishu challenged American technological superiority. In a tactical environment aircrews fly using the image intensifying night vision goggles. These devices gather ambient light and amplify it to produce a dim, but useable image. When encountering bright lights, the goggles dim or may even shut down momentarily. Ironically, the most well lit areas that cause this phenomenon were the U.S. and UN compounds. In the city, shadows cast from tall buildings and walls also added to the problem. The thermal imaging system (TIS) of the OH-58D Kiowa Warrior proved quite useful in the city, but it is used for target acquisition and tracking, not for flying. Even target acquisition was more difficult in this environment.

> The TIS magnification capability was not always sufficient to detect activity in the level of detail required by the rules of engagement. For example, any individual carrying a crew-served weapon was considered an immediately engageable target. At night, the aircrews often observed a Somali carrying an object through the streets, but the TIS magnification was insufficient to determine exactly what was being carried. Many Somalis also carried walking canes, which could be mistaken for a weapon at night, compounding the identification problems. At times aircrews increased their risk factor by closing the stand-off range to view a suspected target. (UNOSOM II, I-5-26)

Crews continued to use additional lighting devices, such as the laser pointer and laser aiming device, to overcome these challenges.

UNOSOM II Case Study Summary

A consistent theme throughout the literature on U.S. Army involvement in Somalia is the difficulty of operating in an urban environment. The UNOSOM II lessons learned report sums up the effects city fighting had on aviation operations:

> The aviation task forces were forced to develop methods of operating in the urban environment. The usual attack methods of an attack helicopter battalion were not useful on urban terrain. Review doctrine for Army aviation operations in an urban environment. In light of experience in Operations JUST CAUSE, RESTORE HOPE, and UNOSOM II, consider whether urban terrain is a viable operational area for Army aviation beyond the low intensity level. If it is, incorporate doctrine on aviation operations on urban terrain in doctrinal publications, including aviation manuals. (UNOSOM II, I-5-3)

Table 2 summarizes the tactical aviation missions performed during United Nations Operations in Somalia (UNOSOM II).

Table 2. UNOSOM II Missions and Conditions

MISSIONS	CONDITIONS
Reconnaissance (predominately zone or area recon within Mogadishu)	Predominately night Almost exclusively in Mogadishu Non-permissive environment, (majority of city was hostile but not all) Restrictive ROE (limit collateral damage)
Security (screen for ground forces)	
Attack (hasty attack a.k.a. fire support, support by fire, deliberate attack)	
Show of Force (presence, intimidation, crowd dispersal, deterrence)	
Air Assault (often in support of infantry "cordon and search")	
Combat Search And Rescue	

Operation Uphold Democracy

The next case study focuses on Operation Uphold Democracy in Haiti. The period covered is September 1994 to March 1995. The aviation brigade of the 10th Mountain Division initially provided the majority of personnel and equipment for this operation and was later augmented by aviation elements of the 25th Infantry Division. The brigade was based at the Port-au-Prince airport. Although they operated throughout the country most actions occurred in the city of Port-au-Prince and the north coast city of

Cap Haitian. The majority of operations in which the brigade participated or planned for fall into the following categories.

1. Security
2. Show of presence
3. Reconnaissance
4. Crowd control (reconnaissance and non-doctrinal tasks)
5. Downed aircraft recovery and security
6. Insertion of Special Operations Forces
7. Air movement

Security

Security missions in Haiti were planned or executed for several distinct purposes. Like operations in Somalia, aircrews often provided security for ground forces conducting weapons searches or cache raids. Another significant security mission was "VIP support"--executed to facilitate the movement and protection of dignitaries (President Aristide in particular). In this role, the commander designated an "Aerial Reconnaissance Team" to work in conjunction with a Ground Reconnaissance Team and the Motorcade Team. The aerial team provided information on the condition of roads, traffic, and crowds. It also served as an aerial communications asset, and, if a scout-weapons team was included, it provided fire support. After reconnoitering the route and destination, the team would remain in the area to provide a "visual presence." If necessary, the team would extract the VIP as well (*OPERATION UPHOLD DEMOCRACY, Initial Impressions, HAITI,* Volume II published by the Center For Army Lessons Learned, hereafter cited as Impressions 1995, C-3). Broken into its components,

this operation was a combination of route and area reconnaissance, convoy security, screen, and show of presence. With the exception of the latter, these missions align fairly well with doctrine. The MOOTW environment, of course, fostered some exceptions. Doctrine, and most training for that matter, addresses operations against a defined enemy. In this scenario, as in the other case studies, aircrews had to observe and report actions of the populace. Dealing with civilian masses deprives aviation units of the ability to directly influence the security of the forces or individuals they are protecting; aircrews cannot use lethal force. This adds importance to the show of presence mission which is discussed in the next paragraph.

Show of Presence

"The American soldier and his presence . . . were the greatest weapon present to prevent oppression" (Impressions 1995, A-2). The multinational force in Haiti consistently used the show of presence mission "to foster a safe, secure, and stable environment" (Impressions 1995, B-1). This mission appears to differ from the show of force employed in Somalia in that its primary goal was to reassure the friendly populace as opposed to intimidating hostile factions. Certainly, the latter was a desired effect, but the general tone was less offensive in nature. Army aviation was often tasked to participate in these show of presence missions. In fact, *Initial Impressions,* Volume II, lists "aerial patrol" as one of the methods for establishing presence in outlying areas (Impressions 1995, B-3). Additionally, numerous aviation mission request forms used in Haiti document the use of aircrews to conduct show of presence missions. More specifically, ground commanders gave aircrews orders to fly "racetrack patterns" over the operational area (1-25 Aviation 1995). As mentioned previously, helicopters were to

provide a "visual presence" during VIP missions as well. Like operations in Somalia, commanders counted on the psychological effect of helicopters as a secondary benefit in other missions.

Reconnaissance

"The need to continually observe the population during Operation UPHOLD DEMOCRACY was a requirement. The monitoring of crowds was essential to prevent incidents between belligerent parties within the city. . . . The second reason for continual reconnaissance was force protection" to identify potential disruptions or fighting before they could cause harm to friendly forces (Impressions 1994, 164). The "presence" this continual reconnaissance established over Port-au-Prince served to inhibit instigators because "they were less likely to begin hostile actions if they knew they were being observed." The ability to conduct this mission effectively at night, however, was significantly reduced when the OH-58D helicopters were withdrawn (Impressions 1994, 164).

Crowd Control

The ground task force developed a set of "Graduated Response Levels" for use in crowd control. This was developed for a planned, peaceful demonstration but provided response levels to implement should the situation turn violent. Each level of response was to be preceded by a loudspeaker announcement of exactly what the next level of response was going to be. The report does not indicate, however, what would cause a transition from one level to the next. The levels are listed here to show Army aviation's prominence in the operation.

1. Level 1 -- Voice commands for the crowd to disperse

2. Level 2 -- Establish a wall of steel (fix bayonets to intimidate)

3. Level 3 -- Use helicopter down draft to disperse the crowd. Use down draft and search lights at night.

4. Level 4 -- Employ riot control agents (pepper spray)

5. Level 5 -- Employ overhead fire

6. Level 6 -- Employ direct fire

In addition to this unorthodox use, aircrews conducted reconnaissance forward of friendly forces in support of the ground commander. Aerial observers provided information, such as size of the crowd, direction the crowd was moving, and a recommended direction for crowd dispersion. The ground commander could then use this information to tell the crowd which way to disperse (Impressions 1994, 122). Being forward, the aircraft would "be the first visual show of an American presence" (Impressions 1994, 124). Interestingly, the Joint Task Force also developed a contingency plan to use CH-47 Chinooks with fire buckets. The concept was to drop water from the huge buckets slung beneath the Chinook in an effort to disperse the crowd. Crews trained for this novel approach but never used it (Impressions 1994, 168).

Attack (Fire Support)

In Port-au-Prince, as in Mogadishu, U.S. forces did not employ artillery due to the potential for civilian casualties and collateral damage. Army helicopters filled the void by remaining prepared to provide mobility and accurate fires if needed. Likewise, fire support plans called for aerial reconnaissance to verify targets acquired by target

acquisition radar. Unlike Mogadishu, however, the environment in Haiti was less hostile, so the fire support role was less prevalent.

Air Assault in MOUT

Port-au-Prince is an overcrowded, medium-sized city with few suitable landing zones. The aviation unit overcame this problem by conducting a map reconnaissance followed by a physical reconnaissance of the intended LZ. Landing zones were selected using factors found in doctrinal manuals and experience gained in Somalia (Impressions 1994, 169). It should be noted, however, that this process was facilitated immensely by the permissive environment in Haiti. That environment also precluded the use of the strike force, which the Joint Task Force designated early in the operation. Though not employed, it is mentioned here to highlight potential missions for aviation in MOOTW. The strike force was essentially an air assault task force comprised of an infantry company(-), five UH-60 Blackhawk helicopters (one for CSAR), and a scout-weapons team (Impressions 1994, 171).

Military Operations In Urban Terrain

"Operation UPHOLD DEMOCRACY once again demonstrated that aviation forces must be able to operate in an urban environment as in Panama City, Mogadishu, and Port-au-Prince" (Impressions 1994, 162). Volume I of the *Initial Impressions* report captured the following observation:

> The ability of aviation assets to be utilized in an urban area, especially against non-sophisticated ADA systems has been proven. The resulting doctrine must be written into the appropriate manuals. The question of whether or not aviation forces should operate within a city has been over come by events.
>
> Refinements in current doctrine, for instance the cycling of attack assets vice the mass employment of the attack battalion are areas that need to be addressed in doctrinal publications. Techniques for weapons engagements need

to be studied based on past experience and included in aircrew training manuals. (Impressions 1994, 172)

Table 3 summarizes the tactical aviation missions performed during Operation Uphold Democracy.

Table 3. Operation Uphold Democracy Missions and Conditions

MISSIONS	CONDITIONS
Reconnaissance (route, area, provide presence)	Day and night Country-wide but mostly in Port-au-Prince Permissive environment Restrictive ROE (limit collateral damage)
Security (weapon searches, VIP)	
Crowd Control (recon, non-doctrinal tasks)	
Show of Presence (recon, crowd dispersal, deterrence)	
Insertion of Special Operations Forces	
Air Assault (planned)	
Combat Search And Rescue (planned)	

Operation Joint Endeavor and Operation Joint Guard

The final case study concerns missions conducted in Bosnia-Herzegovina during Operation Joint Endeavor and Operation Joint Guard. Various units participated in these operations and supplied almost every type of aircraft in the Army inventory. Similar to the previous case studies, the primary missions conducted were:

1. Security
2. Crowd Control
3. Reconnaissance
4. Show of Force
5. Air Movement

Security

The security mission mentioned most often was that of providing security for joint negotiations as noted in *Initial Impressions Report, Operation JOINT ENDEAVOR, Bosnia-Herzegovina,* (cited as Endeavor 1996, 128). Aviation assets and ground elements overwatched these proceedings, usually from a position from which they would be visible to the participants. For aviation units, this presumably took the form of a screening mission, but the effects of their presence proved to be more than just protection for negotiators. This is analyzed further under Show of Force. As in the other case studies, aircrews exploited the psychological impact of helicopters rather than using lethal munitions to protect the force. Attack helicopters also provided security for aerial insertion and extraction of quick reaction forces (Endeavor 1996, 136).

Crowd Control

Similar to other MOOTW environments, large, often unruly, crowds were a challenge to the U.S. and multi-national forces. Army aviation once again assisted in crowd control. Helicopters were effective in this role, but they had limitations as well.

> The rotor wash of the helicopter effectively separated the crowds by spraying debris which forced the crowd to turn their backs and disengage. However, use of helicopters in this manner is very dangerous because of their vulnerability to small arms and objects that can be thrown into the rotors. In addition, civilians could receive serious injury from the flying debris. (Johnson 1997a)

The function of Army aviation in crowd control is deeply intertwined with show of presence or show of force. The preceding quote highlights the physical impact helicopters have on unprotected individuals, but the psychological impact may be

equally important. The psychological impact, however, may not last, as incidents Bosnia will show.

Reconnaissance

Army aviation was employed extensively in the reconnaissance role in Bosnia-Herzegovina. The ability of the aircrews to move rapidly over any terrain, observe the former warring factions, fortifications, and weapons, then bring back a video of it all was indispensable. Some units, however, were not as well suited to this mission. The older AH-1 Cobra and OH-58C Kiowa helicopters did not have built in video recorders or thermal imaging systems. In the overall scheme, U.S. forces were tasked to verify compliance with the General Framework Agreement for Peace. Two key tenets of the agreement were cessation of hostilities and withdrawal from the Zone of Separation (ZOS). The ZOS was over 1,000 miles long and was strewn with minefields, bunkers, and trenches. U.S. forces had to identify those obstacles and verify the factions had dismantled them and kept their military vehicles out of the zone. The task was rather difficult because there were hundreds of miles of trenches, thousands of bunkers, and millions of mines (Endeavor 1996, xi), as well as frequent ZOS violations by the former warring factions.

> To assist in confirming the numbers, aerial reconnaissance was conducted over the ZOS with AH-1 and OH-58s. These reconnaissances were generally effective in identifying bunkers and trenchlines. However, grids were determined using PLUGGERs [a global positioning system which uses data from satellites] on the aircraft which provided approximate, but not completely accurate, locations (determining the locations on the ground from the air has a certain degree of error factor). Ideally, the OH-58 should have been equipped with PADs [equipment used in the artillery community for accurately locating and designating targets] to laze the target for a more definite grid location. Also, the Scout Weapons Team has limited station time. The problem was compounded by the fact that the brigade's air assets were also tasked to conduct reconnaissance of

> another brigade's ZOS. Because of the limited station time, the reconnaissance was not nearly as detailed as it could have been. In addition, OH-58s and AH-1s do not have video recording capability. The brigade could have conducted a much more thorough analysis of the ZOS and completed a much more thorough debrief if helicopters had video-recording capabilities. Confirming the exact grid locations of the obstacles and fortifications by ground forces would have exacted more manpower (read combat power) than was available to accomplish the task in a timely manner. (Johnson 1997b)

Units flying the AH-64 Apache or the OH-58D Kiowa Warrior were better able to document activities of the various factions. In addition to video recorders, these aircraft are also equipped with thermal imaging systems which better enabled them to detect violations of the zone at night.

> One of the bright spots in this picture, however, was the stunning success of Army tactical aviation in Bosnia. The helicopters of the 1st Armored Division's Fourth Brigade combined speed and mobility in mountainous terrain--critical advantages in a region where every other factor conspired any external force. But innovations by Army aviation and intelligence soldiers also led to a new method of digitizing the Apache attack helicopter's gun-camera footage. . . . The resulting photographs documented Dayton Accord violations and--as unclassified imagery--were occasionally handed over to the former warring factions. Not only did these pictures display the exact time and location of such typical violations as tanks in the zone of separation, but they also featured targeting cross-hairs centered on the offending equipment--an unsubtle but highly effective means of compelling compliance. (Allard n.d.)

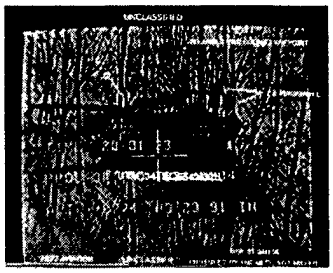

Figure 3. AH-64 Apache Camera Photo

Show of Force

"The ability of the aviation units to appear in the right place at the right time was instrumental in gaining the attention and respect of the factions" (Endeavor 1996, 137). Army aviation, whether employed independently or in conjunction with other elements, was used extensively for its psychological impact. It was not merely the threat of lethal force that made it so effective; it was also the ability to appear at a moment's notice and record the actions of the belligerents. Many after action reviews of operations in Bosnia-Herzegovina stress the importance of the show of force and aviation's contribution to it. One account recalls a flight of helicopters descending to a low altitude and flying directly over a site where the Joint Military Commission was meeting with representatives of the former warring factions. "The synchronization of this event had been closely orchestrated, and the impression made on the military factions had a positive impact on the proceedings. This encouraged faction compliance" (Endeavor 1996, 136). A joint U.S.-Russian study gives great credit to the combination of armored vehicles and helicopters: "Their use for shows of force and the decisiveness of the peace-operation force played a defining role in sustaining the cease-fire in Bosnia-Herzegovina and assisting in the execution of operational tasks" (Foreign Military Studies Office 1998). The following are additional examples of how Army aviation was employed. They are taken from an article titled "Use of Army Aviation in Peacekeeping Operations" by Colonel Christopher Sargent, former aviation brigade commander in Bosnia, and Major Frank Millerd, Center For Army Lessons Learned.

An infantry patrol (with no armored vehicles) was having difficulty getting members of a former warring faction (FWF) to remove machineguns from bunkers.

Being outnumbered, the patrol felt vulnerable. Radio contact with a team of Kiowa Warrior helicopters brought the aircraft by flying low and fast ending with a high hover in view of the ground personnel. After coordinating on the radio, the aircraft flew up to the bunkers. The factions quickly emptied the bunkers and complied with the directives of the patrol.

A FWF commander was not allowing an American armored force access to a warehouse. The American commander coordinated for assistance with Kiowa Warriors observing from hidden positions about four kilometers away. When the aircraft flew over "the FWF commander immediately unlocked the warehouse allowing the soldiers to find a considerable amount of weapons inside. The videotapes made by the Kiowa Warriors were used at the high-level peace talks shortly thereafter" (Sargent and Millerd 1998)

Recall the vignette from chapter 1: "An OH-58D was providing overwatch during a security mission when the local crowd got boisterous and was threatening harm to the convoy. The OH-58D crew was unsure exactly what to do, so they flew low over the crowd hoping that would disperse them. Upon their ascent, the helicopter hit wires, damaging the aircraft and causing injuries to the aviators." (Sargent and Millerd 1998)

In another incident, "an AH-64 providing video reconnaissance hovered near and over a crowd for a period of time. While completing post-flight inspection, a single bullet hole was found in an engine nacelle" (Sargent and Millerd 1998).

Environment

The conditions in which aviation units performed these missions were varied. Aircraft employment was not predominately in large urban areas like Mogadishu and Port-au-Prince. Aircrews instead operated over expanses of wooded, mountainous terrain

as well as in and around smaller cities, towns, and villages. The weather was often adverse: from cold, snow, and fog to unseasonably warm and rainy. Threat conditions were fairly permissive though not without risk.

Table 4 summarizes the tactical aviation missions performed during Operation Joint Endeavor and Operation Joint Guard.

Table 4. Operations Joint Guard/Joint Endeavor Missions and Conditions

MISSIONS	CONDITIONS
Reconnaissance (route, zone, area, video recon)	Day and night Zone of Separation, towns and villages Permissive environment Restrictive ROE (limit collateral damage, lethal force as last resort)
Security (negotiations, convoys, weapon searches)	
Crowd Control (non-doctrinal tasks)	
Show of Presence (negotiations, crowd dispersal, compliance)	
Air Assault (insertion/extraction of quick reaction force)	
Combat Search And Rescue (planned)	

Case Studies Summary

In review, one can see several trends for Army aviation in MOOTW. Reconnaissance is a consistent theme throughout and served numerous purposes. It was often used to facilitate the safe, efficient movement of convoys. It was also used to gain intelligence on the various factions and document their activities. This was particularly true in the peace enforcement environment in Bosnia-Herzegovina where the video capability of Army helicopters was invaluable. Reconnaissance not only gained information, it influenced the actions of belligerents as well.

Security missions also contributed significantly to these operations. Just as aircrews provided reconnaissance for convoys, they provided security too. The security varied from armed interdiction of hostile elements to "shooing" away crowds. Another common mission was providing security during weapons searches. Like many MOOTW missions, the security options ranged from lethal force to protect friendly troops to intimidation of those who opposed them. Conversely, aircrews also secured belligerents from each other. The VIP security mission grew into a distinct operation all its own with its unique collection of subordinate missions.

Across all operations, the attack helicopter figured prominently in the fire support role. In a MOOTW environment, noncombatants and belligerents mix frequently. Likewise, U.S. forces can find themselves among noncombatants who suddenly become belligerents. This proximity to friendlies and innocents precluded the use of artillery. Contact in urban areas further restricted the use of cannon and mortar fire for fear of collateral damage. The ability of helicopters to conduct hasty attacks over any terrain, identify the target as friend or foe, and deliver precision fires proved indispensable.

The air assault or aerial insertion was used in each case. The intent of the ground tactical phase varied from operation to operation, but common to all were the difficulties encountered in urban areas. Another critical mission performed was combat search and rescue. Comments from Somalia bear out the challenges faced in conducting this difficult but essential task and the need to codify tactics, techniques, and procedures for aviation units.

With respect to MOOTW, one might surmise that crowd control for aviation has gone from unconventional to normal. In each case study Army aviation participated in

crowd control in one fashion or another. The intent of the mission alternated between dispersal and deterrence. On the one hand, aircrews used rotor wash, threat of force, and fear of the unknown to break up crowds. On the other hand, just knowing they were being watched kept the belligerents from getting out of control. Though the physical aspects of crowd control presented hazards to crew and crowd alike, the psychological impact proved more pervasive and less dangerous. This psychological impact spilled over into (or out of) the show of force, show of presence, missions.

Without fail, U.S. forces sought and exploited this impact in each operation. Interestingly though, the terminology, intent and method of execution varied widely. Whether termed show of force or show of presence, it appears that there were three basic intents: assurance, deterrence, and compliance. Assurance, as in Haiti, sought to calm the populace by letting them know credible forces were everywhere to provide stability and security. Air and ground assets together reinforced the belief that hostile factions could not act with impunity. The technique was to be visible at all times – principally through continual reconnaissance over population centers. One could say, however, deterrence was the same mission but with effects on different people. Commanders used the presence of helicopters to deter crowds from becoming violent; to deter hostile factions from harming friendly forces, relief workers, and indigenous noncombatants; and sometimes to keep them away from each other. The tactics varied: continual reconnaissance, rotor wash, convoy security, "buzzing" negotiation proceedings. When the commander's intent was compliance, the goal was to coerce or convince the target to take certain actions. Common examples include getting factions to allow weapons inspections, compelling them to dismantle defensive works, and enforcing the withdrawal

of the zone of separation. Techniques could be as simple as being visible to the parties involved to detailed video reconnaissance of areas or actions in question. Common to all intents and techniques was the establishment of an overwhelming presence. The ever-present watchful eye of Army helicopters had a profound impact.

No doubt, urban operations had a profound impact on Army aviators. The characteristics of MOUT challenged some of the American military's traditional strengths. Night operations were difficult because of the effects of city lights on night vision goggles. Thermal devices designed to acquire vehicles did not provide the desired resolution for human targets. An unsophisticated enemy fought with unexpected weapons and tactics. Structural barriers negated massing attack aircraft at maximum stand off distances and rules of engagement forced much greater discrimination in the use of fires. The hazards to air assault forces were magnified and their options limited. These conditions caused aviation units to develop new TTPs and resurrect old ones. They also compelled units to issue or create new equipment to meet the demands of urban conflict.

The case studies have shown the notable tactical missions and conditions for Army aviation during operations in Somalia, Haiti, and Bosnia-Herzegovina. Those listed below stand out as being representative of these types of operations or at least significantly challenging enough to warrant further consideration.

1. Reconnaissance
    a. Area (continuous over city)
    b. Video
2. Security

a. Convoy

b. VIP

c. Weapons searches

3. Attack (in MOUT)

a. Hasty (fire support)

b. Support by fire (in MOUT)

4. Air assault (in MOUT)

5. Crowd Control

6. Combat search and rescue (CSAR)

7. Show of force / show of presence

a. Assurance

b. Deterrence

c. Compliance

Doctrine

As stated in chapter 2, higher level doctrine does not address how to execute operations other than war; it provides the guidance for development of subordinate doctrine. Subordinate manuals, therefore, should provide more detailed direction for conducting these operations. The following paragraphs will review the upper level guidance first, and contrast it with the trends found in the case studies. The study will continue with a review of subordinate doctrine and similar comparisons to the case studies. The section will conclude with an analysis of the differences between doctrine and what units are actually doing.

Higher Doctrine

What are the doctrinal missions for Army aviation in MOOTW? *Army Aviation Operations* (FM 1-100) groups the missions of aviation units under the traditional headings of combat, combat support, and combat service support. Table 5 shows these categories and the missions that align with them. This represents the doctrinal base from which subordinate manuals should develop TTPs.

Table 5. Doctrinal Missions and Categories

COMBAT	COMBAT SUPPORT (CS)	COMBAT SERVICE SUPPORT (CSS)
Reconnaissance	Command, Control, and Communications	Aerial Sustainment
Security	Air Movement	Casualty Evacuation
Attack	Electronic Warfare	
Air Assault	Combat Search and Rescue	
Theater Missile Defense	Air Traffic Services	
Special Operations	Aerial Mine Warfare	
Support By Fire		

These missions may be performed during various types of operations. Field Manual 1-100 delineates these operations as follows:

1. Offensive
2. Defensive
3. Retrograde
4. Air Combat
5. Stability and Support Operations

It further expounds on the missions performed during stability and support operations by explaining that "aviation provides combat, CS, and CSS for SASO by:

1. Reaching remote areas.
2. Delivering food and medical supplies.
3. Providing emergency communications.
4. Providing aeromedical evacuation.
5. Extracting disaster victims.
6. Providing reconnaissance and security, combat projection, and the movement of personnel and equipment, administratively and tactically. (FM 1-100 1997, 2-22)

In an effort to clarify the last bullet, one could reasonably assume "tactical movement" is synonymous with "air assault." "Combat projection," not listed as a mission in Table 5, may refer to aviation's inherent ability to deploy its combat power rapidly over long distances. The manual does not define "combat projection" but it does discuss "force projection"--the ability to rapidly alert, mobilize, deploy, and operate anywhere in the world (FM 1-100 1997, 1-13). It may, however, imply show of force or show of presence missions. The manual is not clear. Contrast these doctrinal SASO missions with those found to be common throughout the case studies. Since the case studies focused on combat missions, the comparison will only be with the doctrinal missions for SASO that fall in that same category.

Table 6. FM 1-100 Missions Compared to Case Study Missions

FM 1-100 SASO MISSIONS	CASE STUDY MISSIONS
Reconnaissance	Reconnaissance
Security	Security
Combat Projection	
Movement of personnel and equipment, tactically	Air assault
	Attack
	Crowd Control
	Combat search and rescue (CSAR)
	Show of force / show of presence

(Note: It is understood that CSAR is doctrinally a "combat support" mission as opposed to "combat." It is included here to highlight that FM 1-100 does not include it in the list of potential SASO missions.)

It is interesting to note that all of the operations in the case studies occurred before this edition of FM 1-100 was written in 1997. Several of their significant missions, however, are conspicuously absent from the manual's list of potential SASO missions.

Having identified the SASO missions, we should now determine what doctrine says about their execution. The following excerpts show how FM 1-100 distinguishes between combat actions and actions in SASO.

> In general, the same principles and tenets that apply to aviation forces in combat operations will apply to aviation forces in these operations where the potential for combat exists. The main modification to the aviation principles and tenets is the need for restraint in SASO.
>
> In SASO, it is essential to apply appropriate military capability prudently. The actions of soldiers and aviation units are framed by the disciplined application of force in accordance with the specific rules of engagement. The use of excessive force could impede the attainment of both short–and long–term goals; therefore, restraints will often be placed on the weaponry, tactics, and levels of violence allowed in this environment. (FM 1-100 1997, 2-24)

There are two key points here. First, what about operations where the potential for combat is negligible or nonexistent? Crowd control in Haiti and Bosnia, for example,

would not exactly be considered a combat mission. What principles and tenets apply in such a case? More importantly, what missions apply? There should be doctrinal guidance on which combat mission to employ and how to modify it to fit the environment. If there is no appropriate doctrinal mission, as in the case of crowd control, doctrine should be updated to address it.

Second, it should be noted that "where the potential for combat exists" the same principles and tenets apply, but the need for restraint will often dictate altering weaponry, tactics, and levels of violence. Certainly, these three items are fundamental components of doctrinal combat missions. Conceivably, the restraints could be so great that a mission being executed in the MOOTW environment can no longer be considered a doctrinal combat mission. How can aircrews provide convoy security when they cannot fire their weapons due to the rules of engagement? If they have to resort to "buzzing" crowds, is that the doctrinal mission of security or the non-doctrinal "crowd control?" Similarly, if aviation units are being tasked to execute missions for which there is no specific doctrine (show of presence), they will have no option but to deviate from existing doctrine. Conversely, aircrews may be assigned doctrinal mission and given the latitude to execute it but lack the techniques to make it happen (attack in MOUT).

Clearly, FM 1-100, *Army Aviation Operations*, was not written to provide specific detail for what to do in every possible MOOTW scenario. Its charter is to provide the guiding principles and concepts. One must continue down the hierarchy of doctrinal manuals to find the details on how to execute.

The next subordinate aviation doctrinal manual is FM 1-111, *Aviation Brigades*. While this manual does not address tactics, techniques, and procedures, it does refine the

guidance of FM 1-100. Whereas FM 1-100 states the same principles and tenets apply in SASO as in combat, FM 1-111 takes this one step further and says the same *missions* apply. "In SASO, Army aviation units conduct combat, CS, and CSS missions. No new Army aviation missions have developed as a result of SASO. There is, nevertheless, a requirement for aviation units to train to the conditions under which they will operate" (FM 1-111 1997, F-1). There appears to be a theme that doctrine still applies, but units may need to adjust it to fit the situation.

Is it really only the conditions that change and not the missions? In combat conditions, a Kiowa Warrior crew provides security to ground troops by remaining hidden, reporting the location of the enemy, and shooting the enemy when able. In Bosnia, aircrews provided security by exposing their aircraft and shooting video footage. Is conducting a zone reconnaissance looking for enemy tanks and anti-aircraft missiles the same as looking for mass graves in farmers' fields? Field Manual 1-111 states no new aviation missions have been added because of SASO, yet crowd control is not listed as a doctrinal mission in the manuals.

Subordinate Doctrine

Continuing down the chain, the next logical step is to examine the doctrinal publications that explain how to conduct missions in combat. If the same combat missions are used in SASO, it should, according to doctrine, only be a matter of altering weaponry, tactics, and levels of violence and training under the appropriate conditions.

The primary sources that address the execution of aviation combat missions are:

1. FM 17-95, *Cavalry Operations*
2. FM 1-112, *Attack Helicopter Operations*

3. FM 1-113, *Utility and Cargo Helicopter Operations*

4. FM 1-114, *Tactics, Techniques, and Procedures for the Regimental Aviation Squadron.*

There is also a new draft FM 1-114, renamed *Air Cavalry Squadron and Troop Operations*, whose revision is under the direction of the Directorate of Training, Doctrine, and Simulation, Fort Rucker, Alabama. (Reference to this draft will only be to highlight emerging doctrine.) These manuals take the missions outlined in the higher doctrinal manuals, and translate them into subordinate unit missions and offer TTPs for their execution. Table 7 is a compilation of the missions taken from these publications. The right hand column shows the missions highlighted in the case studies. The missions in bold are those that units executed for which there is no apparent doctrinal equivalent.

As the table shows, even referencing subordinate doctrine there are still missions being conducted for which there is no specific guidance. Granted, each mission in bold type incorporates at least some elements of doctrine, but, based on the case studies, their execution is different enough to warrant a separate entry.

Table 7. Subordinate Doctrine Missions Compared to Case Study Missions

SUBORDINATE DOCTRINE MISSIONS	CASE STUDY MISSIONS
Reconnaissance Route Zone Area Reconnaissance in Force	Reconnaissance Route Zone Area **Video***
Security Screen Guard Cover Area Security Route Security Convoy Security Air Assault Security	Security Screen Convoy Security Air Assault Security **VIP Security** **Weapons Search Security**
Attack Movement to Contact Hasty Attack Deliberate Attack Exploitation Pursuit	Attack Hasty Attack
Air Assault	Air Assault
Combat Search and Rescue	Combat Search and Rescue
Support by Fire	Support by Fire
Theater Missile Defense** Deliberate Attack Search and Attack	
Special Operations	
	Crowd Control
	Show of Force / Show of Presence **Assurance** **Deterrence** **Compliance**

*Using video recorders is normal procedure even during combat missions. Video reconnaissance is listed separately here because of its unique use in Bosnia. Video taping the actions of individuals to support negotiations and enforce compliance with treaties is not a doctrinal mission for Army aviation.
**Theater missile defense and special operations are beyond the scope of this paper and will not be addressed.

The study now turns to the individual subordinate manuals to review their treatment of stability and support operations. It will highlight the doctrinal missions these manuals anticipate for SASO, and illuminate any indications that units may have to execute them differently than they would in combat. If a manual does suggest a need to adjust doctrinal missions to fit the SASO environment, does it provide guidance? Lastly, we will identify the case study missions not addressed by subordinate manuals.

Field Manual 17-95, *Cavalry Operations*

Cavalry Operations dedicates chapter 7 to stability and support operations. Several times the chapter emphasizes the notion that doctrinal missions are the basis of all missions conducted in SASO. The section on SASO missions begins with the following: "Doctrinal cavalry missions remain the basis for the operations cavalry regiments and squadrons conduct in the stability and support operations environment." It further states that "peace operations are not a new mission and should not be treated as a separate task added to a unit's METL." The Mission Essential Task List (METL) includes those tasks a unit must be able to perform in order to accomplish its wartime mission. The manual also reminds its audience that "Army policy does not prescribe modifying the warfighting mission-essential task list . . . unless and until a unit is selected for stability and support operations" (FM 17-95 1996, 7-1). Even though it clearly states doctrinal missions are the standard, it goes on to imply they alone are not enough for conducting stability and support operations. Furthermore, it implies units will have to modify their METL when selected for SASO. From this one could infer that stability and support operations require a change in tasks--not merely the same tasks in a different environment. *Cavalry Operations* advises that once a unit is selected for stability and

support operations it should "train for the specific mission-related tasks." In fact, it asserts "units selected for a peace operations mission normally require 4-6 weeks of specialized training." Taken at face value, one may conclude from this that doctrinal missions and typical unit training indeed provide the basis or MOOTW, but they are lacking in some areas. The manual reinforces this by listing the missions cavalry units can expect to execute in stability and support operations. While they do appear similar to some doctrinal missions they are not identical, nor do they match all the missions seen in the case studies. In Table 8 the case study missions in bold are those that do not have a match in the adjacent FM 17-95 SASO list.

Table 8. FM 17-95 SASO Missions Compared to Case Study Missions

FM 17-95 SASO MISSIONS	CASE STUDY MISSIONS
Reconnaissance Route clearance	Reconnaissance Route, **Zone, Area, Video**
Security Secure a lodgment area Secure an airfield Separate belligerents Secure border Secure route Secure a facility Secure an urban area Escort a convoy Secure a checkpoint VIP security	Security **Screen** Convoy Security **Air Assault Security** VIP Security **Weapons Search Security**
Attack Quick reaction force	Attack **Hasty Attack**
Expand a lodgment area	
(FM 17-95 1996, 7-13)	**Crowd Control**
	Air Assault
	Combat Search and Rescue
	Support by Fire
	Show of Force / Show of Presence

The manual refers to FM 17-97, *Cavalry Troop*, and FM 17-98, *Scout Platoon*, for "greater detail of troop and platoon responsibilities during these missions." A review of *Cavalry Troop* does provide some valuable instruction for the conduct of doctrinal missions that may be employed during these SASO missions (route, area, and convoy security in particular), but the manual was written for ground troops. The one section on Army aviation only suggests using air scouts to reconnoiter and screen to the front and flanks of the ground scouts. Nowhere do they offer TTPs for aircrews dealing with hostile crowds, show of force missions, or when rules of engagement limit the use of force.

Draft Field Manual 1-114, *Air Cavalry Squadron and Troop Operations*

The 1991 edition of FM 1-114, *Regimental Aviation Squadron*, does not address stability and support operations. Likewise, FM 1-116, *Air Cavalry/Reconnaissance Troop*, makes no mention of them either. The draft FM 1-114, *Air Cavalry Squadron and Troop Operations*, is scheduled to replace both manuals just mentioned and does address SASO. It asserts that most air cavalry missions during SASO will be the same as or build upon doctrinal reconnaissance and security. The major difference, it states, will be in command and control relationships and the greater need for restraint. Perhaps this greater need for restraint is why the manual continues with:

> The air cavalry commander will have to tailor his mission and assets as the situation requires. The unit must plan ahead and have developed contingency plans for numerous situations not normally addressed in the unit's METL. These can be identified and trained for at home station with situational training exercises (STX). Some subjects which should be addressed are:
>
> (1) Civilians on the battlefield.
> (2) Media relations and public affairs.
> (3) Defense against terrorism. (FM 1-114 Draft, 4-2, 4-3)

Like other doctrinal publications, the draft FM 1-114 acknowledges that units will have to deviate from (expand upon) doctrine in some manner to meet the challenges of SASO. It is interesting to note the mention of civilians on the battlefield. Recent events seem to indicate that civilians are major players in operations other than war and sometimes the only players other than the assisting forces. The notion of them being on the 'battlefield' may even be irrelevant in some operations where there is no defined battlefield. The case studies bear witness to this. Also, civilians, media, and terrorism are issues on every battlefield and should, therefore, be addressed in a unit's METL.

The Draft separates stability operations from support operations. "During stability operations, the squadron would primarily perform its mission essential task list (METL) related tasks and be prepared for the potential escalation to full armed conflict. During support operations, the squadron would use the capabilities of its combat systems to increase the effectiveness of the overall effort" (FM 1-114 Draft, 4-3). This implies there is a considerable difference between wartime tasks and tasks conducted during support operations. The manual offers the following examples of missions a unit would likely execute during these separate stability operations and support operations. Since it breaks down the missions by the type of operation they may be used in, Table 9 does the same and lists the case study missions next to their corresponding category. The case studies are categorized peace keeping, peace enforcement, etc. in accordance with the definitions of Joint Pub 3-07, *Joint Doctrine For Military Operations Other Than War.*

Table 9. DRAFT FM 1-114 Missions Compared to Case Study Missions

DRAFT FM 1-114 SASO MISSIONS	CASE STUDY MISSIONS
Stability Operations	
*Show of Force** • Route security • Screen • Tactical demonstration	
Non-combatant evacuation operations • Air movement • Reconnaissance • Air assault security	
Counter-drug operations • Screen • Area reconnaissance • Zone reconnaissance	
Support for insurgencies/counterinsurgencies	
Combating terrorism • Area security • Route security • Convoy security	
Peace enforcement • Reconnaissance and surveillance. • Security missions to protect the U.S. and allied forces. • Tightly controlled applications of force.	*UNOSOM II* • Reconnaissance: zone, area • Security: for U.S. and relief agencies • Attack: hasty, deliberate, support by fire • **Show of force**: deterrence • **Air Assault** • **Combat search and rescue**
Attacks and raids • Attack • Reconnaissance • Security	
Support Operations	
Peacekeeping Operations • Screen a de-militarized zone.**	*Uphold Democracy* • **Reconnaissance**: route, area • **Security**: VIP, weapons searches • **Crowd control** • **Show of presence**: assurance, deterrence • **Air assault** (planned) • **Combat search and rescue** (planned) *Joint Endeavor/Joint Guard* • **Reconnaissance**: route, zone, area, video • **Security**: convoy, weapons searches, negotiations • **Crowd control** • **Show of presence**: compliance • **Air assault** • **Combat search and rescue** (planned)
Humanitarian Assistance and Disaster Relief Augment command and control Search for casualties Assess damage Prevent looting and disorder.	*Restore Hope* • **Reconnaissance**: route, zone, area • **Security**: screen, convoy, weapons searches • **Attack**: hasty, deliberate • **Show of force**:*** assurance, deterrence • **Air assault**
Military Support to Civilian Authorities	

* "Show of force" listed here refers to the strategic operation as described in Joint Pub 3-07. It is not the same as the tactical task mentioned in the case studies.

** The manual lists "screening a demilitarized zone" as the primary task for aviation in peace-keeping operations. Certainly, this security mission occurred during Joint Endeavor and Joint Guard. "Security" is still bold faced under Joint Endeavor/Joint Guard because "screening a demilitarized zone" does not completely describe what the units did. Indeed, they assisted in *demilitarizing* the zone of separation.

*** "Show of force" is the likely mission to prevent looting and disorder; however, the manual does not state this. It offers no guidance on *how* an aircrew is supposed to prevent looting and disorder. Without non-lethal munitions the aircrew has few options other than reporting incidents, being visible, or using rotorwash.

Field Manual 1-112, *Attack Helicopter Operations*

Similar to its companion publications, FM 1-112, *Attack Helicopter Operations*, devotes chapter 6 (four and one half pages) to stability and support operations. It, too, admits units may have to execute missions not normally part of their METL. This manual, however, addresses lessons learned from Operation Joint Endeavor and even cites one of the references used in the case studies. The following quote is the first, in the publications reviewed so far, that addresses the TTPs that may need to change for operations other than war. It is also the first mention of "video reconnaissance" in a doctrinal manual.

> Video Reconnaissance. The onboard video recording systems on the AH-64 and OH-58D can provide extremely useful intelligence information if properly used. Planners must develop NAIs [Author's note: Named Area of Interest--a point or area along a particular avenue of approach through which enemy activity is expected to occur. See FM 101-5-1, *Operational Terms and Graphics*, 1997, page 1-107.] and procedures that focus aircrews where to look and record and aircrews must be as proficient at operating the VRS [video recording system] as they are with their weapons systems or hours of useless videotape may result. (FM 1-112 1997, 6-4)

Oddly, the manual does not refer to "video reconnaissance" anywhere else (like the list of potential SASO missions). It also does not mention the importance of recording the

actions of individuals as discussed in the study of Operations Joint Endeavor and Joint Guard.

> Impact of armed helicopters. The capabilities of our armed aircraft provide commanders a unique ability to impact upon potentially belligerent forces. The sudden presence of enormous firepower can have a lasting impact and be extremely persuasive. This power of persuasion, however, carries with it a great responsibility to avoid provoking hostilities. (FM 1-112 1997, 6-4)

This quote is the first to hint at the tactical show of force mission. It is followed by a brief discussion of a "graduated response matrix," which is the only entry so far to offer TTPs for a MOOTW mission. Content of the graduated response matrix, developed by the Combat Maneuver Training Center, is reproduced in Table 10. It may also be found on page 6-5 of FM 1-112, 1997.

Table 10. Sample Graduated Response Matrix

SITUATION	MISSION	ACTIONS IN OBJECTIVE AREA
• FWF Compliance • No hostile activities against IFOR or protected personnel	Presence (Reconnaissance)	• Distant observations, spot reports, and data recorder • Altitudes as directed 300' Day, 500' Night • Weapon systems COLD
• FWF noncompliance • Threatening but no hostile actions against IFOR or protected personnel	Show of Force (Security)	• Visible at stand off range • Press the target, deploy to cover if required • Documentation and reporting all actions via recorder • Weapons status STAND-BY
• FWF noncompliance • Hostile actions against IFOR or protected personnel	Lethal Response (Attack)	• Establish battle positions, maintain stand off using cover • Maintain contact with hostile forces • Report clear fires • Apply ROE or request weapons release • Weapons system HOT

The graduated response matrix is the only entry, in the manuals studied so far, that seeks to translate doctrinal missions into SASO missions with specific actions for the crews to perform. From left to right, the matrix establishes the conditions, states the likely SASO mission (with the nearest equivalent doctrinal mission underneath), and then lists appropriate TTPs. One may note that it separates "presence" from "show of force," the latter to be used in a more threatening environment. Likewise, its recommended actions are more aggressive. "Press the target," however, is vague in that there is no definition or description of it anywhere in the manual. Perhaps that is what the Kiowa Warrior crew in Bosnia was doing when it flew low over the crowd and hit power lines. Conspicuously absent from this matrix are instructions for dealing with crowds.

Field Manual 1-112 lists operations other than war that have potential for involving attack helicopters, and it includes the doctrinal missions aircrews would likely perform. Since it does not offer anything significantly different than FM 1-114 (Table 9 above) a separate comparison chart is omitted here. It is important to note, however, that FM 1-112 does not include peace keeping or humanitarian assistance since it does not consider them to be likely operations for employment of attack helicopters

FM 1-113, *Utility and Cargo Helicopter Operations*

"SASO often require units to do missions for which they are not trained" (FM 1-113 1997, 9-5). Chapter 9 of FM 1-113 addresses SASO. It is little different from the previous manuals with respect to potential missions. It does, however, provide much more insight to the logistics of stability and support operations. The manual also contains in chapter 7 a fairly descriptive treatment of combat search and rescue. It should be

noted this 1997 edition was published after our involvement in Somalia. Aircrews' comments on incorporating CSAR doctrine were in reference to the 1986 edition. However, Army Regulation 525-90, *Combat Search and Rescue Procedures*, was available at that time and provides detailed information on CSAR.

Military Operations in Urban Terrain

Army aviation doctrine does not provide much information on operations in an urban environment. *Attack Helicopter Operations* (FM 1-112) does address some key planning factors but covers the entire subject in less than one page. Mostly it discusses the challenges and limitations in MOUT. The only TTP it offers is that of diving fire. The manual has numerous diagrams and detailed descriptions of tactical employment in other environments, but not urban.

The only treatment of MOUT in FM 17-95, *Cavalry Operations*, is at the end of chapter 4 in the section dealing with convoy security. "Convoy security operations in an urban environment or built-up area require different emphasis and techniques than those in rural areas. The population density and characteristics of the area require the use of nonlethal weapons and the careful application of weapons of destruction" (FM 17-95 1996, 4-49). This would obviously be challenging for aircrews because there are no non-lethal weapons for attack helicopters except rotorwash.

In FM 1-113, *Utility and Cargo Helicopter Operations*, the final paragraph of the SASO chapter contains the only helpful discussion of MOUT. Even then, it only mentions various intelligence sources for obtaining information on potential landing zones.

Field Manual 1-111, *Aviation Brigades*, has an excellent appendix on combat, as well as stability and support operations, in urban terrain. Oddly enough, it is almost exclusively infantry tactics, techniques, and procedures.

The draft FM 1-114 does not address MOUT, nor does FM 1-116, *Air Cavalry Reconnaissance Troop*. Neither lists any urban considerations in their treatment of landing zone reconnaissance.

Doctrine Summary

The focus of Army aviation doctrine is the conduct of combat operations. Most of the missions discussed in the case studies are categorized as "combat missions." Field Manual 1-100, *Army Aviation Operations*, describes these as being "performed by maneuver forces engaged in shaping the battlespace and conducting decisive combat operations by employing direct fire and standoff precision weapons in combined arms operations." There is extensive literature on the tactics, techniques, and procedures for doing just that: employing direct fire and precision weapons. Some manuals claim that knowing how to conduct these combat missions is sufficient for a unit to conduct military operations other than war. The missions are the same--only the conditions change. Other manuals (and some of the same ones) assert that units will execute missions in SASO for which they are not trained. Whether doctrine is adequate or not, there appears to be a disconnect between the various publications. And at what point are the missions different enough to warrant explanation in doctrinal manuals?

Rare is the manual that explains *how* units are to execute their missions differently. Most place the responsibility on the unit commander. Notably absent from Army aviation doctrine is coverage of crowd control, VIP security, MOUT, and show of

presence (also called show of force). Perhaps the most significant omission is guidance for use of nonlethal force. Use of nonlethal force is obviously crucial in many, if not all, operations other than war. Unfortunately, other than rotorwash and psychological impact, there are no nonlethal munitions for Army aircraft.

CHAPTER 4

CONCLUSIONS AND RECOMMENDATIONS

Army aviation doctrine provides an adequate basis for most missions conducted in military operations other than war. There are shortcomings, however, that it should address. One such shortcoming is the lack of consensus concerning doctrine for MOOTW; the various publications present conflicting views. Some manuals, FM 1-111 and FM 17-95 for instance, assert that the MOOTW environment requires no new missions; aircrews need only train to execute the same missions under different conditions. Other manuals, such as FM 1-100 and the draft FM 1-114, state that units will have to build upon or modify doctrinal missions. Field Manual 1-112 and FM 1-113 admit units will have to execute missions for which they are not trained. All three views are, in fact, partially correct. There are instances when doctrinal missions, reconnaissance for example, are perfectly suitable for use in a MOOTW scenario. On the other hand, there are times when aircrews may need to modify that very same mission, such as making their aircraft plainly visible rather than concealing their location. Lastly, there are indeed nondoctrinal missions for which aviation units are not trained. Crowd control is one example. Some may classify it under the doctrinal heading of security, but clearly it is so unique that it requires further development and explanation.

Terminology

Of all the manuals reviewed no two present military operations other than war in the same manner. The title for this category of operations varies between MOOTW, OOTW, and SASO. Each manual lists a slightly different set of operations that it

categorizes under those headings. Most operations listed are quite similar, if not identical, but many are omitted because the authors felt Army aviation would probably not be involved in those particular operations (see Appendix A, MOOTW Cross Reference).

Another discrepancy in terminology exists concerning show of force and show of presence. Most writing uses the terms synonymously, but some indicate a difference between the two; show of force being more threatening and show of presence being more benign. This is due in large part because doctrine does not address the subject in detail, particularly at the small unit and crew level. This study recommends adopting the term "show of force." Commanders may specify the level of force to be used by choosing from the options discussed later in this chapter.

Missions

The single most common discrepancy between doctrinal missions and how they are executed concerns the use of force. Doctrine describes how units are to find and destroy the enemy. In MOOTW, however, units typically must observe and influence factions – factions with varying degrees of hostility, neutrality, or friendliness. The doctrinal missions for finding and observing (reconnaissance and security) provide an adequate basis for operations other than war. Where doctrine is lacking is in guidance for influencing factions in operations other than war.

Security

According to existing doctrine, doctrine aircrews conduct security missions by remaining hidden and reporting what they see to provide the ground commander reaction time. When necessary, they maneuver to destroy the threatening enemy. In MOOTW,

however, it is often more desirable to be seen. The intent is to *prevent or dissuade* the "enemy" from threatening. Other than being visible and reporting, aircrews have little means of providing security when lethal force is not authorized or justified. Even when lethal force is acceptable, armed aircraft may be ill-suited for the task due to the inherent dispersal of their munitions and the accompanying risk of collateral damage (e.g., aircrews would not shoot rockets or machineguns at a gunman in a crowd). Also, all forces deal with the dilemma of determining how to provide security in an environment where the adversary is not clearly defined and/or does not remain constant. In peace operations, for example, former warring factions may turn hostile with no prior warning. One can see then, there are three distinct differences between security missions in combat and security missions in MOOTW.

1. Aircraft generally remain visible instead of masked.
2. Risk of collateral damage limits use of lethal force more often in MOOTW.
3. Aircrews will often be in situations where there is no clearly defined enemy.

Doctrinal manuals should address these differences in their chapters on MOOTW. One technique would be to list the likely MOOTW missions, as they already do, followed by an explanation of how the mission may be executed differently. Ideally, the manuals should also list actions aircrews may take short of employing lethal fires.

VIP Security

It is also advisable to include "VIP security" as a potential mission in MOOTW. It is very similar to convoy security, but there are nuances that make it distinct. A doctrinal explanation of this mission should discuss the tasks of assessing crowd size and direction of travel, using nonlethal means of dispersing crowds, and extraction of the

VIP. Doctrine should note these tasks are also applicable for providing security at negotiation sites.

Combat Search and Rescue (CSAR)

This study cannot fairly say Army aviation doctrine for CSAR is lacking. To debate its adequacy at the time of the operations in Somalia, Haiti, and Bosnia is a moot point; it is now included in FM 1-113. CSAR doctrine is also addressed in FM 90-18, *Multi-Service Procedures for Combat Search and Rescue* and is published in Army Regulation 525-90, *Combat Search and Rescue Procedures*. The only foreseeable challenge for CSAR operations in MOOTW would be in the area of security. For example, helicopters providing security for a downed aircrew may face large crowds (with unknown intentions) gathering at the scene. Doctrine should address such situations either in its treatment of CSAR or under the heading of security.

Nondoctrinal Missions

Crowd control and show of force have been used extensively in MOOTW scenarios, yet there is no doctrinal definition or explanation for them. They should be included in doctrine and procedures from implementing them should be developed accordingly. While it may be determined that crowd control is not a feasible mission for Army aviation, it is included here with show of force because both share many of the same tasks. The following is a list of actions that aircrews and aviation units may use for show of force and crowd control missions. The term "target" in this example means the same as "target audience." It may be an individual, a particular faction, a crowd, or the populace as a whole, depending on the situation.

Show of Force--Crowd Control Options

1. Practice air assault operations in plain view
2. Practice insertion/extraction of quick reaction force in close proximity to target
3. Conduct continuous route, zone, area reconnaissance in the targeted area
4. Conduct aerial gunnery or combined arms live fire demonstrations
5. Visibly observe target from stand-off distance (show the aircraft from a distance)
6. Fly-by (near target)
7. Fly low directly over target (option: flash search light to simulate muzzle flash)
8. Conduct diving flight towards target, break off at low altitude
9. Hover close to the target, point the aircraft towards the target
10. Increase number of aircraft visible to the target, establish overwhelming presence
11. Visibly track target with weapon system or mast mounted sight
12. At night – shine search light on target
13. Hover or fly close enough for target to feel rotorwash
14. Hover overhead exposing target to full force of rotorwash
15. Conduct demonstration fires: fire gun or rockets – but not in direction of target
16. Fire warning shots in the direction of, but not directly at the target
17. Use nonlethal munitions
18. Destroy unoccupied structure or vehicle

This list is not all-inclusive but should serve as a starting point. Commanders may add to or subtract from the list as needed.

Nonlethal Munitions

Many of the difficulties aircrews encounter in MOOTW occur because they cannot fully exploit their capabilities to influence the target. The attack helicopter is designed to rapidly bring firepower to the decisive point on the battlefield. When the use of lethal firepower would be imprudent aircrews are limited to the actions listed above, some of which may be impractical or too risky. If nonlethal munitions were available crews would be better able to directly influence a target, provide security for ground forces, and lessen exposure of the aircraft. Doctrine should lead technology in this area by establishing what capabilities Army aviation needs and how those capabilities should be employed. The following table suggests some possible solutions.

1. Mission: Crowd control
2. Tasks: Disperse crowds, block crowd movement, incapacitate instigators
3. Employment: From 500 to 1,000 meters. At a hover or in flight
4. Munitions:

    a. Tear gas warheads for 2.75" aerial rockets, cardboard casings to minimize injuries

    b. Shotgun warheads with rubber or cardboard pellets for rockets

    c. "Flash-bang" (concussion) warheads for rockets

    d. Low velocity rubber bullets for 30 millimeter, fifty caliber, and M60 machine guns

Laser-aiming devices that produce a beam visible to the naked eye may be used to facilitate the employment of these munitions. The psychological impact of putting a laser beam on individuals may even preclude the need for firing. There is an excellent publication by the Air Land Sea Application Center titled *Multiservice Procedures for the Tactical Employment of Nonlethal Weapons*. It is a joint publication that would serve

well as a guide for developing Army aviation doctrine (to include TTPs) for nonlethal munitions.

Military Operations in Urban Terrain

Army aviation doctrine needs to expand considerably its coverage of MOUT. Given the nature of MOOTW missions, it is inevitable that their conduct will occur in urban areas with increasing frequency. Likewise, major theater wars present great potential for city fighting as well--Kuwait City being a recent example. Treatment of the subject should address cycling teams of aircraft to the target area as opposed to employing companies and battalions en masse. The doctrine should also consider diving fire and employment of targeting aids such as laser aiming devices. Perhaps more importantly, doctrine should push the development of night optics more suited to operations in urban areas. At the time of this study the Air Land Sea Application Center is scheduled to publish *Aviation Operations on Urban Terrain* by June 2000. It will proscribe multi-service TTPs for the preparation and execution of fixed-wing and rotary-wing aviation operations on urban terrain. The current draft incorporates the unpublished FM 1-130, *Aviation MOUT Operations*, produced by the Directorate of Training, Doctrine, and Simulation at the U.S. Army Aviation Center, Fort Rucker, Alabama. Field Manual 1-130 will not be published separately.

Recommendations for Further Study

There are numerous related topics that deserve further study. This thesis has touched on some of them, but their importance and complexity warrant additional analysis. Nonlethal weapons, for example, are worthy of exploration, particularly with respect to development, employment, an legal ramifications of their use.

Training for MOOTW offers many avenues for further study. Of particular interest is how to train aviation units for MOOTW, what missions to train on, and how this may impact their training for war. Another aspect worthy of study is the designation of units to train exclusively for MOOTW versus training for full scale war. This study would likely need to address the warfighting readiness of units before and after extended involvement in operations other than war.

A final topic recommended for further research is aviation in MOUT. It will be important and interesting to see how helicopters are employed once *Aviation Operations on Urban Terrain* is published. Also important is how it will impact training, weapons, and resources.

Conclusion

It is understood that the focus of doctrine, and the Army for that matter, is fighting and winning the nation's wars. That is the most dangerous situation for which we must prepare. Given time and resource constraints, that may be all we can and should train for on a daily basis. It is only when selected for operations other than war that units train intensively on those unique missions or variations to their existing missions. It would certainly seem wise, then, to provide some doctrinal guidance for the training and execution of these missions. Military operations other than war may not be the most dangerous, but they are still risky and difficult and deserve doctrinal emphasis.

APPENDIX A. MOOTW/OOTW/SASO CROSS REFERENCE

JP 3-07	FM 100-5	FM 1-100	FM 1-111
MOOTW	OOTW	SASO	SASO
Arms Control.	Arms Control		
Combatting Terrorism	Combatting Terrorism	Combatting terrorism	
DOD Support to Counterdrug Operations	Support to Counterdrug Operations	Counterdrug Operations	Counterdrug Operations
Enforcement of Sanctions/Maritime Intercept Operations			
Enforcing exclusion zones			
Ensuring freedom of navigation and overflight			
Humanitarian Assistance	Humanitarian Assistance and Disaster Relief	Humanitarian Assistance and Disaster Relief	Humanitarian Assistance and Disaster Relief
Military Support to Civil Authorities	Support to Domestic Civil Authorities	Military Support to Civilian Authorities	
Nation Assistance--Support to Counterinsurgency	Nation Assistance	Nation Assistance	
	Support for Insurgencies and Counterinsurgencies	Support for Insurgencies and Counterinsurgencies	Support to Insurgencies and Counterinsurgencies
NEO	NEO	NEO	
Peace Operations Peacemaking Peace Enforcement. Peacekeeping	Peace Enforcement Peacekeeping	Peace enforcement Peacekeeping	Peace enforcement Peacekeeping
Protection of shipping			
Recovery operations			
Show of Force	Show of Force	Show of Force	Shows of force
Strikes and raids	Attacks and Raids	Attacks and Raids	Limited attacks, Raids
	Security Assistance	Security Assistance	
			Base defense
			Military training exchanges
			Multinational exercises
			Support to law enforcement

JP 3-07	FM 1-112	FM 1-114 Draft	FM 17-95
MOOTW	SASO	SASO	SASO
Arms Control.			Arms Control
Combatting Terrorism	Combatting Terrorism	Combatting Terrorism	Combating terrorism
DOD Support to Counterdrug Operations	Counterdrug Operations	Counterdrug Operations	Support to Counterdrug operations
Enforcement of Sanctions/Maritime Intercept Operations			
Enforcing exclusion zones			
Ensuring freedom of navigation and overflight			
Humanitarian Assistance		Humanitarian Assistance Disaster relief	Humanitarian Assistance and Disaster Relief
Military Support to Civil Authorities		Military Support to Civilian Authorities	Support to Domestic Civil Authorities
Nation Assistance-Support to Counterinsurgency			Nation assistance
	Support for Insurgencies and Counterinsurgencies	Support for Insurgencies and Counterinsurgencies	Support for Insurgencies and Counterinsurgencies
NEO	NEO	NEO	NEO
Peace Operations Peacemaking Peace Enforcement. Peacekeeping	Peace Enforcement	Peace Enforcement Peacekeeping	Peace enforcing Peacekeeping
Protection of shipping			
Recovery operations			
Show of Force	Show of Force	Show of Force	Show of force
Strikes and raids	Attacks and Raids	Attacks and Raids	Strikes and raids
			Security assistance
			Quick reaction force
			Deterrence

REFERENCE LIST

1st Battalion, 25th Aviation. 1995. After Action Report, for operations as part of Multinational Force, Haiti, on file in Combined Arms Research Library, Fort Leavenworth, KS.

10th Mountain Division. 1993. ARFOR After Action Report for Operation Restore Hope. Fort Drum, NY.

Air Land Sea Application Center. 1998. *Multiservice Procedures for the Tactical Employment of Nonlethal Weapons*. Langley Air Force Base, VA.

_____. 2000. Aviation Operations on Urban Terrain. Langley Air Force Base, VA.

Allard, Kenneth. n.d. Information Operations in Bosnia: A Soldier's Perspective. Chapter X in *Lessons From Bosnia: The IFOR Experience*. Edited by Larry Wentz. Washington DC: National Defense University Press. http://call.army.mil/call/spc_prod/ccrp/lessons/bostoc.htm

Bowden, Mark. 1999. *Black Hawk Down*. New York: Atlantic Monthly Press.

Center for Army Lessons Learned. 1996. *Operation Joint Endeavor Initial Impressions Report. Bosnia-Herzegovina: Task Force Eagle Initial Operations*. Fort Leavenworth, KS: Center for Army Lessons Learned.

_____. 1994. *Operation Uphold Democracy Initial Impressions. Haiti D-20 to D+40.* Fort Leavenworth, KS: Center for Army Lessons Learned.

_____. 1995. *Operation Uphold Democracy Initial Impressions. Haiti D-20 to D+150,* Volume II. Fort Leavenworth, KS: Center for Army Lessons Learned.

_____. n.d. *U.S. Army Operations in Support of UNOSOM II, 4 May 93 – 31 Mar 94. Lessons Learned Report.* Fort Leavenworth, KS: Center for Army Lessons Learned.

Endeavor. See Center for Army Lessons Learned

FMs. See U.S. Army

Foreign Military Studies Office (FMSO). 1998. *Lessons and Conclusions on the Execution of IFOR Operations and Prospects for a Future Combined Security System: The Peace and Stability of Europe after IFOR*. A Joint U.S./Russian research project of the FMSO, Center for Army Lessons Learned, Fort Leavenworth, KS and the Center for Military-Strategic Studies, General Staff of

the Armed Forces, Moscow, Russia. http://call.army.mil/call/fmso/fmsopubs/issues/ifor/toc.htm

Impressions 1994. See Center for Army Lessons Learned

Impressions 1995. See Center for Army Lessons Learned

Johnson, Captain Fred. 1997.

a. Tactics, Techniques, and Procedures for Civil Disturbance, Operation JOINT ENDEAVOR. *CALL Newsletter No. 96-1* (August). Fort Leavenworth, KS: Center for Army Lessons Learned. http://call.army.mil/call/newsltrs/96-11/toc.htm

b. Drawing a Line in the Mud. *CALL Newsletter No. 96-5* (September). Fort Leavenworth, KS: Center for Army Lessons Learned. http://call.army.mil/call/newsltrs/96-5/sec4zos.htm

Joint Chiefs of Staff. 1995. Joint Publication 3-07, *Joint Doctrine for Military Operations Other Than War*. Washington DC: U.S. Government Printing Office.

Sargent, Colonel Christopher, and Major Frank Millerd. 1998. Use of Army Aviation in Peacekeeping Operations. *News From the Front* (November-December). Fort Leavenworth, KS: Center for Army Lessons Learned. http://call.army.mil/call/nftf/novdec98/aviation.htm

UNOSOM II. See Center for Army Lessons Learned

U.S. Army. 1985. Army Regulation 525-90, *Combat Search and Rescue Procedures*. Alexandria, VA: Army Publications and Printing Command.

_____. 1997. FM 1-100, *Army Aviation Operations*. Washington, DC: Headquarters, Department of the Army.

_____. 1997. FM 1-111, *Aviation Brigades*. Washington, DC: Headquarters, Department of the Army.

_____. 1997. FM 1-112, *Attack Helicopter Operations*. Washington, DC: Headquarters, Department of the Army.

_____. 1997. FM 1-113, *Utility and Cargo Helicopter Operations*. Washington, DC: Headquarters, Department of the Army.

_____. 1997. FM 1-114, *Air Cavalry Squadron and Troop Operations*. Washington, DC: Headquarters, Department of the Army.

_____. 1999. FM 1-114 (DRAFT), *Air Cavalry Squadron and Troop Operations.* Washington, DC: Headquarters, Department of the Army.

_____. 1991. FM 1-116, *Tactics, Techniques, and Procedures for the Air Cavalry/Reconnaissance Troop*. Washington, DC: Headquarters, Department of the Army.

_____. 1996. FM 17-95, *Cavalry Operations.* Washington, DC: Headquarters, Department of the Army.

_____. 1995. FM 17-97, *Cavalry Troop*. Washington, DC: Headquarters, Department of the Army.

_____.1993. FM 100-5, *Operations*. Washington, DC: Headquarters, Department of the Army.

_____. 1997. FM 101-5-1, *Operational Terms and Graphics*. Washington, DC: Headquarters, Department of the Army.

OTHER SOURCES

U.S. Army Documents

U.S. Army. 1994. FM 17-98, *Scout Platoon.* Washington, DC: Headquarters, Department of the Army.

_____. 1990. FM 100-20, *Military Operations in Low Intensity Conflict.* Washington, DC: Headquarters, Department of the Army.

_____. 1994. FM 100-23, *Peace Operations.* Washington, DC: Headquarters, Department of the Army.

Government Documents

25th Infantry Division (Light) during operations in Haiti. Mission Request Forms. On file in the Combined Arms Research Library, Fort Leavenworth, KS.

Center For Army Lessons Learned. 1995. *Initial Impressions.* Volume III. *Haiti: "The U.S. Army and United Nations Peacekeeping.* Fort Leavenworth, KS: Center For Army Lessons Learned.

_____. 1997. *Operation Joint Guard Initial Impressions Report: Bosnia-Herzegovina: Task Force Eagle Operations.* Fort Leavenworth, KS: Center For Army Lessons Learned.

_____ . 1998. *Operation Joint Guard Initial Impressions Report: Bosnia-Herzegovina.* Fort Leavenworth, KS: Center For Army Lessons Learned.

Land Group 10 On Battlefield Helicopters. 1997. *North Atlantic Council Working Paper,* "Possible Uses and Limitations of Helicopter Units for Peacekeeping Operations and Humanitarian Intervention." NATO Army Armaments Group, Brussels.

Articles

Fastabend, Lieutenant Colonel David, Lieutenant Colonel Jeffery Leser, Major Lynda Lamitie, Major Mark Dickens, Major Paul Rivette, Captain Robert Murphy, Captain Fred Johnson. 1997. *Tactics, Techniques and Procedures From Operation Joint Endeavor.* CALL Newsletter No. 97-1. Center For Army Lessons Learned (CALL), Fort Leavenworth, KS, August.

Hughes, Major Chris. 1997. "Peace Operations Training Vignettes With Possible Solutions." CALL Newsletter No. 95-2. Fort Leavenworth, KS: Center For Army Lessons Learned, (September).

Lawrence, Lieutenant Colonel David L., Captain John C. White. 1999. "Light-Army Aviation at the JRTC: Do We Perform Search and Attack?" News From the Front. Fort Leavenworth, KS: Center For Army Lessons Learned, (May-June).

Monographs/Theses

Bird, Craig H., Major. 1997. "Tactical Considerations for Army Aviation in Interventionary Operations, a.k.a. - LIC, MOOTW, OOTW, and SASO: Are We Ready Yet?" Monograph, School of Advanced Military Studies, Fort Leavenworth, KS, U.S. Army Command and General Staff College, Fort Leavenworth.

Hansen, John T., Major. 1984. "The Role of the Attack Helicopter in Operations Other Than War." Master of Military Art and Science Thesis, Fort Leavenworth, KS, U.S. Army Command and General Staff College.

Mazzarella, Mark, Major. 1994. "Adequacy of U.S. Army Attack Helicopter Doctrine to Support the Scope of Attack Helicopter Operations In A Multi-Polar World." Master of Military Art and Science Thesis, Fort Leavenworth, KS, U.S. Army Command and General Staff College.

Walker, Gregory D., Lieutenant Colonel. 1996. "Army Aviation's Role In Peacekeeping Operations." U.S. Army War College Research Project, Carlisle Barracks, PA, U.S. Army War College.

INITIAL DISTRIBUTION LIST

1. Combined Arms Research Library
   U.S. Army Command and General Staff College
   250 Gibbon Ave.
   Fort Leavenworth, KS 66027-2314

2. Defense Technical Information Center/OCA
   8725 John J. Kingman Rd., Suite 944
   Fort Belvoir, VA 22060-6218

3. Directorate of Training, Doctrine, and Simulation
   Doctrine Division
   United States Army Aviation Center
   Fort Rucker, AL 36362

4. LTC Carl E. Fischer
   Department of Joint and Multinational Operations
   USACGSC
   1 Reynolds Ave.
   Fort Leavenworth, KS 66027-1352

5. COL Christopher Sargent
   Director, Center For Army Leadership
   USACGSC
   1 Reynolds Ave.
   Fort Leavenworth, KS 66027-1352

6. Dr. Harold Orenstein
   Combined Arms Doctrine Directorate
   USACGSC
   1 Reynolds Ave.
   Fort Leavenworth, KS 66027-1352

CERTIFICATION FOR MMAS DISTRIBUTION STATEMENT

1. Certification Date: 2 June 2000

2. Thesis Author: MAJ Mark A. Tolmachoff

3. Thesis Title: Is Army Aviation Doctrine Adequate for Military Operations Other Than War?

4. Thesis Committee Members Signatures:

LTC Carl Fischer _____

COL Christopher Sargent _____

Dr. Harold Orenstein _____

5. Distribution Statement: See distribution statements A-X on reverse, then circle appropriate distribution statement letter code below:

(A) B C D E F X SEE EXPLANATION OF CODES ON REVERSE

If your thesis does not fit into any of the above categories or is classified, you must coordinate with the classified section at CARL.

6. Justification: Justification is required for any distribution other than described in Distribution Statement A. All or part of a thesis may justify distribution limitation. See limitation justification statements 1-10 on reverse, then list, below, the statement(s) that applies (apply) to your thesis and corresponding chapters/sections and pages. Follow sample format shown below:

EXAMPLE

Limitation Justification Statement	/	Chapter/Section	/	Page(s)
Direct Military Support (10)	/	Chapter 3	/	12
Critical Technology (3)	/	Section 4	/	31
Administrative Operational Use (7)	/	Chapter 2	/	13-32

Fill in limitation justification for your thesis below:

Limitation Justification Statement	/	Chapter/Section	/	Page(s)
	/		/	
	/		/	
	/		/	
	/		/	
	/		/	

7. MMAS Thesis Author's Signature: _____

STATEMENT A: Approved for public release; distribution is unlimited. (Documents with this statement may be made available or sold to the general public and foreign nationals).

STATEMENT B: Distribution authorized to U.S. Government agencies only (insert reason and date ON REVERSE OF THIS FORM). Currently used reasons for imposing this statement include the following:

1. Foreign Government Information. Protection of foreign information.

2. Proprietary Information. Protection of proprietary information not owned by the U.S. Government.

3. Critical Technology. Protection and control of critical technology including technical data with potential military application.

4. Test and Evaluation. Protection of test and evaluation of commercial production or military hardware.

5. Contractor Performance Evaluation. Protection of information involving contractor performance evaluation.

6. Premature Dissemination. Protection of information involving systems or hardware from premature dissemination.

7. Administrative/Operational Use. Protection of information restricted to official use or for administrative or operational purposes.

8. Software Documentation. Protection of software documentation - release only in accordance with the provisions of DoD Instruction 7930.2.

9. Specific Authority. Protection of information required by a specific authority.

10. Direct Military Support. To protect export-controlled technical data of such military significance that release for purposes other than direct support of DoD-approved activities may jeopardize a U.S. military advantage.

STATEMENT C: Distribution authorized to U.S. Government agencies and their contractors: (REASON AND DATE). Currently most used reasons are 1, 3, 7, 8, and 9 above.

STATEMENT D: Distribution authorized to DoD and U.S. DoD contractors only; (REASON AND DATE). Currently most reasons are 1, 3, 7, 8, and 9 above.

STATEMENT E: Distribution authorized to DoD only; (REASON AND DATE). Currently most used reasons are 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10.

STATEMENT F: Further dissemination only as directed by (controlling DoD office and date), or higher DoD authority. Used when the DoD originator determines that information is subject to special dissemination limitation specified by paragraph 4-505, DoD 5200.1-R.

STATEMENT X: Distribution authorized to U.S. Government agencies and private individuals of enterprises eligible to obtain export-controlled technical data in accordance with DoD Directive 5230.25; (date). Controlling DoD office is (insert).