

COMBINED ARMS OPERATIONS IN URBAN TERRAIN



**HEADQUARTERS
DEPARTMENT OF THE ARMY**

DISTRIBUTION RESTRICTION: Approved for public release; distribution is unlimited.

COMBINED ARMS OPERATIONS IN URBAN TERRAIN

CONTENTS

	Page
Preface.....	X
 CHAPTER 1. INTRODUCTION	
Section I. General Considerations	1-1
1-1. Definitions.....	1-1
1-2. Full Spectrum Operations/Urban Operations Concept	1-4
1-3. Tactical Challenges	1-5
1-4. Importance of Urban Areas.....	1-7
1-5. Fundamentals of Urban Operations	1-9
1-6. Characteristics of Urban Operations	1-12
1-7. Urban Battle Space.....	1-15
Section II. Special Considerations.....	1-17
1-8. Weapons Considerations.....	1-17
1-9. Target Engagement	1-18
1-10. Munitions and Equipment.....	1-19
1-11. Noncombatants.....	1-19
1-12. Disease Prevention.....	1-22
1-13. Stress	1-22
1-14. Fratricide Avoidance.....	1-23
1-15. Situational Awareness.....	1-24
1-16. Media	1-25
1-17. Unexploded Ordnance.....	1-26
 CHAPTER 2. URBAN ANALYSIS	
Section I. Models of Urban Areas.....	2-1
2-1. General Urban Characteristics	2-1
2-2. Description of Urban Areas Worldwide	2-2

DISTRIBUTION RESTRICTION: Approved for public release; distribution is unlimited.

*This publication supersedes FM 90-10-1, 12 May 1993, with Change 1, 3 Oct 95.

		Page
Section	II. Terrain and Weather Analyses.....	2-3
	2-3. Urban Zones and Street Patterns.....	2-3
	2-4. Special Terrain Considerations.....	2-9
	2-5. Special Weather Considerations.....	2-12
	2-6. Analysis of Other Characteristics.....	2-13
	2-7. Aperture Analysis.....	2-13
	2-8. Questions for Commanders and Leaders.....	2-15
Section	III. Urban Building Analysis.....	2-15
	2-9. Types of Mass-Construction Buildings.....	2-16
	2-10. Types of Framed Buildings.....	2-20
	2-11. Floor Plans.....	2-24
	2-12. Residential Areas.....	2-27
	2-13. Characteristics of Buildings.....	2-29
	2-14. Distribution of Building Types.....	2-29
Section	IV. Urban Threat Evaluation.....	2-31
	2-15. Operational Factors.....	2-31
	2-16. Threat.....	2-34
	2-17. Projected Threat Capabilities.....	2-38
	2-18. Modern Urban Battle Analysis.....	2-39

CHAPTER 3. URBAN COMBAT SKILLS

Section	I. Movement.....	3-1
	3-1. Crossing Open Areas.....	3-1
	3-2. Movement Parallel to Buildings.....	3-1
	3-3. Movement Past Windows.....	3-2
	3-4. Movement Around Corners.....	3-4
	3-5. Crossing a Wall.....	3-5
	3-6. Use of Doorways.....	3-5
	3-7. Movement Between Positions.....	3-6
	3-8. Fire Team Employment.....	3-7
Section	II. Entry Techniques.....	3-8
	3-9. Upper Building Levels.....	3-8
	3-10. Use of Grappling Hook.....	3-10
	3-11. Scaling of Walls.....	3-10
	3-12. Rappelling.....	3-12
	3-13. Entry at Lower Levels.....	3-12
	3-14. Use of Hand Grenades.....	3-15
	3-15. Individual Weapons Control When Moving.....	3-22
Section	III. Clearing.....	3-22
	3-16. High Intensity Versus Precision Clearing Techniques.....	3-22
	3-17. Principles of Precision Room Clearing.....	3-23
	3-18. Fundamentals of Precision Room Clearing.....	3-24
	3-19. Composition of the Clearing Team.....	3-24
	3-20. Breaching.....	3-25

		Page
	3-21. Considerations for Entry	3-27
	3-22. Techniques for Entering Buildings and Clearing Rooms	3-28
	3-23. Reflexive Shooting.....	3-35
	3-24. Target Discrimination	3-39
	3-25. Movement Within a Building.....	3-39
	3-26. Verbal Commands and Signals	3-45
	3-27. Safety and Force Protection	3-46
Section	IV. Fighting Positions	3-47
	3-28. Hasty Fighting Position.....	3-47
	3-29. Prepared Fighting Position.....	3-50
	3-30. Target Acquisition.....	3-60
	3-31. Defense Against Flame Weapons and Incendiary Munitions	3-62
	3-32. Defense Against Enhanced Flame Weapons.....	3-63
Section	V. Navigation in Urban Areas	3-65
	3-33. Military Maps.....	3-66
	3-34. Global Positioning Systems	3-66
	3-35. Aerial Photographs.....	3-67
Section	VI. Camouflage	3-67
	3-36. Application.....	3-67
	3-37. Use of Shadows.....	3-67
	3-38. Color and Texture	3-69
 CHAPTER 4. OFFENSIVE OPERATIONS		
Section	I. Offensive Considerations	4-1
	4-1. Reasons for Attacking Urban Areas.....	4-1
	4-2. Reasons for Not Attacking Urban Areas.....	4-2
	4-3. Troop Requirements.....	4-2
	4-4. Fires and Maneuver.....	4-2
	4-5. Limitations	4-7
Section	II. Mission, Enemy, Terrain, Troops, Time, Civil Factors	4-8
	4-6. Mission.....	4-8
	4-7. Enemy	4-9
	4-8. Terrain and Weather.....	4-9
	4-9. Troops Available.....	4-9
	4-10. Time Available.....	4-10
	4-11. Civil Considerations.....	4-10
Section	III. Command and Control	4-10
	4-12. Command	4-11
	4-13. Control	4-11
	4-14. Focus on the Threat.....	4-13
	4-15. Commander's Critical Information Requirements.....	4-14
	4-16. Rehearsals	4-15

		Page
Section	IV. Offensive Framework and Types of Attacks	4-15
	4-17. Offensive Framework.....	4-15
	4-18. Hasty Attack.....	4-16
	4-19. Deliberate Attack	4-17
Section	V. Brigade Offensive Operations.....	4-17
	4-20. Task Organization	4-17
	4-21. Assess.....	4-19
	4-22. Shape	4-20
	4-23. Dominate.....	4-21
	4-24. Types of Offensive Operations	4-21
	4-25. Transition	4-29
Section	VI. Battalion Task Force Offensive Operations.....	4-29
	4-26. Task Organization	4-30
	4-27. Deliberate Attack	4-31
	4-28. Movement to Contact.....	4-35
	4-29. Infiltration	4-36
	4-30. Attack of a Village	4-38
	4-31. Route Security and Clearance.....	4-38
	4-32. Nodal Attack	4-40
Section	VII. Company Team Attack of an Urban Area.....	4-41
	4-33. Task Organization	4-42
	4-34. Deliberate Attack	4-44
	4-35. Isolate an Urban Objective.....	4-46
	4-36. Assault a Building.....	4-49
	4-37. Attack of a Block or Group of Buildings.....	4-51
	4-38. Hasty Attack.....	4-52
	4-39. Movement to Contact and Reconnaissance	4-53
	4-40. Seizure of Key Urban Terrain.....	4-55
	4-41. Direct Fire Planning and Control.....	4-57
Section	VIII. Platoon Attack of an Urban Area.....	4-61
	4-42. Task Organization (Platoon Attack of a Building)	4-61
	4-43. Movement in Urban Terrain	4-63
	4-44. Attacking in Urban Terrain	4-64
	4-45. Platoon Assault of a Building	4-66
	4-46. Consolidation and Reorganization	4-68

CHAPTER 5. DEFENSIVE OPERATIONS

Section	I. Defensive Considerations	5-1
	5-1. Reasons for Defending Urban Areas.....	5-1
	5-2. Reasons for Not Defending Urban Areas.....	5-2
	5-3. General Considerations	5-2

		Page
Section	II. Mission, Enemy, Terrain, Troops and Time Available, Civil Considerations.....	5-3
	5-4. Mission.....	5-3
	5-5. Enemy	5-3
	5-6. Terrain and Weather.....	5-4
	5-7. Time Available.....	5-7
	5-8. Troops Available.....	5-7
	5-9. Civil Considerations.....	5-7
Section	III. Defensive Framework and Organization	5-7
	5-10. Defensive Framework	5-7
	5-11. Command and Control	5-8
	5-12. Organization and Preparation of the Defense	5-10
	5-13. Priorities of Work.....	5-16
Section	IV. Brigade Defensive Operations	5-18
	5-14. Defensive Planning	5-18
	5-15. Integrating the Urban Area into the Defense	5-19
	5-16. Nodal Defense.....	5-20
Section	V. Battalion Defensive Operations	5-22
	5-17. Employment of Combat and Combat Support Assets	5-22
	5-18. Integrating Urban Areas into the Defense.....	5-25
	5-19. Defense of a Village.....	5-26
	5-20. Defense in Sector	5-27
	5-21. Nodal Defense.....	5-28
	5-22. Delay	5-30
Section	VI. Company Defensive Operations	5-32
	5-23. Hasty Defense	5-32
	5-24. Defense of a Village	5-33
	5-25. Defense of a Block or Group of Buildings.....	5-36
	5-26. Defense of Key Urban Terrain.....	5-37
	5-27. Defense of an Urban Strongpoint.....	5-40
	5-28. Delay	5-41
Section	VII. Platoon Defensive Operations.....	5-43
	5-29. Planning the Defense	5-43
	5-30. Priorities of Work and Defensive Considerations.....	5-43
	5-31. Conduct of the Defense.....	5-49
	5-32. Consolidation and Reorganization.....	5-49
	5-33. Counterattack	5-50
	5-34. Defense Against Armor.....	5-51
	5-35. Conduct of Armored Ambush.....	5-54

		Page
CHAPTER 6. SNIPER AND COUNTERSNIPER TACTICS, TECHNIQUES, AND PROCEDURES		
Section	I. Employment of Snipers.....	6-1
	6-1. Sniper Capabilities.....	6-1
	6-2. Employment Considerations.....	6-2
	6-3. Commander's Responsibilities to the Sniper.....	6-5
Section	II. Countering the Urban Sniper.....	6-6
	6-4. Types of Enemy Snipers and Their Capabilities.....	6-6
	6-5. The Law of Land Warfare Applied to Snipers.....	6-8
	6-6. Sniper Awareness.....	6-9
	6-7. Planning Sniper Countermeasures.....	6-9
	6-8. Countersniper Tactics, Techniques, and Procedures.....	6-11
CHAPTER 7. EMPLOYMENT AND EFFECTS OF WEAPONS		
	7-1. Effectiveness of Weapons and Demolitions.....	7-1
	7-2. Rifle, Carbine, and Squad Automatic Weapon.....	7-2
	7-3. Medium and Heavy Machine Guns (7.62-mm and Caliber .50).....	7-4
	7-4. Grenade Launchers, 40-mm (M203 and MK 19).....	7-7
	7-5. Light and Medium Recoilless Weapons.....	7-9
	7-6. Antitank Guided Missiles.....	7-17
	7-7. Flame Weapons.....	7-20
	7-8. Hand Grenades.....	7-23
	7-9. Mortars.....	7-26
	7-10. 25-mm Automatic Gun.....	7-28
	7-11. Tank Cannon.....	7-31
	7-12. Artillery and Naval Gunfire.....	7-36
	7-13. Aerial Weapons.....	7-37
	7-14. Demolitions.....	7-39
	7-15. Common Effects of Urban Combat.....	7-39
CHAPTER 8. OBSTACLES, MINES, AND DEMOLITIONS		
Section	I. Obstacles.....	8-1
	8-1. Types of Obstacles.....	8-1
	8-2. Construction of Obstacles.....	8-8
Section	II. Mines.....	8-8
	8-3. Types of Mines and Employment Techniques.....	8-8
	8-4. Enemy Mines and Booby Traps.....	8-10
Section	III. Demolitions.....	8-12
	8-5. Offensive Use.....	8-12
	8-6. Defensive Use.....	8-14
	8-7. Safety.....	8-18

	Page
Section IV. Field Expedient Breaching of Common Urban Barriers.....	8-19
8-8. Force Protection	8-19
8-9. Breaching Reinforced and Nonreinforced Exterior Walls	8-20
8-10. Breaching Interior Walls and Partitions.....	8-20
8-11. Door-Breaching Charges.....	8-22
CHAPTER 9. EMPLOYMENT OF ATTACK AND ASSAULT/CARGO HELICOPTERS	
9-1. Support for Ground Maneuver Units	9-1
9-2. Role During Urban Operations.	9-1
9-3. Command and Control	9-4
9-4. Maneuver Graphic Aids	9-4
9-5. Identifying Friendly Positions, Marking Locations, and Acquiring Targets	9-5
9-6. Attack Helicopter Target Engagement.....	9-10
9-7. Air Ground Integration in the Hasty Attack/Close Fight.....	9-12
9-8. Employment of Assault/Cargo Helicopters	9-18
9-9. Aviation Urban Operations Risk Assessment.....	9-20
CHAPTER 10. FIRES	
10-1. Brigade Fire Support for Urban Operations.....	10-1
10-2. Command, Control, Communications, Computers, and Intelligence (C4I)	10-1
10-3. Mission Support of Offensive and Defensive Operations	10-2
10-4. Acquisition Platforms	10-16
10-5. Meteorological and Survey Requirements	10-17
10-6. Delivery Assets	10-18
10-7. Tactical Air	10-18
10-8. Nonlethal Means	10-18
10-9. Artillery Used in Direct Fire	10-19
CHAPTER 11. MOBILITY, COUNTERMOBILITY, SURVIVABILITY	
11-1. General	11-1
11-2. Mission Analysis.....	11-1
11-3. Support Products	11-2
11-4. Engineer Staff Planning Checklist (Brigade and Below).....	11-4
11-5. Reconnaissance and Surveillance Planning Considerations ...	11-6
11-6. Mobility Planning Considerations	11-6
11-7. Countermobility Planning Considerations	11-9
11-8. Survivability Planning Considerations.....	11-10
CHAPTER 12. COMBAT SUPPORT	
12-1. Mortars	12-1
12-2. Field Artillery.....	12-4

		Page
	12-3. Air Defense Artillery	12-5
	12-4. Engineers.....	12-7
	12-5. Military Police.....	12-8
	12-6. Communications	12-9
CHAPTER 13. COMBAT SERVICE SUPPORT		
Section	I. General.....	13-1
	13-1. Guidelines	13-1
	13-2. Principal Functions	13-1
	13-3. Supply and Movement Functions	13-4
	13-4. Company Resupply Operations.....	13-6
	13-5. Load Planning and Management.....	13-8
	13-6. Other Combat Service Support Tactics, Techniques, and Procedures	13-10
	13-7. Personnel Services	13-12
	13-8. Deceased Personnel.....	13-12
Section	II. Combat Health Support	13-13
	13-9. Medical Considerations for the Battalion Staff.....	13-13
	13-10. Considerations for the Combat Medic (Trauma Specialist)	13-15
	13-11. Considerations for the Battalion Physician’s Assistant and Command Surgeon.....	13-21
	13-12. Battalion Aid Station Operations	13-23
	13-13. Precombat Medical Checklists.....	13-25
Section	III. Legal Aspects of Urban Operations.....	13-27
	13-14. Civilian Impact in the Battle Area	13-27
	13-15. Limits of Authority	13-28
	13-16. Diversion of Military Resources	13-28
	13-17. Health and Welfare	13-28
	13-18. Law and Order.....	13-29
	13-19. Public Affairs Officer and Media Relations	13-29
	13-20. Civil Affairs Units and Psychological Operations.....	13-29
	13-21. Provost Marshall	13-30
	13-22. Commanders’ Legal Authority and Responsibilities	13-30
CHAPTER 14. STABILITY OPERATIONS AND SUPPORT OPERATIONS		
Section	I. Stability Operations	14-1
	14-1. Purposes and Types of Stability Operations	14-1
	14-2. Planning Considerations	14-2
	14-3. Establish a Lodgment Area.....	14-3
	14-4. Conduct Negotiations.....	14-6
	14-5. Monitor Compliance With an Agreement.....	14-8
	14-6. Establish Observation Posts.....	14-8
	14-7. Establish Checkpoints	14-10

	Page
14-8. Conduct Area Security Patrols.....	14-12
14-9. Conduct Convoy Escort.....	14-15
14-10. Open and Clear Routes.....	14-20
14-11. Conduct Reserve Force Mission.....	14-20
14-12. Cordon and Search.....	14-20
Section II. Support Operations.....	14-26
14-13. Types of Support Operations.....	14-26
14-14. Forms of Support Operations.....	14-26
14-15. Phases of Support Operations.....	14-27
Section III. Transition to Combat Operations.....	14-27
14-16. Plan for Contingencies.....	14-28
14-17. Balanced Mindset.....	14-28
14-18. Combat Skills Training.....	14-28
APPENDIX A. URBAN OPERATIONS UNDER RESTRICTIVE CONDITIONS.....	A-1
APPENDIX B. URBAN OPERATIONS UNDER CONDITIONS OF LIMITED VISIBILITY.....	B-1
APPENDIX C. LIGHT INFANTRY AND ARMORED VEHICLE TACTICS, TECHNIQUES, AND PROCEDURES.....	C-1
APPENDIX D. INFORMATION OPERATIONS.....	D-1
APPENDIX E. COALITION OPERATIONS.....	E-1
APPENDIX F. WEAPONS OF MASS DESTRUCTION, TOXIC INDUSTRIAL MATERIALS, AND THE USE OF OBSCURATION.....	F-1
APPENDIX G. INTELLIGENCE REQUIREMENTS CHECKLISTS FOR URBAN OPERATIONS.....	G-1
APPENDIX H. LESSONS LEARNED FROM MODERN URBAN COMBAT.....	H-1
APPENDIX I. PLATOON URBAN OPERATIONS KIT AND TACTICS, TECHNIQUES, AND PROCEDURES FOR MARKING BUILDINGS AND ROOMS.....	I-1
APPENDIX J. SUBTERRANEAN OPERATIONS.....	J-1
APPENDIX K. TACTICS, TECHNIQUES, AND PROCEDURES FOR THE EMPLOYMENT OF MORTARS ON URBAN TERRAIN.....	K-1
APPENDIX L. COMMUNICATIONS DURING URBAN OPERATIONS.....	L-1
GLOSSARY.....	Glossary-1
REFERENCES.....	References-1
INDEX.....	Index-1

PREFACE

Worldwide urban growth and the shift of populations from rural to urban areas have affected Army operations. Urban areas will most probably constitute future battlefields. All major Army operations most likely include urban operations (UO) in the foreseeable future.

There is a high probability that the US Army may be engaged by threat forces that are intermingled with the civilian population. Units using the tactics, techniques, and procedures (TTP) outlined in this manual are bound by the specific rules of engagement (ROE) issued by their headquarters and the laws of land warfare.

This manual provides brigade and battalion commanders and staffs, company commanders, small-unit leaders, and individual Infantrymen with considerations and combined arms TTP for conducting full-spectrum urban operations (offense, defense, stability, and support). Some techniques for dealing with insurgents and terrorists or similar threats are included; however, the manuals which best address these issues are FM 7-98 and FM 90-8. This manual may also be used as a reference for other combat, combat support and combat service support commanders, leaders, and staffs that will be required to support combined arms urban operations.

The proponent of this publication is the US Army Infantry School. Send comments and recommendations to doctrine@benning.army.mil or on DA Form 2028 directly to Commandant, US Army Infantry School, ATTN: ATSH-ATD, Fort Benning, Georgia 31905-5410.

Unless this publication states otherwise, masculine nouns and pronouns do not refer exclusively to men.

CHAPTER 1 INTRODUCTION

“The rapid growth of the number and size of urban centers, especially in regions of political instability, increases the likelihood that US forces will be called upon to conduct MOUT.”

Defense Science Board, October 1996

It is estimated that by the year 2010, seventy-five percent of the world’s population will live in urban areas. Urban areas are expected to be the future battlefield and combat in urban areas cannot be avoided. This manual provides commanders, leaders, and staffs at brigade level and below with a discussion of the principles of urban operations and tactics, techniques, and procedures for fighting in urban areas.

Section I. GENERAL CONSIDERATIONS

Urban operations (UO) are not new to the US Army. Throughout its history the Army has fought an enemy on urban terrain. What is new is that urban areas and urban populations have grown significantly during the late twentieth century and have begun to exert a much greater influence on military operations. The worldwide shift from a rural to an urban society and the requirement to transition from combat to stability and support operations and vice-versa have affected the US Army’s doctrine. The brigade will be the primary headquarters around which units will be task-organized to perform UO. Companies, platoons, and squads will seldom conduct UO independently, but will most probably conduct assigned missions as part of a battalion task force urban operation. This section provides the necessary background information that facilitates an understanding of how higher level commanders plan and conduct UO.

1-1. DEFINITIONS

Terms specific to UO are defined herein.

a. **Urban Operations.** UO are operations planned and conducted in an area of operations (AO) that includes one or more urban areas. An urban area consists of a topographical complex where man-made construction or high population density is the dominant feature. UO usually occur when—

- The assigned objective lays within an urban area and cannot be bypassed.
- The urban area is key (or decisive) in setting and or shaping the conditions for current or future operations.
- An urban area is between two natural obstacles and cannot be bypassed.
- The urban area is in the path of a general advance and cannot be surrounded or bypassed.
- Political or humanitarian concerns require the control of an urban area or necessitate operations within it.
- Defending from urban areas supports a more effective overall defense or cannot be avoided.