



**U.S. Army Research Institute
for the Behavioral and Social Sciences**

Research Report 1716

Selected Training Practices for Military Operations in Urban Terrain (MOUT)

Robert H. Sulzen
U.S. Army Research Institute

DTIC QUALITY INSPECTED 2

19980130 097

September 1997

Approved for public release; distribution is unlimited.

U.S. ARMY RESEARCH INSTITUTE FOR THE BEHAVIORAL AND SOCIAL SCIENCES

A Field Operating Agency Under the Jurisdiction
of the Deputy Chief of Staff for Personnel

EDGAR M. JOHNSON
Director

Technical review by

Jean L. Dyer
David W. Reiss

NOTICES

DISTRIBUTION: Primary distribution of this report has been made by ARI. Please address correspondence concerning distribution of reports to: U.S. Army Research Institute for the Behavioral and Social Sciences, ATTN: PERI-STP, 5001 Eisenhower Ave., Alexandria, Virginia 22333-5600.

FINAL DISPOSITION: This report may be destroyed when it is no longer needed. Please do not return it to the U.S. Army Research Institute for the Behavioral and Social Sciences.

NOTE: The findings in this report are not to be construed as an official Department of the Army position, unless so designated by other authorized documents.

REPORT DOCUMENTATION PAGE

1. REPORT DATE 1997, September		2. REPORT TYPE Final		3. DATES COVERED (from... to) June 1996-June 1997	
4. TITLE AND SUBTITLE Selected Training Practices for Military Operations in Urban Terrain (MOUT)				5a. CONTRACT OR GRANT NUMBER	
				5b. PROGRAM ELEMENT NUMBER 0603007A	
6. AUTHOR(S) Robert H. Sulzen				5c. PROJECT NUMBER A793	
				5d. TASK NUMBER 2127	
				5e. WORK UNIT NUMBER H01	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Army Research Institute for the Behavioral and Social Sciences Infantry Forces Research Unit P.O. Box 52086 Fort Benning, GA 31995-2086				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army Research Institute for the Behavioral and Social Sciences ATTN: PERI-IJ 5001 Eisenhower Avenue Alexandria, VA 22333-5600				10. MONITOR ACRONYM ARI	
				11. MONITOR REPORT NUMBER Research Report 1716	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution is unlimited.					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT (<i>Maximum 200 words</i>): <p>The Army and Marine Corps both consider Military Operations in Urban Terrain (MOUT) to be a central part of future training and together have a joint MOUT Advanced Concept Technology Demonstration (ACTD) underway. Training facilities for military and law enforcement agencies include firing ranges, mock towns or villages, and shoot houses. Makeshift facilities for dry-fire drills include engineer tape staked out on the ground and rooms in any building available. Training in Close Quarter Combat (CQC) is offered in Army and Marine Corps training courses.</p> <p>Training time was mostly allocated to live fire and live simulation. Team dry-fire drills were often extensively practiced before team live fire, but considered as a part of the safety training required as a part of live firing. Before team live-fire training, Army units usually conduct individual marksmanship training. In many cases, standards were set for individual qualification before soldiers could participate in team live fire. Live simulation was both with the multiple integrated laser engagement system (MILES) and Simunition. Law enforcement agencies (including Military Police) and Marines were more likely to use Simunition. Those using Simunition who also had experience with MILES preferred Simunition for live simulation training.</p>					
15. SUBJECT TERMS Military Operations in Urban Terrain (MOUT) Special Weapons and Tactics (SWAT) Special Reaction Team (SRT) Urban fighting Fighting in Built-up Areas (FIBA) Maritime Special Purpose Force (MSPF)					
SECURITY CLASSIFICATION OF			19. LIMITATION OF ABSTRACT Unlimited	20. NUMBER OF PAGES 23	21. RESPONSIBLE PERSON (Name and Telephone Number)
16. REPORT Unclassified	17. ABSTRACT Unclassified	18. THIS PAGE Unclassified			

Research Report 1716

Selected Training Practices for Military Operations in Urban Terrain (MOUT)

Robert H. Sulzen
U.S. Army Research Institute

Infantry Forces Research Unit
Scott E. Graham, Chief

U.S. Army Research Institute for the Behavioral and Social Sciences
5001 Eisenhower Avenue, Alexandria, Virginia 22333-5600

Office, Deputy Chief of Staff for Personnel
Department of the Army

September 1997

Army Project Number
20363007A793

Training Systems and Education

Approved for public release; distribution is unlimited.

FOREWORD

Future missions of the United States Armed Forces, especially those of the Army and the Marine Corps, are increasingly likely to be conducted in cities or built-up urban areas. Well-trained and well-equipped Infantry forces are the key component for military success in urban environments. In preparation for increasing numbers of military operations in urban terrain (MOUT), the Army and Marine Corps are jointly conducting the MOUT Advanced Concept Technology Demonstration (ACTD) to ensure that our troops have technologies available for force dominance in urban fighting. The MOUT ACTD will identify and evaluate new technologies that are intended to improve situational awareness, lethality, survivability, and mobility. This research supports the integration of new advanced technologies into a comprehensive and efficient training system that will be critical to the success of the total effort.

The research described here was undertaken by the U.S. Army Research Institute for the Behavioral and Social Sciences' (ARI) Infantry Forces Research Unit at Fort Benning, GA, in support of the upcoming MOUT ACTD. The project identified and compared training technologies and techniques used by the armed services and law enforcement agencies as the foundation for developing a MOUT ACTD training methodology that can effectively integrate selected advanced technologies. The sponsor for the research was the Director, Directorate of Operations and Training, U.S. Army Infantry Center. The research was conducted as part of Work Package 2127: Light Infantry Training Environments.

ZITA M. SIMUTIS
Technical Director

EDGAR M. JOHNSON
Director

SELECTED TRAINING PRACTICES FOR MILITARY OPERATIONS IN URBAN TERRAIN (MOUT)

EXECUTIVE SUMMARY

Research Requirement:

The primary objective of the research was to identify and compare Military Operations in Urban Terrain (MOUT) training practices as conducted by the Army, Marine Corps, special operations units, and law enforcement agencies. The research was conducted as a foundation for a MOUT training methodology that can effectively integrate selected advanced technologies identified in the MOUT Advanced Concept Technology Demonstration (ACTD).

Procedure:

MOUT doctrinal training literature was reviewed as the basis of the analysis. Interviews were then conducted with service and agency personnel who had a major responsibility for MOUT training. This included interviews at two Army posts, a Marine base, a county Sheriff's Department, and with the U.S. Border Patrol Reaction Team. The results from the interviews were supplemented by observations of training.

Findings:

The Army and Marine Corps both consider MOUT to be a central part of future training. Infantry training offered by both services to novice officers includes MOUT classroom instruction with about four times as many hours in field training as classroom hours. Law enforcement agencies usually have a Special Weapons and Tactics (SWAT) or Special Reaction Team (SRT) as a part of their organization. The requirements for these teams include room clearing, much as is done by the military in built-up areas. The doctrine and principles for clearing a room are similar for law enforcement, special operations, and infantry units. Room clearing organization, equipment, and training facilities are similar for the differing organizations. MOUT training time was mostly allocated to live fire, live simulation, and drills. Live simulation was performed with paint ball guns, Multiple Integrated Laser Engagement System (MILES), and Simunition (a special low-velocity marking bullet that may be fired at participants with protective masks). Law enforcement agencies (including military police) and special operations units were more likely to use Simunition than MILES.

Utilization of Findings:

The results have been provided to the Director, Directorate of Operations and Training, U.S. Army Infantry Center, as the basis for training development in support of the MOUT ACTD.

SELECTED TRAINING PRACTICES FOR MILITARY OPERATIONS IN URBAN
TERRAIN (MOUT)

CONTENTS

	Page
INTRODUCTION	1
METHOD	2
RESULTS	3
Doctrine	3
Organization and Equipment	5
Training Facilities and Resources	7
Time Allocation	8
Institutional Training	9
DISCUSSION	10
Tactical Considerations	10
Other Considerations	11
Summary	14
REFERENCES	15

LIST OF TABLES

Table 1. Type of Facilities Perceived Available (Percent)	7
2. Actual and Preferred Time for Method (Percent)	8
3. Actual and Preferred Time for MOUT Training (Percent)	9

LIST OF FIGURES

Figure 1. Size of unit identified by respondents for training focus	6
---	---

SELECTED TRAINING PRACTICES FOR MILITARY OPERATIONS IN URBAN TERRAIN (MOUT)

Introduction

The objectives of this report are: to review selected training practices followed by the Army, Marine Corps, and law enforcement agencies for urban fighting or Military Operations in Urban Terrain (MOUT), and to provide information for those conducting or planning to conduct MOUT research.

Future warfare will include fighting in cities. According to Lieutenant General Garner, the Assistant Vice Chief of Staff of the Army, troops in the future will most likely be fighting in cities (Holzer, 1997). The Marine Corps Commandant, Charles Krulak, also believes that future warfare will likely be in an urban or jungle setting (Holzer, 1996). In an Army Times article, Zwack (1996), states: "There is no more complex and deadly aspect of war than MOUT. Sustained urban operations ... are the most likely future arenas for the bulk of our future deployments" (p. 62). Naylor (1996) also emphasized the high likelihood of city fighting and its challenges. The noted author, Ralph Peters (1996), stated, "The future of warfare lies in the streets, sewers, high-rise buildings, industrial parks, and the sprawl of houses, shacks, and shelters that form the broken cities of our world" (p. 43).

While urban combat must certainly emphasize dismounted Infantry fighting, there are clear requirements to employ tank and mechanized forces within the city. Armored and mechanized forces were used in the relief force when our forces suffered helicopter and Ranger losses in the city of Mogadishu (Naylor, 1996). In the November-December 1995 issue of Infantry, with an emphasis on MOUT training, Geibel (1995) described the mechanized urban fighting in Grozny. In the May-June 1996 issue of Infantry, Daniels (1996), discussed the employment of the M113 armored personnel carrier, while Miles and Shankle (1996) discussed the same for the Bradley Fighting Vehicle. An Armor magazine article described the cooperation between tanks and Infantry during Operation Just Cause in Panama (Sherman, 1996).

Major General Ernst (1996), as Commandant of the Infantry School, stated: "we [the Infantry] must continue to maintain our lead in...the tactics and techniques of combat in built-up areas ..." (p. 1). Major General Hendrix, the former Commandant of the Infantry School, placed a high priority on the Army's readiness to conduct MOUT (Hendrix, 1995). He also highlighted an effort by the Army and Marine Corps to identify and develop technologies that could rapidly be put into the hands of soldiers and Marines in MOUT situations:

The vehicle for this effort will be an advanced concept technology demonstration (ACTD). This will be a significant effort calling for joint participation between the Army and Marine Corps that will allow the application of emerging technologies to a number of specific MOUT-related issues (p. 1).

There are many problems in MOUT that might be solved for soldiers and Marines by new technologies. One such problem is countersniper missions (Harris & Durante, 1995). A Soldiers article outlines how acoustic and infrared sensors could be tested and used for countersniper missions (Hasenauer, 1996).

Although Marine Corps Commandant Krulak supports experiments to develop new technologies for use in MOUT, he cautions that, "Technology will be beneficial to add to the capabilities [of Marines], but technology is not a solution in itself" (Holzer, 1996, p. 38). Clearly, Marines and soldiers will need focused training to properly employ the differing technologies in concert with MOUT tactics, techniques and procedures (TTPs). In the same article quoting General Garner, "other military experts" held that technology could be used to advantage in cities, since there are often detailed plans of buildings available (Holzer, 1997). While this statement is probably true, caution should be exercised. Two persons interviewed during this research who were involved in actual urban fighting placed emphasis on getting further intelligence on building interiors from recent occupants. Both individuals cited changes in the interior of buildings that caused problems for those involved in clearing them.

The purpose of reviewing selected MOUT training practices was to provide information to interested agencies. Several groups including law enforcement, special operations, Army, and Marine Corps units were selected to see if methods or techniques employed by one could have value for another. Since differing agencies were reviewed, it seemed worthwhile to find out how each was organized and equipped. The first MOUT training topic selected was the doctrine related to room clearing. Another topic of interest was the training resources available for each agency and if they differed. The training emphasis of an agency may be inferred by the time allocated to different training techniques, so questions were asked about time allocation. Where possible, it was decided to collect information on the planned formal MOUT instruction provided by the different agencies.

Method

The MOUT literature was reviewed and key personnel at two Army installations, one Marine Corps base, and two law enforcement agencies were visited and interviewed. The interview guide employed was basically a topic outline with questions allowing interviewer latitude. Questions were posed about room clearing doctrine, organization and equipment, training resources, and training emphasis. Whenever possible, MOUT training was observed at the sites visited.

The Army posts visited were Fort Benning, GA and Fort Campbell, KY. Camp Lejeune, NC was the Marine Corps base visited. The Los Angeles County Sheriff's Department and the U.S. Border Patrol in San Diego, CA were the law enforcement agencies visited. Further law enforcement information was obtained from the Federal Bureau of Investigation (FBI). Details on Special Reaction Teams (SRTs) were gathered from the Military Police School. Personnel responsible for training SRTs at Fort Benning and Camp Lejeune were also interviewed. Finally,

details about instruction provided to novice officers, and to civilian and military SRTs by the Army and Marine Corps, were summarized from formal school documents.

There were 42 participants. An attempt was made to interview those most responsible for planning and conducting training for room clearing. In the case of the military, these were officers and non-commissioned officers (NCOs) responsible for either planning or conducting MOUT training. This training is usually planned and conducted at the company level. For that reason, company commanders or their designated MOUT trainers were interviewed. For the two civilian law enforcement agencies, the individuals responsible for conducting training were interviewed.

The Army and Marine installations that were visited were selected based upon availability and proximity. The law enforcement agencies were selected from a list provided by the MOUT ACTD Technology Program Manager, U.S. Army Soldier Systems Command. In the course of investigating Simunition (a system that substitutes a 9mm relatively safe, short range round for regular bullets fired from pistols, shotguns, and submachineguns modified for force-on-force training), it was discovered that the military used this ammunition with their own law enforcement agency--the Military Police. Accordingly, one Army and one Marine Military Police unit were each selected and an interview conducted with the primary trainer.

The data collected from formal training institutions were in the form of Programs of Instruction (POI) or similar documents describing the institutional training. Information was collected from military institutions responsible for formal training of officers in MOUT training. The U.S. Army Infantry School at Fort Benning was selected for the Army. The Basic School (TBS) and Infantry Officer Course (IOC), both at Quantico, Virginia were selected for the Marine Corps. The U.S. Army Military Police School at Fort McClellan, AL was contacted about their SRT course.

Results

The results that follow are from statements made by officers, NCOs, and law enforcement trainers about training for urban fighting or MOUT. Training observations made along with the research and interviews are summarized in the following discussion section.

Doctrine

MOUT trainers described similar doctrine as underpinning room clearing procedures. The Army field manuals (FM)s prescribe doctrine that copies Special Forces procedures and techniques termed Close Quarter Combat (CQC) or, in civilian terms and earlier Army reference, Close Quarter Battle (CQB). The CQC training was initially developed by the Special Forces at Fort Bragg, NC (Special Warfare Center and School, 1993). The Ranger Regiment at one time also followed CQC procedures (Headquarters, 75th Ranger Regiment [Ranger], 1991), and Army units often have senior NCOs with Ranger experience that teach soldiers basically the same techniques as taught by the Rangers and Special Forces.

The doctrine that provides guidance for conducting battle drills for Infantry rifle squads and platoons (Department of the Army [DA], 1992a; 1992b) and for evaluating rifle squad and platoon performance (DA, 1994) also has guidance for MOUT drills and evaluation. FM 90-10-1 (DA, 1993a) contains doctrine for fighting in built-up areas or cities and Training Circular 90-10 (DA, 1993c) features planning and carrying out MOUT training. The techniques for CQC were not in these manuals at first, but appeared later in an appendix with change one to the FM (DA, 1995). Another appendix in the change provides information on three types of MOUT under restrictive conditions: high-intensity, precision, and surgical. High-intensity MOUT includes "combat actions against a determined enemy occupying prepared positions or conducting planned attacks" (p. G-1). In precision MOUT, "either the enemy is thoroughly mixed with the noncombatants or political considerations require that the ROE [Rules of Engagement] be significantly more restrictive than under high intensity MOUT" (p. G-1). Surgical MOUT includes "... special-purpose raids, small precision strikes, or small-scale personnel seizure or recovery operations in a MOUT environment. They may closely resemble US police operations by Special Weapons and Tactics (SWAT) teams and are usually conducted by special operations forces" (p. G-2).

Specific doctrine and principles for room clearing differ considerably from agency to agency, but have some consistent principles. One principle is to avoid lingering by the doorway, which is likely to be targeted by opposing personnel within the room. The doorway is termed the "fatal funnel." Another principle in room clearing is to gain control of the room as quickly as possible. The first person to enter the room chooses one side of the room or the other. The second person takes the opposite side. Most entry techniques have the entry team focus down one wall to the corner, then from that corner to the opposite corner. In this technique, both halves of the room are covered by a two-person entry team. Some agencies advocate a central focus and then eye-sweep to the corner, while the second person to enter takes a central focus and then sweeps to the opposite corner.

After the first two persons enter the room, the characteristics of the room may indicate the need for more personnel. If the room is small, the two may handle it and move on. If the room is large, they may signal other entry team members to enter. If there is a second door within the room, a signal may be given for another team to enter and help. The size of the entry team may vary from two to six or more personnel. The military tends to favor four man teams (Infantry fire team size for both the Army and Marine Corps). Law enforcement organizations (including the Military Police) favor five or six person teams.

Another principle is to achieve surprise when entering a room. The entry team can expect the occupants of the room to be focused on the doorway. Some law enforcement agencies favor the use of a flash-bang grenade. In some cases the flash-bang is used as a distraction away from the entry point to achieve surprise at the entry point. The Rangers also advocate using the flash-bang, but at the entry point. The Rangers want to blind their opposition, even if non-combatants are present

The Marine Corps also has field manuals prescribing doctrine, but there is a training group called the Special Operations Training Group (SOTG) at Camp Lejeune (Clancy, 1996) that trains the Direct Action Platoon for the Maritime Special Purpose Force (MSPF). The SOTG follows CQC techniques very similar to the special operations techniques and procedures (Special Operations Training Group, 1996).

Ranger MOUT doctrine is presently undergoing revision by members of the 75th Ranger Regiment. The planned revision (Ranger, 1997) places emphasis on automatic fire. The new Ranger revision has this statement, "The threat must be eliminated as you move to your points of domination, not once you get there" (p. 4-3), which has been added to reduce the tendency of soldiers to move to a location instead of engage threats. The location of the team leader is changed from third to first (lead by example). A caution to keep the finger out of the trigger well (Ranger, 1991) is removed from the current version (Ranger, 1997) to increase the ability of those entering the room to engage threats. The room is dominated from all four corners instead of from two opposite corners that divide the room diagonally in half. A common set of terms is added to assist in command and control. Stun grenades are used if there are noncombatants in the room because they are less likely to cause permanent damage.

These proposed CQC changes are thought to be more appropriate for the precision MOUT that the Rangers see as their most likely mission (Ranger, 1997. p. 1-2). The current doctrine is closer to surgical MOUT, a mission for special mission units rather than for Rangers, and not as likely to be mastered by the less-experienced soldiers in the Ranger battalions without extensive additional practice. If the Rangers are right about the changes they are making for their soldiers, it is likely that similar changes should also be made for the Infantry.

While the Army is guided by ROE, the Military Police (MP) and law enforcement agencies are guided by "use of force." The Army uses Army Regulation (AR) 190-14 as guidance for the use of force by MPs (DA, 1993b). The Los Angeles County Sheriff's Department (1993) has a set of rules related to the use of force similar to the Military Police. However, they term their rules "Situational Use of Force Options," and emphasize their options in relation to the behavior of the individual they are confronting. As long as the individual is cooperative, force is not used. When the individual resists, the Sheriff's Deputy may adopt minimal force. The guide for action is based upon the actions of the individual or suspect, and can change dramatically by increasing or decreasing the force directly related to the suspect's behavior.

Organization and Equipment

The military stated that they focus their training on fire team and squad. The two organizations were not identified together in the interview, but so many respondents chose both that the data set was modified to include both as one category. It can be seen from Figure 1 that soldiers chose fire team more often than Marines, while Marines tended to choose squad more than any other alternative. It is clear that both the Army and Marine Corps focus their training on the smaller squads and fire teams than on the larger platoon and company.

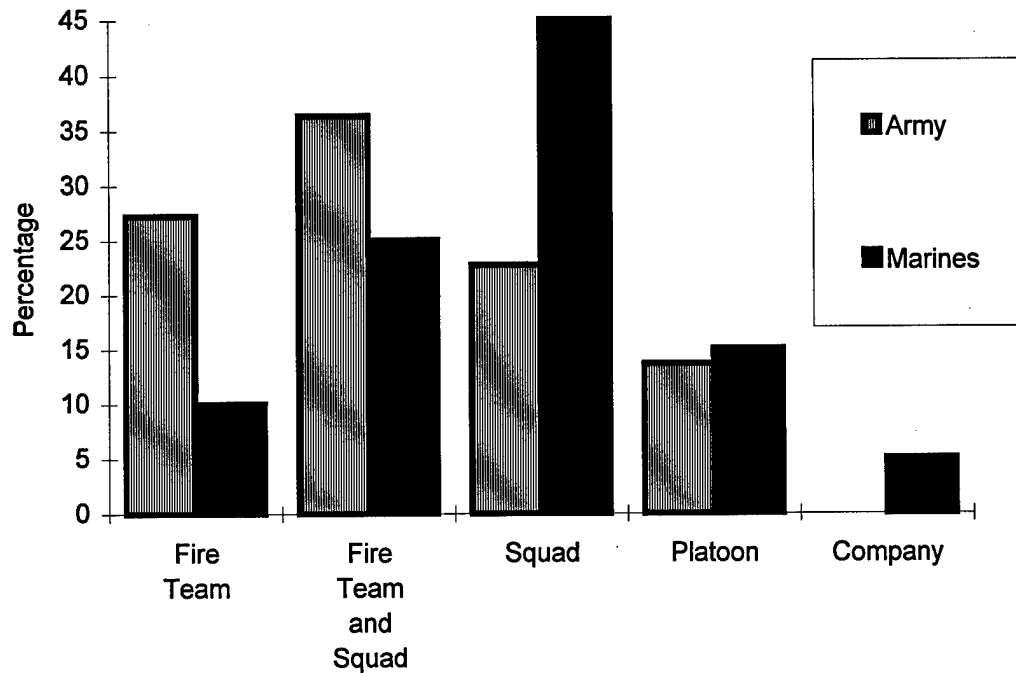


Figure 1. Size of unit identified by respondents for training focus

The military organization for MOUT divides the assault force into two elements: the support force and the assault force. The assault force may be divided into two or more assault parties (DA, 1993a), which amount to the entry/clearing teams. The support force provides suppressive fire for the assault force. Law enforcement organizations are divided into the entry team and “containment” teams. The law enforcement containment teams are more likely to have a single dwelling as an objective surrounded by neutral terrain (Los Angeles County Sheriff’s Department, 1997). The military is more likely to have multiple dwellings as objectives with most of the surrounding terrain hostile (DA, 1993a). Law enforcement and special operations units often include snipers in the support or containment team.

Most agencies make use of body armor for their entry teams. Most have knee and elbow pads. The kevlar helmet is worn by both military and civilian agencies. If tear gas may be employed, the teams have protective masks. Many agencies have tactical vests or carrying belts for additional equipment, canteens, battlefield dressings, pistol holster, ammunition, hand cuffs or flex cuffs for securing prisoners, and tactical radios. Night vision goggles (NVGs) are available to teams, and lights that attach to weapons are common. There are two types of weapon lights: white light and infrared (IR). The IR light must be used with NVGs to be effective.

Team equipment includes the following: ladders to scale walls or get to upper floors, special tools or demolitions to take down doors or make an opening in a wall, and ballistic shields to protect team members from small arms fire. Ropes are also included in the team

equipment for rappelling and fast roping a team from helicopters on to roof tops or from roof tops to rooms below.

Training Facilities and Resources

Both the military and law enforcement agencies that have developed urban warfare training have five types of facilities for training: Firing Ranges, Shoot Houses, Towns, Tape Rooms, and Stress Ranges. Most agencies have at least one firing range where live firing occurs. In most range settings, the targets are fixed and the scoring simple. Some dynamic ranges have been developed, where the firers must move and respond to more active /pop-up targets or moving targets. In contrast, a mock village/town is a facility consisting of a group of buildings where participants can rehearse actions, or have force-on-force exercises. Several buildings are provided to ensure conditions similar to an urban setting. A shoot house is a facility where trainees can live fire within a house specially designed to safely accept the bullets without shooting through a wall or causing a ricochet. In tape rooms, engineer tape (white cloth about 2 inches wide and in a roll several feet long) is often placed on the ground and staked in place to simulate rooms. Soldiers then drill the TTPs for room clearing. Leaders and other teams can watch their drill since the “walls” are transparent. The Military Police School makes use of stress ranges, where the individual shooter must run from cover to cover while engaging targets with live fire.

The perceived kinds of training facilities available at the Army and Marine Corps installations are shown in Table 1. Although both services unanimously stated they had a Mock Village or Town at their installation, interviewees consistently complained about its lack of availability for training. Both services have nine Infantry Battalions vying for time in the MOUT site, and schedule conflicts under those circumstances are inevitable.

Table 1. Types of Facilities Perceived Available (Percent)

Facility	Army	Marine Corps
Live Fire Ranges	95	50
Mock Villages/Towns	100	100
Shoot Houses	100	55
Tape Rooms	64	45
Barracks	59	60
Other	55	20

Without certain resources, or if these resources are significantly reduced, training cannot ensure effective performance. Training resources include training courses, trained instructors, funds, and ammunition. Differing civilian corporations have courses in firing weapons for CQB. Also the FBI has a traveling team that teaches SWAT team tactics to FBI regional teams. The Military Police School offers a one-week course for civilian law enforcement agencies in SRT procedures. The Military Police School also has a two-week SRT course for Military Police soldiers and Marines. A follow-on one-week SRT course is offered for marksmen and observers,

essentially urban snipers. Within the Army, former Ranger NCOs are often called upon to teach the CQC techniques and procedures. Some of these NCOs have attended the Special Forces course on CQC and are, therefore, trained instructors. The training by the Marine SOTG also makes use of CQC techniques and procedures. Although the Department of Defense is drawing down and focused on conserving the budget, none of the organizations stated that lack of funding was a major problem. Ammunition seemed to be available in sufficient quantities to conduct the training required. An exception might be Simunition. Since the Simunition system is confined primarily to 9mm weapons or expensive adaptations to that round size, there are constraints on ammunition. Further, although the Navy has accepted the round, the Army is still in the process of safety certifying the round.

Time Allocation

Most agencies emphasized lower echelon training and allocated a large portion of the training time to the entry team. Most agencies included live fire and live simulation. Live simulation included tactical engagement simulation with the Multiple Integrated Laser Engagement System (MILES) and/or Simunition (see Table 2). Simunition was in use primarily by law enforcement agencies, again including the Military Police. Simunition training is similar to the paint ball game, where players shoot paint balls at each other at close range. With Simunition, the trainees fire the round, which is tipped with a detergent that strikes the target, a fellow trainee. Although Simunition is used mostly by the law enforcement agencies, both the Rangers and Marine Corps plan to use it for precision MOUT training.

Table 2. Actual and Preferred Time for Training Method (Percent)

Training Method	Army		Marine Corps	
	Actual Time	Preferred Time	Actual Time	Preferred Time
Live Fire	24	28	13	31
Live Simulation	34	37	18	30
Other (Drills, etc.)	42	35	69	39

As can be seen in Table 2, the Army actual time spent and preferred time are fairly close. Army respondents would prefer more live fire and live simulation training with some reduction in other training and drills. Marines stated they would prefer to spend more than twice as much time in live-fire than they actually spend. Similar comments are made for Marine perceptions of live simulation.

Army live-fire training included an individual range firing session at known (relatively short) distances. Next there were dry-fire drills, dry-fire drills in the shoot house, blank-fire drills in the shoot house, and live-fire in the shoot house. The dry-fire and blank-fire drills were considered preparation for the live fire, therefore a part of live-fire train-up. The Marine Corps Direction Action Platoon of the Maritime Special Purpose Force (MSPF) receives much more live-fire training than the average Army unit. On the other hand, Army units in general receive more MOUT-related live-fire training than do Marine units in general.

Live simulation consisted of either MILES training or Simunition training. There is a problem for MOUT training with the MILES M16 rifle laser transmitter, the component of the system that simulates rifle firing. To help ensure blank firing safety, the laser is not required to work at ranges inside 10 meters. For the close-in fighting that occurs in MOUT training, that is a serious disadvantage. Simunition is more suited to close-in fighting, but the system is not appropriate for longer ranges. After 25 feet, the ballistic flight of the Simunition round starts to drop considerably, which obviously degrades realistic distance shooting. However, within 25 feet the system is relatively accurate. When using Simunition, protection is strongly recommended for the eyes, teeth, throat, and groin. According to both Army and Marine Corps trainers, Simunition has greater value than MILES due to the fear of the pain inflicted by the detergent round. The Simunition system was developed for law enforcement training at close ranges. The 9mm round was selected since it was common to most law enforcement agencies for both the pistol and MP-5 submachinegun, the common entry team weapons.

When trainers were asked about actual time spent in MOUT training as opposed to all other training, they responded in a remarkably similar manner (Table 3). However, the preferred time perceived as required for MOUT training is nine percent higher for the Army as compared to the Marine Corps.

Table 3. Actual and Preferred Time for MOUT Training (Percent)

Training	Army		Marine Corps	
	Actual Time	Preferred Time	Actual Time	Preferred Time
MOUT Training	20	38	19	29
All Other Training	80	62	81	71

Institutional Training

Both the Army and Marine Corps provide their novice officers training in urban fighting. Both have classroom instruction followed with a practical exercise in a MOUT setting. The classroom instruction is relatively short with a longer practical exercise. In the Army's Infantry Officer Basic Course (IOBC), there are two hours of conference or classroom instruction and nine hours of practical exercise. In The Basic School (TSB) for all Marine Corps officers, there is one hour of classroom instruction and a four-hour practical exercise in MOUT. In the Infantry Officers Course (IOC) given to Marine Infantry officers, there are three hours of classroom instruction followed by a 24-hour field practical exercise.

The U.S. Army Military Police School trains both Army and Marine Corps Military Police in SRT training. There is a two week course (Phase one) where the students receive 20 hours of classroom instruction and 67 hours of practical exercise. The practical exercise includes live simulation training with Simunition. The MP School offers a second course for precision marksman (urban snipers) in a one-week course (Phase two).

Discussion

There are several differences among Army and Marine Infantry units with MOUT missions, units charged with special operations in an urban area, and law enforcement agencies (including the Military Police) in urban settings. There are also similarities. The purpose of this discussion is to present some of the more obvious comparisons. These comparisons were not a direct part of the research, but became evident during the course of the research.

Tactical Considerations

Opposition. There are differences in numbers, arms, uniforms, and the intent of the opposition. The Infantry opposition is usually more numerous, well and diversely armed, likely to be wearing an identifiable uniform, and more likely to focus on terrain (similar to the way friendly forces focus on terrain). The law enforcement and special operations adversary may be one of the following: a relatively small group of terrorists, one distraught and armed individual, a few petty criminals cordoned by law enforcement personnel, or one or more individuals holding one or more hostages.

Intelligence Available. Intelligence concerning the dwelling(s) of interest is easier to obtain for law enforcement agencies than for the military. Since the area surrounding the dwelling of interest is often neutral, it is, on many occasions, possible for law enforcement team members to disguise their purpose/appearance and walk or drive past the objective area to gather intelligence. In these situations, time is a less pressing consideration. An exception to these conditions for law enforcement agencies is a barricade situation, where the opposition is armed, expecting trouble, and may have a hostage. These conditions are closer to the military high-intensity MOUT situation. Time is now more of a factor, stealth is less possible, and intelligence is harder to gather. However, the focus is still most likely to be on a single dwelling.

Success Criterion. Attacking Infantry units that force the withdrawal of the opposition and gain possession of the urban area are usually considered successful. Defending Infantry units are considered successful if they continue to hold the area. On the other hand, law enforcement agencies that allow the opposition to escape have at least partially failed, even if they regain all urban terrain previously held by that opposition. The number of opposing casualties may be a key indicator of success for Infantry and special operations units. However, opposing casualties are *usually* not the most desirable outcome for law enforcement agencies or special operations units with a mission to capture the enemy. Third party survival is one of the driving goals for all law enforcement agencies and for special operations units with a hostage rescue mission. It may become a goal even for Infantry, especially when involved in a peacekeeping mission.

Tactics . Maneuver tactics for law enforcement are generally simpler than military, since they are most often faced with a single dwelling and are likely to control the surrounding terrain. The objective for law enforcement is primarily the apprehension of their adversary, and they are focused on people (suspect, criminal, perpetrator). The military objective is often taking and

holding multiple dwellings, apprehension is less likely, and the escape of personnel does not negate and may even facilitate the military objective.

Similar Entry Tactics and Procedures. Although there are refinements and differences among the different organizations, there are similar principles underlying the tactics and procedures of room entry and clearing. All organizations followed basic tactics. They enter and move quickly through or avoid the doorway. When two persons have entered the room, they move in opposite directions with converging fields of fire that overlap but do not include each other. Next, two or more additional personnel are moved into the room if needed (large room, many opponents, connecting doorway or passage). The persons in the room effectively engage threatening targets as quickly as possible. The room is thoroughly searched (time permitting), and friendly or innocent casualties are evacuated and treated. Prisoners are secured and searched. The status of the room is determined and communicated before proceeding. Finally, the entry team secures the room or prepares to move into the next room.

Differing Entry Tactics and Procedures. One procedure where Army, Marine, and law enforcement agencies differ is in the use of the flash-bang grenade. Army and Marine Infantry units usually do not have flash-bangs available. Law enforcement units, including Military Police, usually have flash-bangs available. Special operations units including the Rangers and the Direct Action Platoon of the Maritime Special Purpose Force also make use of the flash-bang grenade. Another procedure that differs among law enforcement agencies and the military is called "muzzle awareness," or being aware of where your weapon is pointed (especially if it is pointed at friendly forces). Military units place considerable emphasis on training soldiers and Marines to avoid pointing their weapon at friendly personnel, while the Los Angeles County Sheriff's Department deputies were comfortable with pointing the weapon wherever they were looking as long as the trigger finger wasn't on the trigger and the weapon was on safe. The age and experience of the personnel in these two organizations may have some bearing on these procedures.

Other Considerations

Personnel Safety. In typical Infantry MOUT settings, the unit will be focused on mission accomplishment, most often seizing an objective in an urban area or preventing/delaying the enemy's seizure of an urban objective. Prevention of friendly casualties for the Infantry is a secondary objective. Prevention of enemy casualties by the Infantry is usually *not* a goal, while causing enemy casualties may be a common purpose, even the main objective in some cases. Law enforcement agencies are less interested in the urban area itself and more focused on the personnel involved and their safety. This includes non-participants, hostages, the law enforcement personnel involved, and even the opposition. The urban law enforcement adversary may be surrounded with innocents or non-combatants, requiring less lethal weapons and careful precision when assaulting. In precision MOUT, this is also true for the military.

Special operations forces are focused on the safety of hostages, if their rescue is the prime objective. On the other hand, special operations units are rarely focused on the safety of the opposition, unless the specific mission is to capture (sometimes termed "snatch") one or more

enemy prisoners. In the past, public safety has been of little interest to the military. In the current world environment and with advances in weapons and associated technology, the military is seeking to avoid collateral damage. The military may learn to appropriately modify their practices and procedures by following the practices of law enforcement agencies, including the SRTs. The Military Police may be able to provide considerable information to the Infantry about MOUT procedures. The SRTs organized and trained by the Military Police employ many of the same techniques utilized by police SWAT and special operations teams (Benner, 1996). Many of these techniques have direct application to the MOUT setting.

Time for Completion. Infantry and special operations units often have time constraints; for Infantry units it is usually a time of attack. Special operations forces will most often have time constraints when conducting raid missions. Law enforcement agencies, by contrast, often have ample time, except when the safety of innocents becomes compromised. When public safety is endangered, law enforcement agencies and special operations forces (with a hostage rescue mission) must increase the tempo of their operations to a rate higher than Infantry units. When innocents are not in immediate danger, the time factor for law enforcement agencies may be the key factor in a successful outcome. In these cases, the lack of time pressure allows detailed reconnaissance or intelligence collection prior to commitment. In some cases, time may be used to wear down the opposition to the point of major concessions or submission. Special operations units may have added time for reconnaissance where they can gain access to or control the objective area.

Team Member Age and Experience. Law enforcement agencies usually term their urban warfare teams SWAT teams or SRTs. In small law enforcement agencies, these teams are usually formed when the need arises as an additional duty. Additional duty SRT and SWAT teams usually receive limited training for those missions. On the other hand, large metropolitan law enforcement agencies are more likely to have permanent teams, well-trained and experienced. In comparing law enforcement entry teams with military teams, one striking comparison is member age and experience. Large permanent law enforcement teams are older and more mature and have far more experience than military teams. For example, the Los Angeles County Sheriff's Department teams are formed with experienced deputies who have eight to ten years of experience. They then stay an additional eight to ten years, so they have an average age in the mid-thirties. An exception for the military is the Direct Action Platoon in the Marine Corps' Maritime Special Purpose Force. The Direct Action Platoon is usually manned by personnel from Marine Corps Reconnaissance Battalion's B Company, which includes more experienced members of the reconnaissance battalion, probably in their mid-twenties and with parachute and dive qualification, and in some cases sniper qualification. The Direct Action Platoon receives a concentrated period of five weeks training specifically on live-fire entry techniques before being committed to a Marine Expeditionary Unit (MEU). Army special forces units with a MOUT mission will be older and more experienced than general Army units.

Snipers. Law enforcement agencies (including the Military Police) usually employ snipers or long range precision marksmen in support of the entry team as a part of their SWAT teams or SRTs. The Infantry does not usually include snipers in support of the entry-clearing team. Infantry units are more likely to place a rifle squad or platoon and machine guns in

support of the entry team than to employ a sniper or snipers. However, special operations military units are more likely to include these precision shooters. In both of these units (law enforcement and special operations), there is a higher probability of controlling the area surrounding the objective or focus of action. Additionally, there are likely to be fewer opponents in the objective area for law enforcement and special operations units. These organizations are also more likely to have selected personnel trained in the skills of long range marksmanship. The employment of precision long-range fire in the MOUT situation differs from the standard sniper range to the target of 800 to 1,000 meters. The range in the urban setting is usually considerably less, from 100 to 200 meters. The standard military telescopic sight, with a fixed 10 power scope, may be used in an urban setting. However, it needs to be used with other less powerful optics that allow a wider view of the target area. An adjustable power scope would be useful for the closer urban ranges. Many law enforcement agencies make use of the adjustable power telescope. Marines have a special training course for urban sniping, offered only to individuals who are already sniper qualified.

Training and Turn-Over Cycle. Marines go through similar training cycles on the East Coast at Camp Lejeune and on the West Coast at Camp Pendleton, CA. Marine units that form a part of a MEU go through a long train-up cycle. Initially they are low in strength and skills while forming-up, but in the final stages they are close to full strength and well trained. These units will remain teamed-up throughout the deployment of a MEU until it returns. The Marine Corps cycle is much longer than the Army training cycle. Army units must, to some degree, be ready to go at any time. They have major turn-over and constant re-training problems in all units, not just those finishing deployments. The deployed MEUs are at their training peak when first deployed, and are at least fundamentally the same personnel throughout the deployment. The Marine Direct Action Platoon of the MSPF is highly trained in MOUT room clearing techniques before deployment with a MEU. The MSPF provides the MEU a special operations capability and a unit that can execute a raid or a hostage rescue mission, if required. However, the Marines know that other forces are designed to carry out this type mission first. The Marines provide a capability afloat that may be the only one near at hand when needed.

Combat Organization. The Army has stressed that the next war will be a come-as-you-are war. Army combat organization is based upon the specific mission and the modified table of organization and equipment. Marine combat organization is also based on the specific mission and on the MEU. Marine units also have tables of organization and equipment, but they are the basic building blocks upon which units that will make up a MEU will be formed. The MEU is a flexible unit depending on the specific mission and on other factors, such as the Navy ships available for the deployment and the storage and carrying capacity of the ships. When the Army deploys for a specific mission, they will tailor or select the specific units to form a part of the deploying force. When the Marines are called upon, the MEU is often in the area with all personnel and equipment they will have. A typical MEU will include a Command Element, a Ground Combat Element, an Air Combat Element, and a Combat Service Support Element. The MEU will be commanded by a full colonel and the Ground Combat Element will usually be a Battalion Landing Team (BLT). The BLT is a reinforced Infantry battalion, usually with the following attachments: an engineer platoon, a tank platoon, a Light Armored Reconnaissance

Platoon [equipped with Light Armored Vehicles (LAVs)], an amphibious tractor platoon, and an artillery battery (Clancy, 1996).

In comparing the Army and Marine Corps, the Marines tend to think flexibly about what unit performs which mission. Since there are *not* likely to be any additional troops added, the Marines in the MEU are prepared to shift into alternative assignments. For example, the Direct Action Platoon will probably also be the long range reconnaissance platoon, the mortar platoon may also have the air crew rescue mission (as was the case in the rescue of Air Force Captain Scott O'Grady; Clancy, 1996), the artillery battery may become a physical security company when the howitzers are not needed, and so forth. Army units are more likely to concentrate on one mission, and Army leaders will probably call for the unit with that specific mission. When the situation calls for it, Marine units can mass larger organizations, as was the case in the Gulf War. The point of the comparison is not that one combat organization is better than the other, but that soldiers and Marines tend to think differently about that organization.

Summary

This report has reviewed and compared selected training practices by differing organizations with a responsibility to perform effectively in urban fighting situations. The information should be useful to those involved in MOUT research, especially the MOUT ACTD to be carried out by the Army and Marine Corps from 1997 to 2000. The differing MOUT levels (high-intensity, precision, and surgical) employed by the military are distinctions that should be drawn and considered during research. It is also important to determine if the Infantry will follow the lead set by the Rangers and modify CQC for precision MOUT. If so, the research should be adapted accordingly.

Before soldiers or Marines are employed in the MOUT ACTD, they should complete at least some of the basics in MOUT drill training strongly advocated and practiced by the military. Researchers need to be aware of, and carefully consider, the differences in combat organization and philosophy that underline the training practices of the Army and Marine Corps. As new technologies are included into future urban operations, the integration of these devices into MOUT training should be done with an eye to the selected training practices outlined in this report.

References

- Benner, W. J. (1996). Special reaction. Soldiers, 51(5), 18-20.
- Clancy, T. (1996). Marine: A guided tour of a Marine Expeditionary Unit. New York: Berkley Books.
- Daniels, J. B. (1996). Mechanized forces in MOUT: M113 lessons from Operation Just Cause. Infantry, 86 (3), 8-11.
- Department of the Army. (1992a). Battle drills for the Bradley fighting vehicle platoon, section, and squad (Army Training and Evaluation Program 7-7J-DRILL). Washington, DC.
- Department of the Army. (1992b). Infantry rifle platoon and squad (Field Manual 7-8). Washington, DC.
- Department of the Army. (1993a). An infantryman's guide to combat in built-up areas (Field Manual 90-10-1). Washington, DC.
- Department of the Army. (1993b). Carrying of firearms and use of force for law enforcement and security duties (Army Regulation 190-14). Washington, DC.
- Department of the Army. (1993c). Training for military operations on urbanized terrain (Training Circular 90-1). Washington, DC.
- Department of the Army. (1994). Mission training plan for the infantry rifle platoon and squad (Army Training and Evaluation Program 7-8-MTP). Washington, DC.
- Department of the Army. (1995). Change 1, to An infantryman's guide to combat in built-up areas (Field Manual 90-10-1). Washington, DC.
- Ernst, C. F. (1996). Commandant's note: The future of the infantry in Force XXI. Infantry, 88 (6), 1-2.
- Geibel, A. (1995). Lessons in urban combat: Grozny, New Year's Eve, 1994. Infantry, 85(6), 21-25.
- Harris, M. R. & Durante, A. A. (1995). Countersniper missions in operations other than war. Infantry, 85 (6), 26-31.
- Hasenauer, H. (1996). Sniper stoppers. Soldiers, 51 (7), 24-25.
- Headquarters, 75th Ranger Regiment. (1991). Close quarter battle (CQB) program of instruction (POI) (RTC 350-1-2). Fort Benning, GA: Author.

- Headquarters, 75th Ranger Regiment. (1997). Advanced MOUT training (Draft RTC 350-1-2). Fort Benning, GA: Author.
- Hendrix, J. W. (1995). Commandant's note: A perspective on military operations on urban terrain. Infantry, 85 (6), 1-2.
- Holzer, R. (1996, October 21). Krulak warns of over-reliance on technology. Army Times, p. 38.
- Holzer, R. (1997, April 7). QDR's high-tech focus bothers officials: Worries concentration on weapons may leave troops ill-equipped for combat. Army Times, pp. 26, 28.
- Los Angeles County Sheriff's Department. (1993). Situational use of force options chart. (Available from the Advanced Training Bureau, Force Training Unit, 11515 South Colima Road, Whittier, CA 90604)
- Los Angeles County Sheriff's Department. (1997). Special Weapons and Tactics School (Student guide for SWAT School # 81). (Available from the Special Enforcement Bureau, 130 South Fetterly Avenue, Los Angeles, CA 90022)
- Miles, J. L., & Shankle, M. E. (1996). Bradleys in the city. Infantry, 86(3), 6-8.
- Naylor, S. D. (1996, April 15). The urban warfare challenge. Army Times, pp. 12-14.
- Peters, R. (1996). Our soldiers, their cities. Parameters, 26(1), 43-50.
- Sherman, F. (1996). Operation Just Cause: The armor-infantry team in the close fight. Armor, 105(5), 34-35.
- Special Operations Training Group. (1996). Basic room clearing techniques. (Lesson Outline). Camp Lejeune, NC: III Marine Expeditionary Force.
- Special Warfare Center and School. (1993). Close quarters combat (Special Text 31-20-6-1). Fort Bragg, NC: Author.
- Zwack, P. B. (1996, June 17). MOUT: Train for 'all its aspects.' Army Times, p. 62.