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**MILITARY OPERATIONS ON URBANIZED TERRAIN:
A STRATEGIC READINESS CHALLENGE**

BY

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ABSTRACT

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Traditionally cities are population centers, and focal points of commerce, communications, and government. Military planners have viewed cities as "centers of gravity." The characteristics of cities are likely to remain as important in the future as they have been throughout history; and will grow even more important as society becomes increasingly reliant upon the technologies that are the foundation of city life. In the post Cold War international security environment, cities have proven to be a focal point for US military intervention. US forces have conducted operations in Panama City, Port-Au-Prince, and Mogadishu, and non-combatant evacuation operations in other cities. It is increasingly likely that the United States Army will conduct future operations in urban areas. This is primarily due to increased urbanization worldwide, our reliance on force projection from within the United States, terrorism, and changing threat tactics. Such evolution will pose many challenges. Currently the Army is unprepared to

operate successfully at the operational or in some cases, the tactical level. The future may present situations requiring units to conduct Humanitarian assistance, peace operations, and full scale, high-intensity combat inside a city. Almost certainly the United States will again deploy soldiers to urban areas for operations combined with the mandate to reduce casualties and collateral damage; this requires that our concept for future urban combat address these new challenges. This paper will address these challenges by examining the application of warfare to the urban environment and will address the need to prepare for future combat, and make recommendations for improvement in doctrine, training, and force modernization.

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**MILITARY OPERATIONS ON URBANIZED TERRAIN: A
STRATEGIC READINESS CHALLENGE**

The worst policy is to attack the cities . . . If the general is unable to control his impatience and orders his troops to swarm the wall like ants, one-third of them will be killed without taking the city.¹

Sun Tzu

Sun Tzu's great work The Art of War has contributed many insights to warriors past and present. Many of Sun Tzu's ideas are still relevant almost 2500 years after his death. During the past 50 years, the Army formalized the essence of the above quote in doctrine. Fighting in the city was considered demanding and extremely difficult. While it remains true that Military Operations in Urban Terrain (MOUT) are one of the most difficult missions, it is a type of combat that cannot be avoided in the future.

According to United Nations estimates, the urban populations of developing countries worldwide increases by about 150,000 people each day, with most pronounced growth occurring in Africa and Asia. By the year 2025, three-fifths of the world populations- five billion people - will live in urban areas. In 1950 there were only fifty cities with populations exceeding one million people. In 1990 there were 270 with over one million people and it's

estimated that by 2015 there will be 516 cities with over one million in population. In 1950 there were only eight cities with populations over eight million people. In 1990 there was twenty-one; and by 2015 estimates call for 33 mega cities world wide.² As cities become physically larger and more populous, urban terrain grows more complex. Buildings increase in number, as well as in size. Road networks become more extensive, to include heavy-duty, multi-lane highway systems. Subterranean infrastructure expands as subways and storm sewers reach out to service broader areas.

In some developing nations, the pace of urban population growth may exceed the development of city services. Housing, water, and jobs will be in short supply, giving rise to poverty, disease and crime. Over-crowded conditions will create an environment of social and economic tension, which might eventually find an outlet in the form of violence.³ The new terrain of the "megacity," unfamiliar to modern-day forces, is not the open terrain on which much of our conventional military superiority is predicated.

Cities challenge our ability to project power and mount military operations. Urban control - the requirement to control activities in the urban environment--will be difficult enough. Eviction operations --- the requirement to root out enemy forces from their urban strongholds --- will be even more challenging. Urban operations have

historically required large numbers of troops while diluting technological advantages, making for extremely tough fighting. Many of our current weapon systems are often ineffective in urban environments because of trajectory limitations, build-up areas, subterranean passages, and unobservable targets. Our ability to employ force could be significantly hampered by the proximity of noncombatants, vital infrastructures, and government and nongovernment institutions.⁴

Cities have always been significant military targets, but in the post-modern world their importance has increased tremendously. Massive urbanization increases the probability of urban warfare at the least by sheer chance (less open space). These will be difficult for military forces to bypass as they did in the past. Cities will serve as sources of conflict and instability. Regimes in developing countries will find it difficult to provide the services required as a result of the rapid influx of new people.

The pressures of urban life are likely to generate communal and other forms of violence; and exacerbate social problems in both the developed and developing world. Cities are ideal arenas for states that are unable to field modern military forces; and they are likely to become the preferred battlefield for adversaries who wish to avoid conventional

military confrontation with the United States. Enemy forces that use an asymmetrical strategy (e.g., Aideed---Mogadishu) will play to U.S. weaknesses by attempting to lure U.S. and coalition forces into urban combat.

Military operations (which cover the complete range of operations listed in FM 100-5) confirm an increased probability of urban combat operations.

Kuwait City in 1990--Combat

Sarejevo in 1996-1998--Peacekeeping Operations

Baghdad in 1991 and 1998--Strike

Colon and Panama City in 1989--Attack

Mogadishu in 1992--Humanitarian Assistance

Los Angeles in 1992 -Civil Support 1994

Port-Au-Prince in 1994--Peace Building

These are significantly different military missions with one common factor--all were conducted in urban environments. The U.S. missions varied from specific strikes against military targets in Baghdad, to riot control in the continental United States.⁵

Our recent operations speak for themselves. The Army is conducting more and more urban operations and there is potential for more. Military operations in urban terrain were conducted in Panama and Somalia. It was not a significant part of the operations for U.S. forces in

Southwest Asia, but the potential existed since Iraqi forces were in and around Kuwait City.

If the situation had become hostile, combat operations in Haiti would have oriented around Port-Au-Prince. Most actions in Bosnia-Herzegovina are in or around cities. Also, we face the prospect of fighting in Seoul should things go bad in Korea.

Urban fighting has always been one of the most destructive forms of warfare. During World War II, the Russian Army sustained over 300,000 casualties in taking Berlin. Americans did no better with over 1,000 killed in action to regain Manila and more than 3,000 in the battle for Aachen, Germany. In the Vietnam War, the casualty rates for U.S. Marines who fought in Hue exceeded those from Okinawa's bloody amphibious assault. More recently, the ill-fated Russian attempt to seize Chechnya resulted in the deaths of thousands of soldiers and non-combatants.⁶

Historically, operational tacticians have viewed MOUT as attrition style warfare, which is characterized by the application of firepower to achieve the cumulative destruction of the enemy's material assets. Urban terrain limits conventional mobility and tends to "absorb" relatively large numbers of personnel. Unit frontages are dramatically reduced with advance or withdrawals measured in

terms of single buildings or blocks. Troops expend extraordinary quantities of ammunition in efforts to destroy by firepower enemy forces protected by the cover of structures and rubble. Attackers systematically bludgeon their way from building to building, while their opponents doggedly defended every cellar and room. Fierce and continuous close combat resulting in great material destruction, property damage, and high casualties among combatants and noncombatants alike.

The high casualty rates incurred during urban combat operations during World War II lent wisdom to the Cold War doctrinal dictate of avoiding committing forces to the attack of urban areas unless the mission absolutely requires doing so. Avoidance of urban fighting, unless absolutely necessary, remains superb advice, especially in light of the explosion of urban centers since the Second World War. More frequently than in the past, future missions will absolutely require military operations in cities. Clearly, the likelihood is high that in the future, the National Command Authorities will again commit soldiers to missions in urban areas. Based on recent operations and experiences the Army must face some new warfighting realities:

- The American people expect decisive victory and abhor unnecessary casualties. They prefer quick resolution of

conflicts and reserve the right to reconsider their support if any of these conditions are not met.

- There is little tolerance for casualties.
- Warfare now requires minimum collateral damage
- We have the smallest Army and overall military since World War II
- America and the world (via CNN) is always watching
- Requires a new definition of the threat. On defining the future threat we must realize that:

Asymmetric threats are likely to U.S. forces

Urban warfare is one of a number of potential asymmetric strategies

Cities should provide an excellent venue for achieving asymmetric ends

- Potential asymmetric strategy: "Cede the countryside, Control the cities."

Few of today's military servicemen or women would argue against the value of history as a teacher. The military must assess its present capabilities and future challenges so as to understand the relevance of previous events and be ready for coming operations. The Army generally does this balancing act well, but in the area of urban warfare it seems to be overlooking the lessons of history, current readiness shortfalls, and a future that

offers not the potential but the assurance of both international and domestic urban operations. Therefore, if combat in urban areas is a higher probability in the future, the Army should examine the options and prepare for them before we get there.

THE URBAN ENVIRONMENT

"While the different technology and tactical skills of armies are a factor, defensive urban warfare is a great equalizer for an under-modernized force."

Major General Robert H. Scales⁷

It is intended that American land fighting forces be sized and equipped precisely to obtain and retain information dominance, apply overwhelming force at enemy points of vulnerability, and achieve rapid and decisive results with as few American casualties as possible. The trend toward more urbanization and consequently urban warfare will make this effort very difficult.

For the first time in history the majority of humans now live in cities, and perhaps more to the point almost all of this growth has taken place in the poorer sectors of the world. Thus by the year 2005 at least 21 of the world's 30 largest cities will be in the developing world. Additionally, the actual gap between the fighting capabilities of U.S. forces and those in the developing world will actually widen over the next several decades. With

very few exceptions, military budgets in the developing world won't begin to provide the resources to pay to keep up with the great increase in capabilities of U.S forces. The Military advantage will go to the combatant with the truly advanced force. So much that even stepping on the battlefield could become truly suicidal. Given this environment it will be small wonder that developing countries will gravitate towards MOUT. The potential advantages are too great to be ignored. A fighting environment which promises to complicate the information, compromise the effectiveness of high-tech weapons and communications, retard the operational tempo, and increase the vulnerability of a high-tech army to casualties.

The demands peculiar to the urban environment are especially challenging. Urban terrain is an extraordinarily intricate blend of horizontal, vertical, interior, and exterior forms superimposed upon the landscape's natural relief, drainage, and vegetation. The average city includes many styles of construction using a multitude of different building materials, each with its own texture and strength. Urban terrain is highly restrictive, limiting observation distances, engagement ranges, weapons effectiveness, and mobility. These factors tend to force extremely close combat with troops fighting from building to building and from room to room. Command and Control is difficult,

because small unit leaders cannot see their troops and radio communication is subject to interference caused by the presence of structures. Historically, urban combat has called for a high degree of initiative by small unit leaders operating with near-autonomy.

In the future, urban operations will present situations requiring the conduct of many different categories of military activities. Humanitarian assistance, peace operations, and full-scale, high intensity combat may occur simultaneously in different neighborhoods. The presence of large numbers of noncombatants and the potential difficulty in distinguishing these noncombatants from hostile forces will further complicate the task of operating in the urban environment. Noncombatants, without the least hostile intent, can overwhelm the force. These include multiple players beyond the purely military, from criminal gangs to the media, vigilante and paramilitary factions within militaries, and factions within those factions. The enemy knows the terrain better than the visiting army does, and it can be very difficult to tell friend from foe from the disinterested.

Local situations can change very quickly from peace operations to urban combat operations. Atrocity is close-up

and commonplace, whether intentional or incidental. The stresses on the soldier are incalculable.⁸

Potential enemies will modify their strategy to address U.S. military vulnerabilities. The Somalia warlords quickly learned that urban combat denies certain advantages to a better-equipped army. The Russian Army suffered the same disadvantage when a force of 60,000 Russian soldiers engaged about 12,000 Chechnian rebels in Grozny. The Russian Army depended upon massive firepower, causing extensive collateral damage and large numbers of noncombatant casualties. While the Russian force eventually won the battle, the war resulted in a strategic defeat at home and political losses in the world community.

Urban warfare has been, is, and promises to remain confusing. Slow, amorphous in terms of tactical objectives, inordinately consumptive of manpower and material, and reliable producer of large numbers of casualties - - - in short a nightmare for not only the warfighter of today, but for the force planner of tomorrow. What makes the problem truly poignant is that ultimately war is shifting decisively from a rural to an urban setting.

THE PROBLEM

There is conflict between the world's urbanization trend and the prevailing views of some military theorists.

Many military thinkers believe that future combat dominance is primarily a function of precision delivery of large-scale aerial weapons. However, the terrain of urban combat will negate many of the technological advantages our forces currently possess or will possess in the future. Also, Americans and the congress that represent them want a war that is quick, decisive, low collateral damage, and few American or foreign civilian casualties. Other military thinkers believe that our forces could cordon off the city, surrounding areas, control the city services (food, water, electricity, sanitation, etc), isolating the city, and thus let the city collapse upon itself. This could work, providing you have the forces available to isolate a large city and the will of CNN and the American public to allow you to wait for the collapse of the bad guys. With the current force structure and the budget restrictions it's doubtful that the U.S. military could undertake this type of waiting game.

One way that we cannot solve this problem is that we cannot go back to the total destruction urban combat of World War II. As the moral beacon for international law,

global democracy, and respect for human rights, the U.S. can ill-afford to undertake such costly operations.

Additionally, the American people would not tolerate the casualties or extensive damage to a city. American-led coalitions and military operations must find a better solution than physically destroying a city in order to rescue it from a hostile force.⁹

To crystallize the magnitude of the problem of urban warfare let us imagine troops trying to take a single building. First, before any operation can begin, intelligence is gathered on the objective. Next is planning, - do we assault the ground floor or fast rope onto the roof. Even with floor plans and a good estimated troop strength, mouseholes (man-sized holes made to horizontally or vertically access other rooms or floors) can radically alter any given tactical dynamic. Given the requirement to prevent collateral damage and civilian casualties, artillery and other type of preparatory fires will not be used on the objective. Several weapons will probably not be used because they require a minimum range to arm themselves (e.g. both the TOW and DRAGON anti-tank missiles require 65 meters to arm). In the tight confines of the urban sprawl, this minimum range requirement can present a problem. Even the effects of small arms fire (7.62mm/5.56mm) on a concrete

building with a brick facade, for example, will be fairly negligible.

As the troops move to the area and attempt to enter the building what booby traps and ambushes await them. Also, even if they succeed without too many casualties (not likely based on current data), the majority of them will have to stay in the building in order to hold it. The others must move on to the next building or critical node. This single scenario points out many of the problems inherent in urban combat. We will now take a look at the current U.S. Army's capabilities to undertake such missions; and to determine current shortfalls and some possible solutions. Capabilities, shortfalls, and possible solutions are presented in three areas: doctrine, training readiness, and equipment.

URBAN COMBAT DOCTRINE

Military operations in urban terrain will be a significant feature of future conflicts for which the Army must prepare. This preparation must begin with a greater emphasis within doctrine. Current urban combat doctrine found in FM 90-10 recommends avoidance of urban operations when demographic trends make avoidance an unlikely alternative. FM 90-10 (August 1979) states "build-up areas are isolated and bypassed rather than risking a costly, time consuming operation in this difficult environment."¹⁰

FM 90-10 needs a revision with a new focus. This 1979 manual must be revised to provide commanders and planners a useful document. FM 90-10 is a very tactical manual. It describes the steps to conduct an attack or defense of a city; and points out the tactical considerations for MOUT. The revised manual should provide a "how to think" approach about the city vice a "what to do" approach, addressing the operational levels of urban warfare. The manual also does not address Military Operations Other Than War (MOOTW) in an urban environment. Additionally, the manual must move away from its central European orientation. The 1979 manual was developed purely for the defense of the former Federal Republic of Germany. This was probably an accurate focus during the Cold War, but the Cold War is over. The current U.S. strategy calls for a force projection, worldwide orientation. The possible contingencies across the globe makes the "single region doctrine" inadequate. The revised manual should assess norms of urban areas throughout the world.

FM 90-10 must also expand its scope beyond a simplistic treatment of a city as terrain. The changes should address the fact that the city embodies more than terrain. The 1979 manual restricts its scope to the conditions and tactical implications of the city's buildings. A city is a system of systems that performs individual and collective functions

for the community.¹¹ Envisioning an urban environment in this manner affords operational planners a more thorough view from which to develop their plans. The coverage should include the components of the system and the operational implications of each.

Effective operational level doctrine is fundamental for guiding Joint Task Force operations and training. None exists at present; current joint MOUT doctrine is also scarce. Doctrine revision needs to be at all levels (tactical, operational, and strategic) with an emphasis on maintaining continuity from strategic level guidance to that provided for the individual soldier. Both joint and service doctrine need to be comprehensive not only in the sense of the levels of operations, but also with regard to the complete spectrum of potential operations (e.g., stability and support missions as well as those entailing combat), multinational, and interagency considerations.¹² The responsibilities of CINCs regarding making requirements known, overseeing training, promoting technological development, and supporting other activities critical to MOUT preparedness should be identified. Effective operational level doctrine is fundamental for guiding Joint Task Force (JTF) operations and training. None exist at present; current joint MOUT doctrine pays little attention to urban operations.¹³ Any rewritten manual, whether joint

or single service, should include noncombatant considerations throughout and stress that MOUT include the full range of military operations at the tactical, operational, and strategic levels. A definition of "joint MOUT" and analysis of current and future cooperative approaches to urban operations needs to be considered. Doctrine must also address the U.S. capability limits. Joint doctrine must account for diminished force strengths; no longer can the United States expect to commit multiple divisions to a long-term urban operation unless means of dramatically reducing personnel losses are developed. Doctrine to achieve desired end states via methods other than complete seizure or clearing of a build-up area is necessary. The updated MOUT doctrine should address the full spectrum of potential operations (e.g., stability and support missions as well as those entailing combat), multinational, and interagency considerations.

The United States Marine Corps has recently labeled the possibility of humanitarian missions, stability activities, and combat occurring simultaneously during a single operation and in a single city as the "three block war."¹⁴ It is recommended that MOUT doctrine take a broader and more integrated approach to address these varied demands. Doctrine to cover these scenarios is essential.

For example, manuals should include discussions of how to select and neutralize critical urban nodes in order to facilitate success during stability missions. Similarly, coverage of how to prioritize and restore essential services is necessary. Doctrine should cover contingencies such as those now commonplace in Bosnia, situations in which soldiers must constrain their actions to meet stringent rules of engagement but be prepared for the high intensity MOUT that could be but seconds away. Dealing with such divergent requirements requires guidance that considers the use of lethal and nonlethal means of engagement.

After a quick review of available doctrine, which discusses urban operations, you will find a disturbing absence of urban doctrinal guidance for other than dismounted infantry. Light Infantry, Air Assault, or Airborne Infantry is currently the least modernized of our military arms but yet urban combat falls mainly to infantry soldiers. FM 90-10-1, An Infantryman's Guide to Combat in Build-Up Areas (October 1995), is a fairly useful manual and goes into some detail for infantry operations. It explains the importance of cities and provides techniques and procedures for infantry operations. While FM 90-10 does mention supporting arms (Field Artillery, Engineer, Aviation, Tac Air, ADA, MP, Chemical, communications) it falls short of any real prescription for their use in urban

combat. There is much work to be done to make FM 90-10 an up-to-date, useful tool for commanders and planners. The following areas need some detailed attention in doctrine and training: Fire Support, Casualty Evacuation/Medical, Intelligence collection, analysis, and dissemination, Psychological operations, Defensive MOUT, Information operations, Enemy hugging tactics and countermeasures.

Other Army doctrinal manuals provide little for the user seeking guidance in preparing for or conducting urban operations. FM 100-5 (Operations), FM 100-15 (Corps Operations), FM 71-100 (Division Operations), and most 7-series (Infantry) and 71-series (Armored and Mechanized Infantry) manuals do little more than recognize the problems of urban combat.

These changes in a revised FM 90-10 and writing of Joint MOUT doctrine, applying the doctrine to all levels of urban warfare, will provide the Army and other services documents from which to extract concepts for developing operational and tactical plans. Army doctrine has cautioned Army units to avoid MOUT for many years because it seemed too hard to do. Today, the probability of this mission is much higher and it is still hard to do. Military operations in urban terrain will be a significant feature of future conflicts for which the Army must prepare. This preparation must begin with a greater emphasis within doctrine. While Army

doctrine is slowly moving away from the Sun Tzu approach of "never" to the realization that urban combat is "likely," it must continue this progress.

TRAINING AND READINESS

"A military unprepared for urban operations across a broad spectrum is unprepared for tomorrow."

Ralph Peters, "Our Soldiers, Their Cities"¹⁵

Training is closely related to doctrine. Without clear doctrine guidance, Army wide training lacks a basis for commonalty in tactics, techniques, procedures, and standards. The same can be said for all services training and the need for joint doctrine for urban operations. Through unit training we develop the individual soldiers, their leaders, and units become proficient in the planning and tactics required to conduct urban operations.

Current training deficiencies are due to lack of techniques and procedures (doctrine) for urban combat, lack of suitable training facilities and simulations, minimal integration of urban combat scenarios into the Combat Training Centers, and a overall lack of training priority on urban combat operations throughout the service branch school systems. Urban combat training receives low priority in most units and is non existent in others.

Lack of MOUT proficiency is evident from unit performances during rotations at the Joint Readiness Training Center, at Fort Polk, Louisiana. Many of the units who conduct MOUT operations at the center's Shugart-Gordon MOUT facility fail to accomplish their mission. A few

defenders hold off the attack of multiple companies and their supporting Armor, Artillery and Aviation assets during mock combat scenarios. Deficiencies run the gamut from improper actions on contact by individual soldiers to commanders' and staffs' inability to plan effectively.

While the Army in an attempt to train soldiers in urban combat has constructed numerous mock villages or MOUT training sites, most fall short of training units much above the company level. Most Army units, who train in urban combat, have adopted FM 90-10-1 and the Close Quarter Combat Drills developed by the U.S. Army Special Forces, for their training programs, but urban combat training significantly varies between units. The U.S. Marine Corps operates an urban combat training course at Camp Pendleton that allows Marines to develop standardization and consistency of tactics, techniques, and procedures across the Marine Corps. The Army has no such course due to resource constraints. Urban combat training facilities that are normally useful to battalion-sized units and below are expensive to build and maintain; falling often prey to budget cuts. The Joint Readiness Training Center (JRTC), the CTC for light forces, has invested heavily in light force combat training. The JRTC has developed a state-of-the art Third World urban combat facility, numerous villages in the field training exercise area, and several urban combat livefire ranges. A

light infantry unit can expect to rotate through the JRTC about every two years, so extensive home station training facilities are needed to sustain these highly perishable urban combat skills. The National Training Center (NTC) and the Combined Maneuver Training Center (CMTC) both designed for heavy force training have minimal training facilities for urban combat and provide minimum emphasis. Thus by default, urban combat seems to be a light infantry problem according to the Army's training opportunities. However, light forces alone cannot win in urban combat. As we have seen in Somalia and all other urban combat we have participated in, a mix of highly trained heavy and light forces is required to succeed.

MOUT training is not solely for units deploying overseas. During the 1992 Los Angeles riots, units from the California Army National Guard demonstrated that urban operations readiness is also required for units with domestic support roles.

No measures are as important as revolutionizing training for urban combat. The present approach thought worthwhile on its own terms, trains soldiers to fight in villages or small towns, not in cities. Building realistic "cities" in which to train would be prohibitively expensive. What is needed is a National Training Center for Urban Combat. Such a facility would address the most glaring and

dangerous gap in our otherwise superb military training program. In many of our own blighted cities, massive housing projects have become uninhabitable and industrial plants unusable. Yet they would be nearly ideal for combat-in-cities training. While we could not engage in live-fire training, we could experiment and train in virtually every other regard. Development cost would be a fraction of the price of building a "city" from scratch, and city and state governments would likely compete to gain a U.S. Army presence, since it would bring money, jobs, and development. The training center could at least partially administered by the local National Guard to bind it to the community. This same approach may be made toward one of the recently closed or closing military post. The same advantages will exist for the local and state community; however, an abandoned military post would be isolated and large enough to allow live-fires, large units maneuver, and all supporting arms to train in concert.¹⁶

Another innovative approach might include computer simulations or exercises on actual urban terrain. Simulation of urban combat for large-sized units (brigades or higher) is insufficient or unavailable. The Army needs simulations to maintain readiness at the brigade and higher levels since it is not practical to exercise large units in urban terrain. Integration of urban combat scenarios into

U.S. Army Battle Command Training Program (BCTP) would provide a start towards providing some urban combat training. This would help to train our junior and senior leaders in urban operations.

Tactical exercises without troops will aid commanders and staffs in understanding the nature of the urban environment. Soldiers might conduct exercises in subway systems, abandoned buildings, or on closed military bases. Commander and staff "rides" might be conducted in modern cities to see the challenge of urban operations in a large city.

Finally, we must integrate our training approach to the development of our capabilities for MOUT. Only by focusing our training, being innovative in all areas, adding urban simulations to computer exercises, building the right training facilities to teach urban warfare to a common standard, and placing urban combat training as a priority will we mature a capability to carry maneuver warfare to the city.

RECOMMENDATIONS

No recommendation can eliminate the difficulties presented to commanders by urban environments. Cities and other built-up areas will remain costly locales in which to wage war or fight in engagements short of war¹⁷. It is possible to mitigate some of the negative effects and to improve our readiness to conduct urban combat operations. If soldiers are to accomplish urban intervention missions, they must be trained and equipped with new skills and technologies. Missions must minimize ambiguity and exposure to risk, and be achievable. Soldiers and their leaders must be confident of themselves, believe in their purpose and be prepared for long periods of stressful, short violent confrontation as well as traditional combat.¹⁸ The U.S. Army requires changes to doctrine, training methods, and technologies to provide its forces with the capabilities necessary to effectively conduct future urban combat.

The first and most obvious challenge MOUT poses is one of doctrine. Doctrine is the basis for training, tactics, logistics, and the employment of weapons and technology. Success in addressing today's strategic requirements may not be attainable unless an alternate method is adopted. The doctrine of "urban avoidance" will not be possible. Demographics trends dictate that U.S. forces will be forced

to operate in urban terrain in the future. Doctrine writers have begun to make progress in moving beyond the virtually unrestrained tactics of World War II with FM 90-10-1, An Infantryman's Guide to Combat in Built-up Areas (October 1995). However, due to the demand for low casualties, low collateral damages; further approaches must be developed that reflect greater recognition of constraints on noncombatant and property losses.

A rewrite of FM 90-10 giving new guidance for urban combat operations based on today's constrained environment is overdue. Tactics, techniques, and procedures need adjustments to enhance both combat effectiveness and reduction of collateral losses. Similarly, more study of Rules of Engagement (ROE) and their use in environments with an adaptive adversary is essential. ROE not only need to address weapons use; they must also consider a greater scope of interactions, to include how to recruit and pay informants and otherwise gain noncombatant support for friendly operations.¹⁹ Future doctrine should recognize the current reductions of forces and apply the emerging technologies to the urban battlefield. Current doctrine focuses at the tactical level. This needs to expand to include operational levels of combat and to include joint operations. There is little doctrinal guidance for a

commander confronted with the need to seize a large city while protecting its citizens. The following areas require further attention in MOUT doctrine:

- Fire Support—both precision fires, fire support doctrine, planning, and training.
- Casualty evacuation—current reliance on limited numbers of medical personnel result in combat personnel having to assist with medical evacuation, further draining fighting strengths in an environment notorious for manpower consumption.
- Intelligence Collection—analysis, and dissemination, MOUT is in considerable part squad leaders' operations, thus promulgation of real-time intelligence must be to the lowest levels to be of value.
- Psychological Operations--- Chechens' effective use of psychological operations against the Russians emphasized both the value of well-conceived psyops and the need to prepare friendly forces for the enemies' employment of psyops.
- Information Operations --- doctrine should address the use of information operations and its impact on urban operations.
- Enemy hugging tactics--- (as used by the Chechnians in Grozny against the Russians) this tactic is likely to be a response of an adversary to the US targeting

capabilities and therefore a countermeasure needs to be addressed.

- Communication--- Cities are inherently difficult places to communicate. While distance is relatively short, so are clear lines of sight, cluttered with buildings casting electronic shadows. Worse is electronic pollution, CB, cell phones, commercial transmissions, and power generation equipment. Development of communication procedures to overcome these obstacles is needed. Global positioning systems (GPS) suffer some shortfalls. Soldiers within structures or in the proximity of tall buildings may find GPS performance degraded. As accurate targeting demands precise location information, GPS improvements are critical.
- Evidence indicates that US close support weapons systems, munitions, and tactics are severely limited by urban terrain. Doctrine must address how to best use current and future weapons in an urban environment.
- Implications for force structure and modernization must be addressed.
- Command, Control, Communications and Intelligence (C3I) improvements are necessary.

Training for successful urban combat demands more than the Army can provide given current training facilities, budget constraints, and current technologies. The size and

complexity of available tactical training sites are inadequate for preparation of units above battalion size. No sites provide the scope needed for operational-level planning and the size to test commanders and units in the areas of sustained operations, logistical support, and appropriate use of joint forces. Computer simulations might provide adequate training at the tactical or operational levels.

The training of soldiers and units will likely require a systems approach to training that includes utilization of currently available limited assets, benign use of actual cities, and improvements of military simulation software.

CONCLUSION

Effective future enhancement of MOUT capabilities will require a combination of advance in doctrine, training, and some technology. Technology and its availability is not a significant factor in the near term solution of MOUT readiness. While technologies offer some benefits, their impact would be less than those obtained via improvements to doctrine and training. This is in considerable part attributable to two factors(1) that urban operations tend to mitigate technological superiority as was the case in 1993 Mogadishu and 1995 Grozny, and (2) a conviction that technologies likely to be available to the field in the immediate future would not dramatically alter the character of nor losses resulting from MOUT operations. In the near term, the Army will benefit more from improving MOUT doctrine and training.

The U.S. Army can effectively conduct urban warfare while minimizing collateral damage and both friendly and noncombatant casualties with appropriate changes to doctrine, training, and military equipment.²⁰ Constraining the force by demanding that noncombatant casualties and collateral damage be minimized only ensures a multifold increase in the stress and challenges already inherent in urban combat.

Taking steps now to meet these challenges will go a long way toward better preparing the soldier who will face an enemy in the streets.

Whether in war or operations other than war, urban combat involves potentially very costly and difficult missions. Steps can be taken in doctrine guidance, training, and equipping, a force to ensure that its members are better prepared than has been the case in the past. Nothing can make urban combat easy.

(Word Count 5,899)

ENDNOTES

¹ Sun Tzu, The Art of War, trans. By Samuel Griffth, (London: Oxford University Press, 1963), p. 78-79.

² Russell W. Glenn, Denying the Widow-Maker: The RAND - DBBL MOUT Conference (Santa Monica: RAND, 1998) p.5

³ LTG Paul K. Van Riper, Military Operations on Urbanized Terrain (Marine Corps Gazette, October 1997), p a-1.

⁴ Russell W. Glenn, Combat in Hell: A Consideration of Constrained Urban Warfare (Santa Monica: Rand, 1996), P. 7

⁵ Major Richard M. Francey, The Urban Anatomy: The Fundamentals of a City (Fort Leavenworth, Kansas: U.S. Department of the Army, 1994), p.34

⁶ Major General Robert H. Scales, Jr., The Indirect Approach: How US Military Forces Can Avoid the Pitfalls of Future Urban Warfare (Armed Forces Journal International, October, 1998), p. 68

⁷ Ibid, p. 71

⁸ Russell W. Glenn, Combat in Hell: A Consideration of Constrained Urban Warfare (Santa Monica: Rand, 1996), p. 22

⁹ Major General Robert H. Scales, The Indirect Approach: How US Military Forces Can Avoid the Pitfalls of Future Urban Warfare (Armed Forces Journal International, October 1998), p.71

¹⁰ Department of the Army, FM 90-10, Military Operations on Urbanized Terrain (Washington, D.C.: U.S. Department of the Army, 1994), p.34

¹¹ Richard M. Francey, The Urban Anatomy: The Fundamentals of a City (Fort Leavenworth, Kansas: Combined Arms Library, 1994)

¹² Russell W. Glenn, Denying The Widow-Maker: The RAND-DBBL MOUT Conference (Santa Monica:RAND, 1998) p. 6

¹³ Ibid, 7

¹⁴ LTG Paul K. Van Riper, A Concept for Future Military Operations on Urbanized Terrain, (USMC Combat Development Command, October 1997), P. A-2

¹⁵ Ralph Peters, "Our Soldiers, Their Cities", Parameters (Spring 1996): p. 1

¹⁶ Ibid., 6.

¹⁷ Bruce Hoffman and Taw Jennifer Morrison, The Urbanization of Insurgency, (Santa Monica: Rand, 1994) p.28

¹⁸ BG John R. Groves, Operations in Urban Environments, (Military Review, July-August 1998), P.40

¹⁹ Russell W. Glenn, Combat in Hell: A Consideration of Constrained Urban Warfare, (Santa Monica: Rand, 1996) p. 8

²⁰ Ibid, p. 43

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