The Art of Wall: A Different Look at Urban Operations

by **MAJ Fan Mun Poh**

Abstract:

In view of global urbanization, the reality is that most of the military operations of the coming decades will be conducted in or around built up areas. As modern armies began to accept their inevitable involvement in the urban fight, their search for answers evolved around improving tactics, techniques and procedures (TTP), as well as developing technological solutions. This essay views technology as an enabling feature to future urban operations and urges deeper appreciation of the urban environment to overcome its challenges.

Keywords: Urban Operations; Civil-Military Relations; Technology; Urban Terrain

INTRODUCTION

Armies have traditionally avoided built-up areas. As Sun Tzu advised: "The worst policy is to attack cities. Attack cities only when there is no alternative." There are many examples that continue to reinforce the perception the urban fights will be costly, slow, and for the most part inconclusive. Body bags returning home from the Russian campaigns in Grozny,[1] Palestinian casualties reported in the Gaza Strip Conflict,[2] and the trillion-dollar military bill accrued to the American taxpayer for Operation Iraqi Freedom remind us of the human sacrifice and resource commitment resulting from urban operations.[3]

In view of global urbanization, the reality is that most of the military operations of the coming decades will be conducted in, or around built up areas. As modern armies began to accept their inevitable involvement in the urban fight, their search for answers evolved around improving tactics, techniques and procedures (TTP), as well as developing technological solutions. However, these measures are insufficient because tactics evolve quickly. Furthermore, the intelligent use of low or conventional technology by a motivated adversary can undermine the technological advantages of a well-equipped military.[4] Hence, the military must recognize that TTPs and technology can only offer limited solutions to urban operations. More importantly, the military must reach for the fundamentals, to acquire a deep understanding of the terrain *vis-à-vis* the nature of operations as a basis to develop solutions to defeat the adversary in the urban environment. This essay views technology as an enabling feature to future urban operations and urges deeper appreciation of the urban environment to overcome its challenges.

THE URBAN ENVIRONMENT

> *"Conformation of the ground is of the greatest assistance in battle. Therefore, to estimate the enemy situation and to calculate distances and the degree of difficulty of the terrain so as to control victory are the virtues of the superior general. He who fights with the full knowledge of these factors is certain to win; he who does not will surely be defeated."*
>
> *– Sun Tzu*[5]

Terrain is neutral. As Sun Tzu foretold, the general who studies terrain carefully to exploit its limitations and opportunities will emerge victorious in battle. Just as how the military collectively appreciates the terrain, the conduct of urban operations must adopt a similar process expanded to include assessments of

the urban environment—defined by the Urban Terrain, Populace and Surrounding.

The "Urban Terrain" describes the city's infrastructure as one that consists of surface and underground structures, and other features such as building types, urban density, iconic landmarks and transport networks. The populace consists of non-combatants who live in the city, their social behaviors, cultures, values and more importantly, how they would interact with their surroundings. Lastly, it is also vital to understand that cities do not exist in isolation but are surrounded by adjacent urban populations and fringed by nature.

Connections within the Urban Environment

Complexities of the civil dimension are immense and cities influence the conduct of urban operations to great extents as compared to other conventional terrains. The interactive nature of populace amongst themselves, with the urban terrain, surroundings, attackers and defenders will impose challenges to the operating environment. In a conventional engagement, the relationship between the attacker and defender, shown in Figure 1, remains simple. There is a two-way interaction between two different groups.

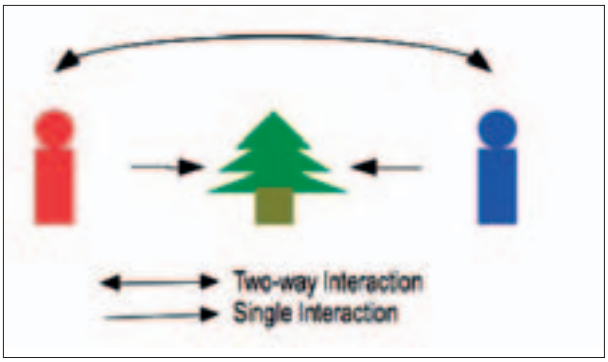

Figure 1: The Conventional Model

The opposing forces leverage on the terrain to their advantage throughout the engagement. Furthermore, opposing forces interact with each other by employing different capabilities through various means in a bid to defeat the other. In the urban environment, non-combatants will interact with opposing forces. After introducing an additional group to Figure 1 (represented by a gray icon), the model becomes complex. The inclusion of the additional group surfaced a different set of interaction into the model. As depicted in Figure 2, the focus of study is not only understanding the civilians, but also the environment that they interacts with.

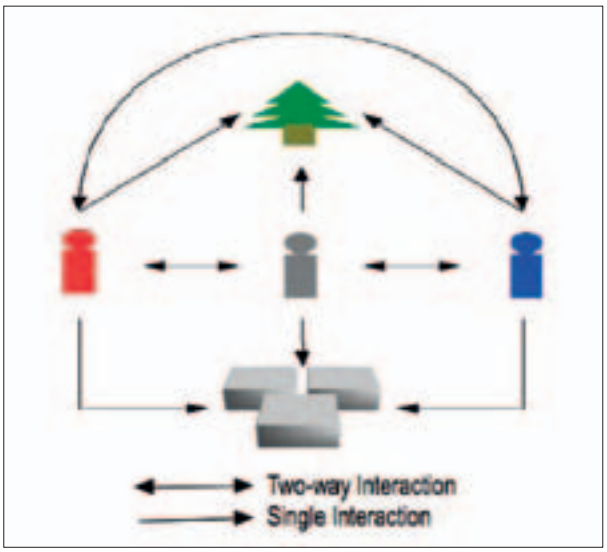

Figure 2: Urban Environment Model

In view of global urbanization, the reality is that most of the military operations of the coming decades will be conducted in, or around built up areas.

The number of interactive linkages follow an arithmetic progression with the inclusion of an additional group (another gray icon). As a result, the model that involved three additional groups (in total of 3 gray icons) in the urban environment would increase interaction tenfold. This illustration highlights the myriad of connections that exist in the urban environment which should be studied to draw conclusions that aid the conduct of urban operations. The appreciation of non-combatant actions and reactions is equally crucial; their behavior such as to stay or flee amidst conflict and return to the city after conflict *vis-à-vis* their degree of hostility, cooperation or assistance towards either the attacking

or defending force. Militaries should seek to exploit these connections to their advantage during urban operations.

EXPLOITING THE LINK

The means to exploit the interaction goes beyond direct action. The use of information operations together with combat and post-combat operations provide the means for the military to confirm how non-combatants react or interact with their surroundings.

Reversing the Relationship

The military must revisit the mindset that the urban terrain would provide the advantage to an under-modernized force, thus giving the advantage to the defender rather than the attacker.[6] A reversal of the relationship is to compel the defender to excessive offensive action within the urban terrain, hence subjecting the defender to the "disadvantages" of an attacker. In order to execute such a plan, one must identify what the adversary regards dear in the urban environment.

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To the question, "How do I cope with a well-ordered enemy host about to attack me?" Sun Tzu replied, "Seize something he cherishes and he will conform to your desires."[7]

The Battle of Arnhem, in Operation Market Garden during the Second World War (WWII) demonstrated a tactical slice of this reversal in real life. The isolated 1st Airborne executed an offensive-defense within the urban terrain. The concept was to seize a key terrain within the urban terrain, thereafter establishing a strong defense, forcing the enemy to expose himself as he tried to recapture the building, where he could be targeted and destroyed.[8] The 1st Airborne held out for approximately six days against close to two full enemy armored divisions.[9] An offensive-defense planned and executed by a modern army that is well-equipped and technologically advanced could gain the upper hand in the urban battle.

Exploiting the Underlying Relationship

Understanding the longstanding relationship between belligerents is key in order for one to exploit the other. The Chinese Nationalist Army during the Second Sino-Japanese War in 1938 demonstrated the ability to entice the Japanese Imperial Army and thereafter encircled its forces for destruction. The Chinese Army exploited the Japanese indoctrinated mindset for aggressive actions and the attitude of never losing to an inferior race.[10]

A series of planned defeats of smaller towns leading to the final city of Tai-erh-chuang not only bought necessary time for the Chinese to complete defense works and survey the Japanese situation, but also encouraged the Japanese to march on towards the trap. The anvil was the city of Tai-erh-chuang where the Japanese Army became embroiled in intense urban fighting. The Japanese Army lost operational awareness, had its lines of communications severed and faced annihilation.

Starving the Relationship

For the adversary that prefers victory by avoiding defeat, military action must target the relationships vital to the adversary to unhinge its hold in the urban environment. For instance, the British during the Malayan Insurgency saw the need to separate the insurgents from their source of supplies and recruits. The British strategized to progressively isolate urban areas, disrupted Min Yuen operations within the population, thereby isolating the Communists from their resource and information supply, starving them into submission.[11]

Although the Malayan Insurgency did not involve extensive close combat in urban environment, it highlighted the effectiveness of dislocating the adversary from its support structure—severing its interactions with the population.

Wariness within the Relationship

During the Russo-Chechen conflict, the Russians failed to exploit the divides within the Chechen society. The Chechens were descendants of a clan-based culture that banded together in the wake of a foreign invasion. Without a common enemy, Chechens would likely be torn by internal strife.[12] Russia could have disrupted the Chechen cohesion by means of concessions to different groups, thereafter defeating the uncoordinated Grozny defense in detail. More importantly, the Russians could leverage on their superior num bers to draw the Chechens into extended engagements where the numerically inferior would be at a disadvantage.

Removing the Relationship

A more extreme method involves the removal of the population from the urban environment. As demonstrated in the Battle of Fallujah, the United States Marine Corps (USMC) force evacuated a city of 300,000 people.[13] Removing the populace simplified the operating environment by reducing the number of interacting parties. With the civilians gone, the military had the luxury to conduct high-intensity operations. As such, this method proved extreme because it was at the expense of the civil infrastructure and civilian morale. However, such methods gave early warning and allowed the adversary to evade the fight by escaping the battlefield safely.

The urban terrain must be appreciated not in isolation but in conjunction to the population and infrastructure.

TERRAIN POSSIBILITIES

With a deep appreciation for the civil dimension and the overlaying physical terrain, the military will be able to operate more effectively within the urban environment. The urban terrain must be appreciated not in isolation but in conjunction to the population and infrastructure. To reduce the urban infrastructure to rubble would be counterproductive. Collateral damage and its implications for post-conflict operations suggest that there should be minimal destruction to the existing infrastructure in the urban environment. 21st century urban operations should not resort to the leveling of cities as seen in Dresden and Grozny. Therefore, militaries conducting urban operations must appreciate the urban terrain differently and seek to exploit all that the infrastructure has to offer.

Exploiting the Urban Infrastructure

No army possesses sufficient force to secure and control the entire urban terrain. Likewise, the defender is obliged to concentrate his defenses at selected areas in order to be effective. Defending the entire city physically is nearly impossible and unnecessary. The surface road networks and subterranean infrastructure such as sewers and subway tunnels permit different rates of movement, ease of lateral transfer of forces and provide mobility for any force that controls them. Different urban densities offer cover and concealment for troops, access to aerial insertions and screen the movement of forces. Critics may consider these terrain features as factors that reduce unit cohesion and stretch command and control, thereby creating overwhelming uncertainties. The military, on the other hand, should view these features as opportunities. Advancing in the urban environment could be distributed yet mutually supporting. Motorized forces possess the mobility to exploit the road networks within the urban terrain. Similarly, the presence of open parks, gardens and rooftop platforms offer airborne and helicopter-borne forces overhead entries. The employment of light and medium lift helicopters can insert sizeable forces into the depth of the urban defense to wreck havoc and dislocate the enemy from within. Nevertheless, the approaches into urban terrain should be multi-dimensional, allowing the advancing force to utilize speed and achieve tactical surprise.

Terrain From a Different Lens

The urban terrain is much more than what is observed from the exterior. The Israeli military (IDF) demonstrated the ability to see the terrain differently during urban fights in cities of Jaffna and

Nablus. The Israeli's employment of "infestation" redefined the inside as outside and domestic interiors as thoroughfares, enabling the IDF to infiltrate towards the objective without being harassed.[14] Even before the term "infestation" was brought into the military context, the Israelis during their War of Independence had demonstrated this tactical innovation. At Jaffna, the Israelis carved two jagged "aboveground tunnels" through city blocks and outhouses to outmaneuver defenders and achieve the element of surprise.[15] Their presence behind enemy lines dislocated the defenders and sent them into a state of panic. In addition, the Israelis avoided direct confrontation. Instead, they toppled buildings on Arab defensive strong points and used rubble to trap armored columns where they could be ambushed and destroyed systematically. At Nablus, the IDF recognized the dangers of maneuvering in open streets and vulnerability to Hezbollah ambushes. They employed infestation and moved in smaller packets from different directions towards their designated objectives. Their tactical innovation paid off as IDF casualties for the Battle of Nablus were notably low.

THE ADJACENT BATTLESPACE

Strong points are viable only until obviated by maneuver. Defeating the enemy within the city may entail exploiting the battle space beyond the urban terrain. Decisive engagements surrounding the urban terrain could contribute to success or failure of the city fight. The contest for Stalingrad during WWII demonstrated that losing sight of the operational level of war could lead to defeat. Similarly, the isolation of the urban terrain was as crucial to the fight within.

The contest for Stalingrad was a tactical obsession for the Germans. Embroiled in the city fight, the Germans lost operational awareness and were surprised by a Soviet encirclement. Pressured by the Fuhrer to seize the symbolic city of Stalingrad, the German Sixth Army was relentless in its attacks and wrestled with the defending Red Army not only at the expense of its reserves but also the forces guarding its flanks. Beyond Stalingrad, another Soviet Army launched a massive counteroffensive to encircle the entire German Sixth Army, forcing it into surrender.[16]

The isolation of the urban terrain prevents reinforcements and supplies from reaching the defending army. At Stalingrad, the German forces failed to sever Stalingrad's lines of communication. Soviet reinforcements and supplies arriving by boat from across the Volga river proved vital in sustaining the attrition battle and bought precious time for the Soviet counteroffensive. A similar lesson during the Warsaw Uprising in 1944 saw the Germans and Poles caught in a bitter stalemate. The Germans eventually won after successfully disrupting Polish resupply efforts to the Polish Home Army.[17]

There are limitations to how much an army can isolate an urban terrain. The extreme approach resembles an encirclement by a physical force which could be manpower intensive. A more realistic method

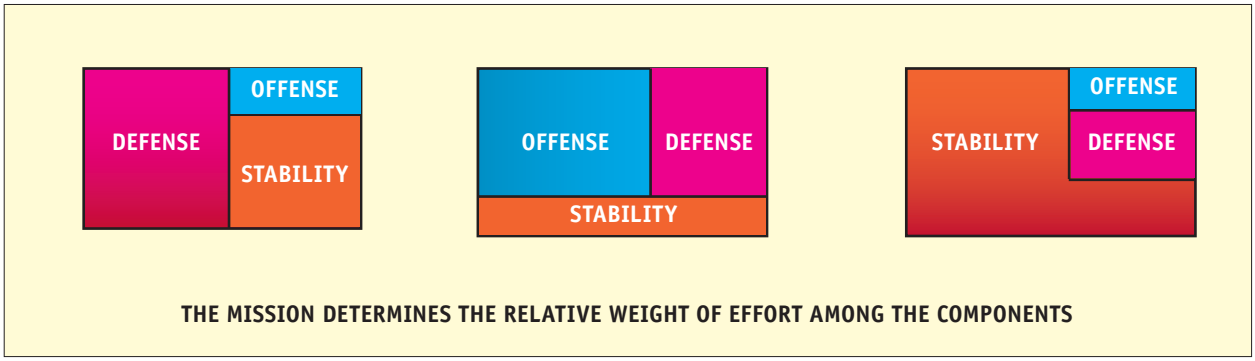

Figure 3: Full Spectrum Operations[18]

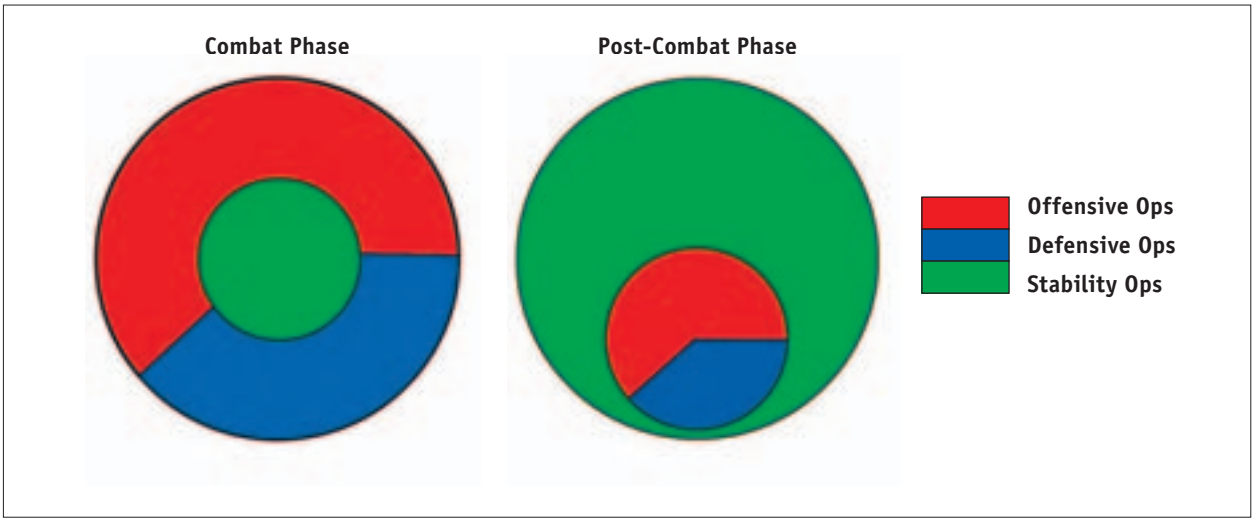

Figure 4: Nature of Urban Operations

would see the army attacker isolate the city by severing approaches into the urban terrain. Instead of physical troops, traffic control points, ambush and indirect fires could control and limit access into the urban terrain.

THE NATURE OF OPERATIONS

Combat phases within urban operations are difficult to delineate because of a complex relationship between civil infrastructure and multi-polar nature of the civilian population. Giving no attention to managing these relationships could lead to strategic consequences. Militaries must consider requirements of post-war operations from the onset. If destruction to infrastructure is inevitable, swift mitigation such as reconstruction is necessary.

This essay borrows the concept of full spectrum operations as shown in Figure 3 and depicts urban operations in two key phases as shown in Figure 4. First is the combat phase consisting of offensive and defensive operations. Second is the post-war phase which predominantly accounts for stability type operations—note that both phases contain elements of the other. General Charles Krulak described the landscape of the future urban operations as a "three block war." According to Krulak's depiction of the urban battle space, we can expect to be providing humanitarian assistance in one part of the city, conducting peacekeeping operations in another, and fighting a highly lethal mid-intensity battle in yet a third part of the city.[19] Figure 4 provides a better portrayal to "three block war."

In the combat phase, provisions are made to prevent collateral damage and vital installations should be secured early to facilitate stability operations—power stations, water and waste treatment facilitates and food stockpiles, just to name a few. The identification of urban objectives would be with regard to the degree of persuasion or coercion the military intends exert to control the population. In view of a volatile urban environment, the military has to even consider protecting vital installations to deny sabotage and disruption to post-conflict operations.

In the post-war scenario, a military force tasked to secure the urban environment maintains operational flexibility by allocating sufficient force and resources dedicated to execute surgical strikes and defensive maneuvers amidst conducting stability operations. The nature of operations must not be viewed as independent parts but subsets of the other, with varying priorities depending on mission criticality.

TECHNOLOGY

Every urban conflict scenario is unique but the fundamental characteristic of urban battles, especially at the tactical level, remains surprisingly consistent. Urban operations are pre-modern fights that require soldiers to be in close combat with "boots on the ground" to execute stability operations. The preference for fighting from a distance has limited effectiveness in the urban fight. The recent Iraqi conflicts confirmed that marines were still required to "clear" buildings in Fallujah and the Abrams Main Battle Tanks were tasked to roam the streets of Baghdad as a show of presence.

Despite recognizing the manpower demands of urban operations, the western militaries continue to invest heavily in technology. Greater bandwidth permits better communication and connection, thus improving command and control; low latency sensor-shooters coupled with precision weapons increases the confidence in conducting precision strikes; unmanned and satellite systems supported by computer software provide information, enhance situational awareness and speed up the decision making processes. Yet, there is little evidence that advanced technology can fundamentally change the nature of urban conflict in the near term. Network centric warfare and low latency sensor-shooter cycles are of boundless value to urban operations. Nevertheless, Clausewitzian imperatives of fog and friction remain valid because chaotic weather, human error, incorrect intelligence, miscommunication, black swan behavior by the enemy and human shields can easily negate any technological advantage.[20] Technology may still hold the key to altering the course of urban warfare in future. Scientists pursue advanced weaponry that produces little or no collateral damage, improving the odds for distant engagements. Likewise, military officers envision a futuristic urban force that is lean and empowered with a full range of urban capabilities that can replace the need for 5:1 combat ratio in urban operations and a huge occupying force for stability operations. Unfortunately, technology development for close combat has yet reached levels comparable to stand-off and precision weapons.[21] Much of the resources invested in the city fight are concentrated on materials for personnel on mission: improved body protection, reactive armor, mine-resistant vehicles—much of which is promising rather than mature.[22] For now, technology will remain as an enabler to militaries conducting urban operations.

CONCLUSION

Understanding the urban environment, its physical features and civil dimensions, remains key to future military operations. Technology has a key role in shaping future urban operations but advancements have been limited and largely untested in real and protracted conflicts. Nevertheless, technology continues to be an enabler to provide information to better understand terrain. Inevitably, as proven by decades of urban warfare, armies cannot win an urban fight without projecting a physical force into the immediate urban environment at some time during the operation.[23]

Modern armies must be prepared to fight real enemies in the urban environment through different phases of war. Until the day where an advanced urban warrior system is developed to equip the soldier with a great range of capabilities and the awareness to employ these capabilities effectively in the urban environment, armies will have to look to tactical innovations, operational-strategic planning to prepare for the man-to-man fight. As such, the success of urban operations hinges very much on the study of the city's inhabitants and terrain, *vis-à-vis* the nature of urban operations.

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