



National Défense  
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B-GL-322-007/FP-001

LAND FORCE

# UNIQUE OPERATIONS—URBAN

## (ENGLISH)

**(This publication is active upon receipt)**

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**Issued on the Authority of the Chief of the Land Staff**

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## FOREWORD

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## PREFACE

1. Doctrine provides a military organization with a common philosophy, a language, a purpose, and unity of effort. To this end, B-GL-322-007/FP-001 *Unique Operations—Urban* discusses major operations conducted within the urban environment. In the future, the urban environment may be the predominant operational environment. Each urban operation will be distinct from others of its kind, as well as from similar types of operations in other environments. Each operation will differ because of the multitude of combinations presented by the threat, the urban area itself, the major operation of which it may be part (or the focus), and the fluidity of societal and geopolitical considerations. Therefore, there will always exist an innate tension between doctrine, the actual context of the urban operation, and future realities.

## ACKNOWLEDGEMENTS

2. This publication is principally based upon the United States Army manual FM 3-06 (FM 10-90) *Urban Operations* published in 2003. While much of the contents are drawn directly from FM 3-06, they have been modified to suit Canadian doctrine, with additional input from the NATO Urban Operations 2020 Working Group (WG) and the NATO draft *Joint Urban Operations* publication.

## PURPOSE

3. This manual provides the means for understanding and determining the impacts of the urban environment on military operations, and provides information on managing, taking advantage of, and as appropriate, mitigating the effects of those impacts. As such, this manual demonstrates how to apply the doctrinal principles contained in B-GL-300-001/FP-000 *Conduct of Land Operations* to this unique environment.

## SCOPE

4. Chapter 1 introduces theoretical and historical perspectives of urban operations that serve as the underlying basis for the rest of the manual. Chapter 2 discusses the characteristics of urban centres and populations, as well as their impact on operations. It is unlikely that friendly forces will ever operate in a benign urban environment; therefore, Chapter 3 discusses the varied nature of potential urban threats. An understanding of the complexities of the urban environment and the nature of the enemy is essential to sound decision-making. Chapter 4 provides planning factors to be pursued when contemplating urban operations. By working through these factors, a decision on whether or not an urban operation is justified could be made. Chapter 5 develops the fundamentals that must be considered when preparing for an urban operation. Chapter 6 outlines an urban operational framework (i.e., understand, shape, engage, consolidate and transition [USECT]) built upon specific urban considerations that create the foundation necessary for successfully applying operational doctrine within an urban environment.

5. The second half of the publication (Chapters 7-10) discusses how urban operations are conducted and resourced. Urban operations include major offensive and defensive operations, as well as stability operations ranging from peace operations and combating terrorism, to domestic operations and foreign humanitarian assistance. However, all urban operations will cross the full spectrum of conflict, involve some aspect of all three tactical operations (although one may dominate), and must be planned for accordingly.

## **APPLICABILITY**

6. This manual is intended for commanders at the battle group level and higher. It addresses the range of operations throughout the spectrum of conflict that will be executed in urban settings. Users should also consult B-GL-322-008/FP-001 *A Tactical Guide to Urban Operations* for information at the unit and sub-unit level

## **TERMINOLOGY**

7. Chapter 2 defines “city” according to the population size. However, to maintain conformity with most other historical reports within the historical vignettes and accounts, the term “city” is applied in its common usage without specific regard to size. Moreover, the term “threat” is applied broadly to include an enemy force (conventional or unconventional), an armed belligerent in a peace operation, antagonistic or unfriendly elements of the civilian population, or some other hazardous condition in the urban environment that negatively influences mission accomplishment. Lastly, the term “hostile” is used as a subset of the “threat” and denotes a particular element of the urban population (e.g., individual, group, or organization), or one or more opposing armed factions in a peace support operation. Both an enemy and a hostile have the *intent* to exploit vulnerabilities and negatively affect an urban operation. A hostile, however, does not engage friendly forces in protracted combat operations.

8. Unless otherwise stated masculine pronouns apply to both men and women.

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## CHAPTER 1 WHY URBAN OPERATIONS

*Urban Operations (UO) are those operations planned and conducted, across the full spectrum of conflict, on or within urban and adjacent natural terrain, where the dominant features are the densities of population, structures, potential firing positions, combat and non-combat activity, friendly and enemy forces, line of sight difficulties, and compression of the time available for military tasks.<sup>1</sup>*

Final Report, NATO Urban Operations 2020 Working Group

### THE PROSPECT OF URBAN OPERATIONS

“Urban warfare, fighting in cities, war in complex terrain. To the casual observer, the words seem detached, almost pristine. However, to military professionals, images of great destruction, and excessive casualties in cities such as Berlin, Stalingrad, Hue and Beirut come to mind. Urban warfare, a subject that many military professionals would prefer to avoid is still with us. Moreover, it may be the preferred approach of future opponents.”

–Major General Robert H. Scales, Jr., *Dynamics of Future War: Complex Terrain and the Indirect Approach*

1. The world is in a period of massive urbanization. A trend of migration from rural to urban areas is occurring across the globe and is especially evident in developing nations. Combined with exponential growth in global population over the last quarter century, this migration has created urban areas that contain not only large concentrations of the population, but key governmental and economic centres in their respective regions. In many cases, rapid urbanization has overburdened already weak infrastructures, scarce resources, and fragile economic bases. Canada’s army must be able to operate in the urban environment in situations spanning the spectrum of conflict within a joint, inter-agency, and multinational force against a wide range of threats. Future urban operations will invariably involve political, diplomatic, economic, and social considerations in addition to military considerations. Finally, the classification of the urban environment as unique may soon be overtaken, as urban operations become the norm vice the exception.

### HISTORICAL SIGNIFICANCE OF CITIES IN WARFARE

2. Urban areas have always been central to, or have significantly influenced, military operations. Much of the history of early Greece revolved around wars between its city-states or with Persia, and centred on the conquest, siege, or blockade of cities. Rome’s history over the past two thousand years can be viewed as a microcosm of urban warfare. Though military operations within the physical confines of urban areas were not the norm, the *focus* of these

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<sup>1</sup> NATO Urban Operations 2020 (UO2020) Working Group Final Report, Chapter 1, page 2, paragraph 1.5.

operations was their conquest or control. Grozny, Sarajevo, Baghdad, and Fallujah are examples of cities that have seen major conflict in the last ten years.

## **STRATEGIC IMPORTANCE OF URBAN AREAS**

3. Several conditions have attracted armies to combat in urban areas:
  - a. A military force chooses to position itself in an urban area to capitalize on the advantages offered by the environment. In contrast, an opposing force, by analyzing the factors of the situation, determines that it must enter the urban area to defeat its enemy.
  - b. The urban area's infrastructure, capabilities, symbolic importance or other factors, have significant operational or strategic value; or
  - c. The urban area's geographical location dominates a region or avenue of approach.
4. Russia's 1994 experience in Chechnya illustrates an increasingly important motivation for conducting UO. The Chechen rebels chose to turn Grozny into the battlefield as they recognized it provided them their best chance for success. The complexities of urban combat, and the perceived advantages of defending an urban area, mitigated Russian numerical and technological superiority. The urban area provided the Chechens protection from fires, resources, interior lines, and covered and concealed positions and movement.
5. The advantages of operating in an urban environment could also facilitate a larger campaign plan, and specifically, decisive battle in another location. From a defensive perspective, an urban defence may gain time and space to reorganize forces in new defensive positions, to divert enemy forces from other critical tasks, or to prepare to conduct offensive operations. To some extent, such reasons motivated Soviet forces defending Leningrad and Stalingrad from the Germans in World War II. The stubborn defence permitted the Soviets to reorganize for later offensive operations. From an offensive perspective, an attack on an urban area may be a shaping operation used to divert resources from the decisive operation that will follow.
6. Infrastructure in urban environments may have operational or strategic significance, and can compel military forces to attack or defend certain areas. As urban areas account for an increasing share of a country's national income, often generating over 50 percent of gross national product, the strategic implications for their control or influence become even greater.
7. Another reason for engaging in UO is the symbolic—historical, cultural, political, economic—importance of many urban areas. Often, capital cities (e.g., Rome, Paris, Seoul and Berlin) are identified as the strategic centre of gravity (COG) of their respective nations. Possessing or threatening these urban areas may affect directly on the outcome of a conflict. The objective of Germany's wars with France in 1870 and 1914 was ultimately Paris. Napoleon's 1812 campaign had as its objective Moscow, as did Hitler's 1941 offensive into Russia. The objective of the Soviet 1945 offensive was Berlin, and the North Vietnamese 1975 offensive had as its objective the South's capital of Saigon.

8. In major combat operations, offensive and defensive operations will take one of two principal forms: fluid or siege. In a fluid urban combat operation, both sides may contend for position and advantage in the urban battlespace. The attacker will seek to quickly seize decisive points before the enemy is able to establish a cohesive defence. This will likely require the attacker to bypass enemy defensive positions whose occupation or reduction are not critical to mission success. Conversely, the defender may use interior lines to shift forces in a fluid defence. In a siege, one side clearly has the initiative as the attacker, and the other side has the advantages of the defence. A siege can develop because of an initial fluid urban battle, or it may be a function of previous military operations that occurred outside the urban area.

9. Counter-insurgency (COIN) operations, peace support operations (PSO), and domestic operations (DOMOPS) encompass a wide range of offensive, defensive and stability operations that frequently take place in urban areas. They are conducted to facilitate diplomacy and support political initiatives, protect Canadian lives and interests, and aid in the efforts to overcome humanitarian crises. During these urban contingencies, resources are often limited and restraints on applying combat power are greater. Typically, these operations are conducted in a joint, inter-agency, multinational, and public (JIMP) setting where there is a requirement for lead agency authority, cooperative engagement, and flexibility.

## **TRAINING FOR URBAN OPERATIONS**

10. Operating successfully within complex urban environments requires rigorous, realistic UO training that must also replicate:

- a. the psychological impact of intense, close combat against a well-trained enemy;
- b. the effects of non-combatants in close proximity to military forces, and the constraints of collateral damage, which require target discrimination and a thorough understanding of the rules of engagement (ROE);
- c. immediate tactical decisions at the lowest levels with potential strategic impact; and
- d. the medical and logistic problems associated with operations in urban environments.

## **THE CANADIAN ARMY EXPERIENCE IN URBAN OPERATIONS**

11. The Canadian Army has some historical experience conducting operations to attack or defend in large urban areas gained from the Italian and North West Europe campaigns of World War II. Annex A provides a review of the lessons learned at the tactical level during the urban battle for the town of Ortona during the Italian Campaign. The legacy of these operations was a doctrinal solution to urban offensive combat: isolate the urban area, seize a foothold, and expand the foothold block by block until occupying the entire urban area and destroying the enemy. The doctrinal emphasis on the use of firepower kept friendly casualties to a minimum. Unfortunately, when the enemy stoutly defended the urban area, the emphasis on firepower

resulted in the city's virtual destruction and high casualties amongst non-combatants. While useful in setting the stage for this publication, it must be emphasized that such doctrine is dated and new ideas need to be applied to encompass the changes to both war and urbanization, which are described in subsequent chapters. On the other hand, Annex B provides a review of the 1994 urban battle of Grozny, and to provide an example of a more recent operation involving a conventional force fighting a non-conventional one, and a review of the British experience fighting a terrorist force in an urban setting, Annex C describes the 2004 battle for Fallujah. This latter battle also serves as example of a counter-insurgency operation.

## **UNDERSTANDING URBAN OPERATIONS**

12. Finally, this publication will enhance the understanding of UO by detailing the enemy; threats and hazards that will be encountered; the fundamentals to follow for conducting such operations; a framework for planning and conduct; specific preparation and planning tools for offensive, defensive and stability operations; and the unique sustainment and support requirements.



**ANNEX A TO CHAPTER 1**  
**THE CAPTURE OF ORTONA DECEMBER 1943**  
**(A REPORT BY 1ST CANADIAN DIVISION)**

1. **Introduction.** For a period of 8 days, 1st Canadian Division fought German Paratroops in Ortona. It was the first time that this formation had participated in any large scale street fighting and consequently many valuable lessons were learned and much experience gathered. No attempt has been made to tell the story of the battle but simply to comment on the tactics and weapons employed by both sides.
2. **The Town.** Ortona, an Italian town of 10,000 people, sits on a ledge above the Adriatic and astride the coast road from Termoli to Pescara. It is a port, a vital communication centre, and was of consequent importance to the Germans. The buildings are of stone or brick, several storeys in height and built close together. The streets, though narrow, are straighter than most Italian towns and divide the buildings into recognizable, but irregular blocks. None of the side streets are wide enough to permit the passage of tanks. Several large squares, surrounded by the more prominent buildings, form the centre of the town, and the citadel, a solid old relic of feudal days, occupies the promontory overlooking the harbour.
3. There is only one approach to Ortona, along a narrow ridge from the south West, for one flank is guarded by a deep ravine and the other by the sea.
4. **German Tactics.** German troops in Ortona had been ordered to defend it to the bitter end. They were paratroops—men thoroughly imbued with the fanatical frenzy of Nazis and the cream of the German Army in Italy. They were fresh, and by their special training and heavy allotment of automatic weapons, particularly suited for the desperate close-quarter fighting which followed our attack. The enemy's plan for the defence of the town followed normal German tactical lines. The fact that the town could only be attacked from one side was of great assistance to him, and he planned his defence accordingly. The outlying houses of the town, facing our attack, presented a strong line of FDLs, which could withdraw, if necessary, according to the plan of the German Commander. The 'line of least resistance' would lead to the selected 'killing ground', the central town square and the main street.
5. The main defensive position was to be the northern half of the town covering the west exit along the coast road. The approaches to both, outposts and main defensive position, were covered by mutually supporting machine-gun, and anti-tank fire. These positions were sited along the line of a lateral road and fields of fire improved accordingly.
6. No previously constructed pill-boxes were encountered but the sturdy Italian houses afforded natural strongpoints. Buildings were methodically blown across streets to form barriers or provide covered approaches to exposed positions. Any buildings which overlooked the main position, or which might offer cover for the attacker, destroyed. In the buildings opposite his position the front walls were demolished, thus exposing their interiors to fire from across the street.
7. No two houses were defended alike, but the general arrangements seem to have been, Schmeisers, rifles and grenades on the main floor, Schmeisers, MG 42s and grenades on the 2nd

and an assortment of grenades and automatic weapons on the top floor. The occasional rifleman was encountered on roofs and in upper storeys, but on the whole they were not used as fire positions. This was probably due to the continual shower of shells and mortar bombs which preceded our troops.

8. All roads, except those leading into the pre-selected 'killing grounds' were blocked by demolished houses which formed admirable barricades. These piles of rubble were in such a position that they could be covered from above and from the rear, as well as from the front. In some cases machine-gun positions were found in the barricade itself, but this was not common. The rubble would normally be liberally sowed with mines and booby traps which were very easy to conceal amongst the litter of dust and bricks.

9. Houses which were not occupied, were booby trapped or had delayed charges placed in them with timed fuses. On one instance a complete platoon was blown up in a house shortly after occupying it. Retribution was swift, a house was prepared and a small withdrawal carried out. The 'Hun' fell for his own trick and occupied the building. The resulting explosion accounted for some 20 odd paratroops. Both sides had learned their lesson.

10. Another simple, but unnerving trick, was the employment of stick grenades as booby traps. Easily set up, they were most effective in imposing caution, if not casualties upon our troops and were a continual source of annoyance. Time detonators were also used on prepared charges and explosions continued several days after our occupation was completed.

11. The main tank approaches, naturally limited to streets, were covered by antitank guns sited to fire at short range. Some were placed close up to the barricades to catch the tank's exposed under side as it lumbered over the rubble. Other guns were kept mobile and were rapidly shifted from street to street as a counter to our armoured threat. A favourite trick was to catch a tank in enfilade as it passed one of the openings to the innumerable narrow alleys which criss-crossed the main streets.

12. For the most part the guns used were 75mm Pak—believed to be drawn from the anti-tank regiment of the 90th Light Division to reinforce the paratroops. One 28/20 mm Gerlick anti-tank gun, a proper airborne weapons, was captured, as was an obsolete 3.7 cm Pak. This latter gun fires a stick bomb propelled by a nitro-cellulose cartridge and was considered quite effective at short ranges. Other anti-tank weapons encountered were the hollow charge magnetic grenade (Hoft Hohlladung), the Blandkorper, a glass chemical filled grenade and the Panzerwufmine.

13. Another of the most annoying enemy characteristics was his repeated and certain infiltration into weak spots. Numerous times on being driven from strongpoints he succeeded in reoccupying them owing to our lack of promptness in placing the garrisons there. These tactics caused us a great deal of irritation and necessitated our employing a larger number of troops than was necessary for the actual operation. Every building had to be occupied as soon as it was captured and held until the whole immediate area had been cleared.

14. No proper enemy counter-attack was launched in the town though he infiltrated continuously and twice necessitated our reclearing a vital part of the town. This failure to

counter-attack was typical of 1 Para Division, who, due to their airborne experience and tactical teaching, conserved their reserves carefully. During the latter part of the battle however, a counter-attack was put in against 1 Cdn Inf Bde, who were doing a flanking movement to the West around the town and it is believed that this comprised the entire divisional reserve. The paratroops fought tenaciously and did not withdraw from a position until all hope of holding it has been lost.

15. **Counter Tactics.** When the leading battalion reached the outskirts of the town, where street fighting really started, it was advancing on a two company front approximately the width of the town. The main road acted as the intercompany boundary. As the fighting developed the battalion commander realized that to keep tight control, and to keep the fighting efficiency of the battalion as high as possible, he would have to shorten his front and limit his company objectives. The result of this was that the Brigade Commander had to commit a second battalion to help clear the town. The main road was made the inter-battalion boundary and divided the town in half with the main defence position, including the fort, in the top right sector. Neither battalion had a front of more than 250 yards.

16. Each battalion divided its respective sectors into various sub-sectors, as company objectives, which were again divided by company commanders into a series of platoon objectives. The latter might consist of not more than 2 or 3 houses. Rigid control was essential and it was soon realised that a company commander, on completing occupation of his immediate objective, must report back before making any further advance. This was strictly adhered to, irrespective of whether the opposition was strong or slight in any one sector.

17. The company commander usually had his headquarters in a house convenient to his two leading platoons, and apart from exceptional circumstances, would remain there. As his leading platoon or platoons moved forward, so his headquarters would move forward just in rear of them. In a similar way the platoon commander had his headquarters just behind the leading section. In this way he could keep watch on the section's progress and observe any signals from the section leader. The platoon commander never committed more than a section at a time. When given a street to clear, the platoon commander placed his 'fire group' so that they controlled both sides of the street. The 'fire group' were generally located on the top floors of the first houses on either side of the entrance to a street. Except under the best conditions troops did not work along the streets, but worked their way from house to house. In some cases 'mouseholing' was necessary, which, generally being done by hand, took some considerable time. Frequently this was avoided by using courtyards and balconies to get from house to house.

18. Every possible battalion and support weapon was used whenever and wherever possible. As an example, the right flank battalion got 17 pounder anti-tank guns on a ridge south east of the town and, at a range of approximately 1000—2000 yards, literally ripped the buildings apart in front of their advancing troops.

19. Tanks were invaluable in spite of the cramped surroundings. They were used by the attackers both singly and in small numbers as assault guns or as pillboxes. They were also used to carry ammunition and mortars forward to the fighting troops and to evacuate wounded over bullet swept ground. Several were lost due to anti-tank fire, mines and grenades, but the cost was considered negligible compared to the value of their assistance.

20. Though masses of artillery were available it was found relatively ineffective in this type of fighting. The first reason was the close proximity of attacker and defender which often reduced no man's land to the width of a narrow street.

21. Such situations required accurate 'pin point' shooting which cannot be provided from field guns and, therefore, tanks and anti-tanks guns were employed in direct fire tasks. The second reason for the ineffectiveness of our artillery was the excellent cover provided by the old buildings. The upper storeys were battered and tumbled but only the pounding of our medium and heavy guns could destroy the lower floors. The main artillery tasks were the continual harassing of the coast road in the rear of the town and the destruction of strongpoints by the 200 lb shells of the heavy regiment. The full effect of its fire is not known but PW spoke dazedly of the merciless pounding they had received. Heavy and light mortars were also used, but their chief value to be in harassing the main streets and squares. These and the approach to the town were continually plastered, causing considerable casualties to the enemy. This fire, combined with that of the artillery, effectively dissuaded the enemy from making full use of the upper storeys of the houses in the town.

22. The advance was slow, it was methodical, but it was relentless. By rapidly shifting the focal point of the attack and by making the fullest possible use of all our weapons the paratroops were cleared from the town. Casualties on both sides were heavy.

23. **Lessons Learned.** The first and primary lesson learnt was that street fighting is an acquired art and that there are only 2 ways to acquire it; by careful planning and training and a high standard of discipline, or by bitter experience.

24. One outstanding point disclosed from the fighting was the absolute necessity of having an organized and detailed plan for the clearance of the town. The town must be cleared by sectors and troops made responsible for each sector. The sectors themselves must be completely cleared before troops attempt to pass through them to further objectives.

25. Another important point was the necessity for occupying houses immediately they were cleared. Several times the garrisons of enemy strongpoints were wiped out but the buildings themselves were not occupied by us. Within a few minutes the enemy would reoccupy these vantage points and a new operation would become necessary to dislodge him. This placed a heavy strain on fighting troops and should be considered in the planning stage.

26. Tanks can be used effectively in street fighting in spite of the limits placed on movement. They should be used singly or in small numbers and always in close co-operation with infantry. A dozen rounds of AP through a building, followed by a dozen HE have a most destructive effect on an enemy strongpoint.

27. There are 2 schools of thought in street fighting, one the commando type which depends on surprise to cover its rapid assault and 2, the much slower system of methodically clearing every house. The latter method was found essential on this occasion and it is believed that it will always be preferable once surprise has been lost.

28. The town could not be bombed prior to the attack as the port facilities were required undamaged. When the fighting was over Ortona was a shambles—one of the most devastated

towns in Italy. It is felt that no value was gained by not bombing the town and if it had been heavily blitzed just prior to our attack the task might have been considerably easier.

29. In planning this type of operation, air photographs should be secured in large numbers—if possible down to section commanders. They are of the greatest possible assistance and can be understood by everyone.

30. The expenditure of small arms ammunition is very high in comparison with any equivalent operation. Extra ammunition should be carried on the man and the battalion's reserve kept well stocked. This applies to explosives and tank ammunition also, very large quantities of which were used.

31. Every battle brings out the necessity for discipline and absolute control by officers and NCOs. This was no exception. Street fighting demands the utmost individual initiative from every soldier, and for this reason the greatest possible sense of discipline, if the close coordination and control of effort demanded by this type of fighting is to be achieved.



## ANNEX B TO CHAPTER 1

### URBAN LESSONS FROM THE RUSSIAN EXPERIENCE IN CHECHNYA 1994–1995

#### A. Strategic Lessons

**Lesson 1:** Military operations could not solve deep-seated political problems. Almost two years of covert and open military operations in Chechnya failed to prevent the local government from asserting its administrative and political independence from Moscow. In the end, Boris Yeltsin was forced to remove all Russian military and interior forces from Chechnya. Although the two sides still openly disagree on Chechnya's ultimate status, Russian newspapers report that "Chechnya today is living its own life, separately from Russia." Even the protocol that surrounded the signing of the final agreement suggested a meeting between leaders of sovereign states.

**Lesson 2:** Local military commanders could not get clear policy guidance to which they could work steadily and logically. Just after the entry of Russian military forces into Chechnya in mid-December 1994, *Izvestia* was reporting "a visible split" within the top leadership of the Ministry of Defense over the nature and wisdom of the operation. Later that same month, the new Russian military commander in Chechnya found his headquarters in "tumult and disarray." Poor or conflicting policy guidance continued over the next two years; e.g., when Yeltsin's national security advisor announced a cease-fire in August 1996, the Russian regional military commander was saying that no such agreement had been signed nor had he been given orders to cease hostilities.

**Lesson 3:** The confusion generated by the minimal or conflicting policy guidance was exacerbated by poorly defined lines of command and control. There was no direct, unified chain of command for the operations in Chechnya. Command and control was spread among the Ministry of Interior, the Ministry of Defense, and the Federal Counterintelligence Service (successor to the KGB) with the result that commanders as a rule did not know who was on their flanks nor the missions of neighbouring forces. Poor lines of communications were also responsible for many incidents of "friendly fire." Additionally, the North Caucasus Military District Command structure (the district which included Chechnya) was by-passed and operational decisions were sent directly from the Russian Minister of Defense to local commanders. Similarly, the overall operational headquarters did not have an on-going staff planning relationship with the assault units, which entered Chechnya from separate axes. Poor coordination between units and services ultimately led to slow rates of advance and sometimes opened avenues through which the Chechens could escape.

**Lesson 4:** Overall Russian command lacked continuity and was plagued by too much senior leadership at the operational level. Russian units fighting in Chechnya experienced over eight major changes in senior command between the start of operations and August of 1996. The former Commander-in-Chief of Soviet Airborne troops, Colonel-General Achalov also claims that there was "too much [flag-level] leadership" on the scene. (Other sources say there were as many as 100 general officers on the operational scene. If true, that would work out to about 1 general officer per every 3,000 to 4,000 Russian soldiers in Chechnya.) Achalov goes on to explain that the presence of so many general officers was a problem because "they confused one another" and "lied to put themselves in the best light."

**Lesson 5:** Contrary to initial expectations, operations in Chechnya were neither of short-duration nor low cost. At the outset of the operation, then Defense Minister Pavel Grachev publicly boasted that he could “settle” Grozny in just 2 hours with one parachute regiment and subdue all of Chechnya in 72 hours. He was later proven wrong by his own admission. Instead, it took two months to subdue Grozny the first time only to lose it to a second rebel counterattack in August of 1996. Operations were also far from low cost. The first Russian assault column to enter Grozny, for example, lost 105 of 120 tanks and armoured personnel carriers. The Russians lost about 70% of the 200 tanks committed to the New Year’s Eve 1994 assault on Grozny. Overall, Russian sources estimate that the Russian Army lost about 18% (400 vehicles) out of its total armoured vehicle force of 2,221 over the course of the campaign. Russian casualties were also high—perhaps constituting as much as 12.5% of their total entering force in Chechnya through March of 1995—six months before the second battle for Grozny where Russian casualties were “appalling.” Civilian losses were also high. Then Russian National Security Advisor, Alexander Lebed, estimated that 80,000 civilians were killed in the fighting in Chechnya and another 240,000 wounded through September 1996.

**Lesson 6:** When Russian security operations began achieving results, the Chechens started attacking targets within Russia. By May 1995, Russian security forces controlled major Chechen cities and had begun extending operations into rural villages and the Chechen cause was looking bleak. Therefore a 100-man Chechen raiding party seized hostages in the Russian town of Budyonnovsk in June 1995. After Russian security forces botched a hostage rescue attempt, the Chechens escaped with a major propaganda victory. The Budyonnovsk operation was repeated in January 1996 when Chechen President Dudaev’s son-in-law seized a hospital and maternity home in the town of Kizlar. Events in Kizlar played out as they had in 7 months before in Budyonnovsk: an unsuccessful rescue attempt by Russian security forces, large numbers of Russian civilian casualties, escaping terrorists, and a major Chechen propaganda victory.

**Lesson 7:** It was difficult to unite police and military units into a single, cohesive force. Efforts to combine disparate Ministry of Interior (MVD) Internal Troops with regular Army units encountered problems at several levels. First, MVD troops were not designed, equipped, or organized for large-scale combat operations nor did they regularly train with units from the Armed Forces. There was also considerable antagonism between the Army and MVD forces, with the military regarding MVD troops as incompetent and unreliable.

**Lesson 8:** Distinct advantage accrues to the side with less concern for the safety of the civilian population. Initially, Russian security forces obeyed orders issued at the outset of operations to minimize civilian casualties. Chechen fighters took military advantage of this Russian reticence about producing civilian casualties. There were numerous instances of Chechen civilians stopping truck convoys, puncturing fuel tanks and tires, and even setting vehicles on fire in the early days of the conflict without provoking a violent response from Russian security forces. Lacking non-lethal crowd-control equipment and apparently confused by inappropriate rules of engagement, Russian troops stood by and took no action. Chechen commanders sometimes also deployed guns close to schools or in the courtyards of apartment buildings to discourage Russian attacks. This was a relatively painless exercise for Chechen commanders since most of the ethnic Chechens had already fled the cities to stay with relatives in the countryside; the residue therefore was mostly ethnic Russians.



**Lesson 9:** Concern about civilian casualties and property destruction declined as casualties among security forces rose. Early Russian concerns about harming civilians and destroying property declined over time as troops became increasingly frustrated trying to distinguish enemy fighters from similarly attired non-combatants and as their own losses mounted. Indeed over time, there were increasing reports of “rampaging” Russian soldiers engaged in looting, arson, indiscriminate arrests, torture, and summary executions of civilians. Initial Russian use of heavy weapons in cities was also very restrained. This self-imposed restraint eventually dissolved; e.g., 4,000 artillery detonations per hour were counted at one point in Grozny. (By way of comparison, Serbian shelling of Sarajevo only reached 3,500 artillery detonations per day.)

**Lesson 10:** Chechen forces received extensive outside assistance. The Russians claim that the Chechens got as many as 5,000 volunteers from 14 different countries, some with combat experience elsewhere in the Caucasus or Afghanistan. In the two years prior to the Russian incursion, Chechen forces amassed a significant inventory, including:

- a. 35 tanks;
- b. 40 armoured infantry vehicles;
- c. 109 artillery pieces, GRAD multiple rocket launchers, and mortars;
- d. 200 air defense weapons; and
- e. vast quantities of small arms and man-portable anti-tank weapons.

According to the Russian military, up to 80% of these weapons were unintentionally provided by the Russians themselves when the Chechens seized them from unprotected military warehouses and largely abandoned Russian military bases in the region. The Chechens supplemented these seizures through purchases from corrupt Russian military officers and arms dealers. After the invasion, Russian soldiers remarkably continued to supply Chechen forces with consumables either out of greed or carelessness. On one occasion, drunken Russian troops sold a tank and an armoured combat vehicle to Chechen separatists for \$6,000. On another occasion, Russian troops unloaded (and apparently left behind) boxes of ammunition from armoured infantry vehicles to make more room for looted household articles.

## **B. Operational Lessons**

**Lesson 11:** Having well-developed military doctrine for urban warfare is not enough in and of itself. The Soviet military had considerable post-World War II experience operating in cities: Berlin (1953), Budapest (1956), Prague (1968), and Kabul (1979). The Russian military also inherited an extensive body of formal urban warfare doctrine from its Soviet predecessor. Despite this sound theoretical grounding in urban doctrine, “no one ever taught anyone anything” claims Colonel General Achalov (the former Commander-in-Chief of Soviet Airborne Troops) when assessing the “blunders” in Chechnya.

**Lesson 12:** Situation-oriented training would have improved Russian military effectiveness. Russian tactical training standards for squads, platoons, and companies mandate a block of 151 hours of total instruction, of which only 5-6 hours were suppose to go to urban warfare. Given

overall reductions in Russian training, it is unlikely that most troops ever received those meagre 5–6 hours of instruction. Nor were there any mock-up training ranges of the city or individual blocks, as prescribed by Russian military doctrine and World War II Soviet Army practice. Instead, Russian troops had to rely on sources like the instructional pamphlet prepared by the Main Combat Training Directorate of the Ground Forces for those fighting in Chechnya which was printed in such limited numbers (because of lack of funds) that soldiers had to share them and pass them along on an ad hoc individual-to-individual basis. The situation is probably best summed up by Colonel A. Kostyuchenko of the Ground Troops Main Combat Training Directorate: “it so happened that for our part the tactics and methods of conducting combat operations in a city found no place in combat training programs.”

**Lesson 13:** Inadequate training in even the most basic manoeuvre and combat skills inhibited Russian operations. Poor Russian combat performance can be traced, in large measure, to an overall lack of training in fundamental military skills. The Army conducted no division level exercises in the two years prior to the Chechnya campaign. In that same period regimental, battalion, and company exercises were also reduced by over 75%. There were also no joint exercises between MVD Troops and the Russian Army. Even individual skill training was down with the consequence that some half-trained units refused combat or their commanders held them out. Operational deficiencies, due to training shortfalls, were not just confined to ground force units. Russian accounts of Air Force operations in Chechnya also reveal that pilots were not psychologically prepared for combat, had “squandered their skills in employing their weapons”, and had problems flying in adverse weather because of reduced peace-time training. Such readiness concerns also led 11 Russian generals to tell the Russian Duma that Russian forces were not prepared for such operations.

**Lesson 14:** Urban combat is an extremely manpower intensive and produces significant attrition of men and materiel among the attackers. The Russians discovered that a 5:1 manpower advantage (consisting mostly of infantry) was sometimes not enough since they had to guard every building they took. Attrition rates for both men and material were also high. For example, Russian military officials, known for understating losses, admitted that 200 soldiers died and another 800 were wounded in about 3 days of fighting during the second battle for Grozny in August of 1996. These causality figures are in line with earlier Ukrainian estimates that Russian security forces lost 600 dead and 300 POWs in the December 31, 1994 attack on Grozny. Materiel losses were also extreme; e.g., element of the 131 “Maikop” Motorized Rifle Brigade lost 17 of 20 armoured vehicles in just one day of fighting near the Presidential Palace during the first battle of Grozny.

**Lesson 15:** Overwhelming firepower can make up for organisational and tactical deficiencies in the short-run if one is willing to disregard collateral damage. When all else failed, the Russians fell back upon their least inventive option—overwhelming firepower—to take Grozny. Use of massed artillery and air-delivered ordnance, while rather heavy-handed, allowed Russian security forces to gain control of Grozny after two months of fighting.

**Lesson 16:** The sudden requirement to deploy to Chechnya, coupled with the unique supply problems posed by the Chechen operating environment, overwhelmed the already fragile Russian military logistics system. The Russian Office of the Inspector General concluded that the Ministry of Defense’s efforts to carryout a partial mobilization of the transportation system to

support Russian security forces in Chechnya was “an outright failure.” This was hardly a surprising finding since Colonel-General V. Semenov of the military council of the ground forces had sought to have the entire campaign postponed before it commenced on the grounds that military equipment was in a sorry state, more than a third of the Army’s helicopters could not fly, and emergency supplies had already been partially consumed. These deficiencies in the logistics system translated into some soldiers entering Grozny without weapons or ammunition for machine-guns on armoured vehicles. Russian Army supply officers were also unprepared for the abnormally high demands for hand grenades, smoke grenades, demolition charges, and disposable, one-shot anti-tank weapons generated by fighting in cities. Similarly, Air Force units entered the conflict with only 50% of the prescribed norms for fuel, ammunition, spare parts, and food. The military logistics system also failed to supply enough clothing for troops going into the field. Even the graves registration and burial system broke down. Mistakes were so common that parents and wives had to travel to Chechnya to identify their loved ones from a pile of bodies “stacked like cordwood.” Parents or wives were also sometimes forced to pay for the burials as well since many military regions lacked the money to do the job as required by regulation. These inherent, structural limitations of the Russian military logistics system were exacerbated by the difficulties of operating in Chechnya. Poor roads limited ground transport and military supply convoys were subject to ambush as well as to delay by crowds of unarmed Chechen civilians blocking roads. Poor weather also restricted shipments by air.

**Lesson 17:** A lack of high-quality intelligence made operations more difficult and dangerous for Russian security forces. During the pre-invasion planning phase, senior Russian officers were forced to rely upon 1:50,000 and 1:100,000 scale maps because they lacked better-suited 1:25,000 or 1:12,500 scale maps. There were also little current intelligence from aerial or satellite intelligence because the satellites had been turned off to save money and few aerial reconnaissance missions had yet been conducted. Lower-level commanders fared even worse. Many received neither maps nor photographs while others received maps published in 1984. Eventually, the Russian Army’s cartographic service had to prepare a new set of maps from aerial photographs taken during the course of the fighting. The lack of adequate maps made it more difficult for Russian forces to co-ordinate their actions or to surround and fully cut off Grozny.

Pre-invasion intelligence assessments of Chechen military capabilities were apparently woefully inaccurate as both senior and troop-level commanders were shocked by the degree and intensity of Chechen resistance in Grozny. After the initial assault on Grozny, some Russian POWs did not even know where they were while others asked reporters “Can you please tell me who is fighting whom?” Despite these early intelligence failures, little was done to rectify the situation beyond initiating more aerial surveillance. As late as March of 1996, the Russian Minister of the Interior was still complaining that poor reconnaissance and intelligence had allowed Chechen military forces to enter Grozny again without warning. Interior Minister Kulikov went on to say that the “outrageous negligence” of local authorities had resulted in “heavy fighting and losses.” Kulikov’s blistering attack produced few results since Chechen military forces recaptured Grozny in August of 1996, again with no intelligence warning.

**Lesson 18:** The spatial qualities and perspective of urban and conventional warfare are very different. Urban warfare is more “vertical” in that operations routinely reach up into buildings and down into sewers. The “vertical” character of fighting in an urban setting worked both for

and against Russian troops. On the positive side, Russian troops were able to attack buildings from the top downward thereby achieving surprise and allowing them to by-pass strong, ground level defenses. On the negative side, “the whole city [was] armed with a grenade launcher in every third floor window.” Also snipers operated regularly from rooftops, deep within upper-floor apartments which made them difficult to spot, and from basements. Chechens operating in this manner posed a serious problem since the guns on many Russian armoured vehicles lacked sufficient elevation and/or depression to deal with these threats. Also, as we shall discuss in later lessons, few Russian armoured vehicles were capable of resisting top attacks.

**Lesson 19:** Composite units were generally unsatisfactory. At the start of campaign, few Russian units (even elite units like the Kantemirovskaya and Tamanskaya Divisions) were up to authorised strength. Battalions were often manned at only 55% or less. Consequently, many units were “fleshed out” with last minute additional personnel and equipment. According to one report, up to 60% of the tanks and armoured vehicle crews were formed on the way to the initial offensive. Similarly, the Chief of Staff of the 805th Guards Artillery Regiment complained that his battalions only received a small percentage of the trained crews necessary to fire its weapons. Many of the last-minute additions to the ranks of the 805th Guards Artillery Regiment, including officers, had to learn their trade “on the fly.” In some cases, soldiers did not even know the last names of their comrades before entering battle. Some military districts also resorted to creating ad hoc regiments of “volunteers” and sending them to Chechnya. The Volga and Transbaikal Military Districts, for example, packaged genuine volunteers with conscripts into new, ad hoc regiments and sent them to Chechnya under armed guard. These ad hoc regiments generally exhibited poor unit cohesiveness, were difficult to command, and sometimes lacked essential equipment. In the opinion of Deputy Minister of Defense Colonel-General Boris Gromov (hero of Afghanistan), “the considerable forces that were mustered piecemeal across Russian were simply unable to collaborate without training.”

**Lesson 20:** Fratricide was a serious and continuing problem throughout the campaign in Chechnya because it was difficult to tell friend from foe, especially in cities. Fratricide occurred frequently, sometimes on a large-scale among Russian forces in Chechnya because, in the words of one Russian commander, it is “unbelievably difficult” to differentiate friend from foe. In one particularly egregious case, an MVD regiment fought a six-hour battle with an Army regiment. Part of the problem stemmed from both sides using equipment (tanks, APC, IFVs, etc.) of the same origin. Chechen forces, for example, wore Russian pattern camouflage coveralls and other items of military dress obtained from former Soviet Army stores in Chechnya. Usually this was not a deliberate attempt to disguise Chechen fighters as Russians, although there were instances of Chechens using this ruse to carryout operations to discredit Russian soldiers with the local populous. Wide-scale use of non-standard uniforms within Russian forces made combat identification even tougher, especially with elite troops who affected a “Rambo” look. Russian troops were also allowed to employ civilian clothing to make up for the inability of the supply system to provide standard issue or to overcome poor military quality control standards. Fratricide was also caused by poor co-ordination between different branches of the security forces. Although the Ground Forces made up the majority of the troops at the beginning of the campaign, federal forces also included MVD troops, Naval Infantry, and Spetsnaz reconnaissance troops under the control of the military intelligence branch (GRU). Miscommunications between ground forces and tactical air support crews also led to numerous cases of fratricide.

**Lesson 21:** Standard Russian military unit configurations were inappropriate for urban combat. The nature of urban warfare led the Russians to employ a novel configuration of assault detachments consisting of infantry reinforced with heavier fire support and combat engineer assets than found in standard formations. The recommended configuration for such a group was:

- a. 3 motorized rifle platoons;
- b. 1 tank company;
- c. 1 flame-thrower (Shmel) platoon with 9 launcher teams;
- d. 2 Shilka or Tunguska air defense guns;
- e. 1 UR-77 line-charge minefield breaching vehicle;
- f. 1 combat engineer squad;
- g. 1 medical team; and
- h. one technical support squad.

**Lesson 22:** Foregoing peacetime maintenance is a false economy. The Russian Army in Chechnya suffered the consequences of poor peacetime maintenance of armoured vehicles and automotive equipment. On the road march into Grozny, for instance, two out of every ten tanks fell out of formation due to mechanical problems. In another case, the Russians were only able to find one regiment's worth of functioning armoured vehicles from an entire division's inventory.

**Lesson 23:** The potential of special forces for urban operations was never realised in Chechnya. Both foreign and Russian military observers agree that special forces, properly used, would have been of great value in Grozny. Nevertheless, this potential was never realised in Chechnya. For one thing, units like the "Alpha Team" and the "Vympel" team were never sent, despite the previous success of the Alpha Team in capturing the Afghan Presidential Palace in Kabul with "little blood." Spetsnaz troops, which were deployed, would have been excellent in reconnaissance and covert operations but were, instead, wasted spearheading the assault column into Grozny on New Year's eve because conventional force commanders did not know how to exploit Spetnaz capabilities properly. Even when Spetnaz were committed in their traditional reconnaissance role, serious problems developed. Teams were frequently inserted without adequate means to extract them, usually due to poor of co-ordination or Cupertino with helicopter units. Teams also often lacked proper radios and other essential equipment.

**Lesson 24:** The nature of cities tends to channel combat operations along narrow lanes of activity. Combat conditions in Grozny were characterised by narrow fields of view, limited fields of fire, and constricted avenues of approach. This meant that operations tended to be channelled along certain pre-ordained lines of march—approaches, which were well known and heavily defended by Chechen fighters.

**Lesson 25:** Psychological operations, especially disinformation, was central to the strategies of both the Chechens and the Russians. Both the Russians and the Chechens realised from the beginning that domestic and foreign perceptions of the war were almost as important as the actual situation on the ground. Thus, both sides tried to shape the news media's coverage of the war. For the Russians, this meant a well-orchestrated campaign of withholding information and spreading deliberate disinformation. This campaign ran from military officers in the field through government-controlled news services up to senior government officials. The Russians:

- a. spread false information about the timing and nature of military operations;
- b. used “black” operations to mask Russian involvement;
- c. lied about the type of weaponry used against targets in civilian areas; and
- d. underreported the extent of their own military losses.

The Russians also sought to shape perceptions by hindering the activity of news correspondents in the war zone. Other Russian psychological operations included:

- a. dropping leaflets from aircraft and employing loudspeakers to appeal to the citizens of Grozny to lay down their arms and not provoke Russian forces;
- b. jamming Chechen radio broadcasts and destroying the local television station; and
- c. conducting useless talks to gain time and to intimidate the Chechens.

Likewise, the Chechens too used disinformation. Additionally, they staged major news/propaganda events like the raids on the Russian towns of Budyonnovsk and Kizlar to embarrass Russian security forces. There were also reports of Chechens, dressed in Russian uniforms, carrying out acts to discredit Russian forces with the civil population.

**Lesson 26:** Strategic bombing can be used in urban operations to shape the battlefield, especially during the early phases. The Russians employed MiG-31 (Foxhound), Su-27 (Flanker), Su-25 (Frogfoot), Su-17 (Fitter), and Su-24 (Fencer) short-range bombers to strike 873 Chechen targets, including:

- a. bridges;
- b. petroleum facilities;
- c. ammunition dumps;
- d. road networks;
- e. fortified areas;
- f. military equipment repair facilities;
- g. command and control facilities; and

- h. enemy air fields.

The Russians also employed Tu-22M3 (Backfire) long-range bombers to close approach and escape routes around the cities of Gudermes, Shali, and Argun.

**Lesson 27:** The Russian Air Defense Force “closed” Chechen airspace even before Russian troops entered Chechnya. The Commander-in-Chief of the Russian Air Defense Forces claims that his command was ordered as early as August of 1994 (5 months prior to Russian security forces entering Chechnya) to “close” Chechen air space to ensure that further mercenaries, weapons, or ammunition were not airlifted into Chechnya. This meant that opposition forces would be limited to on-hand equipment if the air blockaded remained effective.

### C. Tactical Lessons

**Lesson 28:** Rigorous communications security is essential, even against relatively primitive enemies. Apparently much of Russian tactical radio traffic was broadcast in the clear. This allowed the Chechens to enter the Russian tactical air control radio net in order to redirect Russian air assets against their own troops. At other times, Russian forward air controllers broadcast their own co-ordinates in the clear only to have Chechen artillery fire directed against them shortly thereafter.

**Lesson 29:** Night fighting was the single most difficult operation in Chechnya for infantry forces according to Russian after-action assessments. This was due both to a shortage of night vision equipment as well as inadequate training. As a result, some units used vehicle headlights and other visible light sources to conduct night operations—a tactic explicitly forbidden in army directives. Such use of tank headlights and other vehicle-mounted searchlights was initially rationalised as a means to shock Chechen forces. Instead, it usually just made Russian forces more vulnerable to Chechen counter-fire.

**Lesson 30:** Tanks and armoured personnel carriers cannot operate in cities without extensive dismounted infantry support. The Chechens fielded anti-tank hunter-killer teams, equipped with “massive amounts of antitank weapons”, which keyed upon the engine noise from Russian armoured vehicles. Once these hunter-killer teams had converged upon Russian armour, they would volley fire RPG-7 and RPG-18 anti-tank missiles from above, behind, and the sides. Russian armed vehicles had trouble dealing with these forces for a variety of reasons; e.g., poor visibility from the vehicles and insufficient elevation/depression of on-board armament. As documented elsewhere in this paper, armour columns not accompanied by dismounted infantry experienced staggering losses (e.g., as much as a 70% tank loss rate in the initial assault on Grozny). As one Russian airborne commander noted after the battle, “without infantry cover, it was really senseless to bring tanks into the city.”

**Lesson 31:** Forces operating in cities need special equipment not usually found in Russian tables of organisation and equipment. The Russians came to believe that each soldier needed a rope with a grappling hook for entering buildings. Additionally, lightweight ladders were found to be invaluable for assaulting infantry.

**Lesson 32:** Firing tracer ammunition in cities makes the user a target for snipers. Russian forces eventually stopped using tracer ammunition in night fighting since it directed enemy snipers

back to the source of the fire. Later, Army policy in Chechnya banned using tracer ammunition altogether either at night or during the day because of the severity of the sniper problem.

**Lesson 33:** Trained snipers were essential, but in short supply. The Russian Army, although well prepared on paper for fighting a sniper engagement, proved totally unready for the quantitative and qualitative demands of sniper operations in Chechnya. Russian snipers were both under equipped and poorly trained for the conditions they faced in Chechnya. Besides the traditional technique of firing from rooftops, the Chechens used unexpected tactics in their own sniper operations. Chechen snipers fired from well within the rooms of buildings, not from the window ledges as the Russians counter-sniper teams expected. Consequently, Russian sniper operations were a good bit less effective than anticipated.

**Lesson 34:** Obscurants are especially useful when fighting in cities. Russian forces made extensive use of smoke and white phosphorus to screen the movement of forces during city fighting. Indeed, every fourth or fifth Russian artillery or mortar round was either smoke or white phosphorus. (The Russians claim that white phosphorus offers the added benefit of being toxic, readily penetrated Chechen protective masks, and was not banned by treaty.) They also found tear gas very useful in Grozny.

**Lesson 35:** Armoured combat engineering vehicles can perform important, specialised urban combat missions. The Russians found that armoured combat engineering vehicles were indispensable for removing obstacles (a serious impediment to urban movement) and for mine clearing. The Russians employed the IMR which is a multi-role engineer vehicle fitted to tank chassis. It has a bulldozer plough on the front as well as traversing crane in place of the turret. This crane has a bucket or cargo boom at the end depending upon the job at hand. (There are two versions of this vehicle: the IMR built upon a T-55 chassis and the IMR-2 based on the T-72 chassis.) The Russians also extensively used the UR-77 which is a minefield breaching vehicle based on a modified 2S1 self-propelled howitzer chassis. This vehicle has a rocket propelled line charge launcher mounted on the rear of the hull for explosive breaching of minefields. The Russian Army recommended that every assault group include 2 IMRs and 1 UR-77.

**Lesson 36:** Recovering damaged armoured vehicles is especially difficult in cities. The Russians discovered that rubble/debris, narrow streets, sniper fire, and the shortcomings of recovery vehicles themselves made armoured vehicle recovery extremely difficult and perilous.

**Lesson 37:** Hit-and-run ambush attacks by small groups were the favourite tactic of the Chechens. As a rule, the Chechens would operate in groups of 15-20 fighters which, in turn, would subdivide into small groups of 3-4 people for combat missions. Each one of these small groups would generally include a sniper, a grenade launcher operator, and at least one machine-gun operator. These units, employing anti-tank weapons and Molotov cocktails, then lay in wait to ambush Russian forces. Ambushes sometimes involved heavier weapons like artillery. In this case, the Chechens would use one or two artillery pieces, fire a few rounds, and then flee. The Chechens used ambush tactics against helicopters as well.

**Lesson 38:** Direct-fire artillery can be a valuable tool in urban combat provided one does not care about collateral damage. Upon entering Grozny, the Russians found that it difficult to



employ artillery in an indirect mode because the presence of buildings and lack of fire-direction specialists. They also found that technical deficiencies in the main guns of most Russian armoured vehicles made them incapable of dealing with entrenched snipers and RPG teams on the upper floors of buildings. Thus, the Russians employed artillery, multiple rocket launchers, and the 82 mm Vasilek automatic mortar as direct fire weapons, usually at ranges of 150 to 200 meters.

**Lesson 39:** A failure of small unit leadership, especially at the NCO level, was a primary cause of Russian tactical failures in Grozny. The Russians have recognised that urban warfare often devolves into actions of small groups. Unfortunately, the traditional Russian lack of a professional NCO corps, coupled with a shortfall of 12,000 platoon leaders on the eve of the campaign in Chechnya, crippled its small unit operations.

**Lesson 40:** Tracked armoured vehicles are preferable to wheeled armoured vehicles in urban warfare. The Russians discovered urban combat generated vast amounts of rubble—debris, which wheeled vehicles, had trouble traversing. Tracked vehicles, by contrast, could readily negotiate urban rubble.

#### **D. Technical Lessons**

**Lesson 41:** Armoured vehicles require more protection when operating in cities and that protection needs to be distributed differently than for conventional battlefield operations. Russian armour arrays, optimised across the frontal arc for NATO central front engagements, provided inadequate protection in the urban conditions of Chechnya. (The vulnerability of Russian tanks in Chechnya is illustrated by a caustic joke making the rounds in Moscow after the war: “Tell me young soldier, what did you learn in Chechnya?” asks an old man. “Well, grandpa, I learned that tank turrets can fly ten meters.”) Problems with the T-72 in Grozny appear to have centred upon catastrophic ammunition fires and inadequate protection against top attacks from shaped charges. Survivability of the T-80 was also criticised by the Russian Minister of Defense, especially its vulnerability to top attacks by shaped charges. Diagrams of Russian armoured vehicles that appear in public Russian assessments show that the majority of lethal hits against tanks and infantry fighting vehicles occurred on their upper surfaces, especially through the turret roofs and engine decks as well as from the rear. Colonel General Sergei Mayev, Deputy Commander of the Ground Forces for Armaments, estimates that 98% of tanks destroyed in urban operations were hit in places where the design did not permit the installation of reactive armour. These same Russian assessments also emphasize that armoured vehicles in Grozny were subjected to extensive, multiple attacks. Every armoured vehicle had to deal with 6-7 attacks by anti-tank systems, mostly RPGs. These vulnerabilities should not have surprised senior Ministry of Defense officials since Russian tank designers say they consciously shifted the bulk of armour protection to the frontal arc to deal with (what at the time) was expected to be the greatest threat to tanks—NATO tanks and anti-tank weapons firing against advancing Russian armour columns. Severe weight limitations, imposed by the Ministry of Defense, forced designers to make this trade-off.

**Lesson 42:** Rocket propelled grenades (RPGs) can be used against helicopters. There is at least one recorded instance of the Chechens using an RPG to down a Russian helicopter.

**Lesson 43:** Air defense guns are valuable for suppressing ground targets. The Russians found that the ZSU-23-4 Shilka and the 2S6 Tunguska air defense guns were very useful against multi-story buildings because their guns had sufficient elevation to hit targets in the upper stories. Air defense weapons worked so well in this ground suppression role that Russian authorities eventually recommended that urban assault formations routinely include Shilkas and Tunguskas.

**Lesson 44:** Heavy machine-guns still offer good defense against close air attack, especially from helicopters. Improvised Chechen tactical air defenses, consisting of truck-mounted 23 mm cannons and 12.7 mm heavy machine-guns mounted on 4X4 utility vehicles damaged about 30 helicopters and destroyed one other. Other reports indicate that Chechen ZSU-23-4s also destroyed at least one, and possibly two, Russian SU-25 ground-attack fighter.

**Lesson 45:** Both sides employed commercial off-the-shelf technologies for military purposes. As already mentioned, Russian soldiers were allowed to substitute civilian clothing for inadequate, missing, or cumbersome military counterparts. This proved a problem since it made identifying friend from foe more difficult. Chechen experience was more positive. They constructed ad hoc air defense systems by mating Zu-23-4 23 mm air defense cannons on civilian KAMAZ trucks and by putting 12.7 mm heavy machine-guns on Toyota Land Cruisers, Jeeps, and the Russian civilian UAZ-469. Similarly, the Chechens put mortars on civilian-type trucks to improve their tactical mobility and lessen their vulnerability to Russian counter-battery fire. Chechen forces also employed Western-made, civilian radios for tactical communication during the second battle of Grozny. Finally, the Chechens turned industrial chemicals into homemade chemical weapons. (See Lesson 48 for details.)

**Lesson 46:** Non-lethal technologies were seldom used. There are no reports of Russian forces using any non-lethal technologies, except tear gas, which they found quite useful. It is not clear whether the absence of non-lethal technologies was the result of conscious Russian tactical decisions or because their inventory simply did not offer them this option. Whatever the explanation, the lack of non-lethal systems put Russian convoy crews at a disadvantage when confronted by unarmed civilians blocking roads.

**Lesson 47:** Tactical communication proved very difficult in Grozny. Part of the problem stemmed from design practices, reflecting Russian Army preference to fight from within armoured infantry vehicles, that led to infantry tactical communications being inside or dependent upon the BMP or BTR infantry fighting vehicles. Once the infantry dismounted its vehicle, radios became hard to reach and communication cumbersome. City buildings also disrupted the signals of Russian military radios. Their short-term, tactical solution to this problem was to establish ground-based and aircraft-based relay stations. Russian commentators, however, noted that ultimately the military will have to acquire radio equipment better suited for urban operations, like mobile cellular telephone networks. MVD units, equipped more like police forces, tended to have a much wider selection of small tactical radios, including individual radios, which could operate in cities. They, however, had difficulty communicating from the small unit level to higher headquarters or with the military services.

**Lesson 48:** Indigenous forces can improvise crude chemical weapons. Chechen forces had no access to military chemical weapons so they improvised their own by using on-hand supplies of

industrial chemicals. That is, they built chemical mines using chlorine gas that were detonated remotely by radio signal.

**Lesson 49:** The cabs of supply trucks must be armoured. As in Afghanistan, the Russian Army in Chechnya soon discovered that it was essential to armour the cabs of trucks, even those convoyed. Normal, unarmoured supply columns proved to be especially lucrative targets for snipers and roving bands of Chechen fighters. In addition, trucks were very vulnerable to land mines, both anti-personnel and anti-tank models; about 600 trucks and unarmoured vehicles were destroyed over the course of the campaign. High casualties resulted from the absence of mine protection on standard support vehicles. Although the Russian Army had developed armoured versions of the standard Ural 5-ton truck for convoys in Afghanistan, none were manufactured in quantity nor deployed in the Chechen theatre. The Russian Army is now looking at a variety of armour packages for logistics vehicles for contingency operations.

**Lesson 50:** “Bunker busting” weapons are invaluable for urban warfare. The one weapon that was almost universally acclaimed in Chechnya was the RPO Shmel. (A measure of its importance is that 512 Shmel gunners received decorations for their service in Chechnya.) Although officially called a flamethrower, it more closely resembles a rocket launcher in Western armies. Unofficially, it is affectionately called “pocket artillery” by Russian troops. Shmel is a single-shot, disposable weapon resembling a large LAW or AT-4 rocket launcher. The rocket grenade is equipped with a thermobaric incendiary mixture, which can also be described as a fuel air explosive. It is intended primarily to attack enemy troops in confined spaces such as bunkers or inside rooms. It also has secondary use against lightly armoured vehicles. In Grozny, it was widely used for attacking Chechens entrenched in buildings, especially for rooting out snipers.

**Lesson 51:** Some Russian equipment was modified while in the field to counter enemy tactics and equipment. The Russians resurrected the concept of add-on armour from Afghanistan to address problems that surfaced in Grozny. This led to the development of reshetka armour which resembles a set of venetian blinds fabricated out of steel bars. It apparently works on the principle the majority of RPGs striking the reshetka screens will become trapped between the bars or disintegrate without the fuses detonating their shaped charge warheads. Reshetka screens were first displayed in trials at the Kubinka armoured test range at a hastily called conference in January-February 1995 to examine the lessons Chechen campaign to date. These reshetka screens were then deployed to Chechnya in February 1995. Additionally, they outfitted some tanks and armoured personnel carriers with cages made from wire mesh that stood about 25-30 cms away from the hull armour. These wire mesh cages were intended to defeat both RPGs as well as Molotov cocktails. As will be discussed in Lesson 52, the Russians also mounted 240mm rockets on helicopters for the first time in Chechnya as a field expedient to get sufficient stand-off range as protection against tactical air defenses.

**Lesson 52:** Helicopters need stand-off weapons. Wide-spread Chechen use of 23 mm cannons and 12.7 heavy machine-guns encouraged Russian helicopter gunships to employ these weapons at ranges of 3,000 m or more. Helicopter crews, repeating tactics from Afghanistan, found that anti-tank guided missiles were very effective for attacking hardened targets with precision. The preferred type was the radio-command guided Shtrum (AT-6 Spiral). The longer ranged ATGMs such as Shtrum gave the helicopter crew sufficient stand-off range to foil Chechen air defense guns. (After Afghanistan, the Russians also developed a high explosive warhead using

thermobaric principles for helicopter-fired ATGMs, but there were no reports of such weapons being used in Chechnya.) Smaller calibre rockets like the 57 mm S-5 series and the 80mm S-8 series, although effective, lacked sufficient range to put them outside the reach of Chechen tactical air defenses. Consequently, Russian crews experimented with using the 240mm S-24 rocket for attacking targets protected by air defenses. This seems to have been a field expedient since the Russians had never before attempted to integrate S-24s with helicopters for fear that the rocket plume might stall the helicopter's engine when the helicopter moved forward.

**Lesson 53:** Helicopters are not suited for urban combat. This verdict was delivered by none other than the Commander of Russian Army Aviation, Colonel General Vitaliy Pavlov. This verdict is surprising since Russian military doctrine specifies that the preferred method of capturing a building is from the top-down, with troops being helicoptered into position. That part of Russian doctrine notwithstanding, Colonel General Pavlov claims that Russian doctrine also specifies that helicopters are too vulnerable to roof-top snipers and ambushes an urban setting.

**Lesson 54:** The Russian Air Force made extensive use of precision-guided weapons when not hampered by bad weather. The Russians made large-scale use of laser-guided bombs and missiles fired from the Su-24. These weapons were able to destroy key bridges and communications facilities with greater precision than previously possible. Russian use of precision-guide munitions however was severely limited by the frequent appearance of rain and fog over the battlefield, especially during the initial march to Grozny when “weather conditions were appalling and the use of precision weaponry was impossible.”

**Lesson 55:** Inadequate on-board navigation systems and poor radar limited the use of helicopters in adverse weather and at night. Technical shortcomings of on-board radar and navigation forced the Russians to employ MI-24 helicopters mostly during the day and fair weather when visibility exceeded 1.5 kms and pilots could get a clear look at their targets. According to Colonel General Pavlov, Commander of Russian Army Aviation, these rules meant that 95% of days in February 1995 were listed as “non-flying days.”

**Lesson 56:** The Russians did not use precision-guided, artillery-fired munitions despite having such rounds in their inventory. The Russians had the necessary equipment to carry out precise, surgical artillery strikes with weapons like the laser-guided Krasnapol and Santimetr artillery rounds. The guided Smelchak mortar round was also available. None were used in Chechnya. International Defense Digest, quoting unnamed sources in the Russian “higher command”, claims that senior commanders considered highly advanced munitions too expensive “to be wasted” in Chechnya. They may have also been deemed unnecessary by tactical commanders who got much of their fire support from direct fire artillery working close to the targets (e.g., 150-200 m). At such close range, accuracy could be achieved without resorting to “expensive” precision-guided artillery munitions.

**Lesson 57:** Remotely piloted vehicles (RPVs) saw extensive service in Chechnya. The Chechen war saw the first Russian use of several small tactical unmanned aerial vehicles. One of these was the Sterkh RPV which has two modular payloads:

- a. a reconnaissance package with a daylight, stabilized TV camera with a real-time transmission system; and
- b. an electronic warfare jamming package.

The Sterkh's chief short-fall is its limited durability, about 5-10 landings. The Russians also used the sensor-carrying Shmel RPV as well which could operate for up to 2 hours out to a range of 60 kms. Apparently, the RPVs were used primarily by Russian Airborne forces who judged them extremely successful, particularly as a way of saving the lives of reconnaissance teams.



**ANNEX C TO CHAPTER 1**  
**OPERATION AL-FAJR (DAWN)**  
**OPERATION PHANTOM FURY [FALLUJAH]**

This operation was initially named Phantom Fury by DoD. It was later renamed Operation al-Fajr (Arabic for Dawn) by the Iraqi Defence Minister.

An estimated 10,000-15,000 American troops launched Operation Phantom Fury in Fallujah on November 8, 2004. This followed weeks of aerial bombardment by U.S. planes. A number of trained Iraqi forces also participated in the operation. U.S. commanders expected about 2,000 members of Iraqi Security Forces to fight with American troops but Gen. George W. Casey Jr., the top American commander in Iraq, acknowledged that an unknown number of the Iraqis did not show up.

The assault on the city was an attempt to regain control of the city from insurgents in preparation for national elections scheduled for January 2005. Fallujah had a population of approximately 300,000 civilians but U.S. military officials believed that 70-90% of the city's population had fled.

U.S. officials estimated that 2,000-3,000 hardcore insurgents were entrenched in the city at the time the assault began. However, according to the head of CENTCOM, Gen. George W. Casey Jr., Jordanian, Abu Musab al-Zarqawi, leader of the insurgent faction in Fallujah, is believed to have fled the city as of 9 November 2004. In the first stage of their assault, a Marine unit and other troops seized two strategic bridges and a hospital situated on a peninsula formed by the Euphrates River leading to an area that was a possible fall back zone for insurgents driven out of central Fallujah. However, according to MNF-I the hospital was being used as a center for enemy propaganda to inflate the number of civilian casualties. Iraq's 36th Commando Battalion was placed in charge of Fallujah General Hospital which was kept open to provide medical services to injured civilians. However, according to [Defense Tech](#), the 36th Commando Battalion, was originally a "political" unit drawn from the militias of the five major political parties, but only its Kurdish pesh merga element has really proved reliable.

MNF-I also reported that insurgents dug a number of tunnels used as escape routes which also allowed fighters to cross the city from weapons cache to weapons cache. The tunnels are believed to run between mosques and schools that could also be used to transport weapons and ammunitions. Under international law, mosques granted protected status but lose that status if they are used for military purposes.

Prior to the commencement of the operation, Prime Minister Ayad Allawi declared a state of emergency across Iraq, except for the Kurdish area of Iraq as violence flared in anticipation of the assault on Fallujah. A round-the-clock curfew was imposed on Fallujah and residents were warned not to carry weapons. American forces also cordoned off the city. Some Fallujah residents who tried entering the city found no access through the cordon operation, a marked difference from last April when large gaps were likely exploited by gun runners. Attempts had been made by the Interim Iraqi Government to negotiate with representatives from Fallujah to eject foreign fighters suspected to be in the city. These, however, proved unfruitful and led Allawi to authorize the military operation.

On 09 November 2004 U.S. air strikes destroyed an apartment complex and train station prior to U.S. troops pushing into south Fallujah. MNF-I reported on that soldiers relied on a combination of air and artillery support when they began to enter the city's streets and alleys. Marines and soldiers have reported seeing secondary explosions after air and artillery support, a possible sign that a weapons cache or explosives were also hit. By 5 p.m on 09 November 2004 all electrical power in the city had been cut as well. American troops made the greatest gains in the northeastern part of Fallujah and had advanced about 800 yards into the city. Other units in the west of Fallujah faced heavier fire which slowed their house by house push. City residents told the New York Times that insurgent forces were still seen to have relatively fluid movement, able to move around the city to reinforce areas attacked by U.S. troops.

That same day, the leading Sunni political party, the Iraqi Islamic Party, in response to the assault on Fallujah, announced that it was withdrawing from the interim government. The Muslim Scholars Association, composed of Sunni clerics claiming to represent 3,000 mosques called for a boycott of the national elections scheduled to be held in January.

As of 09 November 2004, U.S. officials reported 38 insurgents captured, four of which were foreign fighters and that 2 marines had died in an accident involving a bulldozer. That same day, three of Prime Minister Allawi's relatives (one of his cousin, the man's wife and daughter-in-law) were kidnapped in Baghdad and were threatened with execution unless a halt was put to the assault on Fallujah.

After two full days of fighting on 10 November 2004 U.S. Military officials announced they controlled 70% of the city and newly captured sites included the mayor's office, several mosques, a commercial center and other major civic objectives. Targeted airstrikes continued with laser-guided bombs being used to destroy buildings that held insurgent forces. American commanders said U.S. troops and Iraqi Security Forces secured the neighborhood of Jolan in the northwestern part of the city with less resistance than expected. U.S. forces also saw a lack of resistance by insurgents as they captured and crossed Fallujah's main east-west highway. However, American units in the southwestern neighborhoods of Resala and Nazal reportedly encountered brisk fighting. Gen. George W. Casey Jr., the top American commander in Iraq had predicted that resistance would be stronger as U.S. troops pushed through the outer ring of defense into the heart of the city where insurgents were expected to leave a minefield of IEDs. Some soldiers reported taking fire from mosques and that some women and children were seen firing on soldiers.

There were also some reports by U.S. troops that insurgents used some of the city's mosques to hold fellow wounded fighters. Iraqi Security Forces were believed to be heavily used to search and secure the mosques. Lt. Gen. Thomas Metz, the commander of foreign military operations in Iraq reported that many of the mosques searched housed munitions and weapons. Specifically CENTCOM announced that on 10 November 2004 the 5th Battalion, 3rd Brigade of the Iraqi Army had seized Al Tawfiq Mosque with U.S. Marines from the 7th Regimental Combat Team. The Iraqi Police Service's Emergency Response Unit was at the Hydra Mosque with the 2nd Battalion, 1st Brigade of the Iraqi Intervention Force and U.S. Marines from the 7th RCT who had captured the site. American marines and soldiers, followed by Iraqi Security Forces captured the Muhammadia Mosque in one of the largest battles in Fallujah. The New York times reported the Muhammadia Mosque held strategic significance because insurgents were using it



as a command center and bunker. A convention center across the street from the mosque was captured as well and the two facilities held numerous weapons, munitions, and IED-making material. Eight marines were killed in that operation as well as an unknown number of insurgents.

On 11 November 2004, coalition forces along with Iraqi soldiers claimed to have discovered what was termed by the local Iraqi forces commander, Maj. Gen. Abdul Qader Mohammed Jassem Mohan, to be “slaughterhouses”. These buildings had reportedly contained black clothing resembling that used in video footages showing hostages and had been used by terrorists to detain and kill them.

On 11 November 2004, two Marine Super Cobra attack helicopters were hit by ground fire and forced to land in separate incidents near Fallujah. The crews were not injured and were rescued. U.S. troops also discovered an Iraqi man chained to a wall in a building in northeastern Fallujah. The man, who was shackled at the ankles and wrists, bruised and starving, told Marines he was a taxi driver who had been abducted 10 days prior and that his captors had beat him with cables.

On 11 November 2004, U.S. troops turned over control of the Jolan neighborhood to Iraqi forces. The area was once believed to have been a stronghold of insurgent power. With fighting slowing down, coalition and Iraqi soldiers continued to go house to house, searching for arms caches and insurgents. U.S. military predicted full control of Fallujah would be gained in the following 48 hours, with an additional week or more needed to fully secure the city for remaining arms and insurgents.

U.S. Military officials reported that as of 11 November 2004, at least 18 American service members and five Iraqi soldiers had been killed in the assault, 164 American and Iraqi troops had been wounded and an estimated 600 insurgents killed.

On 12 November 2004, coalition officials asserted that they had achieved control over approximately 80% of the city of Fallujah, with insurgents being driven into the southern part of town. 151 individuals were reported to have been detained by coalition troops, in addition to 300 individuals who had reportedly negotiated surrender from within a mosque that day. Officials believed many of these individuals to be civilians but were being vetted. According to the New York Times, the 2-7th Cavalry was moving in a south-easterly fashion across the city from the Highway 10 and fighting in the Resala, Nazal and Jebail neighborhoods, while the 2-2nd Infantry was moving South and West across the city's industrial area. Some reports also indicated the possibility of sleeper cells being primed to strike upon completion of the initial coalition assault.

The Iraqi Red Crescent, describing the situation in the city as a “big disaster”, announced that it had requested to the coalition that it be allowed to deliver aid to Al-Fallujah and dispatch an emergency medical team into Fallujah's main hospital, but that it had yet to receive a response. The Iraqi government announced that it had already sent medical and reconstruction teams to the area, with 14 trucks of medical supplies and humanitarian goods sent to the region and standing by to deliver aid, possibly by November 13.

By November 13, U.S. officials asserted that they had achieved control of most of the city, and house-to-house clearing operations would follow. That same day, the Iraqi national security

adviser claimed that more than 1,000 insurgents had been killed in fighting in Fallujah, with an additional 200 captured.

On 15 November 2004, the U.S. Military said they were still battling isolated pockets of insurgents mostly on the southern side of Fallujah and estimated that it would take at least four more days to gain complete control of the city. Military officials also confirmed that tunnels had been dug under the city which connected an underground bunker and tunnels to a ring of buildings filled with weapons including anti-aircraft artillery guns. CENTCOM announced that U.S. forces attacked the bunker early on 15 November 2004.

On 15 November 2004, U.S. troops were still engaged in house-to-house clearing operations because fear of booby-traps slowed their progress. Officials said troops generally entered houses only after tanks rammed through walls or specialists used explosives to blast the doors. Numerous weapons caches had been discovered which included small arms, munitions, and bomb-making material.

On 15 November 2004, Multi-National Force aircraft also flew several close air support missions and attacked anti-Iraqi forces in numerous buildings throughout the city. Alpha Company, 1st Battalion, 3rd Marines reported that some of the Iraqi troops attached to the unit had deserted as well.

On 15 November 2004, The Iraqi Red Crescent were still unable to deliver food, water and medical aid to civilians in the city due to the continued fighting. Instead Red Crescent trucks made their way to villages surrounding Fallujah where tens of thousands of displaced civilians camped in tents to escape the conflict.

U.S. Military officials announced that as of 15 November 2004, 38 U.S. troops, six Iraqi soldiers and an estimated 1200 insurgents had been killed. Three of the U.S. fatalities were non-battle related injuries. Approximately 275 U.S. troops were wounded as well.

## CHAPTER 2

### THE URBAN BATTLESPACE—A COMPLEX ENVIRONMENT

1. The urban environment confronts commanders with a multitude of difficulties rarely found elsewhere. Its distinct characteristics result from an intricate topography and high population density. The topography's complexity stems from the fabricated features and supporting infrastructure superimposed on the natural terrain. Hundreds, thousands, or millions of civilians may be near or intermingled with soldiers—friendly and enemy. This second factor, and the human dimension it represents, is potentially the most important and perplexing for commanders to both understand and evaluate. The intelligence preparation of the battlefield (IPB) process remains applicable to urban areas; this chapter provides information essential to the conduct of the IPB for an urban environment. A detailed discussion of the urban IPB is found at Annex A.
2. Urban areas vary depending upon their history, the culture of their inhabitants, their economic development, the local climate, available building materials, and many other factors. This variety exists not only between urban areas, but also within particular areas. The sprawl of Los Angeles, for example, bears little physical resemblance to New Delhi. Societal characteristics most significantly affect each area's uniqueness and complexity. While complex, information about the terrain, its potential effects on operations, and how it changes over time may be determined with some degree of certainty. However, the human dimension is much more difficult to understand and assess, particularly its effects on military operations. Like any environment, the side that can best understand and exploit the effects of the urban environment has the best chance of success. Due to diverse cultural differences, a policy popular with one urban group may cause resentment and hostility in another. Thus, commanders at all levels must make extraordinary effort to understand their particular urban environment in order to plan, prepare for, and execute effective urban operations (UO).
3. Whether a large metropolis or a small village, each urban environment has an identifiable system of components that constantly change and interact. This "system of systems" consists of the terrain, the actors (e.g., friendly forces and culture, the enemy, non-government organizations [NGOs], private volunteer organizations [PVOs], criminal organizations), and the infrastructure that links them. These categories highlight the key aspects to understanding the urban environment and will be used throughout this publication.
4. These systems are not separate and distinct categories, but rather overlapping and interdependent. Thoroughly analyzing these elements will contribute to a commander's situational understanding and assist in developing courses of action that apply appropriate resources against decisive points. Understanding allows commanders to engage and dominate the decisive points. Although each system is categorized into subordinate components or subsystems, commanders should "step back" and visualize each system, the complex urban environment, and their area of operations (AO). This "systems thinking" will aid in uncovering key relationships and connections that can help reveal centres of gravity (COG) and decisive points.
5. Comprehending the urban environment and its components to the fullest extent possible requires the careful integration and employment of psychological operations (PSYOPS), civil-

military cooperation (CIMIC) units, and a myriad of other human intelligence (HUMINT) assets as well as regional, language, and cultural experts. These aspects will require greater dependence on non-military and non-governmental organizations, and host nation agencies for information, knowledge, and expertise. This last consideration requires commanders to develop effective methods for coordinating and interacting with these organizations.

6. Although complex and difficult to penetrate with many intelligence, surveillance, target acquisition, and reconnaissance (ISTAR) assets, the terrain is the most recognizable aspect of an urban area. Truly understanding it, however, requires comprehending its multidimensional nature. Buildings, streets, and other infrastructure have varied patterns, forms, and sizes. The infinite ways in which these factors can intertwine make it difficult to describe a “typical” urban area. However, these elements provide a basis for understanding the complex terrain in an urban area.

## **SECTION 1 MULTIDIMENSIONAL BATTLESPACE**

7. Urban areas present an extraordinary blend of horizontal, vertical, interior, exterior, and subterranean forms superimposed on the natural relief, drainage, and vegetation. An urban area may appear dwarfed on a map by the surrounding countryside. In fact, the size and extent of the urban battlespace is many times that of a similarly sized portion of natural terrain. The sheer volume and density created by urban geometry can make UO resource intensive in time, manpower, and materiel.

8. UO can radically alter the physical character of the urban terrain in ways not experienced in other environments. They may cause (intentionally or not) uncontrollable fires or the loss of electricity. A power outage can cause flooding (especially in subsurface areas) by shutting down pumping stations. Entire buildings may be destroyed, eliminating reference points and creating obstacles with their rubble. Buildings and other urban structures, damaged but not destroyed, can still be effective obstacles. The weakened and unstable structures increase the risk to soldiers moving within them.

9. Normal planning addresses the depth, breadth, and height of an AO in terms of two areas: airspace and surface. In an urban environment, the scope is broadened to include supersurface and subsurface areas (Figure 2-1). Although spatially separated, each area may be used as an avenue of approach or mobility corridor, lines of communications (LOC), or engagement area.

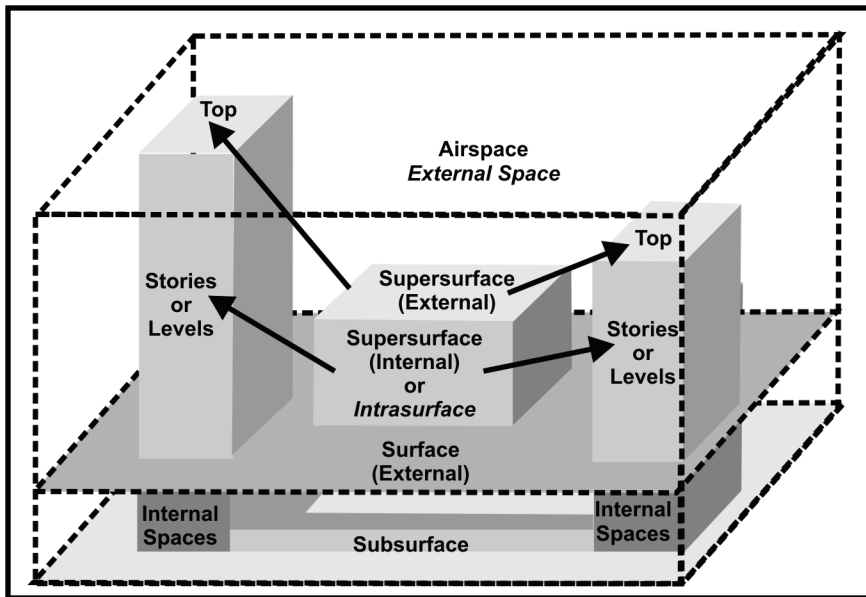


Figure 2-1: The Multidimensional Urban Battlefield

10. Supersurface and subsurface areas magnify the complexity of the urban physical environment. Commanders must consider activities that occur outside buildings and subterranean areas (i.e., the external space), as well as the activities that occur unseen in buildings and subterranean systems (i.e., the internal space). The internal space further challenges command, control, and intelligence collection activities, and increases the combat power required to conduct UO.

11. **Airspace.** Aircraft and aerial munitions use the airspace as avenues of approach in urbanized areas. Aviation assets can be used for observation and reconnaissance, aerial attack, or high-speed insertion and extraction of soldiers, supplies, and equipment. However, buildings of varying height and the increased density of towers, signs, power lines and other urban structures, create obstacles to flight and the trajectory of munitions. These obstacles can limit low-altitude manoeuvrability in the urban airspace. The excellent cover and concealment found in an urban area increases aviation vulnerability to small arms and man-portable air defence systems (MANPADS).

12. **Surface.** Surface areas apply to exterior ground level areas, such as parking lots, airfields, highways, streets, sidewalks, fields, and parks. They provide primary avenues of approach and the means for rapid advance. However, buildings and other structures often canalize movement. As such, obstacles on urban surface areas usually have more effect than those in open terrain since bypass often requires entering and transiting buildings, or making radical changes to selected routes. Where urban areas abut the ocean or sea, large lakes or major rivers, the surface of these bodies of water may provide key friendly and threat avenues of approach or essential LOC, and therefore, may be a significant consideration. As such, amphibious and river-crossing operations may be an integral part of an UO.

13. Larger open areas such as stadiums, sports fields, school playgrounds, and parking lots are often critical areas during UO. They can provide locations for displaced civilians, interrogation centres, and prisoner of war (POW) holding facilities. These areas can also provide

suitable aircraft landing and pickup zones and artillery firing locations. They can provide logistic support areas and aerial resupply possibilities because they are often centrally located.

14. **Supersurface.** These areas include the internal floors or levels (i.e., intra-surface areas) and external roofs or tops of buildings, stadiums, towers, or other vertical structures. They can provide cover and concealment, limit or enhance observation and fields of fire, and restrict, canalize, or block movement. However, forces can move within and between intra-surface areas creating additional, although normally secondary, avenues of approach. Roofs and intra-surface areas may also provide landing locations, locations for snipers, anti-tank weapons, and MANPADS. They enable top-down attacks against the weakest points of armoured vehicles. Overall, elevated firing positions reduce the value of any cover in surrounding open areas and permit engagement at close range without risk of immediate close assault. This area and the subsurface area require commanders to think, plan, and execute ground operations vertically, as well as horizontally.

15. **Subsurface.** These areas are subterranean or below surface level. They may serve as secondary, and in fewer instances, primary avenues of approach at lower tactical levels. When thoroughly reconnoitred and controlled, they offer excellent covered and concealed LOC for moving supplies and evacuating casualties. They may also provide sites to cache and stockpile supplies. Subsurface areas include subways, tunnels, sewers, drainage systems, cellars, civil defence shelters, and other various underground utility systems. Both attacker and defender can use subsurface areas to gain surprise and manoeuvre against the rear and flanks of a threat and to conduct ambushes. However, these areas are often the most restrictive and easiest to defend or block. Their effectiveness depends upon superior knowledge of their existence and overall design.

## **BROAD URBAN PATTERNS**

16. Four major urban patterns can influence UO (see Figure 2-2). Central to two of the patterns (satellite and network) is the hub or dominant urban area or pattern around which outlying urban areas or patterns radiate. Note that a segmented urban area, because it tends to be a larger urban area, can often be a hub. In offensive and defensive operations, the hub serves as a pivot or strongpoint; as such, it often becomes a major obstacle to an attacker. If the attacker chooses to bypass an urban area (hub) located along his axis of advance without first isolating the area, he may expose his flank to attack from the hub, as well as from dependent urban areas or subordinate satellite patterns. Whether or not a hub, urban areas are not islands; all are connected to the surrounding rural and other urban areas through fluid and permeable boundaries and LOC.

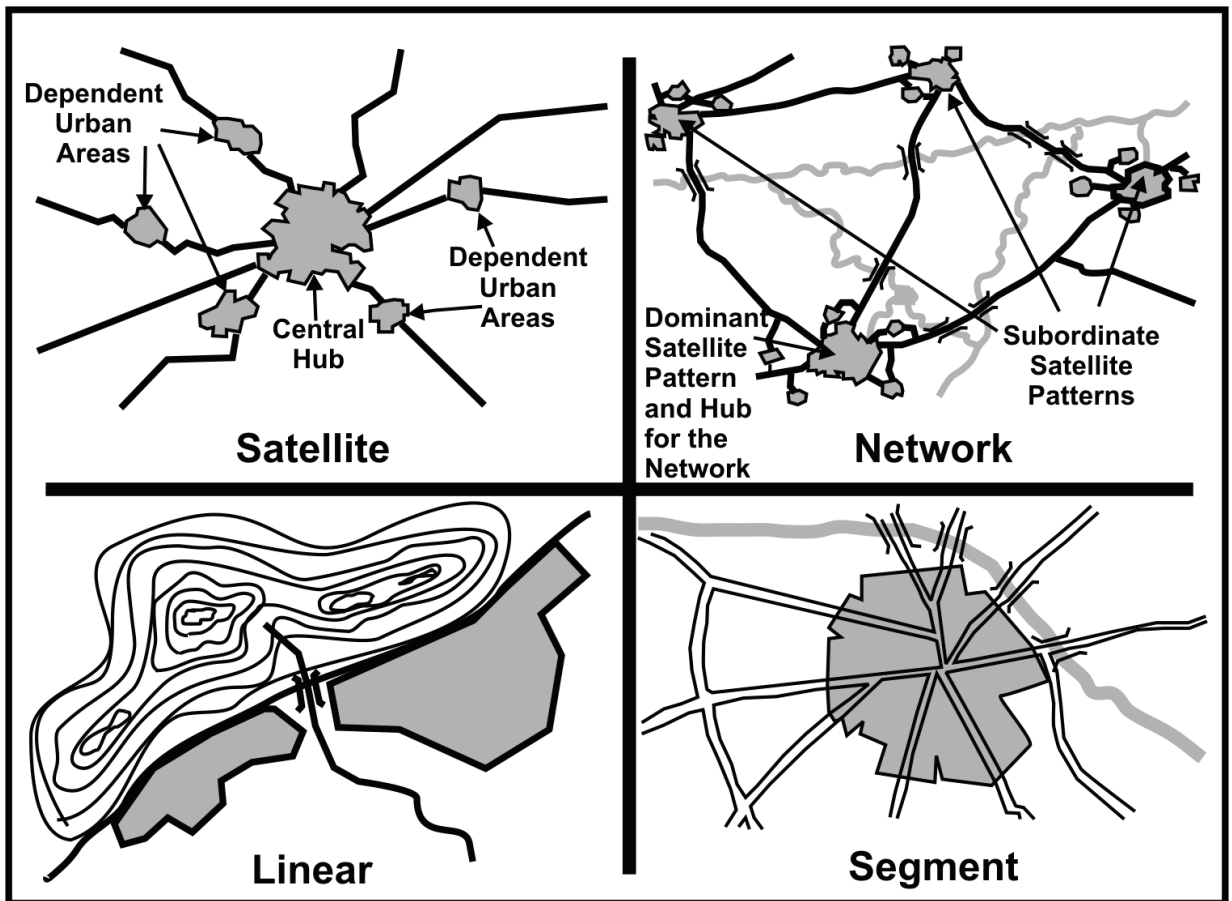


Figure 2-2: Broad Urban Patterns

17. **Satellite Pattern.** This common pattern consists of a central hub surrounded by smaller, dependent urban areas. LOC tend to converge on the hub. The natural terrain throughout this pattern is relatively homogenous. Outlying areas often support the principal urban area at the hub with means of reinforcement, resupply and evacuation. In some instances, they may serve as mutually supporting battle positions. Commanders should consider the effects of the outlying urban areas on operations within the hub, and conversely, the effects of operations within the hub on the outlying urban areas. Information operations (IO), for example, targeted primarily at the hub of a satellite pattern may subsequently influence outlying urban areas and achieve necessary effects without having to commit specific resources to these areas.

18. **Network Pattern.** The network pattern represents the interlocking of the primary hubs of subordinate satellite patterns. Its elements are more self-sufficient and less supportive of each other, although a dominant hub may exist. Major LOC in a network extend more than in a satellite pattern and take more of a rectangular rather than a convergent form. Its natural terrain may vary more than in a single satellite array. Operations in one area may or may not easily influence, or be influenced by, other urban areas in the pattern.

19. **Linear Pattern.** Potentially a sub-element of the previous two patterns, the linear pattern may form one ray of the satellite pattern, or be found along connecting links between the hubs of a network. Most frequently, this pattern results from the stringing of minor urban areas along a

confined natural terrain corridor, such as an elongated valley, a body of water, or a man-made communications route. In offensive and defensive operations, this latter form of the linear pattern facilitates developing a series of strong defensive positions in depth, effectively blocking or delaying an attacking force moving along the canalized terrain.

20. **Segment Pattern.** When dominant natural terrain, such as a river or man-made features (e.g., canals, major highways, or railways), divides an urban area, it creates a segmented pattern. This pattern often makes it easier for commanders to assign AOs to subordinate commanders. However, this pattern may fragment operations and increase risk to an operation requiring mutual support between subordinate units. Still, the segmented urban areas may allow commanders to isolate threats more easily in these areas and focus operations within segments that contain their decisive points. Although an integral part of the whole urban area, each segment may develop distinct social, economic, cultural, and political characteristics. This social segmentalization may benefit commanders with limited assets to influence or control the urban populace. After thoroughly analyzing the society, they may be able to focus IO, and populace and resource control measures, against only specific segments that affect decisive operations. Commanders may need only to isolate other segments, or may need to just monitor for any significant changes in the attitudes, beliefs, or actions of the civilians located there.

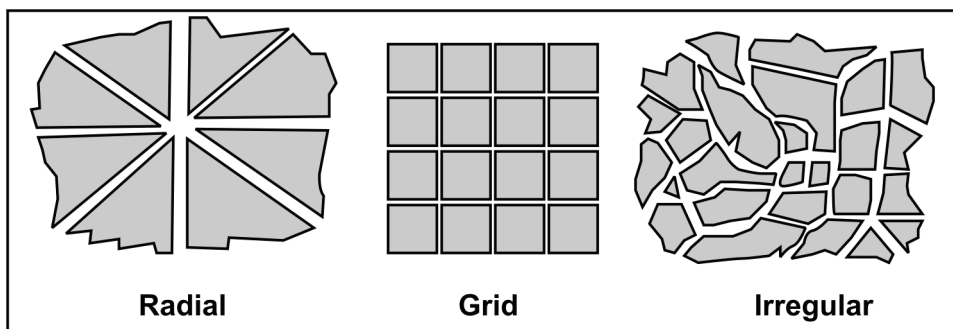


Figure 2-3: Basic Internal Street Patterns

## LESSER STREET PATTERNS

21. Lesser patterns in the urban area result from the layout of the streets, roads, highways and other thoroughfares. They evolve from influences of natural terrain, the original designer’s personal prejudices, and the changing needs of the inhabitants. Street patterns (and widths) affect all battlefield operating systems. Urban areas can display any of three basic patterns and their combinations: radial, grid, and irregular (Figure 2-3).

22. **Radial.** Societies of highly concentrated religious or secular power often construct urban areas with a radial design: all primary thoroughfares radiating out from the centre of power. Cities with this design may signal an important historical aspect in the overall analysis of the urban society. Terrain permitting, these streets may extend outward in a complete circle, or may form a semicircle or arc when a focal point abuts a natural barrier, such as a coast-line or mountain. To increase mobility and traffic flow, societies often add concentric loops or rings to larger radial patterns. Planning must consider boundaries, routes, and axes of advance to ensure movement is not inadvertently funnelled towards the centre of urban areas resulting in congestion, loss of momentum, and an increased potential for ambush or fratricide.



23. **Grid.** The most adaptable and universal form for urban areas is the grid pattern: lines of streets at right angles to one another forming blocks similar to the pattern of a chessboard. A grid pattern can fill in and eventually take over an original radial pattern. Grid patterns often appear to ease the assignment of boundaries for subordinate units. Consideration must be given to the influence of the buildings and other structures lining these streets, such as their height and construction, before assigning boundaries and developing other control measures. If available, natural features are better descriptors than man-made features that may be altered or unrecognizable. Existing administrative boundaries, such as those used by municipal governments and local law enforcement agencies, are also useful when dealing with the local population.

24. **Irregular.** In most urban areas, regardless of the original intent, plan, or vision, existing street patterns emerge from successive plans overlaid one on another. Irregular street patterns serve as an indicator that the underlying natural terrain may exert greater influence over operations than in other portions of the urban area. Finally, irregular street patterns make the movement and manoeuvre of forces more difficult.

## AN URBAN MODEL

25. Throughout the world, urban areas have similar form and function. In form, urban areas contain like characteristics, readily divisible into distinct sections or areas. Functionally, they tend to be the centres of population, finance, politics, transportation, industry, and culture. While urban areas may be modeled by several different means, Figure 2-4 illustrates the general forms and internal functions. Some forms and functions may overlap. For example, high-rise buildings are located in core areas as well as in outlying areas, and may be used for residential purposes. With the rapid urbanization associated with developing nations, the areas displayed in this urban model often manifest themselves less clearly there than in developed nations.

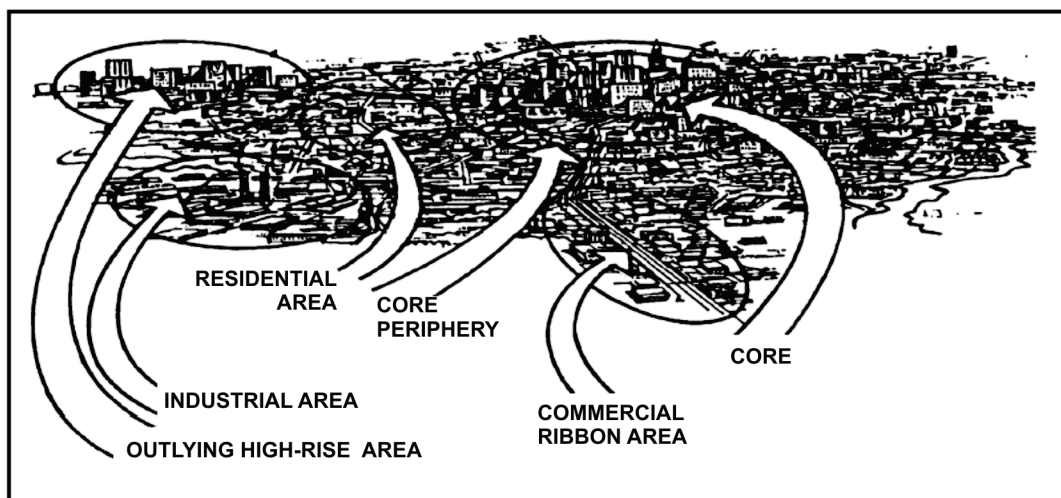


Figure 2-4: An Urban Model

26. This analysis helps to determine, in general terms, potential advantages and disadvantages each portion of the urban area may have towards accomplishing an UO. However, construction materials and methods can vary drastically. Specific building types and

construction must be recognized and weapons effects on them understood. If precise effects are required, the chosen munitions or weapon systems must be sufficiently accurate, capable of penetrating the target structure (without exiting the other side), and achieve effects within. Understanding the structure of buildings in the urban AO will assist in determining the best means to accomplish the mission.

27. **Core.** The core is the heart of the urban area, the downtown or central business district. Relatively small and compact, it contains a large percentage of the urban area's shops, offices, and public institutions. Often, it houses the headquarters for commercial and financial activities and contains important cultural, historical, and governmental buildings. These activities prefer the core because of its accessibility. It normally has the densest concentration of multi-story buildings and subterranean features (e.g., underground parking garages, underground shopping centres, and basements). High-rise buildings, varying greatly in height (e.g., possibly 50 stories above ground and four stories below ground), make up the cores of today's urban areas. Buildings routinely abut one another, with little or no setback from the sidewalks. Building height and density (except in outlying high-rise areas) often decreases from the core to the edge of the residential areas, while the amount of open areas frequently increases. Modern urban planning allows for more open spaces between buildings than found in the cores of older urban areas. Most core areas have undergone constant redevelopment resulting in various types of construction. Commonly, brick buildings abound in the oldest part of the core; framed, heavy-clad structures in the next oldest part; and a concentration of framed, light-clad buildings in the newest part. The outer edge of the core, the core periphery, has ordinarily undergone less change than the core, resulting in buildings of uniform height (commonly two to three stories in towns and five to ten stories in larger urban areas).

28. Generally, offensive operations focused in core areas (even when effectively isolated) will require greater resources—particularly manpower, time, and information—than in many other parts of the urban area. Mounted manoeuvre often proves more difficult in core areas because of fewer open areas, buildings closer to the streets, and civilian vehicles. Rubbled buildings in central core areas (especially high-rise buildings) become greater obstacles to mobility as they can collapse on and easily block thoroughfares. Rubble piles can afford excellent covered and concealed positions for dismounted enemy forces. Conversely, the core may be critical to urban defensive operations, particularly older areas of heavier construction that afford greater protection.

## INDUSTRIAL AREA

29. **Industrial Area.** Industrial areas often develop on the outskirts of urban areas where commercial transportation is easiest (e.g., along airfields and major sea, river, rail and highway routes). These areas will likely displace farther from the core and residential areas as urban planners recognize the potential threat of toxic industrial materials (TIM). The dispersed pattern of the buildings provides sufficient space for large cargoes, trucks, and materiel handling equipment. These areas may provide ideal sites for logistic bases and maintenance sites. While older, heavier-clad structures may be found, new construction consists of low, large, flat-roofed factory and warehouse buildings with large parking areas and work yards. These structures generally have steel frame and lightweight exterior walls. Multi-story structures usually have

reinforced concrete floors and ceilings. TIM may be transported through an urban area (by rail, barge, truck, or pipeline) or found stored throughout. However, larger concentrations will exist in industrial areas, and their presence should be of concern. An estimated 25,000 commercial facilities around the world produce, process, or store chemicals that have a legitimate industrial use, yet are also classified as chemical warfare agents. Many other chemicals (not classified as weapons) may still be sufficiently hazardous to pose a considerable threat in urban areas, such as choking agents or asphyxiates, flammables or incendiaries, water contaminants, low-grade blister or nerve agents, or debilitating irritants. These chemicals can be released either accidentally or deliberately. The most common chemicals that pose a risk are highly toxic irritant gases such as ammonia, chlorine, hydrogen chloride, and sulphur dioxide. Standard chemical defence equipment may not protect against, and chemical detection devices may fail to detect, many toxic industrial chemicals. Assessments must include the chance that the enemy may deliberately release TIM to gain advantage, or that it may be accidentally released by threat or friendly actions.

30. **Outlying High-Rise Area.** High-rise areas consist of multi-storied apartments, commercial offices, and businesses separated by large open areas, such as parking lots, parks, and individual one-story buildings. High-rise buildings are framed, light-clad construction with thin walls of brick, lightweight concrete, or glass. The automobile, mass transit systems, and improved road networks encourage these areas to grow and function further from the urban core. Similar to the urban core, units given the mission to clear these areas, or even portions therein, will need more resources—most notably personnel and time—to accomplish their mission. Courses of action should be considered that isolate these areas, multiple sections within the areas, or even individual buildings.

## RESIDENTIAL AREA

31. **Residential Area.** Residential areas can be found dispersed throughout the urban area; however, large suburban areas (or sprawl) normally form on the outskirts. Residential areas often consist of row houses or single-family dwellings set in a grid or ringed pattern in a planned development project. Yards, gardens, trees and fences usually separate the buildings in a residential area. Modern residential construction is often of light-clad, framed wood construction, or brick. The combined population of surrounding suburban areas often far outnumber that of the urban area proper. Specific suburbs tend towards homogeneity based upon ethnicity, religion, economics, or some other social aspect. These areas must be assessed to determine their impact on operations—often the most critical factor will be the people resident there.

32. This area also contains an urban phenomenon known as shantytowns. These areas are commonly on unoccupied, low-value land in and around many urban areas in underdeveloped countries. Shantytowns may contain over 50 percent of the total urban population. They usually lack proper streets and public utilities. The structures tend to be irregularly laid out, connected by walking paths, and made of any scrap material available: lumber, brick, sheet metal, cardboard, cloth or vegetation. The random arrangement of structures, the absence of formal street naming and numbering, and often the lack of easily identifiable buildings and terrain, create challenges. These challenges include navigating, coordinating, and transmitting accurate

information and intelligence. Similarly, the makeshift materials inhibit weapons effects less and consideration must be given to the effects of operations on shantytowns, to include vehicles and weapons, as the weak structures increase the risk of fratricide, civilian casualties, and large, rapidly spreading fires.

33. **Commercial Ribbon Area.** Commercial ribbon areas are rows of stores, shops and restaurants built along both sides of major streets that run through and between urban areas. These same types of areas often develop along the roads that connect one urban area to another (i.e., strip areas). The buildings uniformly stand two to three stories tall (about one story taller than the dwellings on the streets behind them).

## SECTION 2 URBAN SOCIETY

34. Although intricate, understanding the urban terrain is relatively straightforward in comparison to comprehending the multifaceted nature of urban society. UO are by their nature conducted in close proximity to a high density of civilians. Even evacuated areas can have a stay-behind population in the tens of thousands. This population's presence, attitudes, actions, communications with the media, and needs may affect the conduct of operations. Plans must be made which take into account the characteristics of a population whose beliefs and interests vary based upon the factors shown at Figure 2-5. Thoroughly understanding these societal aspects, and avoiding overlaying one's own values and thought processes on top of the person or group one is trying to assess, will help to accurately anticipate civilian actions and response.

# KEY ASPECTS OF THE URBAN SOCIETY

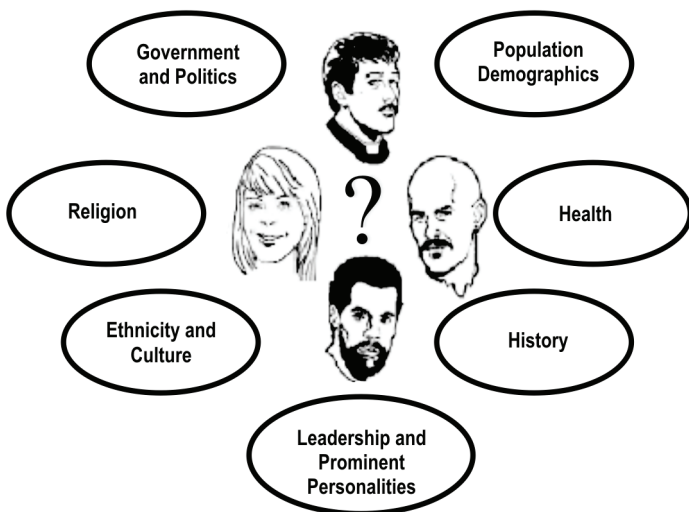


Figure 2-5: Key Aspects of the Urban Society

35. **The Population as a Centre of Gravity.** A COG during an UO, particularly in peace support operations (PSO), counter-insurgency (COIN) operations, or humanitarian operations,

may be the civilian inhabitants, specifically their behaviour. However, supportive behaviour is generally an advantage in any type of operation. Correspondingly, neutral behaviour towards friendly forces is an advantage over hostile behaviour. To influence or control the inhabitants' behaviour, commanders must first understand the complex nature and character of the actors within the battlespace. Secondly, they must understand and accept that every military action (or inaction) may influence the relationship with urban population, and by extension, mission success. Lastly, they must understand that military forces may only play a supporting role as part of an integrated and synchronized multi-agency effort focusing all aspects of national power.

36. Although the factor of civil considerations takes on added significance in UO, it is just one that commanders evaluate. Sometimes it may be the most important factor to consider as a COG. At other times it may be the least important as to be almost negligible. Like all factors its importance is not constant; it changes over time. At the beginning of the operation, civil considerations may not be essential to mission accomplishment, but as the operation progresses this factor's importance to success may increase. In other circumstances, the opposite may be true.

37. Overall, commanders must consider three objectives regarding the population of an urban area:

- a. minimize their interference with and subjection to combat;
- b. maximize the population's trust in and support to the military, governmental and agency elements; and
- c. observe the legal, moral, and humanitarian obligations.

38. **General Population Size.** Urban areas are commonly classified according to the general size of their population instead of land mass. Figure 2-6 lists categories of urban areas with their defining population. These categories are useful to establish commonality and standardize terms that shape ideas, discussion, and concepts. Smaller populations usually suggest homogeneity amongst the inhabitants. Homogeneity can make consensus or compromise easier to achieve because fewer opposing viewpoints exist. Given this homogeneity, effects of change are more certain and often easier to determine.

CATEGORY	POPULATION
Village	3,000 or less.
Town	Over 3,000 to 100,000
City	Over 100,000 to 1 million.
Metropolis	Over 1 million to 10 million.
Megalopolis	Over 10 million.

Figure 2-6: Urban Areas by Population Size

39. As urban areas expand, the urban patterns begin to blur and the social complexity increases. For example, as satellite patterns continue to grow, the LOC between a central hub and outlying urban areas may develop and begin to assume a linear urban pattern. Simultaneously, a hub and outlying urban areas may continue to expand until they merge into a single, large metropolis. On a larger scale, a network pattern can grow and unite as a single megalopolis. This growth physically unites smaller urban areas, but does not create conformity of needs and beliefs. It increases the physical and social complexity of an urban area.

**GROUP SIZE, LOCATION, AND COMPOSITION**

40. **Group Size, Location, and Composition.** Understanding how specific elements of the urban society affect operations, and vice versa, normally begins with analyzing their size, location, and composition (Figure 2-7). Size and location (without regard to composition) are important initial demographic considerations. After determining the presence and numbers of civilians relative to decisive points, commanders can then decide whether civilian proximity and density represent a significant risk to their mission. If civilians are the primary focus of the operation, as in PSO and COIN operations, this same analysis may help to determine decisive points. This analysis must consider that urban areas, on many levels, are in constant motion. The densities of circulating people and other traffic often vary according to the time of day, such as rush hours and market times. In planning an UO, commanders may need to consider the timing or rhythms of population and vehicular movements in the urban area.

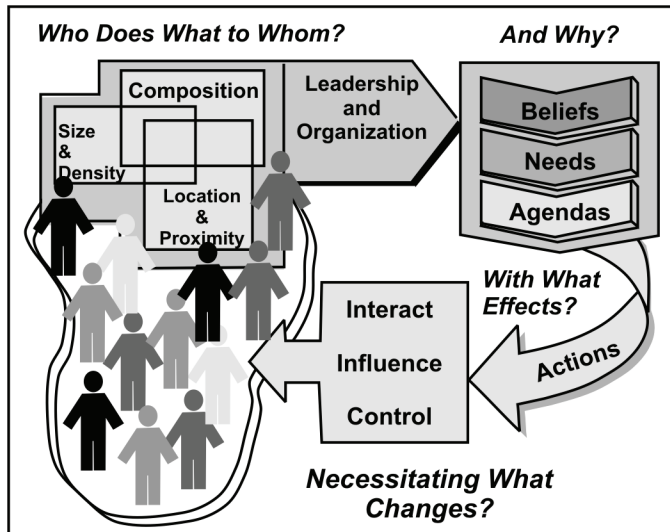


Figure 2-7: Simplified Analysis of Urban Society

41. Groups may be categorized by: race, religion, national origin, tribe, clan, economic or social class, party affiliation, education level, union memberships, age, gender, occupation, or any other significant social grouping. Physical and ideological overlaps and divisions often exist between groups. Overlaps may provide early focus for analysis and suggest ways to affect more than one group simultaneously. In some cases, groups may have radically different ideologies, but are or can be united by a single characteristic. Commanders must understand the intricacies of “who does what to whom.” Such understanding further identifies the urban society’s sources of power, influence (both formal and informal), and decisive points that hold the keys to controlling or protecting this potential COG. Commanders need expert, detailed, and current information to avoid developing incorrect formulas of social interaction that may actively mislead and add to a flawed course of action. A discussion of the issues facing the growing third world cities is found at appendix B.

*Me and Somalia against the world, me and my clan against Somalia, me and my family against the clan, me and my brother against my family, me against my brother.*

Somali Proverb

42. **Leadership And Organization.** Commanders must also understand how authority and responsibility is held or shared within and between each of the identified groups. For groups to exert meaningful influence, leadership provides vision, direction, and organized coherence. This leadership can be a function of personality as well as organization. Some groups depend upon a charismatic leader to provide cohesion. Others de-emphasize individual leadership and provide redundancy and replacement in decision-making. Others combine elements of both these types of leadership and organization. Based solely on personality, a leader may centralize power, or while still being in ultimate control, decentralize decision-making and execution to subordinates. In contrast, a single person may head a group while a ruling council actually makes and executes policy. Groups centred on one leader (who may or may not be the officially designated leader) can often produce decisions and initiate actions rapidly, but are vulnerable to disruptions if key personalities are removed or co-opted. Groups with shared or redundant leadership take longer to make decisions, yet are more resistant to change and outside influence.

43. **Interests and Actions.** Identifying and analyzing groups also helps commanders focus on specific segments of the urban society in order to determine their beliefs, needs, and agendas. It also helps commanders determine how those interests motivate groups to future action (or inaction)—previous patterns of activity are critical in this regard. This analysis seeks to determine why groups (and their leaders) act as they do. Commanders consider political, economic, cultural and religious factors in this analysis. To some extent, these factors affect all groups and often provide the basis for their beliefs, needs (actual or perceived), and subsequent behaviour. Consideration of a group’s size and location also helps to determine to what extent its beliefs or ideologies, needs and actions, may impact the UO. However, size and proximity may not accurately indicate actual or potential capabilities. Individuals, small groups, and groups located some distance from the actual conduct of the UO, may be able to influence large portions of the population. These individuals or groups may have a capability disproportionate to their size and proximity—especially against objectives that are not terrain oriented.

44. **Interaction, Influence, or Control.** As shown at Figure 2-7, an understanding must be developed of a group’s:

- a. size, location (proximity to operations), and composition (to include leadership and organization);
- b. interests;
- c. capabilities; and
- d. potential actions (intent) and their effects, if any, on operations.

45. From this, courses of action can be developed or modified as appropriate. Certain courses of action may be needed to improve the interaction between friendly forces and civilians (and between other agencies) to accomplish common goals. Others may be needed to influence favourable support, stabilize neutral groups, or neutralize hostile groups. Still, others may require more forceful means to control and protect civilians. The latter can include establishing buffer zones and restricted areas; setting up checkpoints and roadblocks with other travel restrictions; controlling rations; enforcing curfews; inspecting facilities; conducting internment and resettlement operations; or maintaining a “stay-put” policy.

46. Many measures will require significant resources that may initially be beyond force capabilities to impose and enforce. Where possible, local law enforcement should be used to accomplish controlling activities. The other elements of the environment, terrain and infrastructure, may fragment efforts and make it difficult to consistently impose controls throughout the urban area. A careful assessment of the urban society’s interests (e.g., beliefs, needs, and agendas) is essential before implementing any populace and resource control measures. Otherwise, inappropriate controls may only aggravate the situation. Finally, an appropriate course of action may require no specific action towards the urban society. In most cases, training and discipline, grounded in cultural understanding and sensitivity, will help mitigate many potential adverse effects resulting from military-civilian interaction.



## A CYCLE OF EFFECTS

47. **A Cycle Of Effects.** Since the urban society is so dynamic and the relationship between various elements of the society so complex, a continual assessment is needed to determine how operations will affect the society's interests and intent, and vice versa. Specifically, our forces need to assess how effectively their measures improve interaction with, influence of, and control over civilians. There is always a difference between intended and actual effects of a specific course of action, and nowhere is this more prominent than dealing with the urban society. This cycle of effects frustrates assessment during UO. Therefore, commanders continuously monitor these effects to make decisions and modifications while planning, preparing, and executing UO. Initially, certain aspects of the society, such as religion, may not affect the operation. However, if the threat, or our actions, shape the perceptions of the urban populace that we are biased against them (or at least critical segments are affected by propaganda), this element may become extremely important.

## SECTION 3 URBAN INFRASTRUCTURE

48. Urban infrastructure includes those systems that support urban inhabitants and their economy. They link the physical terrain to the urban society. Destroying, controlling, or protecting vital parts of the infrastructure can isolate a threat from potential sources of support. A threat force operating in an urban area may rely on the area's water, electricity, and sources of bulk fuel to support his forces. This is true particularly when his bases or facilities are physically located in or near the area. Isolating this threat from these sources may require him to generate his own electricity and transport his own water and fuel from outside the urban area. To transport supplies, the threat may rely on roads, airfields, sea or river lanes, and rail lines. Controlling these critical transportation nodes may prevent the threat from resupplying his forces. Moreover, the control of key radio, television, and newspaper facilities may isolate him from the urban populace (another potential source of support).

49. **Interdependence.** Destroying or disrupting any portion of the urban infrastructure can have a cascading effect (intentionally or unintentionally) on the other elements of the infrastructure. Essential facilities or structures can be seized or secured by using precision munitions, electronic disruption of communications, special operations forces (SOF), or conventional ground forces. An understanding of the technical aspects of the area's systems will assist in developing the best course of action.

50. **Separate Parts of a Whole.** Hundreds of systems may exist. Each system has a critical role in the smooth functioning of the urban area. Simple or complex, all systems fit into five broad categories (Figure 2-8). An analysis of the key facilities within each category is required to determine their role and importance throughout all phases of the UO. This analysis considers each infrastructure system individually, and in relation to others, to determine an appropriate course of action towards it.

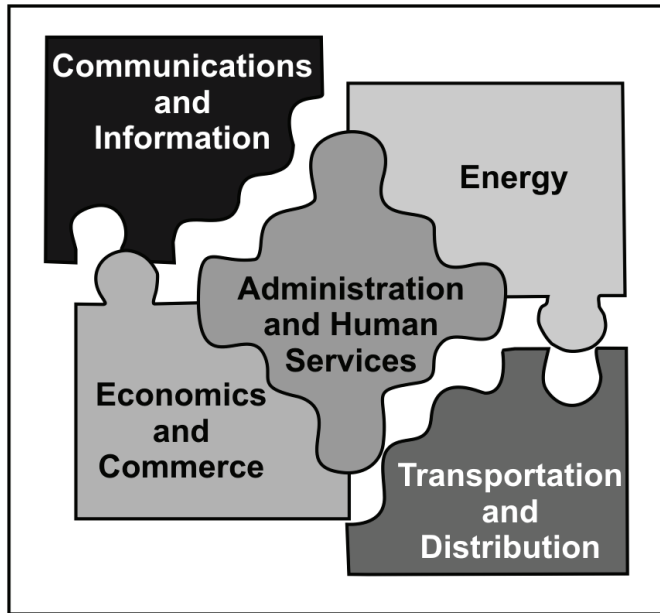


Figure 2-8: Urban Infrastructure

51. **Structures and People.** As depicted in Figure 2-8, each element of the infrastructure consists of both a terrain (physical) and human component. For example, the physical component of the electrical segment of the energy infrastructure consists of power stations, substations, a distribution network of lines and wires, and necessary vehicles and repair supplies and equipment. The human component of this same segment consists of the supervisors, engineers, linemen, and electricians who operate the system.

52. **Impact on Future Operations.** Destroying or incapacitating of any of these elements may impact future operations and inhabitants of the urban area. Destroying urban infrastructure during initial phases of an operation may require commanders to assume responsibility for repair, maintenance and clean-up, and operation of those same facilities later. Although exceptions will exist, commanders cannot destroy, or significantly damage the infrastructure of a foreign urban centre during operations, and expect the population to remain friendly.

53. **Resource Intensive.** Requirements to protect, restore, or maintain critical infrastructure may divert substantial amounts of resources and manpower needed elsewhere, and place additional constraints on commanders. Civilian infrastructure is often more difficult to secure and defend than military infrastructure. The potentially large and sprawling nature of many systems (e.g., water, power, transportation, communications, and government) make their protection a challenge. In PSO and COIN, the safeguard or restoration of critical urban infrastructure for military or civilian use may be a decisive point in the overall operation.

54. **Communications and Information.** Perhaps more than any other element of the infrastructure, the communications and information systems link all the other elements in an interdependent “system of systems.” This system is comprised of the facilities and means to transmit information from place to place. It includes:

- a. telecommunications, such as telephones (to include wireless), telegraphs, radios, televisions, and computers;
- b. police, fire, and rescue communications systems;
- c. the postal system;
- d. newspapers, magazines, and other forms of print media;
- e. the human; and
- f. interaction that conveys information.

55. **Increasing Impact of Computers.** In many urban areas, computers link other elements of the urban infrastructure. They link functions and systems in the urban area, and connect the area to other parts of the world. This latter aspect creates important implications for commanders of a major operation. Operations involving this cybernetic function may produce undesirable effects on a greater scale than initially intended. The authority to conduct these types of IO will often be retained at the strategic level.

56. **Pervasive Media.** The media is central to the communications and information infrastructure, and a critical operational concern. Compared to other operational environments (e.g., jungles, deserts, mountains, and cold weather areas), it has more access to UO. Hence, IO become critical to success in UO. A complex relationship exists amongst information, the public, and policy formulation. Although the degree and manner in which public opinion shapes government policy are uncertain, negative visual images of military operations presented by the media can change political objectives, and subsequently, military objectives. Commanders cannot control the media; however, by monitoring the information that the media receives and generates, they can plan and execute public affairs (PA) operations that will induce cooperation. Failure to provide sufficient information can hamper a commander's ability to conduct the mission. Poor relationships with the media can result in inaccurate and even biased reporting. Such reporting can cause a public reaction that influences the ability to achieve operational objectives. For example, during the Russian 1994-95 battle against Chechen separatists in Grozny, the Russian military refused to communicate with reporters. Consequently, the media reported primarily from the perspective of the Chechen rebels. This encouraged both local and international support for the rebels. It also allowed the Chechens, who lacked sophisticated information systems, to use the media to broadcast operational guidance to their forces. During the second Chechnya campaign of 1999-2000, Russia showed that they had learned this lesson well, and the Russian view of the war dominated domestic public opinion.

## TRANSPORTATION AND DISTRIBUTION

57. **Transportation and Distribution.** Similar to communications and information, transportation and distribution capability provides the physical link to all other elements of the infrastructure and consists of:

- a. networked highways and railways to include bridges, subways, tunnels, underpasses, overpasses, ferries, and fords;
- b. ports, harbours, and inland waterways;
- c. airports;
- d. mass transit; and
- e. trucking companies and delivery services that facilitate the movement of supplies, equipment, and people.

58. Control of decisive points in this infrastructure will be important to the military operation and to the normal functioning of the urban area (and surrounding rural areas). Most urban areas (particularly in developing countries) have two forms of transportation systems that exist simultaneously: a formal system and an informal or para-transit system. Large organizations, bureaucracy, imported technology, scheduled services, and fixed fares or rates characterize formal systems. Low barriers to entry, family and individual entrepreneur organizations, adapted technology, flexible routes, destinations and times of service, and negotiated prices characterize the informal system. The informal system is more decentralized and covers a much greater portion of the urban area than the formal system, and may include both surface and water-borne elements. The informal system is more likely to continue to function through turbulence and conflict, and can extend hundreds of kilometres beyond the urban area. Accordingly, commanders must assess both systems to establish effective movement control.

59. **Energy.** The energy system provides the power to run the urban area. It consists of the industries and facilities that produce, store and distribute electricity, coal, oil and natural gas. This area also encompasses alternate energy sources, such as nuclear, solar, hydroelectric and geothermal power. Sources of energy may be tens or hundreds of miles away from the urban area itself. Positive control may be exerted without applying combat power directly to the urban area simply by controlling or destroying the source (e.g., power generation or refinement plant) or the method of distribution (e.g., pipe or power lines). With electrical energy that cannot be stored in any sizable amount, the latter may be the best means as most major urban areas receive this energy from more than one source in a network of power grids. Control may be as simple as securing a power station or plant, and turning off switches or removing vital components that could be restored later. However, with control also comes the major problem of securing the lengthy pipe and power lines upon which such infrastructure relies.

60. **The Economy And Commerce.** Commanders must carefully weigh the effect their operations might have on the economy of an urban area and seek ways to strengthen, vice damage, the local economy. Commerce leads to jobs. Jobs for the urban population are a critical aspect of PSO and COIN operations, as they help create the stable environment necessary to achieve success. This system encompasses:

- a. businesses and financial centres to include stores, shops, restaurants, hotels, marketplaces, banks, trading centres, and business offices; and

- b. outlying industrial and agricultural features to include strip malls, farms, food storage centres, manufacturing plants, and mills.

## **ADMINISTRATION AND HUMAN SERVICES**

61. This broad system covers urban administrative organizations concerned with the urban area's public health, safety and welfare. It also includes many organizations and structures that provide the urban populace with its social identity. Loss of these services often has an immediate destabilizing and life-threatening impact on the inhabitants of the urban area. This system encompasses:

- a. governmental services that include embassies and diplomatic organizations;
- b. activities that manage vital records, such as birth certificates and deeds;
- c. the judicial system;
- d. welfare systems;
- e. schools and universities;
- f. religious organizations and their churches and shrines;
- g. historic monuments and other cultural resources;
- h. hospitals and other medical services;
- i. water supply systems;
- j. waste and hazardous material storage and processing facilities; and
- k. emergency services, such as police, fire, and rescue.

62. Using the system approach to understand the elements of the urban environment provides the commander with a basis upon which to lay the enemy and threat template. This template is discussed in Chapter 3



## ANNEX A TO CHAPTER 2 URBAN INTELLIGENCE PREPARATION OF THE BATTLEFIELD

1. The complexity of the urban environment and increased number of variables (and their infinite combinations) increases the difficulty of conducting the intelligence preparation of the battlefield (IPB) for urban operations (UO). Although more intricate, *the IPB process remains essential to the successful conduct of UO*. Conducted effectively, it allows commanders to develop the situational understanding necessary to visualize, describe, and direct subordinates in successfully accomplishing the mission.

### URBANIZATION OF IPB

2. IPB is a continuous and systematic process for analyzing the threat and existing weather and terrain conditions in the Area of Intelligence Interest within the guidelines and tempo of the Operational Planning Process. It provides direction for the intelligence system, drives the military decision-making process, and supports targeting and battle damage assessment (see Figure 2A-1). The procedure (as well as each of its four steps) is performed continuously throughout the planning, preparation, and execution of an urban operation.

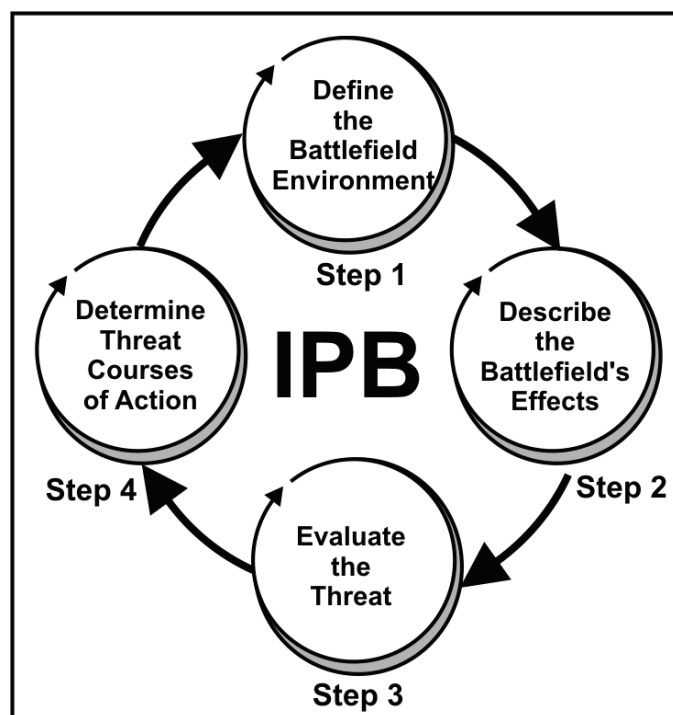


Figure 2A-1: The Steps of IPB

### UNAFFECTED PROCESS

3. The IPB process is useful at all echelons and remains constant regardless of operation or environment. However, urban IPB stresses some aspects not normally emphasized for IPB conducted for operations elsewhere. The complex mosaic is comprised of the societal, cultural, or civil dimension of the urban environment; the overlapping and interdependent nature of the

urban infrastructure; and the multidimensional terrain. This mosaic challenges the conduct of urban IPB. There is potential for the full range of Army operations to be executed near-simultaneously as part of a single major operation occurring in one urban area with multiple transitions. Such precision stresses the importance of a thorough, non-stop IPB cycle aggressively led by the commander and executed by the entire staff. Overall, the art of applying IPB to UO is in the proper application of the steps to the specific environment and threat. In UO, this translates to understanding and analyzing the significant characteristics of the environment and the role that its populace has in threat evaluation. B-GL-357-001/FP-001 *Intelligence Field Manual* details how to conduct IPB as well as the processes and procedures for producing all-source intelligence. This appendix supplements the information found there; it does not replace it.

## **INCREASED COMPLEXITY**

4. Uncovering intricate relationships takes time, careful analysis, and constant refinement to determine actual effects on friendly and threat courses of action (COA). These relationships exist among:

- a. Urban population groups.
- b. The technical aspects of the infrastructure.
- c. The historical, cultural, political, or economic significance of the urban area in relation to surrounding urban and rural areas or the nation as a whole.
- d. The physical effects of natural and manmade terrain.

5. A primary goal of any IPB is to accurately predict the threat's likely COA (step four—which may include political, social, religious, informational, economic, and military actions). Commanders can then develop their own COAs that maximize and apply combat power at decisive points. Understanding the decisive points in the urban operation allows commanders to select objectives that are clearly defined, decisive, and attainable. In targeting, these are referred as nodes and are based on the High Value Targets List (HVTL), which is an IPB product).

### **Blurred Situational Understanding May Lead to Mission Failure**

6. Commanders and their staffs not may be familiar with the intricacies of the urban environment and in comparison with other environments. Therefore, without detailed situational understanding, commanders may assign missions that their subordinate forces may not be able to achieve. Of equal significance, commanders and their staffs may miss critical opportunities because they *appear* overwhelming or impossible (and concede the initiative to the threat). They also may fail to anticipate potential threat COAs afforded by the distinctive urban environment. Commanders may fail to recognize that the least likely threat COA may be the one adopted precisely because it is least likely and, therefore, may be intended to maximize surprise. Misunderstanding the urban environment's effect on potential friendly and threat COAs may rapidly lead to mission failure and the unnecessary loss of soldiers' lives and other resources.



## Training, Experience, and Functional Area Expertise

7. Not all information about the urban environment is relevant to the situation and mission—hence the difficulty. Although it may appear daunting, institutional education, unit training, and experience at conducting an urban IPB will improve the ability to rapidly sort through all the potential information to separate the relevant from merely informative. (This applies to any new or difficult task.) The involvement and expertise of the entire staff will allow commanders to quickly identify the important elements of the environment affecting their operations. Fortunately, IPB is a methodology comprehensive enough to manage the seemingly overwhelming amounts of information coming from many sources.

8. As in any operational environment, tension exists between the desire to be methodical and the need to create the tempo necessary to seize, retain, and exploit the initiative necessary for decisive UO. Quickly defining the significant characteristics of the urban environment requiring in-depth evaluation (not only what we need to know but what is possible to know) allows rapid identification of intelligence gaps (what we know versus what we don't know). Such identification leads to priority intelligence requirements (PIR) and will drive the intelligence, surveillance, target acquisition (TA) and reconnaissance (ISTAR) plan B-GL-352-001/FP-001 *INTELLIGENCE, SURVEILLANCE, TARGET ACQUISITION AND RECONNAISSANCE (ISTAR)* provides guidance for the employment of the ISTAR capability on Canadian Forces land operations. Commanders carefully consider how to develop *focused* PIRs to enable collectors to more easily weed relevant information from the plethora of information. Commanders can make better decisions and implement them faster than a threat can react.

## AMPLIFIED IMPORTANCE OF CIVIL (SOCIETAL) CONSIDERATIONS

9. The experiences in urban operations gained at lower echelons often center on the tactics of urban offensive and defensive operations where the influences of terrain and enemy frequently dominate. At higher echelons, the terrain and enemy are still essential considerations, but the societal component of the urban environment is more closely considered. Moreover, the human or civil considerations gain importance in support operations and stability operations regardless of the echelon or level of command. In addition to the echelon and the type of operation, a similar relationship exists between the key elements of the urban environment and other situational factors. These factors can include where the operation lies within the spectrum of conflict or the level of war and the conventional or unconventional nature of the opposing threat. Figure B-2 on page B-4 graphically represents the varying significance of these elements to urban IPB. Population effects are significant only in how they affect the threat, Army forces, and overall mission accomplishment.

10. Describing the battlefield's effects—step two of the IPB—ascribes meaning to the characteristics analyzed. It helps commanders understand how the environment enhances or degrades friendly and threat forces and capabilities. It also helps commanders understand how the environment supports the population. It explains how *changes* in the “normal” urban environment (intentional or unintentional and because of threat or friendly activities) may affect the population. Included in this assessment are matters of perception. At each step of the IPB process, commanders try to determine the urban society's perceptions of ongoing activities to ensure Army operations are viewed as intended. Throughout this process, commanders, staffs,

and analysts cannot allow their biases—cultural, organizational, personal, or cognitive—to markedly influence or alter their assessment. However, as always in the IPB process, the analyst’s intuition based, for the most part, on experience, should act as a final ‘sanity check’ on the result of deductive reasoning. This particularly applies when analyzing the societal aspect of the urban environment. With so many potential groups and varied interests in such a limited area, misperception is always a risk.

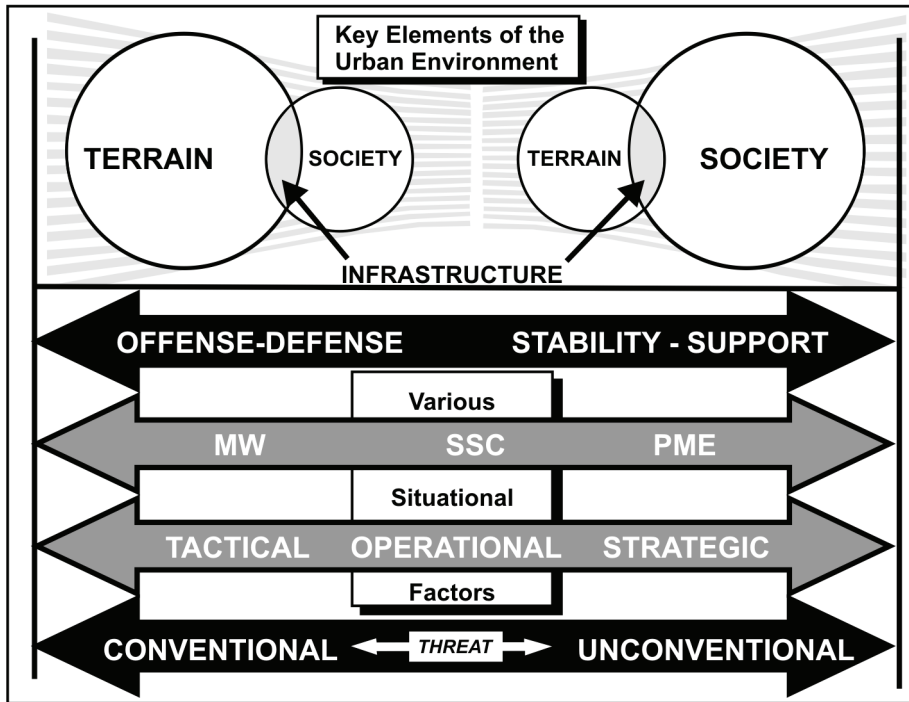


Figure 2A-2: Relevance of Key Urban Environment Elements

11. For IPB to remain effective in UO, its analysis must include the urban environment’s attributes—man-made terrain, society, and infrastructure—and an evaluation of characteristics traditionally included in IPB: the under-lying natural terrain (to include weather) and the threat. Because the urban environment is so complex, it is useful to break it into categories. Then commanders can understand the intricacies of the environment that may affect their operations and assimilate this information into clear mental images. Commanders can then synthesize these images of the environment with the current status of friendly and threat forces and develop a desired end state. Then they can determine the most decisive sequence of activities that will move their forces from the current state to the end state. Identifying and understanding the environment’s characteristics (from a friendly, threat, and noncombatant perspective) allows commanders to establish and maintain situational understanding based on Blue, Red and White Situational Awareness (SA) respectively. Then they can develop appropriate COAs and rules of engagement that will lead to decisive mission accomplishment.

### MULTIPLE OVERLAPS

12. Since the urban environment is comprised of a nodal network, considerations among the key elements of the environment will overlap during urban IPB analysis. For example,

boundaries, regions, or areas relate to a physical location on the ground. Hence, they have urban *terrain* implications. These boundaries, regions, or areas often stem from some historical, religious, political, or social aspect that could also be considered a characteristic of the urban *society*. Overlaps can also occur in a specific category, such as *infrastructure*. For instance, dams are a consideration for their potential effects on transportation and distribution (mobility), administration and human services (water supply), and energy (hydroelectric).

13. This overlap recognition is a critical concern for commanders and their staffs. In “taking apart” the urban environment and analyzing the pieces, commanders and staffs cannot lose perspective of how each piece interacts with any other and as part of the whole. Otherwise, their vision will be shortsighted, and they will fail to recognize the second- and third-order effects of their proposed COAs; the actual end state differing dramatically from the one envisioned by the commander. The increased density of combatants and non-combatants, infrastructure, and complex terrain means that a given action will likely have unintended consequences. Those consequences will be more widely felt and their impact will spread in less time than in other environments. These unintended results may have important strategic and operational consequences. The multiple ways these dynamic urban elements and characteristics combine make it necessary to approach each urban environment as a unique IPB challenge.

#### **URBAN TERRAIN AND WEATHER TERRAIN**

14. Earlier admonitions that civil considerations are more closely considered in UO do not necessarily mean that consideration of urban terrain is de-emphasized. In every urban operation, terrain and its effects on both threat and friendly forces is assessed and understood. Then commanders can quickly choose and exploit the terrain (and weather conditions) that best supports their missions. Terrain analysis thoroughly assesses urban structures as well as the ground on which they stand. An analysis of urban terrain first considers broader urban characteristics and effects and progress to a more detailed examination.

#### **SIGNIFICANT URBAN TERRAIN CHARACTERISTICS FORMS AND FUNCTIONS**

15. Cores.

16. **Industrial areas:**

- a. toxic industrial material production and storage facilities; and
- b. standard signs and markings for toxic chemicals.

17. Outlying high-rise areas.

18. Residential areas and shantytowns.

19. Commercial ribbon areas.

20. Forts and military bases.

#### **BROAD URBAN PATTERNS**

21. **Types:**

- a. satellite;
- b. network;
- c. linear; and
- d. segment.

22. Dominant or central hub (if any).

23. Area covered (square miles).

**STREET PATTERNS**

24. **Basic Types:**

- a. radial;
- b. grid; and
- c. irregular (planned and unplanned).

25. **Variations:**

- a. rayed;
- b. radial-ring;
- c. contour-forming; and
- d. combined.

26. Widths.

**CONSTRUCTION AND PLACEMENT**

27. **Construction:**

- a. mass or framed;
- b. light or heavy clad;
- c. material (dirt, wood, stone, brick, cinder block, concrete, steel, and glass);
- d. density and thickness (roofs, floors, and interior and exterior walls);
- e. load bearing walls and columns;

- f. height (floors);
  - g. doors, windows, fire escapes, and other openings; and
  - h. interior floor plan (including crawl spaces, elevators, and stairs).
28. **Placement:**
- a. random;
  - b. close-orderly block; and
  - c. dispersed.
29. Ownership.

### **MILITARY ASPECTS OF TERRAIN: FLOCARK**

30. **Features:**
- a. population;
  - b. culture;
  - c. landmarks;
  - d. buildings of significant cultural, social, political, or economic significance;
  - e. roads;
  - f. mountainous or hilly terrain;
  - g. heavy wooded areas;
  - h. built- up areas;
  - i. slopes; and
  - j. swamps and rivers.
31. **Lanes:**
- a. disruptive features at the FEBA;
  - b. friendly main defensive area;
  - c. the four dimensions of urban terrain-in the air, above the ground, on the ground, below the ground;
  - d. rubble;

- e. elevation and depression considerations;
- f. lasers and reflective concerns;
- g. cover and concealment;
- h. building protection;
- i. weapon penetration (single shot and multiple rounds) considerations; and
- j. rubble and vehicles.

32. **Objectives:**

- a. enemy; and
- b. friendly.

33. **Canalizing Ground:**

- a. slopes;
- b. unstable soil;
- c. built-up areas;
- d. large water (or water-filled) features;
- e. snipers;
- f. protests;
- g. refugee movement;
- h. large crowds;
- i. ambushes; and
- j. assessed asymmetric threats (suicide bombers, snipers).

34. **Avenues of Approach (Mobility Corridors):**

- a. water obstacles—rivers, streams;
- b. slopes—in excess of 50 per cent up hill;
- c. woods—trees greater than 15 cm thick with less than 5 m spacing;
- d. obstacles minefields, tank ditches and abatis;

- e. airspace;
- f. super/infra/sub-surface and surface;
- g. location of own forces;
- h. refugee movement;
- i. large crowds;
- j. terrorist infiltration;
- k. engagement ranges (including minimum safe distances and backblast factors) and obliquity/angle (ricochets);
- l. obstacles;
- m. rubble;
- n. vehicles;
- o. masking of fires;
- p. burning buildings or other fire hazards;
- q. canals, ditches, rivers and lakes;
- r. observation and fields of fire; and
- s. visibility effects of smoke (fire), dust (explosions), and flying debris.

35. **Key Terrain/Vital Ground:**

- a. landmarks;
- b. buildings of significant cultural, social, political, or economic significance; dominating terrain by fire and/or obsn;
- d. obstacles;
- e. potential Kill Zones (KZ);
- f. usable routes;
- g. potential Landing Zones (LZ)/Drop Zones (DZ)/pick-up zones;
- h. potential Artillery Manoeuvre Areas (AMA).

36. **Natural Terrain.** The natural terrain features beyond the urban area and beneath urban structures significantly influence unit operations. They dictate where buildings can be constructed, the slope and pattern of streets, and even the broad urban patterns that develop over longer periods of time, thereby influencing a unit's scheme of maneuver. The military aspects of terrain—features, lanes, objectives, canalizing ground, approaches, avenues of approach, key terrain and vital ground (FLOCARK) remain critical to the analysis of natural terrain in, under, and around urban areas. Fortunately, commanders and their staffs are accustomed to this type of analysis.

37. **Man-Made Terrain.** Building composition, frontages, placement, forms and functions, size, floor plans, and window and door locations affect maneuver, force positioning, and weapons deployment considerations. Angles, displacement, surface reflection, and antenna locations influence command and control. Structures also influence ISTAR operations. The increased density and volume created by man-made structures increase how much information commanders and their staffs collect and assess as well as the number of forces required. Building materials and construction will also influence force structures to include weapons and equipment required. The ability to maneuver through the urban dimensions—airspace, supersurface (including intrasurface), surface, and subsurface—and shoot through walls, ceilings, and floors also creates increased psychological stress. The characteristics of man-made terrain can also be analyzed using FLOCARK.

## WEATHER

38. Weather and its effects are often considered when examining the military aspects of terrain. Military aspects of weather include temperature (heat and cold), light conditions, precipitation (cloud cover, rain, snow, fog, and smog), and wind. Their military effects during UO are similar to any operational environment. Extremes of heat and cold affect weapon systems and the soldiers that operate them. The extra luminescence provided by the ambient

### **Analysis of an Urban Area's Underlying Terrain Mitrovica, Kosovo**

An urban area's underlying terrain provides many clues into its history, economy, society, and current situation. Mitrovica, Kosovo is an illustrative example. The Ibar River creates a natural line of communications through the middle of the city as well as an obstacle that bisects the urban area. This bisection naturally divides the two resident ethnic groups: Albanians and Serbs. The separation became significant at both the strategic and tactical levels during 1999 deployments to Kosovo. Army forces had to ensure that the Orthodox Church located south of the Ibar was accessible to Serbs residing in the north. North Atlantic Treaty Organization (NATO) peacekeepers built a footbridge across the river that allowed reliable, safe passage. The natural feature separating the two groups assisted NATO troops in maintaining stability in the region.

light of an urban area, unless controlled, may affect night vision capabilities and the ability of the Army to “own the night.” Precipitation affects mobility and visibility. Smog inversion layers are common over cities. An inversion layer may trap smoke and chemicals in the air to the detriment of soldiers' health. (If the conditions are severe enough, it might require the use of protective masks.) Winds, which may increase as they are funnelled through urban canyons, may:



- a. increase other weather effects (wind chill, for example);
- b. decrease visibility (blowing debris, sand, rain, and snow);
- c. spread radiation, biological, and chemical hazards; and
- d. adversely affect low-altitude air mobility.

39. However, commanders also analyze weather for its potential effect on civilians. Rain might create sewage overflow problems in refugee camps, increasing disease and even creating panic. (Rain and flooding may also make some subsurface areas impassable or extremely hazardous to military forces.) Other weather effects on UO can include:

- a. Heavy snowfall in an urban area that may paralyze area transportation and distribution infrastructure, hindering the urban administration's ability to provide vital human services (police, fire fighting, Medical, and rescue). Heavy rains may have similar effects on poorly designed and constructed roads.
- b. Extreme hot and cold weather climates that increase the dependence (and military significance) of many elements of the infrastructure. For example, the energy infrastructure may be critical; without it, civilians may not be adequately cooled or heated.
- c. In urban areas located in tropical regions, it can rain at the same time each day during the wet season. Threat forces may attack during these periods knowing aircraft will have difficulty responding. Bad weather also reduces the effectiveness of surveillance, direct and indirect fire, and logistic support.
- d. Inclement weather may preclude demonstrations or rallies by threats. Good weather may mean a maximum turnout of civilians for events such as festivals, sporting events, and other social, cultural, or religious activities.
- e. Severe weather may affect psychological and civil-military operations. Heavy rains may disrupt leaflet drops, construction projects, and medical and veterinary assistance programs.

## **URBAN SOCIETY**

40. This manual shows that societal considerations take on added importance. Critical to operational success is knowing which groups live in an urban area, what relationships exist among them, and how each population group will respond to friendly and threat activities. Often determining any of this is very difficult. Social and cultural understanding is also essential in helping commanders and their staffs to view the urban area as the residents view it. The demographics presented depict *what* conditions exist, while the other categories help to explain the root causes or *why* conditions exist. These other categories include health, history, leadership, ethnicity and culture, religion, and government and politics.

**SIGNIFICANT URBAN SOCIETAL CHARACTERISTICS POPULATION DEMOGRAPHICS**

41. **General population size:**

- a. village;
- b. town;
- c. city;
- d. metropolis; and
- e. megalopolis.

42. Group size based on race age, sex, political affiliation, economics, religion, tribe, clan, gang, criminal activities, or other significant grouping:

- a. significant US or allied populations;
- b. distribution, densities, and physical boundaries and overlaps; and
- c. majority, minority, and dominant groups.

43. Increasing or decreasing migration trends: Dislocated civilians.

44. **Nongovernmental organizations:**

- a. local;
- b. national; and
- c. international.

45. Languages (distribution, dialects, relationship to social structure).

46. Educational levels and literacy rates.

47. Crime rates.

48. Birth and death rates.

49. Labor statistics and considerations:

- a. skilled and unskilled;
- b. imported and exported;
- c. unemployment;

- d. standard wages and per capita income; and
- e. workday and workweek norms.

### **HEALTH**

- 50. Diseases.
- 51. Nutritional deficiencies.
- 52. Local standards of care.
- 53. Pollution and environmental hazards (air, water, food, and soil).
- 54. Health workers (types, numbers, and degree of skill).

### **HISTORY**

- 55. General and for a specific group:
  - a. internal or external;
  - b. recent conflicts.
- 56. Relationship with US, allies, and other participating multinational forces.
- 57. Applicable international treaties.
- 58. Status-of-forces agreements.
- 59. Antagonists/protagonists.
- 60. Heroes.
- 61. Events, facts, and dates considered important or celebrated.
- 62. Urban area's historical importance.

### **LEADERSHIP AND PROMINENT PERSONALITIES**

- 63. Affiliation (ethnic, religion, military, government, industry, criminal, or entertainment).
- 64. Education attained.
- 65. Organization and distribution of power.
- 66. Associations among different leaders and groups.

### **ETHNICITY AND CULTURE**

67. Values, moral codes, taboos, and insults (verbal and non-verbal).
68. Attitudes towards age, sex, and race (including same-sex interaction).
69. Role of the clan, tribe, or family.
70. Biases between ethnic groups.
71. Privacy and individuality.
72. Recreation, entertainment, and humor.
73. Fatalism or self-determination.
74. Exchanges of gifts.
75. Displays of emotion.
76. Lines of authority.
77. Dating and marriage.
78. Greetings, leave-takings, and gestures.
79. Visiting practices.
80. Alcohol and drug use.
81. Important holidays, festivals, sporting, or entertainment events.
82. Eating and dietary practices.
83. Significance of animals and pets.
84. Urban-rural similarities and differences.
85. Driving habits.
86. Clothing.

## **RELIGION**

87. Sects, divisions, and overlaps.
88. Religious biases and problems.
89. Relationship and influence on government, politics, economics, and education.
90. Impact on ethnic and cultural beliefs.

91. Key events or celebrations (daily, weekly, monthly, or annually).
92. Funeral and burial practices.

### **GOVERNMENT AND POLITICS**

93. Present and past forms.
94. Organization and powers (executive, legislative, judicial, and administrative divisions).
95. Scheduled elections and historical turnouts.
96. Degree of control over the population:
  - a. Identification required.
  - b. Border-crossing procedures.
97. Relationship with US or multinational governments, national governments, and criminal elements.
98. Political factions and boundaries.
99. Political traditions.
100. Grievances.
101. Censorship.
102. Nepotism and other clan, tribal, or social ties.
103. Civil defense and disaster preparedness (organization, plans, training, equipment, and resources): Evacuation routes.
104. Legal system:
  - a. system of laws;
  - b. applicable treaties;
  - c. courts and tribunals;
  - d. procedures; and
  - e. records (birth and deeds).
105. Property control.
106. Monetary system (formal and informal).

107. Domestic and foreign trade:

- a. taxation and tariffs;
- b. customs requirements;
- c. rationing and price controls;
- d. economic performance and contribution to gross national product;
- e. economic aid;
- f. perception of relative deprivation;
- g. trade unions; and
- h. competition with the black market and organized crime.

108. Aside from friendly and threat forces, the society is the only thinking component of the urban environment able to rapidly impact the urban operation. (Even people going about their daily routines can unwittingly hamper the mission.) Urban residents create conditions for restrictive rules of engagement, increase stress on soldiers and logistic capabilities, and confuse threat identification (see Threat Considerations in this appendix). Demographic, health, safety, ethnic, and cultural concerns will be essential considerations in most UO. Other situational factors—the mission, enemy, and time available—dictate the balance between the level of detail and analysis to support the overall urban operation with the level of detail that commanders and their staffs can achieve. However, an IPB that fails to devote enough time and resources to societal analysis can find large elements of the population turned against the Army force. Analyzing the urban society first may help to focus or limit further analysis of the terrain and infrastructure, saving time and ISTAR resources.

## **URBAN INFRASTRUCTURE**

109. Functional and analytical overlap readily appears when examining urban infrastructures. They are composed of physical structures or facilities and people. Hence, much of the analysis conducted for terrain and society can apply when assessing the urban infrastructure. For example, commanders, staffs, and analysts could not effectively assess the urban economic and commercial infrastructure without simultaneously considering labor. All aspects of the society relate and can be used to further analyze the urban work force since they are a sub-element of the urban society. Similarly, the FLOCARK aspects used to evaluate terrain may also apply to the urban infrastructure, especially considerations of key terrain.

## **SIGNIFICANT URBAN INFRASTRUCTURE CHARACTERISTICS TRANSPORTATION AND DISTRIBUTION**

110. **Water:**

- a. shipyards and other port and harbor facilities;

- b. inland waterways, canals, and locks;
- c. offshore pipeline berths;
- d. cargo storage and handling;
- e. types and number of ships, boats, and ferries; and
- f. dams.

111. **Streets and roads:**

- a. bridges and fords;
- b. over-and underpasses;
- c. raised embankments, tunnels, culverts, and other subterranean features (widths and clearances);
- d. parking areas (surface, subsurface, and supersurface);
- e. weight restrictions;
- f. traffic light operations;
- g. traffic patterns;
- h. widths; and
- i. surface materials.

112. **Rail:**

- a. lines;
- b. terminals;
- c. switchyards and junctions;
- d. subways, bridges, elevated rail lines, and underpasses (clearances);
- e. track gauges;
- f. types and number of rolling stock; and
- g. electrification.

113. **Air:**

- a. airfields and runways (including capabilities);

Unique Operations—Urban

- b. heliports and helipads (including rooftop);
  - c. types and number of aircraft; and
  - d. cargo storage and handling.
114. Trucking companies and delivery services.
115. Available material-handling equipment.
116. Rush hour and market time considerations.
117. Seasonal (weather) effects.
118. Rubble effects.
119. Impact of dislocated civilians and migration patterns.
120. Likely population congregation points.
121. Identifiable primary and alternate lines of economics and commerce.
122. **Industries:**
- a. types and locations;
  - b. important companies (including US or allied); and
  - c. military production facilities.
123. Sources of raw materials.
124. **Use of toxic industrial materials and biological agents:**
- a. agriculture (insecticides, herbicides, and fertilizers);
  - b. manufacturing;
  - c. cleaning; and
  - d. research.
125. **Food types, quantities, and sources:**
- a. requirements and availability;
  - b. storage and processing; and
  - c. cleanliness standards.



- 126. Stores, shops, restaurants, hotels, and strip malls.
- 127. **Recreation facilities:**
  - a. outdoor and amusement parks; and
  - b. stadiums and other sports facilities.
- 128. Machine shops.
- 129. Brick and lumber yards.
- 130. Banking and investment institutions.

#### **ADMINISTRATION AND HUMAN SERVICES**

- 131. **Police and fire protection:**
  - a. headquarters, station, and key facilities locations;
  - b. organization and strengths;
  - c. equipment;
  - d. functions, authority, and jurisdictional boundaries; and
  - e. contract guard services.
- 132. **Welfare and public assistance:**
  - a. monetary assistance;
  - b. orphanages;
  - c. elderly care facilities.
- 133. **Water supply systems:**
  - a. water sources and storage (lakes, reservoirs, cisterns, pools, and public baths);
  - b. water treatment and quality;
  - c. pumping stations and other distribution methods (trucks, bottles); and
  - d. hydrant locations.
- 134. Snow removal capabilities.
- 135. Street light operations.

136. **Health facilities:**

- a. hospitals;
- b. emergency medical services;
- c. mental institutions;
- d. medical supplies and equipment;
- e. research and pharmaceutical buildings; and
- f. blood banks.

137. **Governmental buildings:**

- a. embassies;
- b. capitol building;
- c. legislative, judicial, and ministry buildings; and
- d. hall of records.

138. **Cultural resources:**

- a. religious buildings (churches and mosques);
- b. shrines, monuments, and other historical structures; and
- c. schools, museums, theaters, and libraries.

139. **Waste and sanitation:**

- a. types (solid, sewage, and toxic);
- b. collection, processing, and disposal;
- c. dumps or landfills; and
- d. drainage systems.

140. Effects of military control measures on providing vital human services.

**ENERGY**

141. **Types:**

- a. electric;

- b. oil;
- c. coal;
- d. natural gas;
- e. nuclear;
- f. solar;
- g. hydroelectric; and
- h. geothermal.

142. **Facilities:**

- a. production and processing; and
- b. storage.

143. **Distribution:**

- a. pipelines (above and below ground);
- b. power lines (overhead and underground);
- c. water, rail, and road; and
- d. potential hazards.

**COMMUNICATION AND INFORMATION**

144. **Print media:**

- a. newspapers, periodicals, and pamphlets;
- b. billboards and posters; and
- c. postal facilities.

145. **Telephone facilities:**

- a. wire or wireless; and
- b. facsimile machines.

146. Telegraph facilities.

147. Radio facilities.

148. Police, fire, and rescue systems.
149. Security systems.
150. Television facilities.
151. Computers and the internet.
152. Antennas, towers, relay stations, and lines (surface and subsurface).
153. Integration of space-based capabilities.
154. Public forums and speech.
155. Low-technology media (cars horns, drums, graffiti, and burning tires).
156. **Key media organizations and reporters:**
  - a. local;
  - b. international; and
  - c. US.

## **THREAT CONSIDERATIONS**

157. The strategic environment is unstable and uncertain. Intelligence analysts identify and analyze the threat in steps three and four of IPB during the Processing phase of the Intelligence Cycle. They analyze the threat's composition, strength, disposition, leadership, training, morale, weapons and capabilities, vulnerabilities, internal logistics and external support, doctrine (if any), strategy or modus operandi, and tactics. The threat can take a variety of forms:

- a. conventional military forces;
- b. paramilitary forces;
- c. guerrillas and insurgents;
- d. terrorists; and
- e. militia or special police organizations.

158. A general study of guerrilla and insurgent tactics, techniques, and procedures may prove beneficial to many types of operations regardless of the actual composition or type of threat forces. Insurgent strategies and tactics may work especially well in this complex environment and will likely be a part of any threat COA. Particularly, commanders understand how a threat might restrict itself by the laws of land warfare and similar conventions, or exploit the use of these conventions to its own gain. These threats, or aspects of these threats, will likely be, at least initially, asymmetric to us. No, or incomplete, doctrinal templates may exist. It is critical

that analysts evaluate, update (or create), and manage threat databases early (and continuously) in the IPB process.

## ENVIRONMENTAL THREATS

159. While threats vary, by definition they share a common characteristic: the capability and intent to negatively influence our mission accomplishment. When recognizable as forces trained for warfighting, they are referred to as the enemy or adversary. We broaden our concept of the threat when analyzing the urban environment's terrain, societal, and infrastructure characteristics. Analysis includes many environmental dangers (potentially affecting both sides of a conflict as well as noncombatants) such as:

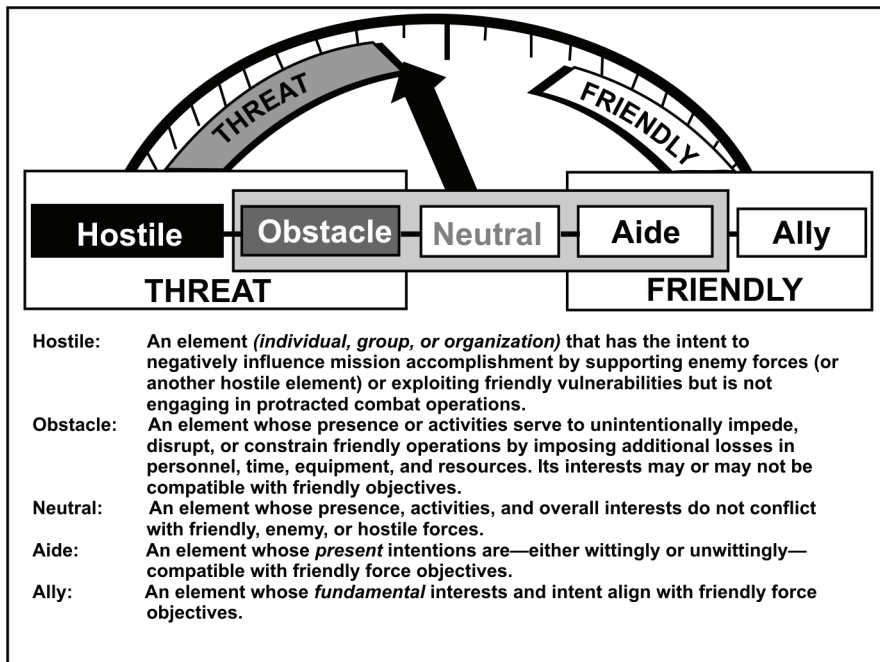
- a. natural disasters (earthquakes, fires, floods, and heavy snows);
- b. hunger, starvation, and malnutrition;
- c. water shortages;
- d. rampant disease; and
- e. pollution and toxic industrial materials.

160. A critical difference between the latter forms of threat (White SA) and the former is the lack of *intent* to do harm. The latter may stand alone as threats, or these conditions may be created, initiated, or used by the enemy or a hostile as a weapon or tool. Threat analysis includes identifying and describing how each relevant characteristic of the area of operation can hinder mission accomplishment. This analysis, particularly during stability operations and support operations, may require extensive coordination and cooperation with urban civil authorities, law enforcement, and numerous governmental and non-governmental organizations. This illustrates the utility of distinguishing sentient and therefore influential neutral aspects on the battlespace (White SA) from the neutral terrain and weather aspects (Brown SA).

## CIVILIANS

161. In a major theatre war where offensive and defensive operations are conducted against a clear enemy, the third step of IPB—identify the threat—is readily accomplished. Its well-established procedures include updating or creating threat models and identifying threat capabilities. This same analytic process includes modeling population subgroups. The process applies to smaller-scale contingencies, peacetime military engagement activities where stability operations and support operations dominate, and urban offensive and defensive operations where civilians are in close proximity to Army forces. This adaptation is necessary to further broaden the threat concept to include specific elements of the urban society and, in some instances, non-governmental organizations (NGOs) and other civilian agencies working in the urban area. In many stability operations, this modification can account for opposing armed forces that are not an enemy but are a threat to the mission. As discussed we must avoid classifying or thinking of these threats as *the enemy*.

## NEED FOR MORE ACCURATE CATEGORIES



162. Army forces recognized that the threat evaluation was not a straightforward assessment of the capabilities of a known, armed enemy. This resulted in developing categories for assessing the disposition of population subgroups within an AO: enemy, neutral, or friendly (Red, White or Blue SA). Sectors of the population were labelled based on which side (if any) each group seemed to favour. This early method helped to mitigate Army forces’ situational uncertainty. It provides a general idea of the level of support or resistance Army forces might expect by elements of the urban population.

163. Aside from the flawed labelling of every threat as an enemy, the initial attempt at categorization was a good first step. However, it required refinement to better indicate the level of threat or utility that civilian groups pose for Army forces conducting UO. It also provides a clearer basis for detecting and monitoring shifts in key or relevant relationships (see Figure 2A-3). Commanders should note that where a group or subgroup falls along this continuum is relative to the perspective from which it is viewed. This is an especially important consideration in multinational and interagency UO.

164. Although necessary and greatly improved, we recognise that no system of categorization will precisely classify any given group; no system can reflect the overall nature and complexity of the urban society. A single group may fit in a particular category. It may also have components in two or more categories simultaneously. Often, it can shift among categories during an operation. A given group may have individuals in it who have interests identical to or different from that group and these individual interests may change over time.

**Figure 2A-3: Continuum of Relative Interests**

165. A peace enforcement operation illustrates the varying nature of groups. An identified criminal group might be classified as an *obstacle* to the commander’s mission because its illegal activities impede unit progress. Its compelling interest, however, is to make money rather than interfere with friendly forces. In the same operation, one of the armed belligerents may be intent

on disrupting the peace process and would be, therefore, classified as a *hostile*. (Again, not as an enemy unless they engaged in prolonged combat operations against the peacekeeping force.) The belligerent force may finance the criminal organization to assist in further obstructing the peace mission. The criminal organization moves from being an obstacle to that of a hostile.

166. This classification effort is synchronous, demanding constantly review and update during the IPB process. Groups or individuals can be influenced, for example into assisting either the friendly or opposing force. People will also act opportunistically, shifting support and alliances as perceived advantages arise. Even seemingly passive and law-abiding members of the urban society may conduct themselves in unexpected ways given the right conditions (mob violence, for example).

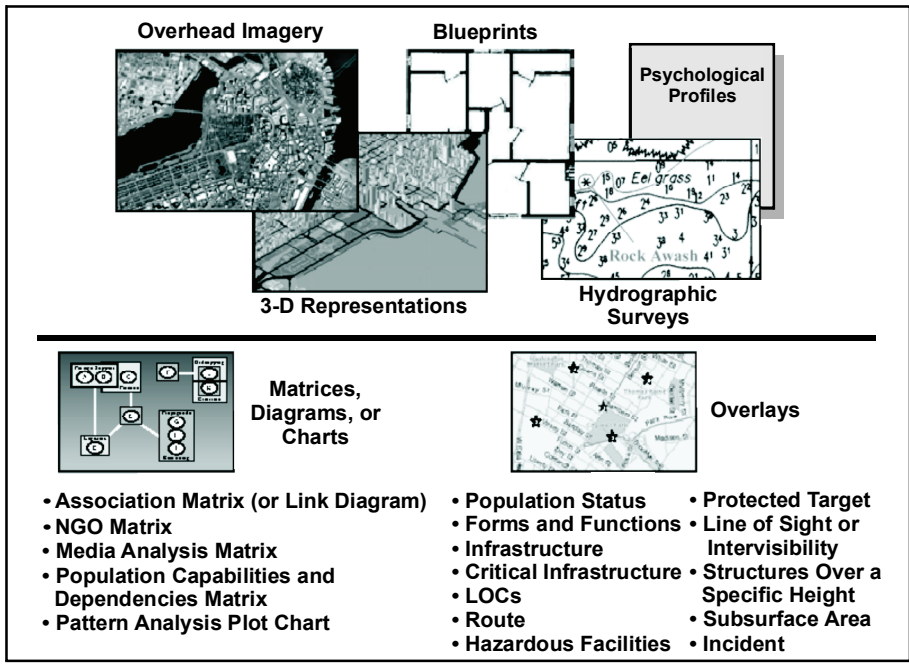
### **SIMILARITIES, DIFFERENCES, CAPABILITIES, AND VULNERABILITIES**

167. **Focal Points for Analysis.** Similarities and differences in interests and interdependencies between groups are often focal points for analysis (and the allocation of ISTAR assets). These may indicate how commanders may influence, coerce, or align civilian interests and intentions with mission objectives. Simultaneously, commanders consider an analysis of the civilian element's (individual, group, or organization) *capability* to influence the accomplishment of friendly objectives. They also consider civilians' vulnerabilities and dependencies. If a civilian group's fundamental interests align with friendly objectives and this group has the intent to assist friendly forces, it is clearly an ally. However, with limited or no capability, a specific group will not help move the commander any closer to achieving his desired end state and accomplishing the mission. Then the commander would normally limit the resources expended on this group to those necessary for maintaining their commitment to common goals and objectives.

168. **Creating Civilian Capability as Aide or Ally.** In contrast, commanders may provide a group with resources to enhance or create the capability to assist in mission accomplishment. They may do this if they felt that the assistance gained (or reduction to threat support) exceeds the potential diminishment of their own force's capabilities from losing those same resources. Commanders would also consider the group's dependencies (such as food, infrastructure, and protection) and overall vulnerability to outside influence. If vulnerable to friendly influence or control (understanding urban societal considerations and matters of perception are critical in this regard), then forces are likely susceptible to enemy or hostile manipulation. Even if commanders can generate extra resources (and not significantly affect their own force's capabilities), they still conduct this same cost-benefit analysis to determine which civilian group (if any) should receive resources.

### **GREATEST POTENTIAL NEARER THE CENTER**

169. The most critical population sectors often are those nearest the middle of the spectrum, particularly if their capabilities (or potential) significantly degrade or enhance mission accomplishment. These are the obstacle, neutral, or aide categories. If their interests can be adequately understood, commanders may have great chance to influence the population segment and significantly contribute to mission accomplishment.



**POLITICAL AND STRATEGIC CONCERNS**

170. The ‘aid’ category may be of significant political or strategic concern. An ‘aid’ group may be invaluable for accomplishing intermediate objectives but become a vulnerability to accomplishing a larger stability operation. (Even an urban offensive or defensive operation is likely to transition to a stability operation.) Commanders may provide resources to a criminal organization to assist in defeating insurgent forces during urban combat operations. Once these forces have been subdued, the interests (monetary gain and defeat of the threat) linking friendly forces with this criminal element disappear. What may remain is a criminal organization with more power than a reconstituted or newly established law enforcement agency and a truly destabilizing force. This also illustrates the second- and third-order thinking that will be required of commanders and their staffs during UO.

**Figure 2A-4: Urban IPB Tools and Products**

**URBAN IPB TOOLS AND PRODUCTS**

171. Adapting IPB to UO involves recognizing the intent of each of the steps of the process and adapting analytic tools and products to help meet those intentions in a complex environment. Standard tools and products include: modified combined obstacle overlays and doctrinal, situation, event, and decision support templates or matrices. In addition to these standards aids, staffs and analysts may develop or produce other innovative tools to assist commanders in their situational under-standing of the complex urban environment. Staffs and analysts may also initiate requests for products (or information) from their higher headquarters or other agencies with the technical means or control over assets when the capability lies outside the Army force’s means. The tools that developed or requested may include:

- a. overhead imagery;



- b. three-dimensional representations;
- c. infrastructure blueprints;
- d. hydrographic surveys;
- e. psychological profiles;
- f. matrices, diagrams, or charts; and
- g. various urban overlays.

### **OVERHEAD IMAGERY**

172. Recent satellite imagery or aerial photography will be required for most types of UO. Such images clarify vague and inaccurate maps and other graphic representations. Satellite assets provide responsive data input into the geographic information systems (GIS). J2 Geomatics Imagery & Counter Intelligence coordinates Global Geospatial Information and Services (GGI&S) support to CF land forces in deployed and domestic operations. GIS will often form the basis for creating the three-dimensional representations and the various overlays described below. Frequently updated (or continuous real-time) satellite or aerial imagery may be required for detailed pattern analysis and maintaining accurate situational understanding. For example, imagery taken during an area's rainy season may appear significantly altered during the summer months.

173. The Deployed Imagery Support Team (DIST) is a deployable capability consisting of one to three pers with integral high- bandwidth IT/ comms connectivity, providing access to national level IMINT and imagery, specialist field analysis and exploitation of imagery (a/ c gun camera and Head- up Display [HUD] recorded footage, hand- held photography, etc.). While DISTs are normally used on brigade-level operations, operational and strategic considerations may dictate their use on battle-group sized ops as part of an enhanced ISTAR component.

174. Likewise, a combined Geomatics and Imagery Support team could be established and linked to the brigade All Source (Intelligence) Cell.

### **THREE-DIMENSIONAL REPRESENTATIONS**

175. Often, physical or computer-generated (virtual) three-dimensional representations may be required to achieve situational understanding. These representations include specific sections of the urban area or specific buildings or structures. Such detail is particularly important for special operating forces and tactical-level units. These units require detail to achieve precision, increase the speed of the operation, and lessen friendly casualties and collateral damage.

### **INFRASTRUCTURE BLUEPRINTS**

176. Urban police, fire, health, public utilities, city engineers, realtors, and tourist agencies often maintain current blueprints and detailed maps. Such documents may prove useful to update or supplement military maps or to clarify the intricacies of a specific infrastructure. They

may prove critical in operations that require detailed information to achieve the speed and precision required for success. Without such detail, analysts determine interior configurations based on a building's outward appearance. That task becomes more difficult as the building size increases.

## HYDROGRAPHIC SURVEYS

177. Many urban areas are located along the world's littorals regions and major rivers. Therefore, commanders may need hydrographic surveys to support amphibious, river crossing, and logistic operations.

## BIOGRAPHICAL INTELLIGENCE (BIOINT)

178. Psychological profiles analyze how key groups, leaders, or decision-makers think or act—their attitudes, opinions, and views. They include an analysis of doctrine and strategy, culture, and historical patterns of behavior. The degree to which the attitudes, beliefs, and backgrounds of the military either reflect or conflict with the urban populace's (or civilian leadership's) core values is extremely important in this analysis. Psychological profiles help to assess the relative probability of a threat (or noncombatant group) adopting various COAs as well as evaluating a threat's vulnerability to deception. These profiles are derived from open-source intelligence as well as signals and human intelligence.

## MATRICES, DIAGRAMS, OR CHARTS

179. Matrices, diagrams, and charts help to identify key relationships among friendly and threat forces and other significant elements of the urban environment. These tools and products include:

- a. **Association Matrix (or Link Diagram).** The association matrix helps identify the nature and relationship between individuals and groups. Similarly, the link diagram graphically represents key relationships between population elements. These tools are critical for identifying common interests. A significant matrix may be a comparison of cultural perspectives—ideology, politics, religion, acceptable standards of living, and mores—between urban population groups and Army (and multinational) forces to help understand and accurately predict a civilian element's actions.
- b. **NGO Matrix.** Potentially a form of the association matrix, this matrix contains each NGO's location, capabilities, and relationships (with specific elements of the civilian population, threat and friendly forces, and other NGOs).
- c. **Media Analysis Matrix.** This conceptual tool can be used to evaluate each information medium (and the multiple elements within each). Such mediums can include radio, television, print, word of mouth, Internet, and graffiti with its effect on specific sectors of urban population (or larger audiences). This can assist in the perception analysis.

- d. **Population Capabilities and Dependencies Matrix.** This matrix is similar to the NGO matrix. It describes the capabilities and dependencies of the urban population elements. It is essential in identifying each element's role (threat or friendly) and influence. Depending on their location along the threat-friendly continuum, dependencies may be vulnerabilities that must be attacked or sustained and protected.

180. **Pattern Analysis Plot Chart.** This chart depicts the times and dates of a selected activity (such as ambushes, bombings, and demonstrations) to search for patterns of activity for predictive purposes as well as to discern intent.

## VARIOUS URBAN OVERLAYS

181. Staffs can produce various map overlays. These overlays depict physical locations of some aspect critical to the planning and conduct of the urban operation. J2 Geomatics Imagery & Counter Intelligence can produce many overlays as an integrated map product (including satellite imagery). These overlays can include the:

- a. **Population Status Overlay.** This tool depicts the physical location of various groups identified by any significant social category such as religion or language. During offensive and defensive operations, it may simply be where significant numbers of people are "huddled" or located throughout the battlefield. Population dispersal can vary significantly through the day, particularly at night, and must be considered as part of the overall analysis leading to the development of this tool.
- b. **Forms and Functions Overlay.** Based on the urban model, this over-lay depicts the urban core or central business district, industrial areas, outlying high-rise areas, commercial ribbon areas, and residential areas, to include shantytowns.

Outlying high-rise areas, commercial ribbon areas, and residential areas, to include shantytowns.

- c. **Infrastructure Overlay.** This overlay is actually a series of overlays. It depicts identifiable subsystems in each form of urban infrastructure: communications and information, transportation and distribution, energy, economics and commerce, and administration and human services. Each subsystem can be broken down into more detail. Infrastructure data may be used to develop three other overlays:
  - (1) **Critical Infrastructure Overlay.** This tool displays specific elements of the urban infrastructure that, if harmed, will adversely affect the living conditions of the urban society to the detriment of the mission. These elements may include power generation plants, water purification plants and pumping stations, and sewage treatment plants. This information could be coded as part of the overall infrastructure overlay.
  - (2) **Lines of Communications (LOCs) Overlay.** The LOCs overlay highlights transportation systems and nodes, such as railways, road, trails, navigable waterways, airfields, and open areas for drop zones and landing

zones. It also includes subsurface areas and routes such as sewage, drainage, and tunnels and considers movement between supersurface areas. The LOCs overlay and the route overlay (below) consider traffic conditions, times, and locations, to include potential points where significant portions of the urban population may congregate.

- (3) **Route Overlay.** This overlay emphasizes mobility information to assist commanders and planners in determining what forces and equipment can move along the urban area’s mobility corridors. Pertinent data includes street names, patterns, and widths; bridge, underpass, and overpass locations; load capacities; potential sniper and ambush locations (which may be its own overlay); and key navigational landmarks. The structures over a specific height overlay and subsurface overlay may assist in its development. As with the LOCs overlay, commanders, planners, and analysts think in all dimensions.
- d. **Line of Sight or Intervisibility Overlay.** This product creates a pro-file view (optical or electronic) of the terrain from the observer’s location to other locations or targets. It can show trajectory or flight line masking as well as obstructed or unobstructed signal pathways.
- e. **Structures Over a Specific Height Overlay.** This level of detail may also be critical to communications, fires, and Army airspace command and control (air mobility corridors especially low-level flight profiles). Incorporated as part of this overlay, it may include floors or elevations above limitations for particular weapon systems at various distances from the structure.
- f. **Subsurface Area Overlay.** As an alternate to the building or structure height overlay, this product provides the locations of basements, underground parking garages, sewers, tunnels, subways, naturally occurring subterranean formations, and other subsurface areas. Similar to elevation “dead spaces,” this overlay may show areas that exceed Depression capabilities of weapon systems and potential threat ambush locations—again, affecting maneuver options.
- g. **Urban Logistic Resources Overlay.** This product identifies the locations of urban logistic resources that may contribute to mission accomplishment. It may contain specific warehouse sites, hospitals and medical supply locations, viable food stores, building material locations, fuel storage areas, car or truck lots, maintenance garages, and appliance warehouses. (NGO locations, taken from the NGO matrix, may be an essential, overlapping element of this overlay.)
- h. **Hazardous Facilities Overlay.** This overlay identifies urban structures with known or suspected chemical, biological, or radiological features, such as nuclear power plants, fertilizer plants, oil refineries, pharmaceutical plants, and covert locations for producing weapons of mass destruction. These locations are critical to maneuver and fire planning.

- i. **Protected Target Overlay.** This overlay depicts terrain that should not be destroyed or attacked based on restrictions due to international, host-nation, or US law and subsequent rules of engagement. These may include schools, hospitals, historical or other culturally significant monuments, and religious sites. This overlay may incorporate no-fire areas, such as special operations forces locations, critical infrastructure, logistic sources, and hazardous sites that must be protected as part of the commander's concept of the operation.
- j. **Incident Overlay.** Similar to the pattern analysis plot chart, this product depicts the location of different threat actions and types of tactics employed to uncover recurring routines, schemes, methods, tactics, or techniques and overall threat interests, objectives, or the desired end state.

182. The above IPB tools and products constitute a small sampling of what staffs and analysts can produce. They are limited only by their imaginations and mission needs (not all tools presented above may be relevant or necessary to every operation). Many products can be combined into a single product or each can generate further products of increasing level of detail. This is similar to transparent overlays positioned one atop another on a map. Technology may allow for more urban data to be combined, compared, analyzed, displayed, and shared. The challenge remains to provide timely, accurate, complete, and relevant information in an understandable and usable form *without overloading the commander*.



## ANNEX B TO CHAPTER 2 FERAL CITIES

Richard J. Norton, *Naval War College Review* Autumn 2003: 97–106

Imagine a great metropolis covering hundreds of square miles. Once a vital component in a national economy, this sprawling urban environment is now a vast collection of blighted buildings, an immense petri dish of both ancient and new diseases, a territory where the rule of law has long been replaced by near anarchy in which the only security available is that which is attained through brute power.<sup>1</sup> Such cities have been routinely imagined in apocalyptic movies and in certain science-fiction genres, where they are often portrayed as gigantic versions of T. S. Eliot’s *Rat’s Alley*.<sup>2</sup> Yet *this* city would still be globally connected. It would possess at least a modicum of commercial linkages, and some of its inhabitants would have access to the world’s most modern communication and computing technologies. It would, in effect, be a feral city.

Admittedly, the very term “feral city” is both provocative and controversial. Yet this description has been chosen advisedly. The feral city may be a phenomenon that never takes place, yet its emergence should not be dismissed as impossible. The phrase also suggests, at least faintly, the nature of what may become one of the more difficult security challenges of the new century.

Over the past decade or so a great deal of scholarly attention has been paid to the phenomenon of failing states.<sup>3</sup> Nor has this pursuit been undertaken solely by the academic community. Government leaders and military commanders as well as directors of nongovernmental organizations and intergovernmental bodies have attempted to deal with faltering, failing, and failed states. Involvement by the United States in such matters has run the gamut from expressions of concern to cautious humanitarian assistance to full-fledged military intervention. In contrast, however, there has been a significant lack of concern for the potential emergence of failed cities. This is somewhat surprising, as the feral city may prove as common a feature of the global landscape of the first decade of the twenty-first century as the faltering, failing, or failed state was in the last decade of the twentieth. While it may be premature to suggest that a truly feral city—with the possible exception of Mogadishu—can be found anywhere on the globe today, indicators point to a day, not so distant, when such examples will be easily found.

This article first seeks to define a feral city. It then describes such a city’s attributes and suggests why the issue is worth international attention. A possible methodology to identify cities that have the potential to become feral will then be presented. Finally, the potential impact of feral cities on the U.S. military, and the U.S. Navy specifically, will be discussed.

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<sup>1</sup> I am indebted to my colleague Dr. James Miskel for the “petri dish” analogy.

<sup>2</sup> Thomas Stern Eliot, “The Wasteland,” in *The New Oxford Book of English Verses: 1250–1950*, ed. Helen Gardner (New York: Oxford University Press, 1972), p. 881.

<sup>3</sup> See, for example, [James F. Miskel and Richard J. Norton, “Spotting Trouble: Identifying Faltering and Failing States,”](#) *Naval War College Review* 50, no. 2 (Spring 1997), pp. 79–91.

## DEFINITION AND ATTRIBUTES

The putative “feral city” is (or would be) a metropolis with a population of more than a million people in a state the government of which has lost the ability to maintain the rule of law within the city’s boundaries yet remains a functioning actor in the greater international system.<sup>4</sup>

In a feral city social services are all but nonexistent, and the vast majority of the city’s occupants have no access to even the most basic health or security assistance. There is no social safety net. Human security is for the most part a matter of individual initiative. Yet a feral city does not descend into complete, random chaos. Some elements, be they criminals, armed resistance groups, clans, tribes, or neighborhood associations, exert various degrees of control over portions of the city. Intercity, city-state, and even international commercial transactions occur, but corruption, avarice, and violence are their hallmarks. A feral city experiences massive levels of disease and creates enough pollution to qualify as an international environmental disaster zone. Most feral cities would suffer from massive urban hypertrophy, covering vast expanses of land. The city’s structures range from once-great buildings symbolic of state power to the meanest shantytowns and slums. Yet even under these conditions, these cities continue to grow, and the majority of occupants do not voluntarily leave.<sup>5</sup>

Feral cities would exert an almost magnetic influence on terrorist organizations. Such megalopolises will provide exceptionally safe havens for armed resistance groups, especially those having cultural affinity with at least one sizable segment of the city’s population. The efficacy and portability of the most modern computing and communication systems allow the activities of a worldwide terrorist, criminal, or predatory and corrupt commercial network to be coordinated and directed with equipment easily obtained on the open market and packed into a minivan. The vast size of a feral city, with its buildings, other structures, and subterranean spaces, would offer nearly perfect protection from overhead sensors, whether satellites or unmanned aerial vehicles. The city’s population represents for such entities a ready source of recruits and a built-in intelligence network. Collecting human intelligence against them in this environment is likely to be a daunting task. Should the city contain airport or seaport facilities, such an organization would be able to import and export a variety of items. The feral city environment will actually make it easier for an armed resistance group that does not already have connections with criminal organizations to make them. The linkage between such groups, once thought to be rather unlikely, is now so commonplace as to elicit no comment.

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<sup>4</sup> Perhaps the most arbitrary component of this definition is the selection of a million inhabitants as a defining characteristic of a feral city. An earlier approach to this issue focused on *megacities*, cities with more than ten million inhabitants. However, subsequent research indicated that much smaller cities could also become feral, and so the population threshold was reduced. For more information on concepts of urbanization see Stanley D. Brunn, Jack F. Williams, and Donald J. Zeigler, *Cities of the World: World Regional Urban Development* (Lanham, Md.: Rowman & Littlefield, 2003), pp. 5–14.

<sup>5</sup> Such a pattern is already visible today. See Brunn, Williams, and Zeigler, chap. 1.



## WHAT'S NEW?

But is not much of this true of certain troubled urban areas of today and of the past? It is certainly true that cities have long bred diseases. Criminal gangs have often held sway over vast stretches of urban landscape and slums; “projects” and shantytowns have long been part of the cityscape. Nor is urban pollution anything new—London was environmentally toxic in the 1960s. So what is different about “feral cities”?

The most notable difference is that where the police forces of the state have sometimes *opted* not to enforce the rule of law in certain urban localities, in a feral city these forces will not be *able* to do so. Should the feral city be of special importance—for example, a major seaport or airport—the state might find it easier to negotiate power and profit-sharing arrangements with city power centers to ensure that facilities important to state survival continue to operate. For a weak state government, the ability of the feral city to resist the police forces of the state may make such negotiations the only option. In some countries, especially those facing massive development challenges, even the military would be unequal to imposing legal order on a feral city. In other, more developed states it might be possible to use military force to subdue a feral city, but the cost would be extremely high, and the operation would be more likely to leave behind a field of rubble than a reclaimed and functioning population center.

Other forms of state control and influence in a feral city would also be weak, and to an unparalleled degree. In a feral city, the state’s writ does not run. In fact, state and international authorities would be massively ignorant of the true nature of the power structures, population, and activities within a feral city.

Yet another difference will be the level and nature of the security threat posed by a feral city. Traditionally, problems of urban decay and associated issues, such as crime, have been seen as domestic issues best dealt with by internal security or police forces. That will no longer be an option.

## REASONS FOR CONCERN

Indeed, the majority of threats posed by a feral city would be viewed as both nontraditional and transnational by most people currently involved with national security. Chief among the nontraditional threats are the potential for pandemics and massive environmental degradation, and the near certainty that feral cities will serve as major transshipment points for all manner of illicit commodities.

As has been noted, city-born pandemics are not new. Yet the toxic environment of a feral city potentially poses uniquely severe threats. A new illness or a strain of an existing disease could easily breed and mutate without detection in a feral city. Since feral cities would not be hermetically sealed, it is quite easy to envision a deadly and dangerously virulent epidemic originating from such places. As of this writing, the SARS outbreak of 2003 seems to offer an example of a city (Guangdong, China) serving as a pathogen incubator and point of origin of an intercontinental epidemic.<sup>6</sup> In the case of SARS, the existence of the disease was rapidly

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<sup>6</sup> “China Criticized for Dragging Feet on Outbreak,” *News in Science*, 7 April 2003, p. 1.

identified, the origin was speedily traced, and a medical offensive was quickly mounted. Had such a disease originated in a feral city, it is likely that this process would have been much more complicated and taken a great deal more time. As it is, numerous diseases that had been believed under control have recently mutated into much more drug-resistant and virulent forms.

Globally, large cities are already placing significant environmental stress on their local and regional environments, and nowhere are these problems more pronounced than in coastal metropolises. A feral city—with minimal or no sanitation facilities, a complete absence of environmental controls, and a massive population—would be in effect a toxic-waste dump, poisoning coastal waters, watersheds, and river systems throughout their hinterlands.<sup>7</sup>

Major cities containing ports or airfields are already trying to contend with black-market activity that ranges from evading legal fees, dues, or taxes to trafficking in illegal and banned materials. Black marketeers in a feral city would have carte blanche to ship or receive such materials to or from a global audience.<sup>8</sup>

As serious as these transnational issues are, another threat is potentially far more dangerous. The anarchic allure of the feral city for criminal and terrorist groups has already been discussed. The combination of large profits from criminal activity and the increasing availability of all families of weapons might make it possible for relatively small groups to acquire weapons of mass destruction. A terrorist group in a feral city with access to world markets, especially if it can directly ship material by air or sea, might launch an all but untraceable attack from its urban haven.

## GOING FERAL

Throughout history, major cities have endured massive challenges without “going feral.” How could it be determined that a city is at risk of becoming feral? What indicators might give warning? Is a warning system possible?

The answer is yes. This article offers just such a model, a taxonomy consisting of twelve sets of measurements, grouped into four main categories.<sup>9</sup> In it, measurements representing a healthy city are “green,” those that would suggest cause for concern are “yellow,” and those that indicate danger, a potentially feral condition, “red.” In the table below, the upper blocks in each category (column) represent positive or healthy conditions, those at the bottom unhealthy ones.

The first category assesses the ability of the state to govern the city. A city “in the green” has a healthy, stable government—though not necessarily a democratically elected one. A democratic city leadership is perhaps the most desirable, but some cities governed by authoritarian regimes

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<sup>7</sup> The issue of pollution stemming from coastal cities is well documented. For example, see chapter two of *United Nations Environmental Program, Global Environmental Outlook—2000* (London: Earthscan, 2001).

<sup>8</sup> The profits involved in such enterprises can be staggering. For example, the profits from smuggled cigarettes in 1997 were estimated to be as high as sixteen billion dollars a year. Among the identified major smuggling centers were Naples, Italy; Hong Kong; and Bogota, Colombia. Raymond Bonner and Christopher Drew, “Cigarette Makers Are Seen as Aiding Rise in Smuggling,” *New York Times*, 26 August 1997, C1.

<sup>9</sup> A similar approach was used in Miskel and Norton, cited above, for developing a taxonomy for identifying failing states.

could be at extremely low risk of becoming feral. City governments “in the green” would be able to enact effective legislation, direct resources, and control events in all parts of the city at all times.<sup>10</sup> A yellow indication would indicate that city government enjoyed such authority only in portions of the city, producing what might be called “patchwork” governance, or that it exerted authority only during the day—“diurnal” governance. State authorities would be unable to govern a “red” city at all, or would govern in name only.<sup>11</sup> An entity within the city claiming to be an official representative of the state would simply be another actor competing for resources and power.

## THE HEALTH OF CITIES

	Government	Economy	Services	Security
<b>Healthy</b>	Enacts effective legislation, directs resources, controls events in all portions of the city all the time. Not corrupt.	Robust. Significant foreign investment. Provides goods and services. Possesses stable and adequate tax base.	Complete range of services, including educational and cultural, available to all city residents.	Well regulated by professional, ethical police forces. Quick response to wide spectrum of requirements.
<b>Marginal</b>	Exercises only “patchwork” or “diurnal” control. Highly corrupt.	Limited/no foreign investment. Subsidized or decaying industries and growing deficits.	Can manage minimal level of public health, hospital access, potable water, trash disposal.	Little regard for legality/human rights. Police often matched/stymied by criminal “peers.”
<b>Going Feral</b>	At best has negotiated zones of control; at worst does not exist.	Either local subsistence industries or industry based on illegal commerce.	Intermittent to nonexistent power and water. Those who can afford to will privately contract.	Nonexistent. Security is attained through private means or paying protection.

The second category involves the city’s economy. Cities “in the green” would enjoy a productive mix of foreign investment, service and manufacturing activities, and a robust tax base. Cities afforded a “yellow” rating would have ceased to attract substantial foreign investment, be marked by decaying or heavily subsidized industrial facilities, and suffer from ever-growing deficits. Cities “in the red” would have no governmental tax base. Any industrial activity within their boundaries would be limited to subsistence-level manufacturing and trade or to illegal trafficking—in smuggled materials, weapons, drugs, and so on.

The third category is focused on city services. Cities with a “green” rating would not only have a complete array of essential services but would provide public education and cultural facilities to their populations. These services would be available to all sectors without distinction or bias. Cities with a yellow rating would be lacking in providing education and cultural opportunities but would be able to maintain minimal levels of public health and sanitation. Trash pickup, ambulance service, and access to hospitals would all exist. Such a city’s water supply would pass minimum safety standards. In contrast, cities in the “red” zone would be unable to supply more than intermittent power and water, some not even that.

Security is the subject of the fourth category. “Green” cities, while obviously not crime free, would be well regulated by professional, ethical police forces, able to respond quickly to a wide

<sup>10</sup> This is not to imply that such a city would be 100 percent law-abiding or that incidents of government failure could not be found. But these conditions would be the exception and not the rule.

<sup>11</sup> Not that this would present no complications. It is likely that states containing a feral city would not acknowledge a loss of sovereignty over the metropolis, even if this were patently the case. Such claims could pose a significant obstacle to collective international action.

spectrum of threats. “Yellow” cities would be marked by extremely high crime rates, disregard of whole families of “minor crimes” due to lack of police resources, and criminal elements capable of serious confrontations. A “yellow” city’s police force would have little regard for individual rights or legal constraints. In a “red” city, the police force has failed altogether or has become merely another armed group seeking power and wealth. Citizens must provide for their own protection, perhaps by hiring independent security personnel or paying protection to criminal organizations.

A special, overarching consideration is corruption. Cities “in the green” are relatively corruption free. Scandals are rare enough to be newsworthy, and when corruption is uncovered, self-policing mechanisms effectively deal with it. Corruption in cities “in the yellow” would be much worse, extending to every level of the city administration. In yellow cities, “patchwork” patterns might reflect which portions of the city were able to buy security and services and which were not. As for “red” cities, it would be less useful to speak of government corruption than of criminal and individual opportunism, which would be unconstrained.

### **CITY “MOSAICS”**

The picture of a city that emerges is a mosaic, and like an artist’s mosaic it can be expected to contain more than one color. Some healthy cities function with remarkable degrees of corruption. Others, robust and vital in many ways, suffer from appalling levels of criminal activity. Even a city with multiple “red” categories is not necessarily feral—yet. It is the overall pattern and whether that pattern is improving or deteriorating over time that give the overall diagnosis.

It is important to remember a diagnostic tool such as this merely produces a “snapshot” and is therefore of limited utility unless supported by trend analysis. “Patchwork” and “diurnal” situations can exist in all the categories; an urban center with an overall red rating—that is, a feral city—might boast a tiny enclave where “green” conditions prevail; quite healthy cities experience cycles of decline and improvement. Another caution concerns the categories themselves. Although useful indicators of a city’s health, the boundaries are not clearly defined but can be expected to blur.

***The Healthy City: New York.*** To some it would seem that New York is an odd example of a “green” city. One hears and recalls stories of corruption, police brutality, crime, pollution, neighborhoods that resemble war zones, and the like. Yet by objective indicators (and certainly in the opinion of the majority of its citizens) New York is a healthy city and in no risk of “going feral.” Its police force is well regulated, well educated, and responsive. The city is a hub of national and international investment. It generates substantial revenues and has a stable tax base. It provides a remarkable scope of services, including a wide range of educational and cultural opportunities. Does this favorable evaluation mean that the rich are not treated differently from the poor, that services and infrastructure are uniformly well maintained, or that there are no disparities of economic opportunity or race? Absolutely not. Yet despite such problems New York remains a viable municipality.

***The Yellow Zone: Mexico City.*** This sprawling megalopolis of more than twenty million continues to increase in size and population every year. It is one of the largest urban

concentrations in the world. As the seat of the Mexican government, it receives a great deal of state attention. However, Mexico City is now described as an urban nightmare.<sup>12</sup>

Mexico City's air is so polluted that it is routinely rated medically as unfit to breathe. There are square miles of slums, often without sewage or running water. Law and order is breaking down at an accelerating rate. Serious crime has doubled over the past three to four years; it is estimated that 15.5 million assaults now occur every year in Mexico City. Car-jacking and taxi-jacking have reached such epidemic proportions that visitors are now officially warned not to use the cabs. The Mexico City police department has ninety-one thousand officers—more men than the Canadian army—but graft and corruption on the force are rampant and on the rise. According to Mexican senator Adolfo Zinser, police officers themselves directly contribute to the city's crime statistics: "In the morning they are a policeman. In the afternoon they're crooks." The city's judicial system is equally corrupt. Not surprisingly, these aspects of life in Mexico City have reduced the willingness of foreign investors to send money or representatives there.<sup>13</sup>

***Johannesburg: On a Knife Edge.*** As in many South African cities, police in Johannesburg are waging a desperate war for control of their city, and it is not clear whether they will win. Though relatively small in size, with only 2.9 million official residents, Johannesburg nevertheless experiences more than five thousand murders a year and at least twice as many rapes. Over the last several years investors and major industry have fled the city. Many of the major buildings of the Central Business District have been abandoned and are now home to squatters. The South African National Stock Exchange has been removed to Sandton—a safer northern suburb. Police forces admit they do not control large areas of the city; official advisories warn against driving on certain thoroughfares. At night residents are advised to remain in their homes. Tourism has dried up, and conventions, once an important source of revenue, are now hosted elsewhere in the country.

The city also suffers from high rates of air pollution, primarily from vehicle exhaust but also from the use of open fires and coal for cooking and heating. Johannesburg's two rivers are also considered unsafe, primarily because of untreated human waste and chemicals leaching from piles of mining dross. Mining has also contaminated much of the soil in the vicinity.

Like those of many states and cities in Africa, Johannesburg's problems are exacerbated by the AIDS epidemic. Nationally it is feared the number of infected persons may reach as high as 20 percent of the population. All sectors of the economy have been affected adversely by the epidemic, including in Johannesburg.<sup>14</sup>

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<sup>12</sup> Transcript, PBS Newshour, "Taming Mexico City," 12 January 1999, available at [www.Pbs.org/newshour/bb/latin\\_American/jan-jun99/mexico](http://www.Pbs.org/newshour/bb/latin_American/jan-jun99/mexico) [accessed 15 June 2003].

<sup>13</sup> Compiled from a variety of sources, most notably "Taming Mexico City," *News Hour with Jim Lehrer*, transcript, 12 January 1999.

<sup>14</sup> Compiled from a variety of sources, including BBC reports.

Although Mexico City and Johannesburg clearly qualify for “yellow” and “red” status, respectively, it would be premature to predict that either of these urban centers will inevitably become feral. Police corruption has been an aspect of Mexico City life for decades; further, the recent transition from one political party to two and a downswing in the state economy may be having a temporarily adverse influence on the city. In the case of Johannesburg, the South African government has most definitely not given up on attempts to revive what was once an industrial and economic showplace. In both Mexico and South Africa there are dedicated men and women who are determined to eliminate corruption, clean the environment, and better the lives of the people. Yet a note of caution is appropriate, for in neither example is the trend in a positive direction.

Further—and it should come as no surprise—massive cities in the developing world are at far greater risk of becoming feral than those in more developed states. Not only are support networks in such regions much less robust, but as a potentially feral city grows, it consumes progressively more resources.<sup>15</sup> Efforts to meet its growing needs often no more than maintain the status quo or, more often, merely slow the rate of decay of government control and essential services. All this in turn reduces the resources that can be applied to other portions of the country, and it may well increase the speed of urban hypertrophy. However, even such developed states as Brazil face the threat of feral cities. For example, in March 2003 criminal cartels controlled much of Rio de Janeiro. Rio police would not enter these areas, and in effect pursued toward them a policy of containment.<sup>16</sup>

## **FERAL CITIES AND THE U.S. MILITARY**

Feral cities do not represent merely a sociological or urban-planning issue; they present unique military challenges. Their very size and densely built-up character make them natural havens for a variety of hostile non-state actors, ranging from small cells of terrorists to large paramilitary forces and militias. History indicates that should such a group take American hostages, successful rescue is not likely.<sup>17</sup> Combat operations in such environments tend to be manpower intensive; limiting noncombatant casualties can be extraordinarily difficult. An enemy more resolute than that faced in the 2003 war with Iraq could inflict substantial casualties on an attacking force. The defense of the Warsaw ghetto in World War II suggests how effectively a conventional military assault can be resisted in this environment. Also, in a combat operation in a feral city the number of casualties from pollutants, toxins, and disease may well be higher than those caused by the enemy.

These environmental risks could also affect ships operating near a feral city. Its miles-long waterfront may offer as protected and sheltered a setting for antishipping weapons as any formal

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<sup>15</sup> Brunn, Williams, and Zeigler, p. 37.

<sup>16</sup> Interview, Dr. Peter Liotta, with the author, Newport, R.I., 14 April 2003.

<sup>17</sup> While the recent successful rescue of Army Private First Class Jessica Lynch during the 2003 Iraq War demonstrates that success in such operations is not impossible, U.S. experiences with hostages in Iran, Lebanon, and Somalia would suggest failure is a more likely outcome.

coastal defense site. Furthermore, many port cities that today, with proper security procedures, would be visited for fuel and other supplies will, if they become feral, no longer be available. This would hamper diplomatic efforts, reduce the U.S. Navy's ability to show the flag, and complicate logistics and supply for forward-deployed forces.

Feral cities, as and if they emerge, will be something new on the international landscape. Cities have descended into savagery in the past, usually as a result of war or civil conflict, and armed resistance groups have operated out of urban centers before. But feral cities, as such, will be a new phenomenon and will pose security threats on a scale hitherto not encountered.<sup>18</sup> It is questionable whether the tools, resources, and strategies that would be required to deal with these threats exist at present. But given the indications of the imminent emergence of feral cities, it is time to begin creating the means.

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<sup>18</sup> It is predicted that 60 percent of the world's population will live in an urban environment by the year 2030, as opposed to 47 percent in 2000. Furthermore, the majority of this growth will occur in less developed countries, especially in coastal South Asia. More than fifty-eight cities will boast populations of more than five million people. Brunn, Williams, and Zeigler, pp. 9–11.





## CHAPTER 3 THE URBAN THREAT

*What the enemy fears most is the war of cities and streets, that war that the enemy expects tremendous, grave losses in. So we also stress the importance of suicide operations against the enemy, those operations that cause so much harm to the enemy in the U.S. and Israel and they have never seen anything like them in their history, thanks be to Allah.*

Text from audio tape, alleged to be from Osama Bin Laden

**Threat.** “Any organization with intentions and military capabilities that suggest it could become an enemy ”

**Hazard.** “A source of danger that is either environmental or occupational.”

### SECTION 1 THE THREAT

1. The broad threat ranges from conventional military forces, paramilitary forces and insurgents, to criminal groups and angry crowds. Further, commanders must plan to contend with many passive urban hazards, such as psychological stressors, pervasive illnesses and toxic industrial materials (TIM). These threats and hazards may be found in isolation, but most likely will be encountered in various combinations. Finally, each new enemy, threat or hazard will pose a different combination of problems, which will change due to the continuous interaction of all elements present in the urban environment.

### INSURGENCIES

2. The urban migration in the developing world, coupled with the trend away from intra-state to interstate wars, has deduced urban insurgencies as the most likely form of conflict in the near future. This transition of insurgencies from rural to urban areas is occurring because urban areas offer richer fields of targets for insurgent attacks. A concentrated urban population is often more susceptible to propaganda and political organization. Insurgents can easily arrange mass demonstrations using available communications facilities, both overt and covert. Travel is effortless and large urban populations provide cover and concealment. On the whole, urban areas offer distinct opportunities for insurgents to disrupt, discredit, and demoralize the government.

### NEGATIVE EFFECTS OF URBANIZATION

3. Many urban areas are engines for increased industrialization and economic growth as an expanding population provides the labour for manufacturing and service needs. However, rapid and inadequately planned growth can result in undesirable consequences. Uncontrolled urbanization may result in an infrastructure and economic base unable to support the growing population. A large transient, ill-housed, and idle population in a close geographic space may

produce strife. Classes, cultures, ethnic groups, and races that might otherwise peacefully coexist, can clash under the stress of survival. Uncontrolled urban growth has resulted in the negative effects listed in Figure 3-1.

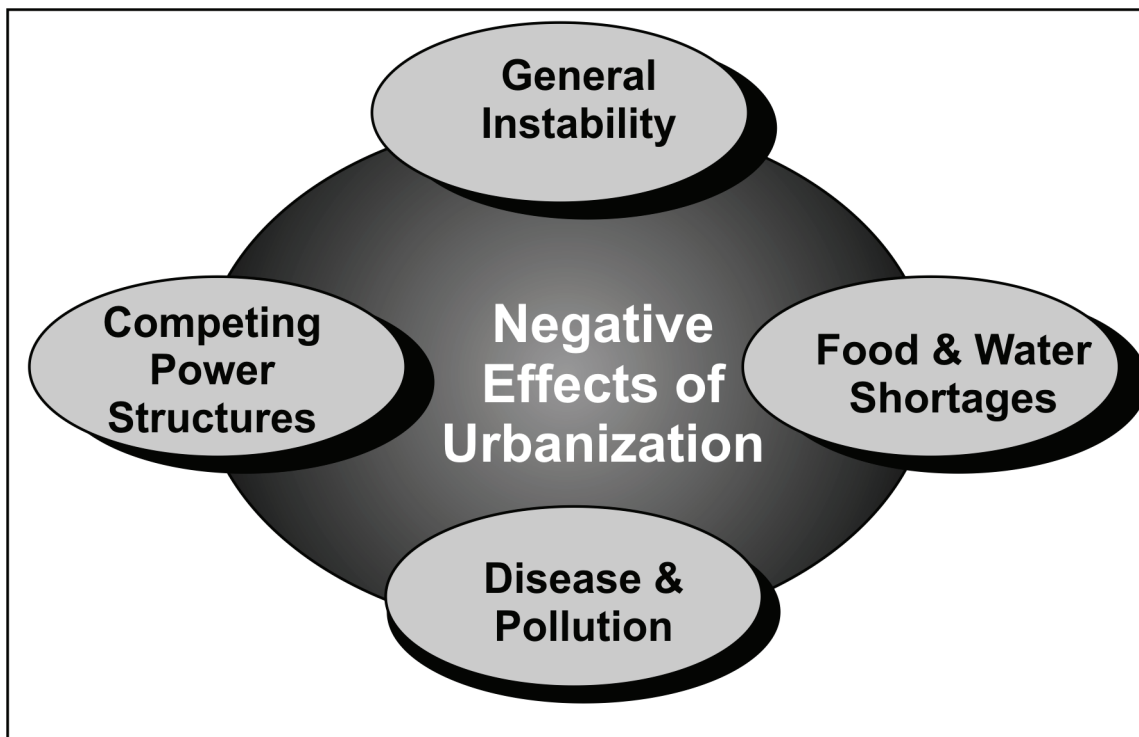


Figure 3-1: Negative Effects of Urbanization

## GENERAL INSTABILITY

4. Urbanization can enhance stability by generating industrialization and economic growth resulting in more jobs, a higher overall standard of living, and an educated, relatively satisfied populace. However, the population dynamics associated with urbanization can also have an opposite, destabilizing effect. Radical population growth may create overcrowding and generate or aggravate resource and quality of life issues. Intense and destructive competition for employment, housing, and social status may develop in this climate of economic deprivation. The inability of some governments to handle these problems:

- a. makes their urban areas potential sources of unrest;
- b. increases the likelihood of the army's involvement in stability operations and support operations; and
- c. complicates operations conducted in such an urban environment.

5. Weak civil administrations have difficulty controlling their society, safeguarding their military armaments, and preventing their urban areas from serving as sanctuaries to terrorists and criminal organizations.

6. Urban areas with a large youth population may also help to generate conditions for instability. Rural-to-urban migrants tend to be relatively young. For example, in 1999 Cairo had more than 40 percent of its population younger than 15 years. Young urban populations generate enormous demands for social resources, primarily education and jobs. Even a strong urban economy may fold under the economic expectations of a tremendous influx of young migrants. Disorder and violence may result as hostiles easily mobilize and manipulate the idle young to act politically and criminally. Urbanization and population growth are more dangerous when they combine to produce a cohort of young urban dwellers separated from traditional social controls, such as village elders and clan leaders.

7. Ethnic, religious, and other social issues may become the vents for anger and frustration produced by the high tension of urban life. Major acts of violence and destruction can directly threaten a nation's security. Friendly forces may have to conduct large-scale, stability operations and support operations to promote peace and to protect national interests. In these cases, all levels of command will be particularly concerned with maintaining impartiality and perceived legitimacy.

## **FOOD AND WATER SHORTAGES**

8. Rapid urbanization, primarily in developing nations, may lead to severe food shortages that may cause instability, massive migration, revolts, or increased support of armed opposition groups. Armed factions may target non-governmental organizations (NGOs) that supply aid as a means of furthering dissatisfaction amongst the populace. In effect, food may become a weapon. Deployed troops may need to provide or support humanitarian food aid networks to keep the humanitarian situation from escalating.

9. Normally, commanders should use centralized feeding centres as a last resort. Instead, the food should be brought closest to the population to encourage civilians to stay in their homes. If safe areas or camps are created, they should be designed and used for as short a time as is feasible. The general rule should be to return the urban population to their homes as soon as possible. Forces conducting stability operations that cannot maintain safe food supplies may find the frustration and hostility of the local population focused on them.

10. Water shortages and water of poor quality are becoming serious problems in many regions. Commanders operating in urban environments need to know all about the water supply—its origin, treatment, purification, distribution, and vulnerabilities. Before beginning operations, commanders must know if they are providing water for the non-combatants as well as their own forces. Controlling and protecting a limited water supply is, or may become, an essential operational consideration during urban operations (UO).

## **DISEASE AND POLLUTION**

11. Urban areas frequently spawn epidemics; therefore, widespread diseases may pose a significant threat to forces. In many developing nations, rapid urbanization has occurred without corresponding upgrades, expansion, or even development of adequate sewage and water systems. Some urban areas have only one toilet for every 750 people or more. In these areas, hundreds of

thousands live much as they would in poor villages, yet they are so confined that they inadvertently ensure high transmission rates for airborne, waterborne, sexually transmitted, and contact-transmitted diseases.

12. In urban areas lacking adequate waste management infrastructure, insect-borne diseases proliferate. Mosquitoes that breed in polluted water, open water tanks, and irrigated urban gardens carry malaria and dengue fever—the leading causes of sickness and death from infectious diseases in Latin America and Africa. The problem compounds with growing numbers of bacteria resistant to various antibiotics, a shortage of trained medical personnel, inadequate or insufficient medical facilities and supplies, and unclean agricultural and food-processing practices.

13. Pollution also creates critical health problems in developing areas and a potential health risk for intervening forces. Pollution may cause immediate health problems, but more often, the insidious effects appear months or years after exposure. As noted earlier, UO may contribute, either intentionally or unintentionally, to an increase in pollution. Destruction of industrial complexes that use, produce, and store hazardous material may produce toxic gases and smoke pollutants that contribute to significant health concerns to exposed soldiers.

14. Health service support (HSS) planning must be done early, including analysis of the medical threat and other critical medical information requirements during the intelligence preparation of the battlefield (IPB) process. In preparation, all personnel should receive a pre-deployment medical examination. This exam establishes an accurate baseline health status of the force and ensures that military forces do not introduce new diseases to an urban area, possibly exacerbating the situation. Conversely, soldiers are not immune to native viruses, or may have a weakened immune system due to continuous operations and the stress associated with UO. The closer friendly forces operate to civilians (e.g., the humanitarian assistance operations conducted in Port-au-Prince, Haiti, and in Mogadishu, Somalia), the more probable these situations will occur.

## **COMPETING POWER STRUCTURES**

15. Many groups can become strong enough to rival the power of the governing officials, and eventually turn the urban area into a system of divergent and competing power structures. These groups can consist of insurgent forces, a merchant class or an economic elite, criminal organizations, or some other significant source of power, such as religious organizations, clans or tribes. In the absence of a legitimate authority, armed factions headed by “warlords” may vie to fill the power void. Sometimes these groups or organizations, normally at odds with each other, may form alliances to achieve specific goals. Commanders must recognize, identify and understand these alternate urban power bases, and if necessary, develop engagement strategies to neutralize, or harness them, to accomplish the mission.

## **MERCHANT CLASS**

16. Urban areas normally possess a merchant class or an economic elite as part of their social structure. In some urban areas, they may carry more power than the local or central state

government. They may isolate themselves physically and socially from the sprawling poor, yet wield enormous power over the country's political and economic activities. The degree of economic separation between the merchant class and the poor may be small, yet still socially or politically significant.

17. In a vastly impoverished area where the economy of the urban area is severely disrupted, the merchant class will often continue to operate and function, and as a result, achieve a measure of influence. To continue to operate under acute economic turmoil, they may form alliances in criminal organizations and secure loyalties within the government. Outside resources introduced into a crisis area (e.g., food, water, fuel and pharmaceuticals) take on increased value, may replace currency as the medium for exchange, and often become the means to amass and hold wealth. One of the primary ways to obtain wealth may be to steal it.

## CRIMINAL ORGANIZATIONS

18. Organized criminal groups have grown common in urban areas; have also become an important part of the urban social structure; and can exert considerable influence on governments, people and forces conducting UO. Some large criminal organizations relying on international connections often have better resources and equipment than their insurgent counterparts. Their large financial resources, long-reaching connections, and ruthlessness provide them the means to corrupt or intimidate local officials and government institutions.

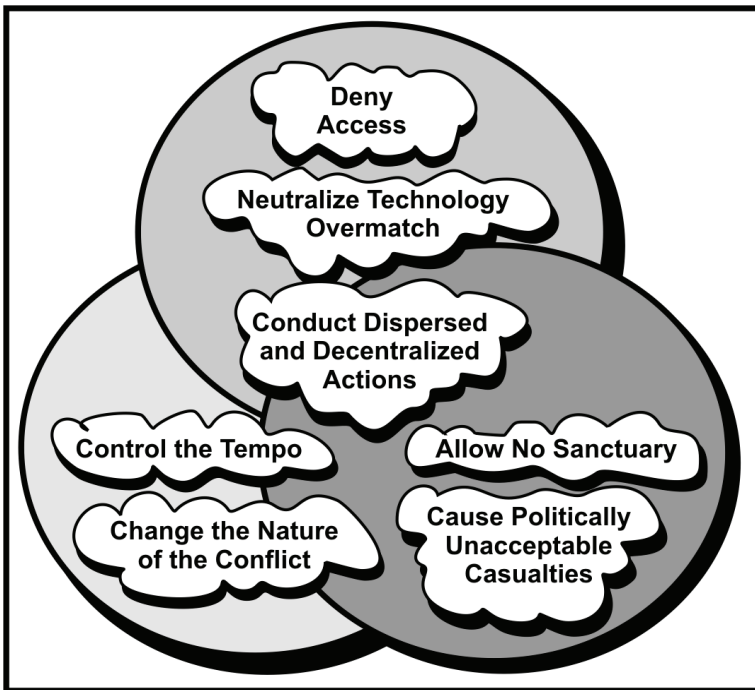
19. The tactics of urban criminal groups parallel those of insurgents. They have an intuitive cultural understanding of slum neighbourhoods and the ability to lure civilians into criminal activities. They have also mastered the management of mobs. They recruit teenagers and young adults in their efforts against rivals and authorities, just as insurgents muster armies from the youth of rural villages. In many developing nations, there exists an alliance between insurgents and organized criminal groups. In these alliances, the insurgents defend the criminals and the criminals fund the insurgents. During many UO, particularly during or following combat, civil disturbances, or large natural disasters, looting (organized or unorganized) may become of critical concern. Therefore, UO may often require a combined law enforcement and military response.

## WARLORDS

20. A characteristic of many recent operations has been the deterioration or complete collapse of political authority within the country or urban area in crisis. In some cases, warlords have filled the power vacuum. These individuals often have no particular claim to legitimacy. Their power issues from their weapons, not necessarily from their political skills, human services provided, or popular consent (although they have *some* popular support to remain in their relative position of authority). In dealing with warlords, there are two options—ignore them completely, or work with them visibly and regularly. Refusal to acknowledge warlords may increase the threat. Their militias may attack to achieve recognition, or simply because of misunderstandings or an inherent friction between armed forces. On the other hand, dealing with them may provide legitimacy to the exclusion of other elements of the urban population, such as professional groups (e.g., doctors or teachers), religious groups, and traditional clan or tribal chiefs—which

may have a greater claim to legitimacy and better form the foundation for a reconstituted urban society. A compromise between these two extremes may offer the best chance for success. Commanders can generally recognize these warlords or risk incident; however, any form of recognition could be kept at staff levels to avoid bestowing a sense of legitimacy. Instead, commanders themselves visibly meet the other elements of society that have a more legitimate claim to political, social, or economic leadership. Inevitably, commanders may need to meet with warlords. In these circumstances, clan or tribal elders and others who represent traditional authority should also attend, and commanders should ask for, and give deliberate consideration to, their opinions.

## SECTION 2 AN UNCONVENTIONAL ENEMY



**Figure 3-2: Unconventional Principles**

21. An emphasis on unconventional tactics to offset Western military capability has emerged as a significant trend amongst potential enemy, and has become an integral part of the enemy principles and tactics discussed below. It naturally evolves from a sound mission analysis by an intelligent, freethinking, and adaptive enemy. These unconventional approaches will include the most advanced, commercially available technology, innovatively applied and mixed with crude, simple, and unsophisticated weapons and tactics. The enemy will always strive to force engagements at a time and place most advantageous to them. To do this they will locate forces and capabilities in urban areas to achieve sanctuary from the effects of weapons capabilities and make friendly forces and systems more vulnerable to less-sophisticated weapons (Figure 3-2).

22. An unconventional means of engaging military forces is to employ weapons of mass destruction (WMD). The use of WMD in an urban area will adversely affect a force's ability to conduct UO by: complicating detection from a stand-off distance because of the intervening

structures and the effects of urban microclimates; impair the individual soldier's ability to recognize his leaders, understand oral and visual commands, and operate increasingly sophisticated equipment when wearing protective clothing and equipment; and most importantly, create a humanitarian disaster that will draw resources away from operations against the enemy.

23. The clutter of the physical structures, electromagnetic radiation, and population diminishes military capabilities. This clutter makes it difficult for military forces to acquire and effectively engage targets at long ranges. In urban areas, the terrain often allows the enemy to operate in closer proximity to friendly forces. Therefore, the enemy may "hug" friendly forces to avoid the effects of high-firepower stand-off weapon systems and degrade their ability to gain or maintain a thorough common operational picture (COP). Additionally, this enemy tactic attempts to inhibit friendly commanders from employing some weapon systems and munitions for fear of fratricide.

24. **Control the Tempo.** The complex nature of the urban environment slows operations conducted in and around these areas. Enemy may maximize this characteristic by fighting for key urban complexes and infrastructure, forcing friendly forces to operate within these areas. If operations focus on one or more urban areas, the overall campaign slows. However, even when UO make up only one component of a much larger campaign, they may consume valuable resources needed for other operations, as well as redirect attention from operational goals by creating humanitarian or political crises, and thus delay the entire campaign.

25. **Change the Nature of the Conflict.** Enemy may attempt to change the fundamental nature of the urban conflict to exploit ambiguous or tenuous political-military objectives. Many nations gain and maintain domestic popular support to use their armies for political objectives. The enemy may attempt to change the nature of the conflict by modifying its strategy and tactics, the environment, or any combination, ultimately hoping to reduce friendly popular support. For example, introducing an urban terrorist threat to Canadian civilians or soldiers not directly engaged in operations changes the nature of the conflict. This type of threat may not have been an initial consideration, and this change may reverse public support for the operation. Another example, coalition combat power may cause the enemy to switch from open manoeuvre warfare to UO to avoid decisive combat with superior forces and achieve a stalemate. Originally expecting a quick solution or victory, the political leadership may now envision a longer deployment with less chance of lasting success.

26. **Cause Politically Unacceptable Casualties.** The enemy may gain an advantage against superior friendly forces by capitalizing on a perceived weakness of many Western nations: the inability to endure continuous losses or casualties for other than vital national interests, or losses for which they are psychologically unprepared. Therefore, the enemy (particularly with fanatical leadership) may willingly sacrifice excessive amounts of money, equipment, and people (soldiers and civilians) to achieve victory. Enemy may attempt to weaken Canadian resolve and national will to sustain the deployment or conflict by inflicting highly visible, embarrassing, and if possible, large losses on military forces, even at the cost of similar losses to themselves. The physical characteristics of the urban environment support these ambush techniques. Light infantry or insurgents with readily obtainable, hand-held anti-armour weapons can effectively attack armoured vehicles and helicopters, no matter how sophisticated, in an urban area.

27. **Deny Sanctuary.** Enemy will attempt to deny our military forces safe haven anytime and anywhere. Terrorism may be one of the tactics used to deny sanctuary to friendly forces. They will attack friendly forces anywhere, particularly while operating in urban areas where the fear from being attacked from any quarter is often greater. Enemy may be or employ state-sponsored or independent terrorists, well equipped and motivated to accomplish their assigned missions.

28. Military buildings, facilities and installations in urban areas are particularly vulnerable to high-yield explosive munitions as well as other clever means to create large explosions. The close-in nature of urban areas, large populations, and high volume of vehicle traffic provide a good environment for target reconnaissance, explosives positioning, and cover for an attack. These attacks will likely be preceded by extensive, careful reconnaissance, necessitating a solid friendly counter-terrorism and counter-intelligence (CI) effort.

29. **Conduct Dispersed and Decentralized Operations.** To a certain extent, dispersed and decentralized operations are an integral part of all enemy principles. However, this concept warrants separate emphasis as a principle since enemy forces will likely place great significance on it on future urban battlefields. Both dispersed and decentralized approaches seek to reduce enemy vulnerabilities to air power and precision-guided munitions (PGM) while increasing their agility, flexibility, and overall manoeuvrability in an urban environment.

30. Urban terrain tends to fragment and separate forces that operate in it. Enemy forces can recognize this characteristic, accept it, and make it work to their advantage. They conduct operations from dispersed urban locations to reduce their vulnerability to friendly decisive operations and massed firepower. Although separated, enemy forces will attempt to retain the ability to assemble and mass quickly to strike as opportunities present themselves. Once enemy forces complete the operation, they will return to separate locations to avoid potential counterattack. The fluidity and seemingly disjointed appearance of this enemy will challenge friendly efforts to template and conduct pattern analysis. Ambushes (air and ground) will be used to deny friendly ground and air reconnaissance of their dispersed locations.

31. Dispersed operations normally depend upon good command and control (C2) to achieve synchronization and massed effects. Enemy forces also understand the debilitating effects of the urban terrain on communications and the execution of operations. When they cannot mass their forces or effects, they will depend upon decentralized operations to achieve their objectives. They will operate autonomously, guided only by a higher authority's purpose and intent. These operations make them even less vulnerable to massed attacks and PGM as smaller enemy forces do not present an objective or target that will allow friendly decisive operations. Again, pattern analysis and templating will be extremely difficult. Using this principle often prolongs the conflict, but is central to implementing the other enemy principles.



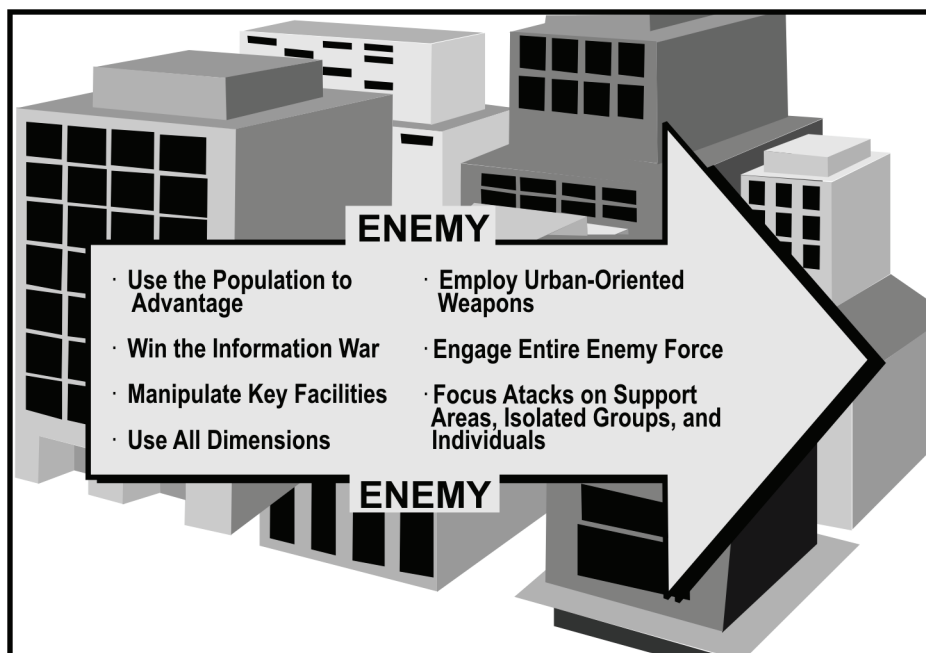


Figure 3-3: Urban Enemy Tactics

### SECTION 3 ENEMY TACTICS IN THE URBAN ENVIRONMENT

32. Urban areas provide the enemy with an unmatched degree of cover and concealment from friendly information and firepower systems. While the urban enemy may vary widely, many techniques will be common to all. The following paragraphs outline a set of tactics available to the enemy. *Friendly forces will use many of these tactics, except those that violate the law, ethics, and morals.* Moreover, using asymmetric means is not the sole domain of the enemy. Commanders can also leverage capabilities, create conditions, and plan operations to develop asymmetric advantages to accomplish the mission.

#### IDENTIFYING SOLDIERS FROM CIVILIANS

During Russia's 1994-95 conflict with Chechnya, Russian forces had difficulty identifying Chechen guerrilla forces from Grozny's non-combatant population. Because their appearance was identical to that of the urban populace, Chechen soldiers could freely walk around the city, suddenly disappear, and then abruptly reappear firing their weapons from basements, windows, or dark alleyways. To distinguish fighters from peaceful city dwellers, Russian forces began looking at men's shoulders to see if they were bruised (from firing weapons) and their forearms to see if there was burned hair or flesh (from the extraction of cartridges). They closely examined their clothing and smelled for gunpowder residue. To identify a Chechen artilleryman, Russian soldiers checked for glossy spots left by artillery and mortar rounds on the bends and cuffs of sleeves. They also turned pockets inside out to check for a shiny, silvery-lead hue indicating the former presence of small arms ammunition. Russian forces also recognized a grenade launcher operator or mortar man from fibers and crumpled pieces of gun cotton on their clothing.

33. **Use the Population to Advantage.** Many urban areas may be too large to evacuate completely (if at all). Even if desirable, a military force may have no place to safeguard and

secure the inhabitants. Therefore, future UO may see large segments of the populace remain. Offensive and defensive operations may be constrained by the terrain and by the presence of many civilians. Military forces involved in urban peace support operations (PSO) or counter-insurgency (COIN) operations will certainly conduct missions in and amongst the residents. These residents may restrict operations, and when gathered in large numbers, may (even without initial hostile intent) present a major force protection issue for the commander.

34. **Use the population as Key Terrain and for Concealment.** From the enemy standpoint, the populace is similar to key terrain: the side that manages it best has an advantage. Enemy forces may gain this advantage by using civilians as camouflage, concealment, and a means of deception. Guerrilla and terrorist elements may look no different from any other member of the community. They may adopt grooming standards, civilian clothing, and other “non-military” characteristics to make themselves indistinguishable from the civilians.

35. **Gain Cover, Protection, and Increased Mobility.** Enemy forces may attempt to gain cover by using the urban inhabitants as human shields. With this increase in protection, they simultaneously increase their mobility. They will take advantage of the restraining effects of international law and the friendly force’s ethical values to enhance their mobility in proximity to friendly positions. Knowing a force’s reluctance to cause non-combatant casualties and collateral damage, enemy may operate in areas containing civilians and essential facilities to restrict the use of massed or non-precision firepower.

36. **Make Moral Responsibilities a Weakness.** Depending upon their successes, enemy may use these tactics and skilful information operations that attack national will and coalition sensitivities in an attempt to force more restrictive rules of engagement (ROE). Enemy forces may also take advantage of the military’s moral responsibilities. By herding refugees into friendly controlled areas, enemy forces try to make the civilians a burden on the logistic and security resources. Enemy forces, on the other hand, may not abide by international agreements, such as the Geneva conventions. They may not take prisoners unless they can be ransomed or made part of a local prisoner exchange. They may even execute friendly prisoners in front of the media to show their “strength,” and more importantly, to cause friendly forces to overreact and lose their legitimacy. Enemy forces can then use such an overreaction to unite others with their cause.

37. **Acquire Intelligence and Logistic Support.** Unconventional enemy forces can normally use the local population for intelligence and logistic support far more effectively than can an alien army. They may manipulate local employees, such as those contracted by the military for base operation purposes or translator duties. In addition, refugees moving through friendly controlled sectors may provide the enemy with information on friendly dispositions, readiness and intent. Even friendly residents may become unwitting or unwilling informants, providing an enemy or a hostile with vital information on friendly activities, dispositions and capabilities. However, an enemy employing particularly cruel, abusive, or repressive measures may easily turn certain groups in the urban area against them, even when they share a common history, culture and ethnicity with the civilians. This is more likely in those areas with high population densities.

38. Enemy forces may also seek to use NGOs. They may try to obtain supplies either through the organizations' legitimate relief operations or as a target for theft. Some organizations may even be fronts for weapons, food, ammunition, money and fighters. This deception increases the need for strict security and force protective measures, close coordination with NGOs operating in urban areas, and closer monitoring of suspect organizations' activities by CIMIC personnel.
39. **Win the Information War.** Enemy forces will try to win the information war as much as they will directly oppose friendly forces. Enemy urban campaigns need not be tactical military successes. They need only to weaken legitimacy and make the opposition's campaign appear unpalatable to domestic and world support. As a critical part of their overall information operations, enemy will use the ever-present media to tell their story. Portable video cameras, commercial radios, and cellular telephones, available and easily concealed, will be as important to many enemy actors as weapons and ammunition. Internet access, already firmly established in many urban areas, provides the means to easily disseminate enemy propaganda, misinformation, and disinformation through web sites and electronic mail. Hackers, covered and concealed in the interior spaces of the urban area, may gain access to sites to manipulate information to the enemy's advantage.
40. **Manipulate Key Facilities.** Enemy forces will attempt to identify and quickly seize control of critical components of the urban area to help shape the battlespace. For example, urban telephone exchanges provide simple and reliable communications that can be easily secured with off-the-shelf technologies. Sewage treatment plants and flood control machinery can be used to implement asymmetric strategies, or to make sections of the urban area uninhabitable. Media stations significantly improve the information operations abilities of the controlling force. Power generation and transmission sites provide means to control significant aspects of civilian society over a large area.
41. **Use All Dimensions.** The enemy will think and operate throughout the depth, breadth and height (including supersurface and subsurface areas) of the urban environment. Conventional lateral boundaries will often not apply as enemy forces control some stories of the same building while friendly forces control others.
42. Intra-surface areas and roofs provide urban enemy with excellent observation points and battle positions above the maximum elevation of many weapons. Shots from upper floors strike armoured vehicles in vulnerable points. Basements and other subsurface areas also provide firing points below many weapons' minimum depressions and strike at another weakness in most armour. Sewers and subways may provide covered and concealed access throughout the area of operations.
43. **Employ Urban-Oriented Weapons.** The enemy will integrate widely available off-the-shelf technologies into their weapon systems and armed forces. However, sniper rifles and small, man-portable, fire-and-forget weapons and demolitions, and other improvised explosive devices, will likely dominate the urban environment. .

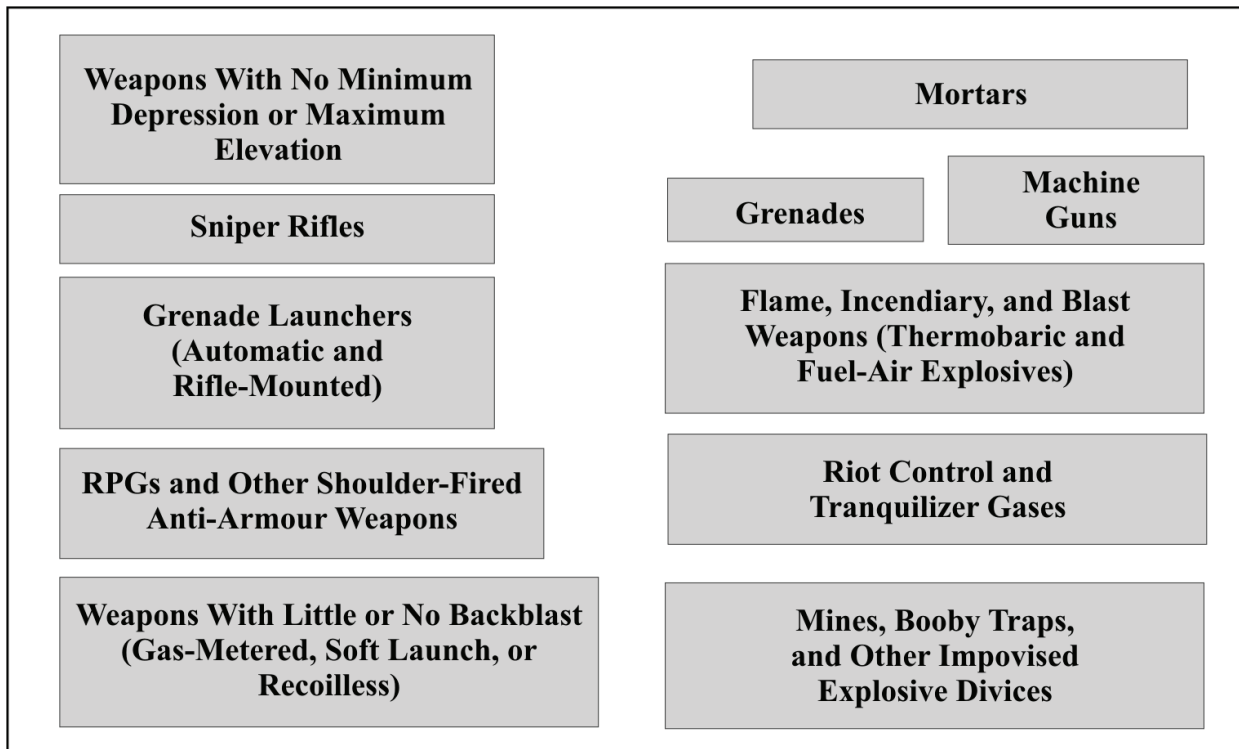


Figure 3-4: Favoured Enemy Weapons

44. **Engage Entire Enemy Force.** Enemy may attempt to keep all or significant portions of the friendly forces engaged in continuous operations to increase their susceptibility to stress-induced illnesses. UO, by their nature, produce an inordinate number of combat-stress casualties. Continuous operations exacerbate this problem. Enemy forces that employ this tactic will often maintain a large reserve to minimize the psychological impacts on their own forces.

45. To accomplish this, enemy UO will likely involve decentralized manoeuvre, precision fires, and simultaneous operations involving unconventional and special purpose forces. Enemy forces will take advantage of any exposed weakness and engage in battles as opportunities present themselves.

46. **Focus Attacks on Support Areas, Isolated Groups, and Individuals.** To supplement the previous tactic, enemy forces will seek to target support areas, small groups, leaders and their headquarters, and individual soldiers. Their focus on resupply, casualty evacuation, and other sustainment activities, coupled with the compartmented terrain, navigational challenges, and multiple three-dimensional avenues of approach, often makes these locations and soldiers more susceptible to surprise raids and ambushes. Attacks on these areas and groups are conducted to erode a force’s ability to sustain UO, to inflict maximum casualties, and to induce psychological stress. These attacks can be mitigated by careful, regular evaluation of choke points and other restrictive terrain, regular awareness training for units and individuals operating in or transiting through potential incident-prone areas, and thorough after-action analysis of incidents.

## **CONCLUSION**

47. Having assessed the threat and the enemy in UO the commander must now develop effective plans to deal with them. Chapter 4 provides fundamentals for understanding UO that can then be used as a base for sound planning.



## CHAPTER 4 PLANNING FACTORS

“Urban combat is difficult for the urban guerrilla and the regular force. Throughout the war, the Soviets and the Democratic Republic of Afghanistan (DRA) forces were never able to completely control Kandahar and Herat. Finally, the Soviets dealt with the Herat guerrillas by bombing 75% of the city into rubble. That still failed to stop the urban guerrilla. The DRA had more success in controlling the capital city of Kabul—but still was unable to stop the rocket attacks and guerrilla actions. On the other hand, surviving urban guerrillas are harder to find to interview. The urban guerrilla must be anonymous and ruthless to survive. The Soviets and DRA devoted a great deal of effort to finding and eliminating the urban guerrilla.”

Ali Ahmad Jalali and Lester Grau—*The Other Side of the Mountain: Mujahideen Tactics in the Soviet-Afghan War.*

1. Commanders need to assess the relevance and impact of urban areas on their operations in order to determine whether urban operations (UO) will be essential to mission accomplishment. UO may be the commander’s sole focus, or only one of several tasks in a larger operation. Although UO can be conducted as a single battle, engagement, or strike, they will more often be conducted as a major operation requiring joint resources.

### SECTION 1 NECESSITY OF URBAN OPERATIONS

2. Early in the planning process the necessity of conducting operations in urban areas must be assessed. The reasons that may compel UO include: the location of the enemy; critical infrastructure or capabilities that are operationally or strategically valuable; the geographic location of an urban area; and, the area’s political, economic, or cultural significance. When determining whether to operate in an urban environment, commanders must consider the operational risks and balance them with mission benefits. The following are planning considerations:

- a. **Force Strength.** Consider the troops available to conduct the operation properly and with acceptable risk. Under normal circumstances, large urban areas require large numbers of forces merely to establish control. Major UO, particularly those that are strongly opposed, will often require a significant number of forces. If commanders lack sufficient force to conduct effective operations, they may postpone or consider not initiating those operations until they have the necessary strength. They must also add to their analysis the requirements for troop strength elsewhere in the area of operation (AO).
- b. **Type of Forces.** Along with force strength, consider the type of forces available. This consideration includes an assessment of their level of training in UO. All UO put a premium on well-trained, dismounted infantry units. Therefore, military forces conducting UO should be tailored to include a large infantry component. In addition, special operations forces (SOF), psychological operations (PSYOPS) and civil-military cooperation (CIMIC) personnel are invaluable in UO. They

should always be considered as part of the task organization. The compartmentalized nature of UO includes combined arms teams at the lowest levels to ensure tactical success in combat. Although masses of heavy forces are not normally required, successful UO require all the combined arms capabilities. Even if an UO is unlikely to involve offensive and defensive operations, field artillery may be essential for force protection. In urban stability operations, successful mission accomplishment requires more robust CIMIC organizations. They are also valuable in urban offensive and defensive operations. While commanders may have sufficient combat and combat support forces, they may lack enough combat service support forces to provide the logistic support to maintain the tempo.

- c. **Casualties.** Casualties in UO are historically higher than in operations in other environments. At the tactical level, friendly and enemy forces often engage at close range with little space to manoeuvre. It may become a battle of attrition as urban terrain provides numerous advantages to the defender and results in higher casualties amongst troops on the offensive, where frontal assaults may be the only tactical option. Conversely, defenders with limited ability to withdraw can also suffer high casualties when isolated and attacked. Casualties can also be more difficult to prevent in urban stability operations because of the complex terrain, proximity of the urban population, and the difficulty in distinguishing friend or neutral from foe. The potential for high casualties, and the subsequent need for casualty evacuation under difficult circumstances, make the positioning and availability of adequate medical resources an important consideration. A realistic understanding of the risk and the nature of casualties resulting from UO critically affect the decision making process. If commanders assess the casualty risk as high, they ensure that their higher headquarters understands their assessment and that the objectives sought within the urban area are commensurate with the anticipated risk.
- d. **Munitions and Equipment.** The urban environment puts a premium on certain types of munitions and equipment. Vast amounts of small arms and precision munitions may be used in the urban environment. Soldiers will need access to special equipment necessary to execute small-unit tactics effectively. In urban stability operations, this equipment may include crowd confrontation equipment (e.g., batons, protective clothing, and other non-lethal crowd confrontation devices). Normal special equipment can include scaling ladders, knee and elbow pads, and door busters.
- e. **Collateral Damage.** UO require an expanded risk assessment. When considering risk, commanders analyze the area's population and infrastructure. This comprehensive analysis includes the second and third order effects of significant civil casualties and infrastructure damage. Collateral damage can influence world and domestic opinion of military operations, and thus, directly affect ongoing operations. It also influences the post conflict physical environment and attitudes of the population. Negative impressions of the civilian population caused by collateral damage can take generations to overcome. The



density of civilian populations in urban areas and the multidimensional nature of the environment make it more likely that even accurate attacks with precision weapons will injure non-combatants.

- f. **Time and Momentum.** UO is time consuming and can require large resources. The density of the environment, the need for additional time to conduct a thorough reconnaissance, and the additional stress and physical exertion imposed on military forces operating in urban areas, consume time and slow momentum. Commanders cannot permit UO conducted as a shaping operation to divert resources from the decisive operation. Nor can they allow UO to interrupt critical time lines, unnecessarily slow tempo, or delay the overall operation. Enemy forces may conduct UO with the primary purpose of causing these effects. Commanders should avoid or minimize UO that might delay or disrupt a larger operation to an unacceptable degree.
- g. **Vulnerabilities.** Commanders must weigh the potential for increased vulnerabilities when executing UO. The density of the environment makes protection (e.g., safety, field discipline, force protection, and especially fratricide avoidance) much more difficult. Forces operating in a large urban area increase the risk of isolation and defeat in detail. Joint capabilities, such as air power, work less effectively to support a close urban battle than in some other environments. Thus, responding to unexpected situations, or augmenting disadvantageous force ratios when applying joint capabilities, is significantly more difficult.
- h. **Fratricide Avoidance.** The complex urban terrain and density of participating forces, coupled with typical battlefield effects (e.g., smoke, dust, burning fires) and weather effects (e.g., fog, snow, rain, and clouds), increase immensely the potential for fratricide. Therefore, commanders need to increase emphasis on fratricide prevention measures during UO. Causes can be procedural, technical, or a combination of the two and include:
  - (1) combat identification failures due to poor situational understanding, lack of communication, and short engagement ranges, coupled with the need for quick reaction;
  - (2) location errors involving either the target or enemy forces due to poor situational understanding;
  - (3) inappropriate command and control (C2) and fire support coordinating measures; a failure to receive, understand, or adhere to these measures; and
  - (4) imprecise weapons and munitions effects, such as an anti-tank round that penetrates several walls before exploding near friendly forces.

## **SECTION 2 ALTERNATIVES AND RISK REDUCTION MEASURES**

3. Since UO are high risk, commanders should consider courses of action that provide alternatives. When the objective of an UO is a facility, commanders should consider replicating that facility outside of the urban area. For example, a critical requirement for an airfield to sustain operations may lead commanders to consider UO to seize or secure one located in an urban area. However, if adequate resources exist it may be possible to build an airfield outside of the urban area and eliminate the need to conduct the UO. Similarly, logistics over-the-shore operations may be an alternative to seizing a port facility. In some situations, the objective of UO may be to protect a political organization such as a government. Relocating the government, its institutions, and its personnel to a safer area may be possible.

4. When executing UO, potential hazards must be assessed and controls developed to either eliminate or reduce the risks. The first means to offset risk is to ensure a thorough understanding by all members of the force of the urban environment and its effects on operations. Other measures to bring risk to acceptable levels include:

- a. Detailed planning to include thorough intelligence preparation of the battlefield (IPB) and appropriate branches and sequels.
- b. Integrated, accurate, and timely intelligence, surveillance and reconnaissance (ISR).
- c. Clear missions and intent, which includes a well-articulated end state.
- d. Sufficient reserves and rotation of forces.
- e. Vigilant physical security precautions to include increased use of barriers and other defences, particularly when urban areas are used as support areas.
- f. Operative communications and other information systems.
- g. Effective populace and resource control measures.
- h. Comprehensive and flexible rules of engagement (ROE) continuously reviewed to ensure they remain adequate for the situation.
- i. Sufficient C2 measures, and standard marking and identification techniques. Measures should allow commanders to satisfactorily control UO and minimize fratricide without unreasonably restricting subordinate commanders' abilities to accomplish assigned missions.
- j. Proper targeting procedures (including effective fire support coordinating measures and a streamlined legal review of targets), positive identification of targets, and controlled clearance of fires. The goal is achievement of precise, yet rapid, effects with both lethal and non-lethal means.

- k. Synchronized information operations (IO) that begin before introducing military forces into the urban environment and continue through transition.
- l. Active and effective integration, synchronization, and coordination amongst all forces, agencies, and organizations involved in the operation.
- m. Responsive, sustainable, and flexible urban combat service support.
- n. Forces well trained in joint, multinational, and combined arms UO.
- o. Thorough after-action analyses conducted during actual operations, as well as after training exercises.

### SECTION 3 CHARACTERISTICS OF MAJOR URBAN OPERATIONS

5. **Joint.** Major UO are inherently joint and often may include a multinational component. These operations may take place within the context of a joint campaign conducted by a joint force land component commander or a joint task force (JTF) commander.
6. **Full-spectrum Operations.** The full range of operations across the spectrum of conflict may be conducted within urban areas. The situation will mandate that one type of operation (e.g., peace support, counter-insurgency or major combat) will dominate the UO. However, commanders will often find themselves executing offensive, defensive and stability tactical operations, often simultaneously. This is called full-spectrum operations. The mission determines the dominant type of operation, with the other types of operations conducted to shape the AO for mission success.
7. **Offence.** Against a large conventional enemy in a major urban area with a large civilian population present, offensive operations require the greatest commitment of resources. They also entail the greatest risks to friendly forces and non-combatants. Within defensive or stability operations, forces may conduct tactical offensive UO, such as counterattacks to maintain the initiative, or raids to eliminate elements disrupting the operation.
8. **Defence.** Defensive UO are generally conducted as a shaping operation within a larger operation. These operations often set conditions for successful offensive operations, stability operations, or support operations. Commanders conduct defensive UO within other types of operations to protect essential facilities in the urban area, protect flanks against counterattack, prevent the breakout of isolated enemies, or protect valuable supply bases or vulnerable convoy routes.
9. **Stability.** Urban stability operations require an offensive capability for a variety of tasks, such as to isolate and destroy an insurgent organization, or separate and protect one faction from another. To conduct of full-spectrum operations in an urban environment will require the ability to aid other agencies either in domestic emergencies or for humanitarian relief. These operations require the equipment, personnel, or organizational abilities rather than combat capabilities. In a humanitarian mission, these capabilities often involve transportation, medical, supply, or

engineer organizations. Defensive and offensive capabilities may be required to mitigate threats to any of these operations, and are often the major reason for military involvement.

10. **Integration into Land Operations.** The commander of the major operation, after determining that UO are required, then integrates the UO into his overall operation. He does this by articulating his intent and concept for the UO to his subordinates. The commander of the major operation also sets the conditions for successful tactical UO by his subordinates. He defines the ROE; focuses the intelligence, surveillance, target acquisition and reconnaissance (ISTAR) effort; task organizes his capabilities; ensures information superiority; designs the operational framework; and coordinates with other agencies.

11. **Concept of Operations.** The commander's concept of operations should address all operationally important urban areas in his AO. It articulates his vision of the UO through directions to his staff and subordinates. Subordinate commanders address urban areas that the higher commander does not specifically address. The commander describes end state in terms of:

- a. the enemy;
- b. the urban environment (terrain, society, and infrastructure);
- c. friendly forces; and
- d. the conditions necessary to effect the transition of the control of urban areas to another agency, or back to civilian control.

12. **Rules of Engagement.** National command authorities will develop urban-specific ROE. Developing effective ROE depends upon a thorough understanding of the national and strategic environment and objectives. It also relies upon understanding how to conduct UO at the tactical level, including weapons effects. For example, broad ROE may result in significant collateral damage and civilian casualties. Even in a major theatre war (MTW), significant collateral damage caused during UO can make post combat operations difficult. Such damage may even change national and international public opinion, or threatens the achievement of national and strategic objectives. In contrast, restrictive ROE can hamper tactical operations causing mission failure, higher friendly casualties, or both. ROE are protected to reduce the potential for enemy exploitation. Even in a limited UO, ROE will frequently need to change as circumstances warrant, and plans for adjusting ROE must be in place.

13. In UO, ROE need to be flexible, detailed, and understandable. They should preclude the indiscriminate use of deadly force while allowing soldiers latitude to finish the mission and defend themselves. ROE should recognize that the urban area is not homogenous and may vary according to the key elements of the enemy and environment: terrain, society, and infrastructure. To be effective, ROE are consistent throughout the force (an increased challenge in multinational UO), and soldiers are thoroughly trained and familiar with them.

14. The nature of an urban enemy affects ROE as well. Commanders consider the type of enemy weapon systems, the degree of defensive preparation, the ability to target enemy

vulnerabilities with precision systems, and the ability to distinguish combatant from non-combatant.

15. ROE may vary according to the terrain or physical attributes of an urban area. Physical factors may drive the ROE to preclude certain types of munitions. For example, if the construction of a portion of the area is sensitive to fire, then ROE may preclude using incendiary munitions in that area. The ROE may lift this prohibition when units move into areas of masonry construction. Toxic industrial chemicals or radiological contaminants in an industrial area may also affect ROE.

16. The societal or human dimension of the urban environment will most affect ROE. Commanders need to base the ROE development on a thorough understanding of the civilian population and enemy. They must evaluate the loyalty of the population, its dynamic involvement in activities that affects the operation, and its size and physical location. A population that is present and supports friendly forces will likely elicit more restrictive ROE than a hostile population actively supporting the enemy. Likewise, a neutral population not actively involved in behaviour affecting a force, supports consideration of more restrictive ROE. The urban population is seldom homogenous and will, in all likelihood, have friendly, neutral and hostile elements. In all cases, ROE conforms to the Law of Armed Conflict (LOAC). However, ROE may be much *more restrictive* than the LOAC requires.

17. The location of the population also affects ROE. The evacuation or consolidation of non-combatants into controlled, safe areas may result in less restrictive ROE. An allied population that remains in the urban area conducting routine business in and amongst military forces during non-combat UO will normally require the most stringent ROE.

18. An urban infrastructure vital to current or future operations may dictate that commanders adjust ROE to ensure that critical elements of the infrastructure remain intact during the conduct of operations.

19. **Task Organization.** Task organizing subordinate units for UO depends largely upon the nature of the operation. Some organizations or units are always part of the task organization to ensure the success of UO. Infantry, CIMIC, aviation, military police, PSYOPS, military intelligence, and engineers are required for all UO across the full range of operations. Other forces—armour, artillery, and chemical—have essential roles in specific types of UO, but are less appropriate in others.

20. Commanders of a major operation can also support the tactical commander with forces remaining under their direct control. These forces can include CIMIC, PSYOPS, special operations forces (SOF), aviation, logistics, engineers, and communications support. These forces may not be under operational control (OPCON) of the supported command, but their efforts are synchronized and coordinated.

21. Joint assets include air support, such as close air support, tactical airlift, and aerial reconnaissance and surveillance. Intelligence support comes in the form of reach-back to strategic and national intelligence capabilities and to space-based systems. This reach-back to space assets provides reliable, robust long-range communications, and environmental

monitoring. In littoral areas, maritime support can be used to assist with offshore basing, coastal security and interdiction, riverine operations, sealift, and fire support.

#### **SECTION 4 URBAN ISTAR**

22. Accurate and timely information to conduct assessments are critical to planning and execution. National strategic sources (as well as open sources) provide most of the information required on the characteristics of the human dimension, the physical properties of the terrain, and the infrastructure. The general characteristics of these aspects of the urban environment do not change drastically over time, with one exception. Military operations or natural disasters can change physical characteristics drastically. Analysts can obtain crucial information through diligent research of intelligence databases and open sources. However, the disposition and composition of the urban enemy is time sensitive and not likely to be discovered through this type of investigation. The urban population is dynamic and must be updated or confirmed as a prelude to UO. Surveillance and reconnaissance are required to provide accurate and timely information regarding enemy dispositions, composition and the state of the population, and the specifics of the urban terrain. Successful UO depend upon the successful conduct of urban reconnaissance.

23. The most significant challenge to urban ISTAR is physical. The physical organization and complexity of the urban terrain, both man-made and natural, will challenge national strategic, operational, and tactical ISTAR capabilities. Commanders need to understand the challenges when planning and allocating time and resources to their ISR efforts. They must acknowledge that subordinate commanders will face similar challenges and consider subordinate capabilities, limitations, and needs when planning and prioritizing ISR assets and capabilities.

24. **Imagery Capabilities.** A significant national and strategic ISR capability is imagery. However, the structures of the urban area significantly degrade the information that imagery acquires and may make it susceptible to physical deception measures. Current imagery capabilities cannot penetrate intra-surface or subsurface areas. Imagery is an excellent source regarding the arrangement and nature of many other physical aspects. It can provide significant detail of major portions of the infrastructure. Imagery can also reveal what may be happening in structures through detailed study of patterns and other exterior indicators. Yet, the bulk of a skilful enemy's forces, well positioned and concealed inside or underneath structures in the urban area, are largely immune from rapid detection by overhead imaging systems. The volume of movement in an urban area will itself provide a degree of camouflage and increase the difficulty of employing pattern analysis.

25. **Electronic Capabilities.** The physical attributes of the urban area also diminish the effectiveness of electronic ISTAR capabilities. Buildings and other structures significantly disrupt radio communications in an urban area. Buildings not only make tactical radio communications difficult for the user, they also make them difficult to locate, intercept, and jam. The range and clarity of frequency modulation (FM) signals significantly diminish when antennas are located inside buildings or when buildings block the line of sight (LOS) between the source and receiving station. To mitigate this effect, detection capabilities often move closer to the transmission source. Without losing tactical surprise and increasing risk, units cannot

effectively use many electronic detection and surveillance capabilities until urban combat is imminent or perhaps already begun. Thus, the enemy's vulnerability to compromise by means of his FM and other wireless communications in an urban environment is much less than in many other environments.

26. **Human Capabilities.** The limits on imagery and electronic ISTAR capabilities place a premium on human-based visual reconnaissance. Commanders have three types of human reconnaissance assets to augment electronic reconnaissance resources: enhanced reconnaissance, conventional combat reconnaissance, and human intelligence (HUMINT) gathered by military intelligence from individuals. The urban environment poses several challenges to these capabilities.

27. The urban area challenges reconnaissance in several ways. First, is the access to the urban area. Although avenues of approach may be numerous, *concealed* avenues of approach into a defended urban area may be limited and thoroughly covered.

28. Reconnaissance then faces a second challenge: moving and identifying targets within the urban area. Stealth movement within an occupied urban area is exceptionally difficult. Repositioning to new or alternate positions is also dangerous. The soldiers' abilities to conceal themselves amongst the civilian population can mitigate some of these challenges, but includes inherent risks of a different nature. Also difficult is establishing observation positions that provide a field of view of several targets.

29. Finally, reconnaissance will face navigational and reporting challenges. Their ability to locate themselves and communicate critical locations and routes are challenged by:

- a. differences in language and numbering systems;
- b. irregular street patterns;
- c. outdated maps;
- d. intervening structures that impede communications and global positioning systems;
- e. changes to the landscape due to the effects of UO or natural disasters; and
- f. featureless shantytowns.

30. Reconnaissance may also lack the advantage of surprise and is not likely to operate undetected by the civilian population. Given the constraints discussed above on other sources, reconnaissance units will likely begin their mission with much less information than they would have on enemy dispositions in a less complex environment. Commanders may choose to have their reconnaissance elements fight for information in the urban area. While this high-risk option is more favourable under fluid conditions, it can be used at any time. It requires careful planning, rehearsal, and formulation of information requirements.

31. HUMINT may be one of the most valuable sources for information regarding the situation inside an urban area. HUMINT may take advantage of the proximity and large numbers of potential informants to gather information about enemy activities and capabilities. It is especially valuable because it can address all elements of the environment. HUMINT sources can describe political and religious nuances significant to commanders. Such information is useful for insights regarding the human dimension, but extremely difficult to obtain from other means. This intelligence can also describe the infrastructure relating essential details of how the infrastructure functions. Obtaining good HUMINT requires skilled interrogators and linguists. Commanders know and account for some of the possible shortcomings of HUMINT:

- a. It is susceptible to the influence of the enemy. The enemy can threaten and influence the source.
- b. It is limited by the accuracy of the source's perceptions.
- c. It may not be timely. The process of identifying and cultivating a source (particularly in an environment where most civilians support enemy forces), gathering information, analyzing the information, and providing the intelligence to commanders, can be extremely time consuming.
- d. informants may often come from unscrupulous elements of the urban society with their own agenda. They may attempt to use protection afforded them by their relationship with forces to conduct activities that will compromise political and military objectives.

32. **Conducting Urban ISTAR.** To be successful, ISTAR efforts (national to tactical level) are exceptionally comprehensive and synchronized. Success requires integrating all ISR sources into operational and tactical planning. This requires that ISR assets be deployed and execute early, diversify, properly focus, and integrate into a comprehensive ISR plan. It also requires flexibility to adapt to the operational and tactical needs of the commander.

33. **Early Deployment.** One of the first requirements for effective urban ISTAR is the early deployment and employment of assets. The complex urban terrain presents a significant challenge. It will normally take longer for ISR assets to gather data amid the complexity.

34. Limited national, strategic, and operational imagery intelligence (IMINT) and signals intelligence (SIGINT) capabilities are requested. If they are approved, they are tasked and deployed or repositioned to begin urban ISTAR operations. This takes time. Spacing the ISR effort over time permits the analysis of the information or data as it is received. Such time also permits subsequent refinement of the ISTAR effort before all assets are committed.

35. SOF or conventional units will require significantly more time to execute reconnaissance missions and maintain an acceptable survivability rate. Urban reconnaissance operations require additional time for stealthy insertion into the urban area. IMINT and SIGINT capabilities are used to identify possible locations of high-value targets and corresponding observation positions; this helps minimize time-consuming and high-risk repositioning in the urban area. Again, reconnaissance units may require extensive time to observe from observation positions for indicators of enemy activity and disposition and identify patterns.



36. As conventional combat forces prepare to commit to the urban area, integral reconnaissance resources will precede them. Conventional reconnaissance will often be a slow and methodical effort. Such forces need time to reconnoitre the interior of structures for snipers and other small enemy teams. They also need time to deploy and destroy snipers and small delaying elements, and to breach harassing obstacles. They will need time to mass the combat power, if necessary, to fight through security forces and continue with the reconnaissance.
37. **Diversity.** No single ISTAR capability can solve the urban riddle. The only way to successfully gain a common operational picture (COP) of the complex urban terrain—so commanders can focus combat power on decisive points—is to employ diverse ISTAR capabilities. These capabilities will each contribute pieces of relevant information to permit the identification of operational objectives and leverage tactical combat power to quickly achieve those objectives. Higher-level commanders know that tactical reconnaissance capabilities alone often cannot provide all the tactical information required for success at lower echelons.
38. Using diverse capabilities challenges the enemy’s ability to defeat the friendly ISTAR effort. An enemy who focuses on minimizing his vulnerability to satellite imagery may increase his reliance on communications and thus his vulnerability to SIGINT. At the same time, he may decrease his ability to detect the actions of ground reconnaissance units. An enemy that actively campaigns to detect ground reconnaissance may make himself more vulnerable to SIGINT and IMINT.
39. Diverse capabilities also facilitate the tactical ISTAR effort. Tactical reconnaissance units often consist of small dismounted teams and small combined arms teams with a dismounted element and an armour-protected mounted element. Engineers and breaching capability are essential to the combined arms reconnaissance effort. The teams’ movements are synchronized and coordinated with other assets, such as unmanned aerial vehicles (UAVs) and air reconnaissance. These teams use several movement techniques including infiltration, with the primary objective of conducting zone reconnaissance along key axes that support brigade and battalion/regimental actions against decisive points. To accomplish this mission, the reconnaissance teams reconnoitre the proposed routes and alternate approaches. This supports deception and contingency planning. Infiltration of dismounted reconnaissance is made easier when an enemy focuses on combined arms reconnaissance teams. Aerial reconnaissance, such as air reconnaissance and UAVs, provides early warning of enemy elements to ground reconnaissance, identifies obstacles and ambush sites, and helps select the routes for ground reconnaissance. Air elements may also reduce the mobility of counter-reconnaissance forces.
40. **Focus.** Another key to successful ISTAR is the ability to focus the assets on commander’s critical information requirements (CCIR). This focus begins with the mission and the commander’s initial planning guidance. It is incrementally refined throughout planning and execution as each ISTAR effort provides information and permits more specific focus in subsequent efforts. The size and complexity of the urban environment require that the ISTAR effort centre strictly on decisive points or centres of gravity (COG). Therefore, the overall ISTAR effort will have two major focuses. The first is to confirm and develop information on the decisive points and COG. The second is the approaches to the decisive points and COG. The first focus will likely drive the ISTAR effort in support of major operations. The second focus will likely provide the impetus for tactical ISTAR efforts. For example, special operations

reconnaissance might focus on a major command centre that controls the entire urban area and that is a CCIR. Tactical reconnaissance might focus on the nature of the defence along a particular avenue of approach to the objective.

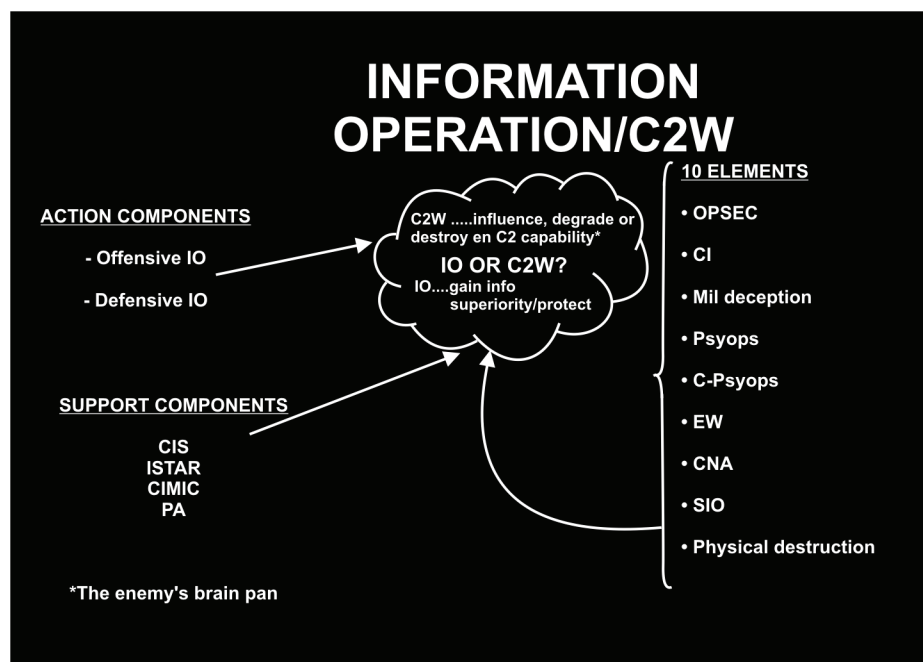
41. **Integration.** Another important aspect of urban ISTAR is integration. All reconnaissance capabilities provide both distinctive information as well as information that confirms and adds to that coming from other sources. Essential to urban ISTAR is the link between all of these sources, either directly or through an integrating headquarters.
42. ISTAR operations are vertically and horizontally linked. Vertical links ensure that ISTAR operations amongst the various levels of command are complementary, and that the information flow between these levels is rapid. Horizontal links ensure that forces operating in close proximity (particularly adjacent units), where areas of interest overlap, can rapidly share results of their individual ISTAR efforts. Together, this helps ensure that all forces share a COP, and permits the greatest flexibility and survivability of ISTAR resources.
43. ISTAR operations are also integrated into the planning system, especially the targeting process. As part of targeting, when appropriate and after considering the risks of compromise of the position or platform, positioned reconnaissance and surveillance elements may become the trigger and terminal control for applying precision fires.
44. **Flexibility.** The urban ISTAR effort is more flexible than in other operations. This flexibility permits the ISTAR effort to meet unforeseen circumstances and to deal with the challenges of the urban environment. As indicated previously, the urban environment is particularly difficult to penetrate. The practical effects of this characteristic are that:
  - a. the initial ISTAR effort may not be as successful as in other operations;
  - b. more intelligence requirements may be discovered later while executing ISTAR operations than otherwise; and
  - c. the enemy may be more successful in active counter-reconnaissance because of the concealment advantages of the urban environment (hiding in structures as well as amongst the urban population).
45. Therefore, tactical and operational commanders consider requesting greater than usual ISTAR support from higher headquarters. Higher headquarters is proactive in augmenting units conducting UO with additional ISR assets. Additionally, ISTAR assets remaining under the control of the higher headquarters respond more quickly to the CCIR of supported commanders. Sequencing reconnaissance missions over time provides flexibility by creating uncommitted reconnaissance assets.
46. Time sequencing of ISTAR assets is essential to flexibility. It makes ISTAR assets more survivable and allows the intelligence cycle to mature the CCIR. It also creates a ready ISTAR capability to augment committed forces in critical areas if required, or diverts them around centres of enemy resistance. If not required, it executes original tasks as envisioned in planning. Cueing allows a high-value ISTAR asset to be capable to respond to multiple targets based upon an ongoing assessment of the overall reconnaissance effort and the changing CCIR. Redundancy

permits the effort to overcome LOS restrictions, the destruction of an ISTAR asset, and the ability to combine ISTAR resources to create combat power if required. Maximizing the ISTAR effort requires applying all available ISTAR assets to support the UO. Additionally, assets—such as air defence (AD) artillery and field artillery radars and engineer squads—are integrated into the ISTAR effort. In UO, units will also commit infantry and armour elements (plus organic reconnaissance elements) into the tactical reconnaissance effort. These units increase the dismount capability and the ability of reconnaissance elements to fight for information and fight through security zones.

## SECTION 5 INFORMATION OPERATIONS

47. IO are an integral part of all operations and a critical component in creating and maintaining information superiority and influencing the population. The information environment is the sum of individuals, organizations, or systems that collect, process, and disseminate information; it also includes the information itself. In UO, the information environment is extremely dense due to the proliferation of information systems and widespread access to those systems. In UO, commanders consider how the urban environment, particularly the human component, uniquely relates to executing IO.

48. The following sections outline some IO considerations unique to UO.



**Figure 4-1: Information Operations/C2W**

49. In the urban environment, existing urban infrastructure, including the communications and information infrastructure, can be used to enhance operations. The danger in integrating these systems is violating operations security (OPSEC).

50. The close proximity of the military operations to a civilian population, particularly in stability operations, makes military activities themselves an OPSEC concern. Threat forces in the urban population have more chances to observe activities closely. Although many UO require close coordination with non-governmental organizations (NGOs), the information provided to them must be screened to protect OPSEC.

51. **Psychological Operations.** PSYOPS aim to influence the behaviour and attitude of foreign audiences, both military and non-combatant, in the urban environment. PSYOPS are a force multiplier and contribute in many ways to mission success. Their ability to influence the attitudes and disposition of the urban population cannot be overstated. While the complexity of the societal component of the urban environment can make PSYOPS challenging, it also offers many options and resources. Potentially, PSYOPS (with other political and economic actions) may help limit or preclude the use of military force in urban areas. In some circumstances, military operations may be relevant only in terms of their psychological effect.

52. The positive influence created by PSYOPS is often essential to developing an effective HUMINT capability, particularly in an urban area where many civilians actively or passively support the enemy. Persuading and influencing a few to support friendly forces may pay great dividends. These few supporters may allow forces to penetrate the urban area and obtain essential information. Such information can apply to enemy capabilities, enemy intentions, and even the urban environment itself.

53. PSYOPS, combined with other elements of offensive IO, aid in isolation of an enemy—a critical shaping action for any UO. For example, commanders may use PSYOPS to inform civilians about new food distribution points located away from urban combat operations. This action supports the UO fundamental of separating combatants from non-combatants, and helps to further isolate the enemy (both physically and psychologically) from the civilian populace. Aside from projecting a positive image of friendly forces over enemy forces, PSYOPS also isolates the enemy. These operations identify and exploit ethnic, cultural, religious, and economic differences between the elements of the civilian populace and enemy forces, as well as the differences amongst supportive and unsupportive civilian factions. The complexity of the urban environment enables quick changes in opinion or attitude. Commanders continually evaluate the results of PSYOPS for mission relevance.

54. **Counter-propaganda.** Because propaganda is aimed at both combatants and non-combatants, UO are especially concerned with its use. Propaganda can rapidly and dramatically affect the attitudes of the urban population and will probably occur after UO have begun. Thus, it can create situations in the human dimension of the environment quite different from those discovered in the pre-operations assessment. Counter-propaganda is, therefore, essential to UO. To negate, deflect, or destroy the enemy's propaganda capability, counter-propaganda requires:

- a. monitoring the enemy's propaganda efforts;
- b. evaluating the effectiveness of those efforts; and
- c. determining methods using all capabilities, especially PSYOPS and public affairs (PA) units.

55. **Military Deception.** UO present numerous challenges to tactical commanders; however, higher-level commanders may help to mitigate some challenges. Commanders can use military deception efforts designed to mislead enemy decision makers as to friendly force disposition, capabilities, vulnerabilities, and intentions. Military deception actions may allow commanders to achieve tactical surprise or improve relative combat power at a selected location. For example, allowing the enemy to observe certain activities on a selected avenue of approach may cause the enemy to shift his forces (and effort) to the area perceived to have friendly forces. This movement may also aid in determining the overall disposition of enemy forces and intentions. Repositioned forces or effort to activities or locations that are not decisive to the achievement of friendly objectives, combined with other IO designed to overwhelm his information and intelligence systems, may create the force and tempo differential necessary to achieve success. Commanders tailor urban deception plans to the specific urban area, paying close attention to the societal characteristics of the target population.

56. **Electronic warfare (EW)** includes all actions that use electromagnetic or directed energy weapons to control the electromagnetic spectrum or to attack an enemy. Conducting EW in urban areas seeks to achieve much the same results as in other environments. A major consideration in urban areas is collateral effects on portions of the urban infrastructure that rely on the electromagnetic spectrum for service. Thus, precision is a major factor in planning for EW operations. For example, EW attacking an enemy's television broadcasts avoids affecting the television broadcasts of neutral or friendly television. Likewise, EW attacking military communications in a large urban area avoids adversely affecting the area's police and other emergency service communications. Urban offensive and defensive operations will have the least restrictions on EW operations, while urban stability operations and support operations may have significant constraints on using EW capabilities.

57. **Computer network operations (CNO)** include computer network attack (CNA), computer network defence (CND), and computer network exploitation (CNE). CNO are controlled and conducted by strategic-level resources.

58. **Computer Network Attack.** Considerations regarding the execution of CNA in UO are similar to those of EW: CNA that does not discriminate can disrupt vital civilian systems. However, possible adverse effects on the civilian infrastructure can be much larger, potentially on a global scale. In the short term, CNA may serve to enhance immediate combat operations, but have a debilitating effect on the efficiency of follow-on urban stability operations.

59. **Computer Network Defence.** In UO, CND will require extreme measures to protect and defend the computers and networks from disruption, denial, degradation, or destruction. The nature of the urban environment and configuration of computer networks provides the enemy with many opportunities to interdict local area networks (LANs) unless well secured.

60. **Computer Network Exploitation.** CNE is an enabling operation and an intelligence collection measure to gather data from target or adversary automated INFOSYS or networks. Tactical units do not have the capability for CNE. CNE contributes to intelligence collection at national headquarters. In UO, CNE will be centrally controlled.

61. **Information Assurance.** Information assurance in UO takes on an added dimension. As with other operations, the availability of information means timely, reliable access to data and services by authorized users. In UO, the timeliness of information may be restricted because structures block the transmission waves. The need for re-transmission facilities will overwhelm the signal community. The reliability can be questioned because of the blockage between units and communications nodes. Unauthorized users may intercept the communications and input misinformation or disinformation. The authentication of information may be accomplished by sophisticated electronic means. However, it is more likely that communications electronics operating instructions (CEOI) authentication tables will be used to authenticate the information, and efforts to protect the information must be enhanced.

62. **Counter-deception.** In UO, enemy forces can easily accomplish deception operations. The force that controls the area above and below ground will have freedom of movement. One example of deception aimed at friendly forces would be to cause them to deploy combat power at the wrong place and the wrong time. Counter-deception is required to identify and exploit enemy attempts to mislead friendly forces. Counter-deception is difficult, and knowing an enemy's previous deception methods is important.

63. **Physical Destruction.** Physical destruction includes those actions, including direct and indirect fire from air, land, sea and SOF, taken with, to augment, or supplement IO actions. Like many other IO elements, major concerns with employing physical destruction in UO are achieving precision and follow-on effects. Thus, commanders using physical destruction to support IO adhere to the same constraints as all other fires.

64. **Counter-intelligence.** Counter-intelligence (CI) in the context of IO focuses on detecting threats against our INFOSYS. The urban environment, particularly in stability operations, is ideal for espionage and sabotage of our INFOSYS.

65. **Civil-Military Cooperation Operations.** Civil-military cooperation operations (CMO) are a critical aspect of virtually every UO and are included here as a closely related activity of IO. CMO activities enhance the relationship between military forces, civilian authorities, and the urban population. They promote the development of favourable emotions, attitudes, or behaviour. CMO range from support to combat operations to assisting in establishing political, economic, and social stability. Chapter 10 has a more detailed discussion of CMO and CIMIC elements. However, because of its criticality to UO, CMO and its effects are thoroughly integrated throughout this manual.

66. **Public Affairs (PA)** influences UO by transmitting information through the media to internal and external audiences.

67. The density of information sources and reporters in UO ensures that all activities will be subject to media and public scrutiny. Many reporters will congregate in cities for their own comfort and take advantage of established communications networks. The local media will often have their own agendas developed over a longer period of time. This local media will also have a greater influence over the urban population than the international media. Commanders must understand the media (particularly the local media), its role, and its potential influence. They cannot allow themselves to be intimidated by it. Commanders support open and independent

reporting and grant access to their units as early and as far forward as the situation permits. PA also helps to counter rumours, uncertainty, fear, loneliness, confusion, and other factors that cause stress civilians and undermine effective UO. If the populace does not understand the mission, false expectations may be created that forces may not be able to meet. Overall, PA supports commanders in their goals to achieve information superiority by creating and preserving public support.

- Truth is Paramount
- If News is Out, It is Out
- Public Affairs Must be Deployed Early
- Not All News is Good News
- Practice Security at the Source
- Media are Not the Enemy
- Telling Our Story is good for the

**Figure 4-2: Public Affairs Principles**

## **SECTION 6**

### **INTEGRATION OF CONVENTIONAL AND SPECIAL OPERATIONS FORCES**

68. One important and joint resource that commanders of a major operation can use to influence UO is SOF. Several types of these forces exist, each with unique and complementary capabilities. They can be extremely valuable in UO for their ability to execute discrete missions with a higher degree of precision than conventional forces, to provide information, and to enhance cultural understanding. However, the challenges of using SOF include C2, integration, and coordination with conventional forces that will normally command, control, and conduct the bulk of UO tasks. The density and complexity of UO make close coordination and synchronization of conventional forces and SOF essential to mission success. The nature of the environment dictates that both forces will work in close proximity to each other; the separation in space and time between SOF and conventional forces will often be much less in urban areas than in other environments, and demands a synergistic combination of capabilities to achieve effects on the enemy and mission success.

69. Successfully integrating SOF occurs with proper integration into, or coordination with, the command structure of the force conducting the UO. SOF within a theatre ordinarily fall under joint C2. Therefore, the commander of the major operation responsible for an urban area, if he is not a joint force commander (JFC), will have to coordinate through the JFC to integrate SOF capabilities into the UO. Examples of critical coordination elements include boundaries, no-fire areas, coordination points, and requirements to support search and rescue contingencies.

70. In multinational operations, a special operations command and control element (SOCCE) is usually formed at formation level, specifically to coordinate the integration of the SOF with conventional forces. The SOCCE links conventional force commanders with the SOF units operating in their AOs. It primarily de-conflicts conventional and SOF targets, positions, and missions. The synchronization and unity of action necessary between conventional and SOF in an urban AO may still require the force headquarters to further coordinate SOF integration through the joint task force (JTF) commander.

## SECTION 7 COORDINATION WITH OTHER AGENCIES

71. The population density of the urban environment, its economic and political importance, and its life-supporting infrastructure, attracts many types of organizations. These organizations include:

- a. other Canadian governmental agencies;
- b. international governmental organizations;
- c. allied/coalition and neutral national governments;
- d. allied/coalition forces;
- e. local governmental agencies and politicians;
- f. NGOs and private volunteer organizations (PVOs); and
- g. commercial companies.

72. Even in a major theatre of war (MTW), many organizations operate in the area as long as possible before combat, or as soon as possible after combat. Therefore, coordination with these organizations sharing the urban AO will be essential; however, effective coordination is challenging, time consuming, and manpower intensive. The staffs of brigade headquarters are normally given the breadth of resources and experience to best conduct the coordination. They can effectively use or manage the organizations interested in the urban area and mitigate their potential adverse effects on UO. By taking on as much of the coordination requirements as possible, the brigade headquarters permits its tactical subordinates to remain focused on accomplishing their tactical missions. The higher headquarters should assume as much of the burden of coordination as possible. However, the density of the urban environment will often require that smaller tactical units coordinate with other agencies simply because of their physical presence in the units' AOs. In urban stability operations and support operations, mission accomplishment will require effective CIMIC activities and measures at all levels as either a specified or implied task.

73. **Civil-Military Cooperation Operations Centres.** To coordinate activities amongst the varied agencies and organizations operating in an urban area and the local population, urban commanders can establish a CIMIC operations centre (CMOC). The CMOC synchronizes activities and resources with the efforts and resources of all others involved. This can be



particularly important in stability operations and support operations where combat operations are not the dominant characteristic of the operation. CMOCs can be established at all levels of command. Hence, more than one CMOC may exist in an AO, particularly large urban areas. CMOCs may be organized in various ways and include representatives from as many agencies as required to facilitate the flow of information amongst all concerned parties. Commanders still ensure that force protection and OPSEC requirements are not compromised. Effective CMOCs can serve as clearing houses for the receipt and validation of all civilian requests for support, can aid in prioritizing efforts and eliminating redundancy, and most importantly, can reduce wasting the urban commander's scarce resources.

74. **Liaison Officers.** Liaison officers (LOs), sufficiently experienced and adequately trained in liaison duties and functions, are necessary to deal with the other agencies that have interests in the urban area. LOs work with the lead agency or other organizations that the commander has identified as critical to mission success. Together they work to rapidly establish unity of effort and maintain coordination, often before a CMOC is established. The additional coordination afforded by the physical presence of LOs within these organizations may be required even after the CMOC is fully functional. When commanders lack enough LOs to meet requirements, they prioritize and often assign a single LO to several organizations. That LO will divide his time between those organizations based upon the situation and his commander's guidance.

75. **Commander's Personal Involvement.** Overall, establishing a close relationship with other agencies will often be a major, positive factor in successful mission accomplishment, particularly in urban stability operations. Commanders that develop a direct and personal relationship with the leaders and staff of other agencies can often avoid conflict, win support, and help eliminate the "us versus them" mentality that frequently frustrates cooperation amongst military forces and civilian organizations.



**ANNEX A TO CHAPTER 4**  
**LESSONS LEARNED CHARLIE 1/5, OPERATION HUE CITY**  
**31 JANUARY 1968 TO 5 MARCH 1968**

Even under the best of circumstances, street fighting is a bloody business. This was, in the end, the ultimate lesson learned by the United States Marine Corps personnel who participated in this historical battle, considered by many to be the bloodiest of the Vietnam War.

The Marine forces involved in Operation Hue City lost 142 Marines killed in action during the month-long battle, including the initial fierce clashes involving, primarily, fighting throughout the southern sections of the city, and the climactic full-scale battles inside the Citadel fortress itself. Hundreds more Marines were wounded and had to be medevacced on both sides of the river. Enemy casualty estimates range well into the thousands.

Although Operation Hue City will be long remembered as an overwhelming victory over the best conventional forces the enemy could throw at us, and although the Fifth Marines overcame very unfavorable odds and ultimately triumphed in the finest traditions of Marines in combat, in truth this battle was a very close thing. At the squad, platoon and company levels casualty rates were very severe, as high as 75% or more in some units. This was especially true during the first day or two of each unit's initial experience in full scale urban combat.

The ultimate success of this operation could have been significantly improved, in our opinion, by several factors, including:

1. Improved (less restrictive) rules of engagement, including situational flexibility down to the platoon level.
2. Improved communication of intelligence information to all levels of command.
3. Acquisition of improved intelligence data, in particular concerning the disposition and size of enemy forces. Reconnaissance and small unit probes to fix enemy positions are critical.
4. Improved supporting fire plan. Access to artillery, naval gunfire, direct fire from armored vehicles, and air support should be judiciously deployed.
5. Significantly increased training for urban conflict (street fighting). Practice and preparation.
6. Deployment of available chemical weapons (tear gas) for offensive operations during the early stages of the operation.
7. Improved dissemination of operational plan details, down to the fire team level.

On the other side of the scale, small unit experience, individual Marine determination, the buddy system, the quick learning capacity of Marines under combat conditions, the combined leadership (officers, staff NCO's and NCO's) of 1/5 at all levels, and the ultimate ability to coordinate fire support and execute street fighting tactics under heavy fire were the factors that won this pivotal battle, despite incredible odds, high casualty rates and the resulting turnover of

officers and NCO's. Certainly, using the 20/20 perspective of hindsight, this battle could have been decided in an even more timely and decisive fashion, reducing friendly casualty rates in the process, by paying attention to the fundamentals of planning

Marine operations. Proper prior planning prevents poor performance.

\* \* \* \* \*

The following details regarding the lessons learned from Operation Hue City are offered from former members of Charlie Company, First Battalion, Fifth Marine Regiment, First Marine Division, who served in combat during Operation Hue City, and who were directly involved in the battle with NVA forces inside the Citadel fortress from 13 February 1968 through 5 March 1968:

## **SITUATION**

### **Terrain:**

There is an infinite variety of possible landscapes that may be confronted by a Marine force given the mission of attacking an enemy force in urban terrain. When the Tet Offensive broke out on 31 January 1968, and conventional NVA forces overran major sections of the largest cities in South Vietnam, Marine forces were, literally, knee-deep in rice paddies and jungle mud. Since first establishing a beachhead in 1965, Marines had been assigned the mission of conducting a counter-insurgency, a rural conflict, fighting for the most part a guerrilla army. The Tet Offensive changed all of that, and for the first time since the height of the Korean War, in 1954, Marines found themselves with a mission that involved urban combat.

Preparing to remove an enemy battalion that has captured a 40-story skyscraper or a college campus is a much different mission than getting an enemy squad out of a house, school or church in a small town. The common factor in all of these variations, however, is that in all cases, in urban combat structures dominate the terrain.

Studying and assessing terrain is a fundamental issue for Marine commanders when planning missions. This is even more critical in planning house-to-house combat operations. Building materials vary worldwide in their ability to provide small-arms cover to a very high degree.

Through use of reconnaissance and intelligence, we recommend conducting a serious assessment of each building or structure that is within your unit's area of operations, because tactics involved in taking each objective (building, structure, etc.) may be different in each case. A small, wood frame house may offer the illusion of cover from small arms fire but little else; in some places walls are paper thin. Even houses that use some form of plaster or concrete construction can prove to be unexpectedly porous at the worst possible time.

Know the basic layout of a structure, as much as possible, before entry. Approach each structure with an entry plan and a search plan, and make sure each member of each fire team and squad is well-versed in these plans. Establish voice codes and commands, and communicate regularly with each other. Consider entryways (existing doors and windows) to be extremely dangerous,

likely locations for booby traps, and to be avoided if at all possible. Wherever possible, blow entry holes using satchel charges or rockets. Once the entry plan is finalized and understood, it must be executed with fierce determination. Be prepared for anything, and be ready to improvise. Be systematic, and check everything (basements, sewer access, attics, rooftops, trash cans) thoroughly before establishing that objective as secure.

The other aspect of urban terrain are the spaces between the buildings. Streets, alleys and other pathways are normal routes for humans, and therefore must be suspected to be under observation and possible enemy firing lanes. Whenever possible, take the most difficult route from house to house.

Establish, in advance, a plan on what to do in the event non-combatants are found in urban combat zones, and for marking buildings that have been cleared.

Make absolutely sure that your Marines are aware that while inside a building being secured, they are at risk from both within and without. Always assume that every room, of every floor, in each and every house, contains enemy soldiers. Always move very quickly when moving in front of windows or doorways. Always know where enemy positions may be in buildings that are adjacent to yours. As in all Marine operations, watch your buddy's back, and run as fast as possible when traversing open ground.

Multiple story structures present an even greater challenge than single story buildings. In a medium-size village or town, or small city, that is dominated by one-, two- and three-story buildings, be very particular about the taller buildings, which are naturally used by the enemy as the "high ground." If possible, make entry to taller, multi-level buildings via the roof, and work systematically and thoroughly downward.

### **Mission:**

The mission assigned to Marine forces during Operation Hue City was to remove enemy forces that had captured major sections of the ancient imperial capital of Hue during the surprise NVA offensive that was quickly dubbed the Tet Offensive. Due to the historic aspect of many of the buildings in Hue, the usage of heavy weapons was significantly restricted during the initial days of fighting on both sides of the river. As friendly casualties mounted, and as initial estimates of the size of the enemy force in the Hue City area was significantly increased, fire restrictions were ultimately lifted. In our respectful opinion, our ability to successfully complete the mission was, initially, severely impacted by the rules of engagement.

Although it is understood that mission and rules of engagement are not the exclusive responsibility of Marine leadership at the platoon, company, battalion or even the regimental level, it is strongly recommended that every effort is made, at every level in the chain of command, to ensure that balance has been achieved between the demands of the mission and the affect of the rules of engagement on the ability of the command to perform the mission successfully.

## **EXECUTION**

### **Reconnaissance and Intelligence:**

Urban combat is nearly always conducted at very close quarters. It is not uncommon to have opposing forces fighting from positions a few dozen meters apart; most of the fighting is done from a distance between 50 and 500 meters. Due to this close-in nature, it is critical to know where the enemy is and how they are deployed. This lesson was learned the hard way during the initial stages of the battle inside the Citadel. During the first two major clashes between Marine and NVA forces on the morning of 13 February 1968, the enemy surprised us and wreaked significant damage very quickly. This was because we weren't exactly sure where they were. Although the ARVN had been in several major battles inside the Citadel, I don't recall receiving any intelligence attributed to them regarding the enemy's exact location. Further, to my knowledge, no Marine recon unit was sent in to check out the situation before we attacked on the morning of the 13th.

We recommend that all intelligence assets, recon units, and surveillance devices that can be made available are deployed in a significant effort to fix the exact location of enemy soldiers and units. The combatant who knows where his enemy is hiding experiences a decided advantage in surprise and the deployment of firepower.

#### **Urban Combat Tactics:**

The tragedy of urban conflict is that the "battlefield" for each firefight is a neighborhood; each objective taken, is someone's home, or a school or church, or some other structure that has value and more or less significant meaning to its inhabitants. Considering the possibilities, it is not difficult to imagine tank battles across mall parking lots; mortar fire hitting a church, a hospital, a community center; heavy small-arms firefights between homes; an artillery barrage on a school yard. While these images may be grist for the mills of Hollywood, when we think about them in relevance to our homes and our neighborhood schools and churches, the tragedy is somehow increased, made more politic. However, it is our collective belief that the life of one Marine is more precious than ten, one hundred homes, schools, churches, shrines, shopping malls, or any other building known to man. Therefore, all efforts should be made, using any and all weaponry available, to stun the enemy and support Marine advances through the use of supporting arms and without regard to damage to buildings.

At the same time, the use of heavy weaponry in urban combat is an assuredly "two-edged sword," as are many assets in modern warfare. Rubble can be nearly as affective as a building for protecting enemy firing positions. Further, artillery and other "flat trajectory" weapons may be somewhat restricted by the height of buildings and their distance from each other. In many cases, mortars, although smaller in caliber, are superior to artillery because of their higher trajectory.

#### **Supporting Arms:**

Supporting arms are most effective prior to "danger close" to minimize the potential of friendly casualties, and to maximize preparatory fires to support the infantry's attack. During Operation Hue City, the most effective indirect fire during "danger close" was from the 8 inch gun. We recommend that the supporting axis of fire be perpendicular as well as parallel. Finally, in the event, as in the case of Operation Hue City, that due to political considerations that proper preparatory fires would not be allowed, that a variety of artillery fires such as smoke, delayed

fuses, high angle, etc. be incorporated with the infantry's attack. Combined arms training for urban combat is critical.

Other advantages of preparatory fires include the destruction of the camouflage of enemy positions, the psychological shock factor against enemy troops, and the fact that heavy weapons can create new avenues of attack and egress for armored vehicles.

One of the most effective aspects of supporting arms during the battle for Hue were the "killer teams" that evolved; an M-48 tank and an Ontos would pair up and maneuver together as a team. This would allow either the tank or the Ontos to maneuver into a good firing position, while the other covered. Further, the devastating firepower put out by the 90mm tank cannon and the (6) 106's of the Ontos turned out to be extremely beneficial because of their capabilities to deliver pinpoint firepower. Armored vehicles can provide many benefits to the infantry engaged in urban combat, as they provide some cover from enemy small arms fire. However, armored vehicles can also become "rocket magnets" producing casualties for infantry troops in close proximity.

Other than in instances of harassment and interdiction fires, buildings that are hit by heavy weapons should be attacked immediately, using whatever shock benefit that may be derived, and all efforts made to clear and neutralize all enemy positions in that particular building before the attack is stopped (whenever possible).

Remember that when calling in fire missions, you can request "splash" so that friendly troops have time to take cover immediately prior to impact.

In daytime operations, the usage of covering smoke is often helpful when Marines must attack across open areas.

However, as was learned during Operation Hue City, even with proper support of heavy weapons, which was ultimately provided to the Marines, we faced "hard corps" North Vietnamese Army troops who fought from prepared positions, moved to secondary positions, fought again, and finally, very reluctantly, died. In the capture of each room, each floor, each rooftop, each building, each street, it was ultimately the Marine rifleman who won the battle.

It is critical for infantry units to know both the capabilities as well as the limitations of supporting arms. For example, naval gunfire is a more flat trajectory weapon, and not necessarily effective due to the vertical terrain (buildings). Further, in our experience, it was not smart to be on the gun- target line because the first round was typically not as accurate as artillery or mortars, in terms of range specified.

Another aspect of supporting arms limitations has to do with helicopter support. Urban terrain is not forgiving to helicopters that may be forced to make an emergency landing. Thus, helicopter pilots may be reluctant to fly over urban terrain. Further, maneuvering helicopters in urban terrain is a very difficult and dangerous proposition.

One very tragic aspect of the use of supporting arms in urban combat is that the likelihood of civilian casualties is very high. In at least two situations that we are aware of, the NVA used

civilians as “screens” for their infantry troops, and fire missions were, of necessity, called in on those positions.

### **On the Use of Chemical Weapons:**

During 1/5's battle inside the Citadel fortress, which kicked off on 13 February 1968, the battalion progressed a total of four blocks along our avenue of attack, and had secured a total of sixteen city blocks within our assigned area of operations after nearly two weeks of heavy street fighting and after suffering nearly 50% casualties at the hands of a well-prepared, determined force of NVA soldiers, a force that was finally estimated to be nearly 11,000 strong in the Hue City area of operations. On 25 February 1968, Marines from Charlie Company shot off three E-8 gas launchers, each carrying about 40 CS gas grenades, toward the enemy's last known position. The next morning, 1/5 took control of the remaining twelve city blocks in about three hours, without a single casualty, because the NVA was not equipped to deal with the tear gas attack and was forced to withdraw. No one can ever be certain that the use of chemical weapons would have made a difference in the initial stages of the battle (although we were all issued new gas masks the day before we went into Hue City!), but many of the veterans of that battle have often wondered what might have happened if the E-8's had been deployed in the early stages of the battle. We recommend the judicious use of chemical weapons, such as tear gas, etc. for urban combat operations.

### **Administration: Planning and Preparations:**

The inherent complexities of urban combat are such that special attention needs to be paid toward planning and preparations. Training, training, training; practice makes perfect. A coordinated Marine attack on an enemy-held position in a town or city can be equated to an intricate opera or Broadway production, although the stakes are a bit higher. Entry techniques, room search and clearing techniques, voice commands indicating movement or progress, fire discipline, the use of grenades, rockets, and supporting fires, communications, all of these must be rehearsed and improved, until they are second nature.

Further, all plans must be communicated and rehearsed at each level of command, from the fire team to the company and above. In particular, platoon commanders, platoon sergeants, squad leaders and fire team leaders must be aware of each man's assignment. This should include who goes into a structure first, who covers. Hand and arm signals, as well as vocal commands should be established and practiced.

## **MEDICAL**

### **Input from Doc John Loudermilk.**

The following recommendations are made regarding training and preparations for field corpsmen who support Marine units in urban combat:

1. Augment corpsmen's field pack with a medical surgical kit and antibiotic creams.
2. Increase knowledge of:



- a. treatment of rashes and dermatitis;
  - b. treatment for opening airways / crico thyroidotomy; and
  - c. treatment of battle trauma (psychological).
3. C.P.R. certification / refresher.
  4. Periodic training sessions at B.A.S. or R.A.S., and discuss ongoing problem resolution in the field, answering questions of corpsmen.
  5. Increase knowledge of childbirth procedures. Although this comment was made in a somewhat lighthearted way, there is a serious aspect to this issue. Doc Loudermilk helped a Vietnamese woman give birth during the battle inside the Citadel.
  6. Follow up information regarding casualties back to their unit.
  7. Time off after major battles.
  8. Better record keeping.
  9. Small, motorized vehicles will be required for both supply and medical evacuation. This will reduce the number of able-bodied Marines required to move wounded to the rear area.

**Command and Control:**

In full-scale urban conflict, especially in situations where enemy dispositions are not well known, initial contact with the enemy can be:

1. unexpected;
2. at very close range; and (
3. massively devastating.

Command and control, the basic Marine's connection to his leadership, can disappear in the blink of an eye. During Operation Hue City, C/1/5 lost all of its officers except two; SSgt's became platoon commanders; PFC's were squad leaders. In urban combat it would not be at all surprising to find PFC's as platoon commanders, given the potentially high casualty rates. The critical factor for unit survival in these situations is that unit's ability to immediately determine the enemy's positions and to return a high volume of sustained fire on those positions, allowing maneuverability, despite the situation with the chain of command.

During the first day of 1/5's involvement in Operation Hue City, Alpha Company lost its C.O., its X.O. and much of the company C.P. Group. Of necessity, Alpha was pulled back to the battalion rear for reorganization. The loss of a few leaders effectively eliminated an entire company. This also delayed the battalion's attack, blunting our initiative.

Unique Operations—Urban

The individual Marine who is under heavy enemy fire from very close range, who may now be cut off from his team and/or squad leader, needs to have been thoroughly informed of communications codes, lines of departure, lines of stoppage, friendly unit dispositions and the ability to call in supporting fires and conduct contingency plans. In short, in urban conflict situations, command and control needs to be understood at every level down to the basic Marine. Based upon our experiences during Operation Hue City, expect the unexpected, expect chaos, and plan for all possibilities.

Scott Nelson, First Lieutenant,  
Commanding Officer, C/1/5

Nick Warr, Second Lieutenant,  
Platoon Commander, C/1/5

Travis Curd, Second Lieutenant,  
Artillery FO, attached to C/1/5

John Mullan,  
Staff Sergeant, Platoon Sergeant, C/1/5

ANNEX B TO CHAPTER 4

**Israeli Urban Doctrine**

- Political, Strategic & Operational goals must be aligned
  - The combined arms team is a MUST to maintain tempo
    - Cohesive units
    - Heavy use of armor
- 
- Infantry, Armor, Engineers, Intel & Aviation are key players
  - Artillery minimized due to collateral damage & poor effects
    - Snipers & Counter-snipers critical
    - Civil Affairs is significant



**Rules of Engagement**

They all conflict in the urban fight



- Minimize civilian casualties & collateral damage
- **Destroy terrorist infrastructure**
- Minimize friendly casualties
- **Destroy terrorist leadership**
- Adhere to fast-paced operational timelines
- **Destroy terrorist military capabilities**
- Maintain tempo/initiative
- **Create buffer zone**
- Generate relationship with the media

Ground forces seek ways around restrictions



# *The Urban Environment*

## Jenin





## *Command & Control*

- COMSEC is essential; IDF adhere to strict comms procedures of encrypting
- PLO & Syrians were poor at COMSEC; IDF had real-time reliable intelligence
- Monitors infrastructure (phone lines), ID enemy location, personnel & activities
- Small unit leaders require independence to execute operations (radios!)
- Communication and situational awareness are critical
- IDF employs numerous assets to ensure up-to-date maps (photographic maps)
- Task organize complex formations for long periods of time
- Extensive use of communications at lowest levels
- RPV's (UAV) provide great intel, but analysis is difficult



## *Armor Forces*

- Armor forces cannot operate without dismounted infantry support
- When this doctrine isn't followed, tanks become very vulnerable
- Early biases towards armor resulted in costly mistakes
- Armor is the nucleus of the force structure, but must be adaptable to the fight
- There are no systems that provide the shock value of the tank
- Significant lethality in close quarters fight; easier to mass deadly/effective fires day/night
- Mobile, survivable and deadly; can perform a wide variety of missions
- Armor is continuously upgraded to defeat emerging AT threats
- Weapons must be suitable against the threat; wide array of munitions available
- Appliqué armor is the current trend (Megach 6 is only ERA-equipped tank)
- After numerous engagements, no tank losses to direct fire to date



## *Infantry Forces*

- Infantry must execute a variety of missions; high level of training in many areas
- Must operate as combined arms; support armor & be supported by armor
- The nucleus of the combined arms team
- Squads must be lethal and have excellent communication
- RPG's, Shoulder-fired HEAT & ATGMs extremely useful
- HMG's are extremely effective for the urban fight
- Infantry carriers must be survivable and flexible (high angle of fires, maneuverable, etc)
- APCs/IFVs required significant upgrades from '82 (could not purchase new fleets)
- 3 Lessons shaped infantry development
  - ✓ Limited elevation of weapons systems
  - ✓ Vulnerable platforms (RPG's very effective in '82)
  - ✓ Poor maneuverability in complex terrain (debris, roadblocks)



## *Engineers*

- EOD are critical to maintaining the tempo of urban combat
  - ✓ Destroy or evacuate enemy weapons caches
  - ✓ Evaluate captured weapons/ammunition
  - ✓ De-mine area of operations
  - ✓ Neutralize dud munitions (extensive homemade devices)
  - ✓ Neutralize booby-traps
- Specialize units for clearing areas; creating avenues of approach
- Extensive coordination with maneuver units
- Introduced new equipment to meet requirements of more lethal urban combat
  - ✓ The D9, Achzarit, Puma & Sledgehammer are outstanding tools for the urban fight
- High value systems/personnel must be well protected
- Mission extends beyond the battlefield (support non-combatants as well)





## Logistics

- Logistics extremely stressed
- Much higher consumption rates
- Harder to conduct LOGPAC, units must be rotated
- Soft-targets are lucrative targets for enemy (force protection measures required)
- UBL's significantly increased to decrease logistical requirements
- Increased issue of short-range radios to enhance communication & rapid resupply



## Soldier "Burn-Out"

- High tempo, intensity & continuous operations lead to "burn-out"
- High stress constantly imposed on individuals & small units
- Commands must create "R & R" plan for units (to include CS & CSS units)
- Psychological casualty = combat casualty
  - ✓ 1973: 3.5% to 5 % experienced psychological problems
  - ✓ 1982: 10% to 24% experienced psychological problems
  - ✓ 2000-2002: Unknown
- Dedicated enemy on his own "turf" brings something new to the fight daily
- Distinguishing combatant vs. non-combatant is a unique stress
- Daily exposure to media puts soldiers under microscope
- Pressures on chain of command



## *Use of Smoke*

- Smoke enhances survivability; denies RPG gunners ability to engage 100-300 m away
- Mask movements
- Numerous drawbacks
  - ✓ Impedes visual communication with friendly personnel
  - ✓ Battlefield confusion
  - ✓ Degrades ability to recognize combatant vs. non-combatant
- Used on limited scale in Beirut & current operations



## *Casualties*

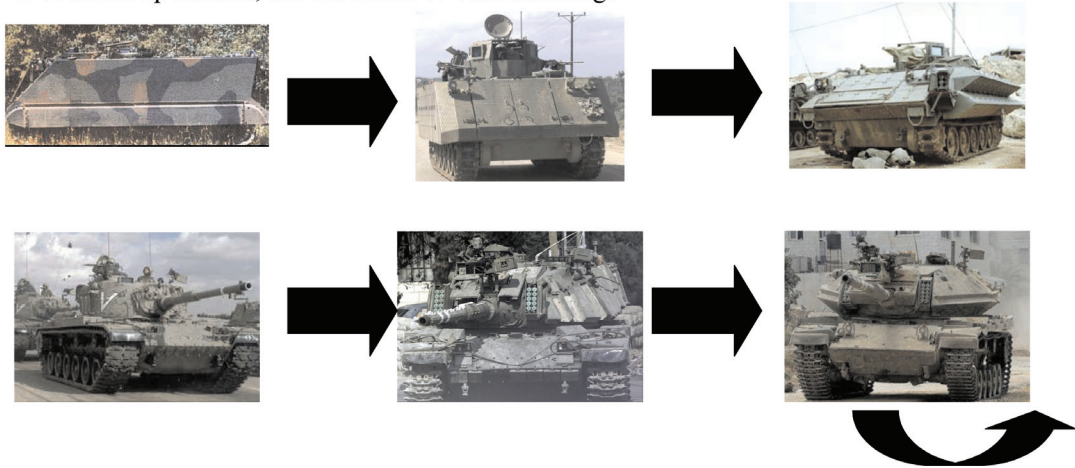
- 55% of casualties sustained by small arms fire in '82 (unknown of current operations)
- Flak jackets significantly reduced casualties
- Studies showed that without flak jackets casualties would have been 20% higher
- Development of light, easy to close, non-cumbersome vests fielded today
- Beirut losses = 24% of all KIA and 32% of WIA of entire '82 war
- Nearly all fighting today is in urban areas; casualties come from urban areas
- Small arms still #1 killer; developments in mines, IED's & booby-traps becoming more lethal
- Casualties = break in "will to fight"
- Immediate treatment saves lives; emphasis on treatment & evacuation critical





## Conclusions

- The IDF modified doctrine & equipment based on the lessons of '82
- The IDF continues to adapt to the evolving threats; maintains ability to fight MTW
- Combined arms (synchronized) is essential to combat in complex terrain; armor remains centerpiece
- New technologies must be integrated (as well as some old & proven ones)
- Document operations; use the media to own advantage





## **CHAPTER 5 URBAN FUNDAMENTALS**

1. To properly understand, prepare for and conduct urban operations (UO) commanders must develop their ability to visualize how the capabilities available to them can be applied in the context of the urban environment. To accurately visualize, they need to understand the fundamentals applicable to UO. These fundamentals provide the foundation for using an operational framework to aid in operational design and decision making. The operational framework of understand, shape, engage, consolidate and transition (USECT) has been developed as the framework for UO visualization. USECT will be discussed in Chapter 6<sup>1</sup>.

### **SECTION 1 FUNDAMENTALS**

2. The fundamentals are as follows:
- a. conduct focused information operations;
  - b. control the essential;
  - c. minimize collateral damage;
  - d. separate non-combatants from combatants;
  - e. restore essential services;
  - f. preserve critical infrastructure;
  - g. understand the human dimension.; and
  - h. understand environmental effects on operations.

### **CONDUCT FOCUSED INFORMATION OPERATIONS**

3. Information operations (IO) aimed at influencing non-military sources of information are critical in UO. Because of the density of non-combatants and information sources, the media, the public, allies, coalition partners, neutral nations, and strategic leadership, will likely scrutinize how friendly forces participate in UO. The proliferation of cell phones, Internet capability, and media outlets also ensures close observation of our activities. With information sources rapidly expanding, public information about operations will be available faster than our ability to process it. Commanders should aggressively integrate focused offensive and defensive IO into every facet and at all levels of the operation (refer to B-GL-300-005/FP-001 *Information Operations*).

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<sup>1</sup> NATO Urban Operations 2020 (UO2020) Working Group Final Report

## **CONTROL THE ESSENTIAL**

4. Many modern urban areas are too large to be completely occupied or even effectively controlled without an enormous force. Therefore, friendly forces must focus their efforts on controlling only those elements essential to mission accomplishment. At a minimum, this requires control of key terrain. Key terrain is terrain whereby its possession or control provides a marked advantage to one side or another. In the urban environment, commanders determine key terrain based upon its functional, political, economic, or social significance. A power station or a church may be key terrain.

## **MINIMIZE COLLATERAL DAMAGE**

5. Forces should use precision fires, IO, and non-lethal tactical systems consistent with mission accomplishment while decreasing the potential for collateral damage. Commanders may need to develop unique rules of engagement (ROE) for each urban operation. IO and non-lethal systems may compensate for some restrictions. Commanders must continually assess the short and long-term effects of their lethal and non-lethal capabilities on the population, infrastructure, subsequent missions, and strategic objectives.

## **SEPARATE NON-COMBATANTS FROM COMBATANTS**

6. Promptly separating non-combatants from combatants (psychologically and physically) may make the operation more efficient and diminish some of the threat's asymmetrical advantages. This separation may also reduce restrictions on the use of firepower, enhance force protection, and strip the threat from its popular support base. This important task becomes much more difficult when the threat is an insurgent force that can mix with and is supported by the general population.

7. The enemy will seek to integrate their military capabilities as closely as possible into the civilian population and infrastructure. In these conditions, commanders must increase their efforts to discriminate between the two. Soldiers managing violence in this setting require the highest level of individual and organizational discipline and judgment. The training, effort and command emphasis in this area is as important as fully successful results. Such efforts strongly affect national and international perceptions of the operation.

## **RESTORE ESSENTIAL SERVICES**

8. There must be a plan to restore essential services that fail to function before or during an operation. Essential services include power, food, water, sewage, medical care, and law enforcement. When planning for and conducting UO, units can use non-lethal and less destructive munitions and capabilities to keep potentially vital infrastructure intact. Initially, friendly forces may be the only entity able to restore or provide essential services. Failure to do so can result in serious health problems for the civilians, which in turn would affect the health of friendly forces and negatively impact overall mission success. Responsibility for providing

essential services should be transferred as quickly as possible to other agencies, non-government organizations (NGOs), or the local government.

### **PRESERVE CRITICAL INFRASTRUCTURE**

9. Different from simply avoiding collateral damage, friendly forces may have to initiate actions to prevent an enemy or a hostile civilian group from removing or destroying critical infrastructure. Commanders must analyze the urban area to identify critical infrastructure and attempt to preserve them for the health and well-being of the indigenous population. Such infrastructure may include cultural resources, or religious and historical places. In some cases, preserving the infrastructure may be the assigned objective of the urban operation.

### **UNDERSTAND THE HUMAN DIMENSION**

10. Commanders must carefully consider and manage the perceptions, allegiance, and morale of the civilians. Their assessment of the environment needs to accurately identify the attitudes of the people towards friendly forces. Operational guidance to subordinates—including ROE, protection, logistics operations, and fraternization—is based upon this assessment. Commanders must expect there will be a demographic variance in the attitudes of an urban population, and plan accordingly. They must avoid inadvertently applying Western cultural norms to a non-Western urban population. *The assessment and the consequential plan must be based upon an understanding and appreciation of the local culture.*

11. Sound policies, proper discipline, and adequate consideration for local culture will positively affect the attitudes of the population towards friendly forces. Additionally, well-conceived and executed IO will enhance a force's position relative to the urban population. Even during high-intensity urban combat, heightened awareness of and sensitivity towards the civilians can lead to a better post combat situation than if civil considerations were unobserved or diminished in importance. An improved post combat situation enhances *transition*. As the environment of conflict becomes more complex, the human dimension (and its associated moral aspects) takes on greater importance and may have the greatest potential for affecting the successful outcome of UO.

### **UNDERSTAND ENVIRONMENTAL EFFECTS ON OPERATIONS**

12. Understanding the way the urban environment affects the operational functions permits the commander to better visualize the battlespace. With this appreciation, he can conduct a more thorough assessment and thereby determine the most efficient means of employing his forces. The staff must be intimately familiar with these affects in their area of expertise, and use that knowledge to understand the problem and develop creative and innovative solutions to achieve their commander's intent. The following paragraphs describe environmental effects.

13. Impacts of the environment on the intelligence system include degraded reconnaissance capability, a more difficult intelligence preparation of the battlefield (IPB) process, and increased importance of credible human intelligence (HUMINT). The friendly force's ability to overcome

these difficulties can result in timely, accurate, and worthwhile intelligence that permits the effective development and application of a plan.

14. **Degraded Reconnaissance and Surveillance Capability.** The physical environment creates a major challenge to the intelligence system. Fabricated construction in urban areas provides nearly complete cover and concealment for threats. Current sensor capabilities cannot penetrate the subsurface facilities, and much of the space within intra-surface areas. The mass of buildings can also defuse electronic signatures. Except from directly overhead, tall buildings shield movement within urban canyons from aerial observation. Urban threats may be less technologically dependent and may thwart signals intelligence efforts simply by turning off their radios and using messengers. Threat forces will likely use elements of the civilian telecommunications infrastructure for command and control (C2). These systems may include traditional landline telephones, cellular telephones, and computer-to-computer or Internet data communications. Most urban telecommunications systems use buried fibre or cables, or employ modern digital signalling technology. Such systems are difficult to intercept and exploit at the tactical level. These characteristics make it difficult for the intelligence system to use electronic means to determine threat dispositions, and in offensive and defensive UO, identify decisive points and centres of gravity (COG).

15. **Challenging IPB Process.** The complexity of the environment also challenges the intelligence system. With more data points for the IPB process to identify, evaluate, and monitor, this application becomes even more demanding. The human and societal aspects of the environment and the physical complexity primarily cause this difference. Relationships between aspects of the environment, built upon an immense infrastructure of formal and informal systems connecting the population to the urban area, are usually less familiar to analysts. Thus, the urban environment will require more intelligence resources to penetrate, identify, monitor, and assess than other environments.

16. Compounding the challenges is the relative incongruity of all urban environments. No two urban areas are alike physically, in population, or in infrastructure. Thus, experience in one urban area with a particular population and pattern of infrastructure does not readily transfer to another urban area. Any experience in UO is valuable and normally serves as a starting point for analysis, but the intelligence system cannot assume that patterns of behaviour and the relationships in one urban area mirror those of another urban area. The opposite is as likely to hold true. The intelligence system will have to study each urban area individually to determine how it works and understand its complex relationships.

17. Each characteristic of the urban environment—terrain, society, and infrastructure—is dynamic and can change radically in response to UO or external influences. Civilian populations pose a special challenge to commanders conducting UO. Civilians will react to, interact with, and influence to varying degrees friendly forces. Commanders know and account for the potential influence these populations may have on their operations. Intelligence analysts revisit or continuously monitor the critical points looking for changes.

18. Our actions will affect, positively or negatively, the relationship with the urban population, and hence, mission success. The intelligence system must be able to monitor and

predict the reactions of the civilian population. Predictive analysis of a large population requires specific training and extensive cultural and regional expertise.

19. **Increased Importance of Human Intelligence.** In UO, the intelligence system adjusts to the degradation of its technical intelligence gathering systems by increasing emphasis on HUMINT operations. Such operations may be the primary and most productive intelligence source in UO. In urban offensive and defensive operations, HUMINT information is gathered from refugees, former citizens (especially previous civil administrators), civilian contractors, and military personnel who have operated in the area. Credible intelligence of this type can help meet requirements, provide more detail, and alleviate some of the need to physically penetrate the urban area with reconnaissance forces.

20. NGOs can be extremely beneficial sources of credible information about the urban environment. For example, during the 1999 fighting in Kosovo, the Red Cross provided the most accurate figures regarding the number of Kosovar refugees, helping coalition forces to estimate the appropriate level of support required to handle their needs. NGOs may also have:

- a. a developed network of influential contacts including local leaders and business people;
- b. historical archives;
- c. extensive understanding of the urban infrastructure;
- d. key knowledge of political and economic influences; and
- e. up-to-date web sites and maps.

## SECTION 2 EMPLOYMENT OF CAPABILITIES

21. **Manoeuvre.** The urban terrain will often canalize and compartmentalize forces manoeuvring through it. Buildings pose obstacles to both mounted and dismounted movement, forcing units to be canalized along streets. The buildings also block movement between streets, thus compartmentalizing units. Changing directions, repositioning committed forces, reinforcing forces in contact, bypassing threats, and manoeuvring to the threat flank become extremely difficult. Units often breach obstacles to help solve this problem. Using helicopters to quickly move forces, both forward into contact and to rear areas as part of repositioning, also works to overcome some terrain constraints.

22. The canalization and compartmentalization effects can slow manoeuvre considerably. However, slowed manoeuvre also results from the physically demanding tasks conducted by soldiers in an urban environment. Soldiers operate dismounted across rubble and hard surfaces. Operating in three dimensions, they constantly move up the intra-surface areas of building interiors and down into basements, cellars, and other subsurface areas. They breach many obstacles and use upper body strength, ropes, and ladders to scale heights. The inability to see into the next room, floor, or building magnifies stress. The resulting fatigue slows the overall rate of manoeuvre.

23. The urban environment increases the vulnerability of forces manoeuvring in offensive, defensive, and stability operations. Both the physical terrain and the urban population provide the threat with cover and concealment. Air manoeuvre is vulnerable for many of the same reasons. In offensive or defensive operations, enemy forces can remain undetected in buildings and in position to conduct an ambush. Forces must clear buildings along manoeuvre routes before mounted movement along those axes. Failure to clear routes (and effectively mark cleared portions) exposes mounted movement to ambush at close range. Movement back across streets and obstacles may be difficult, particularly if the element of surprise was essential in the initial crossing or breach. The same buildings also provide cover and concealment to enemy air defence (AD) capabilities, particularly man-portable air defence systems (MANPADS). In all operations, civilians can conceal threat elements. The threat can then initiate offensive operations from close range and where ROE will hamper the application of combat power. *Thus, manoeuvre through a dense population is a high-risk operation.*

24. An effective combined arms task organization ensures that forces are task organized with infantry—the essential building block for all organizations conducting UO. Infantry protects mounted elements as the combined arms unit manoeuvres through the urban area. The infantry destroys the enemy in buildings and bunkers where they cannot be defeated by mounted forces. Engineers support dismounted manoeuvre by assisting in covered and concealed manoeuvre through buildings and off exposed streets. Field artillery aids in dismounted and mounted (to include air) manoeuvre by suppressing known and suspected enemy positions with *precision* fires. Armour protects soldiers from small arms fire, and destroys or suppresses enemy positions with direct fire. Artillery may also be used in this direct fire role. Armoured forces and attack helicopters can facilitate manoeuvre through shock action that can have a psychological effect, particularly against less well-trained enemy, and in some instances, hostile crowds.

25. A major difference in task organizing combined arms for UO is in proportion and structure. UO require an increased proportion of dismounted infantry and engineer capabilities. Armour is not required in the same high numbers. The level at which combined arms operations occur is also lower. Commonly, company/battery level will require true combined arms capability and may include engineers, military intelligence, reconnaissance, and artillery. Combined arms teams can then form at platoon/troop and section levels. Because of this, task forces required to conduct UO will need more civil-military cooperation (CIMIC), intelligence, and engineers than those included in the typical structure, or as habitually attached for combat in more open terrain.

26. Two other ways to improve our ability to manoeuvre in urban terrain are continuous operations and the leveraging of technology. Historically, urban battles have been fought primarily during daylight because of technological limitations and fatigue. By utilizing night vision technologies, accurate situational awareness and understanding, a common operational picture (COP), training, and rotated units, friendly forces can defeat threats who use the same soldiers in day and night operations, and who are less well-equipped and adept at night operations. Night operations are also a means of mitigating the (AD) threat against air manoeuvre. Continuous operations through night manoeuvre with fresh forces are challenging, but it can overcome many advantages that a stationary force has against manoeuvre in the urban environment. Commanders must also consider that streetlights, fires, and background



illumination (as well as dark building interiors without ambient light) will limit the effectiveness of night vision devices, and make thermal imagery identification difficult.

27. **Fire power.** Target acquisition in an urban environment faces several challenges. There is the difficulty penetrating the urban environment's increased cover and concealment using sensors and reconnaissance. Acquiring targeting information and tracking targets throughout the depth of the urban area may prove challenging. Moving personnel or vehicular targets are normally the easiest to acquire. However, the cover and concealment provided by urban terrain gives moving targets short exposure times, which compel firing systems to act rapidly on targeting data. Targeting of opposing indirect fire units by acquisition radar works more effectively in urban terrain because of the necessary high angles of indirect fire. The urban environment presents similar difficulties for battle damage assessment.

28. Targeting challenges are met by innovatively integrating reconnaissance capabilities. These capabilities include special operations forces (SOF), long-range reconnaissance units, unmanned aerial vehicles (UAVs), and aerial observers, as well as the standard reconnaissance assets. More artillery systems may need to be used to ensure the responsiveness (rather than the weight) of fires. Positioning numerous artillery systems reduces the dead space (as discussed below) and permits units to establish more direct sensor-to-shooter links.

- Masking and Dead Space
- Collateral Damage Limitations
- Acquisition and Arming Ranges
- Type and Number of Indirect Fire Systems
- Positioning
- Mix of Munitions

**Figure 5-1: Urban Effects on Fire Support Systems**

29. Both the physical and human components of the urban area affect how units use fire support weapon systems (see Figure 5-1). The physical aspects of the urban environment, such as the heights and concentration of buildings, cause significant *masking and dead space*. Buildings that stand three or more stories tall hinder close indirect fire support. Tall buildings can potentially mask several blocks of an area along the gun-target line of artillery. For low-angle artillery fire, dead space is about five times the height of the building behind which the target sits. The *potential for collateral damage* to adjacent buildings may also prevent engagement with artillery. Such damage might cause non-combatant and friendly troop casualties and unintentional rubble. Collateral damage concerns may also cause commanders to restrict attacks to certain times of day, give warning prior to an attack so that non-combatants can evacuate the area, or even abort an attack unless precision effects can be achieved. Vertical structures interrupt lines of sight (LOS) and create corridors of visibility along street axes. *The result is thereby shortened acquisition and arming ranges for supporting fires* and subsequently

affected engagement techniques and delivery options. Heavy smoke and dust rising from urban fires and explosions may hinder target identification, laser designation, and guidance for rotary and fixed-winged aircraft. The close proximity of friendly units and non-combatants requires units to agree to, thoroughly disseminate, and rehearse clear techniques and procedures for marking target and friendly locations (see B-GL-322-008/FP-001 *A Tactical Guide to Urban Operations*).

30. The urban environment also affects the *type and number of indirect fire weapon systems* employed. Commanders may prefer high-angle fire because of its ability to fire in close proximity to friendly occupied buildings. Tactically, commanders may consider reinforcing units in UO with mortar platoons from reserve units. This will increase the number of systems available to support manoeuvre units. Multiple launch rocket systems (MLRS) may be of limited use in urban areas due to their exceptional destructive capabilities and the potential for collateral damage. However, commanders may use MLRS to isolate the urban area from outside influence. Commanders may also employ field artillery systems as independent sections, particularly self-propelled systems, in the direct-fire role; decreasing volume and increasing precision of artillery fire helps minimize collateral damage. While discretely applying the effects of high explosive and concrete-piercing munitions, these self-propelled systems take advantage of the mobility and limited protection of their armoured vehicles.

31. The urban area may affect the *positioning* of artillery. Sufficient space may not exist to place battery or platoon positions with the proper unmasked gun line. This may mandate moving and positioning artillery in sections, while still massing fires on specific targets. Commanders will need to increase protection of artillery systems, particularly when organized into small sections. Threats to artillery include raids and snipers. Therefore, firing units will have to place increased emphasis on securing their positions.

32. The *mix of munitions* used by indirect fire systems will change somewhat in urban areas. Units will likely request more precision-guided munitions (PGM) for artillery systems to target small enemy positions, such as snipers or machine guns, while limiting collateral damage.

33. The urban environment also affects the use of non-precision munitions. Building height may cause variable time fuses to arm prematurely. Tall buildings may also mask the effects of illumination rounds. Units may choose not to use dual-purpose conventional munitions if:

- a. the enemy has several building floors for overhead protection;
- b. dismounted friendly units need rapid access to the area being fired upon; and
- c. large numbers of civilians will be in the target areas during combat operations.

34. Depending upon the building construction, commanders may prohibit or limit illumination, smoke, and other munitions because of fire hazards. Of course, in particular instances, they may specifically use them for that effect. Structure fires in an urban area are difficult to control and may affect friendly units. Conventional high-explosive munitions may work best against concrete, steel, stone, and other reinforced structures. When not used in the direct-fire role, a greater mass of indirect fire is often required to achieve desired effects. Commanders balance firepower and collateral damage since the rubble caused by massive

indirect fires may adversely affect a unit's ability to manoeuvre, and provide a threat with additional cover and concealment.

35. Non-lethal weapons can help commanders maintain the desired balance of force protection, mission accomplishment, and safety of non-combatants by expanding the number of options available when deadly force may be problematic. As additional non-lethal capabilities are developed, they are routinely considered for their applicability to UO. In determining their use and employment, commanders consider:

- a. **Risk.** The use of non-lethal weapons in situations where lethal force is more appropriate may drastically increase the risk to friendly forces;
- b. **Threat Perspective.** A threat may interpret the use of non-lethal weapons as a reluctance to use force and embolden him to adopt courses of action that he would not otherwise use;
- c. **Legal Concerns.** Laws or international agreements may restrict or prohibit their use (see Chapter 9);
- d. **Environmental Concerns.** Environmental interests may also limit their use; and
- e. **Public Opinion.** The apparent suffering caused by non-lethal weapons, especially when there are no combat casualties with which to contrast it, may arouse adverse public opinion.

36. **Mobility.** Mobility operations preserve the freedom of manoeuvre of friendly forces. Counter-mobility operations deny mobility to threat forces so that they can be destroyed. Survivability operations protect friendly forces from the effects of enemy weapons systems and from natural occurrences. All three aspects of this system have distinct and important applications in UO.

37. The urban environment presents constant challenges to urban mobility. Combined arms task organization and effective use of engineers to conduct mobility missions significantly reduces these challenges. Commanders must consider all urban buildings obstacles to movement. Engineers, trained and equipped for UO, can turn these obstacles into an advantage by breaching them with "mouse holes" made by explosives, sledgehammers, bulldozers or armoured vehicles, or high-strength (diamond or carbide-tipped) cutting devices. These breaches permit dismounted movement through buildings under cover and concealment.

38. Buildings are essentially obstacles that cannot be breached and restrict mounted movement to the compartmentalized and canalized streets. Threats can block streets with roadblocks ranging from sophisticated log and concrete cribs, reinforced with anti-tank and anti-personnel mines, to expedient cars, buses, and trucks. Engineers must be able to breach these obstacles to maintain the coherence of the combined arms team (mounted and dismounted). Engineers must be forward, often task-organized down to section level, and have the expertise and equipment to rapidly reduce point obstacles.

39. In all UO, mobility operations may allow civilian traffic and commerce to resume, letting the urban area return to some semblance of normalcy (often a critical objective). In stability operations, mobility often focuses on keeping lines of communications (LOC) open, and reducing the threat of mines to soldiers and civilians. In humanitarian operations, mobility may focus on removing storm debris or reducing obstacles caused by destroyed property.

40. Properly planned and executed AD prevents air threats from interdicting friendly forces and frees the commander to synchronize manoeuvre and other elements of firepower. Even in a major theatre of war (MTW), the enemy will likely have limited air and missile capabilities, and therefore seek to achieve the greatest pay-off for the use of these systems. Attacking friendly forces and facilities promises the greatest likelihood of achieving results, making urban areas the most likely targets for air and missile attack.

41. Enemy rotary wing aircraft can be used in various roles to include air assault, fire support, and combat service support (CSS). Some threats may use UAVs to obtain intelligence and target acquisition data on friendly forces. Increased air mobility limitations and targeting difficulties may cause enemy fixed-wing aircraft to target key logistics, C2 nodes, and troop concentrations outside the urban area, simultaneously attacking key infrastructure in and out of the urban area.

42. The enemy intermediate range missile capability is the most likely air threat to an urban area. Urban areas, particularly friendly or allied, make the most attractive targets because of the sometimes-limited accuracy of these systems. By firing missiles at an urban area, an enemy seeks three possible objectives:

- a. inflict casualties and materiel damage on military forces;
- b. inflict casualties and materiel damage on the urban population; and
- c. undermine the confidence or trust of the civilian population, particularly if allied, in the ability of friendly forces to protect them.

43. If facing a missile threat, commanders must work closely with civil authorities, as well as joint and multinational forces, to integrate the AD and nuclear, biological, and chemical defence (NBCD) warning system with civil defence mechanisms. Similarly, friendly forces may support urban agencies, which react to a missile attack with medical and medical evacuation support, survivor recovery, assistance in damaged areas, and with crowd confrontation augmentation of local police forces.

44. Separating AD locations from high population and traffic centres, as well as augmenting these positions with defending forces, can prevent or defeat threat efforts to neutralize them. Additionally, increased density of UO means increased concentration of all friendly and enemy systems engaged in air and counter-air operations. This density may increase friend and foe identification challenges, air space management challenges, and the overall risk in the conduct of air operations. Finally, limited AD assets, difficulties in providing mutual support between systems, potential mobility limitations, and other effects of the urban environment increase the need for, and effectiveness of, a combined arms approach to AD.

45. Counter-mobility capabilities are essential in all UO, not just the defence. In defensive operations, commanders can use counter-mobility capability to control *where* the enemy moves in the urban area. Repositioning defensive forces in the urban area can be difficult and obstacles are essential to limiting the enemy's manoeuvre options. During offensive operations, counter-mobility protects exposed flanks and air assaulting forces from counterattack. In stability operations, counter-mobility operations may take the form of constructing barriers to assist in populace and resource control at critical urban locations.

46. **Survivability.** Survivability in the urban environment is a significant force multiplier. Properly positioned forces can take advantage of the increased survivability afforded by the physical terrain. Even a limited engineer effort can significantly enhance the combat power of small units. In stability operations, properly planned and constructed survivability positions can enable small groups of soldiers to withstand the assaults of large mobs, sniping, and indirect fire. These survivability positions are often critically essential to minimizing casualties during long-term operations.

47. While executing combat operations, in particular defensive operations, well planned and resourced engineer efforts can enhance the survivability characteristics of the urban area. These efforts, though still requiring significant time and materiel, can establish defensive strongpoints more quickly and with greater protection than can be done in more open terrain. Skilfully integrating the strongpoint into the urban defence greatly increases the overall effectiveness of the defence disproportionately to the number of forces actually occupying the strongpoint.

48. Urban survivability operations can become complex if tasked to support survivability operations for civilians. Such operations can range from constructing civil defence shelters, or evacuating the population, to assisting the population in preparing for or reacting to the use of weapons of mass destruction (WMD). Normally, friendly forces can render this type of support only as a focused mission using a unique, specially equipped task organization.

49. **Survivability.** CSS incorporates technical specialties and functional activities, to include maximizing available host nation infrastructure and contracted logistics support. It provides the physical means with which forces operate. CSS operations relate to UO in two ways. Firstly, CSS operations are conducted to support units conducting UO. Secondly, CSS operations are conducted from locations positioned in an urban area.

50. Commanders must understand diverse CSS requirements of units conducting UO. They also need to understand how the environment, to include the population, can affect CSS support. These requirements may include the provision of essential support to a large urban population.

51. CSS commanders must plan for sustaining operations that are based in a major urban area. These operations are located in major urban areas to exploit air and seaports, maintenance and storage facilities, transportation networks, host nation contracting opportunities, and labour support. See Chapter 9 for a detailed discussion of urban CSS.

52. **Command and Control.** The urban environment influences both components of C2: the commander and the C2 system. The leader's ability to physically see the battlefield, his interaction with the human component of the environment, his ability to effectively execute the

targeting process, and his intellectual flexibility in the face of change, each impact the mission. Likewise, the C2 system faces difficulties placed on the tactical Internet and system hardware by the urban environment, by the increased volume of information, and by requirements to support the dynamic decision making necessary to execute successful UO.

53. Although severely challenged, the principle of unity of command remains essential to UO. However, the number of tasks and the size of the urban area often require that units operate non-contiguously. Non-contiguous operations stress the C2 system and challenge the commander's ability to unify the actions of his subordinates, apply the full force of his combat power, and achieve success. To apply this crucial principle in an urban environment requires centralized planning, mission orders, and highly decentralized execution. The philosophy of command that best supports UO is mission command. Mission command permits subordinates to be innovative and operate independently according to clear orders and intent, as well as clearly articulated ROE. These orders and ROE guide subordinates to make the right decision when facing:

- a. a determined, resolute, and knowledgeable threat;
- b. a complex, multidimensional battlefield;
- c. intermittent, or a complete loss of communications;
- d. numerous potentially hostile civilians close to military operations; and
- e. the constant critique of the media.

54. Decentralized execution allows commanders to focus on the overall situation—a situation that requires constant assessment and coordination with other forces and agencies—instead of the numerous details of lower-level tactical situations. Fundamentally, this concept of C2 requires commanders who can accept risk and trust in the initiative, judgment, and tactical and technical competence of their subordinate leaders. Many times, it requires commanders to exercise a degree of patience as subordinate commanders and leaders apply mental agility to novel situations.

55. Commanders of a major operation must consider how the need to maintain a heightened awareness of the political situation may affect their exercise of C2. A magnified political awareness and media sensitivity may create a desire to micromanage and rely solely on detailed command. Reliance on this method may create tactical leaders who are afraid to act decisively and with speed and determination—waiting instead for expected guidance from a higher-level commander. Threats may capitalize on this hesitation by conducting operations faster than friendly forces can react. Mission orders that express the overarching political objectives and the impact of inappropriate actions, combined with training and trust, will decrease the need for detailed command. Leaders must reduce a complex political concept to its simplest form, particularly at the small-unit level. Even a basic understanding will help curtail potentially damaging political actions and allow subordinates to make the often instantaneous decisions required in UO—decisions that support military and political objectives.

56. Leaders at all levels need to visualize the battlefield to lead soldiers, make effective decisions, and give direction. Sensors and other surveillance and reconnaissance assets alone cannot provide all the information regarding the urban environment that commanders will need. The focus of lead elements narrows rapidly once in contact with a hostile force limiting their assessment to the local area. Therefore, tactical commanders will not be able to observe operations from long, stand-off ranges. Their personal observation remains as critical in urban areas as elsewhere, and helps to preclude commanders from demanding their subordinates accomplish a task or advance at a rate inconsistent with the immediate situation. In urban offensive and defensive operations, seeing the battlefield requires that commanders move themselves and their command posts forward to positions that may be more exposed to risk. Thus, commanders modify their C2 system capabilities to make them smaller, reduce their signature, and increase their mobility. Because of the greater threat to C2, security efforts may be more intense.

57. In stability operations, commanders often intervene personally to reassure the urban population and faction leaders about his intentions. To achieve results, commanders personally negotiate and intervene with various faction and community leaders. In these type operations, threats may attack leaders to gain the greatest pay-off with the least expenditure of resources. Commanders must carefully evaluate risk and potential benefits of such exposure. These risks, however, cannot stop them from seeing the battlefield, personally intervening in situations as appropriate, and leading their soldiers.

58. A commander's visualization also requires having detailed maps, other appropriate intelligence products, and intelligence that accurately depicts the urban environment and helps to establish a COP. The reliability of these items is as important to planning major operations as it is to tactical-level operations. The commander of the major operation ensures that subordinate tactical-level commanders have the necessary products to achieve accurate situational understanding and dominate the urban environment. Frequently, satellite or aerial imagery is requested to compensate for the drastic changes that can occur due to UO, natural disasters, and out-dated or imprecise maps. Even maps developed and maintained by the urban area's administrative activities may not be up-to-date. Extensive and continually expanding shantytowns, for example, may not be mapped at all. Maps might have even been purposefully distorted.

59. Other critical intelligence products needed to visualize, describe, and direct UO may include overlays or gridded reference graphics. Overlays and graphics portray important societal information or urban infrastructure, such as:

- a. religious, ethnic, racial, or other significant and identifiable social divisions;
- b. locations of police, fire, and emergency medical services and their areas, boundaries, or zones of coverage;
- c. protected structures such as churches, hospitals, or other historical and culturally significant buildings or locations;
- d. underground subway, tunnel, sewer, or water systems;

- e. bridges, elevated roadways, and rail lines;
- f. electrical generation (to include nuclear) and gas storage and production facilities, and their distribution lines;
- g. water and sewage treatment facilities;
- h. telephone exchanges, and television and radio stations; and
- i. toxic industrial material locations.

60. Heightened concerns for collateral damage will require that commanders pay particular attention to their targeting process. This process ensures that all available combat power, both lethal and non-lethal, including IO, is effectively integrated and synchronized to accomplish the mission. Commanders ensure that techniques and procedures are in place, rehearsed, and understood by all members of their staffs. Additionally, the C2 system is responsive and agile; otherwise, an elusive and adaptable threat will likely disappear before units can employ the appropriate weapon systems.

61. Greater concerns exist for the safety and health (environmental matters) of the urban populace, and the protection of critical infrastructure and cultural structures. Hence, CIMIC and legal officers (see Chapter 9) will play a greater role for the expert advice they can provide regarding these elements of the urban environment. Nonetheless, all members of the staff ensure that operations minimize collateral damage. That responsibility does not end with identifying potential collateral damage; the goal, as always, is successful mission accomplishment. Again, staffs are guided by the commander's intent and work to develop courses of action that incorporate collateral damage concerns (short and long-term) yet accomplish the mission. This requires a keen understanding of the legal issues, and both friendly and enemy weapon systems' effects in an urban environment.

62. Commanders conducting UO must remain mentally flexible. Situations can change rapidly because of the complexity of the human dimension. Typical of the change is a stability operation that suddenly requires the use of force. Equally important is the requirement to deal with populations when executing combat operations. They must be able to adjust plans and orders for sudden stability tasks that emerge during or soon after a combat mission. The commander's vision includes the second and third-order effects of UO.

63. The urban environment will also challenge the information systems that support the commander. Perhaps the largest physical challenge will be communications. Urban structures, materials, densities, configurations (e.g., urban canyons), and power constraints associated with man-portable radios, significantly degrade frequency modulation (FM) communications. This causes problems at brigade level and below where commanders rely heavily on constant FM radio contact with subordinates. Tactical communications problems might also cause an inability to maintain a COP, to give orders and guidance, to request support, or to coordinate and synchronize elements of the combined arms team. Communications problems in urban areas can prevent the achievement of information superiority and contribute directly to mission failure. In UO, allocating critical or high-value communications assets will be significant and essential to weighting the main effort.



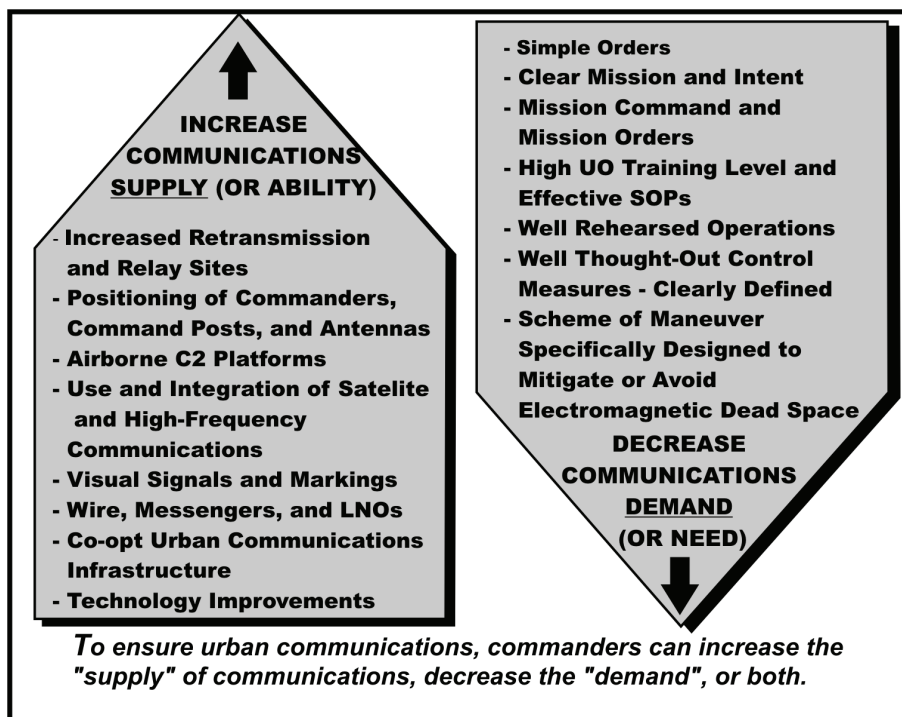


Figure 5-2: Mitigating Communications Problems

64. In an urban environment, planning and preparation is required to mitigate the communications problems (see Figure 5-2). Adequate communications, in most cases, are ensured by:

- a. training in and use of retransmission and relay sites and equipment;
- b. airborne command posts, satellite communications, high-frequency radios, and other redundant communication platforms;
- c. careful positioning of commanders, command posts, and antennas to take advantage of urban terrain characteristics; and
- d. correct procedures will permit adequate communications in most situations.

65. Standing operating procedures (SOP) for visual markings (both day and night) may assist in C2. SOP indicate unit locations and other essential information. They coordinate with units across common boundaries. Given adequate consideration to limitations on multinational capabilities, SOP may assist in C2 and preclude fratricide incidents resulting from loss of FM communications. However, visual signals, particularly pyrotechnics, are less effective in buildings and enclosed spaces.

66. In defensive and stability operations, positions do not change as frequently as in offensive operations. Urban commanders then rely more upon military wire (properly camouflaged amongst the civilian communications infrastructure), commercial communications, and messengers. Even in combat, some, if not all, of the urban area's organic communications structure remains intact for military use. For example, every building may have one or more

telephone distribution boxes that can control up to 200 individual telephone lines. Setting-up wire communications using these points is relatively simple, but like all wire communications, is susceptible to wiretapping. Cellular telephones can usually work well in urban areas; however, locating and destroying the repeater stations or the central cellular telephone system easily disables them. Consequently, the C2 system may use these alternatives to FM communications, but with proper operations and physical security procedures in place.

67. Command posts above brigade level must ensure that they can communicate in an urban area without significant disruption. In stability operations, immediate and reliable communications between tactical and strategic levels may be necessary. Higher commanders anticipate that although the urban area does not significantly challenge their information systems (INFOSYS), the area may severely challenge systems at the lower tactical levels. For this reason, information flow from lower to higher may take longer. If the situation is not acceptable, the higher headquarters takes steps to mitigate it, such as increasing the number of liaison officers (LOs) operating with units engaged in decisive operations. In some instances, the scheme of manoeuvre may be specifically designed to account for communications interference, propagation characteristics, and electromagnetic dead space. However, this will require more time, resources, and a detailed communications IPB of the urban area.

68. Finally, urban areas can overload the INFOSYS with worthless information. UO across the spectrum of conflict and throughout the range of operations can generate large volumes of information when crises threaten. This sheer volume can easily overwhelm UO commanders and command posts. Training prepares command posts to handle this volume of information and to filter the critical from the merely informative. Staffs work hard to create products (visual or textual) that help their commanders to better understand the urban environment, not just to present them with information.

69. The time available to think and act is compressed in urban combat operations. The tactical engagements that comprise battles and major UO are often quick and decisive; therefore, higher-level decision making is correspondingly fast. The impact of decisions, or lack thereof, and the outcome of battle can occur in mere minutes. Often, the amount of information and the number of decisions can overwhelm the overall ability of INFOSYS to respond. Commanders have little time to influence tactical actions with resources kept in reserve. Reserves and fire support assets are close to decision points so that they can respond in time to make a difference. The terrain causes C2 challenges that further inhibit commanders from responding quickly to changes in the situation. Small unit leaders receive training that emphasizes understanding the commander's intent, so that they can recognize tactical opportunities and act quickly to take advantage of them.

70. Distances in UO are compressed to correspond to the *density* of threat forces and non-combatants. Large buildings can absorb the efforts of several companies. Crowds of thousands can assemble in areas of a few hundred meters requiring correspondingly large forces for control. Maximum engagement ranges, as influenced by the urban terrain, are closer. Commanders must understand the telescopic nature of the battlefield, the density of threat forces, and the density of non-combatants. In addition to the actual conduct of urban tactical operations, these factors will directly affect planning, force deployment, and strength.

**ANNEX A TO CHAPTER 5**  
**SIEGE OF BEIRUT: AN ILLUSTRATION OF THE FUNDAMENTALS OF URBAN OPERATIONS**

*The IDF had neither the strategy nor the experience nor the configuration of forces to fight and sustain a house-to-house campaign in Beirut.*

Richard A. Gabriel

*Operation Peace for Galilee: The Israeli-PLO War in Lebanon*

**OVERALL STRATEGIC SITUATION**

1. In 1982, Israel launched OPERATION PEACE FOR GALILEE designed to destroy the Palestine Liberation Organization (PLO) presence in southern Lebanon. On 1 June, Israeli Defense Forces (IDF) launched a massive assault across the border into southern Lebanon. The Israeli attack focused on the PLO, but the operations quickly involved major ground and air combat between Israel and Syrian forces.

2. In the first few weeks, Israeli forces quickly pushed back both the Syrians and the PLO. However, except for some PLO forces isolated in bypassed urban areas, such as Tyre and Sidon, most of the PLO fell back into Beirut (see Figure 5A-1). By 30 June, Israeli forces had reached the outskirts of southern Beirut, occupied East Beirut, isolated the city from Syria and the rest of Lebanon, and blockaded the sea approaches to the city. Even so, with most of the PLO intact inside and with significant military and political capability, the Israelis had yet to achieve the objective of OPERATION PEACE FOR GALILEE. The Israeli command had to make a decision. It had three choices: permit the PLO to operate in Beirut; execute a potentially costly assault of the PLO in the city; or lay siege to the city and use the siege to successfully achieve the objective. The Israelis opted for the latter.

## ISRAELI MILITARY POSITION

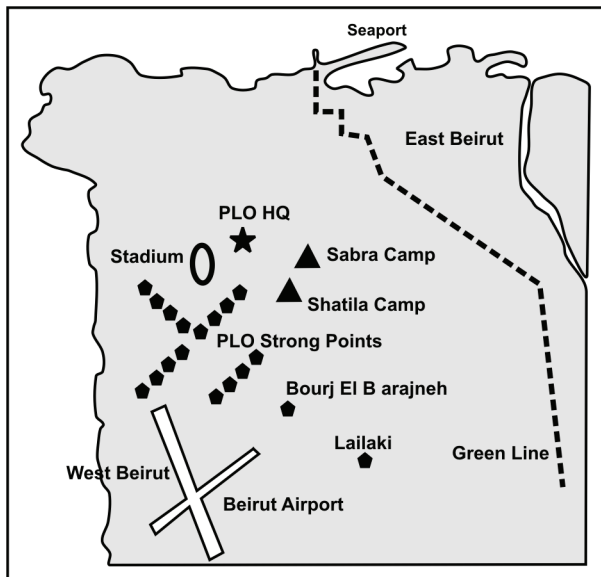


Figure 5A-1: The City of Beirut

3. The Israelis had an excellent position around Beirut. They occupied high ground to the south and west, virtually dominating the entire city. Israeli naval forces controlled the seaward approaches to Beirut. The Israelis' position was also strong defensively, capable of defeating any attempt to break out of or into the city from northern Lebanon or Syria. The Israeli air force had total and complete air superiority. The Israelis controlled the water, fuel, and food sources of West Beirut. Although the PLO forces had stockpiles of food and supplies, the Israelis regulated the food, water, and generating power for the civil population.

4. Despite the superior positioning of Israeli forces, the IDF faced significant challenges to include the combat power of the PLO, Syria, and other threats in Beirut. Israeli doctrine and training did not emphasize urban operations. Additionally, Israel was constrained by its desire to limit collateral damage and friendly and noncombatant casualties. Organizationally, the Israeli army was not optimized to fight in urban terrain. Armor and self-propelled artillery formations dominated the Israeli forces, and most Israeli infantry was mechanized. The Israeli forces had only a few elite formations of traditional dismounted infantry.

## PLO MILITARY POSITION

5. Despite being surrounded and cut off from support, the PLO position in Beirut offered numerous advantages in addition to the characteristic advantages of urban defense. The PLO had long anticipated an Israeli invasion of southern Lebanon; it had had months to prepare bunkers, obstacles, and the defensive plan of Beirut and other urban areas. Approximately 14,000 Arab combatants in West Beirut readied to withstand the Israeli siege. This was done with the advice of Soviet, Syrian, and east European advisors. The preparation included stockpiling essential supplies in quantities sufficient to withstand a six-month siege. Also, the PLO fighters integrated into the civil populations of the urban areas. Often their families lived

with them. The civil population itself was friendly and provided both information and concealment for PLO forces. PLO fighters were experienced in urban combat and knew the urban terrain intimately. PLO forces had been involved in urban fighting against Syrian conventional forces and Christian militias in Beirut several years prior to the Israeli invasion. Finally, the organization of the PLO—centered on small teams of fighters armed with machine-guns and antitank weapons, and trained in insurgent, hit-and-run tactics—was ideally suited to take maximum advantage of the urban environment.

## **ROLE OF CIVILIANS**

6. Various ethnic and religious groups make up the civil population of southern Lebanon. However, West Beirut's population was heavily Palestinian and Lebanese. The civil population of West Beirut was between 350,000 and 500,000. The Palestinian population supported the PLO. The Lebanese population may be described as friendly neutral to the Israelis. Although unhappy under Palestinian dominance, this population was unwilling to actively support Israel. The civilian population was a logistic constraint on the PLO, which would have become significant had the siege lasted longer. The civilians in West Beirut were an even larger constraint on the Israelis. The presence of civilians significantly limited the ability of the Israelis to employ firepower. However, the Palestine refugee camps located in West Beirut were both civilian centers and military bases. The Israeli constraints on artillery and other systems against these parts of the city were much less restrictive than in other parts of West Beirut where the population was mostly Lebanese and where fewer key military targets existed.

7. The PLO knew of the Israeli aversion to causing civil casualties and purposely located key military centers, troop concentrations, and logistics and weapons systems in and amongst the population—particularly the refugee Palestinian population in the southern part of West Beirut. Tactically, they used the civilians to hide their forces and infiltrate Israeli positions.

8. The friendly Palestinian population provided intelligence to the PLO while the friendly Lebanese population provided intelligence for the IDF. Throughout the siege, the IDF maintained a policy of free passage out of Beirut for all civilians. This policy was strictly enforced and permitted no weapons to leave the city. Some estimates are that as many as 100,000 refugees took advantage of this policy.

## **INFORMATION OPERATIONS**

9. The siege of Beirut involved using information operations (IO) to influence the media. PLO information operations were aimed at controlling the media and hence the international perception of the operation. This was done by carefully cultivating a select group of pro-PLO media years before hostilities even began. Once hostilities started, only these media sources were permitted to report from the besieged portions of the city, and they were only shown activities that portrayed the IDF negatively. The IDF did not vigorously counter the PLO plan. In fact, the IDF contributed to it by limiting media access to their activities. The PLO information operations had a successful impact. The international community was constantly pressuring the Israeli government to end hostilities. This put pressure on the IDF to conduct operations rapidly and to limit firepower and casualties.

## CONDUCT OF THE URBAN OPERATIONS

10. The siege of Beirut began 1 July (see Figure 5A-2). By 4 July, Israeli forces occupied East Beirut, the Green Line separating East and West Beirut, and dominating positions south of the airport. IDF naval forces also controlled the sea west and north of Beirut. On 3 and 4 July, IDF artillery and naval fire began a regular campaign of firing on military targets throughout West Beirut. On 4 July, the IDF cut power and water to the city.

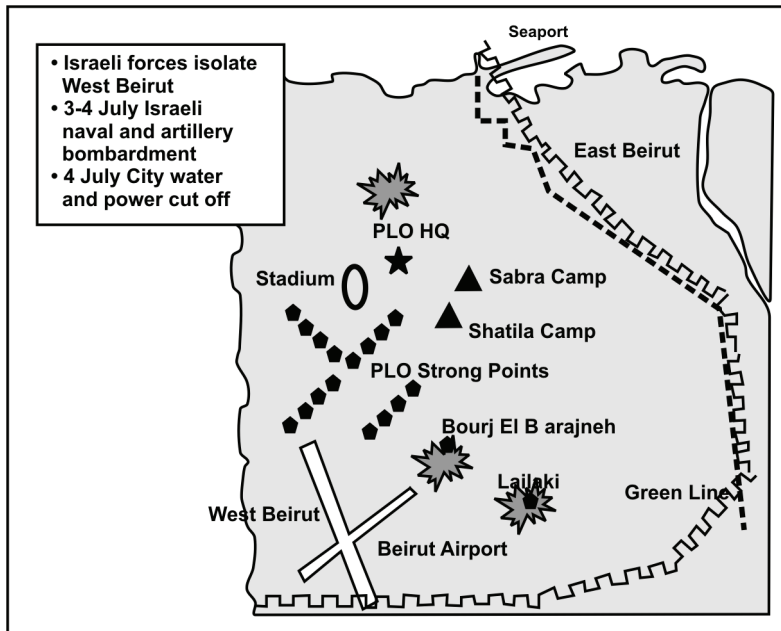


Figure 5A-2: Initial Conduct of the Urban Operation

11. From 5 to 13 July, the Israeli fires continued to pound PLO targets in West Beirut. The PLO gave one significant response, firing on an Israeli position south of the city and causing several casualties. On 7 July, reacting to international pressure, the IDF returned power and water to West Beirut's civil population. On 11 July, the IDF launched its first attack, probing the southern portion of the airport with an armored task force (see Figure 5A-3). The PLO repulsed this attack and destroyed several IDF armored vehicles.

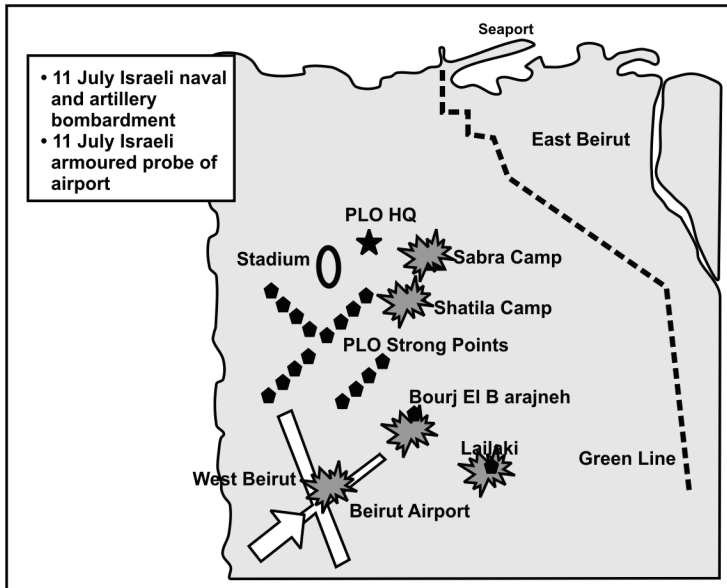


Figure 5A-3. Israeli Probe of PLO Defenses

12. On 13 July, both sides entered into a cease-fire that lasted until 21 July. They began negotiations, mediated by international community, to end the siege. The PLO used this period to continue to fortify Beirut. The Israelis used the time to train their infantry and other arms in urban small unit tactics in Damour, a town the Israeli paratroopers had captured.

13. The cease-fire ended on 21 July as PLO forces launched three attacks on IDF rear areas. The Israelis responded with renewed and even more vigorous artillery, naval, and air bombardment of PLO positions in the city. The IDF attacks went on without respite until 30 July. On 28 July, the IDF renewed its ground attack in the south around the airport (see Figure 5A-4). This time IDF forces methodically advanced and captured a few hundred meters of ground establishing a toehold.

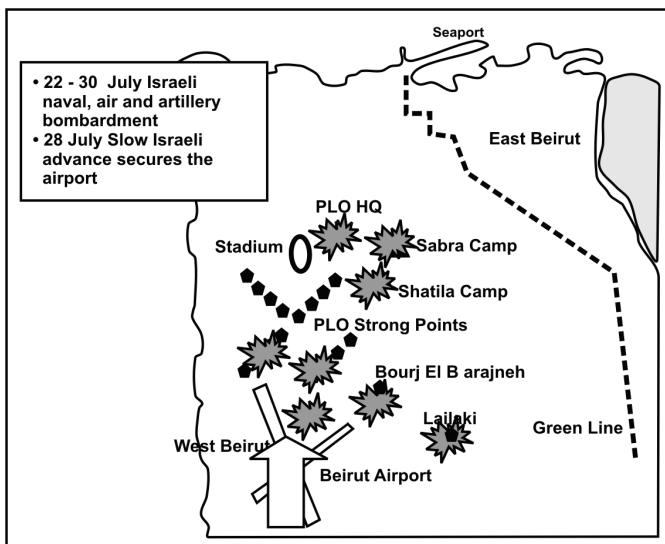


Figure 5A-4. Initial Israeli Attack

14. The Israeli bombardment stopped on 31 July. However, on 1 August the IDF launched its first major ground attack, successfully seizing Beirut airport in the south (see Figure 5A-5). Israeli armored forces began massing on 2 August along the green line, simultaneously continuing the attack from the south to the outskirts of the Palestinian positions at Ouzai. On 3 August, the Israeli forces continued to reinforce both their southern attack forces and forces along the green line to prepare for continuing offensive operations. On 4 August, the IDF attacked at four different places. This was the much-anticipated major Israeli offensive.

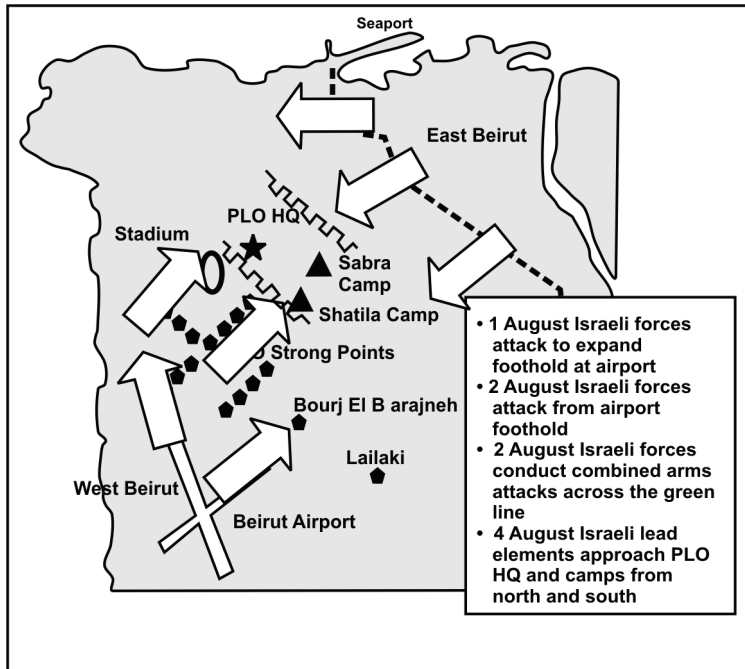


Figure 5 A-5. Final Israeli Attack

15. The Israeli attack successfully disrupted the coherence of the PLO defense. The southern attack was the most successful: it pushed PLO forces back to their camps of Sabra and Shatila and threatened to overrun PLO headquarters. Along the green line the IDF attacked across three crossing points. All three attacks made modest gains against stiff resistance. For this day's offensive, the Israelis suffered 19 killed and 84 wounded, the highest single day total of the siege, bringing the total to 318 killed. Following the major attacks on 4 August, Israeli forces paused and, for four days, consolidated their gains and prepared to renew the offensive. Skirmishes and sniping continued, but without significant offensive action. On 9 August, the IDF renewed air and artillery attacks for four days. This activity culminated on 12 August with a massive aerial attack that killed over a hundred and wounded over 400—mostly civilians. A cease-fire started the next day and lasted until the PLO evacuated Beirut on 22 August.

## LESSONS

16. The Israeli siege of West Beirut was both a military and a political victory. However, the issue was in doubt until the last week of the siege. Military victory was never in question; the issue in doubt was whether the Israeli government could sustain military operations politically in the face of international and domestic opposition. On the other side, the PLO faced whether they



could last militarily until a favorable political end could be negotiated. The answer was that the PLO's military situation became untenable before the Israeli political situation did.

17. This favorable military and political outcome stemmed from the careful balance of applying military force with political negotiation. The Israelis also balanced the type of tactics they employed against the domestic aversion to major friendly casualties and international concern with collateral damage.

### **PERFORM FOCUSED INFORMATION OPERATIONS**

18. The PLO devoted considerable resources and much planning on how to use IO to their best advantage. They chose to focus on media information sources as a means of influencing international and domestic opinion.

19. The PLO's carefully orchestrated misinformation and control of the media manipulated international sentiment. The major goal of this effort was to grossly exaggerate the claims of civilian casualties, damage, and number of refugees—and this was successfully accomplished. Actual casualties among the civilians were likely half of what the press reported during the battle. The failure of the IDF to present a believable and accurate account of operations to balance PLO efforts put tremendous pressure on the Israeli government to break off the siege. It was the PLO's primary hope for political victory.

20. In contrast to the weak performance in IO, the IDF excelled in psychological operations. IDF psychological operations attacked the morale of the PLO fighter and the Palestinian population. They were designed to wear down the will of the PLO to fight while convincing the PLO that the IDF would go to any extreme to win. Thus defeat was inevitable. The IDF used passive measures, such as leaflet drops and loudspeaker broadcasts. They used naval bombardment to emphasize the totality of the isolation of Beirut. To maintain high levels of stress, to deny sleep, and to emphasize their combat power, the IDF used constant naval, air, and artillery bombardment. They even employed sonic booms from low-flying aircraft to emphasize the IDF's dominance. These efforts helped to convince the PLO that the only alternative to negotiation on Israeli terms was complete destruction.

### **CONDUCT CLOSE COMBAT**

21. The ground combat during the siege of Beirut demonstrated that the lessons of tactical ground combat learned in the latter half of the twentieth century were still valid. A small combined arms team built around infantry, but including armor and engineers, was the key to successful tactical combat. Artillery firing in direct fire support of infantry worked effectively as did the Vulcan air defense system. The Israeli tactical plan was sound. The Israelis attacked from multiple directions, segmented West Beirut into pieces, and then destroyed each individually. The plan's success strongly influenced the PLO willingness to negotiate. Tactical patience based on steady though slow progress toward decisive points limited both friendly and noncombatant casualties. In this case, the decisive points were PLO camps, strong points, and the PLO headquarters.

22. The willingness to execute close combat demonstrated throughout the siege, but especially in the attacks of 4 August, was decisive. Decisive ground combat was used sparingly,

was successful and aimed at decisive points, and was timed carefully to impact on achieving the political objectives in negotiations. The PLO had hoped that their elaborate defensive preparations would have made Israeli assaults so costly as to convince the Israelis not to attack. That the Israelis could successfully attack the urban area convinced the PLO leadership that destruction of their forces was inevitable. For this reason they negotiated a cease-fire and a withdrawal on Israeli terms.

### **AVOID THE ATTRITION APPROACH**

23. The Israelis carefully focused their attacks on objects that were decisive and would have the greatest impact on the PLO: the known PLO headquarters and refugee centers. Other areas of West Beirut were essentially ignored. For example, the significant Syrian forces in West Beirut were not the focus of Israeli attention even though they had significant combat power. This allowed the Israelis to focus their combat power on the PLO and limit both friendly casualties and collateral damage.

### **CONTROL THE ESSENTIAL AND PRESERVE CRITICAL INFRASTRUCTURE**

24. The Israeli siege assured Israeli control of the essential infrastructure of Beirut. The initial Israeli actions secured East Beirut and the city's water, power, and food supplies. The Israelis also dominated Beirut's international airport, closed all the sea access, and controlled all routes into and out of the city. They controlled and preserved all that was critical to operating the city and this put them in a commanding position when negotiating with the PLO.

### **MINIMIZE COLLATERAL DAMAGE**

25. The Israeli army took extraordinary steps to limit collateral damage, preserve critical infrastructure, and put in place stringent rules of engagement (ROE). They avoided randomly using grenades in house clearing, limited the use of massed artillery fires, and maximized the use of precision weapons. With this effort, the Israelis extensively used Maverick missiles because of their precise laser guidance and small warheads.

26. The strict ROE, however, conflicted with operational guidance that mandated that Israeli commanders minimize their own casualties and adhere to a rapid timetable. The nature of the environment made fighting slow. The concern for civilian casualties and damage to infrastructure declined as IDF casualties rose. They began to bring more field artillery to bear on Palestinian strong points and increasingly employed close air support. This tension underscores the delicate balance that Army commanders will face between minimizing collateral damage and protecting infrastructure while accomplishing the military objective with the least expenditure of resources—particularly soldiers. ROE is but one tool among many that a commander may employ to adhere to this UO fundamental.

### **UNDERSTAND THE HUMAN DIMENSION**

27. The Israelis had a noteworthy (although imperfect and at times flawed) ability to understand the human dimension during their operations against the PLO in Beirut. This was the result of two circumstances. First, the PLO was a threat with which the Israeli forces were familiar after literally decades of conflict. Second, through a close alliance and cooperation with

Lebanese militia, the Israelis understood a great deal regarding the attitudes and disposition of the civil population both within and outside Beirut.

### **SEPARATE NONCOMBATANTS FROM COMBATANTS**

28. Separating combatants from noncombatants was a difficult but important aspect of the Beirut operation. The Israelis made every effort to positively identify the military nature of all targets. They also operated a free passage system that permitted the passage of all civilians out of the city through Israeli lines. The need to impose cease-fires and open lanes for civilians to escape the fighting slowed IDF operations considerably. Additionally, Israeli assumptions that civilians in urban combat zones would abandon areas where fighting was taking place were incorrect. In many cases, civilians would try to stay in their homes, leaving only after the battle had begun. In contrast, the PLO tied their military operations closely to the civilian community to make targeting difficult. They also abstained from donning uniforms to make individual targeting difficult.

29. Earlier in OPERATION PEACE FOR GALILEE when the IDF attacked PLO forces located in Tyre, Israeli psychological operations convinced 30,000 Lebanese noncombatants to abandon their homes and move to beach locations outside the city. However, the IDF was subsequently unable to provide food, water, clothing, shelter, and sanitation for these displaced civilians. IDF commanders compounded the situation by interfering with the efforts by outside relief agencies to aid the displaced population (for fear that the PLO would somehow benefit). Predictably, many civilians tried to return to the city complicating IDF maneuver and targeting—that which the separation was designed to avoid. IDF commanders learned that, while separation is important, they must also adequately plan and prepare for the subsequent control, health, and welfare of the noncombatants they displace.

### **RESTORE ESSENTIAL SERVICES**

30. Since essential services were under Israeli command, and had been since the beginning of the siege, the Israelis had the ability to easily restore these resources to West Beirut as soon as they adopted the cease-fire.

### **TRANSITION CONTROL**

31. In the rear areas of the Israeli siege positions, the Israeli army immediately handed over civic and police responsibility to civil authorities. This policy of rapid transition to civil control within Israeli lines elevated the requirement for the Israeli army to act as an army of occupation. The Israeli army believed the efficient administration of local government and police and the resulting good will of the population more than compensated for the slightly increased force protection issues and the increased risk of PLO infiltration.

32. Upon the cease-fire agreement, Israeli forces withdrew to predetermined positions. International forces under UN control supervised the evacuation of the PLO and Syrian forces from Beirut. These actions were executed according to a meticulous plan developed by the Israeli negotiators and agreed to by the PLO. Israeli forces did not take over and occupy Beirut as a result of the 1982 siege (an occupation did occur later but as a result of changing situations).

## **SUMMARY**

33. The Israeli siege of West Beirut demonstrates many of the most demanding challenges of urban combat. In summary, the IDF's successful siege of Beirut emerged from their clearly understanding national strategic objectives and closely coordinating diplomatic efforts with urban military operations. A key part of that synchronization of capabilities was the understanding that the efforts of IDF would be enhanced if they left any escape option open to the PLO. This way out was the PLO's supervised evacuation that occurred after the siege. Although the PLO was not physically destroyed, the evacuation without arms and to different host countries effectively shattered the PLO's military capability. Had Israel insisted on the physical destruction of the PLO in Beirut, it might have failed because that goal may not have been politically obtainable in view of the costs in casualties, collateral damage, and international opinion.

## CHAPTER 6

### USECT: A FRAMEWORK FOR FULL-SPECTRUM URBAN OPERATIONS

**Full-spectrum operations:** The simultaneous conduct of operations by a force across the spectrum of conflict.<sup>1</sup>

1. The understand-shape-engage-consolidate-transition (USECT) framework is designed to assist the commander in a complex urban environment. In essence, a conceptual framework for planning and conducting urban operations can be constructed from the interrelated activities of USECT. It provides the basis for coherence and unity of purpose between subordinate components, and cooperation with non-military organizations. However, as an operational tool, it may not necessarily translate vertically down to tactical activity in every case. For example, it is possible for tactical units to be engaged in a close battle in order to achieve a shaping or consolidation task for the operational commander. Based upon eight generic missions, the framework covers the entire spectrum of conflict, thereby representing the breadth of missions that a commander could be tasked. While each mission can be viewed independently, the construct allows for the grouping of missions to represent the more complex and dynamic nature of full-spectrum operations. The missions are defined<sup>2</sup> as stated below:

- a. **Capture an Urban Area.** Gaining physical control of the city with the view to either denying the enemy the benefits the city offers, or allowing friendly forces the opportunity to use the benefits offered by the city. The focus is on the city rather than the enemy force.
- b. **Defend an Urban Area.** Maintaining physical control of the city with the view to either capitalizing on the benefits that a city offers to friendly forces, or denying the same benefits to the enemy. The focus is on the city rather than the enemy.
- c. **Isolate/Neutralize an Urban Area.** Denying the use of an urban area to the enemy by ensuring that elements within the city cannot interfere with friendly force actions, and/or preventing enemy forces from moving into the urban area and subsequently gaining benefit of the city and/or its infrastructure. This mission differs from defending or capturing an urban area in that the focus of this mission is to mitigate the advantages that a city offers to the enemy rather than physically controlling the city.
- d. **Capture/Destroy the Enemy.** Rendering the enemy incapable of completing his mission by attacking on both the moral and physical planes. The focus is on the enemy rather than the city.

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<sup>1</sup> Army Terminology Repertoire.

<sup>2</sup> The eight missions are adapted from the ten missions suggested by the US Institute for Defense Analysis (IDA) as part of their work for the US Military. These missions are being used by the NATO Urban Operations in 2020 Study Group.

- e. **Focused Offence.** Offensive action directed at enemy critical vulnerabilities (i.e., nodes). These vulnerabilities can be either physical or moral. Nodes can be captured, destroyed, or neutralized.
- f. **Focused Defence.** Protecting friendly critical vulnerabilities (i.e., nodes) from enemy action. Defensive measures must take into account enemy activities on both the moral and physical planes.
- g. **Neutralize Combatants.** Denying belligerents the freedom of action, none of which are designated as an enemy that may pose a threat to friendly forces, neutrals or the mission.
- h. **Humanitarian Assistance.** Aiding or protecting non-combatants by providing a range of services through combat and non-combat tasks.

2. Although outlined sequentially in this chapter, these activities function together in an interdependent and simultaneous manner. USECT activities may be sequential or concurrent; they may often overlap. The point where one stops and another begins is often difficult to define. In some cases, the use of all five may not be necessary. For example, in some urban areas a commander may conduct *understanding* and *shaping* activities so effectively that he may be able to shift directly to *transition* activities, and handover the operation to follow-on forces or other organizations, whereas in an adjacent neighbourhood, forces may be fully engaged. This illustrates the complexity of urban operations (UO) and the vital need to understand in order to allow *shaping*, *engaging* or *consolidating* activity. This is reflected in the diagram below (Figure 6-1).

### SECTION 1 URBAN CONCPUTAL FRAMEWORK

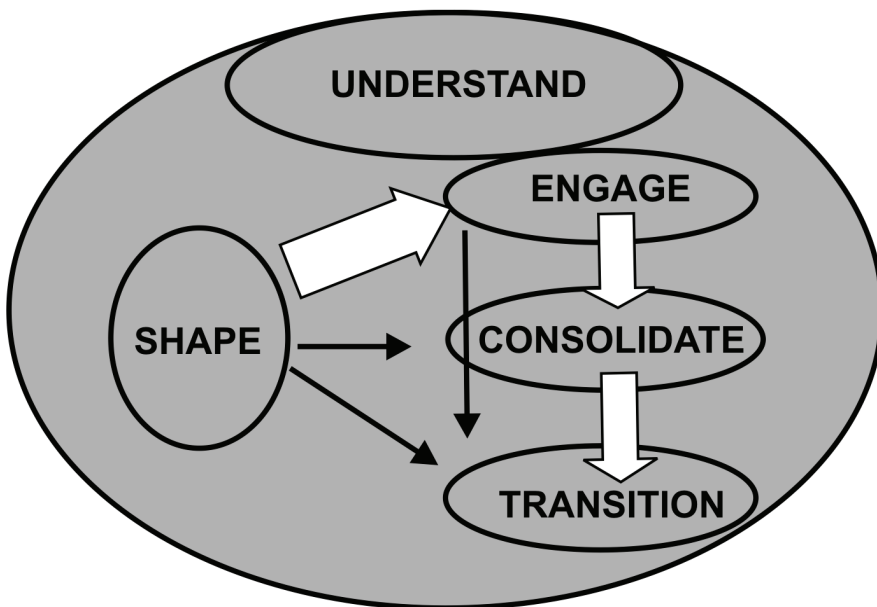


Figure 6-1: The USECT Framework for Urban Operations

3. **Understand (U):**

- a. understand the objectives;
- b. understand the battlefield; understand the enemy;
- d. understand the culture and history; and
- e. understand training needs.

4. The need to “understand” will continue throughout any operation. It is critical to creating and maintaining an advantage in tempo. While friendly forces will have a range of technical equipment, weapons, and other platforms to assist the acquisition of information, the major overriding factor in the conduct of operations in urban areas is the population itself. Thus, there is a need to ensure that the diplomatic, economic, social, and cultural means to both understand and influence the situation in urban areas are available and exploited.

5. The requirement to understand the battlespace includes: evaluation of physical terrain, buildings, cultural centres, and critical infrastructure, such as utilities, transportation systems, and hospitals. This analysis extends beyond conventional enemy forces to criminal gangs, vigilantes or insurgents operating amongst, and indistinguishable from, the local population.

6. To prepare, the commander will need to evaluate all relevant forces, groupings, cultural and religious factors, and to identify critical nodal points in the urban area not all of which are physical. Finding the enemy within the urban area is particularly difficult and is without guaranteed communications, yet a commander requires reliable information to maintain a proper awareness of the situation in order to manoeuvre troops with safety and to target systems with precision. The establishment of the intelligence, surveillance, target acquisition, and reconnaissance (ISTAR) systems is therefore fundamental to understanding. This should include the use of air and space sensors coupled with human intelligence (HUMINT) sources and special operations forces (SOF). Ground reconnaissance will also be required to complement this activity and probe areas where airborne and other remote sensors are unable to penetrate. At the same time, civil-military links with suitable groups, agencies and institutions, such as religious and community leaders, local government officials, public utilities personnel, and local emergency services organizations, will be important. A civil-military cooperation (CIMIC) plan to deal with non-combatants, refugees, displaced persons and injured civilians will be a fundamental part of the military campaign plan without necessarily compromising military security and freedom of action.

7. **Shape (S):**

- a. shape the battlefield; shape the character of engagement;
- c. shape for consolidation; and shape to prepare for transition.

8. The term “shaping” includes all actions taken to set favourable conditions for the subsequent phases of engagement (E), consolidation (C) and transition (T) activities.

9. One aspect of shaping is the strategic movement of forces into theatre and their positioning forces for operations. Depending upon the situation and objectives to be achieved, forcible entry may be required. Shaping also includes actions to maximize mobility, force protection, and establishing air and maritime superiority. At the same time, establishing refugee camps or sanctuaries for non-combatants, providing safe passage for them, and arranging emergency services, which as shaping activities at the highest level, may be the early focus of tactical military activity. Information operations (IO) are an essential contributor to shaping. Enabling capabilities, such as combat service support (CSS), is also part of shaping operations.

10. Shaping will involve activity to isolate portions of the battlespace. Isolation has both an external aspect (i.e., of cutting off outside support), and an internal aspect (i.e., of cutting off mutual support). Isolating the adversary may also preclude his withdrawal. The physical isolation of a large urban area could have serious implications for the identification and movement control of personnel, equipment, and non-combatants.

11. Isolating an urban area in terms of information is also a very desirable part of the shaping process. A military commander should have the capability to achieve and sustain some form of information superiority over adversaries. Information passing into and out of the urban area may well be able to be managed in such a way as to cut-off, or prevent adversary communications, and establishing influence over indigenous radio, television and other media sources. As with all military operations, the IO aspect of a campaign is to be integrated fully. Additionally, it has to be coordinated with national, and perhaps, international agencies so that all actions remain consistent with the overall strategic aim. The presence of international media and charitable organizations could make this task more difficult. Nevertheless, if efforts are properly coordinated, their application can multiply any advantage.<sup>3</sup>

12. At the operational level, shaping a campaign often requires the seizure, disruption, control, or destruction of critical nodes (e.g., power grids, communication centres, etc.) that have been previously identified during the intelligence preparing of the battlefield (IPB) process in line with the requirements of international law. This may involve controlling key terrain, critical infrastructure and cultural centres, unhinging an adversary's decision cycle process, cutting or controlling inter-city and intra-city mobility links and communications, deliberately triggering an adversarial response, or positioning forces to accomplish yet further phases of the operation.

13. **Engage (E):**

- a. engage the enemy; and
- b. engage the people.

14. The shaping activities described above set the conditions for the engagement of adversarial forces. For the commander, engagement activities are those that directly address decisive points on the line of operations aimed at the adversary's centre of gravity (COG). These include those actions taken by the commander against a hostile force, a political situation, or

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<sup>3</sup> NATO Allied Joint Publication 3 (AJP-3) *Allied Joint Operations*, p.5-4/5.



natural or humanitarian predicament that will most directly accomplish his mission. At this point, the commander brings all available capabilities to bear in order to accomplish operational objectives. Engagement can range from large-scale combat operations in war to humanitarian assistance and disaster relief in military operations other than war. In all cases where an enemy is confronted, recognition of his COG and identification of his decisive points will be critical to the success of one's own operations.

15. Integration and synchronization of forces, coupled with a clear knowledge of the rules of engagement (ROE), are critical when employing weapons in urban areas. Precision effects are required to deny the adversary the protection that could be gained from the urban environment. These engagements have to provide reasonable certainty of achieving the desired effect on the adversary, but with reduced risk of injury to non-combatants, collateral damage, or fratricide.

16. However, there are limitations on the effects of firepower (e.g., limited ranges, narrow fields of fire and the use of building materials) that may make it necessary to engage the enemy in close combat. A commander should allow for these contingencies in planning, bearing in mind that the aim is not just to seize and hold positions inside an urban area, but to apply strength against the enemy's weakness using tempo as a controlling mechanism to shatter his organizational command and cohesion completely.

17. **Consolidate (C):**

- a. what has been gained;
- b. retain the initiative;
- c. process enemy prisoners;
- d. repair infrastructure;
- e. restore security; and
- f. support civilians.

18. The focus of consolidation is on protecting what has been gained and retaining the initiative to continue to disorganize the adversary. Consolidation thus requires an ongoing process of organizing and strengthening an advantage in tempo (e.g., spatial, psychological, informational) over the adversary. Consolidation also requires activities geared at mopping-up adversarial forces that have been bypassed, and processing prisoners. Civil affairs, public affairs (PA) and psychological operations (PSYOPS) activities will continue to be especially critical in this phase of the operation, as will engineering efforts that could range from demolition, repairs, clearing routes, bridge construction and water supply.

19. During this stage of operations, an adversary faced by conventional defeat may resort to low-level insurgent/terrorist activities to frustrate consolidation. This possibility must be considered and contingencies to counter it must be developed in the planning stage of the operation. In addition, at this stage, it is important to expand on the use of liaison and cooperation with local authorities and other agencies, and there will be major challenges

associated with infrastructure collapse, humanitarian assistance, and the movement of non-combatants.

20. **Transition (T):**

- a. focus on securing and protecting what has been gained;
- b. retain the initiative;
- c. process enemy prisoners of war (epw);
- d. repair infrastructure;
- e. restore and handover security; and
- f. support civilians.

21. The strategic objective for a military commander in urban areas is to transfer control of the urban area to the local civil authorities, or perhaps an international organization. At this stage, military forces would be gradually redeployed while the work of the civil administration continues.

22. The resettlement of displaced civilians, and if appropriate, the reconstitution of national military forces is central to a transitional process. Essential to this task is maintaining the rule of law. To ensure safety and security, military forces may have to conduct training with indigenous or multinational law enforcement organizations. The rate of military redeployment will depend upon how quickly those organizations establish an effective presence.

23. An exit strategy is usually thought of in terms of military redeployment. However, until the local authorities have established a relatively safe and secure environment, law enforcement units, judicial presence, and a recognized and functioning governmental office with oversight of civilian reconstruction efforts, other capabilities, both military and non-military, will continue to be required. The evidence gained so far is that this usually takes far longer than first anticipated.

## **SECTION 2 APPLICATION OF THE USECT FRAMEWORK**

24. An overt and readily identifiable enemy, a peer-competitor, will provide the least challenge. The most challenging enemy will attempt to operate throughout the urban environment often with the help of non-combatants. Therefore, success requires an understanding of the complex relationships that exist between urban infrastructure, the enemy, and the civilian population. Often these “nodes” are likely to be transitory in nature, such as in the “*defenceless city*” concept adopted by the Chechens in Grozny.<sup>4</sup> Operations must therefore

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<sup>4</sup> The “*defenceless city*” concept avoided static *nodes* or defences through the use of mobile teams with RPG 7s, sniper rifles and captured equipment.

be designed to neutralize these networks and then selectively destroy key nodes within the networks. The objective is to initiate *network collapse*. Attacking a single node at one time is unlikely to be successful because of the opportunity it affords the enemy to re-establish nodes elsewhere. Network collapse is achieved through the simultaneous destruction or neutralization of the linkages between the enemy's situational awareness, command and control, sustainment, and principal weapon capabilities, in order to reduce the nodal network to a disaggregated collection of isolated nodes. These nodes may then, in turn, be defeated through rapid tactical action if required.

25. In general, two guiding themes will govern the selection of an operational concept for any given mission and scenario. These are to apply the manoeuvrist approach at the operational level, and to minimize the amount of close combat activities.

26. The manoeuvrist approach seeks to defeat the enemy by shattering his moral and physical cohesion, his ability to fight as an effective coordinated whole, rather than by destroying him physically through incremental attrition. By manoeuvring in time as well as in space, friendly forces are able to direct the effects generated by combat power against enemy weakness, particularly against his cohesion. The most direct way of reducing friendly casualties is to reduce the amount of close combat required. There are three levels of ground-force activity:

- a. **No Ground-Force Activity.** Examples of “no ground-force activity” include the isolation of an urban area, a blockade, or a standoff engagement. When applicable, this can be effective, but the range of tasks and the conditions to which this could apply are very limited.
- b. **Temporary Ground-Force Activity.** A number of tasks require at least a temporary, ground-force presence. Those cases include limited offensive action against certain infrastructure (e.g., an industrial facility or chemical industrial site where stand-off destruction could release toxic industrial materials), and during non-combatant evacuation operations.
- c. **Sustained Ground-Force Presence.** Finally, a number of key tasks will require a sustained ground-force activity. These tasks include stability operations, humanitarian assistance, and capturing or defending an urban area (war fighting).

27. Examples of operational capabilities that reduce the number of close-combat engagements include those that enable the isolation of sectors of the battlespace, interrupt the opponent's lines of support, those that take advantage of remote sensing and engagement, and those that employ unmanned systems.

### SECTION 3 OPERATIONAL CONCEPTS

28. A commander has to be able to develop an effective concept of operations for any given mission and set of conditions. In order to determine the operational capabilities that would enable him to do this, each mission has to be considered and a range of possible operational concepts identified. For example, to capture a city a commander has to be able to defeat smaller

elements of an opposing force within urban terrain; to attack, create or defend nodes; to deal with various aspects of the population; and to defend urban areas after they are captured (consolidation). This encompasses many of the capabilities needed for the other missions as well.









29. A number of general types of operational concepts that might be employed to capture an urban area are listed in Figure 6-2. Several of these concepts might be used in combination in a given scenario (e.g., in different areas, or at different times). They are separated here for clarity.

30. The operational concepts depicted are “traditional” and “emerging.” The principal methods associated with each concept are listed as isolation, remote strike, or ground assault. Isolation and remote strike concepts may not require penetration of the urban area by a sizeable ground force, whereas the ground assault concepts do.

Figure 6-2: Operational Concepts

**ISOLATION**

31. **Siege.** Isolation is aimed at denying an opponent any advantages of occupying the urban area. Dependent upon the level of the operation this can include isolating him physically,

CONCEPTS	TRADITIONAL	EMERGING
<b>Isolation</b>	Siege 	Nodal Isolation 
<b>Remote Strike</b>	Destruction 	Precision Strike 
<b>Ground Assault</b>	Frontal 	Nodal Capture and Expansion 
		Soft-Point Capture & Expansion 
		Segment and Capture/Isolate 

politically, electronically or psychologically. This multi-track approach can fix an opponent on both the moral and physical planes, and achieve much more than freedom of manoeuvre on the physical plane. Freedom of action politically, morally, and psychologically may also follow. Siege can isolate an opponent’s forces from the rest of a campaign and thereby neutralize their potential contribution, or as in many past instances, siege can be used to “starve them out.” Unless the civilian population could be evacuated to safety, siege requires a willingness to accept responsibility for the effects on the population. Moreover, depending upon the size of the urban area, siege may also require large numbers of forces, which may not be feasible with large,

sprawling urban areas. Siege also takes time to achieve success, and for that reason alone, may be precluded in a number of scenarios.

32. **Nodal Isolation.** Nodal isolation is an emerging concept that denies an occupying force access to, or use of, critical facilities within the urban areas. Elements of this approach may include: IO to control facilities such as power stations, or communication networks; the creation of “keep-out” zones using remote surveillance, remote generation of precision, non-lethal effects, or deployed robotic sentries; or the similar control of transportation routes and facilities. Again, the idea is to deny the utility of the urban area to an opponent’s forces with a minimum of civilian casualties or collateral damage.

33. **Physical Isolation.** In offensive UO, physical isolation keeps the threat from receiving information, supplies, and reinforcement, while preventing him from withdrawing or breaking out. Conversely, a defending force attempts to avoid its own physical isolation. Simultaneously, this force conducts operations to isolate the threat outside, as they enter, or at selected locations in the urban area. Physical isolation can occur at all levels. In many situations, particularly in a major theatre of war (MTW), the commander of a major operation may attempt to isolate the entire urban area and all enemy forces defending or attacking it. At the tactical level, forces isolate and attack individual decisive points. In stability operations, physical isolation may be more subtly focused on isolating less obvious decisive points, such as a hostile civilian group’s individual leaders. In many operations, isolation may be temporary and synchronized to facilitate a decisive operation elsewhere. To effectively isolate an urban area, air, space, and sea forces are necessary in addition to the capabilities of ground forces.

34. **Electronic Isolation.** Electronic isolation is achieved through offensive IO. Electronic warfare (EW), particularly two of its components—electronic warfare support and electronic attack, and computer network attack—are critical to electronic isolation. At the operational level, offensive IO aim to quickly and effectively control the information flow into and out of an urban area. This isolation separates the threat’s command and control (C2) system; in the urban area, from its operational leadership, and outside the urban area, from its strategic leadership. Offensive IO also focuses on preventing the threat from communicating with civilians through television, radio, telephone, and computer systems. At the tactical level, IO aim to isolate the threat’s combat capability from its C2 and leadership within the urban area, thus preventing unity of effort. Defensive IO are key to preventing isolation of friendly forces defending in an urban area.

35. **Psychological Isolation.** Psychological isolation is a function of PA, physical actions, EW, and other forms of IO, especially military deception and PSYOPS. Psychological isolation denies the threat political and military allies. It separates the enemy or hostile civilian groups from the friendly population, non-governmental organizations (NGOs) operating in the urban area, and from political leaders who may consider supporting forces. Psychological isolation destroys the morale of individual enemy soldiers or hostile civilians. It creates a feeling of isolation and hopelessness in the mind of the threat. It undermines the confidence of the threat in their leadership. On the other hand, IO, as well as the disciplined conduct of military personnel, can help to forge legitimacy for friendly operations. In stability operations, psychologically isolating the threat results in positive support from the friendly urban population and NGOs.

## REMOTE STRIKE

36. Remote strike concepts employ area destruction or precision strikes to defeat opposing forces, and denies advantages that urban areas provide (e.g., cover, supplies, information, and utilities). Destruction of an area can be achieved as a last resort when accurate targeting information and accurate weapon delivery systems are not available. In any given situation, the effectiveness of this concept depends upon the friendly force's willingness to accept responsibility for civilian casualties and collateral damage, and the level of the opponent's determination to remain in the urban area. For example, it may be to the friendly force's advantage for the commander to leave an escape route open for an opponent to encourage his withdrawal.

37. However, emerging capabilities in targeting and weapon delivery offer the promise of enabling precision strikes. With such strikes, unintended casualties and collateral damage may be reduced, making the use of this concept a more acceptable option for a military commander.

## GROUND ASSAULT

38. **Nodal Capture and Expansion.** "Nodal capture and expansion" or "soft point capture and expansion" is a ground assault concept, which involves forces entering urban areas. These could include frontal sweeps through the area, which maintains access to supplies through a controlled territory, and the capture of nodes by vertical assault and/or ground penetration, and depending upon the situation, a further expansion out from those nodes. The nodes chosen could be critical elements of the opponent's defences, or soft points in his defences that could be exploited as a base for subsequent expansion.

39. **Segment and Capture/Isolate.** "Segment and capture/isolate" is another ground assault concept that uses remote isolation techniques, or penetration by ground forces, to divide the urban area into segments. Segments that are critical to the opponent may then become the focal points of subsequent military action while sparing less critical areas.

40. Overall, three of the operational concepts correspond to traditional approaches to capturing a city: siege, destruction, and frontal assault. However, these approaches may be necessary because of the lack of a capability for gaining information, caused by technological or political restrictions, in an urban environment. A military force either avoids entering the urban area, (i.e, to avoid a siege or destruction), or enters it with ground forces, and through combat gains more information of enemy positions and capabilities , responding with overwhelming force. Under most conditions, these three operational concepts could easily result in high levels of non-combatant casualties. Destruction and frontal assault will also result in extensive collateral damage, and in the latter case, high friendly casualties can be expected.

41. In general, the emerging operational concepts require much higher levels of military capabilities to conduct the first three stages of USECT than for traditional concepts. For example, they require military capabilities to:

- a. identify nodes that support facilities within the urban area or important elements of the enemy force;
- b. strike those nodes with limited or no collateral damage;
- c. penetrate with an assault force to interior points of the urban area and to sustain them there; and
- d. isolate sectors of the urban area.

42. **Stand-off Assault.** This concept relies upon the use of stand-off attack, indirect or beyond line of sight (BLOS), with a corresponding reduction in close combat to attack identified nodes and to destroy threat forces. Stand-off assault relies upon the ability to locate critical threat nodes and deliver measured effects. This concept has two components. The first is based upon the destructive potential of firepower to destroy portions of the city (e.g., terrain), threat forces, or infrastructure. The second component is based upon achieving a temporary or non-lethal effect on the city, threat forces, infrastructure, or non-combatants. In order to realize this concept, the commander must have the ability to attack wide area and point targets with lethal and non-lethal effects. Therefore, precision has two components: accuracy, that is, the ability to “hit” the target; and scalability, that is, the ability to limit the effects to the target. In order to reduce casualties and limit collateral damage, a high level of understanding is essential.

43. **Isolation.** Most successful UO have effectively isolated the urban area. Failure to do so has often contributed to difficult or failed UO. In fact, the relationship between successful isolation and successful UO is so great that the threat often opposes isolable actions more strongly than operations executed in the urban area. In some situations, the success of isolable efforts has been decisive. This occurs when the isolation or imminent isolation of the urban area compels a defending enemy to withdraw, or to surrender before beginning or completing decisive operations. In UO, the threat can be isolated in three ways: physically, electronically, and psychologically. This concept depends upon time to achieve threat surrender through attrition, or limits the threat’s use or access to a node. This concept keeps friendly forces out of the city, thereby negating many of the challenges associated with the close combat portion of UO. However, to be successful, a large number of forces are needed to isolate the area and a considerable amount of time is needed to achieve the desired effects. For nodal isolation, there is no need to capture or control the node, rather “barrier technologies” could be used to isolate the node from the threat.

44. **Direct Assault.** This concept relies upon the use of mass, primarily ground forces, to operate within the urban area. Close combat is a main feature of this concept. The three sub-concepts of direct assault are listed below:

- a. **Segment and Clear.** The urban area is divided into sectors. Each sector should then be isolated and only those sectors that require close combat (i.e., contain threat forces or nodes) are entered. The exact location of the threat is determined by advancing until contact, thereby reducing sense requirements. Additional forces are required to isolate the threat from reinforcement or resupply.

- b. **Nodal Capture and Expansion.** This concept relies upon the control of nodes to facilitate the capture of the remainder of the city. Finding a node is critical to the application of this concept. Once nodes are identified, friendly forces would capture and control the nodes and expand outwards from that node to defeat the threat. For this concept, nodes are seen to be nodes within the city. Nodal capture, that is, preventing the threat from using a node without expanding out from that node, is a sub-concept of nodal capture and expansion.
- c. **Soft-point Capture and Expansion.** This concept relies upon the ability to occupy undefended areas within the urban area and then expand from the “bridgehead.” The “bridgeheads” would be used as positions from which friendly forces could strike threat forces. The potential multidimensional threat would make the threat’s ability to manoeuvre, sustain, and protect itself difficult.

## CONCLUSION

45. To properly prepare for and fight in an urban environment requires a detailed understanding of the fundamentals of UO and how to execute them within the USECT framework. Thus enabled, the commander can apply USECT to full-spectrum operations. The following chapters will discuss the use of USECT within the specific operations of the urban offence (Chapter 7) and the urban defence (Chapter 8), as well as the potentially more complex issues of an urban stability operation (Chapter 9).



## CHAPTER 7

### URBAN OFFENSIVE OPERATIONS

1. Urban offensive operations are designed to impose the will of commanders on the enemy. The urban offence often aims to destroy, defeat, or neutralize an enemy force. However, the purpose may also be to achieve some effect relating to the population or infrastructure of the urban area.

#### SECTION 1

#### PRINCIPLES OF URBAN OFFENSIVE OPERATIONS

2. There are three principles that apply specifically to the urban offence: surprise, concentration of force and offensive action.

3. **Surprise.** Surprise can be achieved at both the operational and tactical levels. In urban offensive operations, operational surprise can be decisive. The goal is to attack the urban area before the enemy expects it, from a direction he does not anticipate, or in a manner he does not envisage. In major operations, this requires an attack against an area that appears to the enemy to be safe. However, urban areas that meet this criterion are not easily accessible. The attack can be launched in different ways: through a vertical assault using airborne or air assault forces, through an amphibious assault, or through a penetration followed by a rapid and deep advance. All three attacks aim to achieve surprise and to deny the enemy time to prepare and establish a defence. Surprise in major urban operations (UO) prevents an enemy from falling back to occupy prepared positions in and around an urban area. The speed of the US advance to Baghdad, its isolation, and then entry into the city using “thunder runs,” is an example of this type of surprise.

4. At lower tactical levels, surprise can be achieved by attacking asymmetrically. An asymmetric method attacks the enemy so he cannot respond effectively. This may be achieved by using special operations forces (SOF) against an enemy prepared for a conventional attack, by attacking decisively with heavy forces when the enemy expects an effort by light forces or SOF, or by leveraging information operations (IO) capability. Offensive IO, primarily using IO elements of deception, electronic warfare (EW), and operations security (OPSEC), can help achieve surprise at all levels. Attacking at night surprises the enemy and maximizes friendly force training, command and control (C2), and technological advantages. Attacking from unexpected or multiple directions achieves surprise by leveraging situational awareness systems (SAS) and superior synchronization of combat power and capabilities.

5. **Concentration of Force.** The attacking force derives a major advantage by concentrating the effects of combat power at the point and time of its choosing. The area and its compartmental effects naturally disperse and dissipate combat capability. The environment also hinders repositioning forces rapidly. Such effects can work equally against defending and attacking forces. However, in a well-prepared defence, the defender often has the advantage of interior lines. The defender can reinforce or reposition forces more quickly using covered and concealed routes (e.g., sewers, tunnels, or prepared holes made in walls). Successful UO need synchronized air and ground manoeuvre with overwhelming effects from fires at decisive points

on the urban battlefield. To achieve proper synchronization and precise effects, commanders need to consider the unique time and distance relationships set by the environment.

6. **Offensive Action.** The synchronized application of combat power and anticipation of enemy reactions achieve tempo. The rapid tempo of events places friendly forces in positions of advantage and helps achieve surprise. The complexity and the potential risk of the urban environment may invoke a cautious and methodical response on the part of commanders. Often, the primary purpose of the enemy's urban defence is to disrupt the rapid tempo of offensive operations. Controlling operational tempo and not allowing the different tempo of UO to adversely affect other operations is a challenge.

7. Tactical offensive action is also important in urban combat. Because of the complex terrain, defending forces can rapidly occupy and defend from a position of strength. Once friendly forces initiate tactical offensive operations, they cannot allow the enemy to set the tempo of the operation. Not necessarily slow, it requires a careful balance of preparation, speed, and security. In terms of unit fatigue, resource consumption, and contact with the enemy, the tempo of most urban offensive operations may be rated as very high. On the other hand, in distances traveled and time consumed to achieve objectives, the tempo of many urban offensive operations might be rated as slow. The urban battlefield's density concentrates activity and consumes resources in a relatively small area. The lack of terrain seized or secured is not to be construed to mean a low tempo in the battle. In reality, the natural tempo of UO is not faster or slower than other types of operations, merely different. A higher tempo of operations, however, can favour forces which are better led, trained, prepared, and resourced.

8. A high tactical tempo in urban offensive operations challenges logisticians to provide for the increased consumption of munitions, and degrades soldiers' physical capabilities. Commanders must learn to anticipate these challenges and develop the means and abilities to overcome them. In the past, these challenges forced commanders to conduct urban offensives cyclically. They used night and other periods of limited visibility to resupply, rest, and refit forces. Moreover, the environment influenced the tempo of their operations. It is critical that the "battle rhythm" does not result in friendly forces spending each new day attacking a rested enemy that is in a well-prepared position.

## **SECTION 2 SUSTAINING, SHAPING, AND DECISIVE OPERATIONS**

9. Urban offensive operations fall into the overall doctrinal framework of sustaining, shaping, and decisive operations. Each operation is essential to the success of an urban offensive, and usually two or more of these operations occur simultaneously. Sustaining operations in urban offensive operations ensures freedom of action. They occur throughout the area of operations (AO) and for the duration of the operation. Shaping operations in urban offensive operations create the conditions for decisive operations. In UO, much of the shaping effort focuses on isolation, which is critical in both major operations and tactical battles and engagements. Decisive operations are attacks that conclusively determine the outcome of UO. These attacks strike at a series of decisive points and directly lead to neutralizing the enemy's centre of gravity (COG). In many situations, sustaining operations may be the greatest vulnerability of the attacking force.

10. **Sustaining Operations.** Supporting forces in an urban offensive are tailored to the urban environment and are well forward. Ideally, the supporting forces closely follow the combat forces, and as they secure an area, move within or just outside the urban area. Operating in the urban area during offensive operations allows the sustaining operation to take advantage, for security purposes, of the defensive attributes of the environment. Attacks against sustaining operations may take the form of special operations activities aimed at lines of communications (LOC) leading to or within the urban area. Choke points—such as bridges, tunnels, and mountain passes—are vulnerable to these attacks and may require combat forces to protect them.

11. Sustaining operations must also anticipate the growth of sustainment requirements as friendly forces secure and take responsibility for large portions of the urban area. The success of urban offensive operations will often uncover the civilian population in former enemy occupied areas. It may attract the civilian population from sections of the urban area where friendly forces are not operating to areas they occupy. Rural populations may migrate to the urban area as the result of successful offensive operations.

12. There is likely to be a requirement to take initial responsibility to provide for the urban population. This consideration must be integrated into logistics planning and organization from the start of the planning process. To be successful and efficient in such a situation, logistics planning includes civil affairs (i.e., civil-military cooperation [CIMIC]) specialists and local government representatives. It also integrates and consults with the international community and non-governmental organizations (NGOs) that might augment or supplement combat service support (CSS) capabilities. (See Chapter 10 for details).

13. **Shaping Operations.** Shaping operations that support the urban attack separate into those focused on isolating the enemy and all others. Friendly forces must isolate the enemy to ensure successful urban offensive operations. Depending upon the enemy reaction to isolation efforts and the nature of the enemy COG, this task may become decisive. Other shaping operations include those common to all offensive operations and others unique to UO. Unique urban shaping operations may include securing a foothold in a well-fortified defensive sector, securing key infrastructure, or protecting non-combatants. Because of the nature of UO, shaping operations may consume a much larger proportion of the force than during other operations, and may take place both inside and outside the urban area. By successfully isolating an enemy force, the friendly force needed to conduct the decisive operation may be relatively small.

14. **Decisive Operations.** A tactical commander fights decisive urban combat, whereas commanders conducting a larger major operation influence urban combat by setting the conditions for tactical success. Higher commanders may directly influence urban offensive operations by operational manoeuvre, by coordinating joint fires, by closely coordinating conventional forces, or with SOF.

15. Tactical urban offensive operations quickly devolve into small-unit tactics of sections, platoons/troops, and companies/batteries seizing their objectives. The compartmental effect of the terrain and the obstacles on the C2 of small units, especially once they enter close combat inside buildings or underground, often restricts the higher commander's ability to influence operations. Thus, the commander must influence the actions of subordinates by clearly

identifying the COG and decisive points; using mission orders; developing effective task organizations; and synchronizing their sustaining, shaping, and decisive operations.

16. Like all operations, successful decisive operations in UO depend upon identifying the decisive points so friendly forces can destroy or neutralize the enemy's COG. Seizing a key structure or system that makes the enemy's defence untenable; interdicting a key resupply route that effectively isolates the enemy force from his primary source of support; or isolating the enemy so that his force can no longer influence friendly activity, may be more effective than his outright destruction. Friendly forces have a major advantage in the C2 of operations. Commanders can use this advantage to attack numerous decisive points simultaneously or in rapid succession. They can also use it to attack each individual decisive point from as many directions and with as many different complementary capabilities as possible. Commanders must completely understand urban environmental effects on the C2 systems to envision and execute the bold and imaginative operations required.

17. Properly synchronized actions considerably enhance the relative value of the combat power applied at the decisive points. They present to the enemy more requirements than he has resources with which to respond. Synchronized IO and multiple manoeuvre actions paralyse the enemy's decision-making capacity with information overload combined with attacks on his C2 systems. Additionally, well-synchronized actions limit the time the enemy has to make decisions and forces him into bad decisions.

### **SECTION 3 FORMS AND TYPES OF URBAN OFFENCE**

18. Traditional forms of offensive manoeuvre include envelopment, turning movement, infiltration, penetration, and frontal attack. These traditional forms also apply to urban combat. Some have greater application to an urban environment than others. Moreover, success will belong to commanders who imaginatively combine and sequence these forms of manoeuvre throughout the depth, breadth, and height of the urban battlefield. This is true at the lowest tactical level and in major operations. Similarly, the types of offensive actions: advance to contact, movement to contact, attack, exploitation, and pursuit is equally applicable in the urban environment.

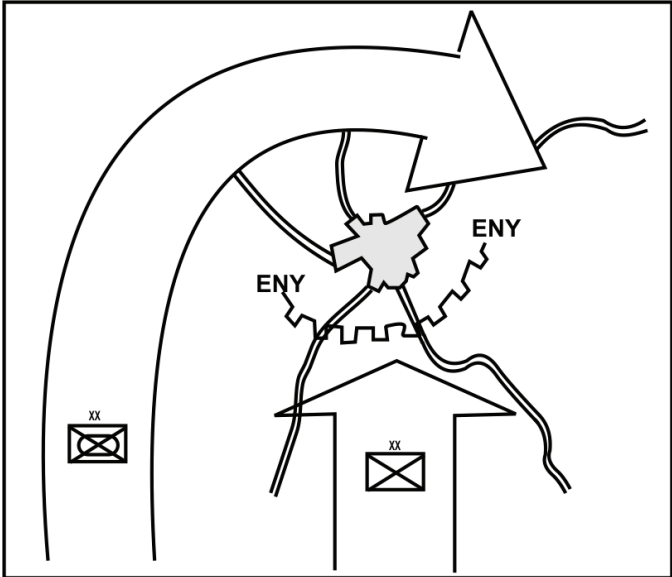


Figure7-1: Envelopment Isolates

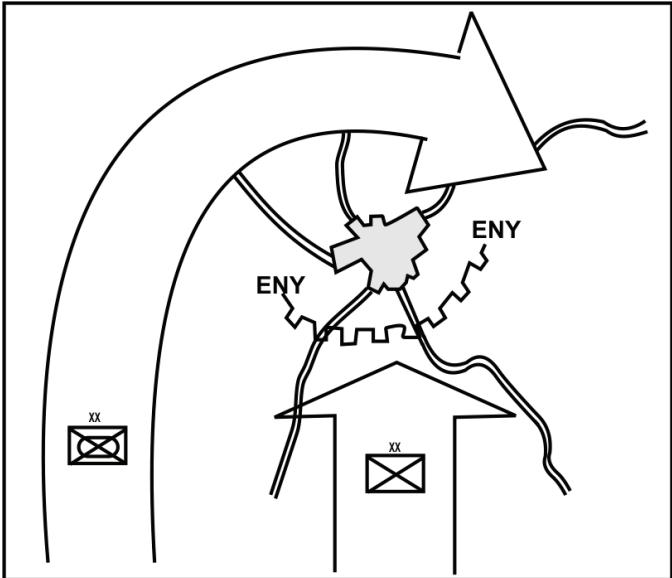


Figure 7-2: Turning Movement

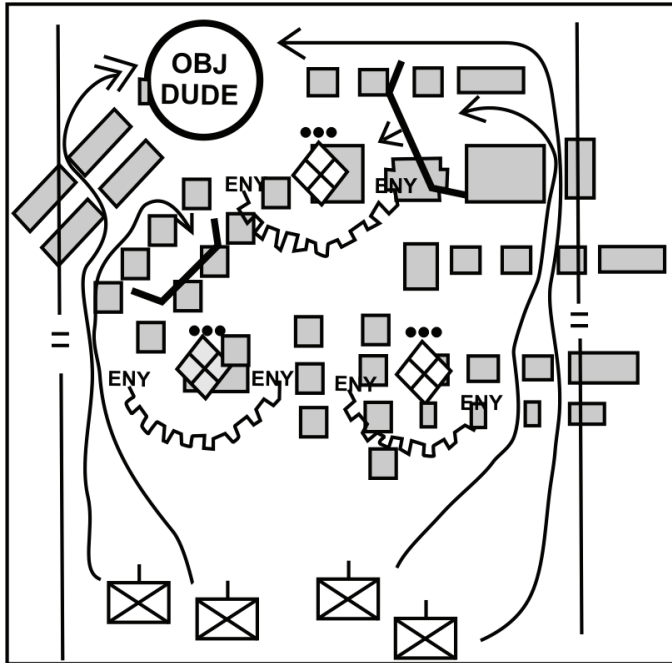


Figure 7-3: Infiltration

## FORMS OF OFFENSIVE MANOEUVRE

19. **Envelopment.** Envelopment is the ideal manoeuvre for isolating enemy elements in the urban area, or isolating the area itself. A deep envelopment effectively isolates the defending forces and sets the conditions for attacking the urban area from the flank or rear. Yet, enveloping an objective or enemy force in the urban area is often harder since achieving speed of manoeuvre in the environment is so difficult (see Figure 7-1). Vertical envelopment, however, works effectively if we can effectively suppress or neutralize the enemy air defence (AD).

20. **Turning Movement.** A turning movement can also be extremely effective in major operations (see Figure 7-2). By controlling key LOC into the urban area, the enemy can be forced to abandon the urban area entirely. These movements may also force the enemy to fight in the open to regain control of LOC.

21. **Infiltration.** Infiltration secures key objectives in the urban area while avoiding unnecessary combat with enemy defensive forces on conditions favourable to them (see Figure 7-3). This technique seeks to avoid the enemy's defence using stealthy, clandestine movement through all dimensions of the urban area to occupy positions of advantage in the enemy's rear (or elsewhere). It depends upon the careful selection of objectives that threaten the integrity of the enemy's defence and superior common operational picture (COP). Well-planned and resourced deception operations may potentially play a critical role in masking the movement of infiltrating forces. The difficulty of infiltration attacks increases with the size and number of units involved. It is also more difficult when friendly forces face a hostile civilian population.

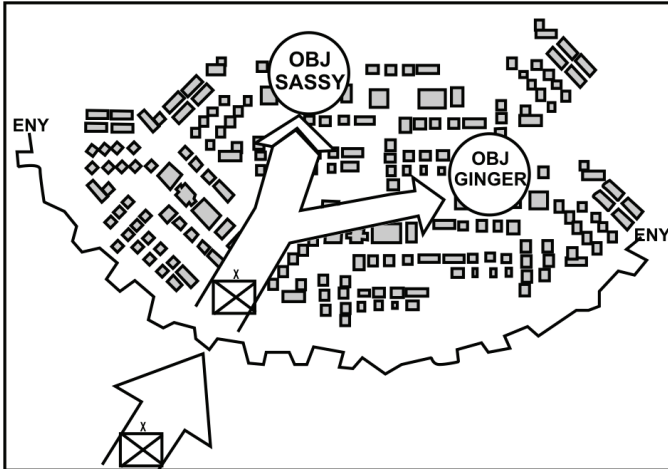


Figure 7-4: Penetration

22. **Penetration.** Penetration is the most useful form of attack against a prepared and comprehensive urban defence (see Figure 7-4). It focuses on successfully attacking a decisive node. Ideally in urban combat, multiple penetrations in all dimensions are focused simultaneously at the same node or on several decisive nodes. In urban combat, the flanks of a penetration attack are difficult to secure, and resources must be positioned to exploit the penetration once achieved.

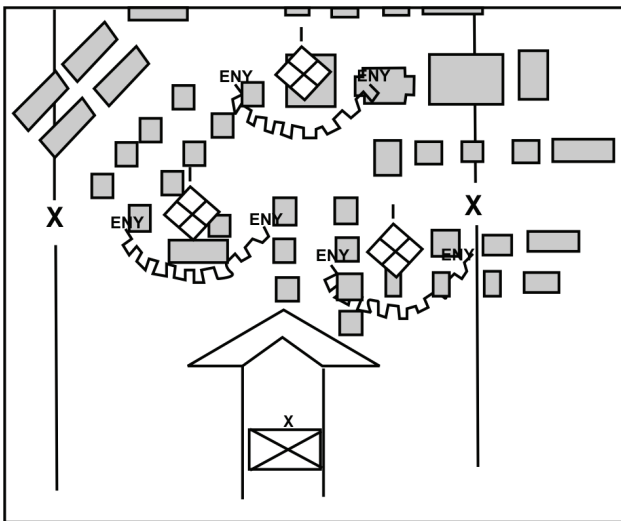


Figure 7-5: Frontal Attack

23. **Frontal Attack.** Frontal attacks are the least favourable form of manoeuvre against an urban area (see Figure 7-5). They require many resources to be executed properly, risk dispersing combat power into non-essential portions of the area, and risk exposing to enemy fires more of the force than necessary. In urban offensive combat, forces most effectively use the frontal attack at the lowest tactical level once they set conditions to ensure that they will achieve overwhelming combat power. Then the force of the frontal attack overwhelms the enemy with speed, firepower, and shock action.

## TYPES OF OFFENSIVE OPERATIONS MOVEMENT TO CONTACT

24. In an urban area where the enemy situation is unclear, friendly forces may have to conduct movement to contact to establish or regain enemy contact and develop the situation. Often movement to contact in an urban area occurs as both sides try to establish their influence or control over a contested population centre. The situation determines whether the movement to contact or its specific technique, the search and attack, is appropriate. A conventional force-oriented movement to contact will likely take place when friendly and enemy conventional forces attempt to establish control simultaneously. Initially, neither side is defensive. The friendly force aims to quickly locate and fix the enemy while establishing control of the urban area and its key infrastructure. The search and attack technique works well when a smaller enemy has established a non-contiguous defence in an urban area. Friendly point defence of key infrastructure, robust reconnaissance, and rapidly concentrated combat power to fix, defeat, or destroy enemy resistance once located, characterizes this operation.

25. A meeting engagement often results from the movement to contact. It occurs when a moving force that is partially deployed for battle collides with and engages an enemy at an unexpected time and place. In a meeting engagement in an urban area, the unit that reacts most quickly and decisively will likely win. Rapid and accurate decision making depends heavily upon understanding the nature of the urban area and its impact on operations. Thus, in a meeting engagement, commanders quickly assess the impact and role of all components of the urban environment (e.g., terrain, infrastructure, and society) on the operation. Responsive reconnaissance and situational understanding are also important. This permits accurate decision making regarding where to attack, where to defend, and how to allocate resources. Situational understanding enhanced by digital information systems (INFOSYS) that provide an enhanced COP facilitates rapid reaction and a synchronized response. This reaction and response allow friendly forces to seize the initiative and dominate the enemy.

26. **Attack.** The attack is the most common and likely offensive operation that will be conducted in an urban environment. Commanders conducting major operations and commanders of large tactical units usually execute deliberate attacks. In the urban environment, units larger than battalion-size rarely conduct hasty attacks. Hasty attacks are common below company/battery level as units use their initiative to take advantage of tactical opportunities. Larger units will conduct hasty attacks when enemy defences are disrupted or unprepared, to take advantage of an unexpected situation, and to prevent the enemy from establishing or re-establishing a coherent defence.

27. **Exploitation.** Exploitation follows a successful attack to disrupt the enemy in depth. Commanders of major operations should consider focusing exploitation attacks on urban areas. An enemy defeated in an attack will attempt to rally units, reinforce with reserves, and reorganize his defence. With its information and communications capability, transportation network, and defensive attributes, the urban area is the natural focal point to re-establish a disrupted defence. By establishing urban centres as the objectives of the exploitation, commanders can deny the enemy the location he needs to re-establish his defence. The exploitation focuses on the urban area, as well as on the remnants of the enemy. A successful exploitation to seize an urban area works efficiently because the attack pre-empts the defence and denies the enemy the full advantages of urban terrain.



28. Commanders conducting exploitation must be aware of the vulnerability of their forces to counterattack and ambush in urban areas. An urban area provides ideal cover and concealment to hide enemy reserves, reinforcements, or reorganized forces. Constrictions of routes into and through the urban area make exploitation forces a potentially dense target, and limit manoeuvre options. Robust and well-coordinated reconnaissance, tactical dispersal, and use of advance guard security forces, protect against this enemy.

29. **Pursuit.** The pursuit is designed to destroy enemy forces attempting to escape. It focuses on the enemy and not on urban areas. When conducting a pursuit, forces move through undefended urban areas and bypass those in which enemy forces successfully take refuge. The enemy will attempt to use urban areas to disrupt the pursuit and permit their main body to escape. Commanders prevent escape by denying the enemy the time to establish forces in urban areas that cannot be bypassed. The agility of aviation for attack, reconnaissance, and transportation is essential to execute a successful pursuit through urban areas.

#### **SECTION 4 URBAN OFFENSIVE CONSIDERATIONS**

30. The urban operational framework (USECT) provides a structure for developing considerations unique to urban offensive operations. The considerations vary depending upon the situation and scale of the operation. Some considerations applicable to major operations that include an urban area will also be considerations at the tactical level focused in the urban area. However, no set rules exist. All UO are unique. Issues addressed at the operational level in one situation may be addressed in a new situation only at the tactical level. Under the right circumstances, a consideration may become an operational issue, a tactical issue, or a combination of the two. The following identifies some planning and execution issues that commanders should address in conducting major operations.

#### **UNDERSTAND**

31. The first requirement, and a continuing requirement throughout the conduct of UO, is the assessment of the situation. Commanders must base this understanding on detailed information regarding the particular urban area. Since the enemy will likely dominate or control most of the urban area during the planning phase of offensive operations, generating an accurate assessment of the urban environment will be difficult. A comprehensive intelligence, surveillance, target acquisition and reconnaissance (ISTAR) effort in support of a rigorous intelligence preparation of the battlefield (IPB) process will help overcome this problem.

32. **Integrated Intelligence, Surveillance, Target Acquisition, and Reconnaissance.** The commander of a major operation that includes an urban area can target reconnaissance deep into the AO and area of interest. This begins the application of ISTAR resources against the urban area that may lead to decisive ground operations. This ISTAR effort, and the understanding it supports, continues as long as the urban area remains in the AO. Commanders of major operations should initially direct ISTAR assets towards information requirements that determine whether or not to conduct urban offensive operations. Once decided, ISTAR resources should shift to support the planning and execution of the operation in the urban area.

33. The resources generally available to a commander include national and strategic sensors, and can be requested through the appropriate joint force commander. The commander must aggressively pursue full use of these systems to begin building an initial database for analyzing the significant aspects of the terrain; key infrastructure considerations; the status and disposition of the population; and the size, type, and disposition of enemy forces in the area. The gathering and analysis of human intelligence (HUMINT) plays a critical part of this process and assists commanders in understanding ethnic, cultural, religious, economic, and political facets of the environment.

34. As the intelligence and the national reconnaissance and surveillance efforts progress, commanders should insert, if available and feasible, SOF reconnaissance assets into the urban environment. These elements will seek to confirm or deny the information received from imagery intelligence (IMINT), signals intelligence (SIGINT), and HUMINT sources. Amongst many factors, using SOF depends on their availability, the particular urban area, the area's ethnic composition, and the relationship between the urban population and the enemy. Other joint operational reconnaissance and surveillance assets that allied/coalition higher echelon commanders may have available include the Joint Surveillance and Target Attack Radar System (JSTARS), the Guardrail Common Sensor airborne SIGINT collection/location system, unmanned aerial vehicles (UAVs), and space-based systems.

35. The commander's staff will use all sources of information—IMINT and SIGINT sensors, HUMINT, historical research, and reconnaissance—to refine his ability to assess the urban environment. Digitally linking subordinate commanders with information sources helps to develop a COP essential to their situational understanding of the urban environment. The IPB process guides this assessment.

36. **Focused Assessment Efforts.** In urban offensive operations, the tactical commander's assessment focuses on defeating the enemy in the urban area within the constraints of the environment. Towards this end, identifying and assessing decisive points to attack is a commander's priority assessment task. Some unique aspects of the urban environment also require the focus of the commander's assessment efforts. These include the character of the urban defence, collateral damage considerations, and the effects of the environment on friendly and enemy courses of action.

37. **Character of the Urban Defence.** To be both efficient and effective, urban offensive operations focus on what is decisive. Decisive points for an urban attack depend primarily upon the mission within the urban area. They can vary widely in composition and size. Since commanders only focus on the essential, they may determine the decisive point to be a single building or a limited sector of an urban area. It could be an entire system within the urban infrastructure, such as a communications and information system, or a limited subsystem of the transportation and distribution infrastructure, such as a single airfield. Sometimes what is decisive in the urban area is the enemy military capability, but even this large an objective, when carefully analyzed, may not require destruction of all enemy forces or control of the entire urban area. Decisive points relate directly to the enemy's COG and to mission success. Some decisive points related to the urban enemy's COG might, in fact, be physically located outside the urban area.

38. To gain specifics on enemy dispositions within the urban area requires a reconnaissance capability to see into the depths of the area, and an intelligence capability to determine the enemy's likely defensive course of action. With this information, commanders can determine decisive points and apply combat power selectively against them. Effective urban offensive operations require detailed situational understanding of an area of interest that extends well beyond the perimeter of the urban area.
39. Commanders can penetrate the depth of the urban area using several actions. Firstly, they can evaluate sensor data and imagery. This guides targeting of special reconnaissance. Simultaneously, HUMINT is conducted using any persons who might know the urban area and enemy. This includes civilians (e.g., allies, aides, neutrals, obstacles, and hostiles) and detainees / prisoners of war (POWs). Finally, tactical conventional reconnaissance assets including reconnaissance forces, aviation, artillery radar, SIGINT, and UAVs are directed at the urban area. All these sources and data are linked through digital INFOSYS to provide commanders and their subordinates with improved situational understanding and a COP.
40. **Collateral Damage Considerations.** Commanders must assess the risk of collateral damage that an operation may cause. This assessment helps to initially determine the viability of a course of action. However, commanders must reassess their courses of action at frequent intervals based upon known information to determine if the original evaluations remain valid. This reassessment minimizes potential collateral damage from a change in mission or a change in a course of action. Many aspects of the environment can change during mission execution.
41. **The Environment's Effects on Courses of Action.** The urban environment's unique aspects can significantly affect the course of action chosen. Commanders assess these effects in planning, but they also verify and monitor these effects as forces execute offensive missions. In particular, commanders will want to confirm the civilian population's locations, beliefs and actions, and monitor changes. They will need to validate terrain considerations and monitor changes based upon rubble and other damage to structures. In urban terrain, dead space, cover, and concealment can only be identified physically and will change considerably as operations affect the terrain.

## SHAPE

42. Commanders of major operations have a primary contribution to UO: the planning and conduct of effective shaping operations that set the conditions for subordinate tactical success. In UO, isolation will be a critical condition. Effective isolation will require persistent, continuous surveillance and reconnaissance, innovative use of fires and manoeuvre (including effective force allocation decisions), and well-established sensor-to-shooter links. These efforts—combined and synchronized with SOF direct actions, IO that minimize non-combatant influences, and necessary shaping attacks (particularly the seizure of a foothold)—establish the conditions necessary for the subsequent offensive domination of the area.
43. **Isolation is Essential.** One key to success in the history of UO has been the effective isolation of the enemy force (see Figure 7-6). This applies today and equally well to major urban offensive operations as it does to smaller-unit attacks. This isolation not only denies access to

the urban area from outside, but also contains enemy forces within. In a modern metropolis or megalopolis, this can appear a daunting task. *Operational isolation requires dominating all physical and electronic contact between the enemy in the urban area and supporting enemy forces outside the urban area.* This does not necessarily require physically encircling the urban area, but it does require that friendly forces be able to exert *control* over the area's entire perimeter, as well as decisive nodes within. For a sprawling urban area, successful isolation may require the commitment of a large amount of resources.

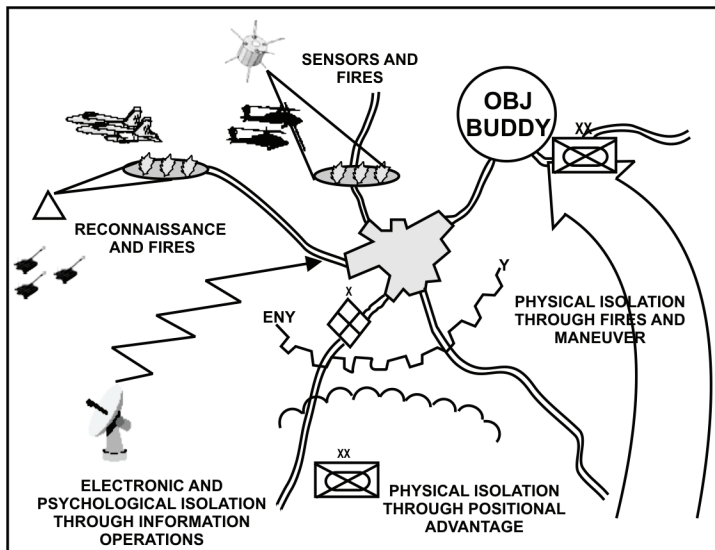


Figure 7-6: Shaping Through Isolation

44. Successful isolation of the urban area depends as much upon the nature of the enemy as it does on any other factor. A conventional enemy in a large urban area may be much easier to isolate than an insurgent enemy in a much smaller urban area. The forces needed in the former situation may be less than those needed in the latter. The more the characteristics of the enemy are conventional in nature; generally the easier it will be to isolate him using standard combat methods and equipment. Isolating a more unconventional force requires many of the same techniques as used against conventional forces. However, it also requires a much greater ability to conduct offensive IO, to integrate CIMIC units and civil-military operations (CMO), and to work with allies, coalition partners, and local authorities. Fundamentally, isolating a less conventional enemy puts increased emphasis on separating combatants from non-combatants.

45. **Offensive Isolation Objectives.** Isolation seeks to achieve two primary objectives with respect to defeating an enemy's urban defence:

- a. weaken the overall coherence of his defence; and
- b. manipulates or limits his manoeuvre options.

46. Isolating the enemy in the urban area from external support, as well as isolating him from sources of support within the urban area, weakens his overall defence. The defence is weakened through a combination of attrition (i.e., the enemy cannot replace his losses) and the diversion of his combat power from the defence to operations to counter the isolation effort. Isolation can

also prevent the enemy from shifting his forces to reinforce decisive points in the urban area or to conduct counterattacks.

47. **Persistent Surveillance.** Persistent surveillance of the urban area is essential for all types of actions employed to isolate an urban area as completely as resources will allow. Surveillance of the urban area relies upon either reconnaissance forces or sensors continuously observing or monitoring urban avenues of approach. This network of ISTAR assets updates the commander's assessment of the situation and provides the means to quickly identify, and if necessary, attack enemy elements as they move. However, particularly with sensors, commanders know that not every sighting is necessarily an enemy to be attacked. Non-combatant activity clutters the environment making it easier for enemies to disguise themselves and increasing the burden (and the number of resources required) of distinguishing friend from foe.

48. **Fires and Manoeuvre.** Fires and manoeuvre may be used to achieve isolation, either singly or in combination. As always, effective obstacles, monitored by sensors or observation, are integral to any isolation technique. Attacking forces can preposition themselves along avenues of approach to deny entry and exit through positional advantage. Relying primarily on this method of isolation, particularly around a large urban area with multiple avenues of approach, can be resource intensive. Instead, the pairing of fires and manoeuvre provides attacking commanders with added flexibility and allows them to isolate several avenues of approach with fewer resources. Highly mobile attack helicopters are ideal for this purpose as long as these operations occur outside the enemy-controlled portions of the urban area. In the enemy-controlled areas, it is more difficult to identify, eliminate, or effectively suppress enemy AD. The enemy may have numerous man-portable AD weapons and enhanced effects of small arms used for AD. Therefore, the risk to using this equipment may outweigh the potential benefits. However, mobile ground units—such as air assault (subject to the same AD enemy considerations as attack aviation), armoured, or mechanized forces—can also rapidly move to attack and destroy a enemy moving into or out of an urban area. Disadvantages of the combined fires and manoeuvre option are that the:

- a. critical assets, on standby and dedicated to isolation efforts, may be unavailable for other missions; and
- b. attacking force may not locate the enemy in time to complete its mission; an inherent risk to any attack.

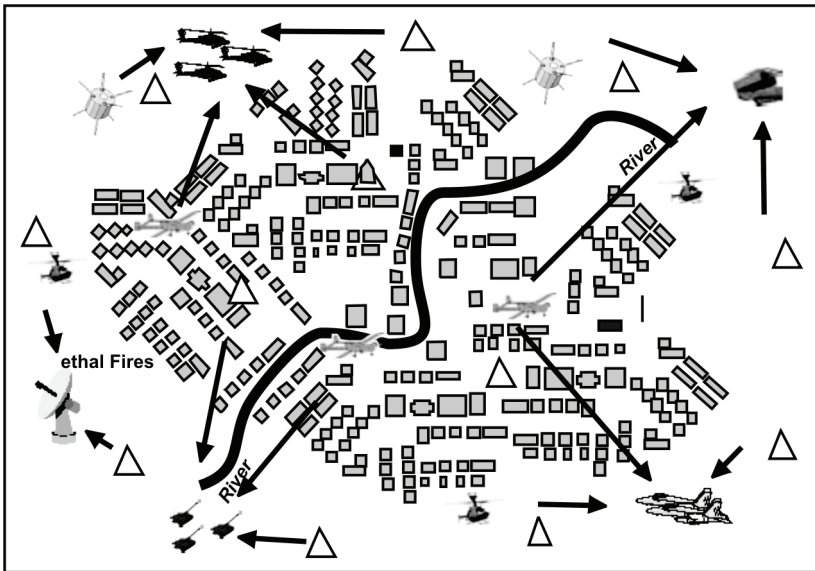


Figure 7-7: Critical Sensor-to-Shooter Links

49. Another alternative relies upon indirect or joint fires alone to destroy the enemy force. Its disadvantage is that fires alone rarely destroy or even stop a force from moving into or out of an urban area. Although targets and avenues of approach will require continual surveillance, it is usually a less resource intensive option than those that include manoeuvre. It also does not normally require fires assets to remain on standby to accomplish the mission. However, fires must be able to reliably and quickly respond, which may not be the case for joint fires—particularly aircraft. For field artillery units and naval gunfire, the units must be in range, which requires careful positioning. A skilled enemy can avoid interdiction fires by using the geometry of the area to identify gaps due to obstructing terrain or the firing unit’s range limitations. It can also use concealment and weather to avoid observation. However, effective sensor-to-shooter links throughout the urban battlefield will reduce the enemy’s ability to hide (see Figure 7-7). A resolute enemy may risk significant losses to fires to prevent isolation, or may attempt to use non-combatants as a shield. Ultimately, commanders use innovative combinations of all techniques discussed. Some units will physically block key avenues of approach. Surveillance will monitor less important routes and avenues. Artillery fires, joint fires, and manoeuvre units will then respond to the results of surveillance depending upon the circumstances.

50. **Enemy Reactions.** The reaction of the enemy to the effects of isolation will depend upon his mission, morale, force structure, and overall campaign plan. The enemy may recognize isolation actions early and withdraw from the urban area before isolation is completed instead of risking destruction. On the other hand, the enemy, based upon a different or flawed assessment, may choose to:

- a. continue to defend and conduct local counterattacks;
- b. attack to break into the urban area or infiltrate forces;
- c. attack to breakout of the urban area or infiltrate forces out; or
- d. any combination of the above (see Figure 7-8).

51. Attacking commanders must consider how the enemy leadership's subsequent actions will affect the continuance of overall offensive operations. They deliberate many considerations, to include:

- a. the allocation of more forces to the shaping operations to isolate the urban area;
- b. the allocation of more combat power to achieve rapid penetration and seizure of objectives to take advantage of developing enemy dispositions in the urban area; and
- c. effects of the isolation on the urban population, either as a direct effect or as a response of the enemy force being isolated.

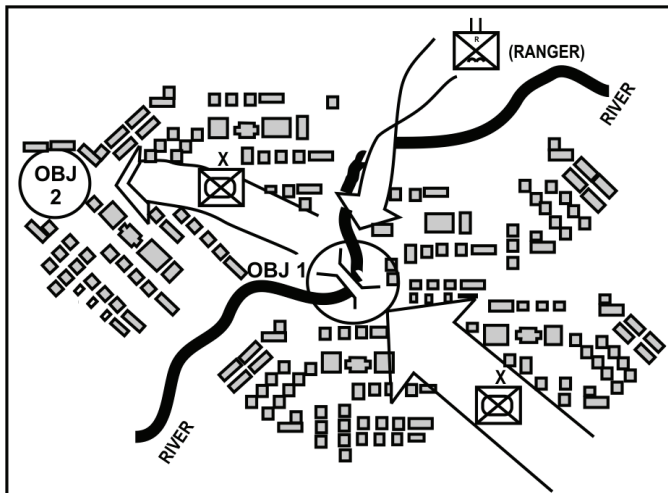


Figure 7-8: Coordination of SOF and Conventional Capabilities

52. **Direct Action by Special Operations Forces.** Although SOF in urban offensive operations will likely conduct essential reconnaissance, they also have a direct action capability to shape the offensive operation (see Figure 7-8). SOF can use direct action capabilities to attack targets to help isolate the urban area, or to directly support decisive actions subsequently or simultaneously executed by conventional forces. Successful attacks against urban infrastructure, such as transportation or communications centres, further the area's physical and electronic isolation. Direct action against command centres, logistic bases, and AD assets can contribute to the success of conventional attacks by destroying or disrupting key enemy capabilities. Direct action can also secure key targets such as airports, power stations, and television stations necessary for subsequent operations. Direct action by SOF and like-forces can reduce potential damage to targets and non-combatant casualties.

53. **Information Operations.** Regardless of how the urban area is physically isolated, it must be combined with IO to electronically isolate the enemy and undermine his morale. Electronic isolation will cut-off communications between forces in the urban area from their higher command to deny both from knowing each other's status. Such isolation may persuade the enemy's higher command or leadership that its forces located in the urban area are defeated. Thus, the command or leadership's intentions to breakthrough to the besieged enemy forces may be affected. Moreover, psychological operations (PSYOPS) can undermine the morale of the

enemy and reinforce electronic isolation and perceptions of abandonment. IO can be used to reduce any loyalty the civilian population may have to the enemy. IO can also ensure that civilians have the information that minimizes their exposure to combat, and as a result, overall non-combatant casualties. In addition, IO aim to deceive the enemy regarding the time and place of force operations and intentions.

54. **Detailed Leader Reconnaissance.** Commanders must clearly see the urban environment to understand the challenges facing their brigades, battalions/regiments, companies/batteries, platoons/troops, and sections. Urban terrain can be deceptive until viewed from the soldier's perspective. Commanders are responsible to intimately know the conditions in order to allocate resources effectively to subordinate units. Often, particularly at battalion/regimental level and above, commanders will not be able to command and control dispersed forces from positions forward, but be forced by the terrain to rely on semi-fixed command posts. Detailed reconnaissance of the AO before a mission by commanders, their staff, and their subordinates, can compensate for this challenge. This reconnaissance will give commanders a personal feel for the challenges of the terrain, and will facilitate more accurate planning and better decision making during operations.

55. **Mission Orders.** Before contact, commanders mitigate some terrain challenges to effective C2 using mission orders. Subordinates have mission orders to take advantage of opportunities before C2 systems can adversely affect the environment. To see the battle and provide effective and timely direction, tactical leaders will follow closely behind units as they assault buildings, floors, and rooms. Thus, only the most mobile INFOSYS can accompany tactical leaders into combat, yet they will still suffer degrading effects of the environment. Mission orders permit rapid and decisive execution without commanders intervening at battalion/regimental level and above. Higher-level commanders facilitate mission orders through their subordinates by articulating their desired end state, clearly stating their intent, and building flexibility into the overall plan.

56. **Effective Task Organization.** Commanders can shape urban offensive operations through effective and innovative task organization. Combined arms, starting with an infantry base, are essential to success and may be an asymmetric means of defeating an urban enemy. Urban attacks will quickly break down into non-contiguous firefights between small units. To achieve the tactical agility for mission success in this non-linear environment, many capabilities are task organized down to the company/battery, platoon/troop, and section levels. Infantry provides the decisive capability to enter buildings and other structures to ensure the enemy's destruction. Tanks, gun systems, and fighting vehicles provide additional mobility, direct firepower, and protection. Field artillery provides the indirect, and if necessary direct, firepower. Such mobility and firepower create the conditions necessary for the dismounted infantry to close with and destroy a covered enemy in an urban defence. When an enemy skilfully uses the urban area to limit ground manoeuvre, vertical envelopment or aerial attack using precision-guided munitions (PGM) may circumvent his defences and achieve necessary effects. Generally, ground systems used *within* the urban area will not be able to operate independently from dismounted infantry. The infantry will be required to protect armour and mechanized systems from close anti-armour weapons, particularly when those weapons are used from rooftops and basements.



57. In urban offensive operations, direct fire support can be critical. Armoured vehicle munitions do not always achieve decisive effects against some urban structures. In some cases, field artillery high explosive munitions work better than armour for direct fire support of infantry. Large calibre (e.g., 105 mm or 155 mm) high explosives directly fired at a structure often produce a more severe shock effect than tank and fighting vehicle cannon and machine guns produce. This is not just a weapon but also a weapon system. As such, artillery may be placed under tactical control (TACON) of manoeuvre commanders, such as a troop of three guns TACON to a company, or a battery to a battalion, not just one gun to a company or other manoeuvre unit. Infantry units must carefully secure and protect these systems—even more so than armoured vehicles—when employed in urban offensive operations, particularly when forward in the direct fire role.

58. Aviation may also be inventively task organized. It can support UO with lift, attack, and reconnaissance capabilities. Tactical commanders down to company/battery may use all these capabilities to positively influence ground close combat. Attack and reconnaissance aircraft can provide flank security for attacking ground forces. Attack aircraft may also provide direct fire support to individual platoons/troops or sections. Lift may move entire battalions/regiments as part of brigade operations, or it may move single sections to a position of advantage (e.g., a roof) as part of a small unit assault. Aviation can assist with C2 by providing airborne retransmission capability, airborne command posts, and the confirmed status and position of friendly forces. However, aviation is a limited and high-value asset; commanders must review its use in innovative task organizations. It is particularly vulnerable to enemy AD unless used over terrain secured by ground forces. From these positions, aircraft can use enhanced sensors to conduct reconnaissance and use precision weapons with stand-off capability.

59. **Shaping Attacks.** In a large urban area, the defending enemy cannot be strong everywhere. Shaping operations can also take the form of attacks against vulnerable positions to force the enemy to manoeuvre and redeploy his forces in the urban area. This prevents him from merely defending from prepared positions. Forcing the enemy to move negates many of the defensive advantages of urban terrain, confirms his dispositions, exposes vulnerable flanks, and permits target acquisition and engagement with precision stand-off fires.

60. A critical shaping operation in urban offensive operations is usually an initial attack to seize a foothold. Once they establish this foothold, they accrue some of the defensive advantages of urban terrain. From this protected location, they can continue offensive operations and have a position of advantage against neighbouring enemy defensive positions.

61. **Dominate.** Commanders may employ several methods to dominate the urban area during offensive operations. These include:

- a. bold manoeuvre;
- b. appropriate use of SOF;
- c. precise application of fires and effects; and
- d. proper balance of speed and security.

62. None is unique to UO. Their effective execution, however, allows commanders to dominate in this challenging environment by effectively using resources with the least amount of collateral damage. Overall, domination results from urban offensive operations when forces achieve the objective of the assigned mission and establish pre-eminent control over the necessary terrain, population, and infrastructure. Largely, the commander's ability to dominate is based upon understanding and accepting the challenges posed by the urban environment and using that knowledge to his advantage.

## ENGAGE

63. **Bold Manoeuvre.** Commanders of major operations may have or create the opportunity to seize an urban area with bold manoeuvre. Such manoeuvre requires striking while the area remains relatively undefended—essentially pre-empting an effective defence. This opportunity occurs when the urban area is well to the rear of defending enemy forces, or before the onset of hostilities. Under such conditions, an attack requires striking deep behind enemy forces or striking quickly with little time for the enemy to make deliberate preparations. Attacks under such conditions may entail significant risk; the potential benefit of audacious offensive operations may be well worth possible losses. Such attacks can be accomplished through a combination of the following three ways:

- a. airborne or air assault;
- b. amphibious assault; and/or
- c. rapid penetration followed by an exceptionally aggressive exploitation; for example, a heavy force using shock, armour protection, and mobility.

64. Commanders analyze all potential UO to seek an opportunity or advantage to apply bold operational manoeuvre to the task. Using operational manoeuvre to avoid urban combat against an established enemy defence, potentially marks a significant operational achievement and can have decisive strategic consequences. Just influencing the enemy's morale can positively affect all future operations. However, commanders must evaluate the challenges of such a course of action. These challenges may include sustaining the operation; avoiding isolation and piecemeal destruction; successfully conducting shaping attacks; and achieving the necessary tactical, operational, and strategic surprise.

65. Commanders also build upon the shaping effects of isolating the urban area internally and externally by attacking urban decisive points from multiple directions. They can attack multiple decisive points either simultaneously or in a systematic, synchronized manner. This complicates the enemy's situational understanding of the urban environment, further impedes his decision making, and allows commanders to dictate the tempo.

## APPROPRIATE USE OF SPECIAL OPERATIONS FORCES

66. Sometimes urban areas can be dominated using the direct action capability of SOF. When the enemy fails to develop a comprehensive defence and does not possess large, capable

conventional forces, then friendly forces can achieve operational surprise. Commanders, by synchronizing conventional and SOF effects, may actively control offensive operations to dominate the area. Then, although SOF may be the primary striking force, conventional forces still are available to reinforce and assume the mission because of SOFs' limited logistic capability.

### **PRECISE APPLICATION OF FIRES AND EFFECTS**

67. Precisely applied fires and the massed effects of combat power characterize successful urban attacks. The fires can be direct fire from combined heavy or light ground teams; direct or indirect fire from supporting aviation standing off from the target and any possible AD enemy; or precision indirect fire from conventional tube artillery. All efforts strive to reduce collateral damage around the point of attack, consistent with mission success. Forces use fires to deny the enemy the ability to manoeuvre in the urban area and to destroy the enemy when he attempts to manoeuvre. When the enemy exposes himself by moving, the environment no longer protects him, and fires can effectively engage him.

### **PROPER BALANCE OF SPEED AND SECURITY**

68. Attacking units balance speed and security. As units advance they must secure flanks, control dominating terrain (e.g., buildings), evacuate civilians, and keep the integrity and synchronization of the combined arms team. Obstacles are anticipated and rapidly breached. Commanders choose avenues of approach to:

- a. provide cover and concealment for following aviation and support units;
- b. permit travel by all classes of vehicles;
- c. easily defend from counterattack;
- d. avoid non-essential centres of enemy resistance; and
- e. avoid population centres.

69. Aviation is one resource to protect flanks. Another resource is engineers who seal off surface and subsurface entries and avenues along the flanks of the attack.

### **CONSOLIDATE**

70. **Preparation to Defeat Counterattacks.** Immediately after the conduct of successful UO, units need to be alert to rapid and violent counterattack. Rapid and decisive counterattacking in UO is extremely important to the defence because a quick counterattack can regain terrain before the offensive forces have consolidated and assumed the advantages of defending on urban terrain. Delaying a counterattack in UO, even for a few minutes, permits the

environment's advantages to shift to the successful attacker. Thus, attacking units anticipate this reaction during planning and are prepared to defeat it during execution.

## TRANSITION

71. Effective transition allows commanders to continue the full range of operations in the urban area and elsewhere in the AO without unnecessary delays. Commanders accomplish this by thorough planning—including appropriate branches and sequels (revised as the situation changes)—that gives adequate consideration to post offensive organizational, training, psychological, and civilian requirements.

72. **Early and Concurrent Transition Planning.** Commanders can ensure smooth transitions of urban offensive operations by planning for post-offensive operations early. Based upon the mission envisioned, they determine which subordinates and what type of force structure to use. Post-offensive missions, like all UO, encompass the full range of operations. At the successful conclusion of offensive operations, there is a transition to some type of stability operation. Commanders may leave the subordinate unit in place to execute the new mission, may reorganize the subordinate unit for the mission, or relieve the unit that just completed offensive operations with a new unit.

73. **Changes to Task Organization.** Commanders should consider the organization of forces following offensive operations. Hostile civilians may require significant combat forces or military police forces to maintain stability. Friendly civilians may require a minimum of military police or combat forces, but significant logistic support. Commanders must carefully consider the urban situation before deciding how to use combat forces.

74. **Training and Psychological Considerations.** Many combat tasks may not support follow-on stability operations without considerable modification, if at all. Often, non-combat skills—not normally part of a unit's mission essential task list, such as negotiating or mediating skills—will be required. However, the greatest modification required applies to each soldier's mental outlook. Forces that transition directly from combat to peace support operations (PSO) may not be psychologically prepared for a rapid and drastic change of mission. Commanders should not expect troops who have just completed high-intensity offensive operations to exercise the sensitivity and judgment required in most PSO. This especially applies if the population is hostile.

75. **Return to Civil Agencies.** Commanders also have the role of affecting the transition from the urban offensive operation to civil authorities, allied organizations, NGOs, and other agencies as appropriate. Planning for a transition is detailed and aims to quickly return as much civil control of the area as is feasible after the attack. Beyond civil control, civil agencies and NGOs assume tasks as completely and as rapidly as possible. These organizations are consulted and integrated into the planning process as early as possible. Commanders must begin planning for a transition when planning for offensive operations. They consider relinquishing control of urban areas to civil government, law enforcement, or NGOs before completing offensive operations. During the conduct of UO, transitional operations have to be closely synchronized with the execution of the attack.

**PREPARATION FOR POTENTIAL MISSION CHANGES—FIGHTING THE THREE BLOCK WAR**

76. In urban offensive operations, like other offensive missions, the change in mission after a successful urban attack may be to a hasty defence or a continuation of offensive operations outside the area. However, in urban offensive operations the mission will just as likely change to a PSO.

77. Even more challenging than a transition at the end of the mission is a transition during the conduct of the mission. Soldiers may have a difficulty in transition from PSO to offence and defence, and back again multiple times during an urban offensive operation. Equally, soldiers may apply the tactics, techniques, and procedures of urban offensive operations to the PSO with potentially disastrous results.



## ANNEX A TO CHAPTER 7

### MARINE CORPS CENTER FOR LESSONS LEARNED OPERATION PHANTOM FURY: THE USMC OFFENSIVE OPERATION IN THE IRAQI CITY OF FALLUJAH NOVEMBER 2004

1. **Background.** This report was compiled by TECOM's representative with the Marine Corps Center for Lessons Learned in Camp Fallujah, Iraq. Input for this report was drawn from personal interviews with company commanders, operations officers and executive officers from three USMC infantry battalions as well as from the personal observations of the author who participated in the operation. The report is not intended to be an exhaustive list of lessons learned but rather an overview of some of the most significant observations. The lessons should be considered in light of the specific context of the battle, which were not typical of operations elsewhere in Anbar Province. Phantom Fury was not a security or stability operation but a conventional battle. Moreover, the battle was fought in a city that was almost devoid of civilians due to the success in persuading most of the town's inhabitants to leave prior to the assault.
2. **Executive Summary.** This paper draws the following overall conclusions:
  - a. That although Operation Phantom Fury is atypical of USMC operations in Iraq due to the intensity of the combat and the absence of civilians, many of the lessons learned are applicable to all military operations on urban terrain (MOUT) across the spectrum of conflict.
  - b. That since the majority of our operations in Iraq are conducted in urban areas, we should focus on MOUT in our pre-deployment training. This will allow units, from battalion to company level to develop and practice techniques, tactics and procedures (TTPs), such as the ones discussed below, prior to deployment.

### BATTALION LEVEL OPERATIONS

3. **Topic.** The Enemy.
4. **Discussion.** The enemy typically consisted of small groups (4-12) of individuals armed with small arms and RPGs who generally chose to fight from inside buildings rather than out in the streets. Although these groups tended to congregate in houses close to one another, they fought as individual groups rather than establishing a mutually supporting series of positions. Although we lost some casualties from rooftop shootings, the majority were incurred inside buildings where the enemy waited for us to come to him. These tactics were probably a result of our ability to dominate by fire the streets and rooftops. Most engagements were initiated by the enemy opening fire on Marines as the latter were entering a house or ascending the stairwell. The insurgents often used PKMs and grenades to initiate the engagements and would usually continue to fight until killed. This does not mean, however, that we were fighting an enemy that was universally suicidal. In many instances, insurgents attempted to escape by throwing down their weapons and either tried to evade or approached our units pretending to be civilians. However, by all accounts, the enemy that we encountered in Fallujah was far more willing to stand and fight to the death than our experiences of him elsewhere in Anbar province would

suggest. Lastly, the enemy generally did not choose to conduct offensive operations at night. Although several newspaper reports and even one Battalion executive officer indicated that the enemy made a habit of launching attacks at night, I found only reports to the contrary from Marines at company level and below.

5. **Recommendations.** None. These observations are intended to put the lessons discussed below in context.

6. **Topic.** Varied approach to methods of attack between the Battalions

7. **Discussion.** Political considerations caused the Division to emphasize the importance of seizing objectives quickly. The concern was that there would be a repetition of the situation in April when the attacking force was ordered to hold up as it closed on the city. RCT 1's order instructed its battalions to "attack to seize" its objectives, while RCT 7 tasked its subordinate units to "conduct a penetration to destroy enemy in zone" and then to "search and attack in zone" in the course of seizing designated objectives.

8. The commanders of two battalions gave their company commanders instructions to "clear in zone" or "attack to clear". However, only one of these battalions was able to resist from the outset pressure to expedite movement in order to make timelines. This particular battalion was very methodical in its approach. With two precepts in mind, to extend its culminating point and to ensure that its zone was truly clear of insurgents, this battalion advanced deliberately with all companies on line from phase line to phase line clearing every building in its path. In this case, clearing meant extensive use of preparatory fires followed by pre-prepared charges or rockets to conduct dynamic breaches. At 1600 each afternoon, the battalion would come to a halt and the companies would put out OPs and "go firm" while the commanders met to conduct a chalk talk of the events of the next day which would include emphasis on the geometry of fires. At night the companies would establish up OPs on their firm bases but would not run dismounted patrols in the streets. The rationale for this was that even with night vision equipment, a moving force is at a disadvantage at night in an urban environment. Since the enemy did not appear to be able or willing to launch night attacks, this afforded the companies the opportunity to post minimal security while allowing their personnel to rest. At 0700 the next day the companies would begin clearing again, starting together on the same phase line. The same battalion pushed hot food up to the forward units nightly, another factor in their effort to "extend their culminating point". By contrast, leaders in the other battalions mention that they had little sleep for the first 24-36 hours of the battle. In trace of the companies came a task force composed of engineers and security elements from the battalion's H&S Company. This task force's mission was to open routes, destroy caches and IEDs and provide rear security for the forward companies. The task force used D-9s, D-7s and ACES to clear rubble and, in some cases, as offensive weapons against pockets of resistance. This proved to be a very effective technique and one whose necessity arose from the enemy's preference to engage dismounted infantry rather than the tanks that preceded them.

9. There are many variables in quantifying the success of a particular tactic but it is accurate to say that this particular battalion, while encountering comparable resistance to adjacent units, suffered the lowest number of casualties and was the only battalion not to encounter significant problems with enemy infiltration back into previously cleared areas. An interesting aspect of



this success was the fact that everything about this battalion's approach to the task of securing its area was methodical, a term which Marines normally tend to shy away from as being too closely affiliated to attrition warfare.

10. Other Battalions either chose or were compelled by the wording of their original tasking to push as rapidly as possible to a designated objective. In doing so they accepted risk on their flanks and to the rear of their forward units, a vulnerability that was frequently exploited by the enemy. The lesson that this taught us is not a new one in urban warfare: unless physically occupied by friendly forces, no area of a city is really secure. The tactic of conducting a penetration may have seemed necessary from a political standpoint but probably resulted in a longer and costlier battle than would have been incurred by a more methodical approach. As an example, one battalion pushed through to seize its objectives ahead of schedule. However, it then became necessary for the adjacent battalion to move into the same area in order to clear it of insurgents, incurring casualties in the process. This pattern was repeated several times between the battalions and 9 weeks after the initial attack, we were losing Marines in areas that had been cleared and then vacated. This problem would only have been prevented if units conducting a penetration had designated the bulk of their force to conduct detailed clearing behind the lead elements. All battalions reported that they incurred more casualties during back clearing than during the assault phase.

11. Lastly, although units pushed to seize designated objectives it became apparent that the enemy was not interested in the same terrain. Although it became necessary for us to seize certain high buildings and mosques in order to deny the enemy use of these structures as a shooting platform, for the most part we were the enemy's key terrain. The fact that we had seized our numbered objectives did not dislodge the enemy who was oriented on us.

12. **Recommendation.** The discussion above is offered for the purpose of illustrating:

- a. The effort required to clear an urban area in order to render it secure.
- b. The dangers attendant in focusing on conducting an urban penetration without a plan for detailed back clearing. Without such a plan the urban penetration is a technique better used for a raid when there is a specific high value target whose location is known and when the attacking force does not plan to secure an area but instead plans to withdraw along a secured route. The only way that these lessons and others in this paper can be learned in peacetime is through the conduct of battalion and company level urban free-play exercises. This leads to the recommendation that battalions deploying to Iraq, train for at least one week in the conduct of company sized urban operations and preferably one additional week in the conduct of battalion conventional urban operations.

### **SMALL UNIT TECHNIQUES TACTICS AND PROCEDURES (TTPs)**

13. The topics below and the associated recommendations lead to the overall conclusion that units should continue to incorporate Basic Urban Skills Training (BUST) in their pre-deployment training.

14. **Topic.** Tank-Infantry Integration.

15. **Discussion.** All but one of the infantry battalions had tanks attached. These tank units were attached in the few weeks prior to the operation and the TTPs continued to be refined throughout the operation. A tank section would typically be placed in direct support of a company and would lead the way down streets with infantry clearing adjacent buildings. The infantry companies dedicated dismounted squads to provide security to each tank section since the tanks were “buttoned up” and had no other means to cover their dead space. Tankers were, as always, reluctant to split their sections so as to be able to support more infantry units. Tanks would fire into confirmed or suspected enemy positions, typically using the 120mm HEAT round which limited collateral damage, while the tanks provided over watch. The infantry would use the “grunt phone” attached to the hull of the tank to communicate with the tank commander and M203 smoke and smoke grenades to designate targets. Great attention was paid by all to geometry of fires since six battalions were operating in a relatively small area. When using grids to designate targets, only 10 digit grids were used. One battalion used a grid system of numbers and letters which worked well as a reference but was not exact enough for targeting since a designator such as, for instance, AB5 would refer to a block of 20-25 buildings.

16. In most cases, this was the first time that the infantry companies had worked with tanks and most of these TTPs were developed in the assembly area and refined during the actual operation.

17. **Recommendation.** That all units deploying to Iraq train in CONUS with tanks and engineers in order to practice TTPs such as those developed above. This training should focus on breaching techniques, movement and over watch, tank/ infantry communications and relative positioning.

18. **Topic.** Weapons and Munitions

19. **Discussion.** The 5.56 mm round did not penetrate the concrete and brick walls that composed most of the city’s buildings. The 7.62 and .50 caliber rounds, however, proved to be very effective in penetrating the walls.

20. The SMAW proved to be an invaluable weapon in the operation. It was used for breaching and as a means of destroying the enemy inside buildings. The SMAW NE (thermo baric) round proved to be especially effective for the latter purpose. The only limitation was the number of rounds that could be carried. SMAWs were used with such frequency that in most cases re-supply could not keep pace with expenditure. For instance, one company with 3/1 fired 250 SMAW rounds.

21. The M203 was also used with good effect but with the same limitation with regard to ammunition.

22. **Explosives.** Most battalions made heavy use of their engineer squads which were attached to infantry platoons, by employing multiple satchel charges and Bangalore Torpedoes to breach buildings and kill the occupants. These charges were pre-prepared in great quantities prior to the operation. It proved to be a critical requirement to have a breaching expertise at platoon level and below.

23. The collapsible stock SAW received very favorable reviews since it facilitated the weapon's use inside buildings.
24. Shotguns were used extensively for breaching and room clearing. Each battalion had on average 20-25 of these. By all accounts, one per squad, for a total of 70-80 per battalion would have been an allocation better suited to the demand.
25. **60 mm mortar.** These were used most frequently in the hand held mode, which by all accounts, took some time to get used to since we do not customarily use this method during training. Since the enemy rapidly responded to our tactics by taking shelter in buildings and since the lightweight mortar caused only minimal structural damage to these buildings, the weapon system was most effective as a means of screening and suppression. In some cases, companies divided their mortars between platoons, in others, the co-located all three mortars with their fire support team on the highest building in the vicinity.
26. **M-67 Fragmentation grenades.** These were used extensively to the point where, again, their re-supply became an issue. Marines quickly discovered that grenades by themselves are not effective in ensuring that the occupants of a building are disabled prior to entry. It became necessary to use grenades as a back up after using some other casualty producing munitions, such as rockets fired into the building.
27. **Stun Grenades (flash-bangs).** All battalions stated that they could have used many more flash-bangs than they were allocated. These were often the first ordnance of choice to use when clearing buildings that were likely to contain civilians. In at least one case a squad leader made a decision not to use fragmentation grenades because of the presence of civilians and, as a result, lost two Marines. Had his squad possessed flash-bangs this might have been prevented.
28. **Recommendation.** These fall under two headings: training and equipping. Both are looked at from the perspective of the deploying Battalion.
29. **Training.** All of these recommendations are directed towards battalions preparing to deploy to Iraq. Here I have focused on those training recommendations that are likely to prove of use in any urban environment regardless of the intensity of conflict:
- a. That battalions conduct a breaching course for all their 0351s.
  - b. That battalions focus on the training of M203 gunners. These weapons have also proved to be invaluable in Iraq.
  - c. That 0341s in rifle companies train to employ the 60mm mortar in the hand held mode for immediate suppression missions.
  - d. That battalions experiment with methods of pushing re-supply of critical ammunition to forward units in an urban environment.
30. **Equipping:**

- a. That battalions be provided with sufficient shotguns to enable the distribution of one per squad.
- b. That the collapsible stock SAW be pushed to all deploying battalions.
- c. That battalions receive as many stun grenades as fragmentation grenades in their ammunition allocation.

31. **Topic.** Use of airborne ISR/targeting platforms: UAV (Dragon Eye) and Litening Pod (correct spelling).

32. **Discussion.** Both of these platforms have proven to be invaluable at the infantry battalion level in Iraq. During operation Phantom Fury, both were used to good effect to identify and target insurgent strongholds.

33. The Dragon Eye and Litening Pod are used in day-to-day Battalion operations throughout Iraq. Recently in Ramadi for instance, the Litening Pod was used to record an IED being emplaced and then to track the get-away vehicle to a house that was subsequently raided. In experimenting with all these systems, battalions have found that they work best in conjunction with units on the ground. The Litening Pod can be set up so as to provide live imagery directly to the UAV monitor in the Battalion COC. Both systems have limitations, for instance they do not produce sufficient resolution to be able to identify weapons. Battalions should have a chance to experiment with the capabilities and limitations of these systems prior to deployment.

34. **Recommendation.** That both systems be incorporated into the pre-deployment training of all battalions deploying to Iraq.

35. **Topic.** Use of the AC-130.

36. **Discussion.** The AC-130, call sign “Basher” became a ubiquitous and re-assuring presence over the city at night. By using the IR fireflies and strobes to mark friendly positions, Basher’s highly destructive and accurate ordnance could be brought to bare within 200 meters or less of covered troops. The AC-130 was often the only CAS platform that could be used in the city because of the proximity of friendly troops. In most cases, this was the first time that USMC battalions had had an opportunity to work with this aircraft since it is normally used in support of Special Forces.

37. **Recommendation:**

- a. that USMC higher headquarters ensure that USMC units have habitual access to this asset;
- b. that USMC battalions receive classes on the capabilities of the AC-130 prior to deployment.

38. **Topic.** Use of the technique of “Going Firm”.

39. **Discussion.** This term is used to describe a pause during which a unit assesses its situation with regard to position of subordinate units and geometry of fires. The term, derived from the British Army, came to be used within the Marine Corps during Project Metropolis, a series of urban experiments conducted by the Warfighting Laboratory in the late 1990s. Although sometimes confused with the consolidation phase of an attack, “Going Firm” is intended only as a tactical pause conducted for the primary purpose of gaining situational awareness. Battalions and companies generally found that there were frequent occasions during Operation Phantom Fury that necessitated the use of this technique. All units would hold in place and would pass their position to their higher headquarters along with any other significant information such location of known enemy positions.
40. **Recommendation.** Discussion of this technique leads again to the recommendation that battalions conduct extensive MOUT training with aggressors prior to deployment. By so doing they will be able to work out their own TTPs for “Going Firm”.
41. **Topic.** Employment of Snipers.
42. **Discussion.** Snipers did not play a very significant role in Operation Phantom Fury. There will, undoubtedly, be objections to this statement made by snipers who will cite instances of individuals who killed a significant number of the enemy. However, the enemy’s tendency to fight from within buildings mitigated the value of placing snipers on high buildings in over watch and made high kill rates the exception rather than the rule. As one Battalion Executive Officer commented “They didn’t give us that much bang for the buck. As far as employment, they were put on roofs almost as guardian angels. They would take the high ground and stay put, until they had to run to the front and catch up again. It just wasn’t a target rich environment for snipers”
43. Since we customarily always employ snipers in over watch positions, we did not have a plan for them once this technique was rendered ineffective by the enemy’s tactics.
44. **Recommendation.** The same recommendation as above: more MOUT training with live aggressors. This will allow battalions to experiment with different methods of employment for their snipers depending on the enemy’s disposition.
45. **Topic.** Methods of Clearing: Top down versus Bottom Up.
46. **Discussion.** It is a central tenet of MOUT that it is preferable to gain entry to a building from the roof and to clear down vice entering from the bottom floor. The enemy reinforced this lesson by inflicting most of our casualties on the ground floor as our Marines entered the building or at the bottom of the stairwell as they attempted to move up to the second floor. Despite this, generally speaking, units did not adapt by gaining access to the roof first. There were some exceptions and some units used AAVs to good effect by breaching the perimeter walls of buildings, a task that was accomplished with ease, and then as a platform from which they could climb on to the roof. This approach would ideally be combined with the use of a distraction charge to focus the enemy’s attention elsewhere. Those interviewed could cite very few instances of a unit using these techniques habitually. In my experience, I observed only one occasion, which occurred a month after the beginning of the operation, where a unit dominated

the rooftops and used this commanding position to gain momentum in their clearing efforts. It is difficult to determine why this did not happen more often but is probably attributable to lack of experience and the difficulty of developing TTPs under fire. It is true that in most cases the door to the roof was made of steel and was invariably locked. However, this was a minor obstacle easily overcome by an explosive breach. Needless to say, it proved much easier to throw a grenade down vice up a stairwell.

47. The method of clearing from top down is equally applicable to situations involving a lower intensity of combat such as a cordon and search operation.

48. **Recommendation.** Same as above: Pre-deployment MOUT training, which will afford units the opportunity to practice these techniques.

49. **Topic.** Casualty Evacuation Procedures (CASEVAC).

50. **Discussion.** In most cases injured Marines were delivered to the medical facility within 30-40 minutes of being wounded. Casualty evacuation was simplified in the operation by the ample availability of ground and air CASEVAC assets and by the proximity of the second echelon medical facility. That having been said, the fact that CASEVACs were conducted with such alacrity is also attributable to the existence of well briefed procedures.

51. The battalions participating in the operation all had procedures that adhered to the following steps:

- a. The casualty was evacuated to the Company Casualty Collection Point (CCP). A designated Marine (usually the Co 1st Sgt) at the CCP called the battalion COC on the designated net (usually TAC 2) and passed the number by category of casualties and battle roster number of each.
- b. At least two battalions used helicopters for CASEVAC. The casualties were taken to the BAS where a shock trauma platoon stabilized them and then on to the LZ. At the BAS, designated individuals collected optics and weapons from the casualties. A designated individual also collected battle roster cards from casualties, one of which he passed to the S-1 and the other to the crew chief. The third card remained on the casualty. The same procedure was followed for ground CASEVACs with the exception that after stabilization, the casualty was loaded on battalion evacuation vehicles for the trip to the next echelon. (The Bravo Surgical Team on Camp Fallujah).

52. Each Marine had a battle roster number, which consisted of his company letter, the first letter of his last name and the last four numbers of his SSN. The Battle Roster itself lists for each Marine in the Battalion his Battle Roster number, full SSN and blood type. Each Marine has three laminated cards, which he keeps in a designated pocket. When a Marine is wounded, only his battle roster number is passed over the radio, which prevents lengthy transmissions. In one battalion, each Marine had his Battle roster number and blood type written on the back of his left glove.

53. **Recommendation.** That battalions rehearse this procedure repeatedly during their pre-deployment training. Where possible, the rehearsal should involve the casualty being flown or driven to another location. This is valuable training for all involved, from the Marines at the CCP to the Battalion COC. All battalions should prepare Battle Rosters prior to deployment.





## ANNEX B TO CHAPTER 7

**Lessons Learned: Infantry Squad Tactics in Military Operations in Urban Terrain During Operation Phantom Fury in Fallujah, Iraq****Sgt. Catagnus, Jr. E. J., Cpl. Edison, B. Z., LCpl. Keeling, J. D., and LCpl. Moon, D. A. 3<sup>rd</sup> Battalion, 5<sup>th</sup> Marines, Scout/Sniper Platoon, Section 1 Fallujah, Iraq****INTRODUCTION**

1. Historically speaking, military operations in urban terrain (MOUT) have created casualty figures that are extraordinary compared to similar operations conducted in different types of environments. The casualties in MOUT present a significant challenge to small unit leaders. Casualties hit Marine infantry squads and fire teams extremely hard because generally speaking they were already under the table of organization (T/O) standards. Some squads in 3<sup>rd</sup> Battalion, 5<sup>th</sup> Marines (3/5) commenced the assault on the Jolan with only six Marines. It is the small unit leaders' duty to accomplish the mission with the least amount of casualties possible. In order for small unit leaders to complete the above task they need tactics and techniques that will prevent casualties.

2. Section 1 of the Scout/Sniper Platoon has attacked and cleared buildings with all the line companies in 3/5. The authors have observed nearly all the squads in the battalion and have "rolled in the stack" with many of them. This is an experience which few in the battalion have. Knowing this, the authors believe it is their **duty** to consolidate their observations, produce a comprehensive evaluation of squad tactics and techniques, and pass it onto the squad leaders. The authors' intent is to give the squad leaders options in combat. It is by no means a "bible," but it is a guideline. All the tactics and techniques have been proven in combat by one squad or another. Section 1 does not take any credit for the information contained within. The information was learned through the blood of the infantry squads in 3/5.

3. The entire evaluation has one underlying theme: **Accomplish the mission with the least amount of casualties possible.**

**TERRAIN AND ENEMY**

4. **Terrain:** The city of Fallujah, Iraq is unlike any city in which Marines have trained for. The layout of the city is random. Zoning distinguishing between residential, business, and industrial is non-existent. An infantry squad could be clearing a house and next door may be clearing a slaughterhouse or furniture wood shop.

5. The streets are narrow and are generally lined by walls. The walls channelize the squad and do not allow for standard immediate action drills when contact is made. This has not been an issue because the majority of contact is not made in the streets, but in the houses.

6. The houses are densely packed in blocks. The houses touch or almost touch the adjacent houses to the sides and rear. This enables the insurgents to escape the view of Marine overwatch positions. The houses also are all made of brick with a thick covering of mortar overtop. In

almost every house a fragmentation grenade can be used without fragments coming through the walls. Each room can be fragged individually.

7. Almost all houses have an enclosed courtyard. Upon entry into the courtyard, there is usually an outhouse large enough for one man. The rooftops as well as a large first story window overlook the courtyard. Generally, all the windows in the house are barred and covered with blinds or cardboard restricting visibility into the house.

8. The exterior doors of the houses are both metal and wood. The wood doors usually have a metal gate over top on the outside of the house forming two barriers to breach. The doors have two to three locking points. Some doors are even barricaded from the inside to prevent entry. There are generally two to three entrances to the house. The entrances are the front, the kitchen, and the side or rear.

9. The interior doors are also made of metal and wood. The differences between the interior and exterior doors are the strength and durability of the doors. Interior doors only have one locking point and most of them can be kicked in. All doors inside and outside of the house are usually locked and must be breached.

10. The layout of all the houses is generally the same. Initial entry in the front door leads to a small room with two interior doors. The two doors are the entrance to two adjacent open seating rooms. The size of the rooms varies according to the size of the house. At the end of the sitting rooms are interior doors that open up into a central hallway.

11. The central hallway is where all the first floor rooms lead and it contains the ladderwell to the second deck. The second deck will contain more rooms and an exit to the middle rooftop. The middle roof top will have an exterior ladderwell leading up to the highest rooftop.

12. **Enemy:** The two types of insurgents that the squads are engaging will be labeled the Guerrillas and the Martyrs in this evaluation. The Guerillas are classified by the following principles:

- a. Their **purpose** is to kill many Marines quickly and then evade. They DO NOT want to die. Dying is an acceptable risk to the Guerillas, but their intention is to live and fight another day.
- b. The tactics used are classic Guerilla warfare. The Guerillas will engage Marines only on terrain of their choosing when they have tactical advantage. After contact is made the Guerillas will disengage and evade.
- c. Their evasion route normally is out of sight of Marine overwatch positions.

13. The Martyrs are classified by the following principles:

- a. The Martyrs' **purpose** is to kill as many Marines as possible before they are killed. Time does not have any significance. The Martyrs want to die by the hands of Marines. The final outcome of their actions results in dead Marines as well as their death.

- b. Their tactics directly reflect their purpose. The Martyrs will make fortified fighting positions in houses and wait. Marines will come, they will fight, and they will die in place.
14. Both the Guerillas and Martyrs employ the same weapons. The weapons used are mostly small arms, grenades, and rocket propelled grenades (RPG's). The Martyrs have used heavy machine guns and anti-air machine guns, unfortunately, with good effects.
15. The battle positions and tactics that the both employ are somewhat similar. The major differences between the two are the egress route and the fortifications. Guerrillas have an evasion plan, while the martyrs do not. The Guerrillas normally do not have fortified positions.
16. Marines have been engaged from mouse holes within the house, Guerrillas shooting down from the rooftops when they are moving into the courtyard, Guerrillas and Martyrs shooting and throwing grenades down the ladderwells, in second deck rooms that are fortified or blacked out, and upon breaching of interior doors. Martyrs have emplaced machine gun positions in rooms facing down the long axis of hallways.
17. The egress routes the Guerrillas use are preplanned and well rehearsed. They move in groups and withdrawal perpendicular to Marines' forward line of troops (FLOT). Their movement is through windows of houses, down back alleys, and from roof to roof (only when obscured from Marine overwatch positions). The routes minimize exposure in the streets. Escape routes do not cross streets that run perpendicular to the FLOT, only parallel. This is done because Marine snipers during 2<sup>nd</sup> Battalion/1<sup>st</sup> Marines' (2/1) attack last April devastated the insurgents when attempting to cross those streets. If contact is made with Guerrillas and the block is not isolated on all four sides then their chance of escape increases exponentially. Isolation of the block is absolutely necessary in order to prevent any "squirters."
18. Overall, the enemy has adapted their tactics and techniques in order to maximize their strong points and hit Marines when they are the most vulnerable. They have learned from 2/1's attack last April. This is common sense, but it must be said in order that Marines realize the enemy they are fighting is somewhat intelligent. In MOUT it only takes a miniscule amount of intelligence in order to create massive amounts of casualties.

## SQUAD TACTICS

19. **Squad Movement:** During house-to-house detailed clearing attacks, squads must minimize exposure in the streets. The streets, especially in Fallujah, can become a death trap if a squad is engaged. The squad should run from house to house in a stack with all elements (security, assault, and supporting) in their appropriate position. In the street the stack should be slightly staggered like a tight tactical column. The Marines should have some dispersion, and the pace of the running should not be so fast that the Marines are uncontrolled and not maintaining all around security. As soon as the point man/one man reaches the courtyard breach the stack should close the gaps of dispersion and swiftly move to accomplish their tasks.
20. All danger areas while on the move must be covered. Security must be three-dimensional and all around. Each Marine in the stack looks to the Marines to his front assesses danger areas

that are not covered, and then covers one of them. If every Marine does this then all danger areas will be covered.

21. **Top Down verse Bottom Up Assaults:** An infantry squad can assault structures using two different methods. Traditionally, the top down assault is taught as being the most ideal method for clearing a structure. Realistically, this may not be the best option for the infantry squad. Below are the advantages and disadvantages of both top down and bottom up assault methods.

a. **Top Down:**

(1) Advantages:

- (a) Surprising the enemy by moving from the top down may throw the enemy off balance. The enemy's defenses may not be prepared for a top down assault and the squad could overwhelm the enemy rapidly.
- (b) The squad has more momentum when moving down the ladderwells.
- (c) If the squad knows that the enemy is inside the roof can be breached in order so grenades and explosives could be dropped on top of the enemy.
- (d) The enemy's egress routes are greatly reduced because the squad can isolate the house by holding security on the back alleys and the front of the house from the roof.

(2) Disadvantages:

- (a) Once the squad makes entry and contact is made, pulling out of the structure is extremely difficult. This limits the options for the squad leader on how to engage the enemy. The structure must be flooded and Marines have to go overtop of casualties in order to kill the enemy. Momentum must not be lost. Marines have been left behind in houses because the momentum was lost.
- (b) If the squad decides to break contact they are moving opposite of their momentum and more casualties will result.
- (c) Marine squads may not have enough Marines to effectively flood the structure.
- (d) If casualties are taken they are nearly impossible to pull up the ladderwell with all their gear and a limp body. This is another reason why the structure must be flooded.

- (e) The casualties will not receive the immediate first aid because the entire squad must be committed to neutralization of the threat. The swiftness of medical attention may mean the difference between life and death.

b. **Bottom Up:**

(1) Advantages:

- (a) The squad leader has a slew of options when contact is made. The structure does not have to be flooded.
- (b) Momentum can be maintained in assaulting or breaking contact and the squad leader can switch rapidly from one to the other relatively quickly.
- (c) The structure can be cleared with fewer Marines because the clearing is more controlled and smooth whereas top down is always in high gear.
- (d) Casualties can be pulled out faster and easier simply because gravity is working for the squad.

(2) Disadvantages:

- (a) The squad is moving into the enemy's defenses. It is easy for the enemy to hold the second deck and ladderwell.
- (b) The squad is slow moving up the ladderwell, which makes it harder to maintain momentum.
- (c) The enemy has the ability to escape by using its preplanned routes.

22. Overall, there should not be a standard assault method. Rather the squad leader should understand the advantages and disadvantages of each, assess each structure quickly, make a decision on which method to employ, and then take actions that maximize its advantages while minimizing its disadvantages.

23. **Gaining Footholds:** Footholds are extremely important. By establishing footholds the squad establishes strongpoints during the assault that can be used for consolidation, coordination, base of fire positions, rally points, and casualty collection points. The squad must move from one foothold to another, never stopping until each foothold is attained.

24. The succession of footholds that the squad establishes will be different when assaulting from either the top down or the bottom up. The following footholds should be seized in this order when assaulting from the top down:

- a. all rooftops;

- b. the inside top deck;
- c. each individual lower level to the bottom deck; and
- d. the courtyard.

25. The footholds seized when assaulting from the bottom up are in the reverse order. They are the following:

- a. the front courtyard;
- b. the first two seating rooms;
- c. the central hallway;
- d. each successive upper deck with its respective rooftop; and
- e. uppermost rooftop.

26. At each individual foothold the squad can consolidate and coordinate its further clearing of the structure. If contact is made the footholds can be used to establish a base of fire in order to assault or break contact. When breaking contact they are used as rally points in order for the squad and fire team leaders to get accountability of all their Marines. The squad will bound back through each foothold. A foothold can also be used as a casualty collection point.

27. **Structure Clearing:** Types of entry.

28. During the assault on a structure there are three different tactics that the squad can use for entry into the structure. The three types of entry are dynamic, stealth, and subdued. The dynamic entry is violently aggressively from start to finish. The commands are verbal and yelled. The squads lead by fire placing one or two rounds in every door that is closed or window that is blacked out. Fragmentation grenades, stun grenades, and flashbangs are used. At night, surefire flashlights are employed in order to clear. The movement of the squad is swift and overwhelming for the enemy inside.

29. The stealth entry is exactly the opposite of the dynamic entry. The squad breaches quietly, moves slowly, speaks only in whispers, and listens for any movement within the house. There is extreme emphasis placed on initiative based tactics (IBT). During night clearing, night vision goggles and PE. Q-2's are used instead of surefire flashlights. The stealth entry confuses the enemy on exactly where the squad is in clearing the house and allows the squad to maintain the element of surprise.

30. Subdued entry is a combination of the two previous types. The squad moves quietly until they encounter a room. Upon entry into the room, Marines are violently aggressive. After the room is cleared, the Marines switch back to the stealth method of entry. This type of entry allows the squad leader to control the rate of clearing while maintaining some element of surprise.

31. It is important to note that squad leaders must vary the type of entry. The squad must constantly mask its movement through every form of deception that may confuse the enemy inside the building or room. It is up to the entire squad to use its imagination and vary their entry tactics and techniques as much as possible. The objective is to keep the enemy off balance and not allow him to get into the squad's rhythm.

## **BREACHING**

32. There are three types of breaching that were used in Fallujah. The types of breaching are mechanical, ballistic, and explosive. Mechanical breaching of the exterior walls of the courtyard or gate was mostly done by amphibious assault vehicles (AAV's), tanks, D-9 bulldozers, or HMMWV's. Sledgehammers and hooligans were used to breach both the metal and wooden doors of the house, but this was and is not the preferred method for breaching. Sledgehammers and hooligans are slow and they require the breacher to stand in front of the door being breach. Obviously, standing in front of the door allows the enemy to engage the breacher through the door.

33. Ballistic breaching was used mostly on exposed pad locks. Both M16A4's and shotguns were used. The M16A4's were employed because there was not enough shotgun ammunition for the amount of locks that had to be breached. They were fairly effective on first round breaching of pad locks if the round was placed near the center. The M203 was also used for breaching. Squads would breach doors of houses that were 50 to 100 meters in front of their position with the M203. It worked extremely well on the exterior metal doors.

34. The last type of breaching employed was explosive. A multitude of charges were used in order to breach walls, gates, exterior doors, and interior doors. Some of these will be discussed later in this evaluation.

35. An important principle in breaching that was learned is the Marine making entry is NEVER the breacher. The breacher should always fall in the back of the stack and never go in first. Marines have died because they followed their own breach.

36. Speed is the most significant factor in all types of breaching. If one method of breaching is not working then the breacher must quickly transition to a different type. Standing in front of a door and beating it with a sledgehammer for ten minutes is unacceptable. The breacher must be able to employ different methods. The squad leader must ensure that the breacher has the necessary equipment and explosives for each method. Every time the squad is stalled because of a breach it is placed in a vulnerable position. Breaching swiftly and effectively is necessary in order for the squad to maintain momentum.

## **MOVEMENT OF THE SQUAD WITHIN THE STRUCTURE**

37. Within the structure the squad should move from one foothold to another. The initial foothold is established by the security element. The security element rolls into the courtyard or rooftop and clears every room on the outside. The assault element proceeds directly to an entry point to prepare for the breach. The support element falls in trace and makes the breach.

38. After the breach is made the assault element makes entry and clears the first two sitting rooms simultaneously by splitting the stack or clears the entire top deck. The support element will assist the assault element by peeling off and clearing rooms or breaching any doors. Security will be left at the courtyard or rooftop foothold in order to isolate the structure and secure the squad's egress route. Security can be maintained by only two Marines. The rest of the security element will fall in the stack.

39. After the initial foothold in the structure the stack will consolidate and then advance and clear to the next foothold. The succession will continue until the entire structure is cleared.

40. At all times the squad will move by using IBT and adhere to its principles which will be addressed later. No Marine should make an uncovered move. The squad should move at a pace that is swift, but controlled, exercising "tactical patience."

### **ACTIONS UPON ENEMY CONTACT**

41. The squad leader's options for actions upon enemy contact vary according to where the squad is in its clearing and whether any casualties have been taken. In any contact, the squad and squad leader have two priorities. The two priorities are eliminating the immediate threat and pulling out any casualties. More often than not, the two priorities are connected because in MOUT the enemy is usually close (within feet) and the enemy fire has wounded a Marine.

42. If contact is made in the courtyard or rooftop the squad should break contact, isolate the house or block, and call in supporting arms (tanks, tracks, etc.). There is no reason to place Marines into the building until it is thoroughly prepped.

43. If contact is made in the house then the squad leader must quickly evaluate the situation and decide the best course of action. Generally, the squad leader has the following three options:

- a. **Break Contact.** Breaking contact is more of an option during the bottom up assault because of the difficulties in changing the momentum during the top down assault. If casualties are taken or the enemy resistance is strong then this may be the best action for the squad leader to take. Upon breaking contact the squad will bound from one foothold to another getting accountability of all Marines and ensuring that no Marine is left behind. When leaving the house the squad can place a satchel charge or another explosive device in order to bring down the house or burn the enemy out.
- b. **Flood the House.** Squad leaders may choose to flood the house with Marines if a casualty is taken during the top down assault or if the enemy threat is not significant. Casualties cannot be dragged up the stairs quickly; therefore, Marines must neutralize or suppress the threat in order to extract the casualties. In some situations the only way to do this may be to flood the house.
- c. **Hold the Last Foothold and Clear by Fire.** Footholds are strongpoints where the squad can fight from. At the foothold Marines can return fire, throw grenades, and use explosive devices to neutralize the enemy. After the enemy has been damaged the squad can move in and clear the house. If the rooftop is the foothold



the squad is holding, then the roof could be breached by a directional charge. Grenades or incendiary devices can be thrown into the structure flushing out the enemy.

44. **CASUALTIES MUST NEVER BE LEFT BEHIND!** The squad leader must ensure that every Marine moves with a buddy. Each buddy is responsible for pulling the other out of the fight if he goes down. The squad leader and fire team leaders must have accountability for all their Marines at all times. There is no excuse for Marines being left behind in a building while the squad pulls out.
45. **Organization of the Squad.** Some squad leaders in the battalion split their squads in two and assigned different sectors to the two different parts. They did this to move faster through the houses because they were tasked with clearing a lane that may have contained up to fifty or sixty houses. Although this worked and the squads moved faster through their assigned sector it is not the best employment of their squad. The following reasons are given on why splitting the squad is not advisable:
- a. If the squad contained twelve Marines and is split in two that leaves two teams of six Marines. Clearing a structure with six Marines, even though the house is small, is extremely risky. If a buddy team of two Marines got hit and went down there would not be enough Marines to provide covering fire while pulling the casualties out. Critical seconds would be wasted waiting for the other team of the squad to come in the house and support the extraction of the casualties. The chances of wounded Marines getting left behind increases exponentially.
  - b. If contact is made by both teams simultaneously then the squad could be cut down in a piecemeal fashion within a matter of seconds before other squads could even move to reinforce.
46. When the squad leader organizes his squad he must think about enemy contact always. Squads must not be split in order to increase the speed of clearing. Commanders should not put stress on the squad leaders to clear at a speed that would force the squad leaders to split their squad. Tactical patience must be exercised at every level.
47. The squad should be organized by using the traditional three elements of assault, support, and security. The amount of Marines contained within each element will vary according to the squad's number of Marines, the skills and abilities that each individual Marine possess, and the weapons systems that each Marine employs (M249 SAW, M203, and ACOG scoped M16A4's).
48. The assault element must contain no SAW's if that is possible. A SAW gunner must never clear rooms. The assault element should contain the most number of Marines because every room must be cleared with two Marines. The support element will supplement the assault by falling in the stack and peeling off to clear rooms.
49. Support should include any engineers or assaultman attached to the squad. A SAW gunner should be included in this section in order to provide massive firepower in the house if contact is made. The corpsman is also located in support because he can use his shotgun to

breach as well as provide quick medical attention to casualties. The support section will fall in the stack behind the assault element to assist in any way.

50. Security should contain the other remaining SAW's in the squad. The security element is responsible for clearing and securing the courtyard or rooftop foothold prior to the assault element moving to the entry point. When assault and support make entry into the structure, two Marines are left behind to isolate the house (rooftop) and secure the squad's entry point. The rest of the Marines will fall in the stack behind the support section. The security Marines will hold security on all danger areas (mostly the stairs) when the assault and support are clearing each foothold.

51. Squad leaders must appoint each fire team leader as an element leader. There are no longer fire teams, only assault, support, and security sections. Each element leader will maintain accountability for his section. It is easier for the squad to maintain this organization until the attack is completed and then the traditional four-Marine fire team can be reinstated. The squad leader should emphasize unity of command and succession of command should the squad leader become a casualty.

52. **Squad Communications.** Inter-squad communication between the Marines in the stack is both verbal and visual. Simple, clear, and universal language should be used. Universal language is words and phrases that are standardized so every Marine understands the other. Words and phrases such as, "Hold right, clear left," and, "Frag out."

53. The one man should describe to the stack what he is seeing. In other words, the one man verbally paints the picture for the stack behind. Marines in the stack should be listening not talking. Talking should be kept to a minimum.

54. **After Clearing-Continuing Actions.** After the structure has been cleared the squad must immediately conduct the detailed search of the house for weapons. The search must be quick but thorough leaving nothing untouched. Weapons were found in every conceivable place, underneath couches in the cushions, in between piled up blankets, etc.

55. Another continuing action would be to render the interior and exterior doors unable to close. This will help if the structure needs to be recleared later. Marines will use their creativity to think of ingenious ways to accomplish this task.

56. **Mission or Time has Priority.** In detailed clearing attacks, time should never be the priority. Marines should never be rushed because they become sloppy and are forced to create shortcuts in order to accomplish the mission under the time restraints. This does not mean that the squads shouldn't be pushed. This means that a realistic timeline for the attack should be made; a timeline that takes into account the overwhelming task of clearing multiple blocks of houses that may contain platoon sized elements of insurgents.

## INDIVIDUAL TECHNIQUES AND TACTICS

57. **Training.** Training is continuous, whether in a combat zone or not. The responsibility of the squad leader is to ensure his squad is combat ready. The individual Marines in his squad

must be continuously trained otherwise the Marines will lose proficiency in MOUT skills learned through experience during the attack.

58. Training does not have to be physical, it can be verbal. The most effective training in this environment is for the squad leader to sit down with his squad and talk. The squad should run through combat scenarios and have individual Marines tell the squad what their jobs are and how they will do it. Communication between Marines can be practiced by talking through universal language, such as, "Open door right, closed door left," or, "Peel right," and telling each other what is meant.

59. All Marines must exercise initiative during combat. Squad leaders must design training techniques in order to stress initiative. Marines must be able to look around, assess what his squad or partner is doing, feed off it, and act in order to support them. Initiative based training is paramount.

60. Constructive criticism should be encouraged. Every Marine debriefs each other, telling good and bad observations. The squad leader will also be critiqued by his Marines in an appropriate fashion. The criticism is not meant to undermine the squad leaders' authority. It is to allow the squad leader to instruct the Marines on why he chose to run the squad the way he did. Young Marines will gain knowledge about squad tactics that they may never have figured out if the squad leader did not tell them. It will prepare them for leadership billets. It will also give them confidence in their squad leader because they will trust him and his knowledge.

61. **Techniques.** Techniques that individual Marines need to be taught and practiced are the following:

- a. Pieing off all danger areas. Even before entry into a room as many danger areas as possible should be pied off leaving only one or two corners that need to be cleared. Don't blindly rush into a room, especially if the door is opened.
- b. Using the buddy system. Two Marines always peel off the stack, never one.
- c. Picking up uncovered danger areas, including when opening doors to furniture when it can fit a man inside.
- d. Clearing obstacles, such as furniture.
- e. Prepping rooms with grenades.
- f. If the room is too small for two Marines or not enough Marines are clearing the house to hold security on all the danger areas, the two-man turns around and covers the rear of the Marine clearing the room.
- g. Moving stealthily through a structure even with broken glass on the ground.
- h. Making a stealth entry with NVG's and PEQ-2's.

- i. Making breaching charges and placing them on the locking points of different types of doors.

62. These are just some of the techniques that need to be practiced and passed on to younger Marines.

63. **Tactics.** Initiative based tactics (IBT) should be taught. There are four rules of IBT. They are the following:

- a. Cover all immediate danger areas.
- b. Eliminate all threats.
- c. Protect your buddy.
- d. There are no mistakes. Every Marine feeds off each other and picks up the slack for the other. Go with it.

64. Every Marine needs to understand and memorize the rules governing IBT. These rules should not only apply to MOUT, but all small unit infantry engagements. Rule number four must be pounded into the squad. **There are no mistakes when clearing a structure in combat, only actions that result in situations; situations that Marines must adapt to, improvise, and overcome in a matter of seconds.**

## SUPPORTING ARMS

65. Throughout contemporary American military history there has not been any opponent that could not be overwhelmed by American supporting arms. The United States Marine Corps has historically been an innovator with the employment of supporting arms. The Marine Corps created the concept of close air support (CAS) in Haiti during the Banana Wars, helicopter envelopment in Korea, and the combined arms team portrayed in the modern Marine Air Ground Task Force (MAGTF). Fallujah has been another proving ground for American supporting arms. The insurgents were completely overwhelmed by the massive indirect fires and close air support on the first two days of the battle.

66. At the squad level the results of the fires were felt through the type of enemy they encountered. The enemy dug in deep into the houses, not allowing themselves to get caught in the open. The infantryman of 3/5 have learned the advantages and disadvantages of fixed wing CAS, rotary wing CAS, tanks, combined anti-armor team (CAAT), AAV's, artillery, bulldozers, and 81 and 60 mm mortars through practical experience.

67. Fixed wing CAS is an enormous weapon that has great effects on the ground. The major problem with it is the amount of time it takes to get bombs on target. It took entirely too long for bombs to be dropped when Marines were in contact. The minimum safe distance of the ordnance was too great in order for even the block to be isolated and that allowed the enemy to escape countless times. Fixed wing CAS should be used for deep targets. It should not be used when Marines have isolated the structure and trapped the enemy inside. A tank or CAAT section can be more effective. Marines do not have to be withdrawn from the cordon.

68. In contrast to fixed wing CAS, rotary wing CAS was extremely timely, but the effects on target were not extraordinary. The hellfire missiles used did not bring down entire structures, but they did do some damage.

69. By far the best two supporting arms used were tanks and CAAT. Tanks and CAAT were the infantryman's best friend. The battle would have been incredibly bloodier if it hadn't been for tanks and CAAT. The tanks were able to provide a 120 mm direct fire weapon on the spot of any contact within a matter of minutes. The thermal sites were able to pinpoint exact position of snipers and then effectively neutralize them within seconds. CAAT was able to use its M2 .50 caliber machine guns and Mk19 grenade launchers to breach as well as destroy buildings were fire was received from. CAAT also helped the squads by clearing the buildings that lined the street in their lane. The infantry should never attack in MOUT without tanks or CAAT.

70. Mortars and artillery proved effective by forcing the enemy to stay in the houses and not allowing the enemy to fight the Marines in the streets.

## **DEMOLITIONS**

71. The variety of explosives used during the fight for Fallujah will not be mentioned here. The few that will be explained have a common theme of being obscure and may be forgotten if they are not written down. Each explosive device was developed in response to the enemy's tactics and has been proven to work.

72. The following is a list of explosives, a description, and their uses:

- a. "Eight Ball"—1/8 stick of C-4—Used for breaching both interior and exterior doors, effective and doesn't use a lot of C-4.
- b. "House Guest" (Named by 2<sup>nd</sup> squad, 1<sup>st</sup> platoon, I Company)—Propane tanks placed in the central hallway with C-4 used to ignite it, creates a fuel air explosive—Used for bringing down a house when contact is made inside, propane tanks must be full.
- c. A 60 or 81 mm white phosphorous mortar round, wrapped three times with detonation cord and a 1/4 or 1/2 stick of C-4—Used when contact is made in a house and the enemy must be burned out.
- d. Molotov cocktails—one part liquid laundry detergent, two parts gas—Used when contact is made in a house and the enemy must be burned out.

73. All Marines should be familiar with explosives and proper placement of the charge for breaching. Any Marine should be able to cut time fuse, crimp a blasting cap, and put the blasting cap in C-4.

## **RANDOMNESS OF TACTICS AND TECHNIQUES**

74. The infantry squad must have a toolbox of tactics and techniques. The squad should not fall into a pattern were they become predictable. Being predictable allows the enemy to prepare

and modify his tactics in order to exploit the squad's weaknesses. The squad must be trained well enough to flow through or combine each tactic and technique fairly easily. Marines must use their imagination to think of ways to vary their tactics. The enemy must be kept off balance by changing, at random, squad tactics. For instance, vary the method of entry into the structure, lead by fire then don't, assault top down then bottom up, don't use the same entry point every time, throw a fragmentation grenade on the middle roof then assault bottom up. Avoid patterning by all means.

## COMBAT MINDSET

75. Preparing Marines for battle is a difficult task for the squad leader. Squad leaders must be the rock and drill into his Marines that no Marine will be left behind. Marine combat infantrymen understand the meaning of Semper Fidelis. No Marine is left behind.

76. Marines have to prepare mentally for casualties and be able to rebound quickly in order to kill the enemy swiftly to prevent more casualties. The old saying, "Anything that can go wrong, will," is always in effect in combat.

77. Every time a squad makes entry they should expect to make contact. Surprise, speed, and maximum violence wins small unit battles. Marines and leaders need to make quick decisions on the move and under fire, always remembering unity of command.

78. In combat, Marine leaders are required to stand up and take charge. Unfortunately, sometimes there are too many chiefs and not enough Indians. The "chief syndrome" will create mass confusion on the battlefield. Being a good combat leader sometimes means stepping back and allowing the Marines to do their jobs. Platoon commanders must allow squad leaders to lead their squads, squad leaders must allow element leaders to lead their elements, and element leaders must allow their Marines to take initiative.

## CONCLUSION

79. In conclusion, this evaluation is nothing more than a guideline for infantry Marines. Squad leaders should take this evaluation, study it, critique it, give it to their squad, have them study it, critique it, and then sit down together to discuss it. **The tactics and techniques contained in the evaluation were gained at an enormous price. Marines were killed on the field of battle developing these tactics. It is the duty of every Marine infantryman to not allow these lessons to die with time. This evaluation is only one step in passing on the knowledge.**

## CHAPTER 8

### URBAN DEFENSIVE OPERATIONS

1. Notwithstanding that in the current operating environment it is unlikely that friendly forces will be involved in a major defensive operation, it is still necessary to maintain the doctrine and training to conduct such an operation. This doctrine forms the basis for urban defensive operations across the spectrum of conflict.
2. The skilful defence of an urban area can decisively affect a campaign. The urban area offers many advantages to defending forces. An adroit defender can use the advantages of the urban environment to negate combat power disparities, blunt the tempo of an attack, and cause heavy casualties to the enemy. The defender gains an opportunity to concentrate resources, reconstitute weakened units, and affect a transition to the offence. A successful defence of an urban area can also deny the enemy vital resources. Defence in the urban environment is an essential capability and can significantly affect the outcome of entire campaigns and the achievement of national objectives. This chapter will discuss the principles of urban defence, the tactical options for conducting a defence, and the use of USECT to provide a framework for the defence.
3. Defence is conducted in urban areas for a variety of reasons: defeating an attack, buying time, economizing forces, protecting political institutions and economic infrastructure, protecting an urban population, shaping conditions for offensive operations, and shaping conditions for executing stability operations. During offensive operations, urban areas may be used as initial lodgement areas that commanders may need to defend at the outset until they build sufficient combat power. Usually two or more of these purposes apply to the urban defence. Urban defensive operations provide commanders great opportunities to turn the environment's characteristics to their advantage. Urban areas are ideal for defensive operations and greatly enhance the combat power of defending units.

#### SECTION 1

#### PRINCIPLES OF URBAN DEFENSIVE OPERATIONS

4. The five key principles of a successful urban defence are: preparation, security, disruption, concentration of force, and flexibility.
5. **Preparation.** The urban area suits the defence since the area's physical characteristics naturally enhance the combat power of defending units. These characteristics include protection, obstacles, and concealment. Urban terrain provides superb defensive positions with minimum preparation. With deliberate preparation, urban defensive positions can rapidly become strongpoints.
6. The primary characteristic of the urban environment that enhances the defence is protection. With little or no advance preparation, buildings, subsurface structures, and walls: protect soldiers from direct and indirect fire, interdict indirect fire, limit observation, and limit engagement ranges. Nearly all buildings provide some ballistic protection from direct and indirect fire. Mason and stone buildings with basements and cellars can protect soldiers from

most fires except the largest calibre or tonnage bomb. Minimal additional preparation turns them into formidable, defensive strongpoints.

7. Buildings in urban areas, because of their height and close proximity, can also protect soldiers by masking them from indirect fire. The height of a building may interdict the flight path of an artillery round, rocket, missile, or bomb at a point short of the intended target. Masking protects static defending forces and protects forces moving along routes bordered with tall buildings that form urban “canyons.” These protected routes can be used for logistics, counterattacks, and manoeuvre.

8. Structurally, significant buildings in an urban area can create major obstacles to manoeuvre. These obstacles immediately canalize manoeuvre into existing streets and routes without any preparation by the defence. These obstacles then become kill zones for well-positioned and well-sited defensive forces. Minimal obstacle construction as point obstacles blocking streets and routes can further restrict the manoeuvre options of the attacking force. Rubble from structures collapsed into streets after fires (intentional or unintentional) can also block routes.

9. Buildings also conceal the location, disposition, and intent of the defence. They limit visual observation to the external perimeter of the urban area. They degrade radar and electronic position identifiers and decrease the utility of overhead imagery. The physical aspect of the urban environment greatly enhances the defence by degrading the opposition’s intelligence, surveillance, target acquisition, and reconnaissance (ISTAR) capabilities. Buildings can conceal static defensive positions and the manoeuvre of defensive forces in the urban area. Although the environment constrains defensive mobility in much the same manner as offensive mobility, the defence has the time and opportunity to conduct careful reconnaissance, and select and prepare routes. This gives the defender the ability to move reserves, manoeuvre counterattack forces, and plan logistics without observation. Careful preparation provides the defence a mobility advantage over attacking forces.

10. **Security.** The urban area can be an advantage or a disadvantage to the security of defending forces. This largely depends upon the nature of the human dimension. If the population is evacuated or is an ally, then the environment may assist in the security of the defence. However, if the population is present and hostile, then the environment may make security difficult.

11. The physical aspects of the urban environment, un-influenced by the human dimension, may assist in the security of defending forces. The combat power of small security forces operating observation posts is greatly enhanced. Forces can more easily restrict and monitor avenues of approach for enemy reconnaissance. Defending forces positioned mostly in structures are difficult to locate.

12. The physical aspects of the environment may also present some security challenges, primarily with observation. The compartmental terrain limits the field of observation from any one point. The defence may require additional forces to adequately observe the mounted and dismounted avenues to prevent infiltration.



13. Friendly civilians in the urban area can help identify enemy attempting to conduct reconnaissance. Civilian activity will also help to mask defensive preparations. However, a hostile element of the population may pass intelligence information to the enemy. They may assist enemy reconnaissance to infiltrate the urban area or provide guides, a work force, or resource support for enemy forces. Commanders must take measures to ensure strict control of the hostile populace. If resources permit, commanders may consider removing potentially hostile civilians from the area.
14. **Disruption.** The urban environment's attributes assist the defending forces' ability to disrupt the attacker. It does this through compartmentalization, inhibiting command and control (C2), and facilitating counterattacks.
15. The physical aspects of the urban area force the attacking enemy into compartmental urban canyons that make mutual support between attacking enemy columns difficult. Shifting resources from one portion of the enemy attack to another is also difficult. Physically, the urban area disrupts tactical communications making synchronization of combat power difficult.
16. The urban environment can hinder the mobility of the defence. However, careful planning, preparation, and rehearsals can facilitate rapid movement of larger forces. Defending forces can assemble counterattacks undetected, move them along covered and concealed routes, and achieve surprise at the point of the counterattack. Attacking forces, if forced into compartmental terrain, often leave forward elements in positions that can be isolated, or they expose long and vulnerable flanks to counterattacks and interdiction.
17. **Concentration of Force.** The urban environment allows defenders to better protect their centres of gravity (COG) and decisive points. The restrictive terrain reduces the attacker's manoeuvre options. Defenders can position forces in protected and mutually supportive positions oriented on deadly engagement areas. Relatively few well-positioned defenders can generate significant combat power. Without the positional advantage and the corresponding protective effects of the terrain, attacking forces often mass numbers to achieve the necessary combat power.
18. An intimate knowledge of the urban area permits defending forces to plan engagement areas that maximize the effects of their combat power. Removing fences, walls, rooftops, and even entire buildings can facilitate fields of fire. By leveraging this knowledge of the terrain, numerically inferior defenders can synchronize devastating indirect fire on attacking forces that are forced by terrain and reinforcing obstacles to mass in confined spaces where fires can have the greatest effect.
19. **Flexibility.** Flexibility results from detailed planning and mental agility. Defensive planning must include alternate and subsequent positions, and emphasize counterattack options. The urban area facilitates defensive flexibility because it can be quickly adapted for defensive operations with little or no preparation. The effect is similar to having multiple, prepared positions on nearly every possible approach. The urban area can also permit rapid, covered movement on interior lines. This permits swift movement to and occupation of strong defensive positions with little or no preparation. The defence also has more flexibility since defenders often know and better understand the urban terrain's effects on operations. Normally, defenders

will not get lost as easily, will know complex lines of sight and masking effects, and will best understand the ballistic characteristics of individual structures.

## SECTION 2 TYPES OF URBAN DEFENSIVE OPERATIONS

20. Urban defensive operations are organized within the overall framework of sustaining, shaping, and decisive operations. The success of urban defence depends upon each operation, but commanders synchronize these simultaneous operations as one action. Sustaining operations in defensive urban operations (UO) ensure freedom of action. Critically, urban sustaining operations ensure security of the lines of communications (LOC) and establish effective movement control. Shaping operations in defensive UO create the conditions for decisive operations. Shaping operations vary greatly depending upon the type of defence. For example, in a mobile defence, the shaping operation may be the fixing force. In contrast, in an area defence, the fixed defence may be the decisive operation. In the urban defence, decisive operations focus on accomplishing the commander's mission. The decisive operation may not be to defeat the enemy's main effort, and it may not prevent enemy occupation of large portions of the urban area if those tasks are not essential to mission accomplishment.

21. **Area Defence.** At the operational level, an area defence may include both urban areas and open manoeuvre areas. The most common defence in an urban area, and the most suitable for the characteristics of this distinct environment, is the area defence. As a defensive operation, the area defence concentrates on denying enemy access to designated terrain for a specific time rather than destroying the enemy outright. Although an area defence in an urban area does not directly seek to destroy or defeat attacking enemy, as an objective it does aim to force culmination of the attack. The urban area defence often works effectively to exhaust enemy resources and shape conditions for a transition to offensive operations. The urban area may also be used as a strongpoint to force enemy movement in a different direction, or to fix the enemy as part of a larger, mobile defence outside the urban area.

22. **Mobile Defence.** A mobile defence can operate in an urban area only under specific conditions. It focuses on destroying or defeating the enemy through a decisive attack by a manoeuvre force. It requires the defender to achieve greater mobility than the attacker. To shape a mobility advantage, the urban defender must effectively use the terrain and correctly organize his forces mobility capability. The principles of applying the mobile defence in the urban area remain the same: a fixing force stops the enemy and limits its ability to manoeuvre while a striking force manoeuvres to destroy him.

23. From the perspective of commanders of the major operation, the urban environment can help defending forces achieve a mobility advantage over an attacker in a broader sense. Defending commanders attempt to shape the battlefield so that the attacker commits significant resources into an urban area, where his manoeuvre capabilities are reduced (see Figure 8-1). A disproportionately small defending force, which relies upon the defensive combat power advantages of the urban environment, reduces and fixes the attacker's manoeuvre capabilities. Other defending forces mass the urban area then strike the enemy with a combined mobility and firepower advantage.

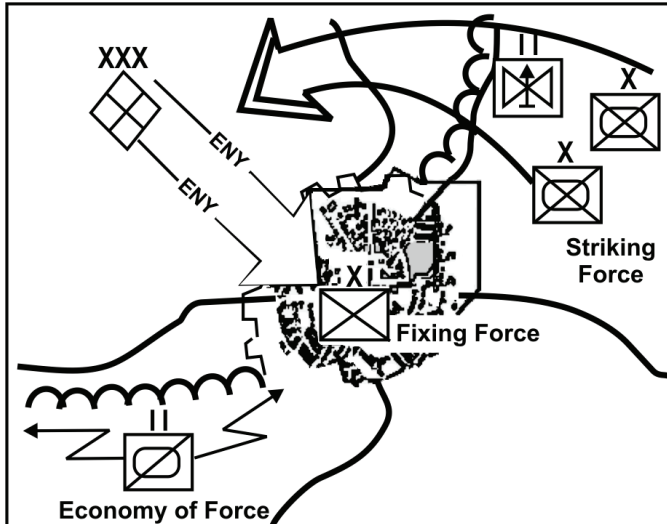


Figure 8-1: An Urban Area Incorporated into a Larger Mobile Defense

24. A retrograde action involves organized movement away from the enemy. Retrograde operations include withdrawals, delays, and retirements. These defensive operations often occur in an urban environment. The urban environment enhances the defending force's ability to conduct retrograde operations successfully (see Figure 8-2).

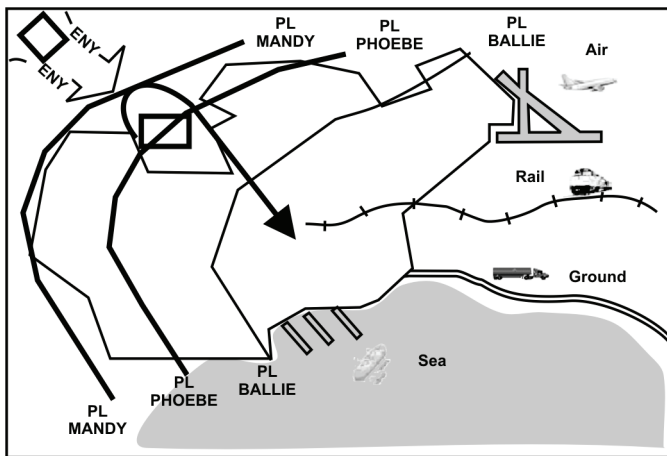


Figure 8-2: Retrograde Through an Urban Area

25. The urban environment's natural cover and concealment, as well as the compartmental effects, facilitates delays. Delays can effectively draw the enemy into the urban area for subsequent counterattack, or as an integral part of a withdrawal under enemy pressure. Delaying units can quickly displace from one covered and concealed position to another; the repositioning options are vast. Compartmental effects force the attacking enemy to move on well-defined and easily interdicted routes, and limit the enemy's ability to flank or bypass delaying positions.

26. The urban area's transportation and distribution network facilitates retiring forces that are not in contact. Properly used, the urban transportation system can quickly move large forces and associated resources.

### SECTION 3 USECT IN THE DEFENCE

27. The USECT framework provides the structure to develop plans for defensive operations. The considerations can vary depending upon the level of war at which the operation is conducted, the type of defence, and the situation. Most issues discussed may, in the right circumstances, apply to commanders conducting major UO and to commanders at lower tactical levels of command.

#### UNDERSTAND

28. The commander defending in the urban area must develop an understanding of many factors. His mission statement and guidance from higher commanders focus his assessment. If the mission is to deny a threat access to port facilities in an urban area, the commander's assessment will focus much differently than if the mission is to deny the enemy control over the entire urban area.

29. **The Enemy.** In the urban defence, a key element is the commander's assessment of the enemy. One of his primary concerns is to determine the attacker's general scheme, methodology, or concept. Overall, the attacker may take one of two approaches. The most obvious would be a direct approach aimed at seizing the objectives in the area by a frontal attack. A more sophisticated approach would be indirect, and begin by isolating forces defending the urban area. Innumerable combinations of these two extremes exist, but the enemy's intentions towards the urban area will favour one approach over another. The defending commander, whose area of operations (AO) includes, but is not limited to, the urban area, conducts defensive planning, particularly his allocation of forces, based upon this initial assessment of enemy intentions. This assessment determines whether the commander's primary concern is preventing isolation by defeating enemy efforts outside the area, or defeating an enemy attacking the urban area directly. For the higher commander, this assessment determines how he allocates forces in and outside the urban area. For the commander in the urban area, this assessment clarifies threats to sustainment operations and helps shape how he arrays his forces.

30. ISTAR efforts of the defender are focused initially on identifying relevant information about the location and nature of the enemy's main effort. Once identified, the defender's ISTAR focus shifts to assessing the rate at which the enemy attack moves to its culminating point. Indicators of culmination may be physical fatigue of soldiers, a breakdown in C2 capability, difficulty providing logistic support, or the increasing time required to reorganize small units to attack. When that culmination is achieved, friendly forces counterattack before the enemy has a chance to affect a transition to a hasty defence.

31. **The Environment's Defensive Characteristics.** A second key to understanding is an assessment of the defensive qualities of the urban environment. This assessment, as in any defensive scenario, is based upon mission requirements and on a systemic analysis of the terrain in terms of observation and fields of fire, avenues of approach, key terrain, obstacles, and cover

and concealment (e.g., FLOCARK)<sup>1</sup>. This assessment accounts for the unique characteristics of urban terrain, population, and infrastructure as discussed in Chapter 2.

## SHAPE

32. Commanders of a major operation will shape the urban battle according to the type of defence they are attempting to conduct. If conducting an area defence or retrograde operation, they use shaping actions like those for any defensive action. Important shaping actions that apply to all defensive UO include the following:

- a. preventing or defeating isolation;
- b. separating attacking forces from supporting resources;
- c. creating a mobility advantage;
- d. applying economy of force measures;
- e. effectively managing the urban population; and
- f. planning counterattacks.

33. **Preventing or Defeating Isolation.** Failure to prevent isolation of the urban area can rapidly lead to the failure of the entire urban defence. Its importance cannot be overstated. In planning the defence, commanders anticipate that the enemy will attempt to isolate the urban area. Defensive planning addresses in detail the defeat of enemy attacks aimed at isolation of the urban area. Commanders may defeat this effort by allocating sufficient defending forces outside the urban area to prevent its isolation. Defensive information operations (IO) based upon deception can also be used. It can mislead the enemy regarding the defensive array in and outside the urban area. Such information can convince the enemy that a direct attack against the urban area is the most favourable approach.

34. If the enemy has successfully isolated the urban area, commanders of a major operation have several courses of action. Two options are ordering the defending force to exfiltrate or conduct a breakout attack of the urban area, or to conduct an attack by forces outside the urban area to relieve the siege. A third option combines the first two: counterattack from both inside and outside the urban area to rupture the isolation. Time is critical to the success of either operation. Delay permits the enemy surrounding the urban area to prepare defences, permits the reorganization of the attacking force, and permits the enemy to retain the initiative and continue offensive operations. The passage of time also reduces the resources of the defending forces and their ability to breakout. Therefore, commanders and staff of a major operation vigilantly avoid isolation when their forces are defending urban areas within their AO.

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<sup>1</sup> FLOCARK refers to Canalizing Terrain, Avenues of Approach, Rating of Approaches, Key Terrain/Vital Ground.

35. **Separating Attacking Forces from Supporting Resources.** Commanders of the major operation primarily use fires and IO for separating, in space and time, the enemy attacking the urban area from echelons and resources in support. The purpose of this shaping action is the same as for any conventional area defence. It aims to allow the defending forces to defeat the enemy piecemeal as they arrive in the urban area without support, and already disrupted by deep fires and IO against information systems. This separation and disruption of the enemy also sets the conditions for a mobile defence if commanders so choose. These operations also prevent the enemy commander from synchronizing and massing his combat power at the decisive point in the close battle.

36. If the urban area is part of a major mobile defence operation, the urban defence becomes the fixing force. Commanders shape the defence to encourage the enemy to attack into the urban area. They lure the enemy using a combination of techniques depending upon the situation. They may make the urban area appear only lightly defended while other alternative courses of action appear strongly defended by friendly forces. Placing the bulk of the defending forces in concealed positions well within the urban area and positioning security forces on the periphery of the urban area portray a weak defence. In other situations, the opposite is true. If the urban area is an important objective to the enemy, friendly forces can make the urban area appear heavily defended, thus ensuring that he commits sufficient combat power to the urban area to overwhelm the defence. Both cases have the same objective: to cause a major commitment of enemy forces in the urban area. Once this commitment is made, the mobile defence striking force attacks and defeats the enemy outside the urban area. This isolates the enemy in the urban area and facilitates its destruction.

37. In the urban tactical battle, many shaping actions mirror those in all defensive operations. The size and complexity of the urban area prevents defending forces from being strong everywhere; shaping operations designed to engage the enemy on terms advantageous to the defence have particular importance. Shaping actions include reconnaissance and security operations, passages of lines, and movement of reserve forces before their commitment. In addition, shaping operations critical to urban defence include mobility and counter-mobility operations, offensive IO, economy of force operations, and population management operations.

38. **Creating a Mobility Advantage.** In urban terrain, counter-mobility operations can greatly influence bringing the enemy into the engagement areas of defending forces. Counter-mobility operations—based upon understanding of the urban transportation system, design, and construction characteristics—can be unusually effective (see Chapter 2). Demolitions can have important implications for creating impassable obstacles in urban canyons as well as for clearing fields of fire where necessary. Careful engineer planning can make the already constrictive terrain virtually impassable to mounted forces where appropriate, thus denying the enemy combined arms capabilities. Counter-mobility operations in urban terrain drastically increase the defender's ability to shape the attacker's approach and to increase the combat power ratios in favour of the defence. As with all aspects of UO, counter-mobility considers collateral damage and the second and third-order effects of obstacle construction.

39. Well-conceived mobility operations in urban terrain can provide defending forces mobility superiority over attacking forces. This is achieved by carefully selecting routes between primary, alternate, and subsequent positions, and for moving reserves and counterattack forces.

These routes are reconnoitred, cleared, and marked before the operation. They maximize the cover and concealment characteristics of the terrain. Using demolitions, lanes, and innovative obstacles denies the defence of these same routes.

40. **Applying Economy of Force Measures.** Economy of force is extremely important to effective tactical urban defence. A megalopolis is too large and too easily accessible for defending forces to be strong everywhere. Forces used effectively in an economy of force role enable the defending force to mass effects at decisive points. Forces used in an economy of force role execute security missions and take advantage of obstacles, mobility, and firepower to portray greater combat power than they actually possess. They prevent the enemy from determining the actual disposition and strength of the friendly defence. If, contrary to expectations, they are strongly attacked, their mobility—stemming from a mounted manoeuvre capability, planning, and an intimate knowledge of the terrain—allows them to delay until reserves can meet the threat. Security forces in an economy of force role take position in parts of the urban area where the enemy is less likely to attack.

41. **Effectively Managing the Urban Population.** Another way to shape the urban defensive battle is population management. In most cases, defending force commanders are in the urban area before combat. This time gives them the chance to manage civilians. Consequently, they can better manage and protect the population (a legal requirement) and gain more freedom of action for his forces.

42. Managing the civilians during the defence is a function of the size, disposition, the needs of the population, and the resources available to the commander. In many cases, this will require a significant commitment of resources. Requesting higher support or coordinating with non-governmental organizations (NGOs), private voluntary organizations (PVOs), and the local civil leadership for support may make up shortages of resources. Resources devoted to population management are carefully weighed against availability, military mission requirements, and possible collateral damage affecting tactical, operational, or strategic success. It may prove impractical to evacuate an urban area's population; still, commanders attempt to create and move most civilians to protected areas. Moving the population allows the defending forces to more liberally apply fires, emplace obstacles, and relieve combat units and support units of the requirements to continue life support for civilians while executing combat operations. Overall, effective civil-military operations (CMO) can turn a friendly, or a neutral, population into an effective force multiplier providing support to every operational function.

43. **Planning Counterattacks.** Counterattacks are also an important tool in shaping the battlefield for defensive success. Counterattacks, as a shaping tool, have two applications: retaining the initiative and separating forces. However, opportunity for effective counterattacks will be brief, and therefore, timing will be critical. If conducted too soon, the counterattack may expend resources required later; if conducted too late, it may not be effective. Commanders understand the effect of the urban environment on time-distance relationships; otherwise, the timing of the attack may be disrupted and the operation desynchronized. Additionally, commanders develop plans beyond the counterattack to exploit potential success.

## ENGAGE

44. **Dominate.** Dominating the urban area in a defensive operation requires decisively defeating the enemy's attacks. Defensive forces use the terrain to their advantage, employ precision supporting fires, and use direct fire from protected positions aligned against carefully selected avenues of approaches and kill zones. The combat power of the defence, augmented by shaping actions and the characteristics of urban terrain, force the culmination of the enemy attack. Like urban offensive operations, domination in urban defensive operations typically results from successful actions at the tactical level of war. These actions include:

- a. creating depth;
- b. executing an effective obstacle plan and
- c. conducting coordinated counterattacks.

45. **Creating Depth.** Depth in the defence is the key to forcing the enemy to culminate. The urban defence cannot allow itself to be penetrated, nor permit forward elements to be destroyed. The defence is designed with the greatest depth possible. Defending forces weaken the enemy to the fullest extent possible by attack from each position, but do not become decisively engaged. Instead, as positions become untenable, the use of mission orders allows subordinate leaders to disengage on their own initiative and move on pre-planned routes to subsequent positions. Positions are designed to be mutually supporting—withdrawing from one position to a subsequent one while supporting position covers by fires. The attacker is constantly forced to deploy and reorganize without being able to achieve decisive effects against the defender.

46. **Executing an Effective Obstacle Plan.** Obstacles in the urban defence are designed to break up the enemy's combined arms capability. Separating dismounted forces from mounted forces disrupts the cohesion of the attacker and reduces his combat power. The leading enemy dismounted force can be effectively counterattacked by a combined arms element, while the enemy armoured force held up by the obstacle becomes vulnerable to attack by dismounted forces.

47. **Conducting Coordinated Counterattacks.** The counterattack is one of the key actions of the urban defence. As the attacker fights into the depth of the urban area, a carefully planned defence should weaken, fatigue, and disorganize his forces. In addition, it should create increasingly long and exposed flanks. As the attacker reaches the culmination point where he can no longer continue to attack, the defending commander executes a pre-planned and coordinated counterattack. The counterattack aims to regain the initiative and to make the enemy fight in multiple directions. Infiltration using superior knowledge of the terrain (including intra-surface and subsurface capabilities) permits attacks on the enemy throughout the depth of his formations. These counterattacks are conducted to set the conditions for a deliberate attack leading to the ultimate destruction of the attacking enemy force.



## **CONSOLIDATE**

48. Consolidation in urban defensive operations occurs at all levels. This consolidation will include tasks, such as clearing munitions, clearing obstacles, and searching for isolated pockets of resistance. As with offensive operations, commanders must select which units are assigned to continue to operate in the area after defensive operations have ceased. This task should not be as challenging as an occupation mission following urban offensive operations. The psychology of troops who have defended an urban area differs from those attacking into it. Defending forces become accustomed to the environment, having experience in the environment before combat. In terms of training, it is easier for follow-on missions to be assigned to a unit that has successfully defended the urban area. This course of action takes advantage of the defending units' experience in the area and its relationships with other agencies—agencies that were operating alongside the units before and possibly during the defence. In defensive operations, regardless of the civilians' attitudes, policies regarding that population are established before the successful defence, and the command likely has experience executing operations with civil authorities and other agencies. Thus, these relationships are not new, nor as significant an issue as in offensive operations. Therefore, defending commanders are better prepared to execute stability operations.

## **TRANSITION**

49. At the end of a successful urban defence, a return to civil control must be planned for and assisted. A civilian population anxious to return to their homes and a degree of normality in their lives should be anticipated. Defensive combat will require virtually complete military control of the urban area; however, after the successful defence, a rapid transition will occur from military control to civil, or joint military and civil control. Conclusion of the defensive operations also requires transition to civil-military cooperation (CIMIC) tasks, such as evaluating structures for safety, restoring essential services, and possibly creating joint law enforcement.



## ANNEX A TO CHAPTER 8

### DEFENSIVE COMBAT POWER SUEZ—OCTOBER 1973

At the end of October, the Israeli Army was in the midst of effective counterattack against the Egyptian Army. The Israelis had success attacking west across the Suez Canal. Their armored divisions were attempting to achieve several objectives, to include destroying Egyptian air defense sites and completing the encirclement of the Egyptian 3rd Army, which was trapped on the canal's east side.

To completely encircle the Egyptian 3rd Army, the Israelis had to seize all possible crossing sites to it from the canal's west bank and the Red Sea. Also, as international negotiations towards a cease-fire progressed, the Israeli government wanted to capture as much Egyptian territory as possible to improve their negotiating position after hostilities.

Consequently, the Israeli Adan Armored Division was tasked to seize the Egyptian Red Sea port of Suez on the morning of 24 October. A cease-fire was to begin at 0700, and the Israeli intent was to be decisively engaged in the city by that time and then consolidate their position as part of the cease-fire compliance.

The Adan Division plan to seize Suez was a two-part operation. Each of the division's armored brigades would have a role. The 460th Brigade would attack west of the city and complete the city's encirclement. Simultaneously, the 217th Brigade would attack in columns of battalions through the city to seize three key intersections in the city. This was in accordance with standard Israeli armored doctrine for fighting in an urban area. The 217th Brigade would seize its objectives through speed, firepower, and shock action. Once the objectives were seized, infantry and armoured teams would continue attacking from the secured objectives to mop up and destroy pockets of resistance. The Israeli commanders expected to demoralize the defending Egyptians—two infantry battalions and one antitank company—by this rapid attack. The armoured division commander was specifically advised by his commander to avoid a “Stalingrad” situation.

The attack got off to an ominous beginning as mist greatly inhibited a scheduled aerial bombardment in support of the attack. The 217th Brigade began its attack without infantry support and was quickly stopped by antitank missiles and anti-tank fire. Infantry was quickly integrated into the brigade and the attack resumed.

At the first objective, the Israelis encountered their first problems. A withering barrage of small arms, antitank missiles, and antitank fire hit the lead tank battalion, including direct fire from SU-23 anti-aircraft guns. Virtually all the officers and tank commanders in the tank battalion were killed or wounded, and several tanks were destroyed. Disabled vehicles blocked portions of the road, and vehicles that turned on to secondary roads were ambushed and destroyed. The battalion, however, successfully fought its way through the first brigade objective and on to the final brigade objective.

Hastily attached paratroop infantry in company strength were next in column following the tanks. They were traveling in buses and trucks. As the lead tank battalion took fire, the paratroopers dismounted, and attempted to secure adjacent buildings. The tank battalion's action of fighting through the objective caused the paratroopers to mount up and also attempt to move through the objective. Because of their soft skinned vehicles the paratroopers were unable to remain mounted and again dismounted, assaulted, and secured several buildings that they could defend. Once inside the buildings, the paratroopers found themselves cut off, pinned down, and unable to evacuate their considerable casualties, which included the battalion commander. The paratroopers were on the initial brigade objective but were unable to manoeuvre and were taking casualties.

A second paratroop company also dismounted and quickly became stalled in house-to-house fighting. The brigade reconnaissance company in M113 personnel carriers brought up the rear of the brigade column and lost several vehicles and was also unable to advance.

By 1100 the Israeli attack culminated. Elements of the 217th Brigade were on all three of the brigade's objectives in the city. However, the armoured battalion, which had achieved the deepest penetration, was without infantry support and under severe antitank fire. Both paratroop companies were isolated and pinned down. In addition, an attempt to link up with the paratroopers had failed. At the same time, the civilian population of the city began to react. They erected impromptu barriers, ambushed isolated Israeli troops, and carried supplies and information to Egyptian forces.

The Israeli division commander ordered the brigade to break contact and fight its way out of the city. The armoured battalion was able to fight its way out in daylight. The paratroop companies were forced to wait until darkness and then infiltrated out of the city carrying their wounded with them. Israeli casualties totalled 88 killed and hundreds wounded in addition to 28 combat vehicles destroyed. Egyptian casualties were unknown but not believed to be significant.

The fight for Suez effectively demonstrates numerous urban defensive techniques. It also vividly demonstrates the significant effect on defensive combat power of the urban environment.

The Egyptian defense demonstrates how the compartmented urban terrain restricts the mobility and the massing of firepower of armoured forces. Trapped in column on the road, the Israelis were unable to mass fire on particular targets nor effectively synchronize and coordinate their fires. The short-range engagement, also a characteristic of urban combat, reduced the Israeli armour protection and eliminated the Israeli armour's ability to keep out of small arms range. Thus, hand held antiarmor weapons were more effective in an urban area. Additionally, Egyptian small arms and sniper fire critically affected Israeli C2 by successfully targeting leaders.

The Egyptian defenders effectively isolated the mounted Israelis by defending and planning engagement areas in depth. The Egyptians synchronized so that they engaged the entire Israeli force simultaneously. This forced the Israelis to fight in multiple directions. It also separated the Israeli infantry from the armour and prevented the formation of combined arms teams necessary for effective urban offensive operations.

Suez also demonstrated how civilians come to the advantage of the defense. After the battle was joined, the population—by threatening isolated pockets of Israelis and building barricades—helped prevent the Israelis from reorganizing while in contact and hindered the Israelis breaking contact. The population was also a valuable source of intelligence for the Egyptians and precluded covert Israeli movement in daytime.

Suez shows the ability of a well-placed defense in depth to fix a superior force in an urban area. Despite the Israeli commander's caution to avoid a "Stalingrad," the Israeli division, brigade, and battalion commanders were quickly trapped and unable to easily break contact. Even a successful defense on the parameter of the city would not have been nearly as effective, as the Israelis would have easily broken contact once the strength of the defense was recognized.

Another key to the success of the Egyptian defense was the Israelis' inadequate reconnaissance. While the Israelis knew the approximate size of the defending forces, they had no idea of the Egyptian dispositions. In this case, time prevented adequate reconnaissance. Key to a successful defense is adequate security to obscure defense dispositions, which permits surprise and shock effect.

The Suez defense was a decisive defeat of elite Israeli forces by regular infantry units inferior in training, morale, and numbers. Total disaster was averted only because of the professionalism of the Israeli armoured forces and paratroopers that permitted them to continue to fight and eventually exfiltrate the urban trap. The Israeli forces thus escaped total destruction. Suez strongly demonstrates how the enhancing effects of the urban environment on defensive combat power are significant enough to permit inferior regular forces to defeat elite formations. Since the 1973 Suez battle, US forces in Mogadishu, Somalia, and Russian forces in Grozny, Chechnya have faced similar urban defensive ambushes.



## CHAPTER 9

### URBAN STABILITY OPERATIONS

*Stability operations are defined as “Operations that impose security and control over an area while employing military capabilities to restore services and support civilian agencies. Stability operations involve both coercive and cooperative actions. They may occur before, during and after offensive and defensive operations, or as the primary objective of a campaign. Stability operations provide an environment in which the other instruments of power—diplomatic, informational, and economic—can predominate in cooperation with a lawful government. Stability operations may include combat as part of the overall stabilization.”*

ABCA Continuum of Operation Project Team

1. The term stability operation is used to describe those tactical tasks that are conducted in peace support operations (PSO) and counter-insurgency (COIN) operations. Stability operations, as defined by the American, British, Canadian and Australian (with New Zealand) Armies’ Standardization Program (ABCA), include:

- a. peacekeeping;
- b. peacemaking;
- c. peace enforcement;
- d. peacebuilding;
- e. conflict prevention;
- f. humanitarian operations;
- g. foreign internal defence;
- h. reconstruction;
- i. support to insurgencies; and
- j. evacuation operations.

2. In general, stability operations are conducted to keep armed conflict from spreading, encourage coalition and alliance partners, and secure the civilian population’s support in unstable urban areas. The fundamental aim of stability operations in an urban environment is to influence the civilian population. The control of or influencing the centre of gravity (COG) for these operations normally cannot be achieved through military means alone; the military is often but one tool supporting a larger, civil-focused effort. Without a tightly coordinated civil-military effort, success will be difficult or impossible to achieve. Urban stability operations may complement urban offensive and defensive operations, or may dominate the overall operation. Humanitarian assistance operations, as a subset of stability operations can range from transporting, feeding, and sheltering the population made homeless because of combat

operations, or natural disasters to providing medical care during urban COIN operations. Nearly every urban operation can be expected to involve some type or form of stability operation combined and sequenced with offensive and defensive operations.

## **SECTION 1 CHARACTERISTICS OF URBAN STABILITY OPERATIONS**

3. Stability operations are diverse, varied in duration, unilateral or multinational, and domestic or foreign. Like all urban operations (UO), they are usually joint. Unlike urban offensive and defensive operations, stability operations are generally inter-agency operations, which require restrictive rules of engagement (ROE). The multiplicity of actors involved usually increases the scope and scale of required coordination and communication. Adverse conditions arising from natural or fabricated disasters or other endemic conditions—such as human suffering, disease, violations of human rights, or privation—will significantly modify the urban environment. Unresolved political issues and tenuous agreements, difficulties discriminating combatants from non-combatants, or between parties of a dispute, and the absence of basic law and order, all serve to complicate an already complex and uncertain environment. Civil-military and legal considerations take on added significance in stability operations. Where a stability operation calls for an emphasis on the diplomatic, and economic the sorts of capabilities required could include:

- a. political-support-teams for municipal and provincial levels of government;
- b. judiciary-augmentation-teams, to include advisory councils to judges; augmentation and training for police forces;
- c. municipality reconstruction teams; and
- d. disarmament (of local citizens and belligerents) incentive action teams.

4. Additionally, a greater focus on the most relevant and important concerns of the family, within any stability operation, might provide a framework by which the commander could develop and structure capabilities and forces. These family concerns include safety, health, prosperity, and freedom. Finally, recognizing and achieving the desired end state is often more difficult than in offensive and defensive operations.

5. Commanders should not expect clear guidance and must learn, adapt, and live with ambiguity. They cannot expect to operate in a political vacuum and should not expect an easily identifiable enemy located across a clearly demarcated line. In fact, in many stability operations, commanders and their soldiers must resist the need to have an enemy—difficult at best when one side or another (or both) may be sniping at them. They must also expect additional and changing missions and tasks, without being allowed to use every means at their disposal to carry out those missions. Many tasks required may be ones for which their units have never, or rarely, trained. Finally, commanders are expected to show restraint with a keen sensitivity to political considerations and to alien cultures, either or both of which they might find confusing or even repugnant.



6. Each type of urban stability operation is distinct. These operations differ even more when applied to a specific urban area. Due to the complexity of the environment, commanders must carefully arrange their forces and operations according to purpose, time, and space to accomplish the mission. In most UO, the terrain, the dense population (military and civilian), and the participating organizations will further complicate this arrangement.

## **DECISIVE OPERATIONS**

7. In urban stability operations, decisive operations may take many years and include multiple actions before achieving the desired end state. This particularly applies to the strategic and operational levels. Conversely, decisive operations involved in an urban operation for mitigating or reducing disease, hunger, privation, and the effects of disasters normally achieve faster results. In urban areas, establishing law and order to protect critical infrastructure and the inhabitants from lawlessness and violence is critical and often the decisive operation.

## **SHAPING OPERATIONS**

8. Shaping operations establish and maintain the conditions for executing decisive operations. In urban stability operations, shaping operations include information operations (IO) that influence perceptions and maintain legitimacy. Often, various participants, and their potentially divergent missions and methods, are involved. Commanders need to coordinate their planning and efforts (early and continuously) to ensure that their decisive, shaping, or sustaining operations are not working against other agencies' efforts and operations—agencies that may have the lead role in the operation. Thus, a critical shaping operation may be to establish the coordination to help develop a common purpose and direction amongst agencies. In some instances and with some organizations and agencies, particularly non-governmental organizations (NGOs), genuine unity of effort may not be achievable; however, recognizing the differences in aims and goals will allow commanders to conduct operations with less friction. Commanders should include NGOs and appropriate governmental agencies in mission readiness exercises or any other training for stability operations.

9. Much of the support provided by military forces will aim to assist local, regional, or national governments. Their location in urban areas will, by necessity, be a dominating factor in accomplishing the mission. As importantly, many stability operations—enforcing peace in Bosnia for example—will require interacting, influencing, controlling, or protecting all or parts of the civilian population. Assessing, understanding, and gaining the support of civilians in key economic, cultural, or political urban areas may influence surrounding regions (smaller urban areas and the rural countryside) and may be decisive to achieving stability objectives. Finally, the support and assistance that the military will provide is only temporary although often of long duration. Eventually, the government and administration must secure and support their population by themselves.

## SECTION 2 CONSIDERATIONS FOR STABILITY OPERATIONS

10. The urban operational framework (understand-shape-engage-consolidate–transition [USECT]) provides a structure for developing considerations unique to urban stability operations. Many considerations presented in urban offensive and defensive operations apply to urban stability operations, particularly those that address how to assess the urban and overall operational environment. Because the situations in which stability operations normally occur share strong similarities with any urban environment, many of these considerations are closely linked to the urban USECT framework presented in Chapter 6.

### UNDERSTAND

11. In urban stability operations, commanders must carefully assess the political dimension of the operational environment as these operations are inherently tied to the exercise of diplomatic power. All operations in urban areas are often the focus of the media, and thus, gain considerable public and political attention. Therefore, military objectives in urban stability operations and support operations are more directly linked with political objectives. The relationship between the levels of war—strategic, operational, and tactical—is often closer than in urban offensive and defensive operations. Military objectives must be carefully nested within political objectives. Commanders must ensure that the ways and means to accomplish their objectives, to include security and force protective measures, will hold up to media scrutiny and are appropriate for the situation and environment. All levels of command need to understand the link between political and military objectives, to include a basic understanding at the individual level. One uncoordinated, undisciplined, or inappropriate action, even at the lowest level, could negate months or years of previous, disciplined effort. Commanders must balance security and force protective measures with mission accomplishment. Ineffective measures can put soldiers at too great a risk and jeopardize the mission. Conversely, overly stringent measures may make it difficult for forces to interact closely with the population—essential in many of these operations. Finally, commanders will need a thorough assessment of the governmental and NGOs and agencies that will be operating in or near urban areas that fall within their area of operations (AO).

12. **Political and Military Objectives.** Commanders need to understand how to translate political objectives into military objectives that are clear and achievable (i.e., clear tasks and purposes) and can lead to the desired end state. Political objectives may be vague, making it difficult for commanders to conduct their mission analysis. This applies to tactical and even operational-level commanders, unskilled at higher level, strategic political-military assessments. Each type of stability operation is distinct, often unfamiliar to the executing unit, and unique to the specific situation. These factors often make it difficult to confidently determine the specific tasks that will lead to mission success. Therefore, commanders must also establish measures of effectiveness that aid in understanding and measuring progress, and help gauge mission accomplishment.

13. These criteria should be measurable (in some circumstances, a qualitative assessment may be most appropriate) and link cause with effect. They help determine the changes required

and are essential to an assessment cycle required for urban stability operations and support operations. In a humanitarian relief operation to aid the starving, commanders could determine that the decisive effort is delivering safe food to the urban area. To judge success or effectiveness, they could determine that the measure is the number of food trucks dispatched daily to each distribution site; the more trucks, the more effective the efforts. However, this measure must correlate with the overarching measure of effectiveness: decline in the mortality rate. If no significant decrease in deaths due to starvation occurs, they may need to reassess and modify the tasks or measure of effectiveness. A better measure may be to track the amount of food consumed by those in need instead of simply counting the number of trucks dispatched.

14. However, planners should also be wary of the unintended consequences of well-intentioned urban humanitarian operations. For example, providing free, safe food may alleviate starvation, but could also undercut the local agricultural system by reducing demand in the market. If the food is distributed through urban centres, urbanization could increase, further reducing the food supply and adding to the existing strains on the infrastructure. Areas around which measures of effectiveness can be formed for many stability operations and support operations (including the example above), and which will help return most societies to some degree of normalcy and self-sufficiency include:

- a. decreasing morbidity and mortality rates;
- b. securing safe food;
- c. resettling the population;
- d. re-establishing economic activity; and
- e. restoring law and order.

15. Although not military in nature, commanders can often develop measures of effectiveness to address the areas listed above in terms of providing security or logistics.

16. Political objectives are fluid and modified in response to new domestic and international events or circumstances. Thus, assessment is continuous, and commanders adjust their own objectives and subsequent missions accordingly. In urban stability operations and support operations, commanders often develop military objectives that support or align with the objectives of another agency, which has overall responsibility for the urban operation. In this supporting role, commanders may receive numerous requests for soldier and materiel assistance from the supported agency and other supporting agencies operating in the urban area, to include elements of the urban population. With such unclear lines of authority and areas of responsibility, they ensure that the tasks, missions, or requested resources fall clearly in the intended scope and purpose of the army's participation in the operation. They do not develop or execute missions based upon inadequate or false assumptions, misinterpreted intent, or well meaning, but erroneously interpreted laws or regulations by any organization, to include even the lead agency. When missions appear outside their scope, commanders need to quickly relay their assessment to their higher headquarters for immediate resolution.

17. **Security and Force Protection Measures.** Commanders plan for and continually assess the security of their forces operating in an urban area, as well as constantly review protective measures. Establishing a robust intelligence network—particularly including human intelligence (HUMINT)—that can determine the intentions and capabilities of the threat and the urban populace is the basis for establishing force protection for military forces operating in the urban environment. However, many such operations, particularly humanitarian operations, require extra time to forge a lasting change. Over time, and particularly in peacetime when objectives centre on helping others and avoiding violence, even the complex urban environment may seem benign. Without continual, aggressive, command emphasis, soldiers may become lulled into complacency. It is usually then that they are most vulnerable to terrorist tactics, such as bombings, kidnappings, ambushes, raids, and other forms of urban violence.

18. Emphasizing security and force protective measures does not mean isolating soldiers from contact with the urban population. On the contrary, commanders must find a balance between survivability and mobility. Survivability measures—such as hardening or fortifying buildings and installations, particularly where large numbers of soldiers are billeted— may be required. On the other hand, mobility operations are essential in preserving freedom of action and denying a threat the opportunity to observe, plan, and attack urban forces. Mission degradation and increased risk to the force can result if force protective measures prevent military forces from conducting prudent missions and establishing an active and capable presence. A major consideration must be to avoid creating a psychological barrier between friendly forces and the local population because of force protective measures. By assuming risk in physical protection to gain rapport with the population, may provide contacts and indicators of threats. It is a paradox of assuming risk to lower risk.

**ASSESSMENT OF SECURITY AND FORCE PROTECTION  
BELFAST, NORTHERN IRELAND**

Since 1969, Belfast has significantly affected the British military campaign for stabilizing the area. British operations in Belfast illustrate the difficulty of balancing the security and protecting forces with maintaining the stabilizing presence necessary to uphold law and order, minimize violence, and control the urban population.

British successes in protecting Belfast's infrastructure and government facilities from terrorist attacks compelled various terrorist cells, especially the Irish Republican Army and the Provisional Irish Republican Army, to attack more military targets. At the time, British soldiers and bases presented relatively unprotected targets to these factions, and attacks against them solidified their legitimacy as an "army." In response, British commanders implemented extreme security and force protection measures—from ballistic protection vests and helmets to fortress-like operational bases and large unit patrols. These protection measures successfully decreased the violence against British soldiers in Belfast. However, they also decreased the soldiers' interaction with the population and their ability to stabilize the city. The large patrols, while protecting the soldiers, inhibited effective saturation of neighbourhoods. These patrols, coupled with fortress-like bases and bulky protective clothing, created an "us-versus-them" mentality among civilians and soldiers.

As force protection increased and stabilizing effects decreased, the terrorists were provided more targets of opportunity among the civilians and infrastructure. British commanders reassessed the situation, identified this "see-saw" effect, and adapted to strike a better balance between force protection and effective presence patrols. For example, British forces switched to four-man patrols to enable greater mobility and wore berets instead of helmets to appear less aggressive.

**19. Participating Organizations and Agencies.** Across the continuum of operations, but more so in stability operations, numerous NGOs will be involved in relieving adverse humanitarian conditions. Dense populations and infrastructure make an urban area a likely location for their headquarters. For example, in 1994 during Operation UPHOLD DEMOCRACY, over 400 civilian agencies and relief organizations were operating in Haiti. Commanders must determine the resources and capabilities that these organizations may bring, and the possible problem areas to include resources or assistance they will likely need or request. Therefore, commanders must assess all significant NGOs and governmental agencies operating (or likely to operate) in or near the urban area to include their:

- a. functions, purposes, or agendas;
- b. known headquarters and operating locations;
- c. leadership or senior points of contact (including telephone numbers);
- d. communications capabilities;
- e. potential as a source for critical information;
- f. financial abilities and constraints;
- g. logistic resources: transportation, energy and fuel, food and water, clothing and shelter, and emergency medical and health care services;

- h. law enforcement, fire fighting, and search and rescue capabilities;
- i. refugee services;
- j. engineering and construction capabilities;
- k. other unique capabilities or expertise;
- l. previous military, multinational, and inter-agency coordination experience and training;
- m. rapport with the urban population;
- n. relationship with the media; and
- o. biases or prejudices, especially towards participating coalition forces, other civilian organizations, or elements of the urban society.

## SHAPE

20. Commanders conduct many activities to shape the conditions for successful decisive operations. In urban stability operations, two rise to the forefront of importance: aggressive IO and security operations.

21. **Information Operations.** IO, particularly psychological operations (PSYOPS) and the related activities of civil-military cooperation (CIMIC) and public affairs (PA), are essential to shape the urban environment for the successful conduct of stability operations. Vigorous IO can influence the perceptions, decisions, and will of the threat, the urban population, and other groups in support of the commander's mission. IO objectives are translated to IO tasks that are then executed to create the commander's desired effects in shaping the battlefield. These operations can isolate an urban threat from his sources of support; neutralize the hostile urban population, or gain the support of the neutral population; and mitigate the effects of threat IO, misinformation, rumours, confusion, and apprehension.

22. **Security Operations Protecting Civilians.** Security for NGOs and civilians may also be an important shaping operation, particularly for stability operations. Commanders may need to provide security to civil agencies and NGOs located near or operating in the urban area, so that these agencies can focus their relief efforts directly to the emergency. Commanders may also need to protect the urban population and infrastructure to maintain law and order if the urban area's security or police forces are non-existent or incapacitated.

23. **Preserving Resources.** Just as forces are at risk during urban stability operations, so are their resources. In urban areas of great need, supplies and equipment are extremely valuable. Criminal elements, insurgent forces, and people in need may try to steal weapons, ammunition, food, construction material, medical supplies, and fuel. Protecting these resources may become a critical shaping operation.

24. **Prioritize Resources and Efforts.** Commanders will always face limited resources with which to shape the battlefield, conduct their decisive operations, and accomplish their objectives. They must learn to prioritize, allocate, and apply those resources to achieve the desired end state. To accomplish this, they need to tailor their objectives and shape their operations to achieve the greatest good for the largest number. Commanders should firstly apply the urban fundamental of preserving critical infrastructure to reduce the disruption to the residents' health and welfare. Secondly, they should apply the urban fundamental of restoring essential services, which includes prioritizing their efforts to provide vital services for the greatest number of inhabitants as possible.

25. **Adaptability.** Rapid adaptability is critical to stability operations because these operations relentlessly present complex challenges to commanders for which no prescribed solutions exist. Commanders often lack the experience and training that provide the basis for creating the unique solutions required for these operations. Since the primary purpose for the army is to fight, the challenge then is to adapt urban war fighting skills to the unique stability operations situation.

## ENGAGE

26. Commanders seek to coordinate all tactical stability operations with other agencies and forces that share the urban environment. They will need to strive to overcome difficulties, such as mutual suspicion, different values and motivations, and varying methods of organization and execution. Frequently, they *initiate* cooperative efforts with participating civilian agencies and determine where their objectives and plans complement or conflict with those agencies. Commanders then match force capabilities to the needs of the supported agencies. In situations leading to many urban stability operations, confusion may initially make it difficult to ascertain specific priority requirements. Reconnaissance and liaison elements—heavily weighted with CIMIC and medical support personnel—may need to be deployed first to determine what type of support to provide. Overall, aggressive coordination will make unity of effort possible in urban stability operations where unity of command is difficult or impossible to achieve.

27. **Perseverance.** The society is a major factor responsible for increasing the overall duration of urban operations. This particularly applies to urban stability operations and support operations where success often depends upon changing people's fundamental beliefs and subsequent actions. Modifying behaviour requires influence, sometimes with coercion or control, and perseverance. They often must be convinced or persuaded to accept change. This may take as long or longer than the evolution of the conflict. Decades of problems and their consequences cannot be immediately corrected. Frequently, the affected segments of the urban society must see that change is lasting and basic problems are being effectively addressed.

28. In most operations, success will not occur unless the host nation, not military forces, ultimately prevails. The host nations' urban administration must address the underlying problems or revise its policies towards the disaffected portions of the urban population. Otherwise, apparent successes will be short-lived. The UO fundamental of understanding the human dimension is of paramount importance in applying this consideration. When

commanders understand the society's history and culture, they can begin to accurately identify the problem, understand root causes, and plan and execute successful UO.

29. **Reasonable Restraint.** Unlike offensive and defensive operations where commanders seek to apply overwhelming combat power at decisive points, restraint is more essential to success in stability operations. It involves employing combat power selectively, discriminately, and precisely, yet still at decisive points, in accordance with assigned missions and prescribed legal and political limitations. Similar to the UO fundamentals of minimizing collateral damage and preserving critical infrastructure, restraint entails restrictions on using force. Commanders of major operations issue or supplement ROE to guide the tactical application of combat power. Excessively or arbitrarily using force is never justified or tolerated. Even unintentionally injuring or killing inhabitants, and inadvertently destroying their property and infrastructure, lessens legitimacy and the urban population's sympathy and support. It may even cause some inhabitants to become hostile. In urban stability operations and support operations, even force against a violent opponent is minimized. Undue force often leads to commanders applying ever-increasing force to achieve the same results.

30. Although restraint is essential, military forces must always be capable of limited combat operations for self-defence. This combat capability is present and visible, yet displayed in a non-threatening manner. A commander's intent normally includes demonstrating strength and resolve without provoking an unintended response. Keeping this deterrent viable requires readiness, constant training, and rehearsals. It also requires active reconnaissance, operational security (OPSEC), a combined arms team, and timely and accurate intelligence, which in the urban environment requires a well-developed HUMINT capability.

31. **Resolute Legitimacy.** Closely linked to restraint is legitimacy or the proper exercise of authority for reasonable purposes. Achieving or maintaining legitimacy during urban stability operations or support operations is essential in obtaining the support of its population. Commanders can ensure legitimacy by building consent amongst the population, projecting a credible force, and appropriately using that force. Perceptions play a key role in legitimacy, and skilful IO can shape perceptions. Commanders send messages that are consistent with the actions of their forces. Generally, the urban population will accept violence for proper purposes if that force is used impartially. Perceptions that force is excessive or that certain groups are being favoured over others can erode legitimacy. A single soldier's misbehaviour can significantly degrade a commander's ability to project an image of impartiality and legitimacy.

## CONSOLIDATION AND TRANSITION

32. Commanders of major operations are the focal point for synchronizing tactical stability operations with strategic diplomatic and political issues. They are also the critical links between national intelligence resources and the tactical commander. Because strategic, diplomatic, and political changes can quickly transition the type of urban operation, they keep subordinate tactical commanders abreast of changes in intelligence, policy, and higher decisions. The potential to rapidly transition to urban combat operations emphasizes the need to maintain the capability to conduct close, urban combat. Failure to recognize changes and transition points may lead to UO that do not support the attainment of the overall objective and needlessly use



resources, particularly soldiers' lives. Therefore, military forces in urban stability operations must be acutely aware of the strategic environment, and understand that the threat and the civilian population will have their own means of monitoring the national and international situation.

33. **Return to Legitimate and Capable Civilian Control.** Commanders maintain, or enhance the credibility and legitimacy, of the government and police of the urban area and of the host nation's military forces operating there. In accordance with the urban fundamental of transitional control, urban commanders must endeavour to conclude UO quickly and successfully, often to use assets elsewhere in their area of operations. This entails returning the control of the urban area back to civilian responsibility as soon as feasible. The host nation's military and the urban area's leadership and police should be integrated into all aspects of the urban stability operations to maintain their legitimacy. They must be allowed, or influenced, to take the lead in developing and implementing solutions to their own problems.

34. If the host nation's leadership, military, and police are not up to the task, steps must be taken to increase their capabilities through training, advice, and assistance by CIMIC units or by other non-governmental or governmental organizations and agencies. Sometimes, new leadership and a restructured police force may be required, particularly if they are corrupt or no longer trusted by the population. This candid assessment of the urban leadership's ability to govern, protect, and support itself is made early in the planning process. Only then can commanders ensure that resources and a well thought-out and coordinated plan with civilian organizations are available for a speedy transition. IO will be paramount in these instances to ensure that the urban population witnesses the training and rebuilding processes as legitimate. Throughout urban stability operations, commanders must shape the conditions to successfully handover all activities to urban civilian authorities.



## **CHAPTER 10**

### **SUSTAINMENT AND SUPPORT OF URBAN OPERATIONS**

1. Sustainment and support are critical factors in successful urban operations (UO). This chapter will discuss the general fundamentals and preparations required to provide support by combat service support (CSS), the legal branch, civil-military cooperation (CIMIC) and engineers. A detailed description of CSS operations at the brigade level and below is included at appendix A.

#### **COMBAT SERVICE SUPPORT IN URBAN OPERATIONS**

2. During UO, the terrain and the nature of operations create unique demands on units and formations. The need for special stores, increased consumption, pervasive threat, mobility difficulties, the vertical dimension, population friction, communications problems and other aspects of UO require changes to a CSS system that is currently optimized for open and mechanized operations. CSS planning and preparation has to be thorough, involving wholesale change to load tables, methods of sustainment, and the orders of battle (ORBAT) for supported and supporting units. CSS and operational plans must be completely integrated. The density of friendly forces, the ubiquitous threat, the limited road network, and the fluidity of the situation mean that combat and supporting forces must be in complete synchronization. Sustaining operations are inseparable from decisive and shaping operations. In offensive and defensive operations, they are not independently likely to be decisive or shaping; however, they contribute to those operations. In some stability operations, when the critical objectives may be restoring the infrastructure and the welfare of civilians, CSS operations can be the decisive element. However, CSS operations affect and are affected by the environment. The urban infrastructure, existing resources, coupled with supportive civilians, may facilitate CSS operations. In contrast, a poorly designed or damaged infrastructure and a hostile population may severely hamper CSS operations.

#### **SECTION 1**

##### **URBAN CSS FUNDAMENTALS**

3. CSS fundamentals guide prudent logistic planning by providing commanders with a framework to analyze and develop urban logistic requirements, assess the impact of the environment on the provision of CSS, and gauge the effectiveness of urban CSS support. The following fundamentals will be discussed in this chapter:

- a. responsiveness and sustainability;
- b. economy and attainability;
- c. survivability;
- d. simplicity;
- e. integration; and

f. flexibility.

4. **Responsiveness and Sustainability.** UO require responsiveness and sustainability to establish and maintain the tempo necessary for success. Responsiveness—providing the right support in the right place at the right time—is the essential CSS characteristic. It requires that CSS commanders and planners accurately forecast urban operational requirements. Continuous UO will drain personnel, equipment, and supplies. Based upon history, this can be more than five times that experienced in other environments. Therefore, sustainability—the ability to maintain continuous support throughout all phases of the operation—will be a significant concern. Anticipation is critical to both responsiveness and sustainability. It requires that CSS commanders and planners comprehend the potential effects that the components of the urban environment (e.g., terrain, infrastructure, and society) may have on operations and CSS, either benefiting or impeding UO. Effective urban operational and logistic planning cannot be accomplished separately. Operational and CSS planners, as well as CSS operators, are closely linked to aid in synchronizing and attaining responsiveness and sustainability.

5. **Economy and Attainability.** A thorough understanding of the urban environment can also help determine how specific urban areas can contribute to, or frustrate the achievement of, economy and attainability. Economy means providing the most efficient support at the least cost to accomplish the mission. Attainability means generating the minimum essential supplies and services necessary to begin operations. If available, obtaining support in the area of operations (AO) costs less than purchasing supplies outside the area and then transporting them there. Critical resources may be available in urban areas to support the operation. However, relying on sources outside the established military logistic system may create conflict with other CSS characteristics. A strike by longshoremen, for example, may shut down port operations, at least temporarily, lowering responsiveness and sustainability.

6. **Survivability.** Survivability is the ability to protect support functions from destruction or degradation. Commanders often choose to locate CSS functions in an urban area because the buildings may better protect and conceal equipment, supplies, and people. Urban industrial areas are frequently chosen as support areas because they offer this protection, as well as sizeable warehouses, large parking areas, and materials handling equipment (MHE). Such areas facilitate the storage and movement of equipment and supplies. They also provide readily available water, electricity, and other potentially useful urban resources and infrastructure. However, these areas may also contain toxic industrial materials (TIM). These materials and chemicals in close proximity to support areas may unjustifiably increase the risk to survivability, especially if any CSS facilities are located in subsurface areas where liquids and heavier gases often sink and accumulate in low-lying areas. Furthermore, CSS activities located in any type of confined urban areas can offer lucrative targets for terrorists, or even angry crowds and mobs. Although host nation support may include assets to assist in defending CSS units and lines of communications (LOC), CSS capabilities must be “hardened” as a first principle and be able to conduct their own defence. CSS commanders must carefully consider what protective measures are required to ensure survivability.

7. **Simplicity.** Simplicity is required in both planning and executing CSS operations in this complex environment. Developing standard procedures amongst the army, the other services, and especially amongst civilian governmental and non-governmental agencies; of liaison and

open channels of communication; simple plans and orders; and extensive rehearsals, contribute immeasurably to attaining this necessary characteristic.

8. **Integration.** The need for CSS integration increases in UO due to its joint nature and greater numbers of other governmental and non-governmental agencies operating in or near urban areas. More non-governmental organizations (NGOs) will likely exist because urban areas often contain most of a region's population. Most NGOs focus on people. Friendly forces and other military and non-military groups cooperate and coordinate their actions. Much of their coordination will revolve around logistics. Cooperation and coordination will take advantage of each group's logistic capabilities, help to avoid duplicated effort (i.e., contributing to the economy), and create logistic synergy. It will also help to curtail competition for the same urban resources and assist in developing a unified list of priorities. Such coordination will help ensure that other operations, by one force or agency, will not disrupt or destroy portions of the urban infrastructure critical to another's logistic operations and the overall mission.

9. **Flexibility.** Flexibility enables CSS personnel to remain responsive to the force commander's needs. CSS operations cannot anticipate every eventuality and must possess the ability to exploit fleeting opportunities. Knowledge of the environment, particularly its infrastructure, can aid in developing innovative solutions to CSS acquisition and distribution problems.

10. The force and CSS commanders consider and prioritize these fundamentals as they visualize UO. The fundamentals seldom exert equal influence, and their importance varies according to the mission, enemy, terrain, weather, troops, support available, time available, and civil considerations.

## SECTION 2 SERVICE SUPPORT PREPARATION FOR URBAN OPERATIONS

11. The information required by the CSS staff will come from various sources, and particularly, close integration with the all-source cell (ASC) is vital. This cell combines information produced from the intelligence staff (G2), the geomatics cell, the intelligence, surveillance, target acquisition and reconnaissance (ISTAR) cell, the engineers, higher information sources (i.e., coalition and national sources), and other sources to build a common operational picture (COP) for the commander and other staffs. The G4 will use this information, and contribute to it, to complete the plan. The G4 must also identify his own information requirements and coordinate the collection of the information. This information produces a plan that is synchronized with the operational plan, contingency plans, and maintains the level of reserve required by the commander. While the products are no different in style and content from other operations, the complexity of UO terrain, the density of the enemy and population, and rapidity with which a situation can change, requires real-time integration of information and action.

12. The planning carried out by the CSS staff will gather this information from the ASC, and from other sources, to develop the necessary detail. The other sources include:

- a. CIMIC can advise and assist in identifying and assessing urban supply systems, services, personnel, resources, and facilities.
- b. HUMINT is vital to the understanding of the urban environment and the enemy. CSS forces can be an important source because they will have the most contact of all the friendly forces with the local population. This is because of the number and dispersion of their facilities, the convoys moving throughout the area, the daily transactions with local suppliers, and the interplay with NGOs and civilians during humanitarian operations. All CSS soldiers must be trained to understand the information needs of the force, to observe and to report this information. The CSS forces must be recognized as vital part of the overall collection plan. Civilian sources, including diplomatic staffs, government ministries, NGOs, and corporations, can be very useful in understanding local resources, trade regulations, and customs.

13. A thorough operational planning process (OPP) seeks, through IPB and the sustain estimate process, to develop the information required to make and a workable CSS support plan. CSS planners must understand and use both processes to develop the necessary understanding of the resources, terrain, and society, including:

- a. **Local Resources.** For consideration is the availability and reliability of local resources (e.g., host nation and local economy), and the willingness of the owners of those resources to support the coalition. In general, it is better to plan for material self-sufficiency and always have a back-up capability. CSS planners determine what urban resources exist in the AO, and they assess whether they can reliably acquire and use those resources without overly disrupting the urban society or economy. It can have the unintended consequence of financially sustaining the most disruptive and violent factions in the area. Local contracts for goods and services should be purchased as fairly as possible amongst urban factions and ethnic groups to maintain force impartiality and legitimacy, to maintain a working local economy, and to deny the development of a black market. These resources include:
  - (1) material including food, potable water, petroleum, electrical energy, barrier material, compatible repair parts, etc., and
  - (2) human resources including general labour, linguists, equipment operators, etc.
- b. **Terrain.** Potential terrain infrastructure of value includes civil parks, industrial parks, water and fuel storage facilities, warehouses, cold-storage sites, manufacturing plants, hospitals, hotels, maintenance facilities, and machine works. The proximity to local water and power sources should be key considerations, particularly in siting medical facilities. The threat may attack some facilities, so secondary positions need to be identified. Some threats will be best countered by moving installations periodically, so real estate will need to be managed for this contingency. Critical local infrastructure will need to be

managed within the targeting process, including its secondary systems that support or enable the infrastructure (e.g., a generating station is no good without the power grid). Geomatics staffs can provide maps and photos useful for navigation in a city and other products tailored to the needs of logistic staffs, such as road networks and load capacities of bridges, etc..

- c. **Transportation information.** Transportation factors, such as airfields, rail and road networks, traffic flow, choke points, and control problems, in all dimensions, must be considered. Main routes, secondary routes, and alternate routes must be programmed into the movement plan, as well as the supporting traffic control, route clearance, maintenance, and security plans (e.g., escort and surveillance). The density and complexity of UO will require close control of routes or the various users (e.g., manoeuvre, logistic, medical, NGO, civilian) will overwhelm route capacity. In some cases, exterior routes will be needed to reduce the inner traffic problems. Transportation information includes:
- (1) surface (e.g., road, rail, sea, in land waterways and pipeline);
  - (2) air (e.g., air drop and airlift);
  - (3) subterranean, including underground parking, sewers, subways, etc.; and
  - (4) transportation terminals.
- d. **The Society.** Societal aspects must be considered to include the population density, local economy, economic customs and leadership, crime and black market activity, NGO, other support agencies, etc. This will allow the planner to understand the impact of the local community on CSS operations, highlight possible areas of friction, anticipate future demand (e.g., for humanitarian goods), and identify local leaders who can facilitate operations. Local merchants are powerful members within the urban society, so it is important to treat them as allies and sources of information. The effects of war can lead to societal breakdown, presenting a direct threat to CSS resources as the population attempts to steal military supplies, including garbage, and stress the humanitarian support burden particularly if the NGOs are not meeting their needs. A contingency of Class X supply is required, based upon the logistic and CIMIC staffs' assessment of the situation.
- e. **Planning Data.** UO present new challenges and accurate data have yet to be produced by any army. US doctrine and recent Russian experience in Chechnya suggest ammunition usage will increase by factor of four. Casualties may increase by a factor of three to six. Caloric and water requirements will increase by 150%. Until experimentation is done, commanders and staff must use these simple yardsticks, and their best judgement, to establish a baseline and ensure data is captured and analysed to ultimately correct the baseline.
- f. **Support Areas.** A major influence on the operation plan and its subsequent execution is the selection of support areas in and outside the urban area. Ideally,

these areas allow access and distribution by road and air, offer adequate protection (e.g., wide fields of observation), storage space, and infrastructure. Access to power, water and fuel infrastructure would be desired. Planners may determine that the risks of seizing or establishing urban lodgement areas may be too high, and recommend building an airfield and logistic bases outside the urban area. This makes the lines of communications (LOC) into the city more critical to the operation. The urban support area will differ from the open terrain model as it will be closer to the combat area, it will be occupied by combat arms units, headquarters and other non-CSS elements, and it will be much more difficult to secure. The idea that the CSS forces will be responsible for the entire rear area security (RAS) task is not possible, given the difficulty of surveillance and security of the urban terrain. There may some security benefits in moving elements periodically to new locations, as opposed to building permanent “bases.” A fixed base may, in time, reveal vulnerable points, and the occupiers may become complacent in their defence. Area boundaries should be established in recognition of local population patterns, and police and fire jurisdictions, rather than “carving up the pie” by using streets and thoroughfares. This technique will ease the security burden by better harmonizing with the local population and civil authorities. The urban support area will require a higher density of support, because there will be a wider range of support echelons (i.e., third line, the national support element [NSE], coalition CSS elements, third party contractors, and the HN), and due to space restrictions and challenging LOC within the city. This, and the reasons measured in the earlier paragraphs, suggests some degree of split-basing will be required to keep the support area and capability to manageable size.

- g. **Centralized versus Decentralized.** The G4 must consider the balance between the centralized and decentralized concepts of operation. While some capabilities may be so precious that central control is required, UO threaten combatants with isolation suggesting decentralization is necessary. Urban infrastructure suggests a limit to what can be positioned forward, while the environment can restrict movement forward *and* backward. The threat from enemy action and pilferage suggests that small CSS nodes would be too hard to defend. All CSS positions (and convoys for that matter) require well-coordinated withdrawal and reinforcement plans.
- h. **Other Support Tasks.** Planning must prepare for other demands on CSS:
  - (1) **Supporting the Local Population.** Commanders should be expected to provide life-saving support to the local population until other arrangements can be found. The G4 and CIMIC staffs must plan to effectively handle such tasks while minimizing the burden. This may involve controlling and routing refugees, building camps, or sustaining populations in place, improving infrastructure, and coordinating NGO and local support.



- (2) **Supporting POWs and Detainees.** Camps, infrastructure and support services will be required.
- (3) Collection and disposal of arms and ammunition.
- (4) Care and removal/burial of mass casualties.

## SUPPLY

14. Supply operations gain heightened importance to an enemy engaged in UO—an attack can damage allied combat power; CSS targets are relatively soft; and the attack can have significant follow-on destabilizing effects within the civilian population if humanitarian operations are hindered. Fuel, water, and ration points and infrastructure may be the enemy’s high pay-off targets. These sustainment points will also be the target of black marketers, local gangs, and provide opportunities for pilferage by the locals. CSS planners must plan for losses due to these effects, and they must design security plans to suit the urban environment.

15. During urban combat operations, the “push system” of supply distribution often works best to maintain the tempo of UO, particularly for consumable supplies. This method prevents critical delays of a “pull system” that requires units to request supplies and then await their arrival. The “best” method for tactical UO will be a combination of the two:

- a. **Class I Water.** The availability of potable water is vital due to the increased consumption in a UO environment. Delivery is difficult, and locally provided water is the best way of meeting demand. The commander must be aware of any water infrastructure to ensure it survives contact as much as possible. These must be protected from contamination or destruction, and the capability to rebuild or reopen these facilities must exist within the force. Local sources of water should be treated as non-potable unless it is purified, as it is susceptible to contamination due to human waste, decomposing human or animal remains, dysfunctional sewer systems, industrial poisons, or other contaminants. There is a requirement for individual and collective portable water purification, and on-board water generation should be a facet of modern vehicle design, such that the water produced during combustion is not wasted. At relatively low cost, disposable, collapsible water bags and bladders will be useful delivery containers in the forward area, eliminating the need to backhaul containers. Canteens, jerry cans, and water buffaloes still serve a useful storage purpose, but to ease the delivery system, larger capacity bladders should be available to positions that will be manned for extended periods.
- b. **Class I Rations.** The feeding standard for soldiers operating in urban areas remains the same: three quality meals per day, fresh whenever possible, and practicable. Urban combat makes higher energy demands on soldiers who require a calorific intake of about 5,000 calories per day. Central feeding, and the distribution of freshly prepared meals may be more difficult. Instead, decentralized feeding should be encouraged, even if it is to supplement the continued use of hard rations. Fresh rations (i.e., uncooked) should be delivered

as far forward as local food storage and preparation resources allow. Foodstuffs and facilities may be available in the urban area; however, local sources must be tested, carefully monitored, and medically approved before consumption, and their use must not be at the expense of local consumers. New highly calorific hard rations are required to meet these needs. Stocks of both rations and water may need to be provided for local humanitarian use, subject to the commander’s guidance.

- c. **Class II General and Technical Stores.** Soldiers will need more Class II, especially clothing and individual equipment, as exposure to the urban environment (e.g., concrete, glass, and steel) causes rapid wear. Likewise, minor equipment and vehicle-mounted equipment will be subject to breakage due to dropping onto hard surfaces, falling debris, and brushing against walls and rubble.

d. **Special UO equipment:**

<ul style="list-style-type: none"> <li>• additional personnel protective kit, including knee and elbow pads, and ballistic eye protection</li> <li>• detailed city maps/air photos</li> <li>• decontamination material and equipment</li> <li>• grappling hooks, rappel and belay gear, and lightweight ladders</li> <li>• chainsaws, crowbars, and construction tools</li> <li>• rope</li> <li>• fire fighting kits</li> <li>• weapon-mounted flashlights and lasers</li> </ul>	<ul style="list-style-type: none"> <li>• drills and fibre-optic viewing devices</li> <li>• mirrors for searching vehicles</li> <li>• explosive-sniffing equipment and dogs</li> <li>• temporary street signs</li> <li>• additional armour for CSS vehicles</li> <li>• Stokes or Skedco brand name litters</li> <li>• medical supplies for burn casualties</li> <li>• special communications equipment for small units</li> <li>• crowd confrontation equipment</li> <li>• non-lethal weapons and equipment</li> </ul>
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- e. **Class III Bulk and Packaged Petroleum, Oil(s) and Lubricants.** The amount of bulk fuel used in UO may be reduced because there may be fewer armoured fighting vehicles (AFVs) and less distances travelled, but no usage data is available to confirm this. Until doctrinal data is available, brigade and unit staffs must use their own judgement to develop the stocking and distribution plan. This baseline must be verified and improved as operations continue. Whatever the consumption rate, delivery of bulk fuel will be difficult through the streets of a city. Using portable or auxiliary power sources, vice running main engines on fighting vehicles and command posts, can reduce fuel consumption. Maximum use of local gas stations and fuel storage sites should be used. Increased issue of 500-gallon bladders, pumps, and hoses, perhaps installed below ground in

basements and parking garages, would reduce tanker travel on dangerous streets. The use of armoured personnel carriers (APCs) mounted with such bladders under armour, or rotating fleets into secure refuelling areas, etc., would also be useful refuelling techniques.

- f. **Class IV Construction Materials.** Barrier materials are essential in defensive operations and in reinforcing base camps against attack, theft, or sabotage. They also figure in consolidation of an objective after an attack, and a rapid push of Class IV supplies should be included in the CSS plan to support offensive operations. UO may demand large quantities of typical defensive stores, such as concertina and lumber (and the power tools to cut it) to reinforce bunkers and bar access to windows and doorways inside structures. It may also include specialized collapsible fabric cribs that can be filled with sand, rock, or dirt to create bulletproof barriers, to block roads, to reinforce defensive positions, and to protect headquarters and CSS activities.
- g. **Class V Ammunition.** Ammunition consumption may increase by as much as a factor of four. The commodities likely to increase in demand are small arms, precision artillery ammunition, grenades, and engineer demolition/explosives. Some rounds, such as specialized ammunition (e.g., to defeat rebar-reinforced concrete) serve greater utility and will be in greater demand. Greater use of individual and area denial non-lethal munitions (e.g., obscurants, stun grenades, kinetic stun projectiles, etc.) can be forecasted. Ammunition consumption will increase throughout the area, including CSS units. Echelon vehicles may have to be allocated for the defence of ammunition points, as well as the movement of ammunition if rubble or glass prevents wheeled vehicle traffic. Urban combat operations will require a constant flow of ammunition.
- h. **Class VI Amenities.** Usually not practiced in peacetime, the delivery of personnel items, such as personnel hygiene products, should be planned for, either as issue items or on a cash basis.
- i. **Class VII Major End Items.** This class will be discussed in the equipment management section further in the chapter.
- j. **Class VIII Medical.** This class will be discussed in the medical section further in the chapter.
- k. **Class IX Repair Parts.** This class will be discussed in the equipment management section further in the chapter.
- l. **Class X Humanitarian Supplies.** This class will need consideration by staff to suit the needs of the mission.

## TRANSPORTATION:

16. **Road Movement.** The urban environment presents challenges to road transportation. The internal road networks may be too narrow, too crowded, or too rubble to have sufficient and reliable throughput capacity. They are vulnerable to attack and blockage. Exterior routes may need to be created to reduce the pressure, and interior routes will need dedicated resources to keep them in operation. This includes surveillance, clearance, repair, and maintenance by engineers. Convoys need to mix combat arms, CSS, military police (MP), aviation and engineer capabilities.

17. Soft-skinned transport used by CSS forces are vulnerable to attack, particularly as most are not equipped with communications or weapon stations. To counter this, commanders must use all available assets and techniques to reduce risk—vary routes, mix with civilian traffic, use over watch and fire support, sweep and clear routes, use armoured vehicles in the forward areas, and use helicopters to move supplies using parks and rooftops as pads, etc. The CSS soft-skin fleet must be modified to provide communications and navigational aides, as well as weapon stations. Both the US and Russian armies have used “gun-ships,” or modified trucks to serve as escorts. These are equipped with armoured against machine gun (MG) fire, screened against grenades, with weapon stations facing forward, aft, and sideways. Some vehicles in each convoy should have bumpers capable of clearing small roadblocks, self-recovery winches, and towing equipment to pull damaged vehicles out of harm’s way.

18. CSS vehicle operators and crews need emphasis in training on weapons, reporting, targeting, threat recognition, ambush avoidance, and urban navigation. Other armies have found CSS soldiers to be passive in combat, largely due to the lack of live fire training and the fact they are rarely the main training audience. Combat requires the opposite—aggressive defence and rapid response to ambushes. Recent experience in Iraq suggests that this is even more important against a “fire and run away” enemy. CSS soldiers must engage with a view to killing the enemy before they can escape, only to attack again at a later date.

19. CSS movement at night may be more difficult in the city, as navigation will be more difficult, and the lights of the city will disrupt night vision equipment. Better night vision equipment, night specific navigation markers, and other wide area illumination in the non-visible spectrum, should be developed to facilitate night movement, as it could be advantageous to move when the congestion of the local population.

20. **Urban Transportation Systems.** Forces can make use of urban transportation systems—such as ports, railroads, and rivers—to move forces and supplies. However, they are complex systems, and can fail due to a number of reasons. Urban transportation systems require many civilian specialists to operate, who may be ill-disposed towards military operations. Civilian authorities may refuse the use of an urban area’s transportation system, and negotiating for access to that system under these circumstances becomes a command priority. Urban transportation systems are composed of smaller subsystems, with each subsystem vulnerable to attack, which in turn shuts down the entire system. They are likely targets because of their military importance, and also because they are so important to the life of the urban citizen. If the enemy can make the system unreliable and unsafe, he can destabilize the population and perhaps turn the discontent to his purposes. These transportation systems should not be used as the sole

means of military transport, but can provide a very significant augmentation to military movement capabilities.

21. **Movement Control.** Movement and traffic control, particularly in urban areas, relies heavily upon support from MP, and if available, host nation support (HNS). Without this support, urban LOC may become congested, hinder movement and manoeuvre, and degrade force effectiveness. Urban commanders may need to establish multiple roadblocks and traffic control posts, restrict selected roads to military traffic, and reroute movement to unaffected road networks when civil support and refugee control operations compete for available routes. MP operations are critical in this regard and will require continuous, close coordination with urban civilian police.

22. **Aerial Delivery.** Aerial delivery is the movement by fixed-wing or rotary-wing aircraft, and delivery by the use of parachute or sling load of soldiers, supplies, and equipment. It adds flexibility and provides the capability of supplying the force even when urban ground LOC are disrupted. In all UO, delivery aircraft are highly vulnerable to small arms, rockets, and air defence (AD) systems, and ground forces may not be able to secure the drop zone and retrieve the cargo. Equipment and supplies transported by helicopter sling-load, or dropped from the aircraft<sup>1</sup> lessen this risk, but the AD threat and proximity of threat forces may preclude their routine use.

23. **Equipment Management.** Though urban combat will not be as platform-centric as combat in open terrain, the operational effectiveness of weapons, supporting weapons systems, communications equipment, and other key technical equipment, will be vital to success. This environment is hard on vehicles and technical items, from battle losses of light armoured vehicle (LAV) infantry carriers and support vehicles engaged in the close fight, and non-battle losses due to usage in rubble and broken terrain. The difficulties in transiting the ground LOC suggest that forward repair or replacement of critical major and minor equipment should be practiced where possible:

- a. **Replacement.** UO place significant friction on repair and recovery operations, therefore weapon system replacement should be done as a means of ensuring seamless support. The system and procedures for rapid replacement of Class II Technical and Class VII Major End Items (vehicle) should be planned for, such that the equipment is pre-positioned, completely prepared for service (i.e., kitted, fuelled, armed). Such equipment replacement needs to tie into the crewed-vehicle replacement and personnel replacement plans. Replacement B-Class components should be stocked as well, to exchange with the damaged equipment which can then be backloaded for repair.
- b. **Repair.** Repair in the forward area will be a high-risk venture, requiring recovery to a nearby sheltered area. The vehicle crew should provide local security. Repair sections in all echelons should be organized to perform multiple levels of repair, reducing the backloading burden as much as is feasible. The availability

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<sup>1</sup> Referred to as “speed balls” in US doctrine.

of local infrastructure, garages, underground parking lots, and threat levels will also determine how much local repair can be done. Operators and maintenance personnel must execute battle damage repair (BDR) to keep vehicles in operational condition until proper maintenance or replacement can be done. Effective BDR requires continuous learning and sharing of techniques throughout the technical chain of command. Commanders must authorize battlefield robbing and cannibalization as useful functions in UO where it may be difficult to bring spare parts forward.

- c. **Recovery.** Immediate recovery is required, because the enemy will take, or the local population will strip, damaged vehicles that are left unsecured. All convoys will require buddy-recovery capability including cables, winches, and A frames. The scarcity and vulnerability of the heavy lift wheeled vehicle (HLVW) and armoured vehicle general purpose (AVGP) recovery vehicles, and the planned removal of the armoured recovery vehicle (ARV) from service, dictate that central control and protection of recovery resources is required. Equipment collection points (ECP) will be required near forward units and along supply routes to avoid clogging limited LOC and mounted avenues with vehicle evacuation operations. However ECPs will be difficult to establish and secure, and therefore should be temporal—rapidly secured and cleared. Direct recovery to the appropriate maintenance facility should be done as much as possible.
- d. **Class IX Repair Parts.** The re-rolling of maintenance organizations to perform various levels of repair requires adjustments to repair part holdings. Data must be gathered to understand the reliability and usage rates, and to adjust scales and stocks accordingly.
- e. **Modification.** Many modifications can be expected when engaging in UO as the army's soft skin and LAV fleets are currently optimized for mobility not protection. To reduce ad-hoc modifications, Director Land Requirements (DLR) and Director General Land Engineering and Program Management (DGLPEM) should produce the engineered solution, a modification instruction describing specifications, materials, skills and procedures, may be needed to cover:
  - (1) Up-armouring to both wheeled and tracked vehicles operating in an urban environment to increase the protection against small arms, mines, rocket-propelled grenades (RPGs), and lightweight anti-armour weapons.
  - (2) Up-gunning wheeled vehicles with protected and unprotected weapon stations.
  - (3) Some escort vehicles should be designed with MG / grenade stations facing outboard (i.e., front, rear, sides), with strengthened bumpers (i.e., for road block busting), etc.
  - (4) These modified vehicles are heavier, putting wear on the drive-train, brakes, springs, suspension, and tires. Preventive and corrective

maintenance instructions, and parts scaling, may require adjustment. Depending upon the complexity and numbers of vehicles, the modification can be done centrally, combining resources of various lines of maintenance, or unit echelons can perform the modifications themselves.

- f. **Potential Urban Maintenance Resources.** Although urban areas can complicate maintenance, they may contribute to this CSS function. Analyzing the urban area in the commander's AO may reveal potential sources of parts, tools, equipment, and facilities necessary to fix equipment and fabricate critical parts. Urban areas may serve as key sources for parts and facilities, and contract personnel, to repair all types of equipment.
- g. **Urban Equipment / Capability Requirements.** Consideration of the following requirements will help optimize forces for CSS UO:
- (1) **Non-vehicular:**
    - (a) water and fuel bladder systems, including pumps and hoses for use at unit and service battalion level;
    - (b) small reverse osmosis water purification unit (ROWPU) for unit use;
    - (c) physical security, surveillance and intrusion alarm systems;
    - (d) ultra-violet / infra-red (UV/IR) (i.e., non-visible to the naked eye) area illumination systems;
    - (e) explosive and weapon signature sniffers; and
    - (f) stairwell climbing or wall scaling equipment.
  - (2) **Vehicular:**
    - (a) tight-turning or neutral steer capability;
    - (b) on-board water generation;
    - (c) add-on armour protection packages against 7.62 mm MG and RPGs;
    - (d) "Roo bars" or similar strong bumpers;
    - (e) winch and tow bar capability;
    - (f) protected MG or automatic grenade launcher (AGL) weapon stations;
    - (g) non-lethal weapon stations, which protect the operator,

- (h) smoke deployment devices;
- (i) auxiliary power generation capability sufficient to power critical combat systems without a main engine;
- (j) vehicle and compartment security protection against pilferage, and anti-climbing devices;
- (k) point and are lighting systems; and
- (l) under armour multi-cargo systems (e.g., to carry water and fuel bladders, a pallet of ammunition, four litters, etc.).

## HEALTH SERVICE SUPPORT

24. Health service support (HSS) operations minimize the effects of wounds, injuries, disease, urban environmental hazards, and psychological stresses on unit effectiveness, readiness, and morale. This environment has historically caused three to six times greater casualty rates, but no modern casualty rate doctrine has been established. Replacement planning must assume most wounded will not be returned to duty once they enter the medical system. Resource limitations have modified medical doctrine from return to service to return to health, meaning evacuation out of theatre, or to Canadian hospitals vice, holding and treating patients in the combat zone.

25. Many fatalities are expected as a percentage of the total wounded if enemy snipers are present. Of the wounded, injuries will include the following:

- a. Wounds of the head, neck, and chest.
- b. Small fragment and secondary missiles wounds.
- c. Respiratory problems.
- d. Minor punctures and lacerations.
- e. Fractures due to falls.
- f. Injuries due to enemy blast munitions, to include burns, broken bones, contusions from flying debris and blindness. Further, the crushing injuries from blast overpressure can create air embolisms within blood vessels, concussions, multiple internal haemorrhages in the liver and spleen, collapsed lungs, ruptured eardrums, and displacement of the eyes from their sockets.
- g. Infectious disease.
- h. Non-lethal weapon effects.
- i. Effects caused by toxic industrial materials (TIM).



26. **Treatment.** The non-contiguous nature of UO, transportation restrictions, and communications difficulties limits the effectiveness of the medical system, which seeks to evacuate casualties to centralized treatment systems. Therefore, forward care must be provided, more so than during other types of operations. This can be achieved:
- a. By providing more medics in combat units, placing one medic per platoon/troop instead of the current one medic per company/battery. These medics should be prepared to hold patients longer than they normally would due to tenuous evacuation LOC.
  - b. By training all military occupations in resuscitation and combat first aid.
  - c. By increasing the numbers of combat lifesavers from one to two persons per section.
  - d. By positioning surgical capability forward. The composition of the Advanced Surgical Centre (ASC) should change to provide more Forward Surgical Team (FST) capability to a maximum of one team per battle group engaged in close combat, noting that the current ORBAT of the ASC has only two FST, allowing only one to go forward.
  - e. By developing self-care materials and equipment. Some research is ongoing into capabilities that allow a soldier to self-recover from a field of fire using a personnel grapple/winch device. Other capabilities could include self-tourniquet devices, haemostatic (i.e., blood loss minimization) bandages, blood coagulating agents, etc.
  - f. By the provision of additional medical supplies to all soldiers and on all vehicles, such as additional field dressings, morphine, and intravenous fluids.
  - g. By more readily locating casualties. Locating casualties in the urban landscape can be difficult. Forces may need unique capabilities, equipment<sup>2</sup>, and skills, typically seen in civilian urban search-and-rescue teams, to clear debris and search for casualties. Specially trained dogs may also play a vital role in locating victims, as could personnel transponders. Units will need to mark locations to aid the evacuation effort, and a systematic search of the area after operations may be required to recover casualties.
  - h. By improving the skill of all HSS personnel to recognize and treat injuries due to incendiary or fuel-air explosives (i.e., explosions from thermobaric weapons). Injuries resulting from these weapons include massive burns, broken or crushed bones, concussions, missile injuries, and internal injuries. The internal injuries, to the lungs, etc., may not be readily apparent and may worsen due to later casualty

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<sup>2</sup> To facilitate the extrication of casualties, aid and litter teams should have special equipment such as sledgehammers, axes, crowbars, ropes, special harnesses, pulleys, and ladders.

activity, so blast casualties should never be considered “walking wounded.” Later medical treatment and handling, particularly the use of intravenous (IV) and transporting the patient by aircraft at altitude, can exacerbate these internal injuries. HSS personnel must be prepared to perform ventilator support forward. The immediate treatment of all casualties should include an assessment of whether the injuries appear to be from blast, so that as the casualty moves back in the medical chain, the possibility of internal injury can be investigated. This may be discernable from the state of the scene where the casualty was found. Other treatment skills, not usually practiced by HSS personnel, include the treatment of injuries caused by non-lethal effects and TIM.

- i. **Evacuation.** Transportation restrictions may preclude the rapid evacuation of urban casualties by ground or air ambulances. Consequently, units may require more litter bearers to move the injured to a point where they can be further evacuated. However, unless augmented or relieved of this responsibility by another unit, these litter bearers will come from the casualties’ own unit, thereby diminishing the unit’s strength necessary to accomplish its primary mission. Depending upon the expected level of casualties, commanders may augment units with additional personnel to perform evacuation, or may assign this mission to manoeuvre units. Evacuation personnel will require specific training in urban evacuation techniques (i.e., moving casualties from subsurface and supersurface levels to and along the surface level).
- j. **Disease and Non-battle Injuries.** Disease and non-battle injuries (DNBI) are a major medical threat during all operations, and UO will be no exception. Urban pollution hazards and potential exposure to TIM may increase the risk to soldiers’ health. Some urban areas, particularly those in developing countries, are already large sources of communicable diseases, such as tuberculosis, cholera, typhus, hepatitis, malaria, dengue, and acquired immune deficiency syndrome (AIDS). Physical damage, or deterioration of urban infrastructure—such as electricity, water, and sewage services and industries that use or produce hazardous materials—will only exacerbate these problems, creating even greater health risks.

27. Commanders must establish a medical epidemiological surveillance system early, and take action through preventive medicine measures. Such action continually assesses the health of the force and promptly identifies unusual or local occurrences that may signal preventive medicine problems, or the influence of biological or chemical agents. These potential hazards, particularly the release of TIM, will influence the type of medical supplies needed by medical personnel and will also necessitate critical planning and preparation for potential mass casualties. Preventive medicine personnel may recommend control and preventive measures extending into the civilian population, conducting health screening, health education, and immunization programs. Care must be taken to prevent the passage of disease, and foreign flora and fauna, to and from Canada, or other theatres during equipment and personnel rotations.

28. Training and equipment are required for food service, medical, and personnel engaged in sanitation activities. Training for all soldiers should be given regarding the handling of people or animals, pest control, overall preventive medicine measures, and other considerations.

29. **Combat Stress.** Combat stress occurs in every operation and type of environment, and UO will magnify this stress. Physical exhaustion, physical isolation, communications isolation, proximity to the enemy, and asymmetric combat raises stress levels. Standing operating procedures (SOP) are required at brigade and unit level for treatment (e.g., encouragement, food and sleep) within formation lines, as this is where treatment is best achieved. Only those casualties not responding to treatment within unit lines after a prescribed period are transferred into the medical system. To prepare for and understand combat stress, the following training is required:

- a. Training unit chaplains, officers, and non-commissioned officers in the prevention, early identification and management of stress-related casualties.
- b. Realistic and tough training that seeks to develop strong unit cohesion, and provides battlefield inoculation so that soldiers get to know the sights and sounds of war in a safe environment.
- c. Training that includes simulation of stress casualties as a normal consequence of war, and the expectation that everybody can recover and continue to do their duty.
- d. **Local resources.** As part of the overall planning process, medical planners analyze and continuously assess the urban area for medical resources, the quality, and availability of medical facilities and resources to include civilian medical personnel. This assessment prevents duplicated services and permits a more effective and efficient organization of medical resources. An analysis may indicate available hospitals, clinics, medical treatment facilities, and medical supplies and equipment, including production facilities, in the urban area. It may also identify NGOs capable of providing medical services and supplies.
- e. **Care of Civilians.** The general task of the military medical support system towards local civilians is to provide emergency care to those who seek care, and affect their transition to the civilian or NGO facilities as soon as possible. In UO, given the size and density of the population, and proximity to military forces, the issue of civilian care should be considered early in the OPP. While a commander may consider extending the range of treatment provided by military medical services directly to civilians, he should first try to improve the ability of the civilian authorities. It is often more effective to provide power and water to a local hospital, for example, than to provide care directly.

30. **Personnel Support Replacements.** In UO, there is a greater potential for casualties, and the replacement system will be of significant importance to maintaining a force's combat power. The replacement system will likely be focussed on individual and formed group replacements, rather than crewed-vehicle replacement. These replacements must be equipped and trained for

urban fighting before going forward into close combat situations. This can be accomplished by the setting up training centres employing experienced soldiers left out of battle for this purpose.

31. **Personnel and Field Services.** The provision of services, such as amenities, postal, recreation, leave, laundry and bath, etc., contribute to the morale and well-being of soldiers. The level of threat determines how far forward these services can extend and how often they can be enjoyed. High intensity UO may require a centralization of these services in a more secure area, where a soldier or a section of soldiers can be sent to relax. This centre should provide a complete range of services, so the soldier can sleep, eat, drink, get clean, exchange or replace uniforms and kit, get debriefed to gain “lessons-learned,” and also learn themselves. When returning to duty, they should be completely physically, mentally and materially ready for battle.

## LEGAL SUPPORT

32. Operational lawyers can provide legal assistance at every level of command on a broad range of operational issues: military justice, administrative law, international law, international human rights law, use of force, drafting and interpretation of the rules of engagement (ROE), handling of POWs/detainees, treatment of the sick and wounded, treatment of civilians and refugees, material acquisition, environmental law, claims by or against the Crown, and legal aid. This support assists in the command and control (C2) and sustainment of UO. Modern commanders must have a comprehensive understanding of the legal environment in which they are required to operate. Whether in peacetime or in a combat environment, the inherent nature of UO will generate several fundamental legal considerations. These considerations will be crucial for establishing ROE, and critical in the targeting process when determining valid military objectives. They further affect how units acquire goods and services from urban areas, and how they provide support to other agencies and organizations operating in an area. The complex nature of UO requires commanders and their staff to review and closely consider applicable legal requirements when developing and executing courses of action.

33. **International Law.** International law is the body of legal rules and norms that regulates activities carried on outside the legal boundaries of a nation state. It will affect the way UO are conducted, such as the right of entry/exit into the receiving State by the Canadian Forces (CF) or allied forces, customs and taxes, vehicle registration and insurance, communications support, use of force, targeting, choice of weapons, use of local urban infrastructure, or over flight and landing rights on the territory of any sovereign State. The sources of international law consist of international conventions and customary law. International law is the primary legal basis for establishing the mandate for international operations from which the authority to use force is derived.

34. The Law of Armed Conflict (LOAC) is the body of international law, which sets out the rules of behaviour in an armed conflict to limit unnecessary human suffering, ensure respect for human dignity, and facilitate the restoration of peace. The sources of LOAC mainly consist of *The Hague Conventions* and the *Geneva Conventions and Additional Protocols*. The LOAC will necessarily apply when Canada is a party to an armed conflict and in cases of total or partial occupation. However, it is CF policy to apply, as a minimum, the spirit and principles of the LOAC in all Canadian military operations other than domestic operations. Commanders have

the positive obligation to train their troops on the principles of the LOAC in order to ensure that they will carry out their duties accordingly. The principles of LOAC are summarized in the *CF Code of Conduct*.

35. **Receiving State Law.** Circumstances permitting, a Status-of-Forces agreement (SOFA), a Memorandum of Understanding (MOU), or any other valid international agreement (e.g., exchange of diplomatic notes, protocol, exchange of letters), should always be negotiated with the government of the receiving State before the deployment of Canadian troops. For instance, this agreement will formalize the presence of armed forces on the territory of the receiving State, confirm the status of forces, address logistic support, secure privileges and immunities for the troops, and may affect the extent of the use of force. Unless expressly specified otherwise in an international agreement, CF members operating in a foreign urban area are subject to the laws and regulations of the receiving State. They have no more rights than tourists and should not expect better treatment from the receiving State. One of the most important deployment issues is to ascertain Canadian criminal jurisdiction over its deployed members. If the receiving State law significantly hinders the operation, commanders must inform their chain of command and request a diplomatic solution.

36. **Legal Aspects of the Use of Force.** The use of force during UO is limited. In addition to the authorized Canadian ROE, the LOAC will directly influence the use of force permissible during the conduct of UO. The reality of modern warfare is such that commanders at every level cannot afford to either ignore or forget about the legal aspects of military operations. Accordingly, it is crucial that commanders take the LOAC and applicable domestic laws directly into account while planning, preparing, and executing the stages of UO.

37. One of the most challenging aspects of UO is certainly the proximity of civilians and civilian property in the area of operation. Pursuant to the LOAC, military operations shall be directed solely against legitimate targets. Legitimate targets include combatant, unlawful combatants, and military objectives. Accordingly, CF members must distinguish combatants from civilians and protected personnel, as well as military objectives from protected property, before they use force in accordance with their ROE. This means that they must do everything practicable to verify that the objective is a legitimate target, and choose the means and methods of attack that will minimize collateral civilian damage. The use of force must be proportionate to the concrete military advantage anticipated from the attack. Unless not permitted by the circumstances, an effective advance warning shall be given of attacks, which may affect the civilian population. Pillage, as well as the attack, destruction or removal of objects indispensable to the survival of the civilian population, is strictly prohibited. Furthermore, acts or threats of violence to spread terror amongst the civilian population are prohibited.

38. Figure 10-1 lists five fundamental principles related to the LOAC: military necessity, distinction, humanity, proportionality, and collateral damage.

**Military Necessity:** This principle justifies the use of force not forbidden by international or domestic law to the extent necessary for the realization of the purpose of armed conflict.

**Distinction:** This principle imposes the obligation on commanders to distinguish between legitimate military targets and civilian objects and civilian population (who may not be attacked) when conducting operations.

**Humanity:** This principle forbids the infliction of suffering, injury, or destruction not actually necessary for the accomplishment of legitimate military purposes. Unnecessary suffering is accordingly prohibited.

**Proportionality:** This principle states that collateral civilian damage existing from military operations must not be excessive in relation to the direct and concrete military advantage anticipated from such operations.

**Collateral Damage:** This is the unintentional loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, arising from the authorized and legitimate use of military force.

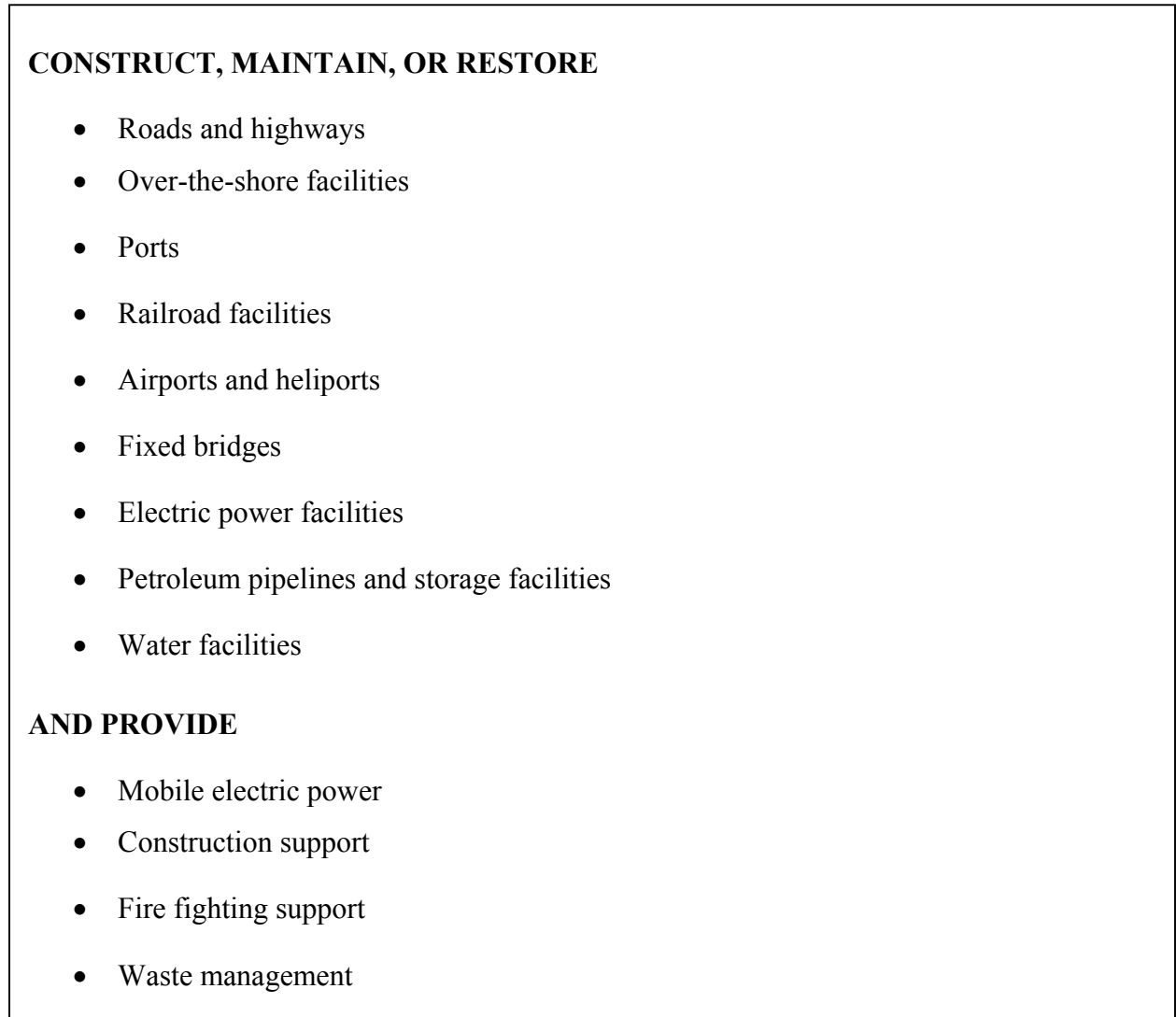
Figure 10-1: Fundamental principals of the LOAC

## ENGINEER SUPPORT

39. Engineer support will be essential to the CSS effort during UO. This support helps assess, construct, maintain, and restore essential LOC and urban facilities to sustain friendly forces, the urban population, or both. Using civilian resources and investing engineer resources requires careful consideration by commanders and staff planners. Since all elements of the urban infrastructure interconnect, engineering support touches each category to some degree. Figure 10-2 illustrates how urban-specific engineering tasks align primarily with the transportation and distribution, energy, and administration and human services components of the urban infrastructure. These engineering tasks are significant and readily apply to UO. The last two, providing fire fighting support and waste management, have not been previously addressed and require more specified consideration.

40. During urban offensive and defensive operations, engineer units accomplish tasks to sustain or improve mobility, survivability, and sustainability of friendly forces. These units maximize the existing urban facilities, HNS, civilian contractors, and joint engineer assets. Commanders consider how the use of urban facilities to support military forces may negatively affect the population. On the other hand, construction and repair may benefit both military units and the urban inhabitants. Restoring the urban transportation network not only improves military LOC, but may also allow needed commerce to resume. Repairing urban airfields or ports increases the throughput capability for military supplies, facilitates medical evacuation operations to the support base, accelerates needed relief efforts, and allows international commerce to proceed. Commanders may invest resources to conduct engineering tasks to first restore facilities for civilian use. Such actions may stem future drains on operational resources, or facilitate the transition of control back to the civilian authorities. For example, repairing

police stations, detention facilities, and marksmanship ranges may help urban governments re-establish law and order after completing urban offensive or defensive operations. During some stability operations, the focus of military engineering clearly supports and assists the urban population, rather than sustains friendly forces.



**Figure 10-2: General Engineer Support**

41. **Fire Fighting Support.** Fire protection and prevention, as well as fire fighting, take on added significance during UO, particularly during offensive and defensive operations. Most ordnance is affected by heat and flame. This, coupled with an abundance of combustible material (e.g., buildings, furniture, gasoline, oil, and propane), poses a serious risk to soldiers, civilians, and the urban operation. Large shantytowns can exacerbate this problem. In highly combustible areas, commanders may even need to limit, or preclude the use of, small-arms tracer ammunition. When analyzing the administration and human services component of the infrastructure, commanders must determine the adequacy of the existing civilian fire fighting support. A deteriorated or non-existent infrastructure that cannot support the urban area will

likely fail to handle the increased risk due to military operations. Commanders may need to provide fire-fighting teams to support their own forces and civilians.

42. A military force task-organized with multiple fire fighting teams (even with maximum use of available civilian fire-fighting assets) will only be able to fight some fires in the AO. Water distribution systems damaged during operations, chemicals, other TIM, and hostile activities will further complicate and limit fire-fighting capabilities. Commanders must develop priorities for equipment, facility, and infrastructure protection. All soldiers need training in fire prevention and initial or immediate response fire fighting. Such training includes planning covered and concealed movement, withdrawal, and evacuation routes. Soldiers are trained to identify and remove ignition and fuel sources, and can be provided additional fire fighting material such as extinguishers, sand, and blankets.

43. **Waste Management.** Management of all forms of waste, particularly human, putrescence (e.g., rotting food), and medical, may become a critical planning consideration for forces. This applies particularly if the urban waste management infrastructure was previously inadequate or damaged during UO, the force is operating in the urban area for an extended period, or a significant number of the urban populace remains. Failure to adequately consider this aspect, possibly coupled with an inadequate water supply, may create unacceptable sanitary and hygienic conditions and subsequently increase DNBIs, as well as civilian casualties.

## CIVIL-MILITARY OPERATIONS

44. Commanders use civil-military operations (CMO) to establish, maintain, influence, or exploit relations to achieve operational objectives. These relations are amongst military forces, civilian authorities and organizations (governmental and non-governmental), and the civilian population. Because of the urban society's link to other aspects of the urban environment, CMO will exist in all UO. Commanders may need to assume temporary responsibility for functions and capacities of the urban government. Although unstated, CIMIC, particularly during urban stability operations and support operations, will be an essential, implied task of the mission. Like public affairs (PA), effective CMO is based upon establishing and maintaining credibility and trust with the urban populace and throughout the civilian organizations operating in the urban environment.

45. **CIMIC Organizations.** CIMIC organizations will be critical during UO. While any military force can conduct CMO, CIMIC organizations are specifically organized, trained, and equipped to conduct activities in support of CMO. They have experience in planning and conducting CMO, a regional focus, which includes enhanced cultural awareness and language training, and civilian technical expertise. Such experience ensures relevant support to commanders conducting UO. Commanders use these skills, often unfamiliar to most military personnel, to perform the following:

- a. Develop their situational understanding of the urban environment, particularly the infrastructure and society. Plan CMO to support UO.
- b. Achieve many of the fundamentals of UO shown in Chapter 5.



46. In addition to providing essential information for assessing the urban environment, CIMIC personnel and activities help shape the battlefield, dominate civil problems, and assist in the transition to a legitimate civil authority. Specifically, CIMIC organizations and CMO help urban commanders:
- a. Minimize civilian interference with UO and the impact of UO on the populace and infrastructure. CIMIC personnel can help establish and run a CIMIC operations centre (CMOC) to coordinate UO with civilian agencies (governmental and non-governmental), other services, and multinational partners.
  - b. Provide advice and assistance to restore or rehabilitate portions of the infrastructure, particularly life-sustaining portions of the administration and human services components.
  - c. When requested, or when military necessity or legitimate directives require, establish all or portions of the civil administration.
  - d. Determine available supplies and services in the urban area, and if necessary, assist in negotiating their acquisition. CIMIC organizations also help commanders assess the capability, dependability, and willingness of urban sources to provide and sustain identified needs, as well as to calculate the impact of using them on other aspects of the urban environment.
  - e. In conjunction with the Judge Advocate, fulfill the force's responsibilities towards the urban population under international, host nation, and Canadian law.
  - f. Plan and conduct the transition of control for the urban area or operation to another military or civilian governmental or non-governmental organization, or agency.

47. Similar to PA operations, CMO are related to information operations (see Chapter 4). The nature of CMO and the need for CIMIC personnel to develop and maintain close relationships with the urban population put CIMIC personnel in a favourable position to collect information. CIMIC personnel work daily with civilians, their equipment, and their records that may be prime sources of information. If used correctly, CIMIC personnel can complement the intelligence collection process, especially HUMINT, necessary to understand and detect significant changes in the dynamic societal components of the urban environment. However, CIMIC personnel are not, and cannot appear as, intelligence agents; otherwise, it will undermine their ability to interact with the civilian community. Examples of information available to CIMIC organizations include government documents, libraries, and archives; files of newspapers and periodicals; industrial and commercial records; and technical equipment, blueprints, and plans.

48. **Assessment of Civil Considerations.** As part of the initial planning process, CIMIC organizations conduct an area assessment, which can provide commanders with essential information about the environment. Commanders integrate this initial assessment into the overall urban IPB process. To help analyze civil considerations, commanders and staffs can consider many characteristics, such as physical terrain, structures, capabilities, organizations,

people, and events. These characteristics easily align with terrain, society, and infrastructure; and, like them, they are overlapped and interdependent (see Figure 10-3).

49. Overall, CIMIC personnel help commanders understand the complexities of the infrastructure and societal components of the urban area. These components, together with the terrain or physical components of the urban area, interconnect. CIMIC organizations help identify and understand the relationships and interactions between these urban components. From this understanding, commanders can anticipate how specific military actions affect the urban environment and the subsequent reactions. CIMIC personnel consider the short-term effects and reactions, as well as the long-term consequences. Understanding these long-term consequences helps ensure a smooth transition of the urban area back to civilian control.

Ten issues to consider in sustaining and supporting urban operations:

1. Innovation, flexibility, and leadership are required in all levels of CSS leadership if the support mission is to succeed. Continued success will rely on continuous learning and improvement.
2. Forces will require a high degree of self-sufficiency. Change stock plans and replenishment rates to recognize increased ammunition consumption, and the need for special stores and equipment.
3. Re-equip CSS units to provide equal levels of protection, armament, communication, and navigation capabilities as the combat units they support. This includes the need for APCs for logistic, maintenance and medical operations in high threat areas.
4. Protect CSS resources. Train and arm CSS soldiers to use lethal and non-lethal force, provide the necessary engineer, MP and combat arms support.
5. Balance centralization and decentralization to make best use of resources while recognizing that the urban environment will isolate soldiers for extended periods.
6. Plan for surface, vertical, and subterranean delivery, including the use of dismounted carrying parties. Push supplies in configured loads as close as possible to the location where those supplies are needed.
7. Position support units as far forward as the tactical situation permits, near drop or landing zones.
8. Find and use HNS and civil resources but do not count on them.
9. Blur the distinction between the traditional functions and lines of support—one stop shopping.
10. Plan for high personnel replacement rates due to battle and non-battle injury, stress and exhaustion. Push trained and equipped replacements forward.

## ANNEX A TO CHAPTER 10 EXECUTION OF BDE CSS OPERATIONS

1. Transitioning to Urban Operations. CSS planners must understand the differences between a force organized for urban operations and one used in open terrain, and how to transition the support plan from one to the other. An illustrative campaign:
  - a. **Open terrain.** A mechanized brigade is advancing over open terrain and conducts rapid, manoeuvre over long distances with significant gaps between units. This requires echeloned CSS forces following behind in soft skinned CSS variant vehicles. These forces have limited C2, communication, navigational, and defensive capabilities compared to the forces they support. They gain protection through mobility, passive measures and local protection. They have wide fields of vision and can access supporting fire. The main difficulty is keeping up with the supported force.
  - b. **At the gates.** As the bde approaches and isolates the city it must understand and shape while preparing to engage in the urban operation. The task org will change to suit the operation, but generally urban close combat demands smaller combined arms teams, and a closer tie to special operating forces, and thus the administrative relationships will change. The CSS elements will establish a Brigade Support Area (BSA) and build up and distribute the special stores, munitions, etc while supporting the isolating units along exterior lines. The Service Battalion and unit echelons will pare down, preparing essential support for deployment into the city, leaving the remainder behind. A significant activity will be the preparation of ammunition stocks, changing natures onboard vehicles, dumping artillery rounds, and configuring loads.
  - c. **Engage.** The bde will engage the enemy though nodal or direct operations. The CSS elements will need to establish a Forward Support Area in the city and establish interior LOCs as soon as possible, while continuing to use the exterior lines as long as necessary. The distance between CSS echelons will need to be compressed due to the difficulty of transiting the city. Combat supplies will be pushed forward in configured loads. Minor and major equipment will be replaced forward, rather than be repaired.
  - d. **Consolidate and transition.** During this phase the bde will move into the city and deploy to maintain stability. CSS will be established throughout, and rearwards with the NSE. Scarce resources will be centrally controlled, but decentralized enough to meet security and self-sufficiency goals. The effort may shift to humanitarian ops, and reconstruction projects, as well as establishing permanent camps for use in the years to come.
2. This campaign illustrates to challenges moving from open terrain to complex terrain. The speed of transition depends entirely on the preparation done by the force prior to the campaign. An army optimized for UO can make the change seamlessly.

3. There must be very close relationship established between the continental Canadian, National Support Element, Bde HQ, Bde Svc Bn, and the unit echelon administrative staffs to maximize the capacity of the line of communication forward and rearward. Much of the sustainment of ground forces is split-based, using rearward to secure and highly capable support echelons and minimising the forward support component.

4. This kind of sustainment system is predicated on the presence of good digital communications and a sustainment management system which delivers situational awareness and total and in transit visibility. Unfortunately such complex communication systems are vulnerable to interruption in an urban environment, particularly the VHF radios used by the army. This means that some redundancy and stockpiling will always be required in the urban area to guarantee availability.

5. Configured loads come in two basic styles:

- a. **Strategic (or commodity) configured loads.** These are designed around the mode of transportation used and the commodity being shipped. They are packaged for delivery to a supply unit. It emphasizes efficiency.
- b. **Tactical (or mission or unit) configured loads.** These take into account who the receiving unit is, their consumption rates, their mission, etc. It emphasises effectiveness. For example a sea container of supplies destined for a battalion overseas could be stocked by 3 Canadian Support Group to suit the exact needs that battalion, and packaged such almost no bulk-breaking is required upon receipt. It could have sub-load designed for each of the battalion's sub-units for example. Likewise vehicles leaving Montreal for employment overseas could have all modifications needed for urban operations done by 202 WD, and all communications and B class gear installed by 25 CFSD, all done before it enters the theatre.

6. Canadian sustainment systems should try and deliver a mix. While the tactically configured load sounds attractive, this can overly restrictive or inflexible to meet the changeable nature of urban operations. The time to relay requirements and the time to transit the sea line of communication may make the configured load obsolete. The lack of data on urban consumption rates makes forecasting requirements very difficult—it is vital that supply managers gather consumption data in-theatre with a view to designing better-configured loads.

7. An in-theatre sustainment point will always be necessary, ideally outside the area of urban operations. The BSA and the unit echelon location should see very little bulk breaking because of the security concerns, the time required and the lack of manpower in these echelons. The NSE's support area should be the primarily location for this work, necessitating the presence of a Bde CSS LO and perhaps bde supply and maintenance elements drawn from the Svc Bn and unit echelons. This is where the bulk breaking, ration sorting, ammunition de-link/re-linking (to reconfigure tracer spacing), ammunition de-packaging, and the final configuring into unit or even sub-unit loads will occur. Equipment should receive equal treatment, to try and deliver equipment forward already armed, fuelled, and even manned, if possible.

8. Such close management through sustainment chain requires the exchange of C4IS equipped liaison officers between the Bde and NSE. Within the bde the same may be required, likely co-locating them with the bde G4 cell, or at the Svc Bn's Logistic Operations Centre, depending on the level of C4IS available to the sustainment elements of the bde. This will enable the coordination required to successfully perform these tasks:

- a. Meeting the demand for urban specific stores via Unforecasted (or urgent?) Operational Requirements (UOR).
- b. The distribution of these stores and munitions in accordance with the commander's priorities.
- c. Movement control and regulation of CSS tactical road movement, and the coordination of security.
- d. The reorganization into smaller combined arms teams could complicate the administrative relationships that traditionally flowed all demands less combat supplies through the parent unit to its decentralized elements. In urban operations where fighting units can be non-contiguous, each echelon should be more flexible and try and meet all demands of their attachments, and consolidate their requirements.
- e. The high consumption rates of ammunition and equipment dictates that the basic loads and supply accounts of all units must be visible for possible issue to the higher priority users.
- f. The pushing of configured loads demands labour in the BSA, and close coordination between supported and supporting. This push will require rehearsal to get it right.

### **CSS IN THE BG**

9. The BG echelon will transform from one designed to support mechanized operations to one that supports dismounted infantry and attached combined arms elements. Designed to operate almost completely from vehicle platforms the echelon will have to be able to dismount some of its capabilities to occupy buildings, garages and gas stations. This suggests the use of remoted communications, the use of water and fuel bladders (with pumps and hoses) which can be installed in basements, or underground parking areas (with ventilation), and construction / defensive stores. The creation of hard points will be required, as fighting positions and support positions holding caches of equipment, ammunition, water and rations, and medical stores. These may demand construction resources, defensive stores, surveillance suites, lights, power sources, water and food containers, latrine, garbage and other amenities.

10. Defence of the echelon will take considerably more resources (soldiers, weapons, defensive stores) than a field deployment. This can be mitigated somewhat by using physical security measures and modern intrusion alarm and lighting systems, but the defence of any city block is challenging.



1. Dismounted HQ with remote comms
2. Defensive strong points
3. Platoon houses
4. Vehicles staggered in streets to allow movement
5. Barrier / checkpoints
6. Interior routes

**Figure 10A-1: Urban A2 Echelon**

11. The unit's basic load will change, as will the scale held within each part of the echelon (F, A, A2). This applies particularly to grenades, obscurants, non-lethal and other munitions, but includes equipment—crowd control equipment, personnel protective kit such as knee pads, etc, more night vision sets, more batteries, different crew-served and personnel weapons may be required. Though bulking up platoons and coy locations, and locating caches throughout the area adds to their self-sufficiency, care should be taken not to go too far. Bigger locations mean more defence, and risk of capture by the enemy. Procedures must be in place to deny them to the enemy. Non-essential or surplus equipment and echelon services should be brigaded in the BSA.

12. The unit echelon will likely be decentralized in support of non-contiguous positions, with dismounted travel only in areas exposed to direct enemy fire. Some infantry should be attached to the echelon to carry out replenishment tasks as these resupply missions may resemble fighting patrols more so than "Delivery point operations". The use of stretchers and ladders will aid load carriage forward as well as the rearward movement of casualties<sup>1</sup>. Any ammunition party must have a group dedicated to providing local protection. The line of communication forward and back must be clearly known in day and night, with hazards marked, and, whenever possible, be the route used by the assaulting forces. If this is not possible, a separate route should be reconnoitred and marked. Possible markings could be a green coloured symbol or chemlite, at the entry point of each cleared building. If adopted by the battle group, red and white mine tape can be used to mark the clear and safe route between buildings.

<sup>1</sup> Such dual purpose removes protection under the Geneva Convention even if the vehicle is adorned with the Red Cross. Canadian medical doctrine is such that any ambulance used for non-medical duties cannot be used again as and ambulance.

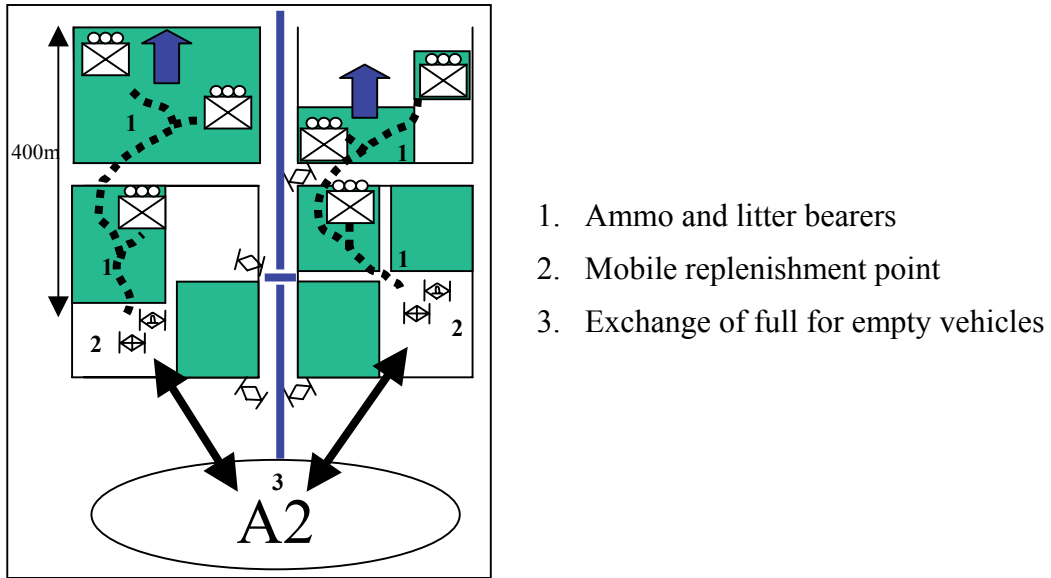


Figure 10A-2: Forward Replenishment

13. The vertical dimension of replenishment and evacuation must be prepared for. Aids could include climbing gear, block and tackle, winches, ladders, small cargo nets, etc. Roof top delivery is also possible if the threat to helicopters is low. Consideration must be given to using subterranean routes. Man portability<sup>2</sup> must be designed into loads going forward, including providing sufficient handholds, and limiting the bulk (mouse hole sized) and weight.

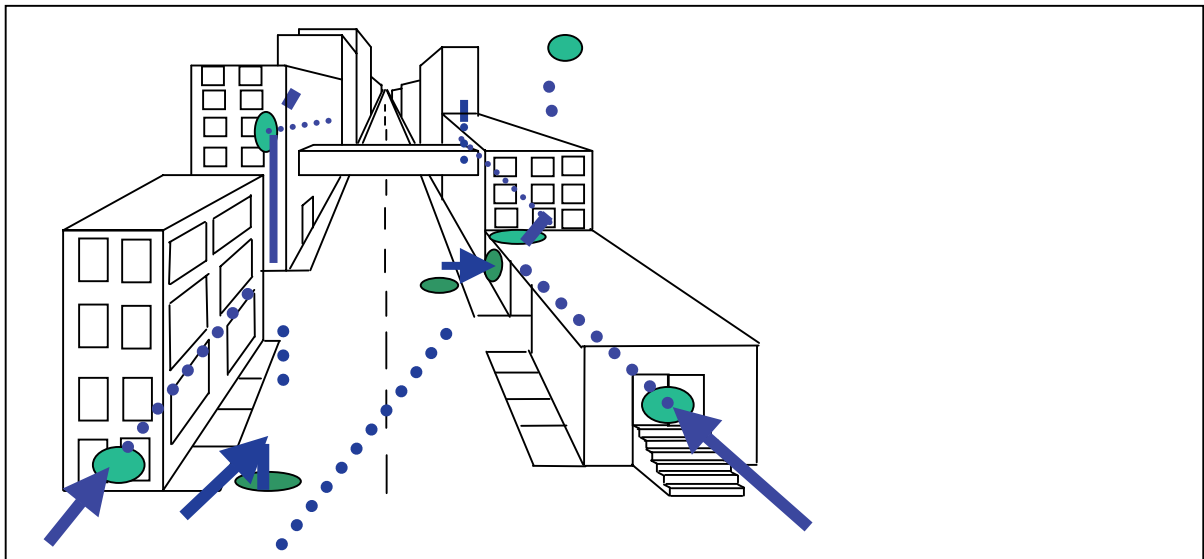


Figure 10A-3: The vertical dimension

<sup>2</sup> Using SKEDCO litters and body bags are two options for carrying loads.

14. Unit level CSS will be the most difficult level of sustainment due to the terrain, the threat and the likely isolation of unit elements. Training and practice must develop general soldier skills in order to work, survive, and kill:

- a. Training in life saving medical techniques such as resuscitation, giving intravenous fluids, and treating traumatic amputations.
- b. All soldiers must be capable with all individual weapons, be trained in urban fire and movement, and be aggressive in engaging the enemy.
- c. The physical fitness of CSS soldiers is vital to success. Tremendous endurance will be demanded as most supplies and casualty movement will be done by soldiers, not by vehicle, over rubble and debris, through sewers and up and down tall buildings.



## ANNEX B TO CHAPTER 10

### MARS AND HIPPOCRATES IN MEGAPOLIS: URBAN COMBAT AND MEDICAL SUPPORT

#### INTRODUCTION

1. “Don’t go there” is the conventional wisdom for military forces and cities. However, with the advent of high-precision weapons, many of the world’s forces can no longer maneuver freely on open terrain and have been forced to move to difficult terrain to negate the effectiveness of high-precision weaponry and to regain movement. Forests, jungle, mountains, swamp, and cities have long been the terrain of choice for less-technologically equipped forces to maximize their situational awareness and combat capabilities. The U.S. Armed Forces may have to fight guerrillas, paramilitary forces, or conventional forces in cities. Military medical support will share the burden of this tough fight. Casualties may be high. Last summer, a specially trained 980-man Marine Corps force “fought” a 160-man opposing force during an urban exercise in California. The Marines eventually took the housing area at a loss of some 100 casualties.<sup>1</sup> Compared to earlier urban exercises, Marine casualties were light, but the exercise was not a protracted conflict—which urban combat is likely to be.

2. Is there a unique role that military medicine will play in support of urban combat? The physician will still remove bullets and shrapnel or treat burns and disease. However, medical support to the combatants will pose some special tactical problems, particularly with finding the wounded, evacuating the patient, types of injuries encountered, preventive medicine, medical intelligence, and protection of medical facilities and patients.

#### FINDING THE WOUNDED

3. Many cities of the world are not laid out neatly in uniform rectangular blocks. Their streets twist and turn and they are easy to get lost in. Fighting further complicates “staying found.” Units fragment during urban combat. A battalion may start its advance at one end of a block, clearing rooms and occupying buildings to prevent the enemy from retaking them. By the end of the block, the battalion is spread out and its combat power dissipated. Even platoon leaders have trouble maintaining control as their squads move into buildings—out of sight and often out of radio and voice contact. Urban combat is truly a squad leader’s fight and even the squad gets split up. Inevitably, soldiers or marines are moving alone or in pairs. If the command has failed to establish frequent rally points and brief the plan in detail to everyone, it is easy to get turned around and lost. Eventually, a soldier or marine is missing and his comrades try to determine when and where they saw him last. Does the platoon stop and retrace its steps looking for him or does it continue on with the mission? If the platoon goes on, the platoon

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<sup>1</sup> Peterson S. “Iraq Prepares for Urban Warfare: as Congress moves to approve a military strike, Iraq says the lesson of 1991 is stay out of the desert.” *Christian Science Monitor*. October 4, 2002:1.

medic is in a quandary. Does he go back and look for the missing man or does he stay with the platoon?<sup>2</sup>

4. Clearly, well before the platoon moves into the city, every member needs to be trained to administer first aid to himself and to carry sufficient medical supplies to take care of himself. Soldiers and marines are trained primarily to give first aid to others, so the act of self-administered first aid can be daunting to someone who is bleeding badly and slipping into shock. Training helps, but self-administered first aid is still tough to do. Perhaps science can help in this area. The Defense Advanced Research Products Agency is considering the development of an electronically controlled medical bodysuit that could actively assist in keeping the wounded soldier alive. Conceivably, such a suit could provide pressure on dressings where needed, create a tourniquet for an injured limb, stiffen and tighten around a limb to provide a temporary splint, treat the wearer for shock, monitor life signs and administer sedatives, nutrients, and painkillers. Development and fielding such a suit will take time. Something that is needed now that can be fielded more quickly is a tourniquet that can be put on with one hand.<sup>3</sup> Another promising technology is a bandage coated with clotting agents to stop bleeding more effectively. The so-called fibrin bandages should be available relatively soon once Food and Drug Administration approval is granted. Tourniquets and fibrin bandages are important since extremity injuries are common in urban combat and the possibility of bleeding to death is elevated.<sup>4</sup>

5. Buddy aid will still be the cornerstone of care in the urban arena. However, the extent and complexity of buddy aid training needs to increase substantially. The ability to preserve life until more sophisticated care can be delivered will require soldiers to become proficient in the basic “ABC’s” of first aid—airway control, breathing support, and circulation support.

6. Should the wounded soldier administer first aid to himself, how do the medic and the platoon find their missing member?<sup>5</sup> Finding an unconscious soldier in a city can be difficult, particularly if there has been a fight producing rubble, falling walls, and blocked entrances. Fighting can also change the terrain a unit has passed over, making it hard to find familiar landmarks and to recognize sites. Personal Global Positioning System transponders are one possible answer, but cities are notorious for electronic dead space. Further, the enemy can read the electronic map of personnel locations as readily as the friendly force; this would provide a great source of intelligence to the enemy. If the transponder is only activated when the soldier is wounded, the wounded soldier has to be able to turn it on before losing consciousness. And, of course, the enemy would love to get a transponder from a dead soldier to use in baiting an ambush. Whistles and infrared strobe lights have the same drawbacks.

## EVACUATION

7. Once the wounded soldier is located, the next problem is evacuation. How does a platoon move an injured comrade from the 12th floor of a rubble-strewn building or from out of

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<sup>2</sup> Water Henry J. “Medical Implications of Combat in Cities,” Student Research Report for the U.S. Army Command and General Staff College. April 1974:5.

<sup>3</sup> Conversations with Dr Jacob Kipp, Foreign Military Studies Office.

<sup>4</sup> Leitch R. ““The three block war”: urban combat.” *U.S. Med Info Cent.* February 2001.

<sup>5</sup> Waters, 5.

a collapsed storm sewer to a patient collecting point? Sledgehammers, axes, crowbars, ropes, harnesses, pulleys, jacks, pry bars, ladders, and carbide-tipped chain saws may be necessary to extract the wounded. Who maintains and carries this equipment? Who is trained to use it? How does the medic ensure that the wounded soldier survives the initial evacuation efforts? Most likely the medic is on foot. Does he lug a stretcher along or rely on an improvised poncho litter? Who carries the stretcher? The platoon has a full-time fight on its hands and the litter team should probably include a security element. Six people are usually essential for carrying a litter over a long distance. Pulling a litter team and security element out of a platoon seriously degrades its combat strength. Therefore, prior to the action, the battalion medical element should be augmented with litter and security teams. Who provides this augmentation and who trains the augmentees?

8. Medical evacuation helicopters may be unable to fly into the city. During the 1994-1995 Battle for Grozny, the Chechens shot down several Russian medical evacuation helicopters, forcing the Russians to resort to ground evacuation within the confines of the city. Ground evacuation from the patient collection points was by field ambulance. The Chechens also shot up numerous soft-sided ambulances, forcing the Russians to use BTR-80 wheeled armored personnel carriers to evacuate the wounded.<sup>6</sup> The BTR-80 is a poor ambulance. Entry is by small side doors and there is no way to carry a litter patient. What the Russians clearly needed was an armored ambulance. The venerable U.S. Army M113 personnel carrier makes a better ambulance, but its tracks tear up communications wire laid on the ground—the primary way of effectively communicating in a city. Analysis of U.S. fighting in Mogadishu suggests that the armored ambulance must offer protection from small-arms fire, be hardened against rocket-propelled grenade fire, be able to move through or over roadblocks, and be armed to protect patients and medical personnel.<sup>7</sup>

9. Urban combat forces a step back in time when dealing with medical evacuation. Litter evacuation will be common. Air evacuation will wait until the patient is moved to a safe location, possibly out of the city. Communication will be difficult due to the incompatibility of tactical radios and high-rise buildings. Urban combat lengthens the time between injury and surgical treatment. Most of the U.S. casualties in Mogadishu took up to 15 hours to evacuate to surgical treatment.<sup>8</sup> The perennial problem of stabilizing the patient is compounded by the fact that evacuation now takes longer and the patient needs to be kept stabilized longer. Shock and loss of blood will significantly complicate the treatment of wounded waiting evacuation. Further, the delay to surgery will increase the amount of subsequent infections and increase the need for the early administration of antibiotics.<sup>9</sup> Research is currently underway to evaluate the efficacy of the early administration of oral antibiotics in the field. It is likely that in the near future, a wounded soldier will take or be given an oral antibiotic such as ciprofloxacin shortly after being injured.

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<sup>6</sup> Savvin Y. "Za zhizni voinov" [For the lives of the warriors]. *Armeyskiy sbornik* [Army Digest]. March 1995:45.

<sup>7</sup> Butler FK, Hagmann JH, Richards DT, ed. "Tactical Management of Urban Warfare Casualties in Special Operations," Supplement to *Mil Med*. April 2000; Vol 165, No. 4:2.

<sup>8</sup> Butler, et al, 2.

<sup>9</sup> *Ibid*, 3.

10. Evacuation of casualties will be a challenge and given the complexities of urban combat, it may well be an insurmountable hurdle. Nevertheless, the primary objective remains to decrease mortality from battlefield injuries, not necessarily evacuating the injured. If sophisticated care could be quickly delivered near the scene of the injury, the need for early evacuation and all of the accompanying problems may be significantly reduced. This could be accomplished by increasing the level of care provided at squad and platoon level, improving basic care (bleeding and breathing) with advanced technologies, and finally providing advanced care far forward utilizing a very small footprint. Once the patient and the battlefield are stabilized, evacuation in a more controlled fashion could be attempted.

**TYPE OF INJURIES**

11. Urban combat produces a higher percentage of burns and shrapnel wounds as well as crushing injuries from falling walls. Many patients will be dehydrated. Psychiatric casualties may be much higher than normal. With the advent of effective body armor, wounds to the torso have fallen off while wounds to the unprotected portion of the head and to the extremities have increased. Russian casualties during the first Chechen War of the last century (Dec 94–Oct 96) may be instructional. Although the Russian figures are not split between urban and mountain combat, a great deal of the war was fought in the cities of Grozny, Shali, Gudermes, Vedeno, Urus-Martan, and Argun. Furthermore, 28.6% of the almost 14,000 Russian wounded and injured in the war occurred in the initial fighting in Grozny from 31 Dec 94 to 20 Jan 95.<sup>10</sup> Therefore, these figures can be used as a start point.

12. The physicians had to treat wounds, trauma, burns, and cold-weather injuries. Table 1 shows the percentage of each treated and the loss rate among those treated.

13. Wounded patients were the majority among the injured. Table 2 clearly demonstrates the efficacy of body armor in protecting the torso.

Type of Injury	Number	Percent of Total	Died despite Treatment	Percent
Wounds	8319	60.5	117	1.4
Blunt	4665	34.0	32	0.7
Trauma				
Burns	542	3.9	15	2.8
Cold	213	1.6	1	0.5
Weather				
Injury				
Total	13739	100	165	1.2

<sup>10</sup> Efimenko NA, Gumanenko EK, Samovalov IM, Trusov AA. “Khirurgicheskaya pomoshch’ ranenym vvooruzhennom konflikte: Organizatsiya i sodержanie pervoy, dovrachebnoy i pervoy vrachebnoy pomshichi (Soobshchenie pervoye)” [Surgical care of casualties in an armed conflict: Structure and stages (Initial report)]. *Voyenno-meditsinskiy zhurnal*. [Military-medical journal]. June 1999:25.

**Table 1. Medically Treated Injuries During the First Chechen War and Loss Rate<sup>11</sup>**

Wound Location	Percent of Total	Light Wounds	Medium Wounds	Severe wounds
Head	19.8	32.9	28.3	38.8
Neck	1.7	37.9	32.5	29.6
Spine	1.2	9.7	19.9	70.4
Chest	6.6	29.0	34.0	37.0
Abdomen	3.2	34.7	31.5	33.8
Arms	22.9	48.3	15.2	36.5
Legs	39.9	47.5	24.5	28.0
Total	100.00	42.0	26.9	31.1

**Table 2: Location of Wounds and Percentages of Each Among Russian Military Wounded in Chechnya 1994–1996<sup>12</sup>**

14. Of the above wounds, 17% were multiple wounds and 12% were compound wounds. The Russians note that the main difference between their Afghanistan War statistics and these is that there was a higher incidence of bullet wounds to the head and neck during the urban combat phase of the war.<sup>13</sup> However, mortars remain a major, if not the chief, casualty producer during urban combat.

15. The Russians experienced delays and difficulties in treating and evacuating the wounded. Among the wounded that required surgical care, 64.1% received first aid within 35 minutes of being wounded while 18.2 % of the wounded received first responder (medic) treatment within 55 minutes of being wounded. A doctor saw 56.2% of the wounded within two and one half hours.<sup>14</sup> Table 3 shows the percentage of doctor-initiated first aid procedures that were required and actually performed among 1,030 wounded.

Medical procedures	Percentages requiring physician first aid	Percentage receiving physician first aid
Eliminate asphyxia	1.7	0.8
Stop external bleeding	15.9	15.9
Use of a tourniquet	3.5	3.5
Administer IV fluids	50.6	25.3
Remove air from pleural cavity in tension pneumothorax	1.0	0.5

<sup>11</sup> Bryusov PG, Khrupkin VI. "Opyt organizatsii khirurgicheskoy pomoshchi v period boevykh deystviy v Chechenskoy respublike." [Experience in organizing surgical support during the combat in the Chechen republic]. *Voенно-медицинский журнал*. [Military-medical journal]. June 1997:11.

<sup>12</sup> Bryusov and Khrupkin; 7.

<sup>13</sup> Ibid.

<sup>14</sup> Efimenko, Gumanenko, Samovalov and Trusov. June, 27.

<b>Medical procedures</b>	<b>Percentages requiring physician first aid</b>	<b>Percentage receiving physician first aid</b>
Seal an open pneumothorax with an occlusive dressing	5.4	4.3
Administer novocaine blocks	36.7	15.9
Administer analgesics	100.00	80.3
Immobilize the patient for transport	49.7	33.2
Amputate an extremity which is hanging by a flap of skin	0.9	0.9
Restore urination	3.0	3.0
Administer antibiotics	88.9	72.3
Administer tetanic antitoxin	100.0	78.1
Administer oxygen	5.3	0.3

**Table 3: Physician First Aid Required and Given to Wounded<sup>15</sup>**

<b>Type of operation</b>	<b>Percentage of total</b>	<b>Surgical time</b>
Tracheotomy to treat asphyxia	0.7	30 minutes
Trepanation of the skull in the presence of external bleeding	2.1	138+/- 24 minutes
Stop external hemorrhage by ligature	1.4	96+/- 36 minutes
Stop external hemorrhage without suturing vessels	3.8	78+/-12 minutes
Stop external bleeding by suturing vessels	3.1	144+/-24 minutes
Stop external bleeding by temporary prosthetization of a blood vessel	1.8	114+/- 24 minutes
Enucleation of the eyeball when there is uncontrolled bleeding	0.3	48 minutes
Thoracotomy due to a cardiac tamponade	0.3	90 minutes
Thoracotomy due to uncontrolled pleural bleeding	3.4	204+/- 42 minutes
Thoracentesis for tension pneumothorax	6.6	30+/- 6 minutes
Suturing a chest wound during an open pneumothorax	9.3	48 +/- 6 minutes
Laparotomy while stopping an internal abdominal hemorrhage	54.1	270 +/- 114 minutes
Amputation of severed or destroyed extremities	13.1	72 +/- 18 minutes
Total	100	186+/- 66 minutes

**Table 4. Types, Frequency, and Time Required for Emergency Surgery<sup>16</sup>**

<sup>15</sup> Ibid, 29.

16. Russian field hospital surgical care to the wounded was divided into emergency surgery, urgent surgery and deferred surgery. On average, emergency surgery was performed within an hour and 24 minutes of the patient's arrival at the hospital and 73.8% of the cases involved abdominal and chest wounds. Table 4 shows the types of emergency surgery as a percentage of all emergency surgery and the average time required to perform the surgery.

17. On average, urgent surgery was performed within 1 hour and 48 minutes of the arrival of the patient in the field hospital. The most common procedures were trepanation to treat cerebral compression (20.8%), thoracentesis for a hemothorax (42.5%) and laparotomy while treating damaged hollow organs (17%). Table 5 shows the types of Russian urgent surgery as a percentage of all urgent surgery and the average time required to perform the surgery.

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Type Of Intervention	Percentage Of Total	Surgical Time
Trepanation to treat cerebral compression	20.8	126 ± 6 minutes
Initial surgery and immobilizing broken jaw bone	0.9	60 minutes
Initial surgery for a penetrating wound to the nasal sinuses	0.9	60 minutes
Thoracentesis for a hemothorax	42.3	36 ± 6 minutes
Laparotomy while treating damaged hollow organs (intestines, bladder)	17.0	138 ± 6 minutes
Surgery for extraperitoneal injury to the rectum	3.3	132 ± 24 minutes
Surgery for extraperitoneal injury to the bladder	2.4	180 ± 18 minutes
Surgery for injury to the urethra	0.5	120 minutes
Final restoration of blood vessels during ischemia of the extremities	2.4	108 ± 18 minutes
Temporary prosthetization of blood vessels during ischemia of the extremities	2.4	120 ± 36 minutes
Amputation due to irreversible ischemia	3.8	150 ± 12 minutes
Initial surgical treatment of extensive and dirty wounds	3.3	108 ± 18 minutes
Total	100	84 ± 6 minutes

**Table 5: Types, Frequency, and Time Required for Urgent Surgery<sup>17</sup>**

18. On average, deferred surgery was performed within 3 hours and 18 minutes of the arrival of the patient in the field hospital. The most common procedures were initial surgery for soft

<sup>16</sup> Efimenko NA, Gumanenko EK, Samovalov IM, Trusov AA. "Khirurgicheskaya pomoshch' ranenym v vooruzhennom konflikte: Organizatsiya i sodержanie pervoy, dovrachebnoy i pervoy vrachebhoy nomoshchi (Coobshchenie pervoe)" [Surgical care of casualties in an armed conflict: Structure and stages (Continuation)]. *Voенно-медицинский журнал*. [Military-medical journal]. September 1999:26.

<sup>17</sup> Ibid.

tissue wounds (41.3%) and surgery to repair gunshot wounds to the long tubular bones.<sup>18</sup> Table 6 shows the types of Russian deferred surgery as a percentage of all deferred surgery and the average time required to perform the surgery.

19. There is a new type of blunt trauma that has entered the urban arena. In the Second Chechen War, the Russians introduced the use of quantities of fuel-air or thermobaric weapons during the fight for Grozny from Dec 99 to Mar 00. Fuel-air weapons work by initially detonating a scattering charge within a warhead. The warhead contents (volatile gases, liquids, or finely powdered explosives) form an aerosol cloud. This cloud is then ignited and the subsequent fireball sears the surrounding area while consuming the oxygen. The lack of oxygen creates a vacuum and subsequent enormous overpressure that is the primary casualty-producing force. Within several dozen microseconds, the pressure at the center of the explosion can reach 427 pounds per square inch (normal atmospheric pressure at sea level is 14.7 pounds per square inch). This is 1.5 to 2 times greater than the overpressure caused by conventional explosives. Personnel under the cloud are crushed to death.<sup>19</sup>

Type Of Operation	Percentage of Total	Surgical Time
Initial surgical repair of skull and brain injuries	6.5	84 ± 12 minutes
Initial surgical repair of facial and jaw wounds	1.8	54 ± 12 minutes
Eye surgery	1.3	72 ± 18 minutes
Decompression lamination to treat spinal compression	0.3	210 minutes
Initial surgery for soft tissue wounds	41.4	72 ± 18 minutes
Initial surgery to repair bone injuries without fixation of fragments	41.4	72 ± 12 minutes
Initial surgery for bone injuries including fixation of fragments	7.3	74 ± 12 minutes
Total	100	54 ± 6 minutes

**Table 6: Types, Frequency, and Time Required for Deferred Surgery**

20. There is little written about the results of the Russian fuel-air weapons used against the Chechens. However, the results are intuitive. Personnel caught under the blast die immediately from flame and overpressure. Personnel on the periphery of the blast are subject to burns, broken bones, contusions from flying debris, and blindness. Air embolism within blood vessels, concussions, multiple internal hemorrhages in the liver and spleen, collapsed lungs, ruptured eardrums and eyes displaced from their sockets are also likely. Peritonitis can result from displacement and tearing of the internal organs. While military medics are well trained in treating casualties with external injuries (stop the bleeding, protect the wound, treat for shock), the internal injuries caused by fuel-air weapons may go unnoticed. Corpsmen should train to look for evidence of blast injuries such as the presence of fluid or blood behind the eardrums as a

<sup>18</sup> Ibid.

<sup>19</sup> Grau LW, Smith T. "A 'Crushing' Victory: Fuel-Air Explosives and Grozny 2000." Marine Corps Gazette. August 2000;30.



possible indicator of pulmonary complications.<sup>20</sup> Air evacuation of fuel-air casualties will be problematic without cabin pressurization.

21. Weapons of mass effect (chemical, biological, and even nuclear) may be used in cities with devastating effect. Combatants and civilians are massed in a limited area where the weapon's effects can be devastating. Medical personnel may have to perform mass casualty treatment while wearing chemical suits and protective masks.

## **PREVENTIVE MEDICINE**

22. Disease was a major problem for the Russians engaged in urban combat in Chechnya. The difficulty in maintaining proper field sanitation in urban combat meant that 95% of infectious disease among Russian combatants was passed through oral-fecal transmission. Over half of the intestinally-related infections (53.2%) were from viral hepatitis, while 27.7% were from shigellosis and 20.1% were from enterocolitis. Diphtheria, cholera, malignant anthrax, and plague also found victims among the Russian soldiers. Dirty water was the main culprit in the transmission of hepatitis. Medical records of one Russian brigade show that 15% of the brigade was down with hepatitis at one time.<sup>21</sup>

23. The Russian Army is not the only Army with a disease problem. In Vietnam, over two-thirds of U.S. Army hospital admissions were for disease. In 1968, disease cost U.S. forces some 943,809 man-days—roughly the equivalent of an infantry division for 2 months.<sup>22</sup> Urban combat will provide unique challenges for epidemiologic control. Unburied bodies, broken sewers, polluted water supplies, local foodstuffs, exotic beverages, rats, insects, and feral animals all represent threats to the health of the force. Increased efforts in vaccine development will be important to limit the threat of these diseases. However, efforts and policies to vaccinate the local populace will also be important. Although there may be a significant financial cost to vaccinate a large city against illnesses such as hepatitis, the long-term savings may offset the initial expense.

## **MEDICAL INTELLIGENCE**

24. Urban medical intelligence starts well before the force enters the city. A good epidemiologic profile will prompt precautions and preventive measures. A good medical survey will pinpoint existing hospitals, clinics, sanitariums, blood banks, pharmaceutical industries, medical supply warehouses, veterinary facilities, and public health facilities and identify key indigenous medical personnel. The survey will also identify potential areas of health risk such as chemical plants, refineries, smelters, and waste disposal areas. Modern mapping programs will allow medical intelligence personnel to post survey data and other pertinent data—such as the location of contagious disease outbreaks, high-speed routes to medical facilities, underground locations suitable for setting up a field hospital—on electronic and printed maps.

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<sup>20</sup> Grau and Smith, 32-33.

<sup>21</sup> Grau LW, Jorgensen WA. "Viral Hepatitis and Russian War in Chechnya." AMEDD J. May/June 1997;2-4.

<sup>22</sup> Neel Spurgeon. Medical Support of the U.S. Army-Vietnam 1965-1970.

25. Intelligence on the enemy medical status is also valuable. Not only does it disclose enemy strengths and weaknesses, but it can also alert friendly medical units as to what diseases and conditions enemy prisoners of war might require treatment for. Part of medical intelligence can be determined before entry into the city, but most of it will be developed once the force is committed. Medical personnel are a prime source of intelligence provided that they are trained on how to observe and report pertinent data. Types and frequency of wounds and disease, attitudes of enemy prisoners undergoing treatment, type and utility of captured enemy medical supplies and observations of the local populace are all important sources of intelligence that medical personnel should provide.<sup>23</sup>

26. Medical intelligence will also be invaluable to detect the use of chemical or biological weapons. These agents may be more difficult to detect in urban areas specifically because of the closeness of the population, the sanitary problems associated with cities, and the general breakdown of support services and infrastructure.

### **PROTECTION OF MEDICAL FACILITIES AND PATIENTS**

27. Medical facilities must be protected. Frequently, their best location is outside the city near major roads and an airfield or port. However, medical facilities will often be located inside the contested city as well. Obviously, the best place to establish a medical facility is often inside an established hospital or clinic. However, civilian medical facilities are often overcrowded in peacetime. Fighting will make them more so. Space and security concerns will usually dictate that military and civilian medical facilities are in separate locations. Use of foreign health care facilities may be complicated by sub-standard facilities when compared to accepted standards of care. Also, medical systems may not be compatible. These types of problems are common at U.S. cities that have well developed hospital systems, so one can imagine how difficult this would be in a foreign city.

28. A thinking enemy will identify urban sites that U.S. forces are likely to use for headquarters, facilities, and hospitals. They will target these and may booby trap or mine them. Sites should be carefully checked and protected. Protection of patients is a primary military concern, so sturdy buildings with clean basements are often prime locations. However, if chemical weapons are used, many chemical agents tend to hug low places. The medical facility should be secure from ground attack as well as mortar and artillery attack. The top floors of most buildings are vulnerable to artillery and mortar fire, so the medical facilities should occupy the lower floors and basement. Enemy prisoners of war will often be treated in the same facility as friendly troops, so establishment of secure prison wards will be an immediate concern.

29. Protection of patients goes beyond the medical facility. Patient protection extends from the initial litter evacuation to flying a patient to a permanent medical facility. Litter protection parties, armored ambulances, well-patrolled evacuation routes, and secure helipads all contribute.

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<sup>23</sup> Waters, 11-12.

## STREET SMARTS

30. Armies avoid cities for a good reason. Cities are difficult to fight in and take an inordinate number of troops. However, the reluctance of an Army to fight in a city is an incentive for an enemy to use it as a refuge. Sometimes urban combat cannot be avoided. Urban combat places extra demands on military medicine. Military medical personnel may find themselves fully involved in supporting the civilian community as well their own military and enemy prisoners of war.

31. A separate issue is providing medical care within a coalition. The U.S. force may be fighting alongside allies and have to provide medical care for allied personnel. Differences in culture, diet, and accepted medical procedures may present difficulties to U.S. medical personnel. In order to minimize the difficulties they are likely to encounter in coalition warfare, coalition staffs should have medical officers who can work and plan together to minimize these problems. Medical command and control will not happen without prior planning and training. Often, medical personnel may have to conduct medical work-ups and diagnoses or coordinate large-scale medical support using an interpreter who has a limited medical vocabulary in either language. Again, with prior planning and training, the impact of these language and cultural barriers can be minimized, if not removed all together.

32. The nature of the large city will have a decided impact on the missions of military medicine. Much of the urban population cannot abandon the city. There simply is no place for all of them to go. Where would the populace of New York or Los Angeles go? There are even fewer options when dealing with the evacuation of the civilian populace of Mexico City, Lagos, Cairo, or Rawalpindi. Most civilians will stay in place, try to protect their property, and try to avoid the fighting. Defenders often will not let civilians leave, since they restrict the capability of the attacker. Civilians won't be able to stay out of harm's way. Some will become combatants. The bulk of casualties in city fighting are usually civilians. Sewage systems, power generating plants, water treatment plants and other utilities are vulnerable and, when knocked out, increase the risk of disease and epidemics. A breakdown in public safety, city services and public health can lead to looting, further disease, riots, unchecked conflagrations, and untreated casualties. Any fighting will interrupt normal commerce and severe interruptions can stop the delivery of medicine, food, and fuel. The populace will look to government and local authority to restore power, sewage, good order, public health, transport, and essential commerce. Often, government and local authority is represented solely by the military and the senior military commander will find that his responsibilities extend far beyond immediate combat. Military engineers, communicators, police, transporters, lawyers, civil affairs, and medical personnel may find themselves doing nontraditional, yet vital tasks to support the senior commander in the struggle for the city.

33. On the operational side, military medical personnel may find themselves reestablishing city public health systems, operating clinics for civilians, training public health workers, conducting or supervising epidemiologic teams, checking water and food, restocking local hospitals, working with nongovernment relief and charitable organizations, and other aid organizations while continuing their primary mission of supporting the military. Clearly, the medical effort will require additional resources to handle an expanded mission and provide aid to the civilian community. Triage efforts may deal with civilians and military simultaneously.

34. Urban combat is difficult—and so is medical support to that combat. However, with training, preparation and foresight, both can be managed.

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## GLOSSARY

**Battle Management.** Battle management is the synchronization, in time and space, of shaping, sustaining and decisive actions in order to achieve the desired end state. Battle management has three distinct but synergistic components: information management, situational understanding and command authority.

**Combat operations.** Combat operations include offensive operations, defensive operations and transitional phases.

**Complex environment.** A battlespace with a mix of geographical, environmental and human factors that collectively and significantly complicate the conduct of operations.

**Contemporary Operating Environment (COE).** The operational environment that exists today and for the clearly foreseeable future. (Source: FM 7-100 Opposing Force Doctrinal Framework and Strategy May 2003).

**Demonstration.** A demonstration is an offensive action conducted out of contact with the enemy. It is a shaping action conducted for the purpose of deception. Demonstrations include deception, information operations, psychological operations, fires and manoeuvre.

**Doctrine.** Fundamental principles by which the military forces guide their actions in support of objectives. It is authoritative but requires judgement in application. 2. The formal expression of military knowledge and thought that the army accepts as being relevant at any given time, which covers the nature of conflict, the preparation of the army for conflicts and the method of engaging in them to achieve success.

**Effects Based Operations.** A process for obtaining a desired strategic outcome or “effect” on the enemy, through the synergistic, multiplicative, and cumulative application of the full range of military and non-military capabilities at the tactical, operational, and strategic levels.

**End State.** End state is the commander’s description of mission success. Description of the end state is vital as there are many paths to the end state that may only become evident as the tactical situation unfolds.

**Enemy.** Person who hates one, and eagerly seeks ones defeat; the member of hostile army or nation; hostile force or ship or aircraft; thing that harms or injures. (Concise Oxford Dictionary—**Note:** see threat for a distinction between threat and enemy)

**Feint.** The feint is in many ways identical to other forms of the attack. Its purpose is to cause the enemy to react in a particular way, such as by repositioning forces, committing its reserve, or shifting fires. The key difference between the feint and other attack forms is that it is much more limited in scope and has an extremely specific objective. The scale of the operation, however, usually is apparent only to the controlling headquarters. For the element actually conducting the feint, execution is just as rapid and violent as in a full-scale attack (Adapted from FM 3-21.11 *Stryker Brigade Infantry Rifle Company*, pp 4-36)

**Full Spectrum Operation.** The simultaneous conduct of operations by a force across the spectrum of conflict.

**Information Operations (IO).** Information operations are defined as actions taken in support of political and military objectives which influence decision makers by affecting other's information while exploiting (fully utilizing) and protecting one's own information.

**Medium Weight Battle Group.** An organization, task tailored for operations, that is based on a unit headquarters and its integral CSS sub-unit with modularized manoeuvre elements, support arms and services.

**Node.** A “node” is an element that is critical to the success of an operation. It includes not only physically localised critical points such as a command centre or WMD-facility, but also more general features such as a logistics system or even the mindset of an ethnic group. (NATO UO 2020 Final Report 2 May 02)

**Purpose.** Purpose describes the synchronisation, in time and space, of the shaping, sustaining and decisive actions that will lead to mission success.

**Reachback.** A concept whereby a deployed force receives support from organizations external to the theatre of operations.

**Reconnaissance / reconnaissance.** A mission undertaken to obtain, by visual observation or other detection methods, information about the activities and resources of an enemy or potential enemy, or to secure data concerning the meteorological, hydrographic, or geographic characteristics of a particular area. Source AAP 6A (2004)

**Self-synchronization.** Self-synchronization is the commander’s use of initiative to arrange the military actions of his forces, in time and space by purpose, relative to the military actions of friendly forces and the enemy, to achieve his superior commanders intent.

**Stability or Stabilizing Operations.** A label or descriptor for a grouping of operations, specifically PSO, NEO, COIN, DOMOPS.

**Threat.** Any specific foreign nation or organization with intentions and military capabilities that suggest it could become an enemy or challenge the national security interests of Canada or its Allies.

**Three Block War.** “Three Block War” is a metaphor that describes the simultaneous conduct of operations by a force across the spectrum of conflict.

**Transitional Phases.** Specialized missions planned and conducted to achieve or sustain a tactical advantage and executed as part of offensive, defensive and stabilizing operations