WHAT IS THE NATURE OF URBAN TERRAIN?

We will use the terms “urban environment,” “urban terrain,” and “built-up areas” interchangeably. A useful working definition of these terms, drawn from Army FM 90-10-1, is the following:

A concentration of structures, facilities, and people that forms the economic and cultural focus for the surrounding area. The four categories of built-up areas are large cities, towns and small cities, villages, and strip areas.

Note that the definition explicitly includes the population of the terrain, one of several features unique to the urban environment that affect operations. Urban areas are centers of social, financial, and political importance in a country, and they usually serve as regional nodes for transportation, communication, and industry. The significance of such areas suggests that they will be bitterly contested should strife overtake the region. History has borne out this supposition, as a review of major battles during the 20th century reveals. Interestingly, the words of West German terrorist Michael Baumann attest to the importance that so many insurgencies likewise place upon the urban arena:

[W]hat’s needed is a vanguard in the metropolis that declares its solidarity with the liberation movements of the third world. Since it lives in the head of the monster, it can do the greatest damage there. (Baumann, 1975, p. 46, emphasis added.)
A detailed discussion of the morphology of the urban environment—urban zone types, building materials, construction methods, weapons effects, and the like—is beyond the scope of this report. For an excellent treatment of these important issues, see Ellefsen (1987).

HOW IS URBAN TERRAIN DISTINCT FROM OTHER TYPES OF TERRAIN?

The urban environment possesses unique qualities. Unsurprisingly, these qualities figure prominently in the challenge to forces wishing to operate in built-up areas. As noted by Ellefsen (1987, p. 12),

Urban terrain, being a man-made environment, is composed of angular forms, the like of which occurs only rarely in non-urban terrain. Not only are these forms angular in planimetric pattern (as a grid street pattern), but in the third dimension as well. Verticality becomes of great importance, for this not only creates extremely difficult barriers to assault, but provides the defense with a man-made form of “high-ground.” A large city provides several planes of “urban high ground” and, in many instances, a subterranean level in addition.

But the unique physical aspects of urban terrain are only half of the equation; the human factor is just as important. As noted in the doctrinal definition above, human beings populate urban terrain in great numbers—vastly more so than any other type of operating environment. The presence of large numbers of noncombatants and their interaction with friendly or hostile forces play a critical role in the outcomes of urban operations.

A comparison of the urban environment with other operating environments, focused upon features key to operations of many sorts, appears in Table 1. The great difficulty of operating in urban environments can be ascribed in large part to the two factors noted above: the physical uniqueness of urban terrain and the presence of a large noncombatant population.

Importantly, the force in possession of a city, with time to prepare and/or be supported by a friendly noncombatant population, often finds some of these difficulties ameliorated. Not so for the outsider. For example, the Egyptian defenders of Suez City in 1973 were able to
Table 1  
**Some Differences Between Urban and Other Types of Terrain**

<table>
<thead>
<tr>
<th></th>
<th>Urban</th>
<th>Desert</th>
<th>Jungle</th>
<th>Mountain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of noncombatants</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Amount of valuable</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>infrastructure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presence of multidimen-</td>
<td>Yes</td>
<td>No</td>
<td>Some</td>
<td>Yes</td>
</tr>
<tr>
<td>sional battlespace</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restrictive rules of</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>engagement</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Detection, observation,</td>
<td>Short</td>
<td>Long</td>
<td>Short</td>
<td>Medium</td>
</tr>
<tr>
<td>engagement ranges</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avenues of approach</td>
<td>Many</td>
<td>Many</td>
<td>Few</td>
<td>Few</td>
</tr>
<tr>
<td>Freedom of movement</td>
<td>Low</td>
<td>High</td>
<td>Low</td>
<td>Medium</td>
</tr>
<tr>
<td>and maneuver—mech</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>forces</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Communications</td>
<td>Degraded</td>
<td>Normal</td>
<td>Normal</td>
<td>Degraded</td>
</tr>
<tr>
<td>functionality</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Logistical requirements</td>
<td>High</td>
<td>High</td>
<td>Medium</td>
<td>Medium</td>
</tr>
</tbody>
</table>

rely upon friendly noncombatants as couriers when radio and other methods of communication failed. The Israeli forces in this case had no such option. This is the essence of urban battle as an asymmetric strategy. As Table 1 notes in simplified fashion, many faculties and capabilities are diminished while operating in the city, but this burden is borne disproportionately by the outsider. Recalling our illustrative parable: should David choose to fight amongst dense woods instead of open ground, he too will be hampered but Goliath will be more so, and thus the overall disparity between them is reduced.

A demonstration of this principle can be seen in the Russian experience in the January 1995 battle for Grozny:

The Chechens were at a huge advantage fighting on home ground in a city most knew from childhood. They worked mostly at night, laying mines and carrying supplies and ammunition to forward positions. Their mobility was their great strength. Using back alleys and the sewers, slipping through basements and destroyed buildings, they danced around the Russians, who often clung to the dubious safety of their armored vehicles. (Gall and De Waal, 1998, p. 206.)
While the Chechens surely found crawling through sewers and operating at night to be difficult, it was far more onerous for the Russians. The Chechens used the urban battlefield as we suggested David might have used dense woods: to offset Russian advantages and exploit Russian weaknesses.

As an aside, consider what this suggests about the application of deception in urban terrain. Deception is by itself an asymmetric approach to warfighting: tricking the opponent into misapplying his strengths and revealing his weaknesses. It is frequently (though certainly not exclusively) used by Davids against prospective Goliaths, as Clausewitz (1873) noted:

> The weaker the forces that are at the disposal of the supreme commander, the more appealing the use of cunning becomes.

The use of deception in urban terrain, therefore, is actually two separate asymmetric strategies folded into one. Will this have a cumulative effect? A synergistic one? We will keep these questions in mind as we proceed in our analysis.

**WHAT KINDS OF OPERATIONS ARE PERFORMED IN URBAN TERRAIN?**

U.S. Army doctrine has heretofore advocated avoiding operations in urban terrain when possible, reflecting an awareness of the challenges posed by such an environment. A 1986 report by the Defense Science Board opined that “avoiding urban involvements is by far the wisest course.” However, current Army and Marine Corps doctrine asserts that operations to isolate, capture, neutralize, or stabilize urban terrain will be performed when

1. Political or humanitarian concerns demand;
2. Strategic, operational, or tactical advantages are likely to be gained;
3. Avoiding the built-up area poses a threat to friendly interests.

These disparate “causes” for urban operations suggest immediately the widely varying types of urban operations U.S. forces may be called
upon to perform. In general terms, these missions include the following:

- **Special operations.** These include hostage rescue, reconnaissance, direct action, and other missions involving small, well-trained units operating usually in hostile environments.

- **Peace support or stabilization.** Whether unilaterally or in coalition, these missions usually occur in permissive or semipermissive environments and frequently entail humanitarian and medical assistance, disaster relief, counterinsurgency, policing of an accord, or separating hostile groups. As part of foreign internal assistance, the United States has often contributed forces to help an ally combat terrorism or guerrilla activity; and historically, urban centers figure prominently in insurgent campaigns.

- **Isolation, cordon, denial.** If an important piece of urban terrain is controlled by hostile defenders but its capture is not of immediate necessity, U.S. forces may be required to encircle it. This could be preparatory to a subsequent attack, or it may be done to neutralize the terrain while it is bypassed by other friendly forces. In a related circumstance, if an important piece of built-up terrain is not yet in the grip of an adversary, friendly forces may wish to “deny” it to him.

- **Attack to capture or control.** In a full-scale conflict, U.S. forces may be required to seize or dominate urban terrain from hostile defenders who may or may not have prepared the area. Such actions may be hasty or deliberate.

- **Mobile or static defense.** While the United States and its allies are predominately force-projection powers, there could well be cases demanding that U.S. forces prepare and defend a city against an imminent attack (e.g., Seoul). As with offensive actions, these defensive moves may be hasty or deliberate.

**HOW DOES URBAN TERRAIN AFFECT THOSE OPERATIONS?**

As described above, the city environment can create numerous operational difficulties that make the invitation to battle on urban terrain a well-known asymmetric strategy. The key difficulties (distilled from
Army FM 90-10-1, _An Infantryman’s Guide to Combat in Built-Up Areas_ (with Change 1), and Marine Corps Warfighting Publication 3-35.3, _Military Operations on Urbanized Terrain_ are noted below.

**Noncombatants and their attendant infrastructure are significantly present, necessitating rules of engagement (ROE).** Any operation in urban terrain is virtually guaranteed to have large numbers of noncombatants in the immediate vicinity, and U.S. policy clearly disallows large numbers of civilian casualties in most cases. Given civilian dependence upon power, water, and other types of supporting infrastructure (this includes sites of cultural importance), destruction of these facilities is also generally unacceptable. Note also that populations of cities tend to be heterogeneous, including the presence of regional and international groups (Red Cross, UN peacekeepers, foreign embassies, etc.). Moreover, built-up terrain usually contains a wealth of resources (food, fuel, vehicles, etc.) desirable to the adversary or to opportunist looters. Lastly, the relationship of combatants to the indigenous noncombatants is critical and may weigh heavily in the outcome of operations at all levels of war. As noted by Bell (1997, p. 375),

> A great strength for the IRA had been created by the segregated housing pattern that produced Catholic Ghettos: some bright, new housing estates, others warrens of little streets and tiny brick houses. With well-defined boundaries they were closed communities of friends and neighbors and an alien presence was noted and reported at once; moreover, the increasingly aggressive searches and sweeps of the British Army after August [1971] guaranteed that the neighbors would remain friends, would supply an urban safe-base for the Active Service Units recruited from the area.

This also suggests an important point that we shall revisit later: while many sources of intelligence (imagery, communications intercepts, etc.) may be degraded in built-up areas, sources of human intelligence may multiply, particularly for the combatant with friendly ties to the local populace.

**The battlespace is three-dimensional, with subterranean, surface, and building/rooftop features, all of military significance.** Operations can and will occur simultaneously in and around all of these elements. The potential for infiltration/exfiltration and flanking maneuvers is thus greatly enhanced, particularly when coupled with the
presence of multiple avenues of approach at each of the subterranean, surface, and building/rooftop levels. As Ellefsen notes (1987, p. 12),

The multiplication of surface space in the form of multistory buildings, means that even though the total area of cities is not very great, the aggregate total surface space (the floor area) on which combat could occur is several times greater than the surface space shown on a map and represents a sizable area when totaled.

Buildings and structures figure prominently in observation, fire, and movement. As noted in MCWP 3-35.3, “buildings provide cover and concealment; limit or increase fields of observation and fire; and canalize, restrict, or block movement of forces, especially mechanized forces.” Buildings can serve as ready-made fortifications, making clearing operations difficult and time-consuming. The battle for Hue City is a prime example of this, wherein North Vietnamese army forces created strongpoints using multistory buildings and their courtyards (Christmas, 1977). Moreover, the size and number of buildings in built-up areas greatly increases manpower requirements for seizing, clearing and holding portions of urban terrain.

Command and control (C2) is complex and chaotic, presenting significant difficulties to combatant commanders. Small units are usually the central players in urban conflict, with control sometimes devolving all the way down to squad level. Communications and intelligence—two of the most critical capabilities in operations—are frequently degraded (regarding the latter, HUMINT may be an exception, as noted above). Identification of friend or foe (IFF) is a nontrivial challenge; units frequently become disoriented and confused. Operational tempo is usually high (particularly in combat missions), substantially reducing the time frame of decisionmaking. The poor decisions that sometimes result can lead to a catastrophic worsening of an already difficult problem, as noted by McLaurin and Snider (1982, p. 20) in their discussion of the fighting in Suez City during the 1973 Arab-Israeli conflict:

The result of the surprise at the Arba’in Junction was disastrous for the attacking IDF [Israeli Defense Forces]. Virtually all the tank commanders in the lead battalion were wounded or killed, with only four remaining officers left to carry out their functions. Some of the tanks and APCs were unable to move, effectively blocking the road
Command and control were destroyed as a result of the simultaneous loss of almost all tank commanders, widespread injury to communications personnel, and the overloading of all tactical radio nets with appeals for assistance. Tanks and APCs veered into side streets in which many were trapped and could not escape.

The urban environment promotes stressful, high-intensity close combat, leading to significant logistical and medical challenges. Urban engagements occur mostly at close range (100 meters or less), involve tremendous expenditures of supply, and are particularly bloody and time-consuming. The battlespace features fire from all directions, plus the aforementioned degradation of C2 and high operational tempo, which can lead to high levels of duress and casualties. Consider just one example from the January 1995 fighting in Grozny, described by Gall and De Waal (1998, p. 206):

[Photographer Patrick] Chauvel was with a group of Chechen fighters sloshing through the city’s sewers, one of the safest ways to cut through the city on the way to an ambush, when the commander in front pushed him down and opened fire into the darkness. A furious gun battle lit up the pitch-black tunnel, as half a dozen rifles opened up and bullets ricocheted off the roof, killing the man behind Chauvel. They had walked slap into a Russian patrol group.

This type of sudden, bloody, close-in fighting is prevalent in urban operations; indeed, it is the historical hallmark of urban operations.

This discussion raises an interesting question: do the factors that make invitation to urban battle an asymmetric strategy have any relationship to deception? In fact, as we proceed in our analysis, it shall become clear that many of the key characteristics of urban operations, noted above, are prerequisites and facilitators of deception.