Our Soldiers, Their Cities

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The future of warfare lies in the streets, sewers, high-rise buildings, industrial parks, and the sprawl of houses, shacks, and shelters that form the broken cities of our world. We will fight elsewhere, but not so often, rarely as reluctantly, and never so brutally. Our recent military history is punctuated with city names—Tuzla, Mogadishu, Los Angeles, Beirut, Panama City, Hue, Saigon, Santo Domingo—but these encounters have been but a prologue, with the real drama still to come.

We declare that only fools fight in cities and shut our eyes against the future. But in the next century, in an uncontrollably urbanizing world, we will not be able to avoid urban deployments short of war and even full-scale city combat. Cities always have been centers of gravity, but they are now more magnetic than ever before. Once the gatherers of wealth, then the processors of wealth, cities and their satellite communities have become the ultimate creators of wealth. They concentrating people and power, communications and control, knowledge and capability, rendering all else peripheral. They are also the post-modern equivalent of jungles and mountains—citadels of the dispossessed and irreconcilable. A military unprepared for urban operations across a broad spectrum is unprepared for tomorrow.

The US military, otherwise magnificently capable, is an extremely inefficient tool for combat in urban environments. We are not doctrinally, organizationally, or psychologically prepared, nor are we properly trained or equipped, for a serious urban battle, and we must task organize radically even to conduct peacekeeping operations in cities. Romantic and spiritually reactionary, we long for gallant struggles in green fields, while the likeliest "battlefields" are cityscapes where human waste goes undisposed, the air is appalling, and mankind is rotting.

Poor state or rich, disintegrating society or robust culture, a global commonality is that more of the population, in absolute numbers and in percentage, lives in cities. Control of cities always has been vital to military success, practically and symbolically, but in our post-modern environment, in which the wealth of poor regions as well as the defining capabilities of rich states are concentrated in capitals and clusters of production-center cities, the relevance of non-urban terrain is diminishing in strategic, operational, and even tactical importance—except where the countryside harbors critical natural resources. But even when warfare is about resource control, as in America's Gulf War, simply controlling the oil fields satisfies neither side.

The relevant urban centers draw armies for a stew of reasons, from providing legitimacy and infrastructural capabilities, to a magnetic attraction that is more instinctive than rational (perhaps even genetically absorbed at this point in the history of mankind), and on to the fundamental need to control indigenous populations—which cannot be done without mastering their urban centers. We may be entering a new age of siege warfare, but one in which the military techniques would be largely recognizably to Mehmet the Conqueror or Vauban, or even our to own greatest soldiers and conquerors of cities, Ulysses S. Grant and Winfield Scott.

Consider just a few of the potential trouble spots where US military intervention or assistance could prove necessary in the next century: Mexico, Egypt, the sub-continent with an expansionist India, the Arabian Peninsula, Brazil, or the urbanizing Pacific Rim. Even though each of these states or regions contains tremendous rural, desert, or jungle expanses, the key to each is control of an archipelago of cities. The largest of these cities have populations in excess of 20 million today—more specific figures are generally unavailable as beleaguered governments lose control of their own backyards. Confronted with an armed and hostile population in such an environment, the US Army as presently
structured would find it difficult to muster the dismount strength necessary to control a single center as simultaneously
dense and sprawling as Mexico City.

Step down from the level of strategic rhetoric about the future, where anyone with self-confidence can make a
convincing case for his or her agenda. Survey instead the blunt, practical ways in which urban combat in today's major
cities would differ from a sanitary anomaly such as Desert Storm or the never-to-be-fought Third European Civil War
in the German countryside (where we pretended urban combat could be avoided) for which so much of the equipment
presently in our inventory was designed.

At the broadest level, there is a profound spatial difference. "Conventional" warfare has been horizontal, with an
increasing vertical dimension. In fully urbanized terrain, however, warfare becomes profoundly vertical, reaching up
into towers of steel and cement, and downward into sewers, subway lines, road tunnels, communications tunnels, and
the like. Even with the "emptying" of the modern battlefield, organizational behavior in the field strives for lateral
contiguity and organizational integrity. But the broken spatial qualities of urban terrain fragments units and
compartmentalizes encounters, engagements, and even battles. The leader's span of control can easily collapse, and it
is very, very hard to gain and maintain an accurate picture of the multidimensional "battlefield."

Noncombatants, without the least hostile intent, can overwhelm the force, and there are multiple players beyond the
purely military, from criminal gangs to the media, vigilante and paramilitary factions within militaries, and factions
within those factions. The enemy knows the terrain better than the visiting army, and it can be debilitatingly difficult to
tell friend from foe from the disinterested. Local combat situations can change with bewildering speed. Atrocity is
close-up and commonplace, whether intentional or incidental. The stresses on the soldier are incalculable. The urban
combat environment is, above all, disintegrative.

The modern and post-modern trend in Western militaries has been to increase the proportion of tasks executed by
machines while reducing the number of soldiers in our establishments. We seek to build machines that enable us to win
while protecting or distancing the human operator from the effects of combat. At present, however, urban combat
remains extremely manpower intensive--and it is a casualty producer. Although a redirection of research and
development efforts toward addressing the requirements of urban combat could eventually raise our efficiency and
reduce casualties, machines probably will not dominate urban combat in our lifetimes and the soldier will remain the
supreme weapon. In any case, urban warfare will not require substantial numbers of glamorous big-ticket systems but
great multiples of small durables and disposables whose production would offer less fungible profit margins and whose
relatively simple construction would open acquisition to genuinely competitive bidding.

Casualties can soar in urban environments. Beyond those inflicted by enemy action, urban operations result in broken
bones, concussions, traumatic-impact deaths and, with the appalling sanitation in many urban environments, in a broad
range of septic threats. Given the untempered immune systems of many of our soldiers, even patrol operations in
sewer systems that did not encounter an enemy could produce debilitating, even fatal, illnesses. One of many potential
items of soldier equipment for urban warfare might be antiseptic bio-sheathing that coats the soldier's body and closes
over cuts and abrasions, as well as wounds. Any means of boosting the soldier's immune system could prove a critical
"weapon of war."

Urban warfare differs even in how "minor" items such as medical kits and litters should be structured. Soldiers need
new forms of "armor;" equipment as simple as layered-compound knee and elbow pads could dramatically reduce the
sort of injuries that, while not life-threatening, can remove soldiers from combat for hours, days, weeks, or even
months. Eye protection is essential, given the splintering effects of firefights in masonry and wood environments, and
protective headgear should focus as much on accidental blows from falls or collapsing structures as on enemy fire, on
preserving the body's structural integrity as much as on ballistic threats.

Communications requirements differ, too. Soldiers need more comms distributed to lower levels--down to the
individual soldier in some cases. Further, because of loss rates in the give and take of urban combat, low-level comms
gear should not be part of the encrypted command and control network. Radios or other means of communication do
not need extended range, but they must deal with terrible reception anomalies. Even a "digitized" soldier, whose every
movement can be monitored, will require different display structures in the observing command center. This is the
classic three-dimensional chessboard at the tactical level.

On the subject of command and control, the individual soldier must be even better-trained than at present. He will face human and material distractions everywhere--it will be hard to maintain concentration on the core mission. Soldiers will die simply because they were looking the wrong way, and even disciplined and morally sound soldiers disinclined to rape can lose focus in the presence of female or other civilians whom they feel obliged to protect or who merely add to the human "noise level." The leader-to-led ratio must increase in favor of rigorously prepared low-level leaders. While higher-level command structures may flatten, tactical units must become webs of pyramidal cells capable of extended autonomous behavior in a combat environment where multiple engagements can occur simultaneously and in relative isolation in the same building. Nonsensical arguments about the Wehrmacht making do without so many NCOs and officers on the battlefield must be buried forever; not only is the German military of the last European civil war ancient history, but it lost decisively. Our challenge is to shape the US Army of the 21st century.

Personal weapons must be compact and robust, with a high rate of fire and very lightweight ammunition, but there is also a place for shotgun-like weapons at the squad level. Overall, soldier loads must be reduced dramatically at the edge of combat, since fighting in tall buildings requires agility that a soldier unbalanced by a heavy pack cannot attain; further, vertical fighting is utterly exhausting and requires specialized mobility tools. Soldiers will need more upper body strength and will generally need to be more fit--and this includes support soldiers, as well.

Ideally, each infantry soldier would have a thermal or post-thermal imaging capability--since systems that require ambient light are not much good 30 meters below the surface of the earth. Also, an enhanced ability to detect and define sounds could benefit the soldier--although he would have to be very well-trained to be able to transcend the distracting quality of such systems. Eventually, we may have individual-soldier tactical equipment that can differentiate between male and female body heat distributions and that will even be able to register hostility and intent from smells and sweat. But such devices will not be available for the next several interventions, and we shall have to make do for a long time to come with soldiers who are smart, tough, and disciplined.

The roles of traditional arms will shift. Field artillery, so valuable elsewhere, will be of reduced utility--unless the US military were to degenerate to the level of atrocity in which the Russians indulged themselves in Grozniy. Until artillery further enhances accuracy, innovates warheads, and overcomes the laws of ballistic trajectories, it will not have a significant role in urban combat divisions. Because of attack angles and the capabilities of precision munitions, air power will prove much more valuable and will function as flying artillery. Mortars, however, may often be of great use, given their steep trajectories. More accurate and versatile next-generation mortars could be a very powerful urban warfare tool.

The bulk of tactical firepower will need to come from large-caliber, protected, direct-fire weapons. This means tanks, or future systems descended from the tank. While today's tanks are death traps in urban combat--as the Russians were recently reminded--the need for protected, pinpoint firepower is critical. Instead of concentrating entirely on obsolescent rural warfare, armor officers should be asking themselves how the tank should evolve to fight in tomorrow's premier military environment, the city. First, the "tank" will need more protection, and that protection will need to be differently distributed--perhaps evolving to tuned electronic armor that flows over the vehicle to the threatened spot. Main guns will need to be large caliber, yet, ideally, would be able to fire reduced-caliber ammunition, as well, through a "caliber-tailoring" system. Crew visibility will need to be greater. The tank will not need to sustain high speeds, but will need a sprint capability. Further, the tank will need to be better integrated into local intelligence awareness.

While the need for plentiful dismounted infantry will endure, those soldiers will intermittently need means for rapid, protected movement. But this does not necessarily mean mechanized infantry--rather, it may demand armored transport centralized at the division level on which the infantry trains, but which does not rob the infantry of manpower in peacetime or in combat.

Engineers will be absolutely critical to urban combat, but they, too, will need evolved tools and skills. The vertical dimension is only part of the challenge. Engineers will need to develop expanded skills, from enabling movement in developed downtown areas to firefighting. Demolition skills will be essential, but will be a long way from blowing
road craters. Tomorrow's combat engineers may have to drop 20-story buildings on minimal notice under fire while minimizing collateral damage.

Aviation is vital to mobility, intelligence, and the delivery of focused firepower in urban environments, but, as Mogadishu warned us, present systems and tactics leave us highly vulnerable. Rotary-wing aviation for urban combat does not need great range or speed, but demands a richer defensive suite, great agility, and increased stealthiness.

Military intelligence must be profoundly reordered to cope with the demands of urban combat. From mapping to target acquisition, from collection to analysis, and from battle damage assessment to the prediction of the enemy's future intent, intelligence requirements in urban environments are far tougher to meet than they are on traditional battlefields. The utility of the systems that paid off so richly in Desert Storm collapses in urban warfare, and the importance of human intelligence (HUMINT) and regional expertise soars. From language skills to a knowledge of urban planning (or the lack thereof), many of the abilities essential to combat in cities are given low, if any, priority in today's intelligence architecture. While leaders are aware of these shortfalls, military intelligence is perhaps more a prisoner of inherited Cold War structures than is any other branch--although field artillery and armor are competitive in their unpreparedness for the future.

Military intelligence is at a crossroads today and must decide whether to continue doing the often-irrelevant things it does so well or to embrace a realistic future which will demand a better balance between systems and soldiers in a branch particularly susceptible to the lure of dazzling machines. Try templating a semi-regular enemy unit in urban combat in the center of Lagos after 24 hours of contact. This does not mean that high-tech gear and analytical methodologies are useless in urban environments. On the contrary, innovative technologies and organizational principles could make a profound difference in how military intelligence supports urban combat operations. But we would need to shift focus and explore radical departures from the systems we currently embrace.

Military police and civil affairs troops will continue to play the important roles they played in urban interventions during the 20th century, but psychological operations (PSYOPS) units, long a step-child, will surge in importance, and may ultimately merge fully with military intelligence to enhance synergy and efficiency. Especially given the potential for electronic population control systems in the next century, PSYOPS may function as a combat arm, even if not credited as such.

Even supply is different. While deliveries do not need to be made over great distances, soft vehicles are extremely vulnerable in an environment where it is hard to define a front line and where the enemy can repeatedly emerge in the rear. All soldiers will be fighters, and force and resource protection will be physically and psychologically draining. Urban environments can upset traditional balances between classes of supply. There may be less of a requirement for bulk fuel, but an intervention force may find itself required to feed an urban population, or to supply epidemic-control efforts. Artillery and ATGM expenditures might be minimal, while main gun and infantry systems ammunition consumption could be heated. Urban combat breaks individual and crew-served weapons and gear, from rifles to radios, and masonry buildings are even harder on uniforms than on human bones. Soldiers will need replacement uniforms far more often than during more traditional operations. Unfortunately, we also will need more replacement soldiers, and all combat support and combat service support troops are more apt to find themselves shooting back during an urban battle than in any other combat environment.

Where do we begin to prepare for this immediate and growing challenge? There are two powerful steps we ought to take. First, the US Army should designate two active and at least one of our National Guard divisions as urban combat divisions and should begin variable restructurings to get the right component mix. Rule one should be that the active divisions are not "experimental" in the sense of nondeployable, but remain subject to short-notice deployment to threatened urban environments. This would put an incredible stress on the unit and, especially, on the chain of command. But today's US Army cannot afford to have any divisions "on ice," and, further, this pressure would drive competence. Two such divisions is the irreducible initial number, since one urban combat division would be rapidly exhausted by the pace of deployments.

Most of the divisional artillery would be shifted to corps-level, while engineers at all levels would be increased and restructured--including the addition of organic sapper platoons to infantry battalions. Composite armor and
mechanized elements would be added to light forces at a ratio of one battalion (brigade) to four, with a longer-term goal of developing more appropriate and readily deployable means of delivering direct firepower and protecting the forward movement of troops. Innovative protection of general transport would be another goal. Military intelligence units would have to restructure radically, and would need to develop habitual relationships with reserve component linguists and area specialists. Aviation would work closely with other arms to develop more survivable tactics, while each division would gain an active-duty PSYOPS company. Signalers would need to experiment with low-cost, off-the-shelf tools for communicating in dense urban environments, and an overarching effort would need to be made to create interdisciplinary maps, both paper and electronic, that could better portray the complexity of urban warfare. The divisions' experience would determine future acquisition requirements.

But none of the sample measures cited above is as important as revolutionizing training for urban combat. The present approach, though worthwhile on its own terms, trains soldiers to fight in villages or small towns, not in cities. Building realistic "cities" in which to train would be prohibitively expensive. The answer is innovation. Why build that which already exists? In many of our own blighted cities, massive housing projects have become uninhabitable and industrial plants unusable. Yet they would be nearly ideal for combat-in-cities training. While we could not engage in live-fire training (even if the locals do), we could experiment and train in virtually every other regard. Development costs would be a fraction of the price of building a "city" from scratch, and city and state governments would likely compete to gain a US Army (and Marine) presence, since it would bring money, jobs, and development--as well as a measure of social discipline. A mutually beneficial relationship could help at least one of our worst-off cities, while offering the military a realistic training environment. The training center could be at least partially administered by the local National Guard to bind it to the community. We genuinely need a National Training Center for Urban Combat, and it cannot be another half-measure. Such a facility would address the most glaring and dangerous gap in our otherwise superb military training program. We need to develop it soon.

In summary, an urbanizing world means combat in cities, whether we like it or not. Any officer who states categorically that the US Army will never let itself be drawn into urban warfare is indulging in wishful thinking. Urban combat is conceptually and practically different from other modes of warfare. Although mankind has engaged in urban combat from the sack of Troy down to the siege of Sarajevo, Western militaries currently resist the practical, emotional, moral, and ethical challenges of city fighting. Additional contemporary players, such as the media, and international and nongovernmental organizations, further complicate contemporary urban combat. We do not want to touch this problem. But we have no choice. The problem is already touching us, with skeletal, infected fingers. The US military must stop preparing for its dream war and get down to the reality of the fractured and ugly world in which we live--a world that lives in cities. We must begin judicious restructuring for urban combat in order to gain both efficiency and maximum effectiveness--as well as to preserve the lives of our soldiers. We must equip, train, and fight innovatively. We must seize the future before the future seizes us.