

APPENDIX H
**LESSONS LEARNED FROM
 MODERN URBAN COMBAT**

Although the US Army has a long history of combat operations in urban areas, it is not alone in conducting UO. Other armies have also conducted extensive urban combat, some very recently. Just as each war is unique, each nation's army is a unique reflection of its national strategy, government, economy, demographics, and culture. For that reason, no one lesson learned can be valid for all cases of urban combat. It is important, however, to study and to learn from the experiences of others. This appendix presents abstracts from various sources of information on the lessons learned by non-US armies in recent urban combat. Because of the subjective nature of such abstracts, no attempt is made to validate these lessons against US experience.

H-1. RUSSIA AND THE WAR IN CHECHNYA

Following the collapse of the Soviet Union, the people of Chechnya began to seek full independence. By 1994, Chechnya had fallen into a civil war between pro-independence and pro-Russian factions. In December 1994, Russia sent 40,000 troops into Chechnya to restore Russian primacy over the breakaway republic. An attack was launched by 6,000 mechanized troops against the Chechen capital of Grozny. Instead of the anticipated light resistance, Russian forces encountered heavy resistance from the Chechens, armed with “massive amounts” of antitank weapons. The Russians were repulsed with shockingly high losses. It took them another two months of heavy fighting, and changing their tactics, before they were able to capture Grozny. Between January and May 1995, Russian losses in Chechnya were approximately 2,800 killed, 10,000 wounded, and over 500 missing or captured. Chechen casualties were also high, especially among noncombatants.

a. **General Analysis.**ⁱ A reversal of fortune so astonishing and unprecedented as the Chechen victory of the Russians should make this war a major and cautionary episode in military history. The large-scale lessons of Chechnya lie in three areas:ⁱⁱ

- It showed, again, the limited effectiveness of heavy weaponry in urban terrain and, by extension, the crucial importance of well-trained, well-led, well-equipped, and highly motivated infantry.
- It validated, once more, the continued relevance of Clausewitz's dictum to seek decisive battle.
- It proved again that a society judged “primitive” or “chaotic” by Western standards can still generate a tremendous fighting spirit and very effective military discipline. This is not a new lesson. The “primitive” Cheyenne, Apache, Nez Pierce, Seminole, and Moro tribesmen; the uneducated North Korean, North Vietnamese and Chinese peasants; and the ragtag Somali clansmen have all taught it to the Americans they faced, just as the Chechens streetfighters taught the conscript soldiers of the Russian Army.

The following lessons learned are from *The World Turned Upside Down: Military Lessons of the Chechen War*, by Mr. Anatol Lievenⁱⁱⁱ.

“It cannot be emphasized too strongly, therefore, that the key to success in urban warfare is good infantry. And the key to good infantry, rather than good weaponry, is a traditional mixture of training, leadership qualities in NCOs and junior officers, and morale – implying a readiness to take casualties.”

“The Russians faced an opponent who was singularly determined not to make peace and retained the means to go on fighting. The lesson to be learned by armies everywhere is that, especially against such an opponent, there is no valid strategic alternative to seeking decisive battle...”

“The US will not always have the ability to pick and choose its wars, and the key lesson Chechnya is that there will always be military actions in which a determined infantryman will remain the greatest asset.”

b. US Marine Corps Analysis.^{iv}

(1) **Strategic Lessons.** Military operations alone cannot solve deep-seated political problems.

(a) Military commanders need clear policy guidance from which they could work steadily and logically.

(b) Confusion generated by missing or conflicting policy guidance is made worse by poorly defined lines of command and control.

(c) Russian senior command lacked continuity and was plagued by too much senior leadership involvement at the lower operational level.

(d) Contrary to initial expectation, operations were neither of short duration or low cost.

(e) When Russian security operations began achieving results, the Chechens started attacking targets within Russia.

(f) It was difficult to unite police and military units into a single, cohesive force.

(g) Distinct tactical advantages accrue to the side with less concern for the safety of the civilian population.

(h) Concern about civilian casualties and property destruction declined as casualties among the Russian forces rose.

(i) Chechen forces received extensive outside assistance despite rigorous attempts to stop it.

(2) **Operational Lessons.**

(a) Having well-developed military doctrine for urban warfare is not enough in and of itself.

(b) Situation-oriented training would have improved Russian military effectiveness.

(c) Inadequate training in the most basic maneuver and combat skills inhibited Russian operations.

(d) Urban combat is extremely manpower intensive and produces significant attrition of men and materiel among the attackers.

(e) Overwhelming firepower can make up for organizational and tactical deficiencies the short-run if one is willing to disregard collateral damage.

(f) The sudden requirement to deploy to Chechnya, coupled with the unique supply problems posed by the weather and the urban environment, overwhelmed the already fragile Russian-military logistics system.

(g) A lack of high-quality intelligence made operations more difficult and dangerous the Russian forces.

(h) The geometry and perspectives of urban combat are very different from combat in the open area. Urban combat is much more vertically oriented.

(i) Composite units were generally unsatisfactory.

(j) Fratricide was a serious and continuing problem throughout the campaign in Chechnya because it was difficult to tell friend from foe.

(k) Standard The Russian-military unit configurations were inappropriate for urban combat.

(l) Foregoing peacetime maintenance is a false economy.

(m) The potential of special forces for urban operations was never realized in Chechnya.

(n) The nature of cities tends to channel combat operations along narrow lanes of activity.

(o) Strategic bombing can be used in urban operations to shape the battlefield, especially during the early phases.

(3) *Tactical Lessons.*

(a) Rigorous communications security is essential, even against relatively primitive enemies.

(b) Night fighting was the single most difficult operation in Chechnya for Infantry forces.

(c) Tanks and APCs cannot operate in cities without extensive dismounted Infantry support.

(d) Forces, operating in cities, need special equipment not usually found in Russian TO&Es. Lightweight ladders were invaluable for assaulting Infantry.

(e) Firing tracer ammunition in cities makes the user a target for snipers.

(f) Trained snipers were essential, but in short supply.

(g) Obscurants are especially useful when fighting in cities.

(h) Armored combat engineer vehicles can perform important, specialized urban combat tasks.

(i) Recovering damaged armored vehicles is especially difficult in cities.

(j) Hit-and-run ambush attacks by small groups were the most favored and effective of the Chechen tactics.

(k) Direct-fire artillery can be a valuable tool in urban combat, provided collateral damage is not a major concern.

(l) A failure of small unit leadership, especially at the NCO level, was a primary cause of Russian tactical failures in Grozny.

(m) Tracked armored vehicles are preferable to wheeled armored vehicles in urban combat.

(n) When operating in urban areas, armored vehicles require more protection and that protection needs to be distributed differently than for combat in the open.

(o) RPGs can be used against helicopters.

(p) Air defense guns are valuable for suppressing ground targets.

(q) Heavy machine guns still offer good defense against close air attack, especially from helicopters.

(r) Both sides employed commercial off-the-shelf technologies for military purposes.

(s) Non-lethal technologies were seldom used.

(t) Tactical communications proved very difficult in Grozny.

(u) Indigenous forces can improvise crude chemical weapons using hazardous materials from the urban area.

(v) The cabs of supply trucks must be armored.

(w) Bunker busting weapons are invaluable for urban combat.

(x) Some Russian equipment needed to be modified in the field to counter enemy tactics and equipment.

(y) Helicopters need standoff weapons.

(z) Helicopters are not well suited for urban combat.

(aa) Precision guided weapons were used extensively by the Russian Air Force.

(bb) Inadequate on-board navigation systems and poor radar limited the use of helicopters in adverse weather and at night.

(cc) Precision-guided artillery projectiles were considered too expensive to “waste”. Direct fire artillery was often substituted for precision-guided indirect fire.

(dd) UAVs were used extensively and were very effective.

c. **US Army Infantry School Analysis.**^v Russian Army Lessons Learned from the Battle of Grozny.

(1) You need to culturally orient your forces so you don't end up being your own worst enemy simply out of cultural ignorance. Many times, Russian soldiers made serious cultural errors in dealing with the Chechen civilians. Once insulted or mistreated, the Chechens became active fighters or, at least, supported the active fighters. Russians admit they underestimated the affect of religion on the conflict.

(2) You need some way of sorting out combatants from non-combatants. The Russians were forced to resort to searching the pockets of civilians for military equipment and to sniffing then for the smell of gunpowder and gun oil. This was crude, and not very reliable. Trained dogs were used to detect the smell of gunpowder or explosives, but were not always effective. Nevertheless, specially trained dogs probably are the best way to determine if a person has been using explosives or firing a weapon recently.

(3) The psychological impact of high intensity urban combat is so intense units should maintain a large reserve that will allow them to rotate units in and out of combat. If a commander does this, he can preserve a unit for a long time. If he doesn't, once it gets used up, it can't be rebuilt.

(4) Training and discipline are paramount. You can accomplish nothing without them. You may need to do the training in the combat zone. Discipline must be demanded. Once it begins to slip, the results are disastrous.

(5) The Russians were surprised and embarrassed at the degree to which the Chechens exploited the use of cell phones, Motorola® radios, improvised TV stations,

lightweight video cameras and the internet to win the information war. The Russians admitted that they lost control of the information coming out of Grozny early in the operation and never regained it.

(6) The proliferation of rocket propelled grenade launchers surprised them, as well as the diversity of uses to which they were put. RPGs were shot at everything that moved. They were fired at high angle over low buildings and from around buildings with little or no attempt made to aim. They were sometimes fired in very disciplined volleys and were the weapon of choice for the Chechens, along with the sniper rifle. Not only were the Russians faced with well-trained, well equipped Chechen military snipers, there were also large numbers of designated marksmen who were very good shots using standard military rifles. These were very hard to deal with and usually required massive firepower to overcome.

(7) As expected, the Russians reiterated the need for large numbers of trained Infantrymen. They said that some tasks, such as conducting logpac operations, could only be conducted by infantrymen. The logistical unit soldiers were hopelessly inept at basic military skills, such as perimeter defense, establishing security overwatch, and so forth, and thereby fell easy prey to the Chechens.

(8) They found that boundaries between units were still tactical-weak points, but that it wasn't just horizontal boundaries they had to worry about. In some cases, the Chechens held the third floor and above, while the Russians held the first two floors and sometimes the roof. If a unit holding the second floor evacuated parts of it without telling the unit on the ground floor, the Chechens would move troops in and attack the ground floor unit through the ceiling. Often this resulted in fratricide as the ground floor unit responded with uncontrolled fire through all of the ceilings, including the ones below that section of the building still occupied by Russians. Entire battles were fought through floors, ceilings, and walls without visual contact.

(9) Ambushes were common. Sometimes they actually had three tiers. Chechens would be underground, on the ground floor, and on the roof. Each group had a different task in the ambush.

(10) The most common response by the Chechens to the increasingly powerful Russian indirect and aerial firepower was hugging the Russian unit. If the hugging tactics caused the Russians to cease artillery and air fires, it became a man-to-man fight and the Chechens were well equipped to win it. If they didn't cease the supporting fires, the Russian units suffered just as much as the Chechen fighters did, sometimes even more, and the morale effect was much worse on the Russians.

(11) Both the physical and mental health of the Russian units began to decline almost immediately upon initiation of high intensity combat. In less than a month, almost 20% of the Russian soldiers were suffering from viral hepatitis (very serious, very debilitating, slow recovery). Most had chronic diarrhea and upper respiratory infections that turned to pneumonia easily. This was blamed on the breakdown of logistical support that meant units had to drink contaminated water. Unit sanitary discipline broke down almost completely.

(12) According to a survey of over 1300 troops made immediately after the fighting, about 72 percent had some sort of psychological disorder. Almost 75 percent had an exaggerated startle response. About 28 percent had what was described as neuro-emotional and almost 10 percent had acute emotional reactions. The Russians

recommended two psycho-physiologists, one psycho-pharmacologist, one psychiatrist, and one medical psychologist at each (US) Corps-sized unit. Although their experience in Afghanistan prepared them somewhat for the physical health problems, they were not prepared for this level of mental health treatment. Many permanent-combat stressed casualties resulted from the soldiers not being provided proper immediate treatment.

(13) Chechens weren't afraid of tanks or BMPs. They assigned groups of RPG gunners to fire volleys at the lead and trail vehicles. Once these were destroyed, the others were picked off, one-by-one. The Russian forces lost 20 of 26 tanks, 102 of 120 BMPs, and 6 of 6 ZSU-23s in the first three days of fighting. Chechens chose firing positions high enough or low enough to stay out of the fields of fire of the tank and BMP weapons.

(14) Russian conscript infantry sometimes refused to dismount and often died in their BMP without ever firing a shot. Russian elite infantry did much better, but didn't coordinate well with armored vehicles initially.

(15) Chechens were brutish, especially with prisoners. (Some reports say the Russians were no better, but most say the Chechens were the worse of the two sides.) Whoever was at fault, the battle degenerated quickly to one of "no quarter asked, none given." Russian wounded and dead were hung upside down in windows of defended Chechen positions. Russians had to shoot at the bodies to engage the Chechens. Russian prisoners were decapitated and at night their heads were placed on stakes beside roads leading into the city, over which Russian replacements and reinforcements had to travel. Both Russian and Chechen dead were routinely booby-trapped.

(16) The Russians were not surprised by the ferocity and brutality of the Chechens; they expected them to be "criminals and animal brutes". But they were surprised by the sophistication of the Chechen use of booby-traps and mines. Chechens mined and booby-trapped everything, showing excellent insight into the actions and reactions of the average Russian soldier. Mine and booby-trap awareness was hard to maintain.

(17) The Russians were satisfied with the combat performance of most of their infantry weapons. The T-72 tank was unsatisfactory, often called, "dead meat". It was too vulnerable, too awkward, not agile, had poor visibility, and poor weapons coverage at close ranges. The Russians removed them from the battle and replaced them with smaller numbers of older tanks and more self-propelled artillery, more ADA weapons, and more BMPs.

(18) Precision guided weapons and UAVs were very useful. There was some need for non-lethal weapons, but mostly riot gas and tranquilizer gas, not stuff like sticky foam. The Russian equivalent of the M202 Flash flame projector and the MK 19 grenade launcher were very useful weapons.

(19) Ultimately, a strong combined arms team and flexible command and control meant more than the individual weapons used by each side.

H-2. BEIRUT (1982), MOGADISHU (1993), AND GROZNY (1995)^{vi}

This paragraph draws together lessons learned on the organization, equipment, and training of the forces involved and draws conclusions about what types of military systems, munitions, and force structure were effective and why.

a. **Beirut.**

(1) **Armor.** Tanks were under the command of the Israeli Defense Force (IDF) Infantry companies. The armor of the Merkava, with an internal troop compartment, proved excellent protection against RPGs, mines, and small arms fire. The IDF felt that tanks were the most useful weapon in Beirut, both in terms of delivering firepower on specific targets and protecting the Infantry. The IDF concluded that the M113 family of armored vehicles was too unreliable, unmaneuverable, and vulnerable.

(2) **Infantry.** Clearing buildings presented a major problem for the IDF. In the words of one IDF brigade commander, "Every room is a new battle." Once troops are inside a building, it is impossible for a commander to understand what his troops are confronting, "The battlefield is invisible." In his judgment, the dangers of clearing buildings are so great that they should never be entered unless absolutely necessary: "Avoid cities if you can. If you can't, avoid enemy areas. If you can't do that, avoid entering buildings."

(3) **Artillery.** The IDF found the American-made M109 155-mm self-propelled howitzer extremely effective when using high explosives in a direct-fire role. Both sides employed Katyusha multiple rocket launchers, which had tremendous psychological effect on noncombatants. PLO antiaircraft artillery (mostly heavy automatic weapons) was not effective against the Israeli Air Force.

(4) **Munitions.** Air-delivered cluster bombs, smart 1000 pound bombs, rockets, missiles and other munitions were precise and effective. Cluster bomb units (CBUs) were highly effective in destroying antiaircraft artillery. However, the CBUs' sub-munitions were responsible for many civilian casualties. Large proportions of the shells used were white phosphorous (WP). The IDF appeared to use WP primarily for the psychological effect it generated, including fear.

b. **Mogadishu.**

(1) **Rules of Engagement.** Despite strict rules of engagement that severely limited the use of mortars and artillery, the US forces inflicted significant collateral damage in Mogadishu. During the 17 June attack, for example, helicopter gunships pounded an Aideed stronghold with TOW missiles and aerial rockets, killing at least sixty Somali noncombatants. Although the Cobra gunships and the AC 130s were removed in August, the lavish use of firepower during the first few months of UNOSOM II significantly alienated the civilian population. One analyst described the larger consequences this way:

"By the time the American resorted to the use of anti-tank guided missiles to root our snipers, it had become apparent that the firepower which had demolished the Iraqi Republican Guards was ill-suited to the streets of Mogadishu.....The Gulf War's promise of a style of fighting that minimized noncombatant casualties was a long way from fulfillment."

(2) **Helicopter Close Air Support.** Given the constraints on indirect fire, the only significant fire support element available to the 10th Mountain Division was an attack helicopter company, equipped with AH-1 Cobras. One participant noted, "Air strikes are only suppressive fire...and did not completely destroy enemy positions or buildings. Many building that were struck were reoccupied by Somali guerrillas within minutes." The Somali fighters' skill with RPGs made all rotary wing aircraft vulnerable. Regardless of this, however, the bravery, skill and combat effectiveness of the pilots flying the AH-6

helicopters were a major factor in the successful defense of several buildings by elements of Task Force Ranger during the intense battles of 3-4 October 1993.

c. **Grozny.**

(1) **Russian Readiness and Training.** Russian performance was severely hampered by the fact that its poorly trained troops were forced to serve together in hastily assembled units. One observer described them as, “Untrained kids” and a “shapeless and disorganized groups of men which does not know itself where it is going.” Additionally, troops received little or no specialized urban warfare training. Both sides employed snipers effectively, but both sides also experienced shortages of these trained personnel.

(2) **Munitions.** The RPG, brilliantly employed by the Chechens, was perhaps the single most useful weapon in the conflict. Smoke, white phosphorus rounds and tear gas were used extensively by the Russians, and they proved useful. According to one analyst, every fourth or fifth artillery round was white phosphorus, which burns upon explosion. The resulting smoke provided cover for the movement of Russian forces. However, these munitions, like much else, were in short supply due to logistical breakdowns.

(3) **Aircraft.** The Russians had large numbers of fixed-wing aircraft, but they proved of limited tactical value. For most of the conflict, poor weather kept Russian fixed-wing aircraft grounded. Helicopter gunships proved more useful, particularly against snipers on the upper floors of buildings.

(4) **Psychological Operations (PSYOP).** Disinformation, deception, and other forms of information warfare were used extensively by both sides during the battle for Grozny. PSYOP ranged from the tactical; for example, the Russian use of loudspeakers and leaflets to encourage the Chechens to lay down their weapons, to the strategic; for example, Russians claim to the world press that its military activities in Chechnya were *peacekeeping* operations. The Chechen commanders organized civil disobedience actions; claimed falsely that the Russians were employing chemical weapons; and claimed, apparently falsely, that Chechnya possessed nuclear weapons. The utility of all this information warfare techniques is difficult to assess. It is clear however, that both the Russians and the Chechens believed that they are important military instruments.

H-3. GENERAL OBSERVATIONS ON URBAN WARFARE.^{vii}

This paragraph is extracted from an article in which the author draws together lessons learned from urban combat around the world and generates a set of conclusions about the nature of the urban battlefield. The conclusions are solely the author’s but they provide interesting professional reading.

a. **Urban Warfare - Different and Demanding.**

(1) Conventional warfare on open terrain—the preferred form of combat for all modern military forces, is a complex and challenging undertaking, requiring vast resources, training, and excellent organization to perform well. Whatever challenges are inherent in this mode of warfare are magnified significantly in the city environment. From Stalingrad to Inchon to Panama to Grozny, urban combat has been characterized by:

- Poor communications
- Difficult command and control
- Difficult target acquisition
- Short engagement ranges

- Reduced effectiveness for transportation and fire support assets
- Difficulties in providing logistical support to the front line.

(2) Tall buildings, sewers, and tunnels give the battlefield dimensions of height and depth that are absent on open terrain. In essence, city fighting is primordial combat. It is clearly distinct from the elegant maneuver warfare that characterized the US conduct of the Gulf War.

- The enemy is at close range.
- Snipers are almost always present.
- Stress is extremely high.
- The opposing force is frequently indistinguishable from the civilian population.

(3) Demographic and urbanization trends in the developing world are likely to lead to city environments that are even more stressful and more difficult to operate in.

b. No US Comparative Advantage.

(1) The historical data suggest that it is extremely difficult for modern forces to leverage their technological advantages against a determined adversary in an urban environment. To be sure, the US military is highly motivated, well trained and well equipped, but not for urban warfare per se.

(2) The city environment, with its high population density and multistory buildings, tends to negate the technological advantages, for example, close air support, mobility, communications, enjoyed by modern military forces. Some US military technology, designed for large scale war in the open areas of central Europe or the desert, is not well suited for urban combat. The US technological advantage, typically associated with long range, high-technology weapons platforms that use mass and mobility, is significantly reduced in urban environments.

(3) It is precisely for this reason that less sophisticated forces are drawn to cities. Urban battles in the recent past, such as Grozny and Mogadishu, have been characterized by conflict between modern combined arms forces and informally organized irregulars. The battle of Inchon was the last significant urban engagement in which US forces fought a remotely comparable force in an urban environment. Aware of our increasing unwillingness to take casualties or cause major collateral damage, and understanding our lack of comparative advantage in the urban environment, US adversaries are increasingly likely to engage our forces in cities.

c. Small-Unit Operations.

(1) The degeneration of urban warfare into a series of small-group—or even of individual—battles was evident in operations as different as Stalingrad, Hue and Beirut. The nature of cities themselves is responsible for this fragmentation process. As battles wear on, the streets and building blocks of the urban physical morphology fragment urban warfare into conflict between units usually of squad or platoon size, with generally insufficient space for the deployment and maneuvering of larger units. The battle rapidly disintegrates into a series of more or less separate and isolated conflicts around such “fortresses”.

(2) Given that much of an urban battle is likely to take place inside buildings or underground, it is likely to be invisible to all except the men actually fighting it on the ground. As a result, it is difficult for higher-level commanders to maintain an accurate picture of the battlefield at any given time.

(3) Given this inevitable fragmentation, operational effectiveness will depend greatly on the quality of leadership at lower echelons, for example, at battalion and below. Leadership shortfalls were apparent among US Marines in Hue and among the Russian army in Grozny. In both cases, the generous use of firepower served as a substitute. The relatively successful Israeli operation in Beirut can be attributed in part to the attention the IDF high command paid to developing small-unit leadership, which long stressed the importance of initiative and independence among junior commanders.

d. Importance of Armor.

(1) Tanks, as one Operation Just Cause participant has written, “are an infantryman’s friend in city fighting.” They can go anywhere. They can deliver steel on target and they scare the enemy. Their firepower can be used precisely, thus minimizing collateral damage; they can serve as troop carriers, as the IDF discovered in Beirut; and they can be useful for shocking opposition forces and less-than-friendly noncombatants.

(2) To be effective, however, they must be supported by dismounted infantry. In the absence of such support, tanks are vulnerable to rocket-propelled grenades, Molotov cocktails, and other systems and munitions. Once a tank is destroyed, it loses its psychological shock value among combatants and noncombatants alike.

(3) As mentioned above, small units are the norm in urban warfare. Given this reality, it may make sense to assign tanks to smaller units than is the norm:

(4) Tanks habitually operate in section or platoon formations. Tank communications procedures are designed for this. Support of a dismounted unit in a city, however, often involves only single or paired armored vehicles. Tanks might be assigned to units as small as a squad.

e. The Primacy of Infantry.

(1) The historical record suggests that urban warfare is manpower intensive. Large numbers of ground troops are needed to attack, clear, and hold cities. No attacking force has ever succeeded in the city environment without using large amounts of infantry.

(2) No firm rule of thumb exists, but according to one source, “a commander is left with the prospect of needing between 9 and 27 attackers per defender in an urban environment—Significantly more than is required for open terrain.”

(3) Placing significant numbers of men on the ground is equally important in stability or support operations. In such situations, human intelligence is a critical capability, requiring large numbers of collectors and analysts. As Army planners begin to create a task force for involvement, they will need to increase the intelligence assets for that task force. Infantrymen, provided they avoid a garrison mentality and patrol often, could be an essential component of this intelligence collection process.

f. Aircraft - A Mixed Blessing.

(1) Since the battle of Stalingrad, aircraft have been employed in city battles. Their use has been completely lopsided. Defenders have never been able to employ either fixed-wing or rotary-wing aircraft. During high intensity urban combat, with liberal rules of engagement, for example, Stalingrad, aerial bombardment has been very useful.

(2) In all other cases, however, airpower has not been terribly effective. The need to limit collateral damage has been the most significant factor in this regard. To date, air-delivered munitions, rockets, and other systems and munitions have lacked the low circular error probable (CEP) that is needed to minimize such damage.

(3) Even in the case of Beirut, where the Israeli Air Force reportedly employed smart munitions, collateral damage, while relatively low, was still significant. Similarly, fixed-wing aircraft, such as the AC-130 gunship, caused significant collateral damage in Panama City, Panama. In the case of Mogadishu, rotary-wing aircraft were vulnerable to RPG rounds, which reduced their utility.

(4) Finally, it should be mentioned that poor weather kept aircraft on the ground at least part of the time during the battles of both Hue and Grozny. As all-weather capability becomes a reality, this should be less of a concern. Similarly, new generations of precision-guided munitions could conceivably turn helicopters into “flying artillery” capable of great precision.

(5) Such munitions are likely to be very expensive, however, and this may limit their utility. During the battle of Grozny, for example, Russian commanders reportedly were unwilling to “waste” precious PGMs on the Chechen rebel forces.

g. Population Control Is Critical.

(1) In every major urban battle in modern times, the presence of noncombatants has affected the course of the operation. At Stalingrad, they served as a force multiplier for the Red Army. In Seoul, friendly noncombatants, exultant at the arrival of their US liberators, slowed the course of the American advance. In Hue, the Viet Cong and North Vietnamese Army forced civilians to construct defensive positions. In Mogadishu, Aided employed “rent-a-mobs” to hold anti-UN demonstrations and to serve as human shields.

(2) Civil affairs (CA) as we know it today is a relatively recent concept—there is no evidence, for example, that civil affairs units were used widely in urban battles during World War II or the Korean War. The evidence suggests that a robust CA (and with it, PSYOPS) capability will be necessary during future urban conflicts.

(4) Cities are unlikely to be empty. In recent conflicts, such as the battle of Mogadishu, and in Gorazde, Bosnia, in 1994, urban populations have sometimes even increased as the battle has progressed. What is more, Western morality (if not the Law of Land Warfare) will require Western military forces to ensure that noncombatants are protected and properly cared for.

(4) During the battle of Manila, for example, US forces spent two days battling fires set by fleeing Japanese forces. More recently, in the aftermath of the battle of Panama, a breakdown in public order forced US troops to conduct emergency law enforcement operations.

(5) Ensuring public safety, although an unpalatable task for US armed forces is inevitable, given the fact that it is unlikely that civilians will be able to provide these services during and immediately after an urban battle. Inevitably, military resources will have to be diverted to perform these public-safety tasks.

h. Key Munitions and Systems.

(1) As suggested earlier, urban warfare has been primordial, characterized by the use of such relatively simple systems as tanks, artillery, rockets, heavy machine guns, rocket-propelled grenades and mortars. However, in terms of utility these have above all been small arms. It is not surprising that in a manpower-intensive environment, the soldier’s most basic weapon should prove to have been of such importance.

(2) When used in a direct-fire mode, artillery has proved useful in destroying fortified targets, although their relative lack of accuracy has limited their use in recent battles, at

least among Western forces. Mortars, with their high trajectory, have also proved useful in the urban environment, but as with artillery, concerns about collateral damage have often limited their use.

(3) Flame, napalm, shotguns, recoilless rifles, and other low-technology systems and munitions that have proven highly effective in the urban environment are no longer readily available in the US military inventory. If the United States and other nations decide to become serious about improving their ability to fight on urban terrain, they have to look closely at their existing inventories and explore the possibility of reinstating such “quaint” systems as flame-throwers.

(4) The US may also need to examine the size of the explosives it uses in its artillery rounds, rockets, and other munitions. HEAT (high-explosive antitank) rounds used in M-1 tanks, for example, were designed to defeat enemy armored vehicles. As such, their lethal energy is directed forward, and the resultant projectile penetration power is such that they may go through several rooms or buildings before stopping.

(5) Similarly, Hellfire and missiles, launched from attack helicopters are antiarmor systems whose utility is limited in an environment where collateral damage needs to be minimized.

(6) Defeating the enemy while reducing collateral damage and friendly casualties requires a new set of munitions. This technique includes highly accurate mortars, lightweight charges for creating *breach holes*, and low yield, low-collateral damage munitions. These perhaps may be delivered by a system such as the Fiber-Optic Guided Missile (FOG-M) that would give US forces the ability to target much more precisely.

i. Rules of Engagement.

(1) In almost every modern urban battle, the attacking force-which is always the more modern force-has entered the battle with a set of strict rules of engagement designed to minimize collateral damage. Even in the case of total war, for example, the United States in Manila, rules of engagement, at least initially, have prohibited unobserved artillery fire, wholesale aerial bombardment, and other techniques of modern war.

(2) However, in each case, these rules of engagement have eased as the battle wore on. The explanation is straightforward: strong resistance and mounting friendly casualties lead inexorably to a relaxation of the earlier prohibitions.

(3) This suggests a tension between the desire to reduce civilian deaths and the destruction of infrastructure and the requirement to reduce friendly casualties. The days of using troops as cannon fodder (as at the Somme, for example) have long passed. In Western democracies, relatively low birth rates have made large numbers of casualties among one’s own forces completely unacceptable politically.

(4) Massive destruction of civilian populations and the vast destruction of city infrastructure are equally unacceptable. If the recent past is any guide, it seems fair to assume that the urban battlespace of the future will be characterized by even greater media transparency. Given that cities are increasingly the world’s centers of commerce, politics, and media, it is likely that warfare will be conducted there under even greater international scrutiny.

(5) In short, the battlefield will no longer be invisible to outside observers. Limiting the use of violence will be even more important in stability and support operations, where the goal of developing and maintaining political legitimacy could be undermined by the excessive use of force.

(6) The challenge, then, for military commanders will be to square the circle. Minimizing friendly casualties and reducing collateral damage have been mutually exclusive in the past. Commanders have resolved this tension in favor of the former.

(7) In the future, however, such a resolution is unlikely to be acceptable. Two possible answers suggest themselves. The first is technological. Advances in nonlethal technology, or in the ability to scan an urban structure's interior may make it possible to keep one's own casualties down while reducing collateral damage.

(8) The second possibility is operational. The ancient technique of laying siege to a city, although by definition time-consuming and thus difficult to sell politically, should be reexamined. A *humane* siege, bolstered by a robust strategic PSYOPS campaign designed to de-legitimize the defending force could minimize both friendly casualties and collateral damage.

j. Difficult for Attackers to Prevail but They Almost Always Do.

(1) As in any mode of warfare, defenders in urban battles enjoy distinct advantages. Intimate knowledge of the buildings, alleyways, tunnels, and rooftops that are a feature of most cities—perhaps gained over the course of a lifetime is one obvious advantage. In many cases, such as the shantytowns surrounding cities in the developing world, maps are likely to be outdated or even nonexistent.

(2) During Operation Urgent Fury, for example, the lack of official maps of Grenada forced troops to rely on tourist maps. Similar shortages reportedly plagued US forces in Somalia and Russian troops in Chechnya.

(3) Cities, particularly capital cities, are the locus of economic, political, and social power, and are becoming more so. It is not surprising that cities serve as critical arenas for those fighting to preserve national, ethnic, or religious identity. Put another way, urban areas are the key battlegrounds in any significant defense of the homeland. Forces claiming to defend that homeland from invasion, as in the cases of Stalingrad, Mogadishu, and Grozny, enjoy a tremendous advantage over attacking forces.

(4) All other things being equal, defending forces are much more likely to be able to gain the allegiance of the local population and use it as a source of food, munitions, shelter, and information.

(5) These observations lead to several conclusions. The first is that it is very difficult for attacking forces in an urban environment to prevail. However, if they are willing to accept high casualties, and can either focus their firepower or simply mass it regardless of collateral damage, they will normally prevail eventually. The second is that in the future, attackers will have to employ effective strategic-level PSYOPS and other techniques of political warfare if they hope to win in cities.

(6) As the Israelis discovered in Beirut, simply crushing an adversary no longer guarantees victory—the attacker must also win the international propaganda battle. A well crafted, effective political warfare campaign, being essentially nonviolent in nature, could also contribute to resolving the friendly casualties—collateral damage tension described above.

ⁱExtracted from *The World Turned Upside Down: Military Lessons of the Chechen War*, by Anatol Lieven, Armed Forces Journal International, August 1998, pp 40-43

ⁱⁱIbid.

ⁱⁱⁱArmed Forces Journal International, August 1998

^{iv}Extracted from *Russia's War in Chechnya, Urban Warfare Lessons Learned 1994 – 1996*, prepared by the USMC Intelligence Activity, Nov 1998

^vExtracted from a briefing by Mr. Timothy Thomas of FMSO, Fort Leavenworth, KS to the *RAND-DBBL Conference on Military Operations on Urbanized Terrain*, 24-25 Feb 1998, Washington, DC, and from personal interviews by USAIS representative. Included as part of USAIS trip report.

^{vi}Extracted in part from *“Every Room is a New Battle”: The Lessons of Modern Urban Warfare*, by William G. Rosenau, SAIC, McLean, VA, included in a collection of professional military reading originally published by the USMC Intelligence Activity, Quantico, VA.

^{vii}Ibid.