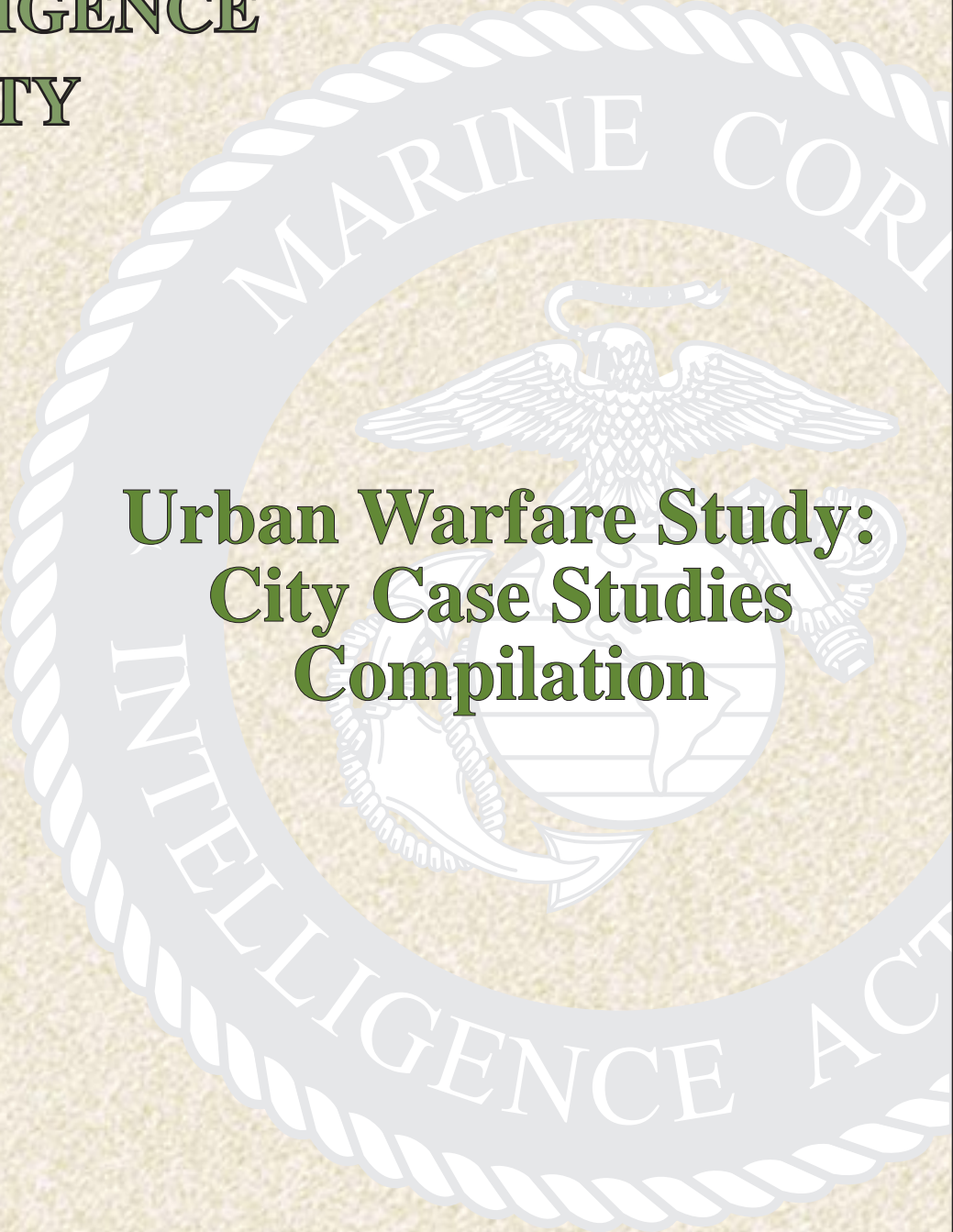


**MARINE CORPS  
INTELLIGENCE  
ACTIVITY**

April 1999



**Urban Warfare Study:  
City Case Studies  
Compilation**



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# Urban Warfare Study: City Case Studies Compilation

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# Section 1

## Introduction

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### Background

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As the forward deployed expeditionary element of United States military power, the United States Marine Corps (USMC) must be prepared to react quickly and effectively in the most unconventional of theaters. Given this unique warfighting mission, the Marine Corps has had much experience throughout its history operating in urban environments. In this decade alone, Marines have deployed in several major peacekeeping operations; all have required a concentration of force in major urban centers. Operations in Somalia, Haiti, and Bosnia have proven that military operations on urbanized terrain (MOUT) are complex and challenging. Preparing for the demands of urban operations requires continual innovations in strategy, operations, tactics, and technology.

In the future, Marine will face urban environment situations where different categories and activities will be conducted concurrently. Missions such as humanitarian assistance operations; peace operations; and full-scale, high-intensity combat may occur simultaneously within three city blocks. The Commandant of the Marine Corps has labeled this concept the “three city block war.” Integrating and coordinating these varying missions — each of which has its own operational characteristics — will challenge Marines to use their skill and determination in imaginative ways. The presence of large numbers of noncombatants and the potential difficulty in distinguishing noncombatants from hostile forces will further complicate the task of operating in the urban environment.

The Marine Corps has recognized these challenges and is staging URBAN WARRIOR exercises to test new tactics and equipment designed to make the USMC the leading U.S. force in MOUT. For example,

as part of URBAN WARRIOR, the Marine Corps Warfighting Lab (MCWL) has sponsored:

- Three URBAN WARRIOR Limited Objective Experiments that examined small unit combined arms operations in the urban environment;
- Military Operations on Urbanized Terrain Advanced Concept Technology Demonstration (MOUT ACTD) experiments that examined the use of man-portable shields and breaching technologies; and
- The first Responder LTA, a medical assessment examining new tactical possibilities for hospital corpsmen in urban warfare.

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### Overview

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In 1997, in light of the probability of future operations in urban environments, the Marine Corps Intelligence Activity (MCIA) was tasked to provide a preliminary assessment of urban warfare lessons learned in support of the CSEEA Joint Wargame. Three scenarios across the spectrum of conflict from mid- to low-intensity were chosen to represent urban operations. The lessons are drawn from:

- Russian military operations in urban areas of Chechnya (with focus on the fighting in Grozny) between 1994 and 1996;
- Israeli experiences operating in urbanized southern Lebanon during Operation PEACE FOR GALILEE in 1982; and
- British military experiences in Northern Ireland from 1969 to 1996, with special emphasis on the period 1969 to 1976 when the British Army had the lead in security operations.

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## Lessons Learned

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Analysis of the Russian, Israeli, and British military operations in urban terrain yielded the following overall strategic, operational, tactical, and technical lessons.

### Strategic Lessons

- ❑ Military action cannot solve deep-seated political problems, but can buy time for politicians to search for political solutions.
- ❑ It is difficult to get well-defined policy objectives to which the military can work steadily and logically.
- ❑ Contrary to expectations, urban operations are neither short-lived nor low cost.
- ❑ Lines of command and control are often unclear and/or conflicting in urban operations, especially when police and military units are intermingled.
- ❑ Problems with disjointed command structures can be exacerbated by too much senior leadership at the operational level.
- ❑ Operations can also suffer when there is a lack of continuity in the senior command structure.
- ❑ Local paramilitary forces are likely to receive outside assistance.
- ❑ Concern for civilian casualties and property damage declines as casualties among security forces rise.
- ❑ When security operations begin to achieve results, the enemy may start attacking targets in the security forces' homeland and/or their personnel stationed abroad.
- ❑ Paramilitary operations more often aim at achieving political advantage rather than military results.
- ❑ A distinct advantage accrues to the side with less concern for the safety of the civilian population.

### Operational Lessons

- ❑ It is important to have a well-developed military doctrine for urban operations, but that is not enough in and of itself.
- ❑ Situation-oriented training in urban warfare and tactics greatly improves military effectiveness and reduces losses.

- ❑ Clear rules of engagement are essential in urban combat situations.
- ❑ Even clear rules of engagement, however, are sometimes difficult to enforce, especially in the face of mounting losses among the security forces.
- ❑ The tempo of operations in an urban environment is so intense that personnel tend to “burn out” quickly.
- ❑ Overwhelming firepower can make up for organizational and tactical deficiencies in the short-run if one is willing to disregard collateral damage.
- ❑ Urban combat is extremely manpower-intensive and produces significant attrition of men and materiel among the attackers.
- ❑ Psychological operations are a key element of any military operation in an urban environment.
- ❑ Urban operations are very infantry-intensive affairs that produce large numbers of casualties.
- ❑ Urban operations usually stress the logistics system because of unusual requirements and abnormally high consumption rates in some classes of supply.
- ❑ The spatial qualities and perspective of urban and conventional warfare differ — urban combat is vertical in nature, whereas conventional combat is horizontal.
- ❑ Special forces are useful in urban settings, but are often misused because conventional force commanders do not understand how to use special skills effectively.
- ❑ The large-scale movement of urban non-combatants can significantly hinder military operations.
- ❑ Noncombatants cannot be counted upon to behave sensibly.
- ❑ Strategic bombing and close air support can be used to shape the battlefield, even in an urban setting.
- ❑ Standard military unit configurations are often inappropriate for urban combat.
- ❑ Failure to understand the importance of civil affairs can carry a high price.
- ❑ Amphibious operations can have an important role in urban warfare — especially in achieving tactical surprise.

## Tactical Lessons

- ❑ Rigorous communications security is essential, even against relatively primitive enemies.
- ❑ Night operations are especially difficult to carry out in an urban setting.
- ❑ Forces operating in cities need special equipment not in standard tables of organization and equipment.
- ❑ Tanks and armored personnel carriers cannot operate in cities without extensive dismounted infantry support.
- ❑ Trained snipers are very cost effective, but likely to be in short supply.
- ❑ If patrolling is central to the strategy of the security forces, it will be different from conventional combat patrolling and must be well coordinated.
- ❑ Fratricide is a serious problem in cities because it is harder to identify friend from foe.
- ❑ Major civilian structures in cities (e.g., hospitals, churches, banks, embassies) are situated in tactically useful locations, command key intersections, and/or are built of especially solid construction. Therefore, such facilities are especially useful to urban defenders.
- ❑ Direct-fire artillery can be a valuable tool in urban combat, provided collateral damage is not a major concern.
- ❑ Small unit leadership, especially at the junior non-commissioned officer level, is critical to tactical success in urban operations.
- ❑ Recovering damaged armored vehicles is more difficult in urban areas.
- ❑ Intelligence, especially from human sources, is critical to successful urban operations.
- ❑ Hit-and-run ambushes by small groups are the favorite tactic of urban paramilitary forces.
- ❑ Tracked vehicles are preferable to wheeled vehicles in situations where large amounts of rubble litter the streets. Otherwise, wheeled armored vehicles are preferable.
- ❑ Helicopters are not well suited for urban combat, but are quite useful in redeploying forces and supplies to just behind the forward edge of operations.

- ❑ Soldier loads must be dramatically reduced because urban warfare requires greater individual agility.
- ❑ Soldiers sometimes either deliberately misuse or modify non-lethal technologies to make them more harmful than intended by their designers.
- ❑ Very accurate and up-to-date maps are essential for successful urban operations.
- ❑ Shock value of artillery fire diminishes over time.

## Technical Lessons

- ❑ Some military equipment will probably have to be modified in the field to counter enemy tactics and equipment.
- ❑ Small arms, though not decisive, play a disproportionately significant role in the outcome of urban battles.
- ❑ Individual flak jackets significantly reduce urban casualties.
- ❑ Smoke enhances survivability in urban situations, but carries significant operational penalties (e.g., impedes visual communications, taxes driving skills of vehicle operators, and slows the overall rate of advance).
- ❑ Mortars are highly regarded by both attackers and defenders in urban operations, but may be less effective than anticipated.
- ❑ Machineguns may be more valuable than assault rifles for urban combat.
- ❑ Air defense guns are valuable for suppressing ground targets.
- ❑ Heavy machineguns still offer good defense against close air attack, especially helicopters.
- ❑ Commercial off-the-shelf technologies can be employed successfully for military purposes in cities.
- ❑ Rocket propelled grenades are omnipresent and very effective weapons in urban combat.
- ❑ Armored vehicles require more protection when operating in cities and have a different distribution than for a conventional battlefield.
- ❑ Remotely piloted vehicles can provide real-time intelligence, but analysts have considerable difficulty achieving accurate interpretation.

- ❑ The enemy often employs homemade weapons — even chemical weapons — against security forces.
- ❑ Lightly protected armored vehicles have limited value in urban terrain.
- ❑ Combat engineering equipment, especially armored bulldozers, is a critical asset in urban combat.
- ❑ Cluster munitions are very effective in cities, provided collateral damage is not a major concern.
- ❑ Although available, artillery-fired precision-guided munitions were seldom used in urban operations.
- ❑ Air-delivered precision-guided munitions were more commonly employed than artillery-fired precision-guided munitions when not hampered by bad weather.
- ❑ Bunker-busting weapons are invaluable for urban warfare.
- ❑ Non-lethal technologies were seldom used for urban combat missions; instead, they were employed for crowd control and riot suppression.
- ❑ Extensive use of non-lethal weapons can become counterproductive because demonstrators can build up an immunity to their effects, especially the shock value of such weapons.
- ❑ Conventional military radios are likely unsuitable for urban operations and work poorly in built-up areas.

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## Conclusion

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In the future, U.S. forces are likely to engage in low- to mid-intensity operations in developing or underdeveloped parts of the world. It is also likely that a large percentage of these operations will draw U.S. forces into MOUT. According to United Nations estimates, the urban population of developing countries worldwide increases by about 150,000 people each day, with the most pronounced growth occurring in Africa and Asia. By the year 2025, three-fifths of the world's population — 5 billion people — will live in urban areas. In some developing nations, the pace of urban population growth will exceed the development of city services. Housing, water, and jobs will be in short supply, giving rise to poverty, disease, and crime. Over-crowded conditions

will create an environment of social and economic tension that might eventually find a violent outlet.

The Russian, Israeli, and British examples of MOUT serve as examples of a military strategy being adopted by weak conventional as well as non-conventional forces around the world. Weaker forces — realizing themselves inferior to larger, better equipped militaries in the areas of conventional battlefield tactics, heavy artillery, armor, and advanced command and control technology — attempt to compensate through asymmetrical means such as guerrilla warfare on urban terrain. By using the familiar terrain of their native cities to launch guerrilla operations against intervening conventional armies, the Chechens, the PLO, and the paramilitaries of Northern Ireland exploited the Russian, Israeli, and British forces' inability to adapt their tactics and technology to the urban environment. As this analysis has shown, these conventional forces learned that fighting an unconventional war in an urban environment poses a set of difficulties and challenges completely alien to military combat in any other type of terrain. Though the Russians, the Israelis, and the British demonstrated capabilities to adapt to the challenges faced in their respective MOUT, in each instance the lack of preparedness made the operation more time consuming and costly than originally anticipated.

The near certainty that the National Command Authorities will again deploy U.S. Marines to urban environments, combined with the mandate to reduce casualties and collateral damage, requires that the U.S. concept for future MOUT address and prepare for the unique challenges that will be faced. The Russian, Israeli, and British experiences illustrate that factors such as the granularity of urban terrain and the presence of noncombatants can combine to create friction that can potentially erode the effectiveness of basic operational capabilities. Therefore, meeting the challenge of future MOUT must continue to be a multi-step process requiring an examination of doctrine, organization, training and education, equipment, and support systems. As this analysis highlights, it is essential that U.S. military planners study and understand the nature of the urban environment and its implications for operational- and tactical-level evolutions.



## Section 2

### Russian Experience in Chechnya



The Chechen people have a long history of resisting Russian control. Following the collapse of the Soviet Union, they began in earnest to seek full independence. During 1994, Chechnya fell 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 break-away republic. After reaching the Chechen capital of Grozny, 6,000 Russian soldiers mounted a mechanized attack. This attack was launched simultaneously from three directions and featured tanks supported by infantry riding in BMP armored personnel carriers. Instead of the anticipated light resistance, Russian forces

encountered heavy resistance from Chechens armed with “massive amounts” of antitank weapons. The Russian attack was repulsed with shockingly high losses. It took another 2 months of heavy fighting, and changing Russian tactics, to finally capture Grozny. The following Russian troop losses occurred between January and May 1995:

	Killed	Wounded	Missing	Captured
Defense Ministry	1,947	5,693	376	---
Total (Federal Troops)	2,805	10,319	393	133

The initial Russian campaign against irregular Chechen forces can be broken into two primary phases. Phase One, running through the end of February 1995, consisted of the initial intervention, the repulse of the first assault on Grozny, and the eventual capture of the city 2 months later. This phase involved some of the most extensive urban combat of the campaign since operations focused primarily on Grozny. Phase Two, extended from March through June 1995, consisted of antipartisan operations in the Chechen countryside to gain control of the rest of the country.

By late August 1996, Yeltsin’s national security advisor brokered a cease-fire that eventually resulted in the total withdrawal of Russian security forces from Chechnya.



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## Strategic Lessons

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### Lesson 1



***Military operations could not solve deep-seated political problems.*** Almost 2 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 Russian military forces entered 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 2 years; e.g., when Yeltsin's national security advisor announced a cease-fire in August 1996, the Russian regional military commander said no such agreement had been signed nor had he received 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) resulting in commanders not knowing who was on their flanks nor the missions of neighboring forces. Poor lines of communications were also responsible for many incidents of "friendly fire." Additionally, the North Caucasus Military District Command structure (the district that included Chechnya) was bypassed and operational decisions were sent directly from the Russian Minister of Defense to local commanders. Similarly, the overall operational headquarters lacked an on-going staff planning relationship with the assault units entering Chechnya from separate axes. Poor coordination between units and services ultimately led to slow rates of advance and sometimes opened Chechen escape avenues.

### 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 at least eight major changes in senior command between December 1995 and August 1996. The former Commander-in-Chief of Soviet Airborne troops, Colonel-General Achalov, also claimed that there was "too much [flag-level] leadership" on the scene. (Other



sources said there were as many as 100 general officers on the operational scene. If true, that would equate to about one general officer per every 3,000 to 4,000 Russian soldiers in Chechnya.) Achalov further explained 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 2 months to subdue Grozny the first time only to lose it to a second rebel counterattack in August 1996. Operations were also far from low cost. The first Russian assault column to enter Grozny, for example, lost 105 of 120 tanks and armored personnel carriers (APCs). The Russians lost about 70 percent 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 percent (400 vehicles) out of its total armored vehicle force of 2,221 over the course of the campaign. Russians casualties were also high — perhaps constituting as much as 12.5 percent of their total entering force in Chechnya through March 1995 — 6 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 operations were spreading into rural villages. 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 prior 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 internal troops with regular Army units were problematic at several levels. First, Ministry of Interior troops were not designed, equipped, or organized for large-scale combat operations nor did they regularly train with units from the armed forces. Considerable antagonism existed between the army and Ministry of Interior forces, with the military regarding Ministry of Interior troops as incompetent and unreliable.





## Lesson 8



***Distinct advantage accrues to the side with less concern for the safety of the civilian population.*** Russian security forces initially obeyed orders to minimize civilian casualties. Chechen fighters took military advantage of this situation. Chechen civilians stopped truck convoys, punctured fuel tanks and tires, and even set vehicles on fire in the early days of the conflict without reprisal from Russian security forces. Lacking nonlethal, crowd-control equipment and apparently confused by inappropriate rules of engagement, Russian troops stood by and took no action. Chechen commanders even deployed guns close to schools or in apartment building courtyards to discourage Russian attacks. This was a relatively painless exercise for Chechen commanders since most ethnic Chechens had already fled the cities to stay with relatives in the countryside; the residue was mostly ethnic Russians.

## Lesson 9

***Concern about civilian casualties and property destruction declined as casualties among security forces rose.*** Over time, early Russian concerns about harming civilians and destroying property declined as troops grew frustrated trying to distinguish enemy fighters from similarly attired noncombatants and as

their own losses mounted. Reports of “rampaging” Russian soldiers engaged in looting, arson, indiscriminate arrests, torture, and summary executions of civilians increased. Initially, Russian use of heavy weapons in cities was restrained; eventually, however, restraint dissolved. At one point, 4,000 artillery detonations per hour were counted in Grozny. (In comparison, Serbian shelling of Sarajevo reached only 3,500 artillery detonations per day.)

## Lesson 10

***Chechen forces received extensive outside assistance.*** The Russians claimed that the Chechens received up to 5,000 volunteers from 14 different countries — some who had combat experience elsewhere in the Caucasus or Afghanistan. In the 2 years prior to the Russian incursion, Chechen forces amassed a significant inventory, including 35 tanks; 40 armored infantry vehicles; 109



artillery pieces, multiple rocket launchers, and mortars; 200 air defense weapons; and vast quantities of small arms and man-portable antitank weapons. According to the Russian military, up to 80 percent of those weapons were unintentionally provided by the Russians themselves when the Chechens seized them from unprotected military warehouses and 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 armored combat vehicle to Chechen separatists for \$6,000. On another occasion, Russian troops unloaded and left behind boxes of ammunition from armored infantry vehicles to make room for looted household articles.

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## Operational Lessons

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### 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, Colonel General Achalov (the former Commander-in-Chief of Soviet Airborne Troops), claimed that “no one ever taught anyone anything” 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 mandates 151 hours of total instruction, of which only 5 or 6 hours are dedicated to urban warfare. Given overall reductions in Russian training, it is unlikely most troops ever received those 5 or 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 prac-

tice. 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. Because the lack of funds limited the number of copies printed, soldiers had to share them and pass them along on an ad hoc, individual-to-individual basis. The situation was probably best summed up by Colonel A. Kostyuchenko of the Ground Troops Main Combat Training Directorate: “[I]t 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 maneuver and combat skills inhibited Russian operations.*** Poor Russian combat performance can be traced to an overall lack of training in fundamental military skills. The army conducted no division-level exercises in the 2





years prior to the Chechnya conflict. In that same period, regimental, battalion, and company exercises were reduced over 75 percent. No joint exercises were held between Ministry of Interior troops and the Russian army. Even individual skill training was reduced; consequently, some half-trained units refused combat or their commanders held them out. Operational deficiencies due to training shortfalls were not confined to ground force units. Russian accounts of air force operations in Chechnya also revealed 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 peacetime 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 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 materiel 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 1996. These casualty figures were in line with earlier Ukrainian estimates that Russian security force losses during the 31 December 1994 attack on Grozny were 600 dead and 300 prisoners of war. Materiel losses were also extreme; e.g., an element of the 131 *Maikop* Motorized Rifle Brigade lost 17 of 20 armored vehicles in just 1 day of fighting near the presidential palace during the first battle of Grozny.

### Lesson 15

***Overwhelming firepower can make up for organizational 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. Heavy-handed use of massed artillery and air-delivered ordnance allowed Russian security forces to gain control of Grozny after 2 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 carry out 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. Those deficiencies in the logistics system translated into some soldiers entering Grozny without weapons or ammunition for machineguns on armored vehicles. Russian army supply officers were also



unprepared for the abnormally high demands for hand and smoke grenades; demolition charges; and disposable, one-shot ant-tank weapons generated by fighting in cities. Similarly, air force units entered the conflict with only 50 percent 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, 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 and delays 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. Current aerial or satellite intelligence was limited because the satellites had been turned off to save money and few aerial reconnaissance missions had been conducted. Lower-level commanders fared even worse — many had no or outdated (1984) maps and photographs. 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 coordinate their actions or to surround and fully cut off Grozny.

Pre-invasion intelligence assessments of Chechen military capabilities were severely 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 prisoners of war did not know their location; others asked reporters to “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 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 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 bypass 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 roof-tops, deep within upper-floor apartments, and from basements, making them difficult to spot. Chechens operating in this manner posed a serious problem since the guns on many Russian armored vehicles lacked sufficient elevation and/or depression to deal with these threats. Also, discussed in later lessons, few Russian armored 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 authorized strength. Battalions were often manned at only 55 percent or less. Consequently, many units were “fleshed out” with last minute additional personnel and equipment. According to one report, up to 60 percent of the tanks and armored vehicle crews were formed enroute 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 Russia 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 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 Interior Ministry regiment fought a 6-hour battle with an army regiment. Part of the problem stemmed from both sides using equipment (tanks, APCs, infantry fighting vehicles (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 Chechens used this ruse to carry out operations to discredit Russian soldiers with the local populous. Wide-scale use of nonstandard uniforms within Russian forces made combat identification even tougher, especially with elite troops who affected a “Rambo” look. Russian troops were also allowed to wear 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 coordination 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 Interior troops, Naval Infantry, and Spetsnaz reconnaissance troops under the control of the military intelligence branch. 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: three motorized rifle platoons; one tank



company; one flame-thrower (Shmel) platoon with nine launcher teams; two Shilka or Tunguska air defense guns; one UR-77 line-charge minefield breaching vehicle; one combat engineer squad; one medical team; and 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 armored 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 armored vehicles from an entire division's inventory.

## Lesson 23

***The potential of special forces for urban operations was never realized in Chechnya.*** Both foreign and Russian military observers agree that special forces, properly used, would have been of great value in Grozny. Units like the Alpha and Vypmel teams were never sent, despite Alpha team's previous success of 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 instead were wasted spearheading the assault column into Grozny on New Year's Eve; this action occurred because conventional force commanders did not know how to properly exploit Spetsnaz capabilities. Even when Spetsnaz were committed in their traditional reconnaissance role, serious problems developed. Teams were frequently inserted without adequate means to extract them, usually due to poor coordination of or cooperation with helicopter units. Teams also lacked radios and other essential equipment.

## Lesson 24

***The nature of cities tends to channel combat operations along narrow lanes of activity.*** Because combat conditions in Grozny were characterized by narrow fields of view, limited fields of fire, and constricted avenues of approach, operations tended to be channeled



along certain pre-ordained lines of march — well-known and heavily defended by Chechen fighters.

## Lesson 25

Psychological operations, especially disinformation, were central to both Chechen and Russian strategies. From the onset, both groups realized that domestic and foreign perceptions of the war were almost as important as the actual ground situation. 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: spread false information about the timing and nature of military operations; used "black" operations to mask Russian involvement; lied about the type of weaponry used against targets in civilian areas; and under-reported 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

dropping leaflets from aircraft and appealing to Grozny citizens over loudspeakers to lay down their arms and not provoke Russian forces; jamming Chechen radio broadcasts and destroying the local television station; and conducting useless talks to gain time and to intimidate the Chechens. Likewise, the Chechens, too, used disinformation. They also staged major news/propaganda events like the raids on the Russian towns of Budyonovsk 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 bridges, petroleum facilities, ammunition dumps, road networks, fortified areas, military equipment repair facilities, command and control facilities, and enemy airfields. 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 Force claimed that, as early as August 1994 (5 months prior to Russian security forces entering Chechnya), his command was ordered to “close” Chechen airspace 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.

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## Tactical Lessons

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### Lesson 28

***Rigorous communications security is essential, even against relatively primitive enemies.*** Apparently, much 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 coordinates in the clear only to have Chechen artillery fire directed against them shortly thereafter.

### Lesson 29

***According to Russian after-action assessments, night fighting was the single most difficult operation in Chechnya for infantry forces.*** This assessment was based on a shortage of night vision equipment and 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 headlights and searchlights was initially rationalized as a means to shock Chechen forces. Instead, it made Russian forces more vulnerable to Chechen counterfire.

### Lesson 30

***Tanks and APCs cannot operate in cities without extensive dismounted infantry support.*** The Chechens fielded antitank hunter-killer teams, equipped with “massive amounts of antitank weapons,” which keyed upon the engine noise from Russian armored vehicles. Once these hunter-killer teams converged upon Russian armor, 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. Armor columns not accompanied by



dismounted infantry experienced staggering losses (in the initial assault on Grozny, up to 70 percent tank loss rate). As one Russian airborne commander noted after the battle, “[W]ithout 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 organization and equipment.*** The Russians came to believe each soldier needed a rope with a grappling hook for entering buildings. Additionally, lightweight ladders were found 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 totally banned using tracer ammunition — night and 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; for example, they fired from deep within rooms of buildings, not from the window ledges as Russian countersniper teams expected. Consequently, Russian sniper operations were 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. Every fourth or fifth Russian artillery or mortar round was either smoke or white phosphorus. (The Russians claimed that white phosphorus had the added benefits of toxicity, readily penetrated

Chechen protective masks, and was not banned by treaty.) They also found tear gas very useful in Grozny.

### Lesson 35

***Armored combat engineering vehicles can perform important, specialized urban combat missions.*** The Russians found that armored combat engineering vehicles were indispensable for removing obstacles (a serious impediment to urban movement) and for mineclearing. The Russians employed the IMR, a multirole engineer vehicle fitted to a tank chassis. The IMR has a bulldozer plow on the front and a traversing crane in place of the turret. The crane has a bucket or cargo boom at the end depending upon the job. (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, 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 hull rear for explosive breaching of minefields. The Russian army recommended every assault group include two IMRs and one UR-77.

### Lesson 36

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

### Lesson 37

***Hit-and-run ambush attacks by small groups were the favorite tactic of the Chechens.*** The Chechens normally operated in groups of 15 to 20 fighters; these groups would further subdivide into smaller groups of 3 to 4 for combat missions. Each small group would generally include a sniper, a grenade launcher operator, and at least one machinegun operator. These units, employing antitank 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, 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 collateral damage is not a major concern.*** Upon entering Grozny, the Russians found it difficult to employ artillery in an indirect mode because of the buildings and lack of fire-direction specialists. They also found that technical deficiencies in the main guns of most Russian armored vehicles made them incapable of dealing with entrenched snipers and shoulder-fired antitank grenade launchers (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 recognized 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 armored vehicles are preferable to wheeled armored vehicles in urban warfare.*** The Russians discovered urban combat generated vast amounts of rubble — debris that wheeled vehicles had trouble traversing. Tracked vehicles, by contrast, could readily negotiate urban rubble.

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## Technical Lessons

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### Lesson 41

***When operating in cities, armored vehicles require more protection and that protection needs to be distributed differently than for conventional battlefield operations.*** Russian armor arrays, optimized across the frontal arc for NATO central front engagements, provided inadequate protection in the urban conditions of Chechnya. Problems with the T-72 in Grozny centered upon cata-



strophic ammunition fires and inadequate protection against top attacks from shaped charges. Survivability of the T-80 was also criticized by the Russian Minister of Defense, especially its vulnerability to top attacks from shaped charges. Diagrams of Russian armored vehicles in public Russian assessments showed 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, estimated that 98 percent of tanks destroyed in urban operations were hit in places where the design did not permit installation of reactive armor. These same Russian assessments also emphasized that armored vehicles in Grozny were subjected to extensive, multiple attacks. Every armored vehicle had to deal with six or seven attacks by antitank 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 armor protection to the frontal arc to deal with the



anticipated threat to tanks — NATO tanks and antitank weapons firing against advancing Russian armor columns. Severe weight limitations, imposed by the Ministry of Defense, forced designers to make this trade-off.

## Lesson 42

***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 multistory 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 machineguns still offer good defense against close air attack, especially from helicopters.*** Improved Chechen tactical air defenses, consisting of truck-mounted 23-mm cannons and 12.7-mm heavy machineguns mounted on 4 x 4 utility vehicles damaged about 30 helicopters and destroyed 1 other. Other reports indicate that Chechen ZSU-23-4s also destroyed at least one, possibly two Russian SU-25 ground-attack fighters.

## Lesson 45

***Both sides employed commercial off-the-shelf technologies for military purposes.*** As previously 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 placing 12.7-mm heavy machineguns 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 counterbat-



tery 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 home-made chemical weapons. [Refer to Lesson 48 for details.]

## Lesson 46

***Non-lethal technologies were seldom used.*** There are no reports of Russian forces using nonlethal technologies, except tear gas. It is not clear whether the absence of nonlethal technologies was the result of conscious Russian tactical decisions or because their inventory did not offer them this option. Regardless, the lack of nonlethal 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 that incorporated Russian army preference to fight from within armored infantry vehicles that led to infantry tactical communications located inside or dependent upon the BMP or BTR infantry fighting vehicles. Once the infantry dismounted their vehicles, radios became hard to reach and communication was 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. Ministry of Interior units, equipped more like police forces, tended to have a much wider selection of small tactical radios, including individual radios, that could operate in cities. However, they 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.*** Because Chechen forces had no access to military chemical weapons, they improvised their own by using on-hand supplies of industrial chemicals. Using chlorine gas, they built chemical mines that were remotely detonated by radio signal.

## Lesson 49

***The cabs of supply trucks must be armored.*** As in Afghanistan, the Russian army in Chechnya soon discovered that it was essential to armor the cabs of trucks, even those convoyed. Unarmored supply columns proved especially lucrative targets for snipers and roving bands of Chechen fighters. In addition, trucks were very vulnerable to both antipersonnel and antitank landmines; about 600 trucks and unarmored vehicles were destroyed over the course of the campaign. Numerous casualties resulted from the absence of mine protection on standard support vehicles. Although the Russian army developed armored versions of the standard Ural 5-ton truck for convoys in Afghanistan, none were manufactured in quantity nor deployed in the Chechen theater. The Russian army is now looking at a variety of armor packages for logistics vehicles for contingency operations.

## Lesson 50

***“Bunker busting” weapons are invaluable for urban warfare.*** The highest acclaimed weapon 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 flame-thrower, it more closely resembles a rocket launcher in Western armies. Unofficially, it is 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 that

can also be described as a fuel air explosive. It is intended primarily to attack enemy troops in confined spaces such as bunkers or interior rooms. It also has a secondary use against lightly armored vehicles. In Grozny, it was widely used against Chechens entrenched in buildings, especially snipers.

## Lesson 51

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



## Lesson 52

**Helicopters need standoff weapons.** Widespread Chechen use of 23-mm cannons and 12.7-mm heavy machineguns encouraged Russian helicopter gunships to employ their weapons at ranges of 3,000 meters or more. Helicopter crews, repeating tactics from Afghanistan, found that antitank guided missiles (ATGMs) 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 standoff range to foil Chechen air defense guns. (After Afghanistan, the Russians also developed a high explosive warhead using therobaric principles for helicopter-fired ATGMs, but there were no reports of such weapons being used in Chechnya.) Smaller caliber rockets, such as like the 57-mm S-5 series and the 80-mm S-8 series), although effective, lacked sufficient range to put them outside the reach of Chechen tactical air defenses. Consequently, Russian crews experimented with the 240-mm S-24 rocket for attacking targets protected by air defenses. This appeared to be a field expedient since the Russians had never attempted to integrate S-24s with helicopters for fear the rocket plume might stall the engine when the helicopter moved forward.

## Lesson 53

**Helicopters are not suited for urban combat.** This verdict — delivered by the Commander of Russian Army Aviation, Colonel General Vitaliy Pavlov — was surprising since Russian military doctrine specifies the preferred method of capturing a building is from the top-down, with troops helicoptered into position. That part of Russian doctrine notwithstanding, Colonel General Pavlov claims Russian doctrine also specifies that helicopters are too vulnerable to rooftop snipers and ambushes in 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 destroyed 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 kilometers and pilots could clearly see their targets. According to Colonel General Pavlov, Commander of Russian Army Aviation, these rules meant that 95 percent of the 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 artillery strikes with weapons such as the laser-guided Krasnapol, Santimetr artillery rounds, and the guided Smelchak mortar rounds. However, none of these were used in Chechnya. International Defense Digest, quoting unnamed sources in the Russian “higher command,” claimed that senior commanders considered highly advanced munitions too expensive to be “wasted” in Chechnya. These munitions may also have been considered unnecessary by tactical commanders who received the bulk of their fire support from direct fire artillery working close (150 to 200 meters) to the targets. At such close range, accuracy could be achieved without resorting to “expensive” precision-guided artillery munitions.

## Lesson 57

***Unmanned aerial vehicles (UAVs) were used extensively in Chechnya.*** Russia used UAVs in combat for the first time in Chechen. One such vehicle was the *Sterkh*, which has two modular payloads: a recon-



naissance package with a daylight, stabilized TV camera with a real-time transmission system; and an electronic warfare jamming package. The *Sterkh's* chief shortfall is its limited durability — between 5 and 10 landings. The Russians also used the sensor-carrying *Shmel* remotely piloted vehicle (RPV), which could operate up to 2 hours out to a range of 60 kilometers. Apparently, the UAVs were used primarily by Russian airborne forces who judged them extremely successful, particularly as a way of saving the lives of reconnaissance team members.



## Section 3

# Operation PEACE FOR GALILEE: Israel's Intervention into Lebanon



Israel's intervention into Lebanon in 1982 was in response to a series of events over the previous decade in which Lebanon disintegrated politically and fell increasingly under the influence of Syria and the Palestine Liberation Organization (PLO). The Israeli Defense Force (IDF) prepared three options for the Israeli response:

1. A shallow penetration into Lebanon to clear out PLO camps near the border;
2. A deeper operation to the Alawi (Auwali) River or to the outskirts of Beirut to eliminate PLO strongholds in Tyre and Sidon, but avoiding a clash with the Syrians or entry into PLO dominated Beirut; and
3. The "Big Pines Plan" that envisioned a confrontation with Syria and intervention into Beirut with the

objective of breaking Syrian influence in Lebanon and driving the PLO completely out of the country.

The Israeli Government rejected the "Big Pines Plan" and approved the second, more limited option that was expected to drive 40 kilometers into Lebanon and be completed within 3 days. Instead, the Defense Minister deliberately manipulated events to ensure that the "Big Pines Plan" was carried out. As a result, the IDF was entangled in a situation where it planned to carry out a relatively limited, short-term operation. Instead, the IDF fought a much longer campaign that eventually lasted 3 months plus an additional year's occupation of Lebanon due to senior Ministry of Defense contravention of government authorization.

The fighting began on 5 June 1982 when the Israeli Air Force began a bombing campaign after an assassination attempt on the Israeli ambassador in London. Following this, the IDF crossed the border on 6 June to commence Operation PEACE FOR GALILEE. This operation consisted of a three-pronged assault with the Western Force advancing towards Beirut along the Mediterranean coast, a Central Force advancing through the Lebanese mountains to seize the western heights over the Bekaa Valley, and the Bekaa Forces



group whose aim was to destroy Syrian forces in the Bekaa Valley in northeastern Lebanon. In terms of urban warfare, only the Western Force experienced extensive fighting in cities and it is the focus of this case study.

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## Strategic Lessons

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### Lesson 1

***Military action did not solve the political problems that underlay Israel's difficulties in Southern Lebanon.***

Operation PEACE FOR GALILEE, which began on 6 June 1982 when Israeli military forces invaded southern Lebanon, was publicly portrayed as a limited operation to drive the PLO away from Israel's northern border and secure a 40-kilometer buffer zone. Privately, Israel's Defense Minister saw this as an opportunity to eliminate the terrorist threat from Lebanon completely by destroying the PLO's military strength, eliminate their infrastructure, and driving them out of Lebanon. The Defense Minister also hoped to reduce Syria's influence in southern Lebanon. These private objectives broadened the political and strategic objectives of the war (without the apparent knowledge or concurrence of the government) and gradually transformed its character into a war both against Syria and for control of Lebanon. The Israeli military achieved its tactical military objectives, but Israel ultimately lost the wider political battle. Operation PEACE FOR GALILEE ended with Lebanon more hostile to Israel than when it began, the substitution of one set of terrorists for another, Syrian influence substantially greater than before, and Israel's international standing sullied.

### Lesson 2

***It was difficult for Israeli military commanders to get well-defined policy objectives to which they could work steadily and logically.*** Israeli Defense Minister Ariel Sharon's hidden agenda, and his consequent need to conceal the true purpose of the war from the Israeli cabinet, deprived his military commanders of their ability to plan and execute decisive operations. Secrecy, in turn, bred confusion and lack of commitment among lower levels of the IDF. The mismatch between stated political and military objectives predictably led to major operational errors because

Israel's key thrusts against the Syrians and Beirut never received the overt priority needed for success. Thus, operations against Syrian forces came late and indecisively with the consequence that the IDF faced prepared, well dug-in Syrian forces. The IDF's slow advance to Beirut and the consequent difficulty in taking the city after pausing on the outskirts were due to confusion about operational objectives in the minds of field commanders.

### Lesson 3

***Overall Israeli command throughout the campaign suffered from a lack of continuity.*** Deployment of IDF forces during the overall campaign was marked by a frequent shifting of units from the operational control of one command to another; moving field commanders in and out of positions of command; and by the formation of small, task-oriented operations. Brigades would begin under the command of one officer only to end up under the command of someone else after having passed through one or two interim commands along the way. In one case, a command switched at least four times in less than 30 kilometers. Operational confusion also resulted when chains of command were disrupted by the practice of continuously forming and disbanding special military task forces.

### Lesson 4

***Problems with disjointed command structures were exacerbated by too much senior leadership at the operational level.*** Many Israeli officers complained that there were too many commanders "running around the battlefield often with nothing to do or commanding piecemeal operations for short periods of time." This situation was a natural consequence of IDF's practice of forming special task forces for limited operations and shifting command responsibility as units moved from one area to another.

### Lesson 5

***Contrary to initial government expectations, Operation PEACE FOR GALILEE was neither of short duration nor low cost.*** The Israeli cabinet authorized a limited incursion into Lebanon that was supposed to last just 3 days and produce few casualties; instead, 3 months of fighting and a long-running, large-scale

occupation resulted. During the 3 months of fighting and the following year of occupation, the IDF suffered 3,316 casualties. While not large in absolute terms, these losses were staggering for a small country like Israel that was inordinately sensitive to casualty rates. [In adjusting these casualty figures demographically equivalent to the United States, they would have equated to the U.S. sustaining 195,840 casualties for the same period.] A large portion of the Israeli losses came from urban operations; e.g., Israeli casualties for the siege of Beirut equaled or were greater than those taken against the PLO in the entire war in the south. Indeed, losses in besieging Beirut cost the IDF almost 24 percent of its dead and 32 percent of its wounded for the entire war.

## Lesson 6

***Distinct advantage accrues to the side with less concern for the safety of the civilian population.*** Realizing that the IDF wished to minimize civilian casualties for political reasons, the PLO sought to exploit that reticence during the battle for Beirut. Thus, the PLO located many of its military resources, such as artillery and ammunition dumps, inside civilian areas especially within the densely populated districts like the refugee camps and Fakahani. The PLO also chose to site weapons firing positions near or within noncombatant structures (e.g., hospitals, schools, embassies) believed immune to Israeli attack for political reasons. These tactics had mixed results. The IDF was restrained in attacking parts of Beirut that contained few Palestinians, but were less cautious about sections of the city and refugee camps where Palestinian civilians predominated.



## Lesson 7

***Wishful thinking and intellectual predispositions prevented leaders and commanders from believing accurate intelligence assessments.*** Senior PLO leaders had an excellent understanding of Israeli intentions before the incursion, even to the point of Arafat having a copy of an attack plan that was remarkably close to the actual Israeli plan for Operation PEACE IN GALILEE. For at least 5 months before the invasion, Arafat was both publicly and privately warning that Israel was preparing a major attack, possibly even extending to Beirut itself. Timely and accurate intelligence warning of Israel intentions went unheeded by the PLO command system, partly because PLO commanders could no longer distinguish real warnings from political gestures, particularly when numerous false warnings were issued in the past.

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## Operational Lessons

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### Lesson 8

***The IDF had a well-developed military doctrine for urban warfare that influenced its tactics, but not its overall force structure.*** The IDF began developing doctrine for military operations in urban terrain in 1973 as a result of its experiences in fighting for Jerusalem in 1967, as well as in Suez City and Qantara in 1973. This doctrine envisioned two types of urban offensive — one in which armor leads, and the other in which armor supports infantry as it opens and secures an area. Traditional IDF reliance on armor usually favored using the former technique until an area proved too difficult to take with armor. Israel's relative lack of significant urban warfare experience to date, plus a decided bias toward armored warfare, meant that Israeli doctrine for urban warfare had little impact on its overall force structure. Thus, the IDF lacked sufficient quantities of infantry necessary for urban operations in Lebanon.

### Lesson 9

***Training in urban operations greatly benefited those Israeli soldiers who received it.*** Unfortunately, not all soldiers were afforded that opportunity. Israeli combat training in military operations in urban terrain was



extensive prior to the invasion of Lebanon and was judged very valuable in the aftermath of the battle for Beirut. Units with such training better understood the hazards of fighting in a city and appeared more confident than units without such training. Additionally, coordination of combat and combat support elements, as exercised in pre-invasion Israeli urban training, was afterwards judged more effective because of pre-invasion training. Part of that training included small tactical training exercises in captured Syrian towns in the Golan Heights and villages in southern Lebanon. Although the environment of these small towns differed significantly from the situation later encountered in heavily built-up Beirut, the training served the IDF well. Unfortunately, only the regular army units received training in urban warfare. This was a serious problem since the IDF maintains only a small cadre force fleshed out by large numbers of reservists — none of whom received adequate training in urban operations because of the limited annual training time available to reservists. Consequently, reservists performed poorly and experienced more casualties in urban fighting.

## Lesson 10

*Israeli rules of engagement were difficult to operationalize.* The IDF was given clear but conflicting rules of engagement. Initial rules of engagement stressed the need to minimize civilian casualties and collateral damage in cities. These same rules also

mandated that Israeli commanders minimize their own casualties and adhere to a fast-paced operational timetable. The Israelis soon learned in the slow house-to-house fighting in the battle of Tyre that it was impossible to accommodate these conflicting instructions.

## Lesson 11

*Rules of engagement are sometimes difficult to enforce.* Every effort was made in the initial phase of the campaign to enforce the rules about limiting injuries among noncombatants. Nevertheless, ground force personnel often sought ways around such restrictions upon the use of heavy weapons and target selection in cities. One method was to call for an air strike when the ground forces met stiff resistance. That way, responsibility for civilian casualties and collateral damage could be displaced to an anonymous platform — the airplane — and to the difficulties of carrying out precision bombing in urban environments. Therefore, the ground forces strictly observed the letter of the restrictions against firing into civilian areas while successfully evading the spirit of those rules.

## Lesson 12

*Concern about civilian casualties and property damage declined as IDF casualties rose.* The Israelis soon realized that heavy firepower was the only way to minimize their own casualties and maintain an adequate operational tempo. Consequently, the Israelis began to bring artillery fire to bear on Palestinian strongpoints with the consequence that collateral damage rose sharply. They also increasingly employed close air support, even in refugee camps. By the battle of Beirut, the IDF was engaging in “intensive bombardment” of Syrian and PLO targets in Palestinian sections of the city.







### Lesson 13

***Overwhelming firepower can make up for organizational and tactical deficiencies in the short-run if one is willing to disregard collateral damage.*** Early in the campaign, the Israelis realized that large numbers of infantry would be necessary to clear built-up areas; something IDF lacked because of its traditional emphasis on maneuver warfare. Lacking sufficient infantry, the IDF resorted to heavy weapons. Firepower over infantry was probably the preferred (and preordained) solution in Lebanon since the IDF had earlier increased its reliance on mobile artillery to suppress enemy infantry rather than expand its own infantry forces in the wake of lessons learned from the 1973 war.

### Lesson 14

***The tempo of urban operations is so intense that soldiers tend to “burn out.”*** After-action assessments of IDF performance during urban operations point out IDF’s difficulty in sustaining combat operations because of the high stress level it imposed on individual soldiers. This observation is borne out by Israeli casualty figures: 10 to 24 percent of Israeli soldiers serving in Lebanon experienced psychological problems as a result of their battle experience. Compared with a psychological casualty rate of only 3.5 to 5 percent in the 1973 war, this means that battle shock casualties in Lebanon were two to five

times more serious. The number of soldiers able to return to their units after treatment was also much lower than expected.

### Lesson 15

***Non-combatants do not behave sensibly.*** Many Israeli military planners presumed civilians in urban combat zones would practice “common sense” and abandon areas where fighting was taking place. In many cases, this did not occur. For many reasons — some based on experiences in the earlier Lebanese civil war — civilians instead tried to stay in their homes. For example, some families were convinced by PLO propaganda that if they left their homes during an IDF truce, they would be killed by the Israelis. Others probably underestimated the likely duration and intensity of the fighting and felt they could withstand the effects of Israeli/PLO/Syrian combat. Still others simply feared that soldiers would loot their unprotected possessions — a reasonable fear given the prevalence of looting during the Lebanese civil war.



## Lesson 16

***The large-scale movement of urban noncombatants can significantly affect military operations.*** At the urging of Israeli psychological warfare units, over 30,000 noncombatants fled the city of Tyre and headed for the beaches southwest of the city. (Later, in the midst of the fighting, half the people returned to the city.) The massive exodus clogged roads and delayed IDF attacks on PLO strongpoints. Similarly, the need to impose cease-fires and open lanes for civilians to escape the fighting in Beirut slowed IDF operations in the city.

## Lesson 17

***Psychological operations were a major element of Israeli strategy.*** Psychological warfare played a vital role in the Israeli seizure of Tyre and Sidon as well as during the siege of Beirut. Throughout the campaign, the IDF widely employed leaflets, pamphlets, and loudspeakers to get its message across. Israeli psychological operations were often successful in achieving tactical goals like encouraging large numbers of civilians to abandon urban areas to facilitate combat operations. However, they were not successful at the campaign nor strategic levels in getting PLO fighters to lay down their arms, nor in convincing the Lebanese Sunni Muslim population to pressure the PLO into leaving.

## Lesson 18

***Urban operations in Lebanon stressed the IDF's logistics system because of unusual requirements and abnormally high consumption rates.*** The IDF took a number of modest, but important steps to supplement the standard equipment suites of units prior to deploying them in cities. Hand grenades, rocket-propelled grenade launchers, light antitank weapons, and illumination rounds for mortars were issued to infantry platoons in larger numbers than normal. The number of short-range tactical radios, especially hand-held radios, was also increased beyond the usual unit allotments.

## Lesson 19

***Standard Israeli military unit configurations were inappropriate for urban combat.*** During the battle for



Beirut, the IDF adopted a task-oriented form of tactical organization that cross-attached tanks and self-propelled artillery to infantry units. In such cases, the armor and artillery generally remained under the infantry's command for the duration of the tactical action.

## Lesson 20

***Failure to understand the importance of civil affairs cost Israeli commanders a high price.*** Local IDF commanders did not understand the vital importance of civil affairs for ongoing urban combat operations. Thus, civil affairs efforts were ineffectual. Commanders failed to grasp the immediate combat implications or the larger political implications of poor population management. Israeli psychological operations convinced 30,000 noncombatants to flee Tyre and head for beaches outside the city. The subsequent inability of the IDF to provide food, water, clothing, shelter, and sanitation for these people produced predictable consequences. Many tried to return to the city; a process that complicated the northward movement of Israeli troops and the delivery of ordnance on selected targets in Tyre. IDF commanders compounded these oversights by interfering with the efforts of outside relief agencies to aid the displaced population of Tyre lest the PLO benefit in some way. This second civil affairs failure created an adverse situation that was quickly exploited by PLO psychological warfare specialists. The IDF also failed to educate its troops in dealing with Lebanese civilians. Although the Shi'a Muslim population of southern Lebanon either initially welcomed or was neutral to Israeli presence, it soon became hostile because of the behavior of IDF personnel and other factors.



## Lesson 21

*Aircraft played several important roles in urban operations, especially at the battle of Sidon.* The Israeli air force carried out seven major missions in the attack on Sidon:

1. Provided air cover for an amphibious landing.
2. Prior to the IDF entering Sidon, bombed selected targets both to take out strongpoints and to psychologically demoralize PLO defenders in the refugee camps outside the city.
3. Provided close air support during difficult battles for the city.
4. Provided air cover over the city against the threat from Syrian fighters.
5. Transported troops and equipment via helicopter around bottlenecks that developed on the ground in Sidon.
6. Removed wounded via helicopter.
7. Dropped psychological warfare leaflets over the city.

## Lesson 22

*Amphibious operations have a role in urban warfare.* Israel conducted two amphibious landings — a small one in support of operations in Tyre, and a larger one (about brigade strength) during the campaign to capture Sidon.

## Lesson 23

*Special forces played a limited, but significant role in Israeli operations.* Israeli naval commandos made the initial landings during amphibious operations just

north of Sidon and secured the beachhead for follow-on landing forces. This was the first major amphibious operation carried out by the Israeli navy.

## Lesson 24

*Naval forces can play an important supporting role in urban operations.* Israeli naval forces were used to conduct amphibious operations to achieve tactical surprise and to isolate Tyre and Sidon at the outset of the campaign. These were technically difficult to conduct due to a shortage of landing craft. The Israeli navy had to keep shuttling the landing craft across the 55 kilometers between the beaches north of Sidon and Israel. At Sidon, the navy also took the ancient port under fire. Due to Beirut's coastal location, the Israeli navy also played an important part in isolating the PLO and other hostile forces in West Beirut near the coast. Additionally, the Navy provided modest fire support using its 76-mm guns, but its main activities involved coastal patrols to prevent reinforcement of PLO positions or the seaborne delivery of supplies. Other tactical missions included preventing opposition forces from either mining the beach or preparing defensive positions.





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## Tactical Lessons

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### Lesson 25

***The shock value of artillery fire diminishes with time.***

The IDF discovered shock value of indirect artillery fire in urban warfare depending upon the frequency of its use. In urban areas like Tyre that were already accustomed to seeing and hearing artillery fire because of the Lebanese civil war, Israeli artillery fire had less psychological shock value than Israeli commanders expected. Likewise in Beirut, its value diminished as combatants (and civilians) became increasingly aware of its shortcomings when used in moderation against built-up areas.

### Lesson 26



***Forces operating in cities need special equipment not found in standard Israeli tables of organization and equipment (TO&E).*** Beyond increasing the quantities of standard TO&E equipment, the IDF also issued loudspeakers and sniping equipment not normally part of an infantry unit's kit. Supplemental armor was also added to the sides and fronts of many tanks because of the heightened risk from antitank weapons in cities.

### Lesson 27

***Urban civilian structures (e.g., hospitals, churches, banks, embassies) are located in tactically useful locations, command key intersections, and/or are built of especially solid construction and therefore afford defenders good protection.*** As mentioned earlier, weapons emplacements in "off-limits" structures such as hospitals, churches, schools, banks, and embassies



afford the defender "political" protection if the attackers wish to minimize civilian casualties and politically unacceptable collateral damage to the urban infrastructure. Such facilities also offer significant tactical military value since they are located at key intersections, command the high ground in an area, and/or are so well built that their construction affords defenders an unusually high degree of protection. Thus, the decision to place weapons in "off limits" facilities may be dictated as much, or on some occasions more, by tactical military necessity as by political considerations.

### Lesson 28

***Rigorous communications security is essential.*** Overall, IDF communications security was good, although a few lapses occurred. This was partly due to the widespread use of encrypted communications equipment and employment of a double-cipher system. The IDF changed codes daily and prearranged changes in radio frequency. Conversely, the IDF regularly monitored Syrian and PLO communications because neither practiced rigorous communications security; both made extensive use of commercial telephones throughout the urban areas of Lebanon. Commercial facilities provided instant communications for those forces, but also enabled the IDF to identify PLO locations and plan responses to orders intercepted over commercial phone lines.

### Lesson 29

***Snipers were very cost effective.*** The PLO actively employed snipers, even though its people received little formal training and were not equipped with specialized equipment. Nevertheless, PLO snipers



delayed IDF operations in Sidon out of proportion to the resources invested in such operations. Similarly, the Syrians used snipers effectively to block Israeli advances in the southeastern suburbs of Beirut. The IDF viewed snipers as extremely valuable for psychological reasons as well. Even if they did not kill large numbers of the enemy, their presence forced Israeli opponents to be wary, thus placing a higher level of psychological stress on enemy personnel. In addition, the Israelis believed sniper teams were a valuable source of intelligence, since much of their time was expended patiently observing enemy actions.

### Lesson 30

***Explosive ordnance disposal teams are essential in urban areas.*** Israeli explosive ordnance disposal teams inspected captured weapons caches, either destroying them or recommending their evacuation. They also performed their traditional function of neutralizing “dud” munitions (such as unexploded submunitions) and clearing bobby traps.

### Lesson 31

***Armored forces cannot operate in cities without extensive dismounted infantry support.*** The IDF, because of its traditional bias in favor of armor, often tried to use armor without proper infantry support. It soon discovered, however, that unaccompanied armor strikes were almost always more costly in lives and equipment than operations in which armor was supported by dismounted infantry. Thus, by the siege of Beirut, Israeli tanks almost always entered battle with infantry support to suppress man-portable, antitank weapons.

### Lesson 32

***Direct-fire artillery can be a valuable tool in urban combat provided collateral damage is not a major concern.*** The IDF made extensive use of point-blank, direct-fire artillery, especially 155-mm self-propelled howitzers, during the fighting in Beirut; this technique called “sniping.” The heavier 155-mm high explosive projectiles were found especially effective in reducing strongpoints and reinforced buildings; in some cases, causing the entire building to collapse. The need to employ self-propelled artillery in a direct-fire mode



was partly due to the inability of available HEAT and APFDS tank rounds to penetrate concrete structures and to an absence of suitable HE-fragmentation rounds for tank guns.

### Lesson 33

***Small unit leadership was critical to Israeli tactical success.*** IDF doctrine endows small units, like companies, with the authority to operate with substantial independence throughout the battle zone. Thus, junior officers were trained to exercise discretion and adapt to operational circumstances without involving superior officers. These were important attributes since urban conflict, by its very nature, places a considerable premium on small units operating independently in a tactically fluid situation.

### Lesson 34

***Tanks are central to Israeli urban warfare doctrine.*** The centrality of the tank in Israeli tactical

doctrine led the IDF to examine how tanks could best be employed in cities while simultaneously guarding against their recognized vulnerabilities. IDF doctrine also emphasized that the shock value of tanks in cities could sometimes compensate for a lack of dismounted infantry support. Despite this predisposition for using unsupported tanks in cities, the IDF moved to using combined arms tactics during the siege of Beirut where the tank was judged the single most valuable weapon for suppressing enemy fire. The Israelis lost a few tanks in urban fighting; it is unclear whether this modest loss rate was due to extensive use of infantry support to suppress anti-tank fire, superior design characteristics, or poor PLO antitank tactics.

### Lesson 35

***Night operations are very difficult in urban terrain.*** The Israeli inventory included a variety of passive and active night-observation devices, light-enhancement devices, and tank-mounted searchlights. Nevertheless, night operations were very limited due to a shortage of night vision devices. (This shortage may explain why the Israelis used the headlights of armored personnel carriers and illumination rounds to capture Beaufort Castle in a rare night operation.) The relative absence of night operations was also due, in part, to the need for troops to rest in highly stressful urban battle conditions. Israeli commanders did, however, use the cover of night to move toward a target undetected, but waited until daylight to attack PLO positions.



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## Technical Lessons

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### Lesson 36



***Small arms, although not decisive, played a disproportionate role in the outcome of urban battles.*** A total of 55 percent of IDF casualties were attributed to small arms fire.

### Lesson 37

***Individual flak jackets significantly reduced Israeli casualties.*** Israeli forces were equipped with flak jackets that were light, easy to close, and fit higher than most standard military protective vests. Israeli after-action surveys of the number of hits on flak jackets (hits that otherwise would have penetrated the wearer's body) indicate that casualties would have been 20 percent higher without the use of protective vests.

### Lesson 38

***Smoke enhances survivability in urban situations, but carries significant operational drawbacks.*** In the battle for Sidon, Israeli forces found smoke very effective.

tive in reducing losses. The Israelis came to believe that smoke was effective between 100 and 300 meters in preventing PLO use of RPGs and light weapons against advancing forces. On the downside, smoke often caused as many problems as it solved. That is, smoke was found to impede visual communication among attacking Israeli forces, taxed the driving skills of vehicle operators, and slowed the overall rate of advance. Perhaps these drawbacks limited IDF's use of smoke during the siege of Beirut.

### Lesson 39

***Mortars were highly regarded by all sides, but had limited effectiveness.*** Many participants placed great emphasis on the value of mortars, especially as a psychological weapon. Also, some believed mortars were particularly useful in urban situations because of their high angle of fire. Despite these perceptions of the participants, it appeared that the Israeli 60-mm and the 81-mm small infantry mortars were largely ineffective since their high explosive projectiles could not, in most cases, penetrate roofs. The heavier Soviet 120-mm mortar was better since it often penetrated roofs. Additionally, the Syrians found the Soviet 240-mm towed mortar highly effective for cratering roads as well as for gutting the top stories (one to three) of buildings. Finally, mortars were extensively used to fire smoke and illumination rounds.

### Lesson 40

***Machineguns may be more valuable than assault rifles for urban combat.*** Syrian experience in urban warfare in Lebanon suggests that machineguns, espe-



cially heavy machineguns (12.7-mm) were far more useful than assault rifles. Aside from their greater rate of fire, rounds from heavy machineguns were better at penetrating concrete and cinderblock structures than rifle ammunition — an important consideration in built-up areas.

### Lesson 41

***Air defense guns are valuable for suppressing ground targets.*** The IDF found that M163 Vulcan 20-mm antiaircraft guns were very useful in urban settings because the Vulcan has sufficiently high elevation to target the upper stories of buildings. Secondly, the Vulcan offered a high rate of fire that was very effective in suppressing snipers and intimidating opponents. These views of antiaircraft weapons were shared by Israel's opponents. As a result of earlier experiences in the Lebanese civil war, standard Syrian tactical doctrine called for employing an antiaircraft section of ZU-23 23-mm cannons with a tank battalion when operating in an urban environment. The Syrians concluded that ZU-23s have a "devastating effect" when employed against the outside walls because they "denude structures with their high rates of fire." Similarly, the PLO also employed antiaircraft guns in a ground-support role.

### Lesson 42

***Commercial, off-the-shelf technologies were employed for military purposes.*** The PLO produced self-propelled antiaircraft artillery by mounting Soviet ZPU-1/2/4 14.5-mm heavy machineguns and ZU-23 23-mm autocannons on light commercial trucks. Additionally, the PLO depended heavily upon commercial UHF hand-held radios made by Motorola, Telefunken, and RACAL, as well as Japanese-made VHF communications equipment for urban operations.

### Lesson 43

***Remotely piloted vehicles (RPVs) can provide real-time intelligence, but analysts have considerable difficulty interpreting it correctly.*** The Israelis employed RPVs to gather real-time intelligence on the movement of people within cities, the state of the battlefield, and for immediate attack assessment. On-board TV cameras relayed the pictures to ground stations for analysis

or dissemination. Such RPV-generated photos, however, only gave vague and contradictory data on troop movements in built-up areas. Photo interpreters frequently misinterpreted the purpose of particular facilities and could only make estimates after this function changed. This was partly because the PLO learned to shelter many of its activities as well as adopt confusing and covert patterns of movement. All of this led to a significant degree of mistargeting in Beirut as well as the need to use area or multiple strikes. The photos from RPVs were only useful for pinpointing major pieces of equipment like antiaircraft defenses.

#### **Lesson 44**

***Helicopters are not suited for urban combat.*** The Israelis made virtually no use of helicopter gun-ships in cities, apparently fearing they were too vulnerable to antiaircraft weapons and ground-fire. Helicopters were used in cities only for transporting men and materiel from rear areas to just behind the frontlines.

#### **Lesson 45**

***Rocket Propelled Grenades (RPGs) are omnipresent and very effective weapons in urban combat.*** The PLO issued RPGs on a wide scale, although training in their use was often poor. PLO forces were equipped with one RPG per every three to six fighters. PLO-fired RPGs had little success against the Israeli Merkava tank, but forced the IDF to stop using M113 armored personnel carriers and trucks near the front-line. RPGs were more widely used as general purpose weapons for attacking troops in buildings, behind barricades, or for harassing fire. The RPG was particularly useful since it was well suited to urban terrain. Fields of fire were seldom more than 300 to 500 meters, making such short-range weapons adequate. In addition, the RPG, although not optimized for destruction of concrete or cinderblock, was more effective than small arms fire.

#### **Lesson 46**

***Armored bulldozers are critical assets in urban combat.*** IDF combat engineers used armored bulldozers to clear barricades (some of which were mined) as well as other obstructions that slowed IDF operational tempo. Bulldozers were also used to smother bunkers,

establish firing positions, widen and grade roads, and to create alternative avenues of advance to bypass the urban infrastructure.

#### **Lesson 47**

***Lightly protected armored personnel carriers are of limited value in urban terrain.*** Israeli infantry moved mostly on foot in cities because the lightly protected M113 armored personnel carrier was found lacking in several respects after initial operations in Tyre. PLO ambushes of Israeli columns with RPGs caused extensive casualties, in part because of the tendency of the M113's aluminum armor to catch on fire after being hit by antitank weapons. In some IDF units, men became so frightened at the possibility of RPG-induced fire that they simply walked next to them or rode outside rather than risk being burned to death. By the time of the siege of Beirut, armored personnel carriers were only used to carry supplies to advancing troops, always stopping at least 100 meters behind enemy lines. Besides the vulnerability of M113s to RPG fire, the IDF found them unsatisfactory for urban warfare because of their limited ability to provide suppression fire — their machine-guns lacked sufficient elevation to use against upper stories of building; extreme vulnerability of crews serving outside mounted machineguns to sniper fire; and inability to maneuver in narrow roads and alleys of cities and refugee camps.

#### **Lesson 48**

***Some Israeli equipment was modified while in the field to counter enemy tactics and equipment.*** Lacking an adequate infantry transport vehicle for urban situations, the IDF fell back on several field-expedient solutions. For example, the unusual configuration of the Merkava tank, with its rear mounted turret, provided one option. This tank had been designed for rapid ammunition resupply through a pair of rear doors. By removing these ammunition racks, about 10 troops could be carried in cramped quarters. The Merkava was also used as an improvised armored ambulance to extract wounded infantry using the same method. The IDF also adapted an armored engineering vehicle, the *Nagma-chon*, that had a large compartment in the center to carry engineering troops, but



could also be used for moving infantry. It was relatively invulnerable to RPGs because its glacis and superstructure were protected by Blazer reactive armor. Additionally, the Israelis equipped some armored personnel carriers with add-on passive spaced-armor for more protection.

## Lesson 49

***Dissatisfaction with the survivability of combat infantry vehicles led to significant technological improvements after the war.*** One of the outcomes of the war in Lebanon was the IDF decision in the early 1990s to build a heavy armored infantry vehicle, the *Achzerit*, based on surplus T-55 tank hulls. About 250 *Achzerits* were built as a supplement to the M113 armored personnel carrier, especially in urban combat situations. The *Achzarit* weighs 43 tons and carries a crew of 2 plus 10 infantrymen. It is armed with a Rafael OWS remote control machinegun station plus two 7.62-mm manually operated FN machineguns. Additionally, the *Achzarit* carries an internally-mounted 60-mm mortar for use against man-portable antitank weapons. The M113 also underwent a series of upgrades to improve its survivability to RPGs and to make it more suitable for urban terrain. With about 4,000 M113s in service, the IDF had no choice but to improve the M113 rather than replace the fleet with a more suitable urban assault vehicle. After the war, the IDF developed an improved add-on spaced armor based on Rafael's TOGA applique armor. This was a carbon-steel, lighter-weight, perforated applique mounted to the sides of the M113's hull and front. Not completely satisfied with the TOGA's performance against RPGs, the Israelis developed two more passive armor packages. Finally, in 1996, the IDF fitted their M113s with a reactive armor package.

## Lesson 50

***Accurate and up-to-date maps are essential for successful urban operations.*** Recognizing the importance of up-to-date maps, the IDF took great pains to assemble accurate and highly detailed maps for the Beirut operation. Besides conventional surface maps, the IDF also was able to obtain maps of the sewers and underground tunnels from their Lebanese allies. Conventional maps were also supplemented by photo mosaic maps created from aircraft and RPV reconnaissance missions that were highly valued because of their timeliness and detail. In spite of extensive efforts to develop accurate maps, urban navigation still remained difficult as units easily became lost in unfamiliar settings or were prevented from recognizing key landmarks due to smoke or dust in the air.

## Lesson 51

***Cluster munitions are very effective in cities, provided collateral damage is not a major concern.*** The Israelis found that cluster munitions, including both air-dropped CBU bombs and artillery-fired DPICMs, were very effective in city fighting. In the case of artillery, conventional ammunition usually struck the upper stories of buildings, causing little damage below, whereas DPICMs dropped their payload into the streets below. Conversely, cluster munitions had little impact if the opponent had already reached shelter since DPICMs had little penetration capability against concrete and cinderblock. Therefore, cluster munitions were found most effective when used in quick, short-duration, time-on-target strikes and least useful in prolonged barrages where the defenders could take cover in buildings. Cluster munitions had a significant downside as well. The residue of unexploded sub-munitions posed problems for friendly forces occupying an area and especially for returning civilians.



## Section 4

# British Experience in Northern Ireland



playing a supporting role. The British army's policing mission created a number of serious problems. Soldiers on the streets of Belfast and Londonderry who needed to make arrests initially had no statutory authority to do so. Soldiers also had to use exact wording when making arrests; failure to do so led courts to release the suspect and/or award the detainee civil damages for breaching his rights. Worse yet, overzealous soldiers faced criminal charges in civilian courts for their use of deadly force. (This was later amended so that soldiers would face military courts.)

Between 1972 and May 1974, the British army reduced the level of urban violence such that the IRA had difficulty operating in Northern Ireland. The IRA then shifted to British targets in Europe and within the United Kingdom. This ultimately led to a series of spectacular attacks that included the Brighton bombing in October of 1984, designed to kill the British Prime Minister and her cabinet; and the February 1991 mortar attack on 10 Downing Street while John Major's Cabinet was in session at the height of the Gulf War. During that same time frame, IRA active service units targeted individual British soldiers and airmen assigned to NATO roles in Europe.

Substantial British military involvement in Northern Ireland began in August 1969 when the army intervened in assistance of civil authorities after large-scale sectarian rioting in Belfast and Londonderry revealed police inability to maintain public order. Some parts of both cities were declared no-go areas by paramilitary forces and the police dared not enter them. Eventually, British army strength in Northern Ireland grew from 3,000 in August 1969 to 32,000 in 1972. Subsequently, the maximum strength of British forces in Northern Ireland declined and has fluctuated between 17,000 to 19,000.

From 1969 through 1976, the military had primacy in security operations in Northern Ireland with the police



Beginning in May 1976, the police began reasserting their primacy over security operations in an effort to criminalize paramilitary operations. The idea was to treat terrorists like other violent individuals who had broken the law. Consequently, a reinvigorated and enlarged police force reentered the no-go areas. Over the next 3 years, the army lost its primacy over security operations in Northern Ireland. Since then, the army has maintained a lower profile within cities and has been called on only when events deem it necessary. The military is also responsible for sealing off the north-south border from contraband weapons and terrorist passage. The following lessons are drawn primarily from the 1969-1976 period.

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## Strategic Lessons

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### Lesson 1

***Military action could not solve deep-seated political problems, but did buy time for politicians to search for potential solutions.*** Despite 28 years of British military involvement in Northern Ireland, the underlying political problems of Catholic-Protestant intolerance and



irreconcilable preferences for either union with the Irish Republic or continued membership in the United Kingdom have never been resolved. British military presence, however, was able to reduce the overall level of violence such that the civilian police could again operate in so-called no-go areas of Belfast and Londonderry. Senior British military commanders often recognized the limitations of their efforts and were frustrated by a lack of initiative in the political arena. Lieutenant General Sir Henry Tuzo, General Officer Commanding in Northern Ireland, specifically acknowledged this proposition in a BBC television interview in June 1971.

### Lesson 2

***Well-defined policy objectives to which the army could work steadily and logically were difficult to obtain.*** Any guidance received often vacillated greatly. Part of the difficulty in the early days stemmed from the fact that the British Army in Northern Ireland needed policy direction from two sources simultaneously: the Unionist Government of Northern Ireland located in Stormont; and the British Government in London. Even after Direct Rule was established by London, governments continued to be torn between the desires of the Protestant and Catholic communities in Northern Ireland, as well as domestic British political preference to minimize involvement in the troubles. For example, Sir Ian Freeland, General Officer Commanding in 1969, repeatedly asked for, but never received, a statement of policy aims for the security forces under his direction. On the whole, officers would have preferred either strong political control or none at all instead of the hesitant direction they did receive.





### Lesson 3



*Contrary to initial expectations, operations in Northern Ireland were neither short-lived nor low cost.* When the British commenced military operations in Northern Ireland in 1969, British Home Secretary James Callaghan told Parliament: “The General Officer Commanding Northern Ireland has been instructed to take all necessary steps, acting impartially between citizen and citizen, to restore law and order. Troops will be withdrawn as soon as this is accomplished. This is a limited operation.” Instead, British military presence in Northern Ireland grew from 3,000 prior to Callaghan’s statement to a high of 30,000 in 1972. Overall, 300,000 British soldiers, sailors, and airmen served in Northern Ireland between 1969 and 1994. Director General of MI5 (British counterintelligence) admitted that half of MI5’s resources went to countering the threat from Irish terrorism. The death toll was also significant. If the level of violence in Northern Ireland between 1969 and 1981 was reproduced in a population the size of the United States, there would have been 340,000 deaths over that same period.

### Lesson 4

*Long-running operations in Northern Ireland elevated British army and the Royal Ulster Constabulary (RUC) force levels, as well as warped the army’s overall combat force mix.* British operations in Northern Ireland absorbed between 20 and 33 percent of all British infantry battalions at any one time between 1969 and 1993; these figures include units in training to deploy to Northern Ireland as well as those already

on the ground. This led the British to keep a greater number of infantry battalions within the overall army combat force mix than they would have otherwise needed to meet operational requirements. These significant manpower requirements also led to larger force levels than necessary to meet NATO and other external security requirements. The manpower-intensive nature of antiterrorist operations also increased the size of the RUC. A White Paper written for the RUC estimated that, with a political agreement and an end to terrorist violence in Northern Ireland, total police force size could shrink from 12,000 to 5,000

### Lessons 5

*Police and military activities overlapped to a point where the demarcation between police and military functions blurred.* This worked to the detriment of both organizations. Police were neither adequately equipped nor trained to deal with an armed terrorist army; similarly, the military was not prepared to rigorously enforce the law. The army’s performance of police work had two major flaws. First, under the provisions of the Special Powers Act by which the army



was deployed in Northern Ireland in aid of civil authority, soldiers initially had no legal authority to make arrests, conduct vehicle checks or break up gatherings. (This oversight was later remedied by the British Parliament.) Second, soldiers were expected to know and use correct legal terms when making arrests; using the wrong terms obliged the government to pay civil damages and/or release well-known villains.

## Lesson 6

***Both Catholic and Protestant paramilitary groups received substantial financial and materiel assistance from abroad.*** The Libyans admit providing aid to the IRA in the amount of L9 million in the 1980s; They shipped 130 tons of weapons to the IRA between 1985 and 1987. These weapons are believed to include:

AK-47 assault rifles	650
General-purpose machineguns,	12
DHSK armor-piercing machine-guns capable of shooting downing helicopters	20
Surface-to-air missile (SAM)	1

The Libyans also allegedly tried to send 20 SAM-7 missiles to the IRA in 1987, but the ship was intercepted off France.

## Lesson 7

***Over time, both the Protestant and Catholic paramilitaries increasingly turned to crime to finance their activities.*** Protestant and Catholic paramilitaries turned to robbery, extortion, and especially drug-dealing in England and Northern Ireland to finance their



military activities, pay salaries of full-time officers, and support the families of jailed comrades.

## Lesson 8

***When British security operations began achieving results, the IRA started attacking British targets on the Continent and within the United Kingdom.*** Since 1972, the IRA has carried out a series of bombings in England. The most spectacular include: the Brighton bombing in October 1984, designed to kill the British Prime Minister and members of her Cabinet during a Party Conference; the February 1991 mortar attack on 10 Downing Street while John Major's Cabinet was in session at the height of the Gulf War; and March 1994 mortar attacks on Heathrow Airport. Besides these high profile events, the IRA also attacked a wide variety of targets — pubs, resort hotels, and shopping districts — affecting British citizens. IRA active service units have also operated in Germany, the Netherlands, Belgium, and France against British soldiers and airmen fulfilling the UK's NATO obligations. The Protestant paramilitaries also threatened to attack targets within the Republic of Ireland as well as to strike Republican sympathizers residing on the English mainland.

## Lesson 9

***IRA and Protestant paramilitary operations more often aimed at achieving political advantage than military results.*** Operations against Heathrow Airport, shopping districts, pubs, and hotels seemed to have little military value, but often translated into political gain. Even attacks against military targets were often carried out for political advantage. IRA strategists believed that





they had detected a pattern in past British colonial policy. At the start of terrorist activity, the government would affirm its intention to remain; over time, it would tire of the violence, decide the asset was not worth preserving, and the British would leave shortly thereafter. Initially, the IRA reasoned that if the deaths of 36 British soldiers in Aden sapped British resolve, the same results could be achieved if they killed a small number of soldiers in Northern Ireland. Even though it has not worked out that way, IRA strategists maintain that political gain is the chief goal of military operations.

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## Operational Lessons:

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### Lesson 10

***Existing British military doctrine was inappropriate for operating in Northern Ireland.*** Despite having extensive experience in counterterrorist operations in Kenya, Malaya, Aden, Hong Kong, Cyprus, and other colonial outposts, the British Army could not apply proven approaches and methods due to the unique status of Northern Ireland as part of the United Kingdom. For example, the traditional approach to suppressing riots involved the following steps: British soldiers would form into a tightly knit box formation, deploy barbed wire to separate themselves from the unruly crowd, order the crowd to disperse or they would be fired upon, and then shoot a few of the obvious ring-leaders in the hostile crowd. Shooting down UK citizens (captured on television) was understood by military leaders as a no-go from the beginning. The British military also had to abandon traditional, doctri-



nally prescribed, intelligence-gathering techniques, such as interrogation in-depth, because they soon aroused accusations of torture that were investigated by a special commission headed by Sir Edmund Compton. The uproar over using interrogation in-depth on a small number of specially selected prisoners caught British military authorities off-guard since those techniques were taught at the Joint Services Intelligence School for some time.

### Lesson 11

***Clear rules of engagement were deemed essential.*** Because the British Army was theoretically only operating in assistance of civil authorities, the actions of its personnel were individually accountable under the provisions of British law. Thus, if a soldier exceeded his authority, he might be charged and tried in a criminal court. (The Army resisted civil prosecution of military personnel and eventually the government agreed that soldiers would only appear in military courts.) Therefore, the British Army issued yellow cards to each soldier to define what he could do. These rules of engagement were well below what the law allowed. This meant that soldiers could theoretically exceed their instructions slightly without breaking the law. This approach of building a wide margin for error within the rules of engagement was probably wise since soldiers found the yellow cards cumbersome and often felt that if they followed the rules, they would not be doing their job properly.





## Lesson 12

***Rules of engagement are sometimes difficult to enforce.*** Despite the British military headquarters in Northern Ireland officially promulgating minimum force/maximum respect for the law policies through its yellow card rules of engagement, strong evidence suggested that at times security forces in the field actually operated on a shoot-on-sight basis at their own initiative. The rules of minimum force and respect of the law were seriously challenged in late 1982 after three RUC officers were murdered by the IRA from ambush in Lurgan. Shortly thereafter, security forces killed three IRA men when their car failed to stop at a checkpoint. One week later, an RUC patrol spotted suspicious activity alongside a deserted cottage near Lurgan and opened fire on two suspects carrying 65-year old Mauser bolt-action rifles. Also, as soldiers increasingly became targets of violence, some became rude, abusive, and even violent with transgressors.

## Lesson 13

***Situation-oriented training greatly improved British military effectiveness.*** In the early years, training for service in Northern Ireland was either nonexistent at worst or haphazard at best for two reasons. First, battalions were often rushed to Northern Ireland with little or no notice. Second, few knew what to train the troops for. This situation changed in 1972 with the establishment of Northern Ireland Training Assistance Teams (NITAT) in England and Germany to prepare units for deployment. The formation of NITAT was the first decisive institutional step taken



by the British army toward dealing with the long-term nature of its commitment in Northern Ireland. The standard Northern Ireland training package for infantry included urban patrolling techniques; riot-control procedures; how to shoot at fleeing targets; first aid; powers and procedures for arrest; rules of engagement for using deadly force; descriptions of IRA and Protestant paramilitary tactics, organization, and capabilities; and use of internal security equipment. Engineer troops received different training, such as search procedures and disarming booby traps. Realism was added to the training through specially constructed urban combat ranges where troops could experience a wide variety of scenarios drawn from actual experience in Northern Ireland. Additionally, the British instituted a procedure whereby each battalion on orders to go to Northern Ireland sent an advanced party to familiarize themselves with the actual ground situation and to gather knowledge from the unit being replaced.

## Lesson 14

***The tempo of operations in an urban environment was intense.*** Therefore, personnel tended to “burn out” quickly. In addition to grim and poor living conditions, soldiers spent days in covert observation positions, sleep was deprived, there were constant patrols, intelligence gathering, base duties, administrative work, short-notice deployments, continuous threat of sniper attacks while on patrol and of mortar attacks when at base camp, and a continuous barrage of insults and verbal abuse from all sides while moving within the community. To minimize



mistakes and maximize effectiveness of duty personnel, the British army allotted one 4-day rest and recreation leave to each soldier per tour and rotated out entire units after 4 months on-station.

## Lesson 15

***Intelligence is even more critical in urban environments fighting paramilitary groups than in more conventional combat operations.*** Intelligence was critical since troops operating Belfast and Londonderry were fighting an enemy indistinguishable from the local population. Good information allowed the British military to perform selective target military operations against specific individuals and to avoid humiliating mistakes like arresting old women, the infirmed, and pro-peace community leaders based on bogus tips anonymously supplied by the IRA disinformation operations. Unfortunately, the RUC's intelligence-gathering capabilities in Catholic areas was virtually nonexistent when the British Army intervened in 1969. Therefore, the Army had to build its own intelligence system costing money, men, and effort. Eventually, impressive results were produced and investment was fully returned. The Director General of MI5 (British counterintelligence) estimates that security forces now prevent four out of every five attempted terrorist attacks in Northern Ireland.

## Lesson 16

***Urban operations (especially intelligence operations) required careful coordination among military, police, and civil agencies.*** At the beginning, many lessons learned elsewhere about the value of coordination were



either forgotten or ignored. In the intelligence arena, there was virtually no coordination between MI5, MI6, the RUC, and the army. Differing loyalties and institutional rivalries were partly to blame for this situation. For example, both MI6 and the RUC would mark papers to prohibit the other's access. Similarly, procedural barriers generally inhibited the exchange of information among army and police elements at the unit level in the early phase of the joint army-RUC campaign against the IRA and the Protestant paramilitaries. Eventually, cooperation and coordination improved; institutional rivalries, however, never completely disappeared and continue to inhibit coordination to some degree.

## Lesson 17

***Psychological operations were a key part of the British military strategy for Northern Ireland.*** There were three primary goals for British psychological operations: winning public confidence (or at least reducing hostility to British military presence) through a 'winning the hearts and minds' campaign; countering disinformation spread by the paramilitaries and damaging rumors; and spreading disinformation to damage or unbalance the paramilitaries.

## Lesson 18

***British military operations were infantry-intensive affairs.*** In 1997, there were 18 battalions serving infantry roles in Northern Ireland. These figures are consistent with the discussion in Lesson 4 that Irish operations absorbed between 20 and 33percent of all the infantry battalions in the British army, and the need for infantry in Northern Ireland led the British Army to retain a larger number of infantry battalions in the total combat force mix.

## Lesson 19

***Operations in Northern Ireland stressed the British logistics system because of unusual requirements and abnormally high consumption rates.*** Units deployed to Belfast and Londonderry discovered they needed large quantities of a wide variety of items not usually assigned to combat elements; e.g., riot batons, riot shields, tear gas, water cannons, rubber bullets, marking dye for identifying specific demonstrators, handcuffs,



and metal spikes for blocking roads to vehicular traffic. These needs, especially in the early days, put enormous demands on the logistical system. During one large-scale deployment of additional combat forces to Northern Ireland, British logisticians had to fly extra helmets, shields, and other riot gear in from Hong Kong on short notice. Eventually, some problems were eased by having departing units leave their special urban warfare kits for newly arriving troops. The other logistical difficulty was the high expenditure rate of consumables in major urban operations. In one crowd control operation in Belfast, for instance, the security forces used 700 tear gas cartridges and grenades. Conversely, consumption of traditional combat supplies (artillery and antitank ammunition) was abnormally low for units in action.

## Lesson 20

*The hard-core fighting strength of paramilitary organizations facing British security forces was relatively modest.* Despite the widespread popularity of Protestant and Catholic paramilitaries among the general population, the actual fighting strength of these organizations was modest. For example, activists in the ultra-violent Irish National Liberation Army number between 50 and 70 in Northern Ireland and an additional 20 to 30 in the Irish Republic. Hard-core IRA membership ranged from a high of about 1,000 in the 1970s to a low of 250 to 300 in the mid-1980s.

## Lesson 21

*Special forces were useful military tools, but sometimes became political embarrassments.* Special Air Service (SAS) personnel began operating in Northern



Ireland selectively as individuals in 1971 and later as acknowledged SAS units in 1976. These special forces effectively carried out a number of general missions: intelligence gathering, reconnaissance and surveillance, training regular British military units in covert observation techniques, ambush and harassment of insurgents, retaliatory raids, and out-of-area/out-of-country operations (e.g. incursions into the Irish Republic and tracking of IRA terrorists through Spain and ultimately killing them in Gibraltar). These last two missions, although never publicly acknowledged by either the British government or army, were widely believed the work of the SAS — a perception that caused great political angst in London. The British government's concern that introducing the SAS would cause detriment from a political perspective — given the SAS's fearsome reputation and the fact that it would be operating domestically — was well founded. Charges of brutality, assassination, and terrorism were hurled at the SAS by critics of British policy.

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## Tactical Lessons

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### Lesson 22

*Patrolling was central to the British strategy in Northern Ireland.* Patrols in Northern Ireland were high-profile affairs whose main function initially was to reassure public and assert government authority, especially in the so-called no-go areas that were



declared off-limits to the police by paramilitary forces in some parts of Belfast and Londonderry. More specifically, patrolling was intended to: dominate the ground thereby denying the enemy freedom of movement as well as asserting the primacy of government authority, gather information about the territory and its inhabitants for future operations, react to kill or capture opportunities as they presented themselves.

### Lesson 23

*Patrolling in Belfast and Londonderry evolved into a very different kind of operation than patrolling in a conventional combat situation.* Whereas traditional combat patrol procedures stressed low visibility and furtiveness, British army patrols in Northern Ireland were intended to be seen and so were intentionally high-profile affairs. Whereas conventional combat patrols are conducted to support the maneuver of larger forces, patrolling in Northern Ireland was the maneuver. Finally, patrolling in Northern Ireland differed from conventional patrolling practices since the frequency of patrols was driven more by political expediency than military necessity.

### Lesson 24

*Coordination was essential for the British urban patrolling tactics.* Haphazard patrolling produced few results and it exposed patrols to unnecessary dangers because they lacked back-up support. Coordination, on the other hand, ensured the systematic and thorough canvassing of an area plus allowed commanders to have patrols moving in parallel so that they could reinforce one another if necessary. Coordination also



reduced chances of patrols unknowingly confronting each other and exchanging fire by accident. Conversely, predictable and repetitive patrolling made it easier for the IRA to stage ambushes. Therefore, company commanders had to strike a balance between these to conflicting requirements.

### Lesson 25

*Although the British used both vehicular and foot patrols, many commanders believed foot patrols were the most effective approach.* Many British commanders believed that patrolling on foot afforded soldiers a better opportunity to learn an area as well as offered opportunities to gain information because they could get to know the people who lived in their assigned patrol area. In doing so, commanders were faced with trading off the greater safety offered by patrolling in armored vehicles versus better effectiveness gained by operating on foot.

### Lesson 26

*The British concluded that wheeled armored vehicles were preferable to tracked vehicles for operating in Belfast and Londonderry.* Early on, the British high command in Northern Ireland decided against using





tanks because they were difficult to operate under urban conditions (e.g., narrow streets), caused damage to roads, were noisy, and were expensive to operate. More importantly, however, senior British commanders worried that, since most laymen categorized all tracked armored vehicles as tanks, the deployment of tracked vehicles would be politically unacceptable.

## Lesson 27

***Human intelligence was more important than technical intelligence in Northern Ireland and the responsibility for its collection rested at the battalion and company level.*** The paramilitaries offered fewer opportunities for technical collection than conventional military forces because of the nature of their organization and equipment. Consequently, the collection and evaluation of human intelligence became much more important. Increased need for human intelligence and devolution of responsibility for its collection and assessment to battalion and company level, led to increasing the normal wartime compliment of the battalion intelligence section from 5 or 6 people up to 30 people.

## Lesson 28

***Special close observation platoons were created around traditional battalion reconnaissance platoons to conduct long-term, covert surveillance from static observation posts.*** During 1973, the General Officer Commanding instructed more covert observation posts be established in order to reduce the number patrols. Soldiers, trained by SAS members, would lie in ad hoc, covert observation posts with binoculars, high-powered telescopes, and night vision devices for days or weeks on end in order to target specific individuals or areas. Equipped with tactical radios, these covert observation posts could link with patrols in order to dominate an area.

## Lesson 29

***Soldier loads had to be dramatically reduced because urban warfare requires greater individual agility.*** Urban operations required greater agility from British soldiers. That is, they need to quickly enter and exit armored vehicles, catch fleeing demonstrators, and climb through buildings. Some regiments, for example, outfitted its fastest runners in track suits and tennis shoes so that they could catch fleeing rioters.



## Lesson 30

***Small unit leadership, particularly at the junior NCO level, was an especially critical link in the British chain of command for urban operations.*** Most British operations in Belfast and Londonderry involved small units in almost continuous contact with citizenry, and situations often demanded quick, on-the-spot decision-making. Thus, junior NCOs had an inordinately large impact on British success or failure when compared to conventional combat operations.

## Lesson 31

***Fixed-wing aircraft played an important, but limited, role in Northern Ireland.*** Given the British rules of engagement, there was no close air support role for fixed wing aircraft. Instead, they were confined to conducting overhead reconnaissance and transporting equipment and personnel to Northern Ireland. It is impossible to understate the importance of the heavy lift mission since equipment and/or units often arrived in-country on short notice.

## Lesson 32

***Although helicopters were important assets in Northern Ireland, there is no evidence they were widely used in urban operations.*** The bulk of the Royal Air Force's presence in Northern Ireland consisted of two support helicopter squadrons. Helicopters are considered vital for hazardous, near-border operations and served several purposes including transporting supplies to isolated security outposts, moving wounded, airlifting quick-reaction forces to trouble spots, overhead reconnaissance, and transporting senior person-





nel. This last role produced a serious setback for British efforts in Northern Ireland when a helicopter crashed in June 1994 with 29 senior intelligence officials from the RUC special branch, army, senior members of MI5 (British counterintelligence), and several officials of the Northern Ireland Office aboard.

### Lesson 33

***Snipers were more effective in urban areas than rural operations.*** The British made extensive use of snipers, especially from covert observations posts, in Belfast and Londonderry. Nevertheless, the British discovered that it was difficult for a sniper to hit a fleeing target (even at ranges of 100 meters) because of the density of cover in built-up areas. Consequently, the ratio of shots fired to hits achieved in urban areas was disappointingly low compared to sniper operations outside cities.

### Lesson 34

***Paramilitary actions against British soldiers were generally carried out by small teams using hit-and-run tactics.*** The ambush, booby traps, mines, and remotely controlled mortar attacks were the mainstay of paramilitary tactics against British military forces, including helicopters. One such attack occurred in January 1994 when the IRA rocketed a joint army/police base at Crossmaglen in South Armagh as military personnel were recovering a vehicle used in an earlier mortar attack. Such attacks were usually carried out by small IRA active service units numbering having 8 to 12 members.



### Lesson 35

***Non-lethal technologies were useful for crowd control and riot suppression.*** British security forces employed a large number of non-lethal technologies in combating riots and dealing with unruly crowds in Belfast and Londonderry. These included tear gas, water cannons, dye for marking trouble-makers in the crowd for later arrest, riot batons, rubber bullets (introduced on a wide-scale basis in Northern Ireland in the early 1970s), and plastic baton rounds that replaced rubber bullets in 1975. The latter two weapons were especially useful for keeping demonstrators out of petrol bomb range.

### Lesson 36

***Extensive use of some non-lethal weapons can become counterproductive.*** British security forces in Northern Ireland discovered that young demonstrators' tolerance of tear gas increased four- to fivefold over time because of its extensive use. Another problem with tear gas was that it indiscriminately seeped into neighborhood homes and affected casual by-standers, consequently turning innocent victims against security authorities.

### Lesson 37

***Non-lethal technologies caused some accidental deaths.*** Casualty statistics from Northern Ireland revealed that 1 death occurred per every 4,000 plastic baton rounds used and 1 fatality per 18,000 rubber bullets fired.



### Lesson 38

*Soldiers may sometimes have either misused or deliberately modified non-lethal technologies to make them more harmful than intended by their designers.*

There were claims that soldiers regularly and consciously disregarded minimum range instructions for firing rubber bullets and plastic baton rounds, as well as deliberately aimed high in order to produce more serious injuries to demonstrators.

### Lesson 39

*Static facilities in Northern Ireland were hardened in the same fashion as those in conventional conflicts.*

Hardening, stand-off layering, and defense in-depth were all used in Northern Ireland to protect base camps and police stations.

### Lesson 40

*Rigorous communications security is essential, even against relatively primitive enemies.* At one point, the British discovered that the IRA had bugged telephones in British military headquarters.

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## Technical Lessons

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### Lesson 41

*Some British military equipment was modified to counter to enemy tactics and equipment.* The British made a number of technical adjustments: applique armor was added to soft-skinned vehicles (like land rovers) to protect their crews from blast, fire, acid bombs, and low-velocity small arms fire; special unfolding screens were added to the sides of the AT-104 (Pig) armored personnel carriers so they could be extended in narrow streets to block off a road as well as protect security personnel from missiles thrown by rioters; wire cages were fitted over the superstructures of armored vehicles to defeat petrol bombs and rocket-propelled grenades; and countermeasure packages were added to helicopters to deal with shoulder-fired surface-to-air missiles.

### Lesson 42

*Not all non-lethal technologies were judged suitable for wide-scale deployment in Belfast and Londonderry.*

Between 1969 and 1975, the British Army experimented with rocket-fired nets to catch demonstrators; stun-guns that fired heavy, bean bag-type missiles to wind rioters; and laughing gas in Northern Ireland. All were rejected as impractical after army testing.

### Lesson 43

*Conventional military radios were unsuitable for urban operations.*

The British Army experienced two serious problems with its standard military radios in urban operations: most were too large, bulky, heavy, and complex for use in the streets by small teams; and the signals of the standard Larkspur A41 VHF radio, designed to operate most efficiently where there is a reasonable line of sight between radio stations, were blocked and distorted in and around the buildings of Belfast and Londonderry. For these reasons, the British introduced small, pocketphone radios in the early 1970s that operated in both VHF and UHF modes via permanent ground stations.

### Lesson 44

*The British military fulfilled some of their equipment needs with commercial off-the-shelf technology.* Over the years, the army supplied off-the-



shelf radios as a way of providing simple, efficient communications between ground patrols and company and battalion level headquarters. At other times, troops in the field took the initiative in substituting commercial equipment for military issue. For example, at the end of 1975, British soldiers were buying the single point, commercially-made rifle sight at their own expense because they said it provided a quicker shot at terrorists than the authorized army model.

#### Lesson 45

*The enemy often employed homemade weapons against security forces.* The IRA developed and fielded at least 16 models of homemade mortars over the course of the conflict in Northern Ireland. These mortars were typically 40 to 60 pound devices with an 80 to 300 yard range. The IRA also make a horizontally-fired mortar (the Mark 10) that could hurl a 50-pound charge up to 80 yards for use against lightly armored security vehicles.

#### Lesson 46

*Armored vehicles, not specifically designed for internal security work, often afforded the crew poor visibility in cities.* The British-designed Saracen armored personnel carrier was the mainstay of the British Army's tactical vehicle fleet in Belfast and Lon-

donderry. Although judged a good all-around vehicle, visibility was poor for drivers, especially in narrow town streets, as well as for the commander in the turret and for men trying to see out the rear.

#### Lesson 47

*Urban operations required specialized vehicles and equipment beyond standard issue.* In one operation, the British brought in specialized tanks (designed in 1944 to deal with concrete pill-boxes in the German Atlantic Wall) to clear urban street barricades believed mined. Each tank was fitted with a bulldozer blade on the front and a wide, stubby-barrel main gun that fired a projectile resembling a dustbin. Following this one-time operation, these specially-fitted tanks were withdrawn from Northern Ireland.

#### Lesson 48

*Irish paramilitary forces remained lightly armed throughout almost three-decades of conflict.* Both Protestant and Catholic paramilitary units only used light weapons like small arms, machineguns, mines, rocket-propelled grenades, and mortars. Explanations for the continued IRA preference for light weapons range from lack of military training to difficulty in smuggling heavier weapons into the country.



