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This thesis traces the development of urban operations from World War II to the present to examine the evolution of doctrine, training, organization, and equipment. Four specific operations/battles are examined, including Stalingrad in World War II on the eastern front, Belfast in Northern Ireland from 1968 to the present, Beirut in Lebanon in 1982, and an illustrative future model in Seoul in Korea in 2012. The historical examples are compared to the U.S. scenario in Seoul, Korea, in 2012 to determine similarities and differences. Future lessons learned are extrapolated from these similarities and differences. The study concludes that the U.S. Army has weaknesses in doctrine, training, organization, and equipment in war and military operations other than war at the tactical and operational levels. This study recommends an updated, integrated doctrine, a training facility and training plans at the unit level, a more flexible organization, and procurement of new equipment.

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A thesis presented to the Faculty of the U.S. Army Command and General Staff College in partial fulfillment of the requirements for the degree

MASTER OF MILITARY ART AND SCIENCE

by

PAUL S. BURTON, MAJ, USA
B.S., Arizona State University, 1985

Fort Leavenworth, Kansas
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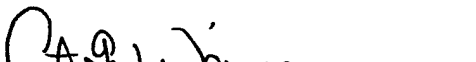 , Thesis Committee Chairman
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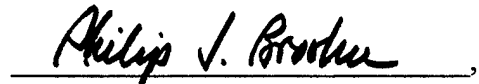 , Director, Graduate Degree Programs
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ABSTRACT

URBAN OPERATIONS, UNTRAINED ON TERRAIN by MAJ Paul S. Burton, USA, 157 pages.

This thesis traces the development of urban operations from World War II to the present to examine the evolution of doctrine, training, organization, and equipment. Four specific operations/battles are examined, including Stalingrad in World War II on the eastern front, Belfast in Northern Ireland from 1968 to the present, Beirut in Lebanon in 1982, and an illustrative future model in Seoul in Korea in 2012.

The historical examples are compared to the U.S. scenario in Seoul, Korea, in 2012 to determine similarities and differences. Future lessons learned are extrapolated from these similarities and differences.

The study concludes that the U.S. Army has weaknesses in doctrine, training, organization, and equipment in war and military operations other than war at the tactical and operational levels. This study recommends an updated, integrated doctrine, a training facility and training plans at the unit level, a more flexible organization, and procurement of new equipment

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To the men of the 7th Special Forces Group, especially 3rd Battalion, who are always ready to stack on any target and enter the breech in the controlled chaos called war.

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CHAPTER 1

INTRODUCTION

Military operations on urban terrain (MOUT) are as old as warfare itself. Sun Tzu, the ancient oriental military philosopher, said, "Stay out of the cities." Lieutenant General William R. Desobry wrote, "In considering military operations on urban terrain (MOUT), I can't help coming to a personal conclusion that our doctrine and subsequent manuals tell us what to do, but tell us very little of how to do it."[1] The majority of modern literature on MOUT seems to share this former V Corps commander's sentiments. In 1980, Colonel John W. Vessey echoed those sentiments when he said, "We've been a little late, perhaps, in the U.S. forces recognizing and dealing with the tactical and technical problems that combat in built-up areas provide us."[2] This issue is further covered in the literature review in chapter 2. This study examines the ability of the U.S. Army forces to conduct operations in war and military operations in other than war (MOOTW) on urban terrain, using current doctrine, training, equipment, and organization.

Regardless of the theater in which U.S. Armed Forces are sent for war or operations other than war, a high probability exists that operations will be conducted on urban terrain. World demographic trends lead to this conclusion in a purely mathematical sense with a doubling of the world population in twenty-three years.[3] Much of the agricultural and industrial world has seen a migration to urban areas.[4] More important than the migration of population is the fact that urban terrain or cities are the cultural, economic, social, transportation, political, and information centers of nations. These areas are lucrative targets, and if the U.S. Army is going to project power as an extension of

policy in these nations, it must have influence or control of this terrain. A city in a nation could be a center of gravity (COG), which is a critical hub of power, or a decisive point (DP), which is a point that provides a marked advantage to an attacker or defender. At the operational or tactical level, a system located in this city could also be a COG or DP. The U.S. Army has moved from a forward deployed to a power projection Army requiring many urban resources, such as seaports, airports, power, and infrastructure sustainment capability, to conduct operations. Where U.S. commanders might have been able to avoid urban terrain in the past, the future suggests the opposite. As the likelihood that U.S. Army forces will operate in urban terrain increases, so has the need to understand the systems that make up that terrain. The potential spectrum of operations in urban terrain runs from the epic World War II type of battle to foot patrols in MOOTW. These operations may be nonviolent, precision limited strikes or large signature, heavy mechanized battles in an underdeveloped country. The desired end state of an operation will likely drive the amount of force allowed in a conflict. Additionally, in MOOTW operations, limiting damage to the urban systems could increase cooperation between indigenous inhabitants and U.S. forces. Because of political influence, media coverage, or potential future operations in the area, the collateral damage to urban systems could be limited by the chain of command. These issues pose a need for a higher level of training for U.S. troops. Whatever the focus of these operations on urban terrain, the potential for high casualty rates and for high consumption of ammunition and other supplies far exceeds that of most environments.[5] Due to increased, decentralized execution, these operations must be planned and executed to enable leaders at the lowest levels to seize and exploit the initiative.

The following examples depict scenarios in which U.S. Army forces could be committed for operations on urban terrain. The North Koreans have attacked and pushed U.S., South Korean, and allied forces south. A forced entry operation into a seaport city is necessary to establish the theater's lines of communication, logistics, and bridgehead for future conventional combat operations.

A European peacekeeping mission with a heavy mechanized force turns to a peace enforcement mission due to ethnic violence. U.S. Army forces with allied coalition forces are forced to defend population centers, logistical bases and lines of communication.

An evil, totalitarian regime rules a third-world country producing widespread suffering and death. Because of increased press coverage that fuels moral and public concerns for the inhabitants, political lobbyists in the Unites States pressure the National Command Authority (NCA) to commit conventional and Special Operations forces. Their mission is to relieve the hunger and to conduct limited strikes against the regime with minimal damage to noncombatants and the city systems.

U.S. Special Operations forces and coalition forces are committed as a preventive measure for a possible evacuation of U.S. citizens and as a deterrent to terrorism in a developed country. Tensions ease, however, the NCA feels that continued U.S. presence is needed to sustain stability. Active patrols are used in urban terrain to deter violence and project U.S. political resolve and military power.

These scenarios contain some historical similarities, but demonstrate the potential for likely involvement in urban terrain. The Army's new doctrine FM 100-5 places increased emphasis on operations other than war, which frequently involve cities.

Operations other than war require all the capabilities of the infantry, whereby both heavy and light infantry play major roles. Therefore the Army will see increased emphasis on MOUT, force projection, and material readiness that will require rapid deployment of a varied mix of forces against an equally diverse range of contingencies.[6]

The Research Questions

Can U.S. Army forces with current doctrine, training, organization, and equipment effectively conduct operations in urban terrain in war and MOOTW? How can U.S. forces improve effectiveness on urban terrain?

Assumptions

The Army needs to be prepared to conduct war and MOOTW on urban terrain. The Army needs the most efficient and effective doctrine, training, organization, and material to conduct these operations. Modern demographics demonstrate the need for operations in urban terrain because of population trends and because of their importance as cultural, political, transportation, social, economical, and informational infrastructure centers.

Definitions

A unique lexicon exists in the military, with each reader influenced by prior experience. This study could possibly deviate from joint or Army doctrinal definitions. Therefore, the following definitions, arranged alphabetically, will clarify key terms. and allow easy reference during the reading of this study.

Centers of Gravity (COG). COG is the hub of all powers and movement upon which everything depends. It is that characteristic, capability, or location from which enemy and friendly forces derive their freedom of action, physical strength, or will to fight.

City Systems (or referred to as systems in the text). The systems of transportation, physical composition, utilities, communication, information, cultural, political, economic, and social structure that make up a city. Collectively, these systems make up the whole of the city system.

Close Quarters Combat (CQC). A term for combat in built-up areas. The difference in terminology between MOUT and CQC comes from a unit's ability to train to a high level of proficiency. The emphasis of CQC operations is on the individual operator's ability to quickly discriminate between threat and nonthreat targets and engage them effectively and quickly. Collateral damage to material and personnel is limited by the nature of this type of mission.

Conventional Forces. Forces are armed and equipped for standard maneuver warfare, including mechanized and light forces in a U.S. division.

Decisive Points (DPs). DPs provide commanders with a marked advantage over the enemy and greatly influence the outcome of an action. DPs are not COGs; they are the keys to getting at COGs.

Defense (prepared and unprepared). There are two types, deliberate and hasty. The deliberate defense is organized when out of combat or contact is not imminent. It normally includes extensive fortified zones, pillboxes, forts, and communications. The defender has substantial time to reinforce existing defenses or improve terrain to

significantly improve his advantage for combat. The hasty defense is normally organized while in contact with the enemy or when combat is imminent and time available for organization is limited. It is characterized by the natural defense strength because of terrain, rather than utilization of improvement to existing defenses or terrain.

Doctrine. The fundamental principles by which the military forces or elements thereof guide their actions in support of national objectives. It is authoritative but requires judgment in application.

Large Cities. Cities possessing comprehensive city systems; it is associated with urban sprawl with population ranging from one hundred thousand to millions and covering hundreds of square kilometers.

Material. For the purposes of this study, material includes war-fighting equipment, ammunition, and logistical support equipment.

Military Operations Other Than War (MOOTW). Operations that encompass the use of military capabilities across the range of military operations short of war. These military actions can be applied to complement any combination of other instruments of national power and occur before, during, and after war.

Military Operations on Urban Terrain (MOUT). All military actions that are planned and conducted on terrain where man-made construction affects the tactical options available to the commander.

Noncombatant. An individual in an area of combat operations who is not armed and is not participating in any activity in support of the factions or forces involved in combat.

Organization. The definite structure of a military element prescribed by a component authority such as a table of organization.

Rules of Engagement (ROE). ROE are directives issued by competent military authority that specify the circumstances and limit actions under which forces will initiate and/or continue combat engagement with other forces encountered.

Special Operations Forces (SOF). Military personnel with primary and cross training in basic and specialized skills, organized into small, multiple-purpose detachments, and specially equipped to conduct nonstandard missions.

Strip Area. Urban areas built along roads connecting towns or cities.

Three-dimensional Battlefield. A concept used to describe urban terrain in three levels of operational and tactical battle areas: (1) above ground refers to the second story and above in buildings, airspace, and space over built-up areas; (2) ground level refers to street level, and land that is included on the surface area in urban terrain; and (3) below ground includes basements, sewers, subways, and associated city system infrastructure that ties belowground-level, such as underground cable, to ground-level systems.

Towns and Small Cities. Areas with population up to 100,000 and not part of a major urban complex.

Training. Activities associated with the preparation of a military unit to conduct combat operations and operations short of war.

Urban Terrain. A built-up area of man-made structures and/or city systems. Built-up areas are broken down into the following four categories: large cities, towns and small cities, villages, and strip areas.

Villages. Built-up areas with populations of three thousand or less.

Limitations

The following limitations present weaknesses beyond the control of the researcher. There is no single example of urban combat that clearly demonstrates all the necessary aspects of this type of operation. For this reason, four case studies were chosen and will be discussed in Delimitations. This research derives from only open sources to allow the widest possible dissemination of the thesis.

Delimitations

This study is limited to brigade and below unit operations because these operations dominate the complex urban terrain. Additionally, maneuver combat arms units are the focus of this study. Doctrine, Training, Leader development, Organization, Material, and Soldiers (DTLOMS) provide the model that will be used for analysis. This study will focus on doctrine, training, organization, and material. These four functional areas will be used to illuminate the uniqueness and difficulty of conducting operations in urban terrain. Material will be referred to as equipment in this study.

Three historical examples demonstrate the different levels of conflict and are located in different theaters of operations because cities are unique in different theaters. Additionally, these examples are presented chronologically to demonstrate the evolutionary process and the effects of technology. The first example is the Battle of Stalingrad in World War II, between the German and Russian forces on the eastern front. This battle demonstrates the complexities of a conventional, total war-type battle that was fought on a European-type city with complex structures. Combined arms teams operated

in large numbers on both sides, clearly demonstrating unique organization and material and new developments in training and doctrine.

The second historical example is the British experience in Northern Ireland. This MOOTW depicts a low-intensity urban conflict fought with conventional, unconventional, and Special Operations forces. This conflict was fought in a European city in which British political powers mandated limited collateral material damage. This example demonstrates more surgical-type operations in which civil authorities integrated with military operations. A unique training program was developed to support the British doctrine. Innovations in material and organization evolved to deal with the Irish threat.

The third historical example cited is the war in Beirut in 1982 between the Israeli Defense Forces (IDF) on one side and the Syrians and Palestinian Liberation Organization (PLO) on the other. This war's participants included both conventional and unconventional aspects and organizations. A modern combined arms team and new technology played significant roles in the conflict. An environment of conventional and unconventional combat existed in a modern city-system type city in the Middle Eastern Theater, as well as a under-developed section of the city consisting of predominately primitive structures. Varied training, types of doctrine, equipment, and organization were needed to combat two completely different types of enemies, the Syrians and the PLO. Additionally, an environment of extreme Israeli national and international political sensitivity existed which affected the implementation of certain tactics.

Significance of the Study

Army manuals are called field manuals (FMs), and army units are continuously going to "the field." The fact remains that the number of people living in cities is rapidly increasing. The likelihood of the U.S. Army becoming engaged in a monumental, epic World War II style battle where hundreds of thousands of combatants on each side are consumed in extended pitched combat is small; however, the possibility exists that divisional and smaller sized units will engage in war and MOOTW on urban terrain. The attitude that "MOUT is not a potential for the Army" will cause deficiencies in readiness. Recent Army operations, to include Urgent Fury, Just Cause, Desert Storm, Bosnia, and multiple SOF deployments demonstrate that operations will be conducted in urban terrain. There is a whole generation of Army leadership at different levels that has not been afforded the opportunity to prepare for urban operations realistically. Because of the decentralized execution of small unit operations on urban terrain, leaders must be able to exercise initiative even at the lowest levels. If the Army's doctrine, training, organization, and material are not modern and effective, objectives will be costly to obtain. In a time of limited force structure and resources, this could lead to mission failure. A lack of training could cause needless human suffering or the condemnation from domestic or international political organizations. The skillful application of combat power to obtain operational or tactical success could be critical for the success of strategic goals. The Army's training doctrine states that units should train as they intend to fight.[7]

As the Army decreases its numbers and moves from a forward-deployed Army to a force projection Army, units not formally prepared for this type of terrain could find themselves embroiled in extended operations in urban terrain. It is important to

consolidate lessons learned because there will potentially be very little time to train-up once given the mission. Historical lessons learned, presented in a logical manner with suggestions for future operations, will allow leaders a more focused approach to what little training time and resources will be allotted for operations on urban terrain.

Organization and Methodology

This study consists of five chapters. Chapter 1 defines the questions and problems, states the significance of the study ,and sets the parameters for the study. This chapter contains the introduction, background, scenarios, research questions, assumptions, definitions, limitations, delimitations, organization, methodology, and significance of the study.

Chapter 2 is the literature review of books, professional journals, periodicals, doctrinal manuals, and college papers to establish background information and present professional literature trends.

Chapter 3 covers the methodology and explains three historical examples and one future scenario, which are analyzed in chapter 4. Additionally, it discusses the city systems that comprise urban terrain and covers and demonstrates the complexity of conducting urban operations.

The methodology used in this study is from the book *Thinking in Time: The Uses of History for Decision Makers* by Richard E. Neustadt and Ernest R. May. The historical analytical method used is the Known-Unknown-Presumed/Likeness-Differences or the K-U-P/L-D method.

The following steps will be used to illustrate three historical examples of urban operations compared to a potential future urban operation: Step one is to separate what is known now from what is unclear and from what is presumed (the future).[8] Step two is to make a comparison of likenesses and differences.[9] Step three is to analyze the products of the first two steps and make recommendations or changes to present doctrine, training, organization, and material.

Chapter 4 includes a comparison and analysis of the three historical examples using doctrine, training, organization, and material (DTOM). Chapter 5, "Recommendations and Conclusions," answers the research questions posed in chapter 1, based on the analysis of chapter 4. Lastly, recommendations will be made on identified problems in the U.S. Army approach to DTOM, and areas that could benefit from further research and analysis will be identified.

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[1]William R. Desobry, "Brute Strength, Not Finesse," *Infantry,* July-August 1987, 9.

[2]U.S. Government, *International Symposium on Military Operations in Built-up Areas* (U.S. Army Human Engineering Laboratory, 1980), 19.

[3]*Encyclopedia Britannica*; vol. 25, *Macropaedia*, 1993 ed., s.v. "Population," 1042.

[4]Ibid., 1039.

[5]Russell W. Glenn, C*ombat in Hell: A Consideration of Constrained Urban Warfare* (Santa Monica, CA: RAND, Arroyo Center National Defense Research Institute, 1996), vii.

[6]Jerry A. White, "Operations Other Than War: A Broader Perspective," *Infantry*, January-February 1994, 2.

[7]U.S. Army, Field Manual 100-5, *Operations* (Fort Leavenworth, KS: Command and General Staff College Press, 1941; A Military Classic Reprint 1992), 1-5.

[8]Richard E, Neustadt, *Thinking in Time: The Uses of History for Decision Makers* (New York: The Rue Press, 1986), 273.

[9]Ibid., 273.

CHAPTER 2

LITERATURE REVIEW

Introduction

This chapter accomplishes four objectives. First, it briefly covers the evolution of Army MOUT doctrine from World War II to the present. This portion of the chapter will provide background information of MOUT doctrine to give a point of reference in this doctrine's development. The second section provides a synopsis of current Army doctrinal manuals and special texts (STs), and some Marine Corps publications. The third section of this chapter overviews books, periodicals, and professional studies. Some of these sources are written by civilians and in a scientific manner that provides a unique perspective. The fourth section of this chapter will cover theses and monographs on MOUT. Although the focus of most of these projects is not completely parallel to this study, there is immeasurable benefit in the utilization of these professional soldiers' research and knowledge.

The primary research facility used in this study was the Combined Arms Research Library at Fort Leavenworth, Kansas. Army manuals that provide the doctrinal basis for the U.S. Army are the primary focus of this review. The historical approach provides insight into current trends and helps demonstrate the evolution of urban warfare. The breadth of this study is large and the nature of MOUT complex, requiring exploration of a large cross section of manuals. Although this study is limited to brigade and below operations, it was necessary to also explore some manuals covering echelons above brigade because their doctrine applies to all levels of command and influences brigade

and below operations. Additionally, doctrine for the conduct of urban operations is covered in a wide variety of manuals, and various branches and levels of command focus on different operational and tactical principles.

Development of Doctrine

The oldest manuals surveyed are World War II vintage and forward to the 1990s. These manuals include the following: FM 100-5, *Field Survey Regulations Operations* (1941); FM 100-5, *Operations* (1976); FM 31-50, *Combat in Fortified Areas and Towns* (1944); FM 31-50, *Combat in Fortified Areas and Towns* (1952); and *Combat in Fortified and Built-up Areas* (1964). All of the FM 100-5 manuals focus on what the Army feels is the primary threat or conflict in which they will fight; thus the change from offense to defense, and from defense to power projection in midintensity and MOOTW. This paper begins with a review of the progression of FM 100-5 because it is the Army's capstone manual.

The primary use of FM 100-5 published in 1941 was to provide guidance, which was used in fighting the majority of World War II. Additionally, this manual provided doctrinal changes for a force that was modernizing and becoming mechanized, and it was the foundational manual for a force that increased seven to eight times in size. This early manual covered numerous areas that are covered in today's manual, to include reduced fields of fire, reduced observation, close engagements, and increased difficulty in command and control. The doctrine from this early version of FM 100-5 provided guidance for fighting numerous MOUT battles and stated that the outcome of these fights in built-up areas would depend upon "initiative and aggressive leadership of

subordinates."[1] Isolating a town prior to attack and then attacking in two echelons was emphasized in this doctrine. The assault echelon would attack through the town while the reserve, or support echelon "mopped up or cleared the sectors." Because of insufficient mechanized forces available for deployment in the European Theater of operations, this manual also warned against using mechanized forces in a town, because unnecessary vehicle losses would occur. In the defense, MOUT was viewed as an effective way to slow and defeat mechanized forces. Using prepared defenses would cause the enemy to systematically deploy large numbers of light forces in support of mechanized forces. If those light forces were not available, mechanized forces would be vulnerable to attacks by forces they attacked from the rear and above ground level. The use of friendly mechanized forces was relegated to that of a mobile reserve. Additionally, the 1941 version of FM 100-5 emphasized the use of aerial bombardment and artillery in support of maneuver forces.

FM 100-5 (1976) introduced the terms "active defense" and "AirLand Battle" and placed great emphasis on Air Force and Army integration. The 1941 version of FM 100-5 placed great emphasis on the offense, whereas the 1976 version emphasized the defense. The defense of Europe was the primary concern of the Army during this historical period. This doctrine was force oriented and traded space for enemy combat power. Operations in built-up areas were discouraged, and MOOTW was not even covered. This post-Vietnam manual stressed maneuver warfare and attempted to use lessons learned from the 1973 Arab-Israeli war to confirm the U.S. Army's operational tactics. The lack of emphasis on MOOTW reflects the fact that General Depuy, the manual's sponsor, saw Vietnam as an anomaly.

The current FM 100-5, published in 1993, states that, "Urban operations present unique and complex challenges to Army forces."[2] The manual stresses that forces will fight in small, decentralized elements. Emphasis is placed on limitation of unnecessary collateral damage and civilian casualties due to the large numbers of civilians in the area. The specific portion of the manual devoted to urban operations is one paragraph long; however, the doctrinal principles and concepts, and operational design, covered throughout the remainder of the text, can easily be applied to urban terrain. The change from the monolithic battle in Europe to the midintensity and MOOTW is quite evident. The fact that the Army changed from threat force based to capabilities based only helps validate the need for comprehensive, current MOUT doctrine.

FM 31-50 (1944)

The FM 31-50 progression of manuals again demonstrates the threat or conflict that the Army is embroiled in or anticipates. The 1944 edition of FM 31-50, *Combat in Fortified Areas and Towns*, was published to support the European invasion. The manuals stress the bypassing of cities and the use of offensive operations as a last resort. World War II was a time of great change for the U.S. Army, and one of the most significant challenges was the effective use of a combined arms team. Although these concepts were stressed in FM 31-50, the U.S. Army would not master this technique during this war. Artillery and airpower would prep the built-up area or isolate it, while the armor forces physically isolated the built-up area by encirclement. Infantry then penetrated and attacked through the objective with the use of assault teams. The forces would then mop up or clear the objective by destroying small pockets of resistance. After

the fight, a reorganization phase occurred to prepare for future operations. These basic tactics remain constant over the years, although the number of phases and the lexicon to describe it have changed.

FM 31-50 (1944) does provide a list of considerations for the tactical level of war. Some examples from this list include the use of photographic reconnaissance, to the most likely loophole locations for enemy snipers. The manual is offensive in its orientation in a total war scenario and does not cover civil military operations or collateral damage. The manual is deficient in describing for the commander available options at the operational level of war and integration of the combined arms team. Because the U.S. Army was engaged in a full-scale war during this manual's publication, FM 31-50 (1944) does not address civil military operations, collateral damage, and operations short of war.

FM 31-50 (1952)

FM 31-50 (1952) was a post-World War II manual that was primarily used for Korea; this revised manual incorporates the lessons learned from World War II. The seven steps of the built-up attack in the 1941 manual were reduced to three: isolate the town, advance the assault force to seize some buildings on the near edges of the town, and systematically advance house to house, block to block through the built-up area.[3] The support of tanks as part of the team was considered vital to the attack evolution from earlier manuals. Previously, tanks were not massed to exploit their tremendous combat power. The lessons from World War II operations are applied to this doctrine. This manual concentrates on the offensive and stresses that cities provide the advantages to a

well-prepared defender. The FM 31-50 manuals mature as they become more than a tactical checklist and begin to cover operational level considerations in built-up areas.

FM 31-50 (1964)

The 1964 version of FM 31-50, *Combat in Fortified and Built-up Areas*, is most like the present day FM 90-10, published in 1979. This Vietnam and cold war era manual covers both conventional operations for a European type scenario, and counter-guerilla operations. The manual covers World War II examples of offensive and defensive operations and truly attempts to address considerations for the brigade task force down to the individual infantryman. It does slate its applicability to nuclear and nonnuclear environments.

This manual is more detailed in its coverage of the considerations in MOUT and provides the commander with options. In the section devoted to counter-guerrilla operations, it states, "Innocent civilian adults and children will probably be killed or wounded by the action. The guerrilla force will attempt in every way possible to exploit this fact to the utmost to arouse the hatred of the civilian population for the counter-guerrilla force. A very effective means of countering such psychological warfare is the use of loud speaker announcements and leaflets prior to the attack."[4] Sections like this show development from the checklist mentality to the flexible thinking mentality where a commander chooses options to maximize the effects for the desired end state.

FM 90-10 (1979)

FM 90-10, *Military Operations on Urbanized Terrain*, was published by the Infantry School in 1979 and replaced the FM 31-50 series manuals. Like its predecessors, the manual focused on the current threats of the time, which were the Warsaw Pact nations and the monolithic European war. "Tactical doctrine stresses that urban combat operations are conducted only when required and that a built-up areas are isolated and bypassed rather than risking a costly, time-consuming operation in this difficult environment."[5]

This manual includes detailed sections on how the Soviets planned to fight in offensive and defensive operations. It focused entirely on central Europe and used German towns as examples. The manual stated that the defender should use urban areas in order to: control avenues of approach and integrate adjacent terrain, act as a combat multiplier, fight on the terrain only when it provided the advantage, avoid combat in built-up areas when feasible, and provide a centralized plan but implement control measures to facilitate decentralized execution.[6]

In the offense, FM 90-10 covers the hasty and the deliberate attacks. In the hasty attack, the operation "is conducted to capitalize on opportunities as they present themselves, commanders should not expect to execute these tasks in the same order on all occasions."[7] The three tasks essential to success are highlighted as locating a weak spot, fixing forward all elements, and rapidly moving through or around to exploit the weak spot.[8] The deliberate attack is more methodical where the enemy is isolated, assaulted, and cleared from the objective.[9]

FM 90-10, a defensively oriented manual, divides the battle area into the covering force, main battle, and rear battle area operations.[10] The manual stresses the combined arms team and the importance of combat support (CS), and combat service support (CSS). Chapter 4, the CS chapter, covers field artillery, engineer, Army aviation, tactical air, air defense, military police, chemical, and communications considerations. In chapter 5, the CSS chapter, support organization, logistical functions, noncombatants, civil affairs operations, and refugee control are covered. The manual establishes a Warsaw pact threat-based doctrine, but integrates a wider range of considerations than previously covered. The main focus is on corps level to battalion task force operations, while the appendix covers the how to fight and special considerations. The manual does not cover MOOTW or low intensity conflict operations, non-European scenarios, or non-Soviet threats, and it is so outdated it is almost twenty years behind in technological advances.

FM 90-10-1 (1993)

Fm 90-10-1, *An Infantryman's Guide to Combat in Built-up Areas*, was published in 1993 and revised in 1995. The change in the order of chapters in this manual from FM 90-10 is significant because it places the chapter on considerations, characteristics, and analysis ahead of the chapters on operations, leading the soldier to actually study the unique terrain prior to operations. There are some improvements in FM 90-10-1; however, the manual was written for the infantryman and focuses on that part of the combined arms team. The manual is well written and concentrates on operations from the battalion to platoon size units. Because it is a more current manual, it does cover more modern systems like the M-2 Bradley Fighting Vehicle (BFV) and discusses the effects

of improved munitions. FM 90-10-1 suggests using BFVs in place of tanks to provide direct-fire weapons. "The best direct-fire support is provided by BFVs, but it can also be provided by tanks."[11]

This infantryman's manual does a thorough job covering conventional combat operations and covers area characteristics other than found in Europe; however, it does not adequately cover MOOTW. Appendix G, "Military Operations in Urban Terrain Under Restrictive Conditions," consists of seven pages and focuses on rules of engagement (ROE) and some of the differences between high intensity MOUT, precision MOUT, and surgical MOUT. One of the inherent problems with the manual for MOOTW is the average infantry squad does not have some of the equipment necessary to conduct surgical MOUT. In Appendix K, "Close Quarters Combat Techniques," and Appendix M, "Expedient Breaking of Common Urban Barriers," deficiencies appear. It disregards methodical training and safety techniques that will ensure the well being of U.S. soldiers. The manual tells of techniques, but does not provide enough information on the techniques or the complexities and situations in which these techniques should or should not be implemented. Generally, FM 90-10-1 is a well-written manual and provides the soldier with the fundamentals to conduct MOUT.

FM 71-2 (1996), FM 71-3 (1996), and FM 71-100 (1996)

The FM 71 series manuals covered by this study are FM 71-3, *The Armored and Mechanized Infantry Brigade*, and FM 71-2, *The Tank and Mechanized Infantry Task Force*. Although this study is limited to brigade and below operations, FM 71-100,

Division Operations, was reviewed because brigade task forces receive their guidance from the division.

FM 71-100, *Division Operations*, covers maneuver missions that could be given to a division or elements of a division; however, MOUT is never mentioned. A forced entry in war or security of an urban area in MOOTW is not considered a division operation. There is a nine-page chapter devoted to OOTW, which makes inferences to the infrastructure of the typical large city and how it could support or affect OOTW, but a city is never mentioned.

FM 71-3 does not contain a section devoted to urban operations. It does include appendixes on OOTW, armored operations with light infantry, special operations forces, and fratricide prevention. In offensive and defensive operations, the soldier is supposed to use Mission, Enemy, Troops Terrain-Time (METT-T) for all fighting scenarios. This is a sound manual that could be adapted for MOUT with a user who is knowledgeable on the unique difficulties in an urban environment for mechanized forces. A brigade level manual should be thought provoking based, rather than how-to-fight based which concentrates on lists and techniques.

FM 71-2, *The Tank and Mechanized Battalion Task Force*, has several short passages on MOUT and summarizes FM 90-10 in one paragraph, stating that urban areas are a special environment.[12] In offensive operations, the urban area is not mentioned; however, in the defensive section of the manual, the technique covered the employment integration of BFVs and tanks into urban defense.

TC 31-32 (1997)

TC 31-32, *Special Operations Sniper Training and Employment* (1997), covers the training and implementation of sniper teams. There is an entire chapter devoted to operations on urban terrain, which provides excellent how-to-fight information for a sniper team in an urban setting. It is an updated manual that integrates modern technological advances. The biggest weakness of the manual is the lack of information concerning countersniper operations.

FM 100-20 (1990)

FM 100-20, *Military Operations in Low Intensity Conflict* (LIC), was published jointly by the Air Force and Army in 1990. This manual refers to urban areas only because of a growing trend from rural to urban terrorism and insurgencies. It does address Civil Military Operations (CMO), restrictive ROEs, and the necessity for limiting collateral damage to gain support of the local population. Written for leaders in task forces in a LIC environment, this manual does not attempt to address how-to-fight issues. Although an excellent manual on the theory of low intensity conflict, it does reflect the growing trend to urban operations.

ST 31-20-6-1 (1993)

ST 31-20-6-1, *Close Quarters Combat (CQC),* 1993, published by the U.S. Army John F. Kennedy Special Warfare Center and School, is totally devoted to the training and conduct of operations on urban terrain. This how-to-fight manual focuses on small

unit operations at an advanced level in the urban environment. It is an excellent manual for its designated purpose.

Marine Corps Doctrine

Marine Corps manuals provided supplemental information on urban terrain operations and are included in this review. FM 6-3, *Fleet Marine Force*, and OH 8-7, *Military Operations on Urbanized Terrain*, are the primary Marine Corps sources referenced. The Marine Corps doctrine for MOUT parallels that of the Army. The manuals define urban terrain, its characteristics, and the effects this terrain has on operations. The Marine manuals focus better on the urban areas as a system, and the critical areas that give that city system value, that is, railroads, radio stations, and others. Another concept, although not fully developed, is the key building concept. The Marine Corp defines a key building as a structure which contains an important governmental agency or public utility, or is one of distinct cultural, political or historical value.[13] Operational Handbook 8-7 is their how-to-fight reference and is adequate for small units. But it does not attempt to cover large-scale operations.

Periodicals

Some of the best sources for analysis of the Army's current MOUT doctrine include professional magazines and journals. Branch magazines, like *Armor* or *Infantry*, or service magazines, like *The Marine Corps Gazette*, provide recent insights into actual operations and critique current doctrine from those experiences. The *Military Review* and publications from the Army War College provide an intellectual analysis of theoretical

problems in MOUT. The periodicals provide numerous lessons learned and suggestions for improvement, but this body of works criticizes the present doctrine for MOUT.

Books

The books used in this study are in the following three categories: references, battles or campaigns, and urban terrain. Reference books provided verification for specific weapons capabilities, specific facts for demographics or the city as a system. Technical information that needed to be is verified or referenced for aspects of the study. Battles and campaigns used as historical examples of urban conflict provided this study with facts, figures, orders of battles, and success and failure of forces in these actions. Generally, these books focused on the action, not the terrain, and the reader must infer that the terrain had the specific effect on the action. The third category was books that cover operation on urban terrain and the effects of that terrain. These books are generally European, but provide a unique perspective outside the normal U.S. Army thought processes.

Student Products, Technical Reports, and Studies

There are numerous theses, monographs, technical reports, and studies that examine MOUT, MOUT doctrine, and other aspects of urban operations. The sources of these works are primarily military colleges, like the Command and General Staff College and the War College, and the Army institutes for research, like the U.S. Army Human Engineering Laboratory. These studies and theses are valuable because of the research and thought that went into them. Although their works cover aspects of urban operations,

they no not have exactly the same focus of this study. Additionally, the Army has gone through a major peacetime restructuring, emphasized MOOTW, and acquired new technology since some of these studies were published.

Historical Examples

The book list for the historical examples is plentiful, but repetitive. A considerable amount of information about the battles themselves is available, but not specifically in relation to urban terrain.

Technical, historical publications on Russian and German operations in World War II that were published in the 1950s by U.S. Military Intelligence and the Department of the Army are an excellent source. These works fill in doctrinal, tactical, and organizational areas not covered in most books.

Numerous British and Israeli soldiers have written books about their operations. Sufficient material to extrapolate technical information and the impact that urban terrain had on those conflicts was extracted.

Summary of Literature

Some of the literature reviewed in this chapter, primarily doctrinal manuals, expose weaknesses in MOUT doctrine. Many of the scholarly works reviewed for this study have concluded with similar assessments. Because of the increased likelihood of future urban operations, books reviewed about MOUT continually emphasize the necessity for current MOUT doctrine, training techniques, force organization, and modern equipment. This chapter covered the sources used to compile this study. It

examined the evolution of doctrine and current doctrine as it relates to urban operations. The study traced doctrinal developments from World War II forward to give a point of reference and provide insights into present problems. These trends in the development of doctrine reflect the threat and goals of the historical force they provided guidance for Marine Corp doctrine was briefly summarized as an example of another U.S. ground force that operates as a combined arms team.

A synopsis of other material, to include books, periodicals, studies, theses, and monographs was included. Although these sources are usually not official points of view for the U.S. Army, their freethinking, analysis, and unrestricted format are invaluable. The books were necessary for the analysis of the historical examples of urban operations. The resources expended on many of these products could not be duplicated, but rather capitalized on the multiple points of view and previous time spend on analysis of similar, relevant topics on urban operations.

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[1]U.S. Army, FM 100-5, *Operations* (Ft. Leavenworth, KS: Command and General Staff College Press, 1941; military classic reprint 1992), 209.

[2]Department of the Army, FM 100-5, *Operations* (Washington, DC: Department of the Army, June 1993), 14-4.

[3]U.S. Army, FM 31-50, *Combat in Fortified Areas and Towns* (Washington, DC: Department of the Army, 1952), 77.

[4]U.S. Army, FM 31-50, *Combat in Fortified and Built-up Areas* (Washington, DC: Department of the Army, March 1964), 48.

[5]U.S. Army, FM 90-10, *Military Operations on Urbanized Terrain* (Washington, DC: Department of the Army, 1979), 1-1.

[6]Ibid., 3-43.

[7]Ibid., 2-13.

[8]Ibid.

[9]Ibid., 2-14.

[10]Ibid., 3-18.

[11]U.S. Army, FM 90-10-1, *An Infantryman's Guide to Combat in Built-up Areas* (Washington, DC: Department of the Army, 1995), 3-13.

[12]U.S. Army, FM 71-2, *The Tank and Mechanized Battalion Task Force* (Washington, DC: Department of the Army, 1996), 1-14.

[13]Marine Corps Development and Education Command, OH 8-7, *Military Operations on Urban Terrain* (Quantico, VA: U.S.M.C. Development and Education Command, November 1980), 7-7.

CHAPTER 3

METHODOLOGY, CITIES, AND HISTORICAL EXAMPLES

> The study of the part alone can give us a true perception of practical methods, and enable us to see how the soldier will inevitably fight tomorrow.
>
> Ardant du Picq, *Battle Studies*

This chapter explains the methodology, describes urban terrain, cites historical examples, and provides a future scenario for comparison and analysis in chapter 4. The procedures and methodology are covered first. Second, the modern city is dissected to show the complexities and interdependency of this unique terrain. Next three historical examples of urban operations and one future urban operation are outlined. Finally, the chapter establishes the characteristics for urban operations and provides the basis for analysis in chapter 4.

The methodology and procedures for the study were briefly covered in chapter 1. The method of historical analysis used is modeled on the work of Richard E. Neustadt and Ernest R. May in *Thinking in Time: The Use of History for Decision Makers*. The K-U-P/L-D method is used in comparing three historical urban operations to a future operation. Each historical example, chosen for its uniqueness, was compared to a future operation by determining what is known in the past. The known data is separated from what is unknown or presumed, and similarities and differences are compared. The presumed is the assumption upon which the analysis of the problem is based. Since the future is not a known quantity, assumptions must be made as to what would and would not be successful based on the historical operations. Showing which characteristics made

these operations successful helps project doctrine, organization, training, and equipment for the future. Chapter 4 contains an analysis to show what will be needed for future successful operations. These observations will have negative and positive characteristics. A positive characteristic implies that it will help future operations, and a negative characteristic implies that a failure or shortcoming occurred which should not be reinforced or repeated.

Several different ways exist to logically break down a city to show the complexity and interdependency within the system. Some studies have used the human body as a method of comparison, such as a city to the nervous system or as vital structures to organs. Some divide the city into industries, others use a dimensional method of subterrain, ground level, and above level, while still others use a concentric circle method that begins in the "heart" of the city. For the purposes of this study, the city is divided into systems, some of which are physical in nature while others are conceptual.

City Systems

Cities, urban terrain, are unique; however, that system's foundations, which comprise these cities, demonstrate patterns. Due to increased probability for U.S. forces to participate in urban operations, they must understand the urban terrain on which they will operate. Urban terrain is different from a conventional maneuver type of area of operation. The systems that make up a city must be understood in order to know the operational and tactical level to which commanders can exploit those systems to gain the advantage.

Depending on the mission, forces may be required to destroy or preserve these systems. This paper will divide the city system into four major subsystems, physical infrastructure, utilities, facilities, and the human dimension.

Physical Infrastructure Subsystem

The infrastructure of a city is the foundation and framework, the very physical composition of the city. It includes the transportation system, physical characteristics of structures, the economic and industrial characteristics, and the sectors of the city.

The transportation system is vital to a city's existence because the efficient movement of goods and people is necessary for economic, social, political, and possibly military health. The city's transportation system interconnects to a national and most likely international system. It could quite possibly be a vital link to the well being of a nation.

Transportation

The transportation systems are air, sea, and land, and this network provides inter- and intra-movement of goods and people. Air transportation includes primary and secondary airports, and civilian and government airports. In the future, it could also include intraspace-launching facilities. Airport control in an operation quickly means control of what and who enters and exits the city. For example, a commander might know the airport's runway is long enough for a certain type of aircraft, but how many aircraft can a terminal service or hold and for how long? What is the storage capacity available for goods and personnel? What is the disruption to civilian business if the military utilizes

all of the assets and does this impact on the city or nation? What is the capability to offload material, especially hazardous material?

Ports have unique capabilities and restrictions, and failure to understand and exploit these in war or MOOTW could hinder operations. Ports embark and disembark bulk material, and for the operational commander, the sustainability of an operation often hinges on the port. Some restrictions concern the type of material allowed into the port, such as ammunition, or the size and number of ships that can dock. Inadequate storage space for equipment results in delayed distribution. If a commander does not understand local labor procedures, he might not ever get to unload his ship in a MOOTW operation.

The land transportation network of railways, subways, roads, and bridges most directly impacts the city itself. The capability of the ground transportation system greatly affects supply distribution and troop deployment. Adverse weather or poor road conditions cause delays, as well as bridges that cannot support heavy equipment. These factors may cause commanders to change routes. A subway could provide a mechanized battalion with a high-speed avenue of approach, protected from air interdiction. The majority of a city's population will use some sort of ground transportation system and the impact of the military operation on these systems could be great. Especially in a MOOTW, the commander might be required to minimize impact on these systems. Limiting hardship on the local population might be necessary to maintain the legitimacy of the operation.

Physical Characteristics

The physical characteristics of infrastructure include the types of buildings, structures, bridges, roads, and the materials used to make them. A modern concrete steel reinforced U.S. type city presents different considerations for operations than a Central American ghetto. The ability of U.S. forces to project the necessary specialized equipment and environment specific special considerations is critical to their success.

In Europe, old, heavy stone houses create large amounts of rubble when shelled and require significant engineer support to make lanes for mechanized forces to pass. This rubble also creates instant natural strong points, especially in the defense, and provides cover for light infantry. Buildings in other parts of the world made from poor quality materials are susceptible to over penetration from small arms. Slum areas easily ignite, especially from white phosphorous rounds and heat antitank rounds. The effects of modern munitions on different types of structures in the defense and offense are paramount. The operations that U.S. forces will employ required restraint for legal, media, and moral reasons. Limiting collateral damage will be a major part of these operations. Combatants as well as noncombatants will no doubt inhabit the city. The proper application of force and violence aids in restoring normalcy in post conflict operations.

Transportation network facilities in the quality, size, and numbers greatly affects military and civilian operations. Bridge and road location and trafficability aids or hinders operations. Because cities are so linear and man-made, ambushes prove difficult to spot on streets. The potential for improvisation in the defense is endless. The

knowledge of alternate routes to by-pass or envelope strong points in the city will be vital to the success of operations.

Sectors

Cities are divided into sectors. These include industrial, commercial, residential, and sprawl sectors. Factories and plants dominate industrial sectors. Commercial sectors include downtown high rise areas and strip areas with shops or malls.

Residential sectors cover the neighborhoods, while sprawl sectors are mixtures of the previously mentioned sectors, but have areas with parks or undeveloped land that present large open danger areas. Each area is different in its layout, type of construction and population density, and would present different challenges in operations.

Economic and Industrial

The economic infrastructure is the lifeblood of a city and can be tangible, like a factory, or intangible, like an information based business. A factory can be destroyed in an operation and thousands of people could be without work. Just as vital to some economies is the electronic transfers conducted in a market. The jamming of these transactions could equally cripple an economy. The preservation or destruction of such markets or production capabilities can legitimize or deligitimize an operation. If the goal of an operation is to crush an enemy's economy, or to cripple a DP or COG, then the commander cannot think in a single dimension. The operational or tactical level commander could accomplish the objective of destroying the infrastructure of a city economy without ever destroying the physical structure where those businesses are

housed. Choosing the critical node in which to destroy industry mandates that the commander understands the process of that industry. A bombed out building with dead civilians around it places a much different image on the newscast that a building that is still standing but cannot effectively function because of nonlethal interdiction.

Utilities Subsystem

The utilities subsystems that service a city are further broken down into three subsystems: power to include gas, electric, and nuclear; information to include all forms of media, Internet, and telephone; and water, which includes drinking and sewage treatment.

The power subsystems provided warmth, the ability to cook, and the power to run industry. In a modern society, the basics of life are dependent upon power, and control of these systems can effectively control the population of a city. Some examples of a force needing to shut down a power system could be to disrupt command and control, to slow the deployment of forces, or to shut down a radar grid. But a force might need to occupy that same area a week later and want to use the power grid, therefore necessitating understanding of the power system to effectively destroy a component that can be replaced quickly. The desired effect and manipulation of replacement time can only be exploited if the total system and interconnectivity are understood.

The information system in a city can either aid or hinder an operation. A coordinated campaign to use the media to the advantage of an operation assures a wide spectrum of options. In the initial stages of a forced entry operation, television, radio, telephone, and Internet services might be seized for psychological operations (PSYOP)

reasons. In a peacekeeping mission, these might provide airtime to assist in refugee control or announce areas to obtain medical assistance or food. The capabilities are different in each country, and PSYOP or Public Affairs assets might need to be used to accomplish mission objectives. The commander needs to know the capabilities and limitations as well as the loyalties of the media source so that he can be proactive to population sentiments.

Water is critical to the survival of the inhabitants of a city. The protection of waterways and resources of a city could require large numbers of forces or deployment of sophisticated detection equipment. The vulnerabilities of a water source to pollution from battle damage or the biological or chemical weapons are great. A city will concede in time when deprived of potable water.

Facilities/Public Works Subsystem

The public works or facility systems in a city include public health, public safety, public service, and environmental health. Public health includes hospitals, preventive medicine, disease control, animal control, and other organizations like these. The capabilities of these organizations and facilities vary depending on the maturity of a theater, the type of operation being conducted, and the status of the population. A military force is usually not prepared to deal with large numbers of civilian casualties and will have to establish status agreements with host nations on operations. The effective use of existing infrastructure greatly eases the impact on military operations.

Public safety organizations like police, fire departments and civil defense organizations, provide a link to the local population. These organizations can also be the

enemy, or perceived as the enemy. The environment and circumstances for utilization of these assets require careful consideration.

Many public service facilities are not crucial to the population or the city; however, in a protracted operation, the ability to maintain these facilities, like the library, schools, and the Department of Motor Vehicles, could increase support for your side in the operation. On the other hand, depriving a city of these services might help delegitimize a government.

Environmental health and protection is a broad subject. The Army has been forced to focus on the effects of munitions, equipment, and the general impact training on the environment. With the present trends, there is no reason to believe that a host nation government during an operation will not charge the military for impacts upon their environment. Additionally, the international political pressure from a large scale environmental incident could bring an operation to a halt. The monetary and public relations costs could be high if proper preventive steps are not in place to limit damage to the environment.

Human Dimension Subsystem

The human dimension of a city helps shape the personality of that city, and it includes the cultural, religious, governmental officials, and the population. Cities are not homogeneous places where all the people fall into neat groups. The complex needs and demands of diverse groups according to nationality, religion, age, sex, tradition, language, and race help determine how a commander deals with the city. Sensitivities to the cultural needs and traditions could gain legitimacy for the operation whereas

destruction of a cultural icon could enrage a population. Stripping away certain traditions could immasculate one culture while rallying another. Understanding the operational environment could either lead to a fight or prevent one. The human dimension cannot be underestimated in its effect on an operation. U.S. units with the ability to establish effective communication with the population will gain insights into potential problems. The support of local church or political groups could be a vital force protection issue. Technology has advanced incredibly in the past decades for imagery; however, there is no system that can penetrate a structure or a man's mind.

Historical Examples

> Security against foreign danger is one of the primary objects of a civil society. It is an avowed and essential object of the American Union.
>
> James Madison, *The Federalist*

In this section of the chapter, three historical examples establish the known factors of urban operations for comparison to a future scenario, the unknown, in an analysis in chapter 4. Each of the operations and battles has been selected for their diversity. The examples reveal a cross section of geographic regions, climates, total and limited war, Special Operations Forces, conventional forces, unconventional forces, and differing equipment, training, doctrine, and organization with some successes and failures in the past. The three historical examples will be covered in chronological order starting with The Battle of Stalingrad, then the British experience in Northern Ireland, and Beirut 1982.

Stalingrad

> In the name of the people of the United States of America, I present this Diploma to Stalingrad to mark our admiration for its valiant defenders, whose bravery, strength of spirit, and selflessness during the siege from September 13, 1942, to January 31, 1943, will forever inspire the hearts of all free people. Their glorious victory halted the wave of the invasion and became the turning point of the war of the Allied Nations against aggression.
>
> Franklin D. Roosevelt, *Nothing to Fear*

In November of 1942, the war on the Eastern Front, or the Soviet-German front, was entering its second year. The German forces gained significant territory; however, the gains in 1942 took longer to achieve and cost more than those in 1941. Because of a shifting of priorities in the military objective, Hitler had doomed the Wehrmact advance in the Caucases. By November, Army groups in the south were locked in a life or death battle in Stalin's city, Stalingrad. A city of arguably little military importance became the obsession of two leaders, Hitler and Stalin, and would be the stage for an incredible human bleeding ground, and an epic World War II urban battle.

Background

On June 28, 1942, the Wehrmact launched the IV Panzer Army in a major offensive campaign. The first objective was Vorohezh, a key town in the Soviet lateral communications system behind the front line.[1] The overall objectives of the offensive were to capture the northern Caucases because of their oil producing capacity, and to seize the industrial regions of central Russia. Hitler chose to divide his forces in the south into two Army groups, which are referred to as Group A and Group B. Army Group A's mission was to capture the oil fields at Maikop and defeat any Soviet forces it

encountered.[2] Army Group B was the covering force for Army Group A along the Don River, to protect it against Soviet attacks from the north.[3] The plan could have worked until on July 13; Hitler changed the objective for both Armies. Army Group B's new objective was to capture the city of Stalingrad and to make matters worse, Hitler transferred the fourth Panzer Army to Army Group A. Despite these problems, Army Group B was on the outskirts of Stalingrad by August 23.

Without the IV Panzer Army, Army Group B lacked sufficient combat power to take Stalingrad. The IV Panzer Army was later returned with additional forces. However, the Germans had lost any element of surprise, and a bitter battle ensued in the city. The Germans at one point in the battle actually controlled most of the city. During September and November, the Germans continued to strip the rest of the front of assets to reinforce the Stalingrad offensive. What had begun as a campaign to cut off a Russian line of communication was now playing into the Soviet strategic deception plan. The Russian winter came with a vengeance in the middle of November and would aid the impending Russian counteroffensive. The Germans had failed to achieve either strategic objective in the 1942 Stalingrad campaign or the Caucases.

The Soviet counteroffensive in Stalingrad and along the entire front began on November 19, 1942. The Stalingrad front attacked from the south while the southwest and Don fronts attacked from the north.[4] The remaining division collapsed and German units retreated, and by November 23, Stalingrad, containing the German VI Army and parts of the IV Panzer Army, were encircled. During December and January, the Soviets strengthened their position while German attempts to relieve the city failed. Goering, the German Luftwaffe Commander was confident he could supply the besieged city by air,

but was incorrect. The reduction of the German pocket of resistance continued, and the troops of Field Marshal Paulus, the German commander, were being destroyed by battle casualties, starvation, disease, and the cold. On January 31, Field Marshal Paulus surrendered his forces, and by February 2, all fighting had ceased. General Georgy Konstantinovich Zhukov, the Soviet commander, had won. Three hundred and thirty thousand Germans had been surrounded within the original perimeter, only ninety-one thousand capitulated and only five thousand would return to Germany in 1955.[5] By the end of February, the Red Army had regained all terrain lost in 1942. The Battle of Stalingrad proved a strategic German error.

The City

Stalingrad is located on a plateau along the west bank of the Volga River at a point where the Volga and Don Rivers are separated by a strip of land less than forty miles wide. It is a linear city running north to south for approximately thirty-seven miles.[6] The long, linear layout was due, in part, to the heavy industrial structure which required water from the Volga. Lighter constructed structures housing workers surrounded the factories. The city was divided into seven settlements with an overall population of approximately 500,000.[7]

Industries were located throughout the city with the concentration in the north. This part included a tractor factory, a Barrikady factory, and the Krasny Oktyabr factory. To the west of the city was a Steppe Region with a gentle incline to the Don River. From Mamaru Hill at an elevation of 336 feet, an observer could see most of the city, as well as

crossing sites over the Volga.[8] Another unique characteristic of Stalingrad was a 150 degree Fahrenheit temperature fluctuation.

William Craig provides a description of the city in his book, *Enemy at the Gates*.

> To the North was the awesome network of industrial plant that had made Stalingrad s symbol of progress within the communist system. Almost at the base of the Mamaru were the yellow brick walls of the Lezur chemical plant. They covered most of a city block and were yielded? by a rail loop resembling a tennis racket. From the Lezur, trains puffed north pas an oil tank farm on the bluff beside the river, then on to the Red October Plant with its maze of foundries and calibration shops, from which poured small arms and metal parts. Further north, the trains passed the chimneys and towering concrete ramparts of the Barrikady Gun Factory, whose outbuildings ran almost a quarter mile to the Volga Bank.... Beyond the Barrikady loomed the pride of Russian industry, the Dzerhezinsky Tractor Works. Once the assembly point for thousands of farm machines, since the war it was on of the principle producers of the T-34 Tank for the Red Army.
>
> Built in eleven months...it ran more than a mile along the main north-south road. Its internal network of railroad tracks measure almost ten miles....
>
> On the other side of the main road, paralleling the eleven miles of industrial park...more than three-hundred dwellings, some six stories high, housed thousands of workers. Clustered around carefully manicured communal parks, they were only a few minutes' walk from summer theaters, the cinema, a circus, soccer fields, their own stores and schools....[T]he model community that Stalin had fostered was a showpiece of the Soviet system.[9]

Doctrine

The German Army organized into effective combined-arms teams consisting of armor, infantry, artillery, airforce, and support teams called "Kampfgruppen." The Germans used a Blitzkrieg doctrine that exploited shock and speed using concentrated armor thrusts, and artillery support preceded by air strikes. When the artillery could not keep up, close air support provided fire support to maintain the initiative. The German Army did not desire large scale battles in cities, as city combat was contrary to their basic doctrine. But their tactics in cities were to air bomb then attack with infantry and armor to

destroy strong points, by-pass, and envelop. A doctrinal principle which did aid the German Army in the execution of urban operations was "Aufragstaktiks," a technique where the tactical commander understands his superiors intent and makes decisions to maintain the initiative at his level without waiting for further orders. This is a vital concept in urban combat since communications are difficult and since small units will be forced to act independently.

In attacking a city or buildings, the Germans employed flanking and encircling tactics. One of their primary missions was to cut off water, gas supplies, and electricity. The Germans employed heavy artillery in large quantities to pin down defenders.[10]

If the Germans had to make a direct assault on a city, they favored placing heavy supporting fire on the forward edge of the community, especially on isolated buildings. Assault troops were organized into a number of columns to execute coordinated, parallel attacks. The Germans tried to avoid attacks from opposite directions or conflicting angles to avoid fratracide.[11]

The columns were divided into assault groups and mop-up groups. Assault detachments of engineers equipped with demolitions, flamethrowers, and large quantities of grenades sometimes accompanied the infantry. Direct-fire artillery, tank and antitank guns were extensively used. The advance through the city was measured in bounds, usually consisting of a few streets. After each bound the troops reorganized and established new objectives. The German infantry tried to avoid streets as much as possible, trying to use backyards and roofs to seize the high ground. When necessity dictated advancing down streets, files moved on both sides with sectors of fire. The sectors included rooftops and multiple floors of structures.[12]

The Division Reconnaissance Battalion normally carried out the reconnaissance missions. Reconnaissance patrols were likely to be mixed and could include cyclists, motorcyclists, cavalry, or armored cars. The reconnaissance element may have close air support and antitank weapons. The reconnaissance patrols carried large numbers of self-propelled antitank guns. The Germans conducted armored reconnaissance and placed greater firepower in these formations. The goal was to make contact with the unit and obtain information on its strength, assembly areas, approach routes, and movements. These reconnaissance elements avoided decisive engagements; however, armored patrol cars were prepared to fight for important information.[13]

The Germans eventually went on the defense in Stalingrad, and their defensive tactics were based on strong points. When defending, the Germans located their main line of defense well within the city to avoid massive artillery strikes. They preferred to lay out an irregular line of resistance in order to develop flanking fire, and every effort was made to conceal its location until the last possible moment. Minor strong points were used along the line to break up main attacks. Mobile reserves were held within and outside the city to prevent flanking actions.[14]

In Stalingrad, soldiers used countless individual techniques. In organizing the defensive position, both occupied and unoccupied buildings were booby-trapped. The Germans preferred to use machine guns on lower floors because they provided better grazing fire. Communications were maintained through cellars and rooftops. Soldiers tried to fire from the middle of rooms to avoid detection.

The Germans considered tanks to be effective in towns, but used them in static dug positions in the defense, excluding their reserve forces. They also considered single

tanks quite vulnerable. Antitank weapons were used in support of friendly tanks as well as large amounts of mines. The Germans did use tanks as an effective counterattack force. Not only did they use the counterattack to stop a potentially desperate situation, but also as a surprise spoiling attack.

During the Battle of Stalingrad, the Soviet Army adopted a new doctrine for fighting in cities, and General Zhukov was responsible for these changes. Zhukov felt the German offense was based on three basic elements, air attacks, tanks, and infantry. Zhukov felt that the way to destroy the German offensive capability was to negate the effectiveness of the airforce since the tanks would not launch attacks until the air force was over the objective. Russian troops were ordered to stay within hand grenade range of German units. This tactic resulted in German fratricide and eventually led the Germans to shift air targets to deep city targets. This change caused the Germans to change their tactics to the less effective technique of infantry preceding tanks instead of with tanks.

The Soviet Army used strong points to canalize the Germans where flank attacks were conducted with tanks, infantry, and antitank weapons. Strong points were mutually supporting to disrupt German thrusts. One strong point manned by approximately sixty men held out for forty-eight days, never being captured. The defense of "Pavlov's House" used minefields, small arms engagement areas, mortars, and antitank weapons. A critical directive issued by Zhukov was that counterattacks would be conducted by small units called "Storm Groups," which were roughly platoon size.[15] The defense of Stalingrad was to be an active defense by attack.[16]

The Soviets made massive fortifications through civilian and enemy labor in preparation of the German attack. Antitank ditches were up to fifteen feet deep and

twelve feet wide, and the one constructed from the tractor works was twenty-five miles long. Streets were barricaded and defenses were constructed in depth for fallback positions.[17]

The Russians made makeshift pillboxes from tank turrets and positioned them in strong points. These turrets were also covered with concrete to provide additional protection. [18] The Russians dug tanks in and manned them with two-man crews, one for the cannon and one for the machine gun.[19]

German air and artillery attacks created large quantities of rubble. This rubble contributed to existing defenses and made movement very difficult for vehicles as well as individual soldiers. The attacks killed thousands of civilians and burned most of the city. The net effect was ready-made positions for antitank gunners and snipers.

Both sides used large numbers of snipers. Movement during the day was said to be suicidal for both sides. In the works of General Zhukov, "Whoever stuck his head out or ran across the street was inevitably shot by a sniper or tommy gunner."[20]

Both German and Soviet forces placed brigade and division level command centers well forward, sometimes only 300 to 1,000 yards from the front. Commanders could sense changes in the battle quickly and make the necessary adjustments.[21]

"Fighting in a city...is much more involved than fighting in the field. Here the big chiefs have practically no influence on the course of operations, since the initiative passes into the hands of officers commanding units and sub-units, and into those of soldiers themselves."[22]

Organization

> You cannot be a commander if you do not believe in the soldier's abilities....[W]e decided to change our tactics. We were going to break down the formations that existed in the Army: alongside platoons and sections in our companies and battalions appeared new tactical units, small storm groups.[23]
>
> Alexander Werth, *The Year of Stalingrad*

The Soviet storm groups were comprised of three subelements: an assault group, a consolidated group, and a reserve group. The number of personnel in the storm groups totaled approximately eighty. The mission of the six-to-eight-man assault group was to assault the objective to gain a foothold. The group was heavily armed with submachine guns and grenades and spades for digging in. The Russians used artillery to shock the Germans prior to the assault. The small group rushed a building, throwing grenades through windows or other holes in walls. Once in the building, the assault group commander, who was also the storm group commander, signaled the consolidation group.[24]

The consolidation group followed closely, entering the building from different directions to prevent enemy reinforcement, and to thwart counterattacks. This group was armed with heavy and light machine guns, antitank weapons, mortars, and explosives. Also in this organization were specialty troops, to include snipers, sappers, chemical, and medical troops.[25]

The reserve part of the storm groups countered counterattacks. These elements were placed at the flanks while the assault and consolidation groups continued to clear the building. After the objective was secured, the reserve element served as replacements

or the assault and consolidation groups. They improved defenses upon consolidation to include hasty minefields and coordination with adjacent units.[26]

The Soviets also concentrated tanks and artillery, especially in their counterattack. The Katyusha rocket helped reduce strong points and allow infantry to attack while German defenses were disorganized.[27]

The Soviets allowed casualty rates in personnel and equipment that would typically not be tolerated for U.S. units. The civilians that remained in the city aided in constructing defenses, repairing tanks and equipment, and fighting along with soldiers. Stalin wanted a living city for his soldiers to defend, so civilian casualties were high.

A high degree of flexibility characterizes German organization, and it is best demonstrated in the composition of combat teams *or Kampfgruppen* (battle groups). Divisions organized themselves into combat teams as opposed to fighting pure. Combat teams vary in size from company to regiment. Normally, a team consisted of a regiment of infantry, an artillery battalion, an engineer unit (probably a company +), and an antitank/antiaircraft detachment. Divisions with tanks attached armor to the team. The team was such an important concept, that divisions cross-leveled units and troops to organize teams. The Germans placed a heavy emphasis on firepower and the ability to concentrate effects on targets so units could maneuver and maintain the initiative.

A typical Panzergrenadier regimental team in a Panzer Division would consist of the following: 2,200 Panzer grenadiers with over 200 light machine guns, 24 mortars, 24 heavy machine guns, and 24 antitank guns. An armored engineer company with twelve 20-millimeter tank guns, an artillery battalion with eight howitzers, antitank guns, and flamethrowers, and an antitank/antiaircraft detachment with twelve antitank guns. Tanks

were added in necessity and tank battalions had roughly fifty to sixty-five tanks and around sixty-five antitank guns.[28]

Training

Both sides had training programs in order to deal with the difficult environment of Stalingrad. The Russians trained storm groups sometimes as close as 100 yards from the front. The storm groups tactics were very different from those of conventional infantry, and required training of the sub elements to properly coordinate the attacks.

Snipers provided invaluable skills during the battle for the psychological effect, intelligence resource, and casualty producing capability, and for these reasons, significant attention was given to their training. The Russians set up a sniper school in the Lazur chemical plant to train sharpshooters. They trained their snipers in pairs or as independent operators. Prior to the training, these men and women were recommended for their self-reliance, patience and marksmanship ability. Next these individuals received advanced marksmanship training, and camouflage and reporting techniques.

German personnel losses between December 1941 and March 1942 amounted to over 1.3 million men. Approximately 400,000 were battle casualties, and the remainder were attributed sickness and disease.[29] The Germans needed an aggressive training program on the eastern front and especially for Stalingrad. They maintained training institutions for staffs and commanders in Germany and rotated new officers to the front. The Germans also rotated instructors to Stalingrad, for example, the chief sniper instructor rotated from Berlin.

The Germans favored night operations, and for this reason conducted over half of their training at night. The training emphasized platoon level operations as a part of an integrated combat arms team. The Germans even conducted large quantities of their basic training at night so they felt it was unnecessary to devise a specific night training program.[30]

Equipment

The equipment used in Stalingrad represents the full spectrum of World War II equipment, encompassing manufactured and field-improvised systems. The equipment that will be covered for this battle is tanks, antitank guns, small arms, flamethrowers, fire support systems, demolitions, improvised systems, and support equipment.

Although the tank was effectively used in both the defense and offense in the Battle of Stalingrad, it knew significant limitations. Large quantities of rubble hindered the tank's mobility. The extreme cold weather often made it necessary to light fires under the engine, making it warm enough to start. The most effective weapon against a tank is another tank, and the demoralizing effect on infantry being attacked by tanks without friendly tank support it great.

Marshal Zhukov noted during the summer of 1942, "I was expecting close combined operations between the enemies artillery and ground forces, a precise organization of the artillery barrage, a lightning-fast maneuver of shell and wheel. But this new method of slow bearing-down, trench by trench....The German tanks did not go into action without infantry and air support. On the battlefield, there was no evidence of the prowess of German tank crews, their courage and speed in action, about which

foreign newspapers had written. The reverse was true, in fact. They operated sluggishly, extremely cautiously, and indecisively."[31]

Both sides used tanks in support of tanks; however, the Russians were short armor during the beginning of the battle and usually operated in pairs. Tanks were used at strong points and to direct fire against strong points. A counterattack weapon, the tank used shock and speed with covered machine-gun fire to effectively break up coordinated attacks.

Tanks were vulnerable in the rear and from fire above. Additional tracks and other improvised armor were placed on tanks for added protection. Another limitation of the tank was the gun tube elevation and depression, and antitank gun crews quickly learned to calculate distance and elevation engagement capability before setting up engagement areas.

Antitank guns supported tanks and operated independently. They varied from self-propelled systems and towed pieces to shoulder-fired rifles. Antitank guns were used against buildings as direct-fire weapons and probably would have been more effective with different types of rounds. One of the advantages to some towed antitank guns was their high rate of fire and mobility in small places.

The standard small arms of the two belligerents were used throughout the battle, but some were more effective than others. The Russians produced large quantities of tommy guns, the PPSH-41, a type of 7.62-millimeter submachine gun. This weapon had a high rate of fire and a 35-round drum magazine. It also had superior penetration power to the German MP40, 9-millimeter counterpart. These submachine guns were ideal for the storm group tactics, and both armies valued its use.

Hand grenades were an important weapon to the infantry soldier. The grenades were used to break an enemy attack through the shock effect. In the offense, grenades were used to assault strong points and clear rooms. It was not unknown for assault group members to carry six to ten grenades. Another significant aspect of the grenade was that during the night, it was impossible to trace where it originated. The Russians would use subterranean routes to infiltrate to the rear of the German lines and then initiate with a volley of grenades.

The sniper system was extremely important because of its psychological effect and casualty producing capability. The sniper rifles had greater ranges and superior optics and could engage from a distance, giving the sniper a greater chance of survival.

Machine guns were used in strong points for defense and in the offense for strong point elimination. The punching power and sustained rate of fire engaged buildings effectively. The German tripod systems on the MG34 and MG42 were superior systems to that of the Russian Degtyarev 7.62. light machine gun or the DS M1939 heavy machine guns. The German system could change barrels, and this was an important factor in a sustained firefight. The German guns could also be used in an antiaircraft configuration.[32]

Booby traps and improvised munitions were used in large quantities. Booby traps had a great psychological effect and helped slow attackers down in and outside buildings. Booby traps in an urban environment are extremely difficult to detect because everything is man-made and tends to be easy to booby trap. Unlike a forest terrain, where a sign is easily picked up, in an urban environment the whole floor could be booby-trapped and appear normal.

"Molotov cocktails" and other improvised systems were made because supplies of munitions ran low. The Molotov cocktail flame bomb was effective against vehicles and buildings.

Both antipersonnel and antitank mines were used in large quantities. These weapons were an important part of engagement areas and strong point defense. Since large amounts of fighting took place at night in Stalingrad, mines were an important early warning system as well as casualty producer. Over 10,000 mines were laid in one divisional section in less than two months.[33] A significant problem with mines came when counterattacking through your own minefield.

Indirect fire systems played an important role in the battle. Both sides initiated attacks with artillery fire. The Russians used the Katyuska rocket as a shock weapon to paralyze the German front line defenses prior to attack. The Russians also placed large amounts of their artillery on the far shore of the Volga, which complicated fire control coordination but increased survivability.

The German artillery systems, especially the 8.8-millimeter gun, were used effectively as tank killers and strong point reduction guns. When German artillery could not engage targets because buildings masked their positions, mortars and air support were used. Mortars were more responsive closer to the front and had a higher angle of fire. They were used in direct modes to clear building and rooms. The Russian storm groups carried mortars to repel counterattacks. Radio as well as wire was used to communicate from the fire control center to the forward observer. Timed preparatory fire was also used in the attack. Counterbattery fire became increasingly important to the Germans as their pocket became smaller. Unfortunately for them, the ammunition was in short supply.

The flamethrower came in a man portable and tank-mounted models. Flamethrowers are a psychologically intimidating weapon, but their physical effects on the targets were also expensive. Flames could be used to clear rubble or bounce off buildings to another building. The flames burnt and the smoke suffocated soldiers.

The effects of weather on soldiers and equipment were great. The Germans were not properly supplied with winter clothing, and this greatly affected morale and combat effectiveness. During the summer, dehydration was a problem because temperatures were over 100 degrees. The Germans could never meet the demand for special lubricants for vehicles and equipment.

The German logistic lines were much longer than the Russian and once encircled, became critical. The German's inability to maintain consistent railroad flow to the Eastern front seriously hampered equipment replacement. The Partisan War west of Stalingrad had an impact on operations in the city. Ammunition was always in short supply. Once the city was encircled, the Luftwaffe lost 500 planes in the 62-day airlift. Only on one day did they deliver enough tonnage to sustain the Army. The planes did evacuate 35,000 wounded and mail that bade farewell to loved ones.[34] At Gumrak airfield, just outside of the city, Paulus expressed his despair to a Luftwaffe liaison officer after thirteen planes littered the runway, and the Luftwaffe said no more. Then Paulus shouted, "If your aircraft cannot land, my Army is doomed. It has been four days since they have had anything to eat. The last horses have been eaten up." One of Paulus' officers joined in, "Can you imagine what it is like to see soldiers fall on an old carcass, beat open the head and swallow the brains raw." Paulus then continued, "What should I, as the commander in chief of an Army, say when a simple soldier comes up to me and

begs 'Herr General, can you spare me one piece of bread?'" Paulus could not stop. "Why on earth did the Luftwaffe ever promise to keep us supplied? Who is the man responsible for declaring that it was possible?"[35] The men as well as the equipment of the German Army could no longer endure the climate, starvation, disease, and abuse Stalingrad had inflicted.

Conclusion

The Germans, who were initially on the offense, would become the defenders and ultimately the vanquished. At the regimental level and below, the sound use of combat teams was extremely effective. The German's defeat came from a cutoff force that was forbidden to breakout when possible; it has been argued that this decision saved the collapse of the entire southern eastern front. The German's could not replace leaders or destroyed equipment in Stalingrad, and the combat effectiveness was greatly decreased.

The Russians skillfully defended a city with great sacrifice. Their use of strong point defense, underground envelopment, booby traps, civilian labor, and a ruthless no retreat policy all bought time in an economy-of-force operation at the operational level to unleash a strategic counterattack to crush the southern eastern front.

The doctrine, tactics, organization, and equipment developed by both sides in this battle bear striking resemblance to each other. This leaves leadership as the decisive point that can influence the outcome of a battle. Both Hitler and Stalin were obsessed with this battle, but Hitler's thinking was flawed. Shorter supply lines, weather, and time all favored the Russians, not to mention it was their city. The German's inability to seize the initiative to take Stalingrad prior to a Russian buildup, and defense became their undoing.

The British Experience in Belfast

Introduction

Originally, the Irish Republican Army (IRA) fought for the expulsion of British and Protestant influence from the whole of Ireland. Their goal was an Irish Catholic Republic. In the pursuit of this goal, the IRA became an increasingly violent, terrorist organization, waging a low intensity conflict in the streets of Ireland. The conflict in Northern Ireland is a social class conflict aligned with religious differences where a Catholic minority has claimed suppression for over two centuries. The British have long been involved in the Irish problem; however, this study will focus on the conflict from 1968 on.

The British experience in Northern Ireland provided a costly educational experience for their Army. The British have been forced to develop effective techniques in combating the IRA. In an environment of intense political and international scrutiny, the British gained success in limiting collateral damage, controlling the population, and achieving military objectives against the IRA.

Background

Numerous organizations are involved in the conflict in Northern Ireland. All of these organizations have an impact, so a brief explanation of the players will help in understanding the operations conducted.

Several groups were involved on the British side. Within the British Army, numerous units have taken part in operations, but only doctrine, training, organization and equipment of the following units will be highlighted: The Special Air Service, The

Parachute Regiment, The Royal Green Jackets, The Royal Artillery, The Ulster Defense Regiment, and The Royal Marines. The British have also used police organizations and intelligence organization in the conduct of operations.

The Irish side is divided into the Catholics and the Protestants, and numerous factions exist within both groups. Many splinter groups with their own organization and agenda are found among the Catholic group. This analysis focuses on two main groups, the IRA and the Provisional Irish Republican Army (PIRA).

In 1969, a split in the IRA led to distinction of the PIRA.[36] In the mid-1960s, a Marxist wing of the IRA was resurrected under the influence of Cathal Goulding. The IRA is the militant branch of the Sinn Fein, which was the original nationalist party founded in 1905. Today the IRA is illegal in Northern Ireland and the republic, Sinn Fein is not.[37] The PIRA felt that the IRA was placing Soviet Union Marxist-Leninist ideology ahead of nationalism. When the PIRA split from the IRA, they took some of the Sinn Fein with them. The PIRA is a revolutionary organization in that its members believe that a revolutionary movement does not depend on a popular mandate as a basis for action. It believes that its mandate comes from the justice and correctness of its cause.[38]

On the Protestant side, the most modern spin-off groups originate from the Ulster Defense Association (UDA). In the 1980s, the group was 60,000 strong, made up mostly of Protestant urban working classes.[39] The UDA has militant branches that have bombed and ambushed known meeting locations of the IRA. Additionally, like the IRA, the UDA has stiff penalties for members or Protestants who have deviated from its ideology or support for their cause.

The conflict in Northern Ireland is an extremely complicated one. This study does not seek to explain it, only to use it as a setting to demonstrate modern urban operations in what is termed Military Operations Other Than War (MOOTW).

The City

For the purposes of this study, Belfast will be the city of concentration. This conflict has not been limited to this area, but Belfast has experienced more than enough operations to demonstrate the necessary points.

Belfast is a modern city of European construction with sectors of industrial and residential areas. On the northern coast of Ireland, it is a port city that is basically cut in half by the Victoria Channel and River Lagan. The transportation network is extensive with roadways, airports, railways, and waterways. The population is approximately 295,223, and the neighborhoods are divided by Protestant and catholic factions.[40] No clear separation exists between Catholics to the north and Protestants to the south, and neighborhood areas vary in size and population.

Doctrine

The British Army has traditionally been involved in small conflicts and operations around the world, but none so close to home and under the intense media and international scrutiny as the operation in Northern Ireland. Because of these and other factors, the British Army has developed doctrine and tactics to combat well-trained, motivated and dedicated opponents. Because of the nature of the operations in Northern Ireland, the command of units is nonstandard. Even though the brigade commander

"commands" his battalions, these battalions seldom or never act in concert. In reality, the commander coordinates and lays down policy for several different commands in his area. Each battalion and subunits maintain areas of responsibility.[41]

The command and control is nonstandard. The commander-in-chief of Northern Ireland is a lieutenant general and reports to the Minister of Defense in London, but often during a crisis has a direct line to 10 Downing Street where the Prime Minister resides. The Commander, Land Forces (CLF), is responsible for day-to-day operations in Northern Ireland, and his rank is major general. Both of these commanders advise politicians and civilians on sensitive issues.[42]

For operational reasons, the British developed an aggressive surveillance and intelligence effort. The collection plan mainly was implemented at the battalion level with liaisons to special branch and the Royal Ulster Constabulary (RUC). The goals of the intelligence cell were to build and maintain an accurate list of suspected IRA and other paramilitary activists, to maintain a list of sympathizers, to locate explosives and weapons caches, to provide the RUC information for arrests, and to collate information to enhance the battalion's operational capability.

In the early 1970s, overt patrolling and observation posts were the standard; however, a move to covert patrolling and posts allowed for preventive rather than reactive missions. The key to success of operations in Northern Ireland has been good intelligence.[43] Censuses were taken at the local level so street registers could be built up and so known IRA members could be tracked. The information would come from regular patrols, observation posts, and informants. Once the information was analyzed, the unit had multiple courses action with which to react to various situations. Flexibility and

resources made available to low-level commanders enabled them to implement timely operational actions. If a house needed to be searched, dogs or mechanical sniffers could be used in a timely manner, giving the commander evidence that would stand up in court.

The British fought two wars in Northern Ireland, the war of terrorism and the war of community relations or legitimacy. In the war against terrorism, the British Army conducted conventional and special operations to attack and neutralize targets while trying to minimize collateral damage. In the war of community relations, battalions adopted programs to help improve the community. These programs varied from helping the elderly in repairing their homes, to removing children from the riot-torn streets of Belfast.[44]

The British Army has had to remain impartial and target extremism on both the Catholic and Protestant sides. The Army push to restore order met with support of the majority of people who wanted to live in peace. Without this grassroots-level support, the Army would have suffered far more casualties than it did. Without the proper restraints in operations, the army would lose the common man's support.

Extremists exist on both sides, but his study concentrates on the IRA. The IRA is a well-trained, well-equipped, and well-financed organization. They are organized unto units and compartmentalized for security reasons.

The IRA has a rank structure and doctrine, although not in a classic military sense. They thoroughly researched terrorist organizations and their doctrine, and have implemented a cellular system for security. The problem for the IRA stems from the broad republican family where everyone knows each other or is related, thus hindering effective doctrinal implementation. As a compromise, the IRA uses battalion

commanders, company commanders in a paramilitary structure whereas a classic doctrinal terrorist organization would refer to their leaders as cell leaders.

The principle tactics of the IRA are terror, coercion, and an appeal to nationalism. Propaganda is an important part of their doctrine for recruitment of personnel and funds. The IRA maintains an efficient intelligence network and provides early warning for individuals and movement of caches. The equipment and personnel are moved often and they use multiple concealment techniques. Women, children, and sympathizers are key to the early warning system.

The principle weapons of the IRA are guns and bombs. They carry weapons for defense purposes, but use them against security forces to maintain the prestige of the IRA. The IRA kills security forces to embarrass the government, in an attempt to weaken public resolve, force the British government to discontinue the campaign.[45]

Many degrees of abilities exist within the organization, but normally two types of gunmen operate against the security forces. These are the "cowboy" and the sniper. The cowboy is often courageous, but seldom determined or well trained. He lacks planning for his engagement areas and escape routes. The cowboy fires and then runs as a sort of hit-and-run tactic. The sniper is generally armed with a high-velocity weapon and is well trained. He fires one or two rounds and escapes; his killing zone is well planned. Minimally trained gunmen can successfully execute properly laid ambushes.[46]

Training

The British Army learned its lessons and adopted an organized training program prior to unit rotations in Northern Ireland. In the early years, the units and government

reacted and rushed units into operations. Now there is a standard Northern Ireland training package consisting of urban patrolling, riot control techniques, shooting at fleeting targets, first aid, powers and procedures of arrest, orders for opening fire, IRA bomb and weapons recognition and capabilities, IRA organization, and training on internal security items of equipment.[47]

The patrols must be rehearsed and well coordinated; however, the British Army wants to avoid a repetitive plan, so they fluctuate between nonpattern and repetitive patrols. Patrolling is emphasized because the Army feels it serves two main purposes: domination of the ground to deny the enemy freedom of movement and detailed knowledge of the area and its inhabitants.[48] The British changed their patrols from eight to ten men in size to four-man patrols or "bricks." More bricks were used and were found to be more efficient in terrain coverage. Mobile vehicles and helicopters supported bricks if needed.

Search techniques were refined through operations and training. The Royal Engineer search teams now use dogs and equipment to search buildings. The search methods also changed. The Army now looks at the target of search as from the mind of the terrorist, that is, where would I hide, place a cache, or fire from? The key was to know the enemy.

The IRA training and instruction takes place when and where it is secure for them. Most of the training takes place in the Republic, but selected individuals are sent abroad. Training areas consist of deserted buildings, farms. The IRA posts security, and normally no more than a platoon-sized element trains at one time in a specific area.

New recruits undergo one week of training, and they receive instruction on small arms handling, target practice, demolitions, and field craft. There are advanced training courses for experienced men which include sophisticated bomb making, communications, and heavy weapons training.[49]

The IRA standard of training is far inferior to that of the British Army; however, the initiative remains with the terrorists most of the time. For this reason, the IRA has remained relatively effective. The standard required is not equivalent to that of the British soldier.

Organization

The British Army has changed its organization for operations in Northern Ireland. The British place units on 4 ½-month rotations and 2-year garrison tours. There is an overlap of key individuals in the units for commanders and replacements to learn operations and terrain. This relief system has taken years to refine but is now fully integrated.[50] Irish units remain there permanently, which aids continuity. The unit size varies, but is usually that of a regiment. Each subunit is assigned an area of responsibility.

Many different types of units participate in the effort. The majority is infantry, but there are also engineer, aviation, bomb disposal, artillery, personnel, communications, medical, intelligence, and special forces elements. The British task organizes for operations to support a minimum force policy. The responsiveness of units is critical to successful operations, and the emphasis is placed on smaller units with superior leadership.

The PIRA in Belfast is organized into a brigade composed of three battalions. Companies are the basic unit of the IRA. Within a battalion are the following officers: Operations, adjutant, quartermaster, explosive, intelligence, training, recruiting, finance, and commanders. Initially, companies were organized into sections of volunteers, but due to manpower shortages, some companies organized into Active Service Units (ASUs). These ASUs are comprised of small teams for bombings and shootings, and often include company or battalion officers. Many members of the organization are full-time "soldiers" and receive pay.[51]

Women are fully integrated into the IRA and the women's branch of the PIRA, called the Cumman Na M'Bann. These women conduct reconnaissance, carry messages, and participate in the early warning system.

Equipment

The British developed multiple pieces of new equipment in order to support operations in Northern Ireland. The range of equipment used includes armored vehicles, water cannons, tear gas and grenade launchers, baton rounds, explosive detectors, body armor and shields, and bomb disposal, protection, X-ray, surveillance, and special communications equipment. When operations began in Northern Ireland, the Army did not have the right type or sufficient quantities of necessary equipment.

When operations first began, the British standard radio, the Larkspur A41 failed miserably in the city. Sometimes a helicopter had to serve as a relay station and, if the helicopter had to land, soldiers used the telephone system. The British adopted an ultrahigh frequency (UHF) radio that was smaller, lighter, and secure. This off-the-shelf

civilian equipment proved more effective. In addition, the Army now can detect and locate illicit transmitters.[52]

Vehicles have also undergone development. The use of tracked APCs would destroy roads, and tanks would be politically unacceptable. Vulnerable points on the vehicles must be protected, and guide entries and exits established. Vehicles can be armed with water cannon, tear gas, and machine guns. Special cages might be attached to the sides to protect soldiers from rocks and debris when they walk along beside the vehicles as they move forward for crowd control. Some vehicles were electrified to help keep rioters off. The British placed modified bulldozers on the front for removing barricades. To accommodate these modifications, the British Army adopted the GKN Stankey AT-104IS vehicle commonly known as the "pig." They also used many other vehicles, such as the Ferret and Saracen, which are armored cars, and the Land Rover.

Individual equipment was needed for the Northern Ireland operations, including standard military uniforms and web gear. The British did adopt newer body armor, helmets with face shields, shields, and other protective gear. Rifles included night sites and suit sights, which was a X4 magnification sight for day and night use.

Three common nonlethal weapons used in Northern Ireland are the baton round, tear gas, and the (Pyrene) water cannon. Baton rounds are made of rubber or PVC and fired out of 1.5-inch or 38 riot guns, with a range of 25 to 30 meters. The round is used to break up rioting crowds. CS smoke, or tear-gas, is standard antiriot irritant cartridge which can be delivered from a 38-millimeter riot gun or a grenade.

The water cannon has been used mounted on a vehicle. The vehicle is a Foden six-by-four chassis, and its clean design prevents the lodging of bombs or rioters

mounting. A soldier behind bullet-resistant glass controls the cannon. The nozzle can traverse 180 degrees, elevate 45 degrees, and depress 15 degrees. The tank holds 1,600 gallons, has an effective range of 100 feet, and can sustain fire for 5 ½ minutes. An optional colored dye tank can be used to color rioters for future identification.[53]

The British purchased numerous types of police equipment to support operations. This equipment was used for surveillance, photography, bomb detection, bomb disposal, vehicle search, roadblocks and checkpoints. The British Army was not prepared for this type of operation and was forced to invest in a new line of equipment for a nonlethal urban environment.

The IRA has improved equipment sophistication in operations, but like most terrorist or guerilla organizations, they lack standardization. The IRA uses a wide variety of small arms, but they also have mortars and RPG7s. The IRA possesses sufficient quantities of arms and ammunition to conduct sustained operations.

Bomb making is an IRA trademark, and the size and type of explosive varies greatly. The IRA sometimes uses antihandling devices to prevent the public or military patrols from removing the bombs. The IRA manufactures bombs using plastics, explosive dynamite, or improvised substances. The detonation as well as the housing device is complex and clever.

The IRA uses various types of communications equipment to include secure radio, telephone, and citizens-band type radios. To avoid detection, the IRA does not maintain radio transmitting base stations in static positions for long periods of time. While the IRA, like the British, has interception capabilities, they cannot break secure nets.

Conclusion

The British adapted to conduct operations in Northern Ireland to combat an enemy who has grown in sophistication. The security forces have tried to keep the level of violence down to allow other influences to work. Nonstandard equipment and small units conducting coordinated operations have helped mission success. A methodical training program with an effective overlap of key leaders in rotating units is vital to the conduct of urban operations in Northern Ireland. Although covert operations and sophisticated surveillance equipment have been effective, the dominance of the street by small infantry foot patrols remains at the center of British success.

Beirut 1982

Introduction

"Israel achieved a decisive military victory over the PLO (Palestine Liberation Organization) in Lebanon....The PLO's military, political and organizational infrastructure in west Beirut...was smashed. The PLO was forced out of its only independent base, and its leadership and combat cadres were dispersed throughout the Arab world."[54]

The siege of Beirut by the Israeli Defense Force (IDF) in the summer of 1982 was the most significant event of the invasion of Lebanon. Operation Peace for Galilee, the invasion code name, had several objectives as outlined by Ariel S. Haron, the Israeli Defense Minister:

> 1. The main objective is the annihilation of the terrorist threat, i.e., the destruction of their military strength as well as their entire infrastructure, including in particular, Beirut. (A force oriented operation)

2. [A secondary objective is to] neutralize the Syrians through threatening maneuvers while attempting to avoid real fighting with them.
3. The minimum objective, which should be guaranteed as soon as the operation begins, is to remove all northern settlements from shelling range.
4. These operations should be carried out so that Shiites, Druze, and Christians will not be harmed.
5. We have no interest in keeping forces for long periods of time in areas we would capture. Our success in achieving all the above mentioned goals will enable withdrawal.
6. The operation is not aimed at guaranteeing the integrity or the sovereignty of the government of Lebanon over all its territory. This is a matter for the Lebanese themselves.
7. Linking up with the Christian zone in the north is the precondition for attaining all the above mentioned objectives, since that is the only way to cut off Beirut and the only way to cut the Beirut-Damascus Highway without tackling the main Syrian deployment in the Bekaa.[55]

The Israeli government felt that it was necessary to power project for reason of future preservation of their state. This power projection operation would draw national and international criticism. Whether or not this operation was a military or political necessity is not the focus of this study. But what did present a paradigm for Israeli forces in Beirut was split support between home and abroad. Close media coverage of the conflict necessitated restraint by the IDF because unrestrained violence against the PLO would result in negative criticism from the international press, yet failure to destroy the PLO would result in negative criticism from the Israeli people.

The primary IDF enemies, the PLO and Syrian Army, represent two distinct types of forces. The IDF had to simultaneously execute completely different tactics in close proximity for success in the city. This two-style conflict had to be executed by the same army in the same city and required military flexibility and mental agility.

Background

In 1975, Lebanon erupted into civil war between numerous military factions. The PLO was one of these factions and had been in Lebanon since the 1960s. With the aid of some more powerful Arab states, the PLO was conducting terrorist actions against Israel. The PLO was organized and equipped well enough to rocket and shell the northern Israeli settlements by artillery fire. The PLO continued to grow in strength--first with Syrian support. Later the Syrians pulled their support when they believed the PLO might attempt to take over the Lebanese government. There were over one-hundred armed factions when the civil war ended; however, the Syrians controlled the Bekaa Valley and parts of east Lebanon.[56]

The completion of an Israeli-Egyptian peace agreement served as a catalyst to reunite the PLO and Syrians. Syria pulled out of eastern Lebanon and relinquished control south of Beirut to the PLO. The PLO continued to grow operationally stronger and to conduct against Israeli settlements.[57] PLO forces began to instigate armed conflicts with United Nations (UN) forces stationed to separate Israel and Arab factions in Lebanon. The PLO did not honor the 25-kilometer neutral zone, which had been established north of the border. This zone denied them the border they needed to conduct strikes, so they continued to enter it and set up camps. PLO attacks and shelling increased. The Israeli Air Force (IAF) started to conduct bombing raids on known PLO positions. From May 1981 until June of 1982, the PLO carried out more than 1,500 artillery and rocket attacks against Israeli northern settlements.[58] Israel was unable to stop the attacks.

On June 3, 1982, there was a failed assassination attempt on the Israeli ambassador to Great Britain. The Israeli's responded with intense bombing strikes and the PLO responded with two days of rocket and artillery fire. On June 6, after an Israeli cabinet vote, an invasion launched into Lebanon.[59]

The IDF defeated the PLO and Syrian forces in the south and the southern Bekaa valley. Large numbers of PLO forces retreated into Beirut. After a brief cease-fire, fighting once again resumed. The IDF cut the Beirut-Damascus road to pressure forces in the south. The majority of the PLO was now isolated in western Beirut. The final push was in to Beirut to eliminate the PLO.

The City

Beirut, the capitol of Lebanon, was the largest and most populated city in that country. Its diverse population was estimated at one million in 1982. The city was geographically divided into east and west sectors, and three demographic areas. The Mediterranean Sea bordered the western part of Beirut, and the airport was located in the southwestern part of the city. Demographically, the western area was a Christian-Muslim mixture, but the area was predominantly Muslim. The U.S., British, and Soviet embassies were in the northwestern section of Beirut, along with many high-rise hotels. The buildings were generally Western-reinforced concrete structures.

The eastern side of Beirut includes the Beirut River that runs south to north. This area contained both Western style high-rises and four- and five-story sandstone buildings. The older buildings exhibited the influence of the French. Christians dominated this area.

The streets in the city were wide enough for armor. The business district accommodated wide-open boulevards. Its park areas and hills provided slopes and danger areas. The PLO was headquartered in the Fakehani district, characterized by new construction, but not to the same quality standard as the north. Buildings stood close together in violation of zoning standards and high-rises of over fourteen stories were not uncommon. Most buildings were reinforced concrete or curtain-wall construction. Originally, this area was a sports complex, but the PLO turned it into a recruiting and training area, and a major ammunition storage facility.[60]

Doctrine

The IDF devoted substantial thought to the problems of urban conflict. The first battle fought for the inception of the Israeli State was fought in Jerusalem in 1948. By the 1970s, the IDF was developing a doctrine for MOUT and refined this doctrine in the 1973 war while engaged in actions in Suez City and Qantra. A lesson from the 1973 experience was development of an integrated doctrine for all branches. The improvements in operations and support for operations became visible in Beirut in 1982.[61]

The IDF armor forces recognized the importance of MOUT, and the IDF is an armor-oriented force. The IDF doctrine states that it is superior to fight armor in open terrain; however, MOUT is a reality. The IDF doctrine stresses the need to attack before a defender can prepare improved positions. When attacking, the IDF doctrine states to surround, isolate, and deliver concentrated firepower. A combined arms team is seen as a necessity to include combat arms, combat support, and combat service support.[62]

The Israelis considered two basic options in the Beirut siege. The first was the occupation of western Beirut in a large assault using a pincer strike. A major attack would occur on the northern axis of advance using the coastal highway, while land forces attacked the PLO from the east. The second option was to use what Richard Gabriel in his book, *Operation Peace for Galilee*, described as the "salami" technique. Basically, the IDF would isolate pockets of PLO resistance in the southern suburbs. The systematic seizure of sectors would require shelling, bombing, and then occupation. Both plans depended on heavy air bombardment and artillery fire.

The IDF doctrine allows for two types of offensive operations in MOUT, one where armor leads and one where armor supports infantry. The battles around the airport effectively demonstrate where tanks led and infantry and engineers supported the attack. The fighting around the densely populated area of Hay'as-Salloum exemplified infantry and engineers in the lead with tank support.[63]

Due to their inferior numbers of personnel and equipment in past conflicts, the IDF leaders geared their tactics toward brief, intense, decisive, mobile, offensive warfare to minimize casualties. The trade-off in Beirut was destroying PLO combat power while minimizing IDF and noncombatant casualties.

The IDF applied constant pressure to the PLO in western Beirut and south of the city. The city was then split in half by seizing the "green line" which had been established in the 1975 civil war. Forces moved from the east to the west and seized the Museum and Gallery crossing along the Beirut River. Israeli naval vessels were positioned off the west coast of Beirut to prevent resupply or PLO escape.[64] The IDF isolated the PLO in a pocket in the western section of Beirut.

The IDF dropped leaflets to the population in western Beirut declaring their intent to destroy PLO forces in the pocket. Crossing sites were identified for noncombatants to exit the area. The Israelis then turned off the power and water to west Beirut. The IDF still rallied on a firepower doctrine in reducing PLO camps within the city, using massive artillery bombardments and air strikes. The PLO suffered heavy casualties but used the civilian casualties to exploit political objectives in the media coverage. Approximately 500,000 civilians still inhabited western Beirut during the conflict.

On the thirty-first day of the siege, the IDF moved to take the airport, while negotiation continued. The IDF wanted to seize the airport for logistical and medical evacuation reasons. Additionally, they did not want the PLO to retain a means of escape. During this time, the IDF also returned power and water flow to the western section of the city. This was a result of international pressure, to include President Reagan.

The IDF continued to attack PLO strong points and camps. The PLO strong points north of the airport in the vicinity of Ouzel and Bourg el Barujneh were costly for the IDF. The IDF and Israeli Air Force (IAF) continued to attack from east to west across what was called the green line while negotiation progressed. The IDF stepped-up pressure on the fourth of August in an attempt to capture the PLO headquarters and remaining three camps, suffering the most casualties of the war on this day.[65]

On August 9, Phillip Habib, the American mediator, negotiated a plan and presented it to the Israeli government. The Israeli government countered with two stipulations: first, that the PLO would provide a by-name list of those leaving the city, and second, that they would leave the city before an international peacekeeping force arrived. Negotiations continued, as did the war, when it seemed an agreement would

finally be accepted. Meanwhile, Defense Minister Sharon ordered a twelve-hour intense bombardment of the remaining PLO camps in western Beirut. The Israeli cabinet objected to these actions and decreed that further attacks would have to be approved by the Prime Minister and cabinet.[66] The presence of PLO families caught in Beirut proved to be a psychological disadvantage for many PLO members who, although willing personally to be martyred, had reservations about losing their families.[67]

On August 12 Prime Minister Begin ordered a cease-fire, which basically ended hostilities. The IDF pulled back, but did not withdraw from western Beirut. On August 14 the Syrians agreed to withdraw and were permitted to leave. A multinational peacekeeping force arrived on August 21, and the PLO departed the city one day later, ending the siege.[68]

The IDF employed heavy firepower when attacking known PLO positions, but showed restraint in using force in other parts of the city. The firepower-based doctrine focused on destroying the PLO, not seizing terrain. The IDF received significant political criticism from Israel and abroad.

The PLO symbolizes the embodiment of Palestinian nationalism. Although most Palestinians support the organization, the PLO is made up of many component groups. These groups do not have total solidarity in ideology, militancy, and background, but most support Yassir Arafat and rally around him.

Beirut served as the military headquarters for the PLO and was well suited to support training, recruiting, logistics, administration, and political activities. The principal PLO headquarters was three stories underground, impervious to conventional air attacks.[69]

The PLO derives its doctrines from a combination of Soviet-supported Arab states, former Warsaw Pact nations, and leftist and East Asian countries. The formation of regular units as well as paramilitary units makes their doctrine somewhat different from a standard military force.

The PLO realized that the IDF needed to minimize civilian casualties. For this reason, the PLO placed many of their military resources in populated areas. Individual positions were frequently located near noncombatant installations like hospitals, embassies, schools, and residential areas. This tactic did hinder the IDF operations and minimize damage to the PLO's materials.[70]

The PLO defensive tactics typified what would be expected from an outgunned, numerically inferior force with less training. The PLO fighters depended on high volume, heavy firepower, and a break contact tactic. They used mobile platforms to engage in hit-and-run tactics supported by strong points. The PLO did use artillery on advancing units in an attempt to spoil attacks.

The defense of the city was based on three perimeters in concentric lines. The outer perimeter, which included the airport, was defended by small, mobile antitank teams equipped with light weapons and RPGs. These teams moved and struck at night, moving from house to house staying hidden during the day.[71] Two- to five-story buildings dominated the middle perimeter, which constituted the first line of static defense. This area was intended to break up the IDF's attacks and was heavily populated with noncombatants.[72] The area north of Corniche and west of green line constituted the inner defensive perimeter. This area with its density and tall buildings served as the last

stronghold for the PLO as it favored a defender from an attacker who was sensitive about casualties.[73]

The PLO, in its previous confrontations, noted the IDF's reluctance to enter into MOUT. The PLO had fought in Beirut for seven years and had numerous defensive bunkers, underground storage sites, dumps, tunnels, and bomb shelters. The PLO was fighting from improved positions in a favorable defensive position.

The Syrian Army is a Soviet equipped and trained force. Their doctrine for combined arms warfare comes from Soviet tactics. During the Beirut conflict, the Syrian forces were primarily engaged in the fight for the Beirut-Damascus Highway. They engaged approximately a brigade-size element in Beirut during the siege. They also employed artillery, air defense artillery, mortars, rockets, and commandos and fought as a combined arms team.[74]

Training

The general effectiveness of the IDF's training was evident in Beirut. Air and artillery munitions were delivered with precision. Integration of Remotely Piloted Vehicles (RPV) proved to be quite successful.

The IDF's superior, coordinated effort held junior officer leadership as the pillar. The IDF conducted regular live-fire exercises and emphasized individual initiative and responsibility. In urban fighting where autonomy may exist, these attributes are important. Reservists, although well trained in general skills, were not sufficiently trained in MOUT prior to Beirut.

The IDF conducted many movements to the target at night, which was how they trained. They usually attacked during daylight hours because they could better control the attack and limit casualties.

Training as a combined arms team was instrumental to successful integration of engineer support for the IDF. The engineers cleared obstacles to include barricades and mines and acted as their own infantry covering force for clearing operations when infantry was not available.[75] Special medical evacuation teams trained to be able to communicate with helicopters to evacuate the wounded.

The IDF Psychological Operations (PSYOPS) teams lacked innovative and imaginative techniques at the tactical and strategic level. Their goals were to convince the PLO fighters to withdraw from the city, in which they failed. The strategic PSYOP campaign addressing the Palestinians, Unites States and world opinion also failed. It is questionable whether the campaign was even successful in Israel.

Beirut served as a PLO training center, providing adequate individual level training. The PLO soldiers could break contact before becoming decisively engaged and enveloped during small unit actions. The PLO sent many of their members abroad for training. In the PLO, the squad levels and below performed satisfactorily but lacked sophisticated training. They lacked the concept of the overall battle. Although urban combat is typified by small unit actions, there must be coordinated effort. They rarely coordinated sectors of fire, and adjacent units lacked support.

In a system where loyalty promotes officers, not leadership or technical or tactical competence, problems are easily identified. Midlevel officers needed training, initiative, and leadership skills. Senior-level leaders lacked the ability to control and coordinate an

effective defense. One advantage the Palestinian fighter did have was his extensive city training.[76] The PLO movement inside structures did not seem to be standardized, or, if it was intended to be, they did not adhere to it. The PLO fighters frequently moved to different buildings, but they never cleared an Israeli-held building. The PLO usually stationed their main line defense on the second and higher floors for observation. Using this technique, they could dominate the roads but minimize detection. The IDF countered by placing troops on the third floor of cleared buildings.

The Syrian performed superior in this conflict than in past conflicts. Their orientation toward small unit combat proved particularly appropriate on the approaches to Beirut. They demonstrated greater ability to coordinate their commando units with mechanized forces. The Syrian forces fought nominally under the command of the "Joint Forces," the coalition of Palestinian and leftist forces. The training level of Syrian forces was superior to that of the other Arab forces in western Beirut. Syrian doctrine on movement inside buildings is unknown, but probably parallels Soviet doctrine.

Organization

Most armies view the infantryman as the primary MOUT executor, but the IDF is not structured to execute this option. The invasion force was designed for rapid breakthrough, and they organized three division-sized combined arms teams. The IDF ground forces in and around Beirut consisted of about 35,000 to 50,000 men, not including naval blockade, air force, or other ground forces in the Lebanon war.

The IDF modified their table of organization and equipment for city fighting, but for now, only organization will be covered. A typical IDF tank division contains 12,000

men comprising three tank brigades with 111 tanks each. Each brigade has three battalions. The division maintains thirty-six additional tanks for commanders. The division also has one artillery brigade of self-propelled howitzers and one logistics brigade with the following battalions: intelligence and reconnaissance, engineer, division headquarters, transportation, medical, and maintenance.[77]

Units were task organized for specific objectives during the conduct of the operation. The IDF added PSYOP loudspeaker teams, sniper teams, and special casualty evacuation teams at the battalion level.

Two special military units saw action in Beirut. The MUSAD, which had maintained units in Beirut since 1975, had developed effective Human Intelligence (HUMINT) sources. The other units consisted of two special military teams used as shock squads rather than as special operations squads.[78]

Task organization was developed in response to specific tactical objectives. It even assigned LNOs to Christian Lebanese units to coordinate operations and avoid contact. The IDF frequently cross-attached tanks and self-propelled artillery to infantry companies. The command of these assets remained with the infantry company commander. This tactical flexibility at the lower level eliminated time-consuming, complex coordination. The junior officer maintained relative independence in operations and this cleared radio nets and negated the effects of jamming. Companies received sectors and missions, and junior officers were expected to exercise discretion and improvise to the tactical situation.

The small number of IDF infantry affects doctrine. It also relegates the infantry to a secondary status. The dismounted infantry are fewer, so cross training is necessary, that

is, tank crews and infantry trained to do each other's jobs. All branches are trained to call and adjust indirect fire. IDF organization flexibility requires individual flexibility as a corollary.[79]

The IDF organization placed medical assets forward and collection stations in buildings approximately 150 meters or less behind the spearhead, away from direct fire. These stations were light and flexible. Battalion doctors could send WIAs to field hospitals or evacuate them by helicopter. Each battalion had one or two doctors. Helicopter medevacs also provided doctors on board. Medics served in front line units and carried morphine, IVs, and other equipment. Doctors confirmed KIAs at the collection station where a special unit then evacuated the bodies.[80]

In Beirut the PLO organized and operated on several levels. Both the Palestinian and Lebanese organized into militias and also into combatant and noncombatant groups. There were almost 130,000 Palestinian refugees and 6,000 to 7,000 PLO fighters in Beirut when the war began. Only 2,000 to 3,000 of the fighters were PLO regulars. By the time the city was cut off, the number of PLO fighters in it numbered 12,000 to 15,000. Platoon-sized PLO deployment formations dominated the center and inner perimeters. The PLO brigades originally deployed in the southern part of the city, but were broken up. Because of the small size of the units, the PLO had little or no offensive or counterattack capability.

The PLO command and control (C2) did not completely break down in western Beirut as it did in the south. This was due in part to the PLO High Command retaining control over units in western Beirut. The presence of the PLO political command greatly contributed to the sustained and fairly effective C2.

The Syrian forces in Beirut were primarily elements of the 85th and 62nd Infantry Brigades. Most of 30,000 Syrian soldiers withdrew prior to the siege, but approximately 2,500 infantry and 5,000 commandos remained. There are numerous estimates of forces and equipment in the city, but the Syrians are estimated to have had about 220 tanks, artillery mortars, and antiaircraft guns.[81]

Equipment

The equipment used in this operation rivaled state of the art for the late 1970s and early 1980s. In addition to the typical combat arms equipment used on the battlefield, were RPVs, night vision equipment, and UHF secure communications. The following equipment is covered in this section: armor, air defense artillery (ADA), antitank weapons, engineer, helicopters, small arms, indirect fire systems, grenades, mines and explosives, recoilless rifles, RPVs, communications, and machine guns.

Both the IDF and the PLO used tanks, but the IDF did so more effectively. Tanks were a major part of the IDF's urban fighting doctrine. The tanks proved valuable for providing quick, suppressive fire and, although target elimination did not always occur, the psychological effect of white phosphorous shells exploding inside the building was immense. The noise and effect of the blast caused many defenders to flee. Tanks were used as roadblocks for sector control. In the offense, tanks responded to PLO harassment fire by returning fire with four-to-five rounds and then advancing. The night optics on the Merkava, a main battle tank, were quite valuable. This tank also carried infantry and evacuated wounded. Additional armor reinforced the tanks to protect them from flanking and overhead antitank fire. Following the war some Centurion tanks were modified by

removing the turret and adding machine guns and other infantry equipment. This provided an armored personnel carrier to transport infantry, with as much survivability as their tanks.[82]

The PLO had some T-34 World War II Russian tanks and used them as mobile artillery. They avoided tank-on-tank battles, and their tanks experienced chronic maintenance problems.

Syrian and IDF armor clashed, and the Syrian's Soviet-made T-62s did not fair well against the IDF armor. The IDF also engaged Syrian tanks in areas in the south and overwhelmed the Syrian armor.

The Syrians, the IDF, and the PLO all used large quantities of indirect fire systems. These systems included mortars, field artillery, rockets, missiles, and air-delivered munitions. Artillery played both an indirect and direct firing role. The IDF used the Rafael Davis computerized fire-control system which was effective in coordinating fires

The IDF primarily employed high explosive, white phosphorous, and illumination rounds. They used artillery shells to breech walls and felt the psychological value of the seeming endless shelling was valuable in wearing down PLO defenders.

The IDF used Cluster Bomb Units (CBUs) to destroy equipment in open areas and to deliver PSYOP messages. They used CBUs in built-up areas to engage personnel, but also caused numerous noncombatant casualties.[83]

Both sides of the Beirut conflict used Katyushes (multiple rocket launchers). The IDF used Katyushes they had captured. The rocket launchers were truck mounted and offered good mobility and survivability.

Syrian and PLO artillery was towed, making their systems vulnerable, immobile, and inflexible. The PLO lacked sufficient ammunition and training to really make their artillery effective. Less than 8 percent of the IDF's casualties were attributed to artillery fire.[84]

Both sides used mortars and believed they were effective in harassment fires. The PLO mounted the mortars on trucks and then hid the trucks in buildings. They would then pull out, fire, and move back under cover. After several iterations of the tactic, they would displace to a new building.

The IDF mainly used Air Defense Artillery (ADA) as a direct fire suppression weapon. APC-mounted Vulcans fired against infantry and strong point buildings. The IDF felt that the effects from the ADA systems were quite valuable.

Most of the PLO and Syrian ADA assets remained stationary and were destroyed by CBUs. The PLO and Syrians did not coordinate well and their fire plans and fire control procedures were weak. The guns were not radar controlled, and the logistical system did not adequately support them. These ADA systems achieved success against IDF tanks and APCs.

The antitank weapons were of the wire-guided, fire and forget class. The Syrians used Sagger, and the IDF used TOWS. The effect of these weapons on tanks varied, but their effect on APCs and other vehicles was great. The IDF also used TOWS as strong point busters, achieving varied results depending on the target. Limited engagement ranges affected the employment of TOWS. The PLO used RPGs extensively, but was ineffective against Israeli tanks. The RPGs were effective against APCs and other

vehicles. The large numbers of RPGs greatly influenced the Israeli's decision not to lead movements with APCs.

The PLO used large numbers of recoilless rifles in 75-millimeter, 106-millimeter, 82-millimeter, 107-millimeter, and 73-millimeter caliber. These rifles originated from Western and Soviet suppliers, and were primarily vehicle mounted. Although employed against tanks, their effect was minimal, which was attributed to the poorly trained crews, poor positioning, and inadequate maintenance.[85]

The defenders used mines with ineffective results. They attempted to use the mines as roadblocks to set up engagement areas, but their poor technique in laying the mines provided the IDF easy identification and removal of the mines.

The IDF employed engineer-made, explosive charges to breech walls. Sources did not mention how rebar in concrete wall was dealt with or what kind of wall they breached.

The IDF restricted hand grenade use in built-up areas. Israeli personnel were not permitted to throw a hand grenade into structures prior to entering, but when fire was heavy, this restriction was not adhered to.

The Israeli forces used snipers effectively to engage small groups of PLO. Each infantry company had a sniper team armed with an M-14 rifle with optics. In critical areas, the IDF increased snipers, evidenced in the actions around the green line. Because of the lack of standardized PLO uniforms, Israeli snipers had difficulty identifying and selectively engaging PLO leadership.

The PLO used sniping type tactics; however, there was a lack of evidence to support trained sniper teams were deployed. The Syrians used snipers effectively to block an IDF advance in the southeastern suburbs of the city.

Small arms fire resulted in approximately 55 percent of the IDF casualties. The IDF ended up with 88 KIAs and 750 WIAs in Beirut. No accurate figures for PLO casualties exist, but intelligence sources place the PLO combatant KIAs at around 1,500, and noncombatant KIAs at 4,000 to 5,000.[86]

The defenders used machine guns to break up attacks and slow the IDF infantry. The IDF was usually engaged at a range of 150 meters from the first shots fired. The IDF used dismounted and mounted coaxial machine guns effectively against structures occupied by the PLO and Syrians.[87]

The IDF Signal Corps was directly involved in the network planning and selection of control locations. Net control was altered to accommodate the slightly different task organization. Additionally, the medevac operated on an independent net. The IDF used U.S.-style radios to include secure Motorolas and digital burst radios.

Helicopters usually transported troops and equipment behind the front lines. Casualties were evacuated by helicopter. Gunships did not play a significant role in Beirut.

RPVs achieved great success and provided real-time facts to the commanders in the rear. The RPVs were integrated into the overall collection plan. The IDF did not report any RPV losses in the city.

The IDF engineers cleared obstacles to facilitate their advance in Beirut, although the rubble created by the PLO was not a large-scale problem. Roads remained serviceable

to tracks and vehicles, but some roads were too narrow to drive on. Mines and unexploded CBUs posed a more serious threat than PLO defenses. Civilian vehicles did become obstacles in the city and had to be cleared.

The soft-skinned vehicles of the PLO and the APCs of the IDF did not fair well in the conflict. The PLO's vehicles were vulnerable to tanks and air attacks while the IDF APCs were vulnerable to the large numbers of RPGs.

Conclusion

The experience in Beirut provides an example of modern armies in city fighting. The results of the battle are mixed for the attacker and defender. On the field of combat, the IDF clearly outperformed the PLO and Syrians. The Syrian Army was defeated in selective engagements in Lebanon and Beirut. The PLO was clearly going to be crushed if the fighting continued. To be politically victorious, the PLO did not have to win on the battlefield, just avoid total defeat. The Israeli military generally achieved all of its military objectives, although political reputation abroad and in Israel suffered. First, the PLO was driven out of Beirut, but not out of Lebanon. Second, the siege tactics used to minimize IDF casualties had a telling impact on public opinion in Israel and abroad, to include the United States. Third, the PLO could claim partial victory since they held off the great IDF for seventy-seven more days than any other Arab nation. Fourth, in order to secure Saudi support for the PLO withdrawal, the United States committed to a new initiative to resolve the Middle East peace process.[88]

The PLO and Syrian defeat had far-reaching implications. The Soviet equipment and doctrine was viewed as poor performing on the international stage. The PLO defeat

in Beirut was potentially disastrous for that organization. The casualties were significant, but the equipment losses set them back many years. The loss of the Beirut sanctuary to conduct future operations resulted in an operational and symbolic defeat for the PLO. The greatest victory for the PLO was that the Reagan administration privately welcomed Palestinian moderates in a compromise for peace.[89]

Seoul 2012

Introduction

The purpose of this section of the chapter is to outline a hypothetical future scenario in Korea, allowing a comparison of the unknown (future) to the known (past) in chapter 4.

The United States as a force projection superpower has many potential areas of conflict; however, the Korean peninsula provides a particular geographic, political, military scenario that is probable and dangerous. The focus in this chapter will not be on the entire campaign of the North Korean forces, but rather a microcosm of the conflict in Seoul, the capital city.

Background

The Ministry of the People's Armed Forces (MPAF) in North Korea is directly under the control of the Central's People Committee. The MPAF maintains centralized control, facilitating joint service support to strategic missions. This shortened and centralized chain of command promotes security and compartmentalized decision making.

The economic and political situation had become critical in North Korea. The third consecutive severe famine and only limited relief from international organizations led the dictator Kim Jong II to a drastic course of action. North Korean Special Forces had infiltrated South Korea by submarine, subterranean tunnels, and over land. The Special Forces had many on-order missions.

1. Contaminate water sources south of Seoul

2. Attack north of the Demilitarized Zone (DMZ) to create the impression that the North Koreans were attacked

3. Neutralize key facilities within Seoul to hinder mobilization and create confusion

4. Place biological and chemical weapons in key locations to neutralize key units

5. Conduct direct action strikes against selected operational and strategic targets

The North Korean People's Army (NKPA) operated on a timetable where Special Operations forces executed preemptive strikes while their conventional Army conducted a large corps level exercise to take out Panmunjon. When it appeared that the South Koreans had attacked the North, conventional forces immediately rolled into a contingency plan to take Seoul. Seoul was seen as the South's cultural and political center of gravity, and its loss would provide powerful bargaining leverage during peace negotiations.

The NKPA attacked along a broad front, but focused overwhelming combat power in the Seoul axis of advance. Their 2nd Infantry Corps that had been conducting the urban exercise in Panmunjon was already task organized in regimental combat teams and had recently trained in urban operations. As the 820th Armored Corps forces reached

Seoul, the 2nd Infantry Corps passed through and attacked, while the elements of the 820th passed to the east and west of Seoul to encircle U.S. and South Korean forces.

Because the North Korean Special Forces had targeted chemical plants, there were massive toxic emissions, causing massive civilian casualties. Military casualties were light due to NBC equipment, but civilian anger heightened as gas-masked soldiers passed civilians suffering agonizing deaths. Civilian hospitals ceased to provide effective treatment due to the monumental numbers of casualties.

Biological agents released in rear areas caused considerable damage to the personnel infrastructure of the U.S. 8th Army and 2nd Infantry Division. Attrition in rear areas units was 40 percent and climbing.

Because the United States had signed the international agreement to ban the use of antipersonnel mines in 2008, the 2nd Infantry Division could not hold its sector on the Demilitarized Zone (DMZ). Korean units were forced to fall back in sector to avoid envelopment.

The high ground around Seoul was now under the control of the NKPA. The NKPA 2nd Infantry Corps was preparing to take the city after only two days of fighting. NKPA 178-millimeter self-propelled guns were shelling the city from 45,000 meters. Frog 7 rockets delivered chemical warheads to U.S. headquarters areas, and high explosive shape charges to high payoff targets.

U.S. and South Korean forces were faced with the decision to defend Seoul to the death and become enveloped or retreat to the south and try to take Seoul in a counteroffensive. For political and humanitarian reasons, they chose an active mobile defense with criteria to disengage and retreat quickly to preserve combat power.

As the North Koreans applied pressure isolating the city, they initiated systematic attacks on the eastern and western outskirts of the city, choking the center. Penetrations were made on flanks to block mechanized withdrawals along major routes.

Four days into the city siege, U.S. and South Korean forces began to collapse their defenses and retreat to preserve combat power for the inevitable counteroffensive. U.S. intelligence showed indicators that the NKPA 9th Mechanized Corps could launch a massive offensive on the eastern side of the peninsula towards Kangnung. The NKPA 820th Armored Corps threatened Inchon. What U.S. intelligence was not aware of was that Seoul was the only objective of the NKPA.

The North Koreans pushed toward Inchon, Suwon, Wongu, and Kangnung, but only to buy time to prepare defenses in Seoul. The NKPA purposely did not use flames on buildings because they desired to occupy them. Nonpersistent chemicals began dissipating to inhabitable levels on day 10.

The 82nd Airborne Division closed on day 12, and elements of the 25th Infantry Division began to arrive at Pusan by ship. The 1st Infantry Division and 1st Air Cavalry Division were rail-loading equipment and advance parties started to arrive in South Korea. The 1st and 2nd Marine Corps Divisions were also going to be committed. The U.S. Army would commit four of its eight active divisions to this action, and the Marine Corps would commit two of its three divisions. It would be seventy days before enough combat power could be consolidated to launch a U.S. offensive. The 1st Armored Division was on permanent duty in Bosnia, the 101st Air Assault Division was now the strategic rapid deployment force, and the 10th Mountain and 24th Infantry Divisions were at C3. Additionally, the 10th Mountain Division had a commitment to rotate a

brigade plus on border patrol mission on the U.S. Mexican border. The U.S. Air Force was launching air strikes into Seoul, but because of the ADA net and the quantity of civilians in the city, precision munitions were the only weapons being launched. Ammunition and supplies were running low, and effects in the modern city were limited.

With a potential start date for the offensive seventy to eighty days away and the NKPA continuing to apply modest pressure along the front, Seoul was relatively free to prepare defenses in depth. The North Korean government at day 21 proposed a new DMZ fifty kilometers south of Seoul. The South Korean government with support of the U.S. refused.

Eighty days into the war, the U.S. and South Koreans launched a major offensive to retake Seoul. As U.S. casualties in the conflict rose above 15,000 on day 85, the Congress threatened to pull support. The U.S. public began to cry that Seoul was not worth more American blood. It was an election year, and the President was not willing to have high casualty rates on the front page. The U.S. politicians were pushing to approve the new DMZ. Time was running out for the U.S. military to dislodge an entrenched enemy. U.S. public resolve was weakening. The South Koreans could not take Seoul without U.S. ground and air forces. It was now time for negotiations.

For the purpose of this study, the conflict is described in the city, doctrine, training, organization, and equipment format.

The City

Seoul is a modern city with mixed infrastructure. There is industry consisting of food processing, iron and steel smelting, textiles, chemical manufacturing, electronic factories, and auto assemblies.[90]

Seoul's transportation network is advanced by international standards. Kimpo International Airport is Seoul's major airport, and construction on a new airport fifty kilometers west of city began in 1993.[91] A 444-kilometer double-tracked railline runs between Seoul and Pusan, the two principle cities in the country. There are ninety private bus-serving organizations in Seoul alone, and roads are considered good. Additionally, the city has a metro.

As the capital city of South Korea, Seoul has a population of approximately 10,612,000 people, comprising 24.4 percent of South Korea's total population. South Koreas population is 99 percent homogeneous, with 49 percent Christian and 47 percent Buddhist.

Doctrine

U.S. doctrine continued to stress open maneuver warfare as outlined in Vision 2010, dominant maneuver, precision engagement, full-dimensional protection, and focused logistics. The integration of the digitized division reinforced this. The line-of-sight communications systems required implementation in a Saudi type of environment.

U.S. doctrine stresses that combat operations in cities were to be avoided and still had not published branch doctrines that were interconnected. Joint doctrine on the conduct of MOUT operations was placed in the too hard to coordinate category. No war-

fighter exercises had even been conducted in an urban environment. No one was willing to risk an exercise where it might be perceived as a failure in an eight-division army. There had been a new FM 90-10 published in 2004, but it focused on peacekeeping operations and MOOTW.

The NKPA had focused on MOUT because they understood their strategic and operational objective was a city. They had also calculated that the U.S. Army had procured systems that would not be effective in a city. Regimental combat teams had rotated through training cycles for years at the training center outside Sinpyong.

The NKPA doctrine that emphasizes combat arms operations has organized its forces to support operational plans. North Korea has organized its forces into assault forces of infantry, armor, and artillery. To infiltrate targets in the rear area, it has organized unconventional warfare brigades. At the tactical level, three key principles are adhered to: use a combined arms team, ensure rapid maneuverability, and use terrain advantage.[92]

At the regimental level, the NKPA had developed effective aggressive techniques to conduct urban operations. Combined arms teams were organized as divisional spearheads and acted as assault regiments. These regiments were organized with reconnaissance elements, engineers, armor, infantry, and direct-fire artillery. This firepower doctrine on a wide front would penetrate and envelop allied forces. Special Forces teams disguised as civilians directed effective indirect fire. The NKPA Special Forces engaged operation and logistic centers on direct action missions. Although the NKPA Special Forces suffered heavy casualties, their effect on allied sustainment operations was significant.

Training

The U.S. Army focused on digital integration and maneuver warfare at the divisional level. Brigades still conducted National Training Center rotations to develop the integration of the digitized system, but these rotations only occurred every two-to-three years. The number of live fires was reduced to save money. No urban training center had been developed because of funding. Gunnery and other types of training at the company level were severely restricted and crew proficiency was poor. Because of the increased commitment to peace operations like Bosnia and Algeria, many captains had never trained to fight when they were lieutenants. Counterdrug border patrol operations tied down a brigade rotation at all times. These captains experienced difficulty training their lieutenants in war-fighting skills. The lower level commanders were constrained by resources and restricted in realistic training by timid chains of command.

Integrated combined arms training had decreased, as brigades could not integrate divisional units like engineers, artillery, and DISCOMs. Consequently, at the outbreak of hostilities in 2012, senior leaders wanted to refight Desert Storm, which the assets and terrain did not permit. Lower commanders lacked sufficient training to seize the initiative and exploit tactical advantages.

The NKPA had aggressively trained regimental assault teams to spearhead attacks at the urban training center at Sinpyong. Because they understood their strategic and operational objectives, they were able to focus their training assets. Prior to the conflict, a corps level exercise in Panmunjon served as a dress rehearsal to coordinate the control measure for operations with large formations.

Because the NKPA doctrine was firepower maneuver, based on terrain objectives, conventional collateral damage was not restricted. Live fire exercises conducted at the battalion level stressed the integration of direct-fire artillery, allowing engineers to reduce obstacles and strong points and to constantly move forward to envelop flank units. Antitank killer platoons were organized to compensate for U.S. armor superiority. These platoons, equipped with flamethrowers and antitank missiles, infiltrated and attacked tanks from the rear and above using buildings as a three-dimensional engagement area. Because casualties were not of great concern, the NKPA was willing to accept tactical losses to maintain operational initiative. Night training had been stressed in an attempt to make up for technological deficiencies.

Organization

The United States, during the 2004 Quadrennial Defense Review (QDR), had mandated the 15,000-man division, cutting aviation assets, combat support, and combat service support assets. The result was a division that retained most of the punch, but lacked sustainability.

Organization of the operational and tactical level remained similar to the present organization. The brigades did not enjoy as much flexibility in task organization with support units in CONUS-based divisions because of force commitments. Normally, if an operation is conducted, a CINC will request special operations forces. These forces offer a unique ability to conduct surgical type of direct-action strikes and reconnaissance and to provide liaison capability with host nation because of language and regional training.

These forces bring a unique infiltration and exfiltration capability to the battlefield as well as other significant organizational differences.

The 1st Special Forces Group maintains responsibility for the Asian Theater and has the ability to field fifty-four, twelve-man A-Teams, or Operational Detachments Alpha. Additionally, they permanently maintain one special operations detachment in Korea. In the event of a major regional conflict, other Special Forces groups could be deployed to the area to conduct operations.

The NKPA had projected a short-duration conflict and stripped strategic reserve units of key personnel and equipment to reinforce assault regiments. These regiments had reserve infantry battalions assigned as an exploitation unit or replacement unit, and this offered the tactical level commanders immediate flexibility. Reserve engineer and artillery battalions were reassigned to a division to allow the division commander the ability to focus on strong point reduction.

At the unit level, assault regiments organized into assault teams to gain a foothold, consolidate, and exploit tactical gains. Each company was assigned a support platoon to carry extra ammunition for quick resupply. In the absence of continuous order, lower level commanders in assault regiments understood the intent to push forward and envelop flank units. Sniper platoons were integrated at the battalion level.

Equipment

Although the NKPA equipment was not as sophisticated as U.S. equipment, it was used effectively. During the Seoul conflict, the North Koreans prepped objectives

with heavy artillery fire to reduce strong points. Although many of the systems were antiquated, they were effective when used in a direct-fire role on point targets.

Assault regiments were issued extracrew-served small arms weapons to the individual soldiers to maximize firepower. The assault regiment organized down to company shock elements that carried machine guns, mortars, and antitank weapons. Sniper rifles had night vision sights that helped cover offensive movements in the absence of large quantities on night vision goggles (NVGs).

NKPA armor was massed and integrated with antitank guns because of its inferiority to allied armor. Armor movement occurred on multiple avenues of approach in an attempt to envelop and engage the superior allied armor at close range from the flanks and rear. Catastrophic kills were not necessary, just mobility kills, because as the infantry took buildings, the allied tanks became isolated and vulnerable to flame weapons.

The NKPA attempted to jam and flood satellite frequencies in order to dismantle the U.S. information systems. Additionally, computer viruses were sent out over frequencies to disrupt U.S. command and control. The NKPA knew that the U.S. could adapt and defeat these measures, but used them at critical times to disrupt the system at a tactical and operational level to gain the advantage for brief periods of time.

In an attempt to confuse the J-STARS system, civilian vehicles were arranged in tactical formations to replicate military movements. The availability of surplus Soviet satellite provided much needed communications capability for the NKPA. They relied on the Nika-K Soviet surplus series of satellites. Although not as sophisticated as U.S. counterparts, it provided much needed communications capability at the beginning of the invasion.

Because the North Koreans possessed European and U.S. Global Plotting Systems (GPS), it was difficult to shut down their GPS capability. European allies had not built shutdown codes into the units and were reluctant to turn off systems that would affect their economies.

In the forward infantry units, ADA fire-and-forget weapons were used to fire at UAVs as well as helicopters and airplanes. Chemical and biological weapons were used to clear subterrain avenues of approach and disrupt rear operations. Because the NKPA contaminated southern water supplies, the allied defenders had difficulty maintaining sufficient water levels for combatants as well as noncombatants. The use of chemical agents killed numerous noncombatants, and the allies' inability to protect these civilians caused widespread panic and resentment toward military forces in MOPP gear.

The NKPA developed antitank weapons with a shorter arming distance and used them in the offense and defense with great success. Their nonwire-guided shape charge rounds could be fired from buildings because of minimum backblast. The NKPA fired these weapons from third story levels down on allied vehicles.

The United States' equipment focus since the overwhelming Gulf War victory was for equipment to combat an enemy with a maneuver capability in an open battlefield. The equipment produced during this period of time was aimed at an information superiority that enabled speedy maneuver forces to mass firepower from multiple locations to create a staggering synergistic effect with firepower.

The U.S. had superior information in the conflict seeing forces mass and move. The U.S. division in Korea could quickly acquire and engage targets in the retrograde to Seoul; however, there were too many targets to stop the NKPA. Additionally, the South

Korean Army was not linked to the U.S. digital system. Once in the city, building, smoke, and line-of-sight interference negated the information advantage. The city terrain was an Achilles heel in the system designed for open warfare.

U.S. armor was superior to NKPA armor in firepower and mobility, but because overwhelming numbers of infantry and enemy armor penetrations, tanks were often engaged from the rear and side, inflicting mobility kills. Because U.S. tank crews were forced to button up, their engagement vision was seriously limited. In the offense, as U.S. infantry advanced behind tanks in squad-sized elements to clear buildings and obstacles, communications were difficult because there were no outside phones on the rear of tanks. The infantry improvised with TA-312s, so they could direct fire against strong point defenses.

Bradley Fighting Vehicles (BFVs) were critical in the defense of the city. Counterattacks used speed and fire to allow dismounted infantry to withdraw. The 25-millimeter chain gun was an excellent destruction and suppression weapon against enemy armor. Again, as infantry forces experienced attrition, the BFVs had to withdraw because enemy attacks from the flank, rear, and overhead inflicted mobility kills. BFVs proved to be particularly vulnerable to handheld, placed flame weapons and shape charges because of the number of exterior parts exposed that acted as lodging areas.

The U.S. infantryman used the M16A1 rifle and its 5.56-millimeter cartridge effectively. The average infantryman lacked night-aiming devices, like PAQ-4s, resulting in ineffective night engagements. The M249 SAW proved to be an excellent weapon, although its high rate of fire with inexperienced crews used ammunition quickly. These

weapons usually had night optics and were the hallmark of the squad's night defense plan.

Sniper weapons systems and crews were small in number because of insufficient systems. The inability of U.S. sniper teams to move in an urban environment and understand the correct time to engage and disengage hampered effectiveness.

Because antitank mines and noncommand detonating antipersonnel mines were banned, U.S. forces depended on Fascam and Claymore mines. Fascam did seal off avenues of approach for short duration, but were bypassed without great difficulty. Because air or artillery usually delivered Fascam, many mines never made it to their target area, but impacted in buildings in the trajectory.

Artillery was used in direct and indirect fire modes. The direct fire capabilities were not as effective as they could have been due to complete inexperience of U.S. gun crews. Many buildings masked the target area, requiring guns to displace to vulnerable positions to establish an effective gun target line.

The use of Q36 and Q37 radar was very effective in counterfire in the city. The problem was with the system's vulnerability when placed in positions in which they could acquire targets.

ADA systems were in short supply and were primarily used to protect the retrograding unit. They achieved success when employed in a direct-fire mode. The biggest constraint was ammunition consumption, since U.S. ammunition depots had been attacked with chemicals.

UAVs were used successfully while they survived, but enemy ADA system codes were reprogrammed to hone in on frequencies emitted by the live video feed. A French

video firm in a so-called nonwarlike application transferred this technology. Replacement UAVs were not available in sufficient numbers to influence the defense of Seoul.

Conclusion

The U.S. forces, although superior in weaponry and technology, were grossly outmanned. U.S. intelligence sources failed to focus on the operational objective of the NKPA, Seoul. By the time U.S. forces deployed in large enough number to attack the city, the peace negotiation process was underway.

The U.S. Army did not intend to fight in an urban environment and had not prepared for it. Doctrine, training, organization, and equipment shortcomings became amplified in this complex terrain. The NKPA used the city terrain to effectively negate technology inferiority and exploit mass superiority. Although this conflict is notional, it provides a comparison model of the future, the unknown, to that which is known, result conflict in history. of urban

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CHAPTER 4

ANALYSIS

> The practical value of history is to throw the film of the past through the material projector of the present onto the screen of the future.
>
> B. H. Liddell Hart, *Thoughts on War*

Introduction

In the spirit of Liddel Hart's famous quote, this chapter seeks to throw the urban operations of the past through the material projector of this study onto the "screen of the future," the Seoul, Korea, scenario portrayed in chapter 3.

This chapter analyzes four urban operations, three past and one possible future. These operations are Stalingrad in Russia in 1942-1943, Belfast in Northern Ireland from 1968 to the present, Beirut in Lebanon in 1982, and Seoul in South Korea in the year 2012. Each past operation is analyzed using the methodology presented in chapter 3: doctrine, organization, training, equipment, likeness to Seoul, and difference to Seoul. This analysis provides insights into urban operations in the future.

Stalingrad

Doctrine

The total war atmosphere of Stalingrad inflicted incredible damage to the war-waging abilities of both nations involved. The fight for victory at Stalingrad came with staggering expended assets. The cost in terms of military and civilian lives was heavy, but the adaptation of doctrine only increased killing effectiveness. The Belligerents in

Stalingrad had prior urban operations experience, but still adapted their doctrine to fit this battle. The battle exemplified total war in a microcosm in that the participants employed every means available to them. Both the Germans and the Russians enjoyed success when employing sufficient combined arms teams. Integration of light and mechanized forces proved effective in the offensive with multiple attacks along numerous avenues of approach. Coordination of fire support and adjacent attacks proved vital to the success of operations. The implementation of special assault forces was important to gaining and maintaining the initiative in a front where progress was sometimes measured by the room or building.[1]

The Russians invented "hugging" the Germans in order to negate the effectiveness of their combined arms teams. This technique degraded the German's airpower effect causing them to lead with tanks resulting in higher tank casualties. Russian flexibility in fighting greatly contributed to their tactical success.[2]

First the Russians and then the Germans presented a strong defense system based concentric lines of defense. The reduction of strong points was a costly matter and also aided in canalizing enemy forces. Defenses were most successful when mines, fields of fire, tanks, and antitank guns were coordinated with adjacent units. Light forces and mechanized forces were used as a reserve and counter-attack force to culminate enemy advances. Because of force density, achieving overwhelming success proved difficult in the city.

The German's inability to replace junior officers, especially in the latter part of the battle degraded the effect of small unit actions. The Russians had a continuous flow

of new units into the front. Small unit actions in this urban combat scenario were critical, especially in an era when radio communication was intermittent to front line units.

Organization

The German "Kampfgruppens," or combined arms teams, consisted of armor, infantry, artillery, air force and support units. The infantry contained special assault units that were the shock troops to gain a foothold. Artillery provided direct-fire as well as indirect-fire capability. Supporting units attached for the mission consisted of air defense artillery, engineers, reconnaissance teams, and intelligence units.[3] As the battle continued on, the German Kampfgruppen's composition became less effective due to attrition.

The Russians were able to mass more troops on the offense and replace the loss of specialized units. The use of small storm groups gave lower level Russian commanders the ability to advance and consolidate gains, and caused German counterattacks to be more costly than those directed against straight infantry units. In this deadly battle of attrition and annihilation of forces, the cost in terms of human life proved significant.

Training

Both belligerents used an aggressive training program near the Forward Edge of the Battle Area (FEBA). It is arguable that, man for man, the Germans enjoyed some superiority at the start of the battle; however, by the time the battle was over, the Russian soldier proved to be a well-trained, resourceful opponent. Individual skills like marksmanship are validated in their importance by statistics. Russian snipers inflicted

over 6,000 German casualties. This must have had an effect on morale, not to mention the death of the equivalent of half of a division.[4]

The German's tendency toward night operations testified to their high training standards. The individual soldier's ability to conduct operations in difficult terrain and hours of darkness is a combat multiplier. In combat typified by close, violent engagements, this advantage gain is significant. Training was often conducted only 100 yards away from the FEBA. In a battle where the outcome of armies hinged on performance, training and rehearsals received substantial attention.

Equipment

The harsh environment of a rubbled, burnt-out city, in conjunction with brutal climate greatly affected equipment. Neither side claimed superior technical ability; however, the German systems were arguably overall somewhat better. The short engagement ranges often negated any superiority of munitions or individual pieces of equipment. The crew in this environment becomes the deciding factor. He who fired first and hit won. The Russians eventually gained superiority in quantity of weapon systems like tanks and artillery used in the battle.[5] A contributing factor to the Russian victory was their ability to replace equipment. The Russians also instituted a superior system for maintaining their equipment. Cold weather lubricants for vehicles and cold weather equipment for troops provided a marked advantage for the Russians.[6]

Both the Russians and the Germans developed innovations in equipment and integrated these innovations with standard equipment. With great effect, both sides used locally manufactured mines and antitank weapons on the defense. An important concept

drawn from the Stalingrad experience is the volume of fire placed at short ranges in concentrated areas in reducing strong points. The volume and duration of fire varied, based on how well the defense prepared. The firepower-based doctrines consumed an incredible amount of ordnance in the conduct of this battle.[7] Tactical level units used flame weapons in large quantities, which devastated morale and produced casualties.

Likeness to Seoul

Doctrine

The Germans and Russians had urban-fighting doctrines but updated their tactics/North Koreans focused doctrine for the corps that would fight in Seoul.

Training

1. The Germans and Russians maintained aggressive urban-training programs for their specialized units. The North Koreans focused training for their corps that operated in Seoul.

2. The Germans, Russians, and North Koreans developed junior leaders for the decentralized urban battle.

Organization

1. The Germans, Russians, and North Koreans adapted organization at the tactical level to more effectively execute urban operations.

Equipment

2. The urban terrain in both battles significantly affected equipment. Decreased ranges degraded the technical superiority of German and U.S. equipment.

3. The Germans, Russians, and North Koreans developed urban specific equipment.

Difference to Seoul

Doctrine

1. U.S. forces failed to maintain an effective urban doctrine.

2. The North Koreans used biological and chemical agents.

Training

U.S. forces had not trained in brigade-sized combined arms teams in preparation for an urban battlefield.

Organization

U.S. forces maintained a conventional organization.

Equipment

U.S. forces had not procured urban specific equipment prior to the battle.

Conclusion

In both conflicts, the political objectives were understood. The ability of the Russians and North Koreans to focus on their enemies' military DPs significantly contributed to the overall outcome of the battle. The victor's ability to understand the city system and exploit or protect those systems played a key role in deciding the battle.

Doctrine

The Irish terrorists and British have had an evolving doctrine in the protracted conflict in Belfast. Both sides have employed the measure, countermeasure principle and tactical success largely depends on which force is ahead in the deadly game. The ability of the British to properly change their doctrine from a rigid conventional European war mentality to a flexible MOOTW doctrine has greatly contributed to their success. A shorter chain of command to the Minister of Defense has enabled the speedy implementation of new policies in crisis times.[8] The ability of British commanders to exercise autonomy and implement effective programs in their respective sectors has helped local operations.

The British have emphasized intelligence, increasing their capability to allow units to conduct covert, preemptive, strikes and to actually seize the initiative in local sectors. Previous tactics forced the British to be reactive.[9]

The principal tactics of the IRA have remained terrorism, coercion, and an appeal to Irish nationalism, enabling them to maintain the initiative on most operations. Their inability to achieve success in their overall goals and the repeated criticism from the international community have hurt public support for the terrorist cause. The protracted effort, because of the British government's resolve, has actually hurt the terrorists. Irish citizens grow weary as the war continues on the home front.[10]

Training

The British forces were not prepared to conduct MOOTW in Belfast. Although infantry and support soldiers are well trained for a European war scenario, the restraint required in MOOTW was not the standard. Over the years, the British Army developed an effective training program required for each unit and individual prior to serving in Belfast. This training program allowed units to train on special equipment and tactics prior to deployment. The rotation of units also allowed for lessons learned to be passed on and for units to maintain the operational edge.

An aggressive training program challenges junior leaders to make decision independently in a nebulous environment. The training combines individual skills and collective training to develop unit effectiveness.[11] The ability for junior officers and noncommissioned officers to make correct decisions in this decentralized environment is critical to the tactical success of an operation since the windows to exploit local target advantages are so limited. Additionally, the maturity gained through training and numerous rotations has, on many occasions, prevented incidents from getting out of control and becoming damaging headlines in the international media war. The British minimum force policy has contributed to deescalating conflict.

The British have not allowed the IRA to maintain a secure area from which to train, forcing them to conduct training in remote locations in small groups or off of Irish soil.[12] The result is an overall degradation in the IRA's capability to conduct well-coordinated, large operations.

Organization

The British Army has reorganized completely for the conduct of operations in Belfast. Although the majority of units continues to be infantry, the specialized and support units used in the conduct of this conflict encompass a wide spectrum. Specialized units in the area give the local sector commanders great flexibility in the conduct of missions. The ability to be proactive and then conduct damage control, if an incident occurs, has steadily improved. The integration of government organizations and the Army has also given the commander a wider range of options and more effective methods of implementation.

The tactical implementation of smaller and more frequent patrols has allowed commanders to cover more ground simultaneously. These "bricks" present smaller targets and give less of a signature, which helps normalize life in Belfast. This lower signature helps legitimize the British effort. The use of covert and overt patrols has also increased effectiveness. Additionally, men learn the geographic sectors well through repetitive patrols, and continuous contact with the local population aids in the intelligence collection effort.

Intelligence organizations have developed effective databases, profiles, and human intelligence (HUMINT) resources. These intelligence organizations have made it difficult for the known IRA member wanted for crimes to remain in the same area for long periods of time.

The IRA and PIRA have failed to maintain consistent centralized leadership. Due to significant struggles for power within the organizations, operations have sometimes been fractured. These organizations are more organized like a military unit than a

traditional terrorist organization, using classic cell structure.[13] The military type organization has allowed penetration by HUMINT resources and exposed operations, allowing the British to take the offense on some operations.

Equipment

The British procured and developed an entire issue of equipment for service in Belfast, mostly nonlethal in nature. This equipment ranges from radios to water cannons. As a need was identified, the equipment was tested and then sometimes adopted. Cost was a factor, but the long-term political costs were considered to be far more costly than the economic expenditure for some nonstandard equipment. On numerous occasions, off-the-shelf technology was used and adapted from police use. This new equipment provided the local commander necessary minimum force options with a calculated increase in force. The individual soldiers and commanders increased effectiveness through improved protection, superior communications, more accurate target acquisition, new sites, and better support equipment like vehicles. Because the British equipment improved and the training improved, the command structure could implement more effective, flexible policies for equipment use.

The delta between the IRA and the British in equipment grew larger as the conflict proceeded. The IRA has upgraded its communication capabilities but the British have a superior intercept capability. The IRA has not been able to keep pace with the British equipment overall, and this is a contributing factor to the British ability to adapt to the new environment.

Likeness to Seoul

Doctrine

1. The British, IRA, and North Koreans developed effective urban doctrines.

2. The British, IRA, and North Koreans integrated effective intelligence apparatus to support doctrines.

Training

1. The British and North Koreans devoted significant training resources to urban training.

Organization

2. At the tactical level, the British, IRA, and North Koreans reorganized to conduct urban operations.

Equipment

The British, IRA, and North Koreans procured urban specific equipment for conducting urban operations.

Differences to Seoul

Doctrine

1. U.S. forces failed to maintain effective urban doctrine.

2. The British exercised a more decentralized command structure in this MOOTW conflict.

Training

Because of decentralized execution in a MOOTW urban environment, the British trained their junior leaders to develop their decision-making ability.

Organization

1. British forces organized to conduct MOOTW in conjunction with local law enforcement authorities.

2. The British organization allowed their units to combat a nonstandard enemy with a minimum force policy.

Equipment

Due to the duration of the conflict, British forces had time to overcome equipment deficiencies.

Conclusion

Tremendous differences exist between a conventional type of war and a MOOTW. The comparison of these two conflicts demonstrates that political objectives can be equally important in both types of conflicts, affecting military courses of action. The belligerent's ability to exploit or protect the city system to their advantage remains a constant in the diverse conflicts. The protection of the system in MOOTW coupled with military restraint aides in the legitimacy campaigns. In the Seoul scenario, city exploitation in order to provide a tactical battlefield advantage helps degrade the U.S. weapons and information superiority. Operational awareness in a city is a key component to success.

Doctrine

The IDF is an armor-based, firepower-oriented force that conducted effective but slow operations in Beirut against the PLO and Syrians. The IDF was under intense scrutiny from international opinion as well as domestic opinion. The IDF operations relied on firepower because they were not willing to accept friendly casualties; domestic, political and public pressure would not permit it. The paradox was that a firepower-based operation in an urban environment with thousands of noncombatants would produce significant numbers of civilian casualties, thus the international pressure to cease the operation. These constraints limited timely implementation of tactical operations. The IDF purposely did not enter most structures in an attempt to limit civilian and friendly casualties. In an operation where the destruction of forces was the objective, this was a detriment. The IDF had operated in an urban environment since the battle of Jerusalem in 1948, but had never seen such intense scrutiny as in Beirut 1982.

Because the PLO had made tremendous efforts to fortify and intermingle with civilians, the IDF had to be precise in their objectives. The IDF had to gain tactical surprise and use integrated, flexible firepower. They used concentrated firepower coming from multiple directions and platforms. The key to this success was a simplified, flexible command net. As the infantry advanced, placing direct fire on enemy positions with accompanying tanks, other units thrust ahead or paralleled axis, pushing the defenders from all sides and causing confusion by the sheer density and movement of firepower.[14]

The PLO had numerous years to develop a doctrine in urban areas; however, they had never before experienced the effectiveness of a force like the IDF on a scale this

large. As the outer perimeters of defense were destroyed, effective command and control began to disintegrate. Although the PLO had dug in for years in this area, they had not ever before been under so much coordinated firepower from land, air, and sea. In the outer perimeters, the hit-and-run style of tactics might have been more effective against a less-organized opponent. It is important to keep in mind that the PLO never expected to defeat the IDF tactically, but the PLO hoped to achieve a political victory in the Arab community and internationally. To stall the IDF victory by a show of so-called IDF brutality was victory to the PLO.

Training

The IDF is a well-trained army, but their training is normally focused on maneuver operations in open areas. The IAF is an integral part of this training, and procedures used in open areas were less effective in cities. There are conflicting sources on the IDF level of training in urban operations. This is probably due to the authors' relationship with certain units whose focus of training was no doubt different. It is clear that the lack of infantry trained in building clearing techniques was a consideration in the tactics adopted for this operation. Although units were being trained in tactical operations, the lack of operational level of training in urban terrain affected tactics.

The overall higher level of training was an advantage for the IDF. The ability for tactical level commanders to make effective, timely decisions, including which tactics to use, allowed for the concentration of firepower to be employed practically. This superior junior officer training enabled exploitation of windows of opportunity maintenance of the initiative.

The level of training for the PLO and Syrian units varied. The Syrians performed superior to past conflicts because of training implemented prior to the conflict. The integration of armor forces and commando units achieved success because of an aggressive training program. It was the ability to understand the IDF's dependence on tanks and airpower in battle that helped the Syrians negate IDF effectiveness. The Syrians flooded the area with trained antitank teams and ADA units.

The PLO training varied with the local commanders and units. They had many years of urban combat, but their training was not on par with that of the IDF. Beirut was a major training base of the PLO, and this was one of the reasons the IDF wanted to dislodge the PLO from it. The PLO training was deficient in its ability to field an effective combined arms team.

Organization

The IDF was organized into combined arms teams to include close air support. This organization allowed for deliberate destruction of strong points. Armor, infantry, artillery, and ADA units were used in direct fire roles, but near the center of the town, airpower helped reduce key targets behind the FEBA. Vehicles presented one problem for the IDF infantry. The M113 Armored Personnel Carrier had not offered the same protection as the tanks and had difficulty advancing at the same rate as the tanks. The infantry was also vulnerable in the vehicle since the IDF usually fought with the top doors open.

The command and control organization of the IDF allowed for almost real-time intelligence to be passed to tactical commanders through the use of Remote Piloted

Vehicles (RPVs). The RPV, used in advanced mission capacity for the first time in combat, provided zoom magnification and high-resolution imagery, allowing full display at various command levels on screen or overlaid maps of the combat area. This near real-time information enabled IAF strikes to be precise and quite effective.[15] Additionally, the Israelis fielded a new ground-launched missile designed to fire against air defense radar using a sensor to home on radiation emmissions.[16]

The IDF's organization, with substantial medical assets attached as low as the battalion task force, provided for fast, responsive evacuation and care of casualties. The IDF did demonstrate marked improvement in MEDEVAC support in this conflict; however, the IDF did have a doctor killed in an evacuation operation.[17]

The greatest asset to the organization of the PLO in Beirut was the fact that their political and military leadership was located in the city. This situation served to galvanize PLO resolve and fighting especially towards the middle of the city. The problem with the PLO organization was that units sometimes acted independently and did not implement orders to standard. This made the consistency of the defense weak ,and the IDF exploited success in weak areas. The PLO also failed to concentrate their troop assets and firepower in critical areas to disrupt Israeli attacks.

The Syrians had a division plus size element in Beirut. The division included a tank brigade and two infantry brigades. Additionally, there was an independent tank brigade, ADA batteries, and commando battalions. The IDF tried not to engage these units except in self-defense operations because Israel did not want Syria to commit more troops to the region. Although the Syrians sent MIG21s and MIG23s to the area for air support, the IAF inflicted heavy losses on these forces. The Syrian air force influence was

not significant. The Syrians organized in multiple tanks killing teams and coordinated defenses, and their performance was superior to past conflicts.

Equipment

The conflict in Beirut served as combat-testing ground for Western technology against Soviet block technology. Both sides experienced successes and deficiencies in equipment. The most significant deficiency for the IDF was lack of an APC that could support tanks in the city. Following the conflict, the IDF experimented with APCs on Centurion tank hulls for better protection and speed.

The performance of Western equipment was superior to its Soviet-made counterpart. Comparing tank for tank, or artillery piece for artillery piece, the scales tipped far in the direction of the West. The IDF did receive criticism from the Israeli cabinet as well as the international media for the collateral damage to the city. There was a lack of precision munitions used and the use of large quantities of "dumb bombs" and shells. Do to excessive cost and limited quantities of smart munitions, the IDF attempted to clear the areas of civilians in order to limit noncombatant casualties.

The IDF continually took the high ground to maintain communications. This was necessary for the direction of artillery, naval gunfire, and air attacks.

On July 4, the IDF shut off water, power, fuel, and food into the city, denying the PLO and the noncombatants the life support materials to survive.[18] This was sound military thinking; however, it is considered to be the political turning point of the conflict.

Likeness to Seoul

Doctrine

1. The IDF and North Koreans maintained effective doctrines to combat their opponents.

2. The political objectives of the belligerents greatly affected the military commander's flexibility.

3. The IDF, U.S., and North Korean forces employed firepower-based doctrine.

Training

The IDF and North Koreans conducted urban training prior to the conflicts, but reached different proficiency levels.

Organization

Forces on all sides committed conventional and nonstandard troops.

Equipment

1. Direct fire artillery and air defense systems played a key role in reducing strong points.

2. U.S. forces and IDF maintained overall equipment superiority.

Differences to Seoul

Doctrine

1. The North Koreans employed biological and chemical weapons.

2. The North Korean doctrine stressed speed as opposed to casualty limiting.

3. The IDF's objectives were force oriented not terrain oriented.

Training

Because of their general level of training, the IDF in Beirut maintained a training superiority not seen in Seoul

Organization

1. The IDF and the U.S. lacked sufficient infantry to clear objectives.

2. Casualties were an overwhelming concern for the IDF and U.S. forces.

Equipment

1. The IDF and U.S. did not properly modify their equipment for urban operations.

2. A large disparity in equipment quality existed between The IDF and PLO.

Conclusion

The political objectives in both conflicts influenced the tactical commander's options. The role of the international media, especially in the Beirut conflict, restricted the exploitation of the city systems. The IDF understood the important DPs in the city, but failed to calculate the repercussions of exploiting the water supply. The introduction of RPVs greatly enhanced the IDF's ability to engage targets in the city. Intelligence helped the IDF apply firepower in the correct location. If the IDF firepower had been totally unrestricted, the political disaster for their international legitimacy would have been great.

The PLO was so motivated by political objectives that, without the media coverage, they likely would have been destroyed. The PLO understood the Israeli

military DPs and national COG. The sacrifice of the noncombat casualties was another key to the PLO agenda. The PLO used the city system to aid their political agenda.

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[10]Ibid.

[11]Ibid.

[12]Dewar, *The British Army in Northern Ireland,* 180.

[13]Goodall, interview.

[14]Richard Gabriel, *Operation Peace for Galilee: The Israeli-PLO War in Lebanon* (New York: Hill and Way, 1985), 62.

[15]David Eshel, *The Lebanon War 1982* (Tel Aviv: Steinmaizky Agency, Ltd., 1982), 46.

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[18]Gabriel, *Operation Peace,* 154,

CHAPTER 5

CONCLUSION

Purpose

The purpose of this chapter is to provide an answer to the research questions presented in chapter 1: Can U.S. Army forces with current doctrine, training, organization, and equipment effectively conduct operations on urban terrain in war and MOOTW? How can U.S. forces improve effectiveness in urban terrain? The focus of all previous chapters was directed to presenting and then analyzing the information to answer the first question. This chapter synthesized previous chapters and answers the second question.

The first question will be divided into four subsections covering doctrine, training, organization, and equipment in war and MOOTW as individual components of the overall question.

Doctrine

The literature review in chapter 2 covered the evolution of U.S. urban doctrine and supporting doctrine. The current army manuals as a whole provide adequate, broad-based doctrine at a tactical, what-to-do level; however, the how-to-do is deficient. The overwhelming focus on a European environment in a wartime operation, by doctrinal manuals, leaves serious shortfalls in the tactics, techniques, and procedures that should be implemented by a task force in a non-European area of operations in war or MOOTW. The Army doctrine states that a combined arms team with a light/heavy mix offers the

best solution. This doctrine would be hard for a task force to implement since most brigades are either heavy or light.

Another problem with U.S. Army doctrine is that light infantry manuals in the FM-7 series do not necessarily agree with the FM-71 series of armor/mechanized manuals. Published combat support unit manuals lack doctrine on how to support maneuver forces in the urban environment. The contradiction or lack of published information on MOUT creates institutionalized problems. An officer with a mechanized background will have a completely different perspective than a light fighter on interpreting doctrine. The "cookie cutter" approach to problem solving should not be used, but a doctrine that calls for a light/heavy combined arms force mix as the premier fighting force should have doctrines that are supportive and nested in the different operational levels.

Current doctrine states that a combined arms team is the key to success in the phase of the attack: isolate the objective, penetrate to gain a foothold, and clear the objective. This doctrine does not indicate which forces are more important during any of these phases and how weapons systems employment effort changes at different phases.

The current doctrine does not support the current technology available in the inventory. FM 90-10 was written in 1979, prior to most of the present active weapons systems. The capabilities of an M1A1 tank, a Bradley IFV, or Apache helicopter, to name a few, affect tactics, and doctrine has not kept pace. The increase in information, communication technology, and other technologies also affects Army capabilities.

The Army of 1979 was also a completely different force structure focused on one geographical environment. The current doctrine does not affect the present force projection posture, or the emphasis on nonlethal operations in MOOTW.

The Army as an institution and branch schools need to coordinate in development of a modern, effective doctrine. In a perfect world, branches would cease with the tunnel vision that governs their specific manuals, and the Army would designate a proponent to supervise the direction of MOUT doctrine.

Summary

1. Individual soldier doctrine with current equipment is adequate.
2. Tactical level unit doctrine is lacking.
3. Operational level unit doctrine is lacking.
4. Levels of doctrine need to be nested.
5. Branches need to integrate doctrine.

Training

The training of the U.S. Army is deficient at all levels in MOUT. The individual soldier tactics might be adequate, but the knowledge base and opportunities to train on these techniques is lacking.

Presently at the unit level, no training facilities exist that would support a brigade combined arms team exercise in MOUT. The facility at Fort Bragg, North Carolina, for example, only accommodates a condensed battalion task force. It is also a dry fire facility only. There are live fire facilities throughout the U.S. Army, but they are designed for

platoon size and below elements. These ranges are simple in design, and do not present a realistic portrayal of a modern city system. Urban training has no NTC or JRTC equivalent.

Presently, no Regular Army course at any level specifically focuses on MOUT. The Special Warfare Center at Fort Bragg, North Carolina, offers a four-week course and a nine-week course that focus on conducting live fires in an urban environment, but they are only available to active duty, Special Operations Forces personnel.

No conventional Army infantry units will ever achieve a CQC level of proficiency because of constraints in resources and training locations. This lack of training emphasized by conventional Army units has left a void in the institutional knowledge of how to conduct MOUT. The doctrinal concepts and effects of munitions are a theoretical concept left untested by most units. The danger lies in the situation where junior leaders need to conduct actual fighting with a large learning curve because of little or no training. Techniques that could have been refined through training exercises will not have been rehearsed. Infantry, armor, and engineer units could place urban operations as a mission essential task for one company per battalion, so the institutional knowledge could be developed at junior levels. This training tactic would facilitate quick formation of assault forces in times of crisis.

Across the United States, various other government agencies study and/or conduct MOOTW type urban operations daily. Police forces and local civil engineer organizations are two such prominent groups. The separation of law enforcement and the military in times of normalcy are clear under the Constitution, but low visibility exchange programs for knowledge and technical information should be explored. The Army needs to go

beyond joint and other government organization and interchange ideas with industry and other friendly nations.

Simple one- or two-week follow-on courses at basic branch schools could be conducted with a minimum of resources expended and provide a valuable knowledge base and improved thought awareness. This would also help to interconnect branch doctrines if a student exchange program was instituted.

At the operational level, training is deficient. Exchange programs with industry, contractors, and other government agencies would be relatively inexpensive and would provide valuable exposure and exchange of ideas. Exercises using computer simulation could provide task force staffs the ability to adapt to situations, and more doctrinal refinements would better support individual unit organization.

Summary

1. Unit-level live fires are small and unrealistic.
2. Individual soldier training is lacking.
3. Training facilities to support task force training, especially for live fire training, are lacking.
4. Junior level leader courses are needed to bridge the lack of knowledge and training experience.
5. Cross training and integrated branch training is needed.
6. Realistic exercises are needed at the operational level.
7. Exchange programs similar to the medic trauma exchange program with civilian hospitals should be instituted with organizations that conduct operations in cities.

8. Specialized units for assault purposes must be trained to a higher standard.

Organizational

Tactical level units do not have the organizational flexibility to properly organize for urban combat. The brigade and below units within a U.S. Army division do not have sufficient quantities of support units to conduct operations in urban areas. The typical maneuver brigade task force has an artillery battalion, an engineer battalion, a support battalion, an air defense artillery company, and military police and signal assets in direct support. Additionally, the U.S. doctrine suggests a heavy/light mix of forces. Most heavy brigades do not have sufficient numbers of dismounted infantry that can become light. Most light infantry units do not have a habitual working relationship with heavy mechanized forces. There are not enough engineers to reduce strong points, clear rubble, and emplace mines in an urban environment.

Typically, MOUT operations are decentralized. Junior leaders are required to make decisions from the intent of their commanders on a more frequent basis. Units that conduct MOUT operations with regularity, like Special Forces units, have only noncommissioned officers and officers. The conventional Army can not replicate this structure, but should allow assault units to have a higher percentage of noncommissioned officers and officers. This would require designating these units as "special" and changing the MTOE.

The average brigade has no rotary wing assets to conduct vertical envelopment or exploitation of an enemy weakness. The depth of division or corps aviation lift assets that could be used to fill these needs could potentially be very shallow. The mechanized

reconnaissance units that could carry armed reconnaissance in an urban area have decreased as the armored cavalry regiments have diminished. Properly organized intelligence organizations to support urban operations are not sufficient. In figure 1 of appendix A, there is an example of a typical task force and the proposed changes in organization that would help MOUT effectiveness.

Summary

Tactical

1. There is a need for integrated, specially organized assault units.
2. Tasks force require more flexible organizations with more available assets to lower level commanders.
3. Tasks force require organization structure that exploit success quickly.
4. Increase rank structure in assault unit or units with that mission.

Operational

1. More flexible organization at the task force level that can exploit success.
2. Organizations with more depth for sustainability.
3. More robust reconnaissance units.
4. More tailored intelligence units.
5. Select divisions should be restructured to have a heavy/light force mix.
6. There is a need for units that can conduct vertical envelopment and penetration.

Equipment

The U.S. Army has some of the finest equipment in the world; however, much of it is not suited for urban operations. The individual soldier is not afforded equipment that would allow him to be more effective in an urban operation. The M16 is a fine rifle, but it is unwieldy inside structures. Individual soldiers do not have shotguns available to breech doors or clear rooms without excessive penetration of rounds. Conventional soldiers have no rounds that do not penetrate interior walls for reducing collateral casualties. Individual soldiers do not possess level IV body armor, which would increase survivability in MOUT. The U.S. inventory does not contain electronic counter-measures to jam electronically detonated bombs. Soldiers do not have flame weapons to clear structures. Night vision equipment is severely hampered in an ambient light in a city environment. The soldier has no system that provides the edge in low visibility environments. There is presently no effective individual communication system in the conventional Army for soldiers in MOUT. There are not enough sniper systems to support the infantry in sustained MOUT, and counter-sniper teams are nearly nonexistent in units.

The individual soldier in a MOOTW environment does not have sufficient nonlethal options. He cannot incrementally increase his level of violence to counter his adversary. There are no batons or pepper-type sprays in an infantry unit. Additionally, riot control systems are not available to train on. Equipment like shields or nonlethal firing devices is also unavailable. These are merely examples of shortfalls in equipment, but there is a serious lack of specialized individual urban equipment for war or MOOTW. Most units do not have equipment as simple as knee and elbow pads to protect soldiers from the inevitable bruises that they will sustain operating in a concrete urban area. The

tactical level equipment is inadequate to conduct urban operation. Vehicles are vulnerable at close ranges and slant elevations in an urban environment. Tactical maneuver vehicles cannot engage upper stories from reasonable ranges in the support of infantry. No wheeled vehicles afford proper protection for infantry soldiers in a MOOTW. Additionally, the Army has no vehicles with nonlethal options, like water cannons. There are no vehicles for crowd control with attached partitions to push crowds or protect soldiers from rocks or other objects. The Army does not have electrical protection shrouds to keep crowds off of the vehicles. This list is by no means inclusive.

Specialized equipment for communication challenges in MOUT does not exist in the conventional inventory. The large amount of concrete steel reinforces structures combined with line-of-sight interference makes communications extremely difficult in cities.

Precision munitions with short-range arming distances should be developed so targets can be engaged effectively at close ranges. These munitions should be compatible with present and future firing platforms. Increased precision munitions will also help limit collateral damage.

RPVs should be issued at the battalion task force and below so lower level commanders can have real-time information to plan with. Disposable, inexpensive RPVs could provide a valuable picture that could preserve an expensive M1 tank from entering a kill zone.

The brigade task force needs a vertical air envelopment or penetration capability to be able to exploit areas of success quickly. It is usually easier to take buildings from the top down. A U.S. brigade does not presently have the organic or attached rotary wing

assets to land forces in the rear to preserve combat power, bypassing strong points. The window of opportunity to exploit an advantage requires a fast, flexible, responsive capability.

Traditionally, engineers reduce strong points and minefields. Since the M728 Combat Engineer Vehicle (CEV) has been retired from the active inventory, the requirement remains unfilled. Conventional mine clearing systems are not as effective in a city, especially in areas with large amounts of rubble.

Equipment Summary

Individual Equipment

1. There are serious deficiencies in offensive equipment.
2. There are serious deficiencies in protection equipment.
3. There are serious deficiencies in communication equipment.
4. Nonlethal rounds and equipment options are almost nonexistent for MOOTW.
5. Nonstandard equipment is needed.

Tactical Unit Equipment

1. Vertical and slant angle protection systems are needed on vehicles due to vulnerability from upper floors.
2. Penetrated munitions with minimum collateral damage are needed.
3. RPVs at the tactical level, even disposable RPVs for battalion task forces, are needed.
4. Specialized equipment for communications is needed, like an airborne relay station to support line-of-sight communications.

5. Vertical envelopment capability at the brigade task force.
6. Engineer equipment for mine clearing and strong point reduction.
7. Wheeled vehicle, like a LAV-25, that could support the infantry in MOOTW.
8. Crowd control modifications and protection for vehicles is needed.

Summary

The fact that U.S. maneuver forces have been so successful in open maneuver combat, like Operation Desert Storm, is one reason their future enemies will migrate to the city. The enemy will try to exploit the forces' weakness. Success on any battlefield, especially in complex urban terrain, requires up-to-date, integrated nested doctrine; specialized training at the individual, collective and staff levels; a unique flexible organization; and specialized equipment. The Army's doctrine is to avoid the city; however, the unparalleled urbanization of the world makes urban operation inevitable. The city is a system that must be understood in its complexity and uniqueness. The commander can either protect or exploit these systems to his advantage only if the interrelational connections between the subsystems are understood. In every city and operation, the importance of the subsystems will not be the same. Mental flexibility and an effective staff analysis process are important components to success.

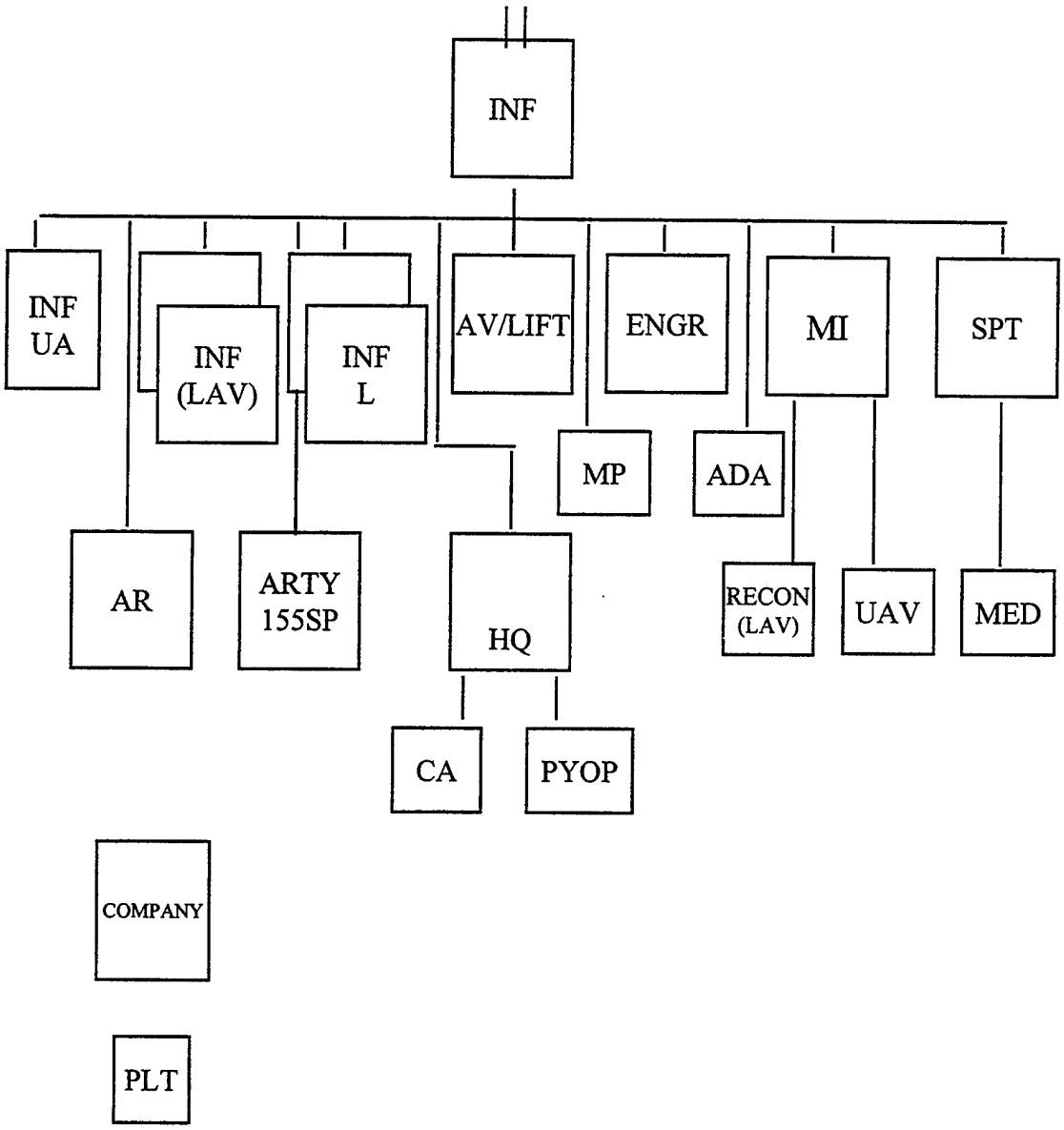
The Army as an institution can no longer afford to avoid training and preparing for operation in this unique terrain. The consequences will be soldiers' lives and unachieved objectives. There is a whole generation of soldiers and officers that are devoid of an effective MOUT doctrine, the equipment to implement this doctrine, the will to train on this terrain, and the organization to support these operations.

Areas for Future Study

Because of the enormity of the topic of MOUT, this study could not comprehensively cover all subjects. The following areas are identified for future study:

1. Partnership with industry program.
2. School for leaders on MOUT.
3. Doctrinal shortfalls and corrective steps for a nested doctrine.
4. Compatibility of branch doctrines on MOUT.
5. Training facilities.
6. Training techniques.
7. Individual equipment.
8. Unit equipment.
9. Emerging technology with MOUT application.
10. Law enforcement techniques, equipment, and organization.
11. Marine Corps doctrine.
12. MOUT health.

APPENDIX A
FIGURES



UA=URBAN ASSAULT INFANTRY

Figure 1. Battalion Urban Combat Organization

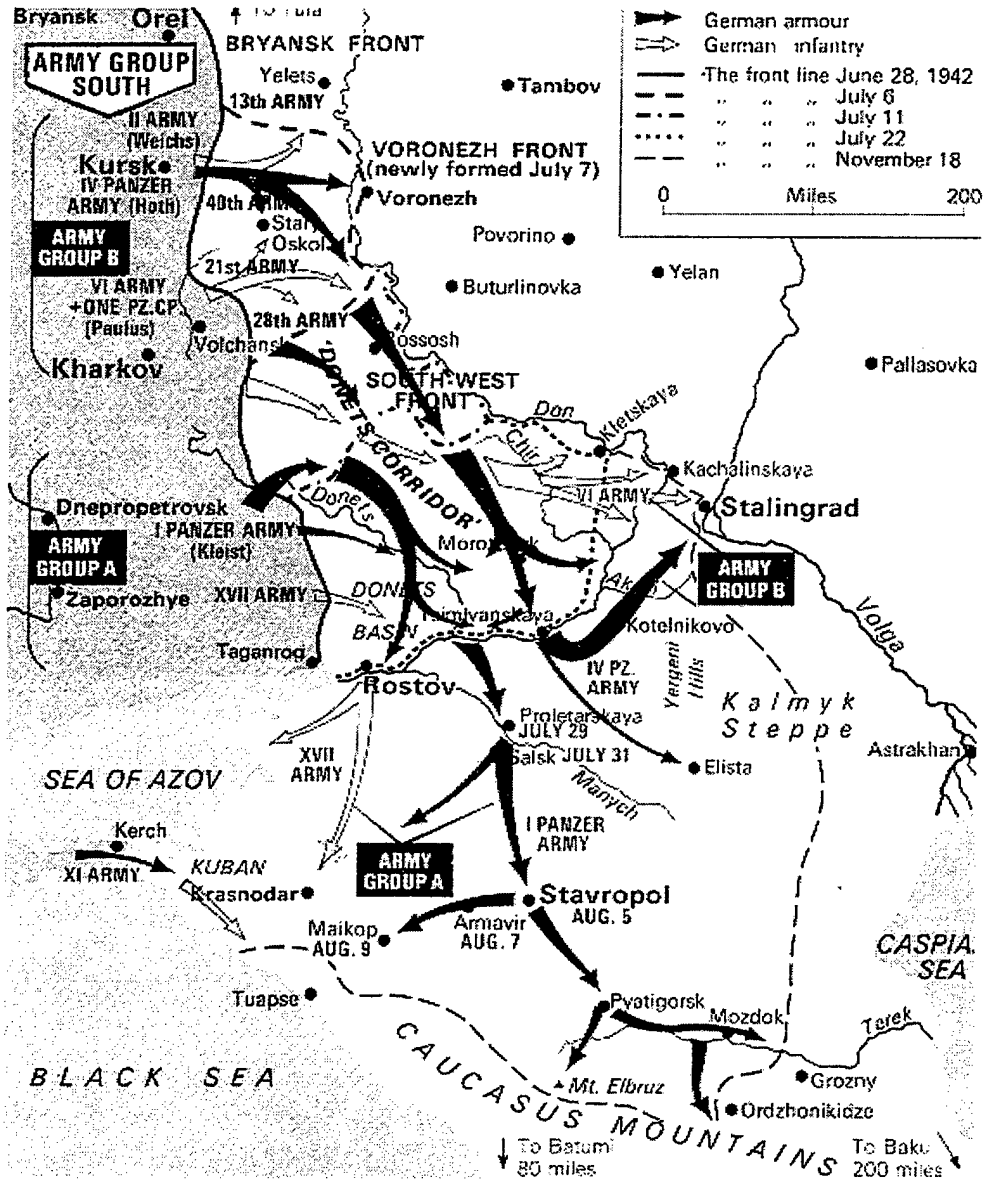


Figure 2. Stalingrad the Campaign. *Source:* Simon Goodenough, *War Maps* (New York, St. Martin's Press, 1985), 94.

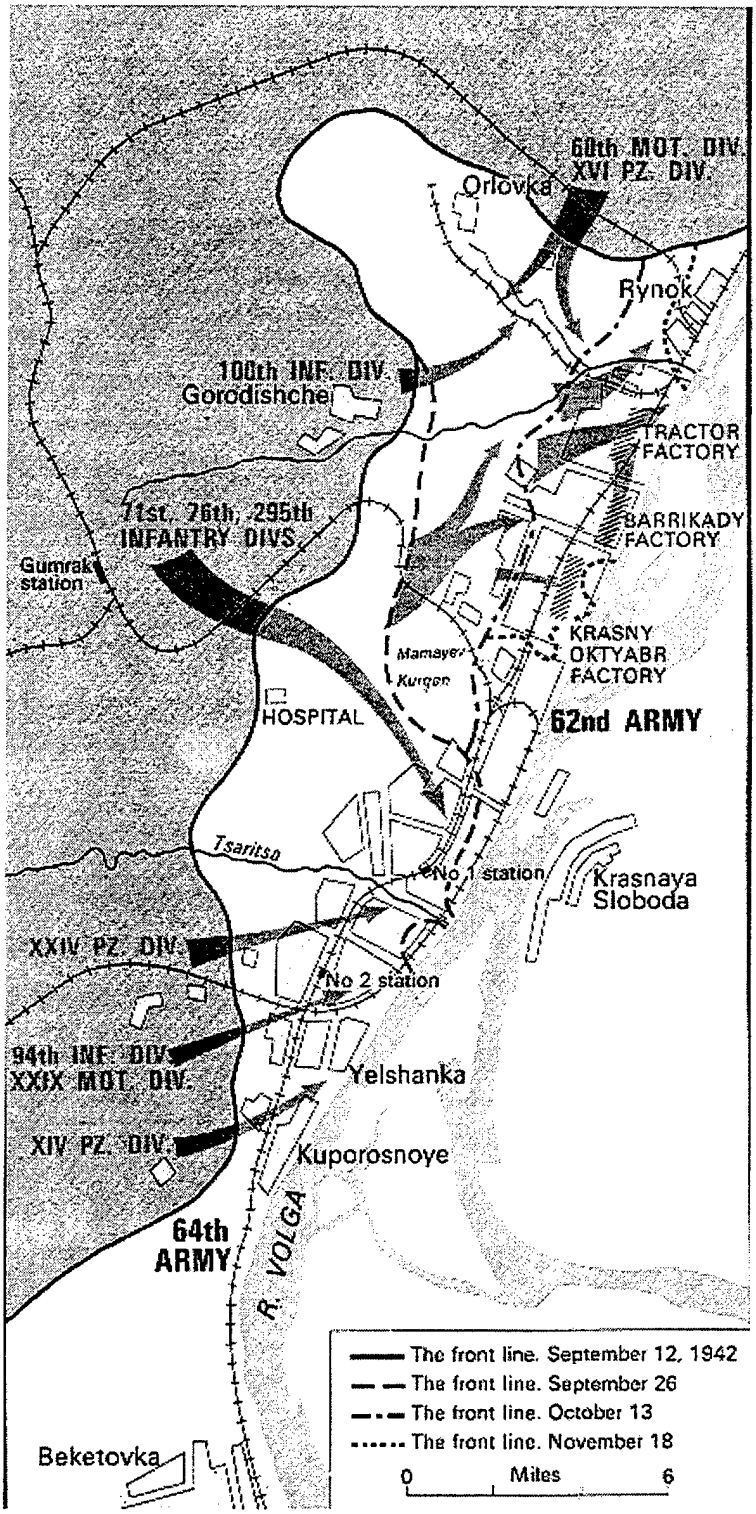


Figure 3. Stalingrad the City. *Source:* Simon Goodenough, *War Maps* (New York, St. Martin's Press, 1985), 95.

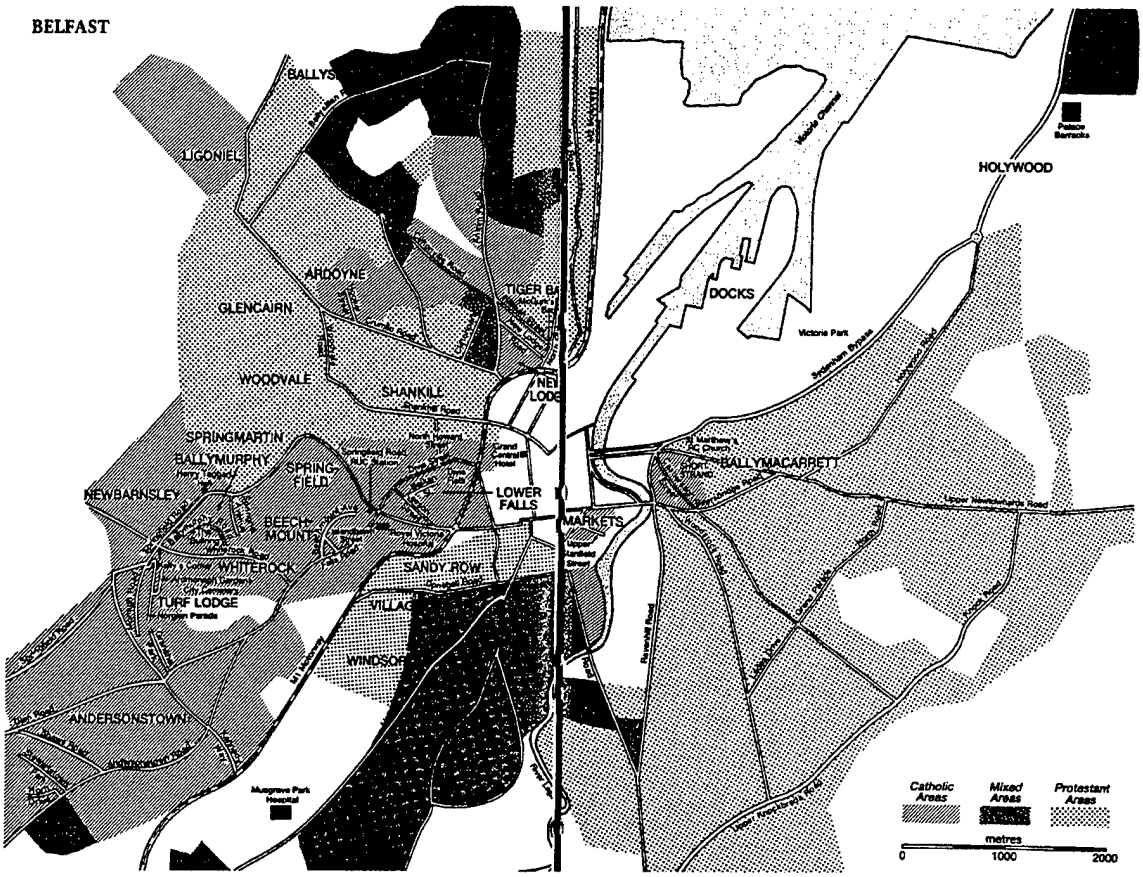


Figure 4. Belfast the City. *Source:* Michael Dewar, *The British Army in Northern Ireland* (New York: Arms and Armour Press, 1985), 34-35.

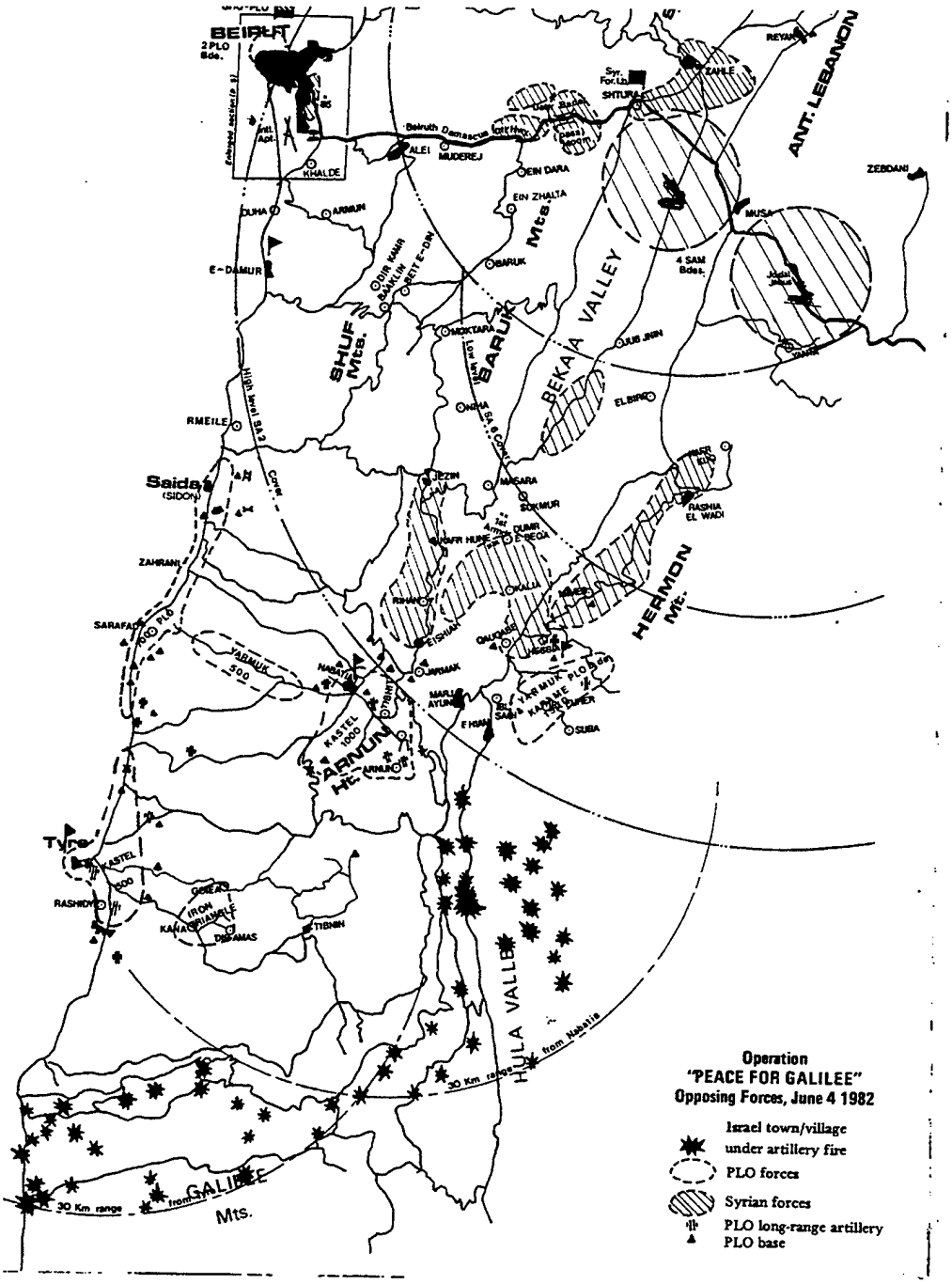


Figure 5. Beirut the Campaign. *Source:* David Eshel, *Mid-East Wars: The Lebanon War, 1982* (Tel Aviv: Steimatzky's Agency Ltd., 1983), 16.

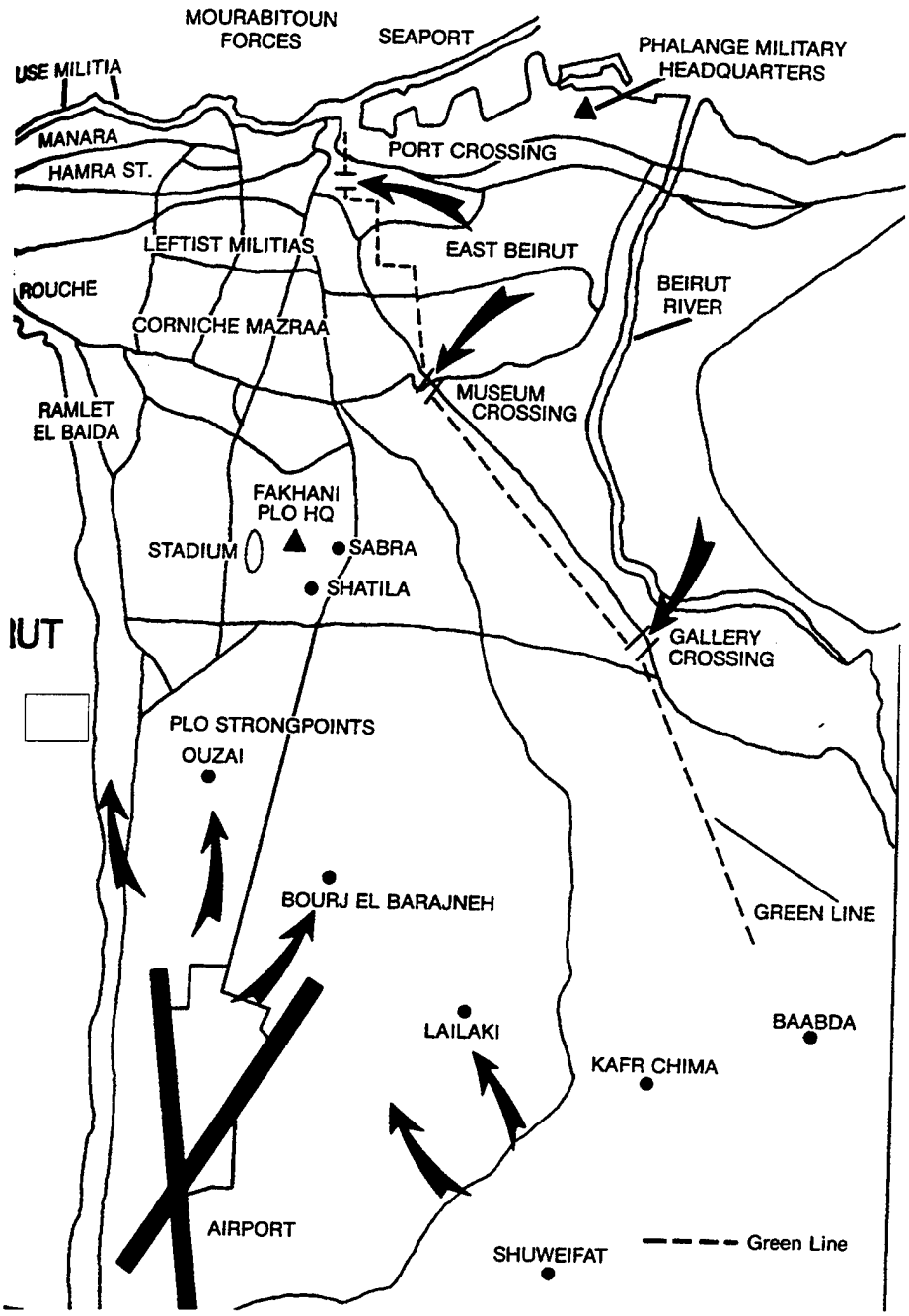


Figure 6. Beirut the City. *Source:* Richard A. Gabriel, *Operation Peace for Galilee* (New York: Hill and Wang, 1984), 140.

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