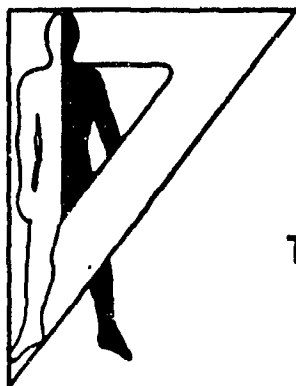


DTIC FILE COPY
DTIC FILE COPY

4



AD

AD-A217 091

Technical Memorandum 13-89

THE BATTLE OF SIDON

R. D. McLaurin
Abbott Associates, Inc.

October 1989
AMCMS Code 612716.H700011

DTIC
ELECTE
JAN 28 1990
S E D

Approved for public release;
distribution is unlimited.

U. S. ARMY HUMAN ENGINEERING LABORATORY
Aberdeen Proving Ground, Maryland

90 01 24 041

**Destroy this report when no longer needed.
Do not return it to the originator.**

**The findings in this report are not to be construed as an official Department
of the Army position unless so designated by other authorized documents.**

**Use of trade names in this report does not constitute an official endorsement
or approval of the use of such commercial products.**

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1a. REPORT SECURITY CLASSIFICATION
Unclassified

1b. RESTRICTIVE MARKINGS

2a. SECURITY CLASSIFICATION AUTHORITY

3. DISTRIBUTION/AVAILABILITY OF REPORT
Approved for public release;
distribution is unlimited.

2b. DECLASSIFICATION/DOWNGRADING SCHEDULE

4. PERFORMING ORGANIZATION REPORT NUMBER(S)

5. MONITORING ORGANIZATION REPORT NUMBER(S)
Technical Memorandum 13-89

6a. NAME OF PERFORMING ORGANIZATION
Abbott Associates, Inc.

6b. OFFICE SYMBOL
(if applicable)

7a. NAME OF MONITORING ORGANIZATION
Human Engineering Laboratory

6c. ADDRESS (City, State, and ZIP Code)
P.O. Box 2124
Springfield, VA 22152

7b. ADDRESS (City, State, and ZIP Code)
Aberdeen Proving Ground
Maryland 21005-5001

8a. NAME OF FUNDING / SPONSORING ORGANIZATION

8b. OFFICE SYMBOL
(if applicable)

9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER

8c. ADDRESS (City, State, and ZIP Code)

10. SOURCE OF FUNDING NUMBERS
PROGRAM ELEMENT NO. 6.27.16
PROJECT NO. 1L162716AH
TASK NO. 70
WORK UNIT ACCESSION NO.

11. TITLE (Include Security Classification)
The Battle of Sidon

12. PERSONAL AUTHOR(S)
McLaurin, R. D. - Abbott Associates, Inc.

13a. TYPE OF REPORT
Final

13b. TIME COVERED
FROM _____ TO _____

14. DATE OF REPORT (Year, Month, Day)
1989, October

15. PAGE COUNT
76

16. SUPPLEMENTARY NOTATION

17. COSATI CODES		
FIELD	GROUP	SUB-GROUP
15	06	

18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)
urban warfare Lebanon - 1982 war
MOUT Foreign military - Israel
military operations on urban terrain

19. ABSTRACT (Continue on reverse if necessary and identify by block number)
This report is a study of urban combat in and around the city of Sidon during the 1982 Israeli campaign to eradicate the Palestine Liberation Organization (PLO) in Lebanon. The report includes discussions of operations, weapons, tactics, command and control, and psychological operations as viewed by both sides in the conflict. The report further reviews the complex political atmosphere that shaped military operations. Along with its companion studies, The Battle of Tyre (McLaurin, 1987) and The Battle of Beirut, 1982 (McLaurin, 1986), this report provides insight into the issues of urban combat in a highly politicized, limited warfare operation. The effectiveness with which the Israel Defense Force surprised, isolated, and eliminated PLO forces in Sidon (and Tyre) contrasts sharply with difficulties later encountered in the siege of Beirut.

20. DISTRIBUTION/AVAILABILITY OF ABSTRACT
 UNCLASSIFIED/UNLIMITED SAME AS RPT. DTIC USERS

21. ABSTRACT SECURITY CLASSIFICATION
Unclassified

22a. NAME OF RESPONSIBLE INDIVIDUAL
Technical Reports Office

22b. TELEPHONE (Include Area Code)
(301) 278-4478

22c. OFFICE SYMBOL
SLCHE-SS-IR

UNCLASSIFIED

THE BATTLE OF SIDON

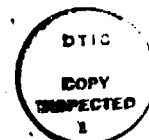
R. D. McLaurin

Abbott Associates, Inc.
P.O. Box 2124
Springfield, VA 22152-0124

Accession For	
DTIC GRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By _____	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
A-1	

October 1989

APPROVED: *John D. Weisz*
 JOHN D. WEISZ
 Director
 Human Engineering Laboratory



Approved for public release;
distribution is unlimited.

PREFACE

This report is based primarily on data collected through interviews with combatants and observers of the fighting in Sidon. Interviews were conducted on the basis of a standard questionnaire. This questionnaire was only slightly modified from similar data collection instruments developed in previous work on military operations on urban terrain (MOUT). Data collected through questionnaire-based interviews were supplemented by written analyses prepared in newspapers, books, and journals in English, French, Arabic, and Hebrew.

This report is not intended to be a definitive history or after-action report of the battle of Sidon. Rather, the purpose is to give participants' perceptions of the use and effectiveness of weapons, tactics, and so forth, in urban combat. As demonstrated in previous reports, this approach frequently offers tactically and doctrinally valuable insights. It can, however, also suffer from what might be called combat myopia. Participants have a limited view, and those engaged in actual fighting almost never see the "big picture" as it is seen by more senior commanders. Battles are confused affairs. Observations, inferences, and conclusions are therefore often contradictory, based on the particular experiences of the participant, his biases, and his powers of memory.

This report sets forth some background information on the fighting in and around Sidon. This information, provided in Chapters I through IV, is provided as context against which the substance of the report, based on participant perceptions, may be understood.

TERMS, ABBREVIATIONS, AND ACRONYMS

AAA	antiaircraft artillery
APC	armored personnel carrier
AT	antitank
CB	citizens band
C ²	command and control
C ³	command, control, and communications
C ³ I	command, control, communications, and intelligence
COMSEC	communications security
HQ	headquarters
IAF	Israel Air Force
IDF	Israel Defense Forces
INF	Israel Naval Forces
Katyusha	generic slang for any model of Soviet 122mm multiple rocket launcher
KIA	killed in action
LOC	line of communication
MEDEVAC	medical evacuation
MOUT	military operations on urban terrain
MRL	multiple rocket launcher
NCO	noncommissioned officer
OP	observation post
PLA	Palestine Liberation Army
PLO	Palestine Liberation Organization
PSYOP	psychological operations
RPG	Soviet shoulder-fired AT rocket launcher (Russian acronym)
RR	recoilless rifle

SAM surface-to-air missile
SPA self-propelled artillery
TO&E table of organization and equipment
ZSU-23-4 Soviet self-propelled quadruple 23mm AA gun (Russian acronym)

CONTENTS

EXECUTIVE SUMMARY	3
CHAPTER I. INTRODUCTION	9
CHAPTER II. THE SITUATION	15
CHAPTER III. CONCEPTS OF OPERATIONS	21
CHAPTER IV. TACTICAL PLAN	25
CHAPTER V. OPERATIONS	27
CHAPTER VI. OUTCOME	47
CHAPTER VII. FINDINGS AND CONCLUSIONS	49
CHAPTER VIII. REFERENCES	55
CHAPTER IX. BIBLIOGRAPHY	57
APPENDIXES	
A. Operation PEACE for GALILEE (Map)	63
B. Map of Sidon (Sayda)	67
C. Data Collection Instrument and Information	71

EXECUTIVE SUMMARY

BACKGROUND

On Sunday, June 6, 1982, Israel launched a military campaign in Lebanon to eradicate the Palestine Liberation Organization (PLO). The advance eventually reached all the way to Beirut and resulted in the siege of that city. The city of Sidon, in southern Lebanon, was captured during the Israeli advance en route to Beirut and was the scene of significant urban combat. This study is a companion to The Battle of Beirut, 1982 (McLaurin, 1986) and the Battle of Tyre (McLaurin, 1987) which address other urban battles of the 1982 campaign.

At the time of the battle, Sidon was a predominantly Sunni Muslim city of about 150,000, with a metropolitan area of about 200,000 people. Palestinian refugee camps--Miyveh wa Miyveh (population--3,500) and Ayn al-Hilwe (population --25,000)--lay nearby or directly adjacent to Sidon.

The capture of Sidon was an important Israeli military objective because (a) Sidon is astride the main road to Beirut, with Beirut being the ultimate Israeli objective; (b) the PLO's regional headquarters were in Sidon; (c) large, conventionally organized PLO units (the Palestine Liberation Army [PLA]) were positioned nearby; (d) several large PLO refugee camps were on the outskirts of Sidon, and their capture would eliminate them as a threat as well as demoralize the PLO elsewhere; (e) Sidon is the gateway to the South, the region bordering Israel and is of primary security interest; and (f) as a major city, with a Sunni Muslim majority, Sidon could be considered a hostile bastion, and it therefore offered important symbolic advantages to Israel if it were captured. (The PLO had successfully defended Sidon against Syrian attack in 1976.)

The battle for Sidon began on June 6 with an amphibious landing north of the city. The next day, elements of task forces advancing from the south on the coastal road and west through the mountains linked up south of the city. Beginning on June 8, attacks against the city proper were conducted by columns from the three directions. By this time, the conventionally organized PLA units and the PLO command structure had collapsed under the shock of the Israel Defense Forces' (IDF) thrusts. Even so, irregular PLO forces independently offered unexpectedly heavy, if uncoordinated, resistance. Although spearheads headed for Beirut bypassed the city until the coastal road through Sidon was opened on June 9, resistance in the city continued until June 11. Meanwhile, the fiercest fighting occurred in the Ayn el-Hilwe camp east of Sidon. The clearing of this camp on June 12 effectively ended the battle for Sidon, although mopping-up actions continued for several days thereafter.

WEAPONS

Small Arms, Grenades, and RPGs

Rifles were not a critical weapon in the outcome, but Palestinian sniping had a delaying effect out of proportion to the resources invested. Despite scant

attention to small arms, more than half of the IDF casualties came from small arms fire.

Hand grenades were used extensively by both sides. The IDF used grenades in mop-up operations; Palestinians lobbed hand grenades from upper floors at tanks and self-propelled artillery. Sometimes, the Palestinians ran behind tanks and tossed grenades at them, and in the camps, they threw grenades from yard to yard.

The proliferation of RPGs (Soviet shoulder-fired AT rocket launchers) among the Palestinians was such that the weapons were used virtually everywhere in the city and the camps. RPGs were fired against vehicles and fixed positions. Frequent mention by Israeli soldiers suggests that RPGs had a pronounced psychological effect on armored personnel.

Mines and Explosives

Palestinians used mines to delay the IDF advance and to cut off IDF units from support. Mines were used rather ineffectively--often strewn on the surface and covered with something. Clearing was easy, quick, and effective.

The IDF made great use of explosives in the battle, particularly in Ayn el-Hilwe, where the most stubbornly defended positions were finally destroyed with explosive charges. Smaller charges effectively breached walls.

Armor

FLO armor was not used in Sidon or Ayn el-Hilwe. The IDF used its armor extensively in both areas, with better results in Sidon than in Ayn el-Hilwe, where it encountered greater mobility problems than it did in the city.

IDF doctrine and experience disagree with the prevailing U.S. view that the tank is a much greater liability than an asset inside cities. The tank plays a principal role in IDF urban warfare doctrine, particularly for reducing enemy hard points, for suppressing enemy harassing fire from structures, in some cases for breaching walls (limited by the nature of the wall), and often for psychological effect. Infantry moving with tanks used the tanks' laser range finders to range their own weapons. The Israeli-developed Merkava tank served as a vehicle for evacuating wounded personnel from built-up areas.

Israeli military leaders were much more cautious in their use of armored personnel carriers (APCs) than in their use of tanks. Because they believe that APCs are neither properly equipped nor sufficiently armored for city fighting, the military leaders used APCs for transporting equipment and supplies only, and kept them behind the front lines. The role of APCs in Sidon was negligible.

Artillery, Rockets, and Missiles

Artillery--in particular artillery used in its direct fire role--was considered by many Israelis to be a critical component of the Battle of Sidon for its ability to suppress enemy fire from buildings and to breach walls (particularly in cases when the walls were too distant or too well covered for

the use of charges). Artillery was used to deliver extremely high volumes of fire on point targets, and indirect fire was also used extensively in the camps.

The PLO had many Katyusha multiple rocket launchers and some field artillery around Sidon at the outset of the battle. However, the initial IDF movement into the area quickly neutralized most PLO artillery. Katyushas were often mounted on truck beds. The lack of escape routes (Sidon is a small city), combined with the narrow confines of the area left to the Palestinians from the outset of combat, greatly constrained the value of Katyushas.

Mortars

Observers and participants placed much greater emphasis on the value of mortars in Sidon than in most other Middle East battles. They believed them to be a valuable psychological weapon.

Antiaircraft Artillery

The IDF's use of the Vulcan in direct fire against ground targets was deemed extremely valuable by IDF participants and observers. Vulcans were also mounted on M-113s for firing at buildings. The Vulcan effectively suppressed hostile fire from structures.

Air-Delivered Munitions

Even though the Israel Air Force (IAF) refrained from using its heaviest bombs, the cumulative effect of iron bombs and some smart weapons provided outstanding close air support of assaults, especially in Sidon itself. Their use was much less effective in Ayn el-Hilwe.

Naval Gunfire

The primary role of the Israel Naval Forces (INF) was outside the city. The importance of the navy in actual combat operations in the city was negligible.

TRAINING

The effectiveness of Israeli military training programs in combined operations was visible in Sidon in the precision with which air and artillery munitions were delivered to identified targets. IDF training for urban fighting was very good. Those units with the greatest training and experience appeared to be more confident, and they better understood the hazards of city fighting. Coordination of combat, combat support, and combat service support functions, which had been exercised in training operations, was excellent. The key role of engineers and medics, for example, and the interplay between armor, artillery, and infantry were critical factors in the military effectiveness of Israeli forces in Sidon.

The collapse of the PLO in Sidon from the earliest days of the battle there precludes an analysis of PLO doctrine. The doctrine was not applied if it exists. However, the stubborn fighters in Sidon and the camps, most of whom were not PLO regulars, showed once again that a few defenders, without doctrine and with severe constraints on movement, firepower, and support, can translate determination and sacrifice into military staying power in cities. Their "on-the-job" training reflected the value of a force that knows its urban environment well and can operate comfortably within it, even if cut off from their allies.

COMMAND, CONTROL, COMMUNICATIONS, AND INTELLIGENCE (C³I)

IDF ground forces' doctrine stresses flexibility in organization and decision making. The attachment of armor and self-propelled artillery (SPA) to infantry units typifies this flexibility. Given that small units must operate with substantial autonomy in urban combat, the Israeli approach has some inherent advantages for that type of conflict.

Rarely has the importance of the quality and quantity of intelligence been more visible than in the contrast between the PLO and the IDF. The IDF was not only aware of likely PLO behavior but also of major positions, headquarters, and observation posts (OPs) of the defender. The PLO, based on its own grossly inadequate assessment of IDF intentions, collapsed quickly as a result of its errors.

MEDICAL CORPS

The IDF Medical Corps was particularly concerned about the possible urban combat Israeli soldiers would encounter. Several changes were made in the medical organization as a result of the lessons learned from both the 1973 war and the 1978 campaign in Lebanon and as a result of the urban combat concerns. Sidon area casualties were limited by virtue of the nature of the operation and the excellent strategy that led to it. Fighting in the city of Sidon produced no IDF deaths, which is remarkable. The bitter battle for Ayn el-Hilwe was more costly.

ENGINEERS

IDF combat engineers played a valuable role in Sidon and in the camps where combat engineer equipment was effectively used to remove barriers. In part, the engineers' excellent preparation may have come from training along with regular combat troops. Many of them strongly recommended an even greater effort to increase the numbers of combat tractors and bulldozers for future urban operations.

PSYCHOLOGICAL OPERATIONS

Israeli psychological operations (PSYOP) demonstrated both sophistication and the lack of sophistication in basics such as message composition. Management of the civilian population during the battle was good, but the follow-up of PSYOP and civil affairs programs were woefully inadequate. Training for noncombatant aspects of military operations in the city, other than fire discipline, was insufficient.

THE BATTLE OF SIDON

I

INTRODUCTION

PURPOSE AND INTRODUCTION

The purpose of this report is to provide insights into the weapons, equipment, and techniques associated with modern urban combat, as evidenced in the battle of Sidon. This report is a companion to The Battle of Beirut, 1982 (McLaurin, 1986) and the Battle of Tyre (McLaurin, 1987), which address other urban battles of the 1982 campaign in Lebanon.

On June 6, 1982, Israel launched a major military operation in Lebanon to eradicate the threat of the PLO. Code-named "PEACE for GALILEE," the campaign and subsequent occupation of territory proved to be the costliest military operation in Israel's history in economic, human, and political terms. Aside from the later difficulties, the operation opened with a bold maneuver typical of IDF operations. The IDF advance eventually reached all the way to Beirut and resulted in the siege of that city. The city of Sidon, in southern Lebanon, was captured during the advance en route to Beirut. Throughout the first week of fighting, Sidon was the scene of significant urban combat.

BACKGROUND

The Israeli invasion of Lebanon in 1982 was probably inevitable in view of regional forces at work in the Middle East, in both Lebanon and Israel. The precipitating incident that led to the Israeli attack on Palestinian, Syrian, and allied forces in Lebanon was the attempted assassination of Israel's ambassador in London on June 3, 1982. Although this attack was conducted by a group hostile to the PLO, and may even have been designed to produce an Israeli retaliation against the PLO, the minister of defense and the chief of staff of the IDF were trying to justify launching a war they had planned and tried to begin, only to be frustrated by political hurdles.

Southern Lebanon had at one time been Israel's only peaceful border. Apart from one "minor" battle in the first war in Palestine (Israel's war of independence) from 1948 to 1949, the Lebanese Army never threatened Israel. Immediately after the war, the armies of Syria, Israel, Egypt, Jordan, and Iraq began to grow. Over the years, the pace of that growth accelerated. But Lebanon never participated in this competitive armed forces growth syndrome, and its army was essentially oriented toward internal security.

As a result of the 1948 war, hundreds of thousands of Palestinian refugees crossed into Lebanon, where they have been ever since. A further influx occurred

after the 1967 war, and another after the internal conflict in Jordan in 1970 and 1971. The first arrival of Palestinian refugees presented monumental political problems to Lebanon's fragile sectarian balance. (The country's political offices were distributed along religious lines, with a 50-50 split [in some cases] or a 6-5 split [in others], but the Palestinian refugees were overwhelmingly Muslim. Many Christian Palestinians also took refuge in Lebanon, but about 100,000 of them sought and were granted citizenship.) Yet, the problems resulting from the first wave of refugees paled into insignificance by contrast with those arising from the second and third waves.

After 1967, rising Palestinian consciousness and militancy were visible among the refugees. Supported by various Arab states, especially Syria, several "liberation movements" began to develop, the most important of which was Fatah, led by Yasser Arafat. It had been established in the years before the 1967 war. Lebanon exercised maximum vigilance so that the activities of these groups did not force the small and virtually unarmed country into a posture of confrontation with Israel that it could not afford. There were a few raids, but the Lebanese Army caught and punished those responsible, severely when possible.

Beginning in 1968 and 1969, the Palestinian movement started a much more concentrated development of its resources in Lebanon. Gun smuggling was no novelty in the country, and virtually every Lebanese household had firearms. It was known that arms existed in the Palestinian camps, such as that of Ayn al-Hilwe near Sidon, but they were small arms for the most part and posed no threat, either to Israel or to public order in Lebanon. Throughout the 1950s and 1960s, until 1969, the Palestinian refugee camps remained under the careful scrutiny of the very competent Lebanese military intelligence apparatus, generally referred to as the *deuxieme* bureau or G-2. The G-2 did not hesitate to apprehend any Palestinians suspected of conspiring to engage in illegal activities, and abuses of the G-2's authority in the camps were frequent and to a certain extent encouraged by the government.

The problem faced by Lebanese authorities did not arise in the camps. Rather, it derived from the infiltration from Syria, with the Syrian government's support, of armed Palestinian fighters into relatively unpopulated areas near the border with Israel. Initially, guerrilla activity was sporadic, as the guerrillas were periodically suppressed by the Lebanese Army. However, three developments spurred their growth and independence in southern Lebanon.

First, the 1967 war and its aftermath had a devastating psychological impact in the Arab world. A sense of powerlessness and frustration seized virtually all Arabs. It was against this background that the Palestinian guerrillas, conducting small, futile, but seemingly heroic and often suicidal raids into Israel, captured the public imagination. Consequently, any government seen acting against these newfound heroes courted instant public disapprobation. While Syria and Egypt exercised very careful and sometimes brutal control over the guerrillas, they extolled the movement and tried to outdo each other in rhetorical support for the guerrillas, a hypocrisy that the more open and liberal states like Jordan and Lebanon had little opportunity or inclination to match. As the Lebanese border heated up under the pressure of raids, this problem manifested itself in sectarian terms. Most of the South of Lebanon is predominantly Muslim, as were the guerrillas. When Israel responded to the raids by launching punitive air or ground operations, the Lebanese Muslim community increasingly blamed the Christian-dominated security establishment for failing to

protect Lebanese Muslims and for its lack of support for the Arab cause. The Palestinians and their Arab government supporters quickly understood the process of fragmentation that was under way and just as quickly moved to aggravate it. They felt that in this manner, they could force Lebanon to take a more active role in the struggle against Israel, if only by reducing government control of the Palestinian fighters. The first consideration then was sectarian.

The second development was the involvement of outside powers, notably Syria. Syria had long provided intelligence, arms, logistical support, training, and other assistance to the Palestinian guerrillas. However, in 1969, when the Lebanese government was forced to take military action against the PLO, the Syrians intervened militarily inside Lebanon. Predictably, no one came to Lebanon's aid, and the government effort to control the Palestinians was condemned by most of the Arab world, many of whose governments cut off trade links with Lebanon. In no way could the diminutive Lebanese state meet these complex challenges, especially in view of the sectarian divisions now appearing in the body politic, which threatened the very essence of the Lebanese pluralist system.

Finally, the Jordanian civil war of 1970 to 1971, which originated from problems similar to those that Lebanon had begun to face with the Palestinians, brought into Lebanon (via Syria again) large numbers of heavily armed and well-organized Palestinian fighters. These fighters were determined to develop Lebanon not only as their last sanctuary but more importantly, as their last base bordering Israel, thus permitting confrontation.

Even before the Jordanian war influx, Lebanon's Palestinian problems exceeded the ability of the state to contain them. In the 1969 fighting, Lebanon had to reach a compromise with the PLO that was a barely disguised victory for the latter, ensuring a certain level of PLO cross-border activity that could only increase Israeli pressure against Lebanon. This Israeli pressure, in turn, augmented the sectarian fissures, since it typically involved raids on southern Lebanon in areas generally inhabited by Muslim Lebanese. As these retaliatory raids became more frequent, thousands of poor Shi'a farmers were driven from their farms and moved as refugees into squalid quarters near Beirut. This created an explosive social and political situation that further constrained the ability of the government to act against the Palestinians, who now presented themselves as the "equalizers," the armed guardians of the Muslim Lebanese community against the depredations of the Israelis and any excesses of the Christian-dominated army. (Ironically, the government was making intense efforts at this time to recruit and promote senior Muslim officers in the army.)

By the mid to late 1970s, the Palestinians controlled large tracts of Lebanese territory, and this was the case not only in the South. They also controlled most of the narrow coastal plain from the South to the southern outskirts of Beirut. Strains were developing between the Palestinians and the Shi'a community, but in Sunni strongholds like Sidon, the Palestinians became the armed guardians of the community.

In 1978, Israel conducted a limited military operation in southern Lebanon but did not enter the major cities of Tyre and Sidon. The operation was not particularly successful, because most of the Palestinian fighters simply retreated northward before the advancing IDF or moved into the cities. Israel captured some equipment but few PLO fighters. Nevertheless, it was this model

that many Palestinians applied in thinking about the next war. For some Israelis, it was a model to follow, but for others, it was a model to avoid.

The process of arming the PLO in southern Lebanon continued, even after a cease-fire in 1981. In fact, the PLO had arms caches far exceeding anything it could ever use for any conceivable purpose, but the long-range artillery and Katyusha rockets specifically concerned the Israelis, because artillery and rocket shells could wreak havoc in the upper Galilee. An internal migration from Galilee had already begun, a process some Israelis believed had far-reaching implications.

With this situation in the background, the IDF began to plan how it might remove the PLO threat from southern Lebanon. Essentially, there were two alternative plans. One called for a limited engagement along the lines of the 1978 operation. The other, however, envisioned removing the armed Palestinian threat from all of Lebanon. While the former had unquestioned public support and enjoyed the support of the Israeli cabinet as well, some believed it simply would not solve the problem any more than the 1978 operation had. Advocates of the second approach--mainly Minister of Defense Ariel Sharon and IDF Chief of Staff Rafael Eytan--could point logically to the necessity of resolving the question of the Palestinian fighters in Lebanon for once and for all, but they enjoyed neither public support for the larger war nor even support within the cabinet.¹

The schism in Israel resulted in a war nominally fought for limited ends similar to those of the 1978 operation; however, this war was deceptive to both the Israeli public and the United States Government. From the outset, Sharon had in mind the larger plan and intended to implement it. But, lacking public or cabinet support, he had to do so in stages by creating pretexts for continued forward movement. This approach was to prove disastrous for Israeli forces and Israeli policy in the overall conflict.

In the southern cities of Sidon and Tyre, however, the problem of disarray in Israeli policy proved largely peripheral to the military operations and their consequences, at least for the duration of the war itself. Following the assassination attempt in London, Israel bombed PLO positions in and around Beirut. This retaliation was intended to provoke a PLO response, because IDF intelligence was fully aware that the PLO leadership had been put on notice by militant elements of the organization that any further Israeli actions must be answered. (The IDF had tried for months to incite PLO actions that would violate the cease-fire but with only limited success because nothing was flagrant enough to justify large scale military action.) The PLO did respond this time--its artillery and rockets hitting the Galilee heavily. With the justification for military operations now in hand, the IDF undertook the invasion of southern Lebanon; its code name was "Operation Peace for Galilee."

¹This episode has been treated brilliantly, if controversially, by Schiff and Ya'ari (1984).

SIGNIFICANCE OF THE BATTLE

Sidon is also one of Lebanon's major cities, the third largest after Beirut and Tripoli. Perhaps more important, Sidon lies along the coastal road that runs more or less directly from the Israeli border to Beirut. The only direct and expeditious ground route to Beirut was the coastal road, and the Palestinian camps and units along it had to be neutralized in either the limited or the larger war scenarios.

The capture of Sidon was an important Israeli military objective because (a) Sidon is astride the main road to Beirut, with Beirut being the ultimate Israeli objective; (b) the PLO regional headquarters were in Sidon; (c) large, conventionally organized PLO units (the PLA) were positioned nearby; (d) several large PLO refugee camps were on the outskirts of Sidon, and their capture would eliminate them as a threat as well as demoralize the PLO elsewhere; (e) Sidon is the gateway to the South, the region bordering Israel, and is of primary security interest; and (f) as a major city with a Sunni Muslim majority, Sidon could be considered a hostile bastion, and it therefore offered important symbolic advantages to Israel if it were captured. (The PLO had successfully defended Sidon against Syrian attack in 1976.)

DESCRIPTION OF THE CITY

Sidon, which is an ancient seaport, is 40 kilometers (km) south of Beirut and about 55 km north of the Israeli border. The city was originally a principal Phoenician settlement built on a promontory in the typical fashion of the culture. Other settlements have come and gone through the centuries. A castle built during the Crusades, for example, lies at the mouth of the harbor.

Sidon was the capital of the South. It was the seat of government for southern Lebanon as well as the commercial and manufacturing center of the region. The population of Sidon proper at the time of the battle was about 150,000 with another 50,000 in the greater Sidon area. The people were predominantly Sunni Muslim. (Sunnis are the largest, hence "orthodox," branch of Islam; Shi'as are the minority sect. The rivalry between the two is often greater than that between Muslims and Christians.) To the immediate south, however, lay several Christian villages, and many Shi'as had moved in during the previous decade, especially as their lands became the frequent targets of the IAF in the late 1970s and early 1980s. Near Sidon were two large refugee camps--Miyeh wa Miyeh (population--3,500) and Ayn al-Hilwe (population--25,000). Ayn al-Hilwe abutted the city on the southeast.

In the old city--essentially that part of Sidon built on the promontory--buildings were predominantly limestone and cement structures, often quite old and all were one or two stories. Many were poorly maintained. The population in this area was rather dense, reflecting significant migration into the city. Roads were narrow, without any semblance of pattern. Eastward toward the junction with the coastal highway, construction was newer but still primarily limestone and generally of the same height as that in the old city. However, some three- and four-story buildings existed in this area. Most of these structures were stores and cafes. Farther east, Ayn al-Hilwe was a shantytown, with buildings, mostly residences, constructed of tin and siding, some with mud

and plaster. All of these buildings had a single story, and virtually none had a foundation. However, extensive underground construction of shelters and bunkers was evident. Roads were very narrow, patternless, and often unpaved.

North and south of the city were extensive citrus orchards along the only major road, the coastal highway that ran from the Israeli border to Beirut. The coastal road bypassed the old city to some extent, but at one point, the built-up area extended to and even across it. The Awwali River lay about 2 km to the north and the Zahrani River about 3 km south. Both ran east-west, more or less perpendicular to the coastline. The main coastal road was rather small and poorly maintained south of the city but became a major highway at the Zahrani Junction (just south of Sidon). North of the city it was better maintained. To the south, it was wide enough only for a single tank; to the north, some greater flexibility in maneuvering was available. Off-road movement was hazardous. The roads into the city from the mountains to the east tended to be small, and their ability to support heavy armored vehicles was uncertain and uneven. Narrow mountain defiles, when well defended, made it especially dangerous to use these roads.

II

THE SITUATION²

THE COMBATANTS

The Israel Defense Forces

The attackers were the ground, naval, and air forces of the IDF. IDF ground forces (hereafter referred to as IDF, unless otherwise indicated) consisted of three discrete elements. The first of these elements, essentially the 91st Division (six reserve mechanized infantry brigades) spearheaded by the 211th Armored Brigade (normally part of the 162nd Division), attacked the city from the south. The second element was part of the 36th Division, the IDF's best armored division, which moved toward the city from the east (see text below). The third element was an amphibious task force built around the 96th Division but including naval commandos, a paratroop battalion, and armored and engineering units. Landing north of the city before the assault on its southern perimeter, elements of the task force attacked Sidon from the north. All of these units probably totaled about 25,000 to 30,000 men, with more than 200 tanks. No other organized attackers participated in any significant way in the initial actions around Sidon, although the Army of Free Lebanon moved into the city after the battle and claimed it as a new headquarters. (This Lebanese militia, led by Major Sa'ad Haddad, was based in the southern town of Marjayoun and was supported politically, financially, and logistically by Israel. Its Israeli-supplied weapons included tanks.)

The IDF is one of the most highly trained and competent military forces in the world. It is a cadre army in which the standing regular army can be rapidly expanded by mobilizing reserve units. Reservists form the bulk of the IDF. They are well trained in their reserve capacity, and most have also previously served in the regular army. The IDF is well equipped with the most modern and sophisticated combat arms and equipment. Many of the heavy armaments are of U.S. origin, including F4 and F16 fighter-bombers, M48 and M60 tanks, M113 armored personnel carriers, M109 self-propelled howitzers, Vulcan antiaircraft guns, and Hawk surface-to-air missiles. The ever-expanding Israeli armaments industry also equips the IDF with such weapons as the Merkava tank, Kafir fighter-bombers, SOLTAM mortars, Galil assault rifles, and Uzi submachine guns. Israel also extensively modifies most of its American and other foreign equipment. The remaining equipment in the IDF is a mix of materiel from other western nations.

The IDF is also very well led. The emphasis on individual initiative and responsibility that typifies an Israeli officer is probably unmatched in any other national military organization. This is particularly valuable in urban fighting, in which small units operate with substantial autonomy. Frequent training maneuvers with live fires similarly serve to promote small unit

²Elements of this section borrow from a previous report (McLaurin & Jureidini, 1986).

capability. The IDF also conducts regular large unit exercises. Coordinating and supporting the movement of a multidivisional task force operation, such as was used in Lebanon, was well within the capabilities and experience of IDF commanders.

The IDF had trained in MOUT. Training had begun before the 1973 war as doctrine was developed. Small exercises were conducted in Ismailia (then under Israeli occupation) and Quneitra. After 1978, the IDF conducted exercises in southern Lebanese villages like Khiam. These exercises reflected that the IDF was well equipped and that doctrine was relatively highly developed for MOUT. The IDF's MOUT training involved the integration of infantry, armor, artillery, engineers, and signal and medical elements, reflecting an acute awareness of the importance of combined arms operations. However, as a cadre army, the reserve elements of the IDF received only limited annual training and had not had adequate MOUT training for this operation. Moreover, despite extensive MOUT training of regular forces (at least by contrast with U.S. forces), virtually no attention had been paid to civil affairs issues in the training (i.e., controlling or managing the population of a city whether under attack or under occupation). Training centered solely on combat activities.

Task organization of forces is common in the IDF and is seen as a principal response to specific tactical problems. This was very much the case in Sidon. Cross-attachment of tanks and self-propelled artillery (SPA) to infantry companies was common, and in such cases, cross-attached armor and artillery generally remained under infantry command. Extensive cross-training is the corollary of this organizational flexibility. Infantry, for example, routinely operates in conjunction with tanks and is trained in artillery observation methods. Initiative and flexibility at lower command levels are characteristic of the IDF and reduce or eliminate complex coordination and unnecessary movement of forces involving higher echelons of command. The relative independence of junior officers also helps reduce overloading of communication nets in times of combat.

Small units, such as companies, operated relatively independently in the sectors at the front line. This, too, is characteristic of IDF operations, in which junior officers are expected to exercise discretion to adapt to the tactical circumstances without turning to superiors.

The force structure for the operation reflected task organization expected to be appropriate to the campaign (except that the IDF was necessarily burdened by the existing condition that its overall structure is armor-heavy).

Ground force logistics support was altered for the campaign in Lebanon. Tanks and SPA carried food and water, as well as ammunition, although the infantry units to which they were attached also had the capability to supply them. Immediate resupply items, such as ammunition, were carried in armored personnel carriers (APCs) following 100 to 500 meters behind the lead elements.

While most armies perceive urban combat as mainly an infantry task, the structure of the IDF does not permit such a view. The invasion force was designed for rapid breakthrough, and ground forces were organized into division-sized combined arms units stressing armor-infantry cooperation. Congruently with objectives and capabilities, mobile repair facilities and supply depots were established in forward areas to maintain momentum. The IDF made additional

special preparations for fighting in cities. Additional grenades were carried by a specially designated soldier in each platoon, for example, and pressure charge devices were also supplied. Antitank (AT) weapons, mainly M72 LAWs (light antitank weapons), were also provided in increased numbers. Loudspeakers for PSYOP, not traditionally a part of the IDF table of organization and equipment (TO&E), were added along with sniping equipment and additional communications sets. Some proportion of explosive mortar shells was replaced by star-illuminating shells. Supplemental armor plating on the sides and front of many tanks was added.

The Sidon battle was the hallmark of combined operations in that air and naval units played perhaps a more visible and varied role in Sidon than at any other point in the campaign in Lebanon. These operations are discussed in more detail later.

Medical organization reflects evolving ideas within the IDF that differ sharply from American practice. In Israel, every physician in the country is trained by the medical corps of the IDF. All medical services are integrated into the medical corps which is, in turn, organic to every unit. In preoperational periods, the medical officer must provide the commander with a plan for handling casualties consistent with the commander's military plans. In each IDF platoon, there are two "medical orderlies," actually an infantryman or a paratrooper with combat training as a noncommissioned officer (NCO) squad commander who has received 3 months' additional training in medical aid. The medical orderlies can perform triage and must know the location of the battalion physician at all times. The orderlies carry triangles, hartman infusions, morphine, personal dressings, tourniquets, a stretcher, other medical aids, and their combat gear. The company-level orderly is responsible for all orderlies within the company. One or two physicians are attached to each battalion. The battalion doctor maintains an independent station in the battalion communication network and has his own emergency communications net. However, battalion doctors are also connected to a brigade doctor's network. Collecting stations at brigade level are subject to the supervision of assigned battalion physicians. Doctors are rotated among unit elements. Soldiers are trained to work with medical evacuation (MEDEVAC) helicopter pilots to hasten removal of the wounded.

Lebanese medicine is highly developed. The Lebanese have always produced a disproportionate number of physicians and other health professionals. Nevertheless, the IDF from the beginning planned to avoid using local medical facilities for IDF personnel but use these facilities for the indigenous population. When the wounded required surgery, they were sent back to Israel or, when necessary, were operated on in Israeli mobile surgical facilities.

The Palestine Liberation Organization

The PLO is an umbrella institution symbolically important as the embodiment of Palestinian nationalism. Most Palestinians support the PLO. As an umbrella organization, the PLO is composed of several component groups, some official, many unofficial. These groups are deeply divided by ideology, background, militancy, and other factors. Some groups are legitimately considered "PLO" in that they wear two hats--that of their own group and that of the PLO. This is true, for example, of the PLO leadership cadres around Yasser Arafat, most of whom were also members of the Fatah group. Ideally, group affiliation should be

noted, but this is not generally possible, because commentators, including Palestinian commentators, often fail to distinguish among various groups.

The PLO operated on several levels. It organized the logistics of defense, such as they were, for civilians and combatants in Sidon. The PLO also coordinated the action of various organizations and militias, Lebanese as well as Palestinian. However, the militias played almost no part in the defense of Sidon.

There were about 30,000 to 40,000 Palestinian refugees in and around Sidon before the war began. The overwhelming bulk of these refugees supported the PLO or one of its constituent organizations. Most of the refugees were in the camps near the city--Ayn al-Hilwe and Miyyeh wa Miyyeh. Nevertheless, these Palestinians, though sympathetic to and strongly supportive of the PLO, were mostly noncombatant, working-class civilians.

PLO fighters are thought to have numbered about 1,500 in the Sidon area before the war. These consisted of elements of the PLA Kastel Brigade deployed on the outskirts of the city and in the mountains to the east. (It should be noted that not all of the Palestinians were PLA regulars or were even full-time fighters.) However, the rapid Israeli movement northward meant that at no time were all of these Palestinians available, since many began to retreat to the north or east very early.

PLO fighters received reasonably adequate individual training, by regional standards. Training programs existed in Lebanon, but many personnel were also sent to foreign countries (Arab, Warsaw Pact, and leftist East Asian countries, in particular) for various military courses on everything from demolitions to flying. PLO forces lacked sophisticated weapons and training above the squad level. While often fully capable of using and maintaining individual weapons, they frequently lacked any concept of the role of the weapon in the overall battle or of coordinating firing sectors. Their ability to coordinate higher level combat operations was quite limited. Moreover, loyalty was of greater value than leadership in officer promotion, so middle and field grade officers were of low quality, preferring safe settings and security to effectiveness. Many fled the South as quickly as possible. Among these was the senior PLO officer for the South, a close supporter of Yasser Arafat. Finally, the quality of training varied markedly from unit to unit within the PLA. The Kastel Brigade was generally at a much lower state of readiness than were the units stationed around Beirut.

In 1976, Syrian forces attacked the PLO in Sidon, using armor in the city, with disastrous results. A series of ambushes and well-prepared defensive positions exacted a heavy toll from the Syrians. Israeli intelligence had elaborate reports of the escapade to support its own planning. Jureidini, McLaurin, and Price (1976) have given a brief description of the Sidon battle of 1976.

In the 3 years before the outbreak of the war, the PLO exerted substantial efforts to develop higher level coordination. Command, control, and communications (C³) links were established more in line with the standards of a regular army than had been done in the past. Forces up to and including battalion size were deployed in the South on a regular basis, although manning was a consistent problem. Unlike the situation encountered around Beirut, the

PLO in Sidon did not have to divert its attention from Israel to the Lebanese Forces. (The Lebanese Forces were the largest and most effective militia in Lebanon, based in the Christian heartland of Mount Lebanon.) While there were problems with local anti-Palestinian elements, these problems were more manageable in Sidon than they were in Beirut for two reasons: first, the anti-Palestinian elements were not as well armed, organized, or led; second, they had no defensible territorial base from which they could launch attacks (although they enjoyed the unquestioned support of the population, especially outside the city of Sidon itself).

PLO light arms included, first and foremost, the common Soviet-made AK assault rifle, the Belgian FN, the German G-3, 7.62mm and 12.7mm machine guns, and the also common RPG-7. The most sophisticated weapons at the disposal of the PLO were tanks and APCs, but these were not a factor in Sidon; BM-21 mobile 30-tube and 40-tube multiple rocket launchers; 73mm (SPG-9), 75mm, 82mm (B-10), 106mm, and 107mm (B-11) recoilless rifles (RRs); 76mm, 85mm, and 100mm AT guns; Sagger AT missiles; SA-7 and vehicle-mounted SA-9 surface-to-air missiles (SAMs); substantial quantities of a wide variety of antiaircraft artillery (AAA)--12.7mm, 14.5mm, 20mm, 23mm, 30mm, 37mm, 40mm, 57mm, 85mm, and 100mm; and a growing artillery inventory (76mm, 85mm, 100mm, 122mm, 130mm, and 155mm). The PLO had 200 to 400 AAA pieces at the outbreak of the hostilities, most of which were mounted on trucks that could quickly move from one position to another. Some ZSU-23-4s, full-tracked, quadruple, 23mm antiaircraft cannons, had also recently become available. Abundant ammunition was available in numerous caches in the South.

THE STRATEGIC AND TACTICAL SITUATIONS

The Strategic Situation

Israel is the superpower of the Middle East but has been heavily dependent on the United States for political, economic, and military assistance. In previous Middle East wars, the United States had frequently intervened politically to end hostilities. One of the reasons that Israeli military leaders placed a high priority on rapid achievement of campaign objectives was to preempt imposition of a cease-fire by outside powers. Within days, President Reagan dispatched Ambassador Philip Habib to effect a cease-fire and the withdrawal of the Palestinian fighters from Beirut.

Another reason for rapid movement was to disorient and demoralize the opponent and to reduce casualties while achieving objectives that victory required. Moreover, since this approach assumed bypassing pockets of resistance, especially in the cities, rapid movement was also likely to persuade those pockets to surrender without further fighting, or so it was thought. The necessity to minimize casualties was derived from the domestic society in Israel and proved to be a very important constraint in the Lebanese environment.

By contrast with Israel, the PLO was a small force that could hardly be considered a military opponent worthy of the name. While PLO attacks and PLO-supported terrorism were a threat to Israeli interests, they were not a threat to Israel's survival; therefore, a number of observers (most of them inclined more

favorably toward the Arabs than toward the Israelis, although many of them were Israelis) have speculated that the war might be considered more a political undertaking than a military undertaking, believing that some Israeli leaders sought to destroy the PLO as a political force more than as a fighting force, which it never was. Such speculation may or may not be justified, but it does not alter the military realities as they took place on the ground.

The Tactical Situation

The battle for Sidon was joined as Israeli units converged on the city from three directions. This is even more significant than it sounds, because of Sidon's key role in the South. PLO command and control (C²) placed Sidon outside Beirut's direct authority, except in the sense that all of the PLO was subordinate to Yasser Arafat. But the regional commander for the South enjoyed an autonomous status of considerable extent, and it is hardly an exaggeration to say that a clear demarcation line existed between Sidon and the area north of it whose units came under the direct control of PLO headquarters (HQ) in Beirut. Thus, the Israeli attack from the north, as well as from the south and east, immediately and completely isolated, and generally threw into chaos, the Sidon command.

III

CONCEPTS OF OPERATIONS

ATTACKER

The Israel Defense Force has had enough experience in city fighting to have elevated MOUT to an important position in defense thinking, planning, and preparation. IDF doctrine for MOUT is relatively well developed although characteristic of Israeli military practice, innovation plays a key role, and communication of new ideas and techniques among field personnel is rapid even during the heat of battle.

IDF doctrine envisions two types of urban offensives--one in which armor leads, and another in which armor supports infantry as it opens and then secures an area. Circumstances dictate which of the two approaches is used. Traditional IDF reliance on rapid armor thrusts has usually favored the former technique until an area is shown to be held by a force determined to resist or equipped to fight armor.

The key variable in the operations in the South was time. The fact that Israeli forces would overcome the ineffectual PLO resistance was never in doubt, not even in planning for the worst case conceivable. Yet, as Minister of Defense Sharon saw the battle, victory did not lie in overcoming the PLO in the South or even in destroying the Organization's infrastructure in Lebanon, but rather, in creating the conditions that would force the PLO from Lebanon altogether. These conditions could not be created in the South, which, while it was nominally "the front," was in many respects a sideshow. Rather, they could only be effected by the creation of "new facts" in Beirut. Consequently, the IDF had to move very quickly northward to place PLO fighters around Beirut in an untenable position before they could harden their defenses in the city. Time was then of the essence.

The criticality of rapid movement dictated the nature of the overall Israeli campaign in Sidon. There was no margin for a long drawn-out battle, no matter how decisive it might be, since such a battle would necessarily be secondary to the preparation time it would provide the PLO in Beirut. Instead, it was clear that the IDF force must move through Sidon quickly and avoid anything--such as a battle in a city--that might slow their process of "rolling up" the countryside. For all intents and purposes, pockets of resistance were isolated and surrounded but bypassed by the main force moving north. Sufficient Israeli forces were deployed so that even though the main force moved on, the units left to clean up pockets of resistance were always many times the size of the defenders' units. It was a classic "punch-through" operation.

The IDF concept for Sidon was simple. First, move through the city quickly (punch-through) and proceed north with all possible speed. Second, to the extent resistance surfaced, bypass but encircle it. Resistance should be overcome by psychological pressure as well as by firepower to minimize casualties. Follow-on units, including reserves, would mop up resistance.

The multifront attack on Sidon was dictated not only, and perhaps not even mainly, by the desire to thrust maximum firepower and confusion at the city's defenders, but also for at least four other important reasons. First, the imperative of the drive northward, which was key to Minister Sharon's goals for the operation, demanded that forces secure the road and bridges north of the city before they could be destroyed or mined. Second, cutting off the city from the north effectively reduced the number of PLO fighters from the city who could withdraw to the north and reinforce the Beirut PLO. Third, the coastal road south of Sidon is very narrow and could not accommodate the quantity of personnel and equipment that the IDF wanted to commit on the move northward. The amphibious landing and the use of the mountain roads (from the east) allowed a much higher volume of traffic to converge at Sidon to use the coastal highway from Sidon northward, where it broadened and improved substantially in quality. Finally, the mountain foothills had several gun emplacements that could have played havoc with the timing and pace of the attacking column. The division attacking through the mountains, which split into several groups and approached the coastal road at four different points from the south of the city to the refugee camps, reduced the possibility of hostile fire on the main column and cut off PLO forces from each other and from the city.

DEFENDER

For the PLO, Sidon represented an important opportunity to block, at least temporarily, any rapid movement of Israeli forces northward along the coastal road, and this in effect constitutes the single most important task of the defender. Unlike Tyre, the city of Sidon actually sits astride the main coastal road. Important rivers to the north and several kilometers to the south of the city offered additional opportunities for slowing movement with delaying actions (destroying bridges, setting ambushes). Since Israeli forces would have to move through the city itself, a well-organized defense in Sidon could substantially delay the progress of the IDF, giving vital time to PLO HQ in Beirut to organize and deploy its own forces.

Apart from the mission of delaying rapid IDF movement to more important targets in Beirut, the PLO's experience and training were oriented toward using the urban environment to repeatedly ambush and wear down heavy armored forces, as they had done with Syrian attackers in 1976.

Ineffectual (and in some cases cowardly) leadership of PLO field forces failed to perform any of these actions on a timely or effective basis. It is not clear even to what extent centralized planning had allocated responsibilities or resources in advance to accomplish the missions. These errors are all the less understandable in view of the evidence that the IDF had sought for months to initiate offensive operations in Lebanon and of the readily available information that only international pressure had prevented such operations. Many Palestinians believed that the IDF would avoid the cities and restrict military operations to the type conducted in 1978, but putting aside the futility of the 1978 operations, a prudent planner would certainly have had to consider alternative possibilities. Under the circumstances, it would be misleading to suggest that the PLO operated under any coherent "concept of operations" in Sidon.

The single concept that guided the PLO for some years was that, in case of an Israeli invasion, the IDF would be reluctant to fight in Sidon and that it would try to minimize civilian casualties. In theory, the PLO hoped to force the IDF to fight inside the city--and far better the city (predominantly populated by Lebanese) than the refugee camps (populated by Palestinians) for two reasons. First, city construction was considerably sturdier and more resistant to aerial bombardment or artillery attack; hence, it was better suited to defense. Second, the Israelis might be more sensitive to inflicting casualties and damage on Lebanese than on Palestinians.

To this end, the PLO placed many of its military resources inside the built-up area, particularly in the densely populated districts. Artillery positions might be sited near hospitals or schools; apartment basements were used as ammunition storage depots; and windows in some apartment buildings were outfitted to serve as firing positions or observation posts (OPs). (However, the PLO may have placed weapons near structures in large part for tactical reasons having little to do with the nature of the structure. Many positions near hospitals, churches, and other structures commanded key intersections, and buildings that were especially solid offered better protection, whatever their sociological function. In some areas, any position the defender could choose would be near some key civilian building; neither side was prepared to declare any area off-limits nor to surrender it to the other's control before the battle.) At the same time, it can also be speculated that some of these preparations were less for battle than for deterrence. PLO leaders were known to believe that the IDF was eager to avoid fighting in cities, with its attendant attrition rates, and the appearance of a defender already well prepared for just such a battle might well deter an attack altogether.

IV

TACTICAL PLAN

ATTACKER

The tactical plan envisioned by IDF defense planners had been developed in principle during the 18 months preceding the war. Most combat elements of it had been gamed and exercised extensively at the tactical level, and as previously stated, the IDF conducted extensive combined arms training (including joint service training) during that period.

The attack began at 1100 hours on Sunday, June 6. Many IDF units began their movement from within Lebanese territory where they had assembled in areas under the control of Sa'ad Haddad's pro-Israeli Army of Free Lebanon. The plan envisioned the amphibious landing north of Sidon to begin at 2200 hours on June 6, well before the columns moving through the mountains and along the coastal road could attack the city. All elements were to link up within 24 hours of the initial landing. The mountain task force was to join with the coastal task force at the Zahrani Junction, on the coastal road two-thirds of the way between Tyre and Sidon. Many of those landing in the amphibious assault were to use vehicles brought north by the coastal column. A rapid move through Sidon was thus necessary to maintain the momentum of the drive on Beirut. All of the south of Lebanon below the Awwali River (just north of Sidon) was to be under Israeli control within 48 hours (i.e., by 1100 hours on June 8).

DEFENDER

The PLO's tactical plan for the defense of Sidon was built on the urban nature of the environment. Having experienced combat against superior forces earlier (in many confrontations with Israel, although none of these was in Sidon, and in the Syrian attack on the city in 1976), the PLO did not expect that it could defeat a concerted IDF assault on the city. However, aware of IDF sensitivity to casualties and to endangering the lives of many civilians, the use of city structures and streets was central to the plan.

At the PLO's disposal were large numbers of mines and AT weapons. It was intended that these resources be used against the IDF as it tried to enter the city. Overall coordination was in the hands of the commander of the Kastel Brigade, Haj Ismail, whose southern Lebanon PLO HQ was in central Sidon, not in the camps. Although technically such coordination should also have been effected with allied Lebanese militias subject to the agreement with the Joint Forces, the Joint Forces were never a viable instrument in Sidon. All real power was wielded by the PLO and Amal (the primary Shi'a militia); allied militias never had substantial territorial or equipment bases from which to conduct independent operations.

It is important to distinguish between tactical plans and their actual execution. In fact, much less is known about PLO tactical plans for the defense of Sidon, even as purely a blocking maneuver, than is known about the defense of Sidon as it actually took place. Under the circumstances of near-complete collapse of PLO command and control, the determination of the fighters reflects much more individual heroism than it does good planning. As we have pointed out, excellent resources and opportunities existed to block or at least to delay the IDF attack on Sidon and the move northward and to do both outside the city. These opportunities were virtually all ignored because if responsibilities were assigned with respect to them, they were assigned within the conventional PLA unit structures, which broke down immediately with the flight of key officers. Thus, there was no "line of defense" whatsoever. The fighting for Sidon was done in Sidon; the fighting for the camps, inside the camps. This reflects desperation rather than decision making. General Drori of the IDF, when interviewed for this report, indicated that Sidon was initially prepared for defense outside the city; that is, there was evidence of plans and preparations for a coherent line of defense. However, he agreed that in this case, the only serious resistance arose in the city.

OPERATIONS

COURSE OF COMBAT

Overview

Operations around Sidon began on Sunday, June 6, the first day of the Lebanon campaign, with an amphibious landing north of the city. Elements of columns approaching from the south on the coastal road and from the west through the mountains linked up south of Sidon on the evening of June 7. Attacks against the city proper began the next day, with IDF forces advancing from three directions. By this time, the conventionally organized PLA units and the PLO command structure had already collapsed under the shock of the IDF thrusts. Even so, irregular PLO forces independently offered unexpectedly heavy, if uncoordinated, resistance. Spearheads destined for Beirut were forced to bypass the city until the coastal road through Sidon was cleared on June 9. Most remaining strongpoints were eliminated by June 11. Meanwhile the fiercest fighting of the battle occurred in the Ayn el-Hilwe camp, east of the city. When the camp fell on June 12, the week-long battle for Sidon effectively ended, although mopping-up actions continued for several days thereafter.

Because the attack on Sidon took place from three directions, it is easiest to relate the course of combat by considering the first phase in terms of three "fronts": the north (i.e., the attack from the amphibious forces that landed north of Sidon on June 6 and thereafter); the east (i.e., the attack from the task force coming from the mountains); and the south (the task force proceeding north along the coastal road). The second and third phases can be more easily understood from the point of view of the defenders' positions (even though the early breakdown in coordination meant that the most difficult battles were not coordinated or planned by the defenders at all). Thus, the attack on Sidon proper will be considered as the second phase, and the assault on the Ayn el-Hilwe camp, the third. These battles began at about the same time, but the fight for the camp lasted much longer and was significantly more complex.

Phase One: The Approach and Initial Attacks

The Northern Front

The Israeli attack on PLO forces in Lebanon began at 1100 hours on Sunday, June 6, but by that time, the amphibious force (believed to have consisted of most of Israel's 15 landing craft, except those involved in another smaller amphibious operation near Tyre) assigned to capturing the Awwali had already left Israeli ports and had been en route to Lebanon for more than 12 hours. The amphibious assault was covered by the IAF. Israeli commanders knew the terrain

well, having raided the area several times. Naval commandos made the initial landing, but its prime component was paratroops. Although there was some random PLO firing during the landing and later that night, no Israeli vessels or personnel were hit. The attack was a successful surprise amphibious assault. Once the beachhead was established and additional forces began to dig in, local PLO troops immediately moved out toward the foothills or north toward Beirut. The Israeli Naval Forces (INF), in their first major amphibious operation, continued to shuttle back and forth between the beachhead and Israel, constantly bringing in more troops. The INF took the port of Sidon under fire and patrolled the entire coast from the Israeli border to a point north of Beirut. Reports sent to the Kastel Brigade commander Haj Ismail began to reflect the seriousness of the Israeli landing by late Sunday. Colonel Ismail, claiming the need to conduct a personal reconnaissance, absconded with the PLO funds under his control, apparently using an ambulance, and late Sunday or early Monday, successfully crossed through IDF lines to Syrian intelligence headquarters at Shtaura (in the Beqa'a Valley). By June 7, the beachhead contained approximately four battalions.

At this stage, the amphibious force was divided into three elements: one moving north, another striking generally eastward and enlarging the beachhead, and a third going southward toward Sidon. It is this last group that is relevant to the present study, and this group was to link up with the task forces moving from the south and east of the city.

The Israeli beachhead at the Awwali, north of Sidon, marked the IDF's northernmost ground attack into Lebanon (apart from commando raids). Consequently, it constituted for the Beirut PLO command the first indication that this time, the IDF was planning to go all the way to Beirut, a prediction some PLO leaders had made for quite awhile.

The Eastern Front

The mountain task force encountered uneven but occasionally stiff resistance from PLO units. While leadership of the PLO units appeared weak, the individual fighters often surprised Israeli soldiers with their bravery. The attack tended to splinter the command and control of the PLA units in the mountain areas, cutting off various support and command elements from combat forces. The result was a complete and early breakdown in Palestinian battle management, especially since virtually all of the senior PLA and PLO commanders fled or "retreated" individually toward Syrian lines, leaving a complete vacuum of decision-making ability, complicating the problem of severed lines of communication (LOC). By the night of June 6, the bulk of the IDF task force was moving rapidly toward the coastal road along four different small mountain roads. Some were intended to meet the coastal task force south of Sidon, while others were to arrive nearer to the city itself to cut off the city from the Ayn el-Hilwe camp.

The linkup with the coastal task force at the Zahrani Junction was accomplished according to plan. Similarly, some forces did establish contact with elements moving south from the amphibious operation, but these contacts were not in the city. Those that neared the main road south of the camp shelled Ayn el-Hilwe with a view toward breaking through to the main north-south road. They entered the camp with the support of IDF artillery positioned in the mountains to

the east. However, the road was closed behind them, and they had to fight their way back out against ambushes and individual attacks with AT weapons.

The attack recommenced on the morning of the third day, with preparatory and support fires by artillery and with aerial bombardment of PLO strongpoints in both Sidon (along the road) and Ayn el-Hilwe. The level of response made it clear that positions were well prepared, and the only recourse was for heavier bombardment from artillery and the IAF. It was at this stage that the first leaflets warning civilians to flee were dropped on Sidon. On June 8, the Israelis--primarily the Golani Brigade with an armored brigade attached--advanced almost to the center of Ayn el-Hilwe, but they were unable to establish any real control over the camp and withdrew before nightfall.

The Southern Front

The movement toward Sidon from Tyre began on the second day of the war, although part of the coastal task force was already halfway between the two cities by nightfall of June 6. This "battle group," which was the spearhead of the attack toward Sidon on the road to Beirut, moved approximately 15 km to the town of Sarafand where it was ambushed as it passed through the town. (Here, incidentally, the PLO exploited the populace by hiding their ambush behind a welcoming crowd. Similar incidents occurred elsewhere on the advance to Beirut.) The unit continued to move to the Zahrani Junction, still 6 km south of Sidon and the camps. At that point, it linked up with the southernmost column from the mountains. The overall pace moving northward on the coastal road was behind schedule, and consequently, as early as June 7 (the second day), CH-53 helicopters transported units from the coastal road south of the city to the ever-expanding area of Israeli control north of Sidon. These units, however, could clear only the path north of the city for the eventual advance to Beirut. The main ground column south of Sidon still had to break through to maintain the momentum of the advance.

Fighting became much more intense as the column entered Sidon; it was slowed to such a point that the scheduled pace could not be regained. Therefore, some way had to be found for the spearhead of the column destined to move on Beirut to continue. After some debate, the spearhead elements under Colonel Eli Geva bypassed Sidon entirely, going east into the mountains and skirting the city and camps, while the bulk of the assigned forces moving on Sidon from the south and east continued to try to open the road to ensure an adequate LOC for follow-on support to the spearhead. However, it was the morning of June 9 (D+3) before the spearhead brigade was able to reach the Awwali River.

Meanwhile, on June 8 (D+2), well after the Golani Brigade had entered Ayn el-Hilwe (from which it was to withdraw before nightfall), elite paratroops of the coastal force (reinforced by units from the mountains) were able to penetrate the southern parts of Sidon proper; however, they, like the units in Ayn el-Hilwe, soon found determined opposition and retreated southward as night arrived.

On June 9, the attack was renewed, this time led by the more experienced paratroops (originally from the mountain route, but now stationed south of the city). Artillery created a rolling barrage in front of the force, and the IAF flew numerous sorties in support as well. (Whereas the Israeli forces often attempted to adequately forewarn civilians, this attack was one that caught many

civilians unaware.) The paratroops moved northward along both the major north-south road and a parallel street to the east. The breakthrough still did not occur until the afternoon of June 9.

Phase Two: The Fight for Sidon

Phases Two and Three were the more intensive aspects of the city battle, but they must be considered in the overall campaign context as mop-up operations. By the time the assault on the city had begun, PLO forces were completely cut off and encircled, retained no organic unity or cohesion, had lost all senior commanders, and for all practical purposes had lost any centralized command and control; hence, they fought as what most of them were--irregular home guards.

Israeli forces moved into Sidon only after the mountains to the east and the villages to the south were under control. The attack on the city was led by the paratroops, who used the approach they had used in the past and were to put to good use later in Beirut. PLO headquarters in Sidon, and the other principal positions contested there, lay in the old quarter with its narrow streets and congested and twisted byways, generally considered the most dangerous kind of environment for any attacking force, especially for armor and artillery. However, the IDF has always believed that armor and SPA have a vital role to play in urban warfare. The Israelis advanced deliberately, making full use of combat engineer support to widen roads in order to use armor and SPA. No attempt was made to engage fire, but when fired upon, the attacking force used armor and SPA in the direct-fire mode. The forces benefited from effective close-air support and, around the port, from naval gunfire support, as well. But the lion's share of the combat rested on the shoulders of the ground forces. Remarkably, the battle in Sidon itself, in the 3 days it continued, yielded not a single Israeli casualty. Most strongpoints had fallen by June 11. There were incidents of Syrian planes that apparently attempted to bomb IDF positions but missed by a great deal; these Syrian aircraft were later destroyed by the IAF.

Phase Three: The Battle of Ayn el-Hilwe

The fact that Ayn el-Hilwe was a Palestinian refugee camp rather than a Lebanese city cannot be passed over lightly. Many Israelis and many Lebanese, believed that whatever the future of the Palestinian civilians in Lebanon might be, the camps were a source of trouble that if destroyed, would not be missed. (This is not to suggest that the majority of either Israelis or Lebanese believed this, opposed it, or even considered the issue; it only suggests that a number of important Israelis and Lebanese had come to this conclusion.) Whether or to what extent this philosophy lay behind the very different approaches used in the Lebanese cities and in the camps cannot be determined. Certainly, the IDF displayed markedly less concern with the structural integrity of the camps (to be distinguished from the lives of their inhabitants) than it did with that of the cities, even when taking into account the greater degree of resistance in the former. The Battle of Ayn el-Hilwe became the destruction of Ayn el-Hilwe. It began on the afternoon of June 9, the day before the attack on the old quarter of Sidon. Infantry troops bore the brunt of the assault, at least at the outset. The resistance was led--more in the sense of motivation than planning--by a Sunni

fundamentalist sheik (leader), Haj Ibrahim Ghanim. Refusing to surrender, he infused the spirit of the resistance with suicidal fervor and intent. Tanks led the initial assault on the mosques north of the camp itself. Once inside the camp, however, the infantry took the lead, as the camp was a maze of small alleys and densely packed structures from which AT weapons could make unprotected armor easy victims. Tanks and SPA remained immediately behind the infantry and were called in for direct-fire support against fortified positions.

Throughout Thursday and Friday, June 10 and 11, the IDF tried to separate combatants and noncombatants and to encourage the noncombatants to move out of the camp or to surrender:

...Three separate delegations...each comprising leading personalities from Sidon...were asked to explain to the defenders of [Ayn el-Hilwe] that the area was surrounded, their cause was hopeless, and whoever was willing to lay down his arms would be allowed to leave the camp unharmed. ...The first delegation never got to speak with the besieged fighters; it had barely approached the fortified positions when angry cries were heard: "Traitors! Tell the Jews that no one is leaving this camp, civilians included!" ...Haj Ibrahim's men sent a spray of bullets into the dust around the feet of the intermediaries.... The second delegation managed to hold a brief exchange with the defenders by shouting at them from a distance, but it too was rebuffed. The third delegation returned with the most harrowing tale of all. Residents...had told its members that the militiamen were shooting civilians who tried to escape (Schiff & Ya'ari, 1984, p. 147).

The IDF also used PLO prisoners; they used a larger composite delegation of villagers, dignitaries, children, and PLO prisoners, and even a team of Israeli psychologists specially flown in for this problem along with other ploys (see the section on Psychological Operations)--all with equally unsatisfactory results.

On Friday morning, June 11, the IAF conducted a number of sorties against the camp, mainly at its outskirts and key fortified positions in the interior. Later in the day, the bombing and artillery attack picked up momentum. A ground assault moved slowly against strongpoints after they had been liberally bombarded. Nevertheless, small teams ambushed tanks with AT weapons, and mines were placed on roads already traversed to cut off retreat and to slow support. The main bunker was not knocked out until the evening of June 12 (through the use of demolitions), and the camp's last battle took place at one of the major mosques, also eventually destroyed by demolitions. Remaining fighters elsewhere in the camp surrendered quietly during the next 2 days.

ROLE OF NONCOMBATANTS

Attacker

Noncombatants were a primary problem for the attacker and a major defender resource in the battles around Sidon. While Sidon did not have the same exposure to international media as did Beirut, Israeli forces displayed a substantial concern for the lives of civilian noncombatants, particularly the Lebanese, and for the structures and integrity of the city of Sidon, though this last observation applies much less accurately to the refugee camps nearby.

Special care was taken in assigning strike missions to aircraft to control targeting in order to minimize collateral damage to points other than those from which fire was issued. Generalized destruction within the city was strictly limited to parts (where resistance was encountered) along the major thoroughfares that the IDF sought to clear as its principal LOC to support the thrust northward and to certain areas near the port where opposition was determined. This care also applied to artillery insofar as it was attached to the assault forces. Artillery support from the mountains to the east appears to have been only somewhat less precise.

Israel's supporters have heralded the campaign in Lebanon as one in which unprecedented concern for civilian lives was allowed to substantially interfere with the efficient use of Israel's overwhelming military superiority against the PLO. Critics, by contrast, have pointed to photographically demonstrable destruction and to reports of widespread death and dislocation of noncombatants to suggest that the war reached a level of grotesque disregard for the legal restraints on the use of military force in civilian environments.

There can be no doubt that the IDF exerted significant--in some cases, almost superhuman--efforts to spare Lebanese civilians' lives. Timetables of attack were altered in deference to the threat to civilians, with significant impacts on the overall schedule of the campaign planning, impacts that may well have had much to do with the course of the complicated situation around Beirut and the overall outcome of the conflict. Moreover, Israeli forces did not use only one approach but a multitude of techniques to assist civilians to escape the combat (see text below). Hostilities were suspended on a number of occasions to allow civilians to exit, even when it was clear that combatants were mingling with civilians to effect their own escape. In at least one case, a major air raid was blocked at the last minute because a panicked multitude of civilians suddenly flooded a street that was about to be attacked.

If concern was more pronounced for the Lebanese noncombatant population than for Palestinians, this should hardly be surprising. However, reasonable precautions were taken in many cases inside the camps and in Sidon proper to minimize civilian casualties. To a large extent, the difference in treatment applied much more to the physical structures than to the populations. Given the intensity of the battles in the camps, more examples are available to show both excesses and sensitivity.

Photographic evidence of Israeli destruction of Sidon is highly misleading. Most of the heavy destruction occurred in very specific areas related to the thrust to the north and near the port, both centers of resistance. While use of

direct-fire armor and artillery in urban areas can be condemned, it is unlikely that any known armed force would stop using the armor and artillery if their use was effective in capturing the city with minimal attrition of its own forces. Nor can the very understandable PLO practice of using city assets and specifically civilian structures be fairly overlooked in an assessment. The deployment of military resources in noncombatant areas does alter the nature of those areas; they become de facto combatant areas, irrespective of how fair this may be to the noncombatant residents. (We do not speak here of the nature of international law and conflict but of the practical principles that apply on the ground to combat situations.)

Exceptions to the situations just mentioned are the initial assaults and particularly the initial artillery and aerial bombardment of Sidon, effected before residents were warned to flee and before the virtual razing of Ayn el-Hilwe. Israeli forces could have done little more to bring safety to the poor noncombatants trapped and held against their will by Ghanim. The Israeli communications to civilians were certainly not perfect. Directions for the escape of noncombatants were at times unrealistic and impractical, and many were trapped trying to evacuate embattled areas. Instructions to civilians were also not received more often than Israelis care to believe. These problems, however, were related to training and planning shortcomings, as well as to the normal confusion of war that few, if any, armies could have overcome. (Golani Brigade members are quick to point to an incident recalled by many that was repeated on several occasions in the South. PLO fighters retreated, surrounded by civilians under white flags. Soon thereafter, the same fighters revealed an RPG and fired on an IDF tank.) These incidents reveal some of the problems that the IDF faced in handling civilians and noncombatants in the combat zone.

Defender

The Israeli charge that the PLO used civilians as a shield is true. It is much less clear how the PLO should have been expected to do otherwise. There can be no doubt that in Sidon in particular, they enjoyed the support of the majority of the population which was used perhaps but hardly against its will. Jewish guerrillas had made no less use of the civilians in Palestine a half-century earlier. It is in the nature of such movements that they must nest among noncombatants, however poorly that comports with the "laws of war" and whatever constraints it may place upon an assault. To expect otherwise would be unreasonable and unrealistic.

PLO forces even during the fighting tried to mingle with the civilian noncombatants, at times to escape, at times to acquire better positions from which to fire, and at times to collect intelligence. Schools, hospitals, and mosques, as we have seen, often became key centers of resistance. (Incidentally, this does not apply only to irregular warfare; it applied just as frequently to the Iran-Iraq War that was taking place in the Gulf as the Israelis invaded Lebanon.)

The brutal case of the civilians held hostage by Ghanim and his zealous followers in Ayn el-Hilwe must be viewed separately. Here, the civilians were a shield at the outset, but essentially they became forced martyrs at the end.

CIVILIAN RESOURCES

The Sidon battle and the Ayn el-Hilwe fighting were too short for civilian resources (power, telephone, and water) to have played a major role. A blockade would have had even less effect in Sidon than in Beirut. However, electricity and water were cut off by the fighting. The telephone was intentionally not cut, either so it could be used by the IDF or so that news of the success of the Israeli attack could be guaranteed to reach Beirut from credible sources.

TERRAIN AND TOPOGRAPHY

The coastal road is the main LOC in Lebanon. It links the major cities along the Mediterranean coast and intersects numerous roads leading eastward into the mountains. South of Sidon, this road is narrow. The road widens at the Zahrani Junction, but remains poorly maintained. Less than a kilometer west of the road is the Mediterranean, and often as close as another kilometer to the east are mountain foothills. Extensive citrus groves lie on either side of the road. To the east, these groves vary in depth but extend to the mountain foothills. These groves make cross-country movement largely impossible, and they provide numerous potential ambush sites. (Ambushes from such groves did take place, but not often in the vicinity of Sidon.)

In the old quarter of Sidon, the buildings are of mass construction, very close together; streets are of inadequate width to support armored movement; and street patterns are chaotic. The IDF had extremely accurate intelligence regarding the location of PLO positions and excellent photographic maps and intelligence about streets. Nevertheless, armored and SPA movement was largely restricted to the primary routes, even after combat engineers using bulldozers widened some paths.

In Ayn el-Hilwe, construction tended to be much less solid but no less dense in some areas. Much of Ayn el-Hilwe was urban slum. Residences were generally one to two stories, concrete block construction. The camp also had hospitals, schools, markets, small businesses and manufacturing enterprises, mosques, and some office buildings. Streets were only marginally less chaotic than in the old quarter, and alleyways abounded. Positions for AT ambushes were virtually infinite. Most structures in both the old quarter and much of Ayn el-Hilwe were two to four stories, although exceptions were numerous in parts of the camp.

To the west of the city, the INF exercised complete control of the seas, preventing escape or reinforcement of the PLO and providing naval gunfire support for ground forces, especially around the port. To the east, IDF ground forces quickly cut off the PLO through seizure of the mountain roads. This allowed the IDF the luxury of positioning artillery on the mountains to support infantry and paratroop operations in Sidon and Ayn el-Hilwe and of denying it to the PLO. Previous PLO positions, which might have been defended at least briefly, were abandoned in many cases without a fight, apparently because the occupants fled. For example, one ZSU-23-4 on a hill overlooking the Awwali River was never used.

CLEARING AND USE OF BUILDINGS

Attacker

The IDF's practice of moving within buildings was well established but was altered for the purpose of the Lebanese campaign. In an effort to minimize civilian casualties, unnecessary fire was suppressed. Buildings were to be searched without fire. At stairways, soldiers moved together, one along the wall, the other along the banister. They leapfrogged each other up the staircases in this manner, always covering turns of corridors and staircases. At the end of staircases, the two leaned with their backs against the wall ready to move to adjoining corridors or rooms. Movements along corridors were dependent to a greater extent on the structure of the corridor and the location of adjoining rooms. In principle, movement was along walls, with the first person in the column shouting out the features of the corridor as he saw them. The commander of the group moved in the third position.

Defender

Buildings were used by defenders to store ammunition (generally on lower levels) and to fire down on approaching IDF troops. This was particularly true of key intersections, such as the clock junction in old Sidon. The roads were broader there, offering better fields of fire.

DEPLOYMENT OF PERSONNEL IN BUILDINGS

Typically, fighting took place at street junctions. Defenders often consisted of groups of four to seven persons at a junction. Heavy aerial or artillery bombardment did not cause them to retreat. Instead, they sought shelter in nearby basements. Most were armed with AK assault rifles and RPGs. Preferred firing positions were third to fifth floors of buildings overlooking key junctions, if such positions were available. When buildings or junctions were about to be seized, defenders often left a single fighter behind to continue to annoy and slow the Israeli advance. These were suicide missions, but most of the fighters in Sidon and Ayn el-Hilwe seemed prepared to die in any case.

FIRING FROM ENCLOSURES

In Ayn el-Hilwe, much more than in the old city, the camp's structures had many loopholes that were well camouflaged and were used heavily. The density of the structures made the discovery of these apertures even more difficult. In old Sidon, but more so in Ayn el-Hilwe, firing from windows was also common, and grenades were often lobbed over backyards.

MOVEMENT WITHIN BUILDINGS

The IDF's doctrine for movement inside buildings addresses the problem of moving in and clearing buildings held partly or wholly by hostile forces. Movement within buildings under IDF control is not a matter of primary concern in doctrine, since Israeli military thought focuses on rapid movement forward of the front.

No system of PLO movement appeared systematic, and it is unknown whether the PLO developed or disseminated doctrine on movement within buildings.

MOVEMENT AMONG BUILDINGS

The IDF practice of moving among buildings stresses that secure movement must be effected near walls in echeloned formation to exploit natural cover. Open areas are crossed by running, with distances of 7 to 10 meters between soldiers. Doors and windows are covered by another unit.

Areas that were "secured" did not remain secure. It is difficult to prevent infiltration and reoccupation of "cleared" buildings. This was particularly true in the camps, where the confused street and building patterns were magnified by the extensive area that had to be cleared (as opposed to Sidon, which was also densely built up but where the sector defended by the PLO was much less extensive). Battles for control of buildings, areas, and streets were constantly refought. Companies lost unit integrity as subunits became separated and disoriented in the densely built-up areas.

SUBTERRANEAN OPERATIONS

Tunnels and underground movement were not factors in Sidon but were a consideration in Ayn el-Hilwe, where well-prepared defensive positions were linked by subterranean passages in some cases. Such tunnels allowed resupply and intelligence gathering, as well as movements that allowed PLO forces to appear at the rear of IDF units inside the camps.

USE OF STREET PATTERNS

The main attack on the primary north-south road through Sidon moved along two parallel streets simultaneously--the major road and a smaller, parallel road to the east that abutted the western end of Ayn el-Hilwe. Such use of streets is highly characteristic of IDF practice in cities.

RUBBLE AND TRAFFICABILITY OF STREETS

Rubble did slow the attack. Because of the massive destruction in Ayn el-Hilwe, there was a considerable amount of rubble, most of it caused by artillery.

There was less difficulty with rubble in Sidon. In neither case was the effect of the rubble significant on combat operations.

BARRIERS AND BARRICADES

Defenders used barriers and barricades to block movement. In the city of Sidon, combat engineers moving along with or in front of the attacking troops removed these barricades with bulldozers. Barriers and barricades consisted of a wide variety of materials, including wood and trees, stones, barrels of stones, and some vehicles. These barricades were hastily constructed and had little effect. In at least one case, there was an attempt to crater a road with explosives, but it failed.

MINES

The PLO had an enormous stock of mines of various types, but very few were used. As in other aspects of the military operation, the lack of command coordination and the haste of preparations reflected poor professional conduct of the senior PLO command. As previously noted, no mining of the bridges over the Awwali or Zahrani Rivers appears to have been attempted. Certainly, the bridges were intact when captured by the IDF. The mines used in Sidon were generally thrown about and covered, not buried. Consequently, they were very easily identified. Most were quite small and weak, and the Merkava tank was affected very little by them (although mobility kills were possible). In fact, mines did not concern the IDF once the operation was underway and it became clear that they were not seriously used.

SNIPERS

Attacker

The IDF used sniping in Beirut but used little organized sniping in the southern cities. To defend against individual snipers, the IDF ground forces often used bazookas effectively.

Defender

Individual riflemen acting as snipers, were ubiquitous in Sidon and in Ayn el-Hilwe. (Few, if any, of these snipers were trained experts with special weapons.) In terms of the goal of reducing Israeli forces, sniping was the single most effective technique in the camps. (No IDF were killed in action in the city.) In Ayn el-Hilwe, snipers had to use lower floors because most buildings from which the sniping occurred were quite low. Substantial concern was voiced among Israeli troops about the throwing of hand grenades from upper floors and over backyard fences.

ANTITANK OPERATIONS

RPGs were ubiquitous among the Palestinians in Sidon and Ayn el-Hilwe. Although a systematic doctrine on roving antiarmor teams was not evident, the use of such weapons by small groups of fighters was perhaps the most common antitank tactic. The known vulnerability of APCs to AT weapons caused the IDF to keep them behind the lines when possible.

SNOKE

Smoke was not used by the defenders. The IDF used smoke candles as a deterrent to sniping, since the candles forced snipers to shoot blindly into the smoke, substantially reducing the chances of hitting anyone. This technique was relatively effective but was not repeated on any scale in Beirut.

FLAME

Attacker

The IDF did not use flame among the ground forces. However, in an attempt to persuade the fanatic followers of Ghanim to surrender in Ayn el-Hilwe, the Israeli commander did order the use of napalm. The desired effect was not achieved.

Defender

The use of flame was not recorded.

NIGHT FIGHTING

There was little night fighting in Sidon or Ayn el-Hilwe. However, there was a good deal of activity at night. Many of the Israeli combat engineer operations were conducted at night behind safe lines, and the Palestinians used darkness to move forces into new positions safely.

The IDF commander in Sidon and Ayn el-Hilwe believed that his forces might be under severe handicaps in densely populated areas largely unknown to them at night. Consequently, IDF forces were withdrawn from built-up areas not completely secured before nightfall. As a consequence, there was very little real night fighting.

COMMAND ORGANIZATION

Attacker

IDF command and control have already been discussed in general. Colonel Yitzhak Mordechai, commander of the coastal task force that moved north from the Israeli border, was in overall command of the forces that completed the capture of Sidon and Ayn el-Hilwe. The initial penetrations were subject to the command and control of the commanders of those task forces (for the northern front, General Yaron; for the eastern front, Colonel Avigdor Kahalani). All of the activity in the area fell under the authority of the general officer commanding the northern area command, General Amir Drori, but division task forces operated with almost total independence subject to General Drori's overall guidance. This guidance, under the circumstances, served to a great extent as the strategic translation of heavily debated political decisions made in Jerusalem. (The problem of lack of a consensus among government leaders, however, did not affect the fighting in and around Sidon; it arose only later as the IDF neared Beirut.)

Task organization of forces is a common practice in the IDF, as noted previously. In Sidon, tanks and SPA (155mm) were commonly attached to infantry companies and placed under their command, remaining so for considerable periods. This tactical flexibility at lower levels of command obviated the need for the IDF to undertake complex coordination and minimized superfluous movement of forces. Relatively small units, such as companies, operated with substantial independence in their sectors. Junior officers were expected to use discretion and to adapt to circumstances without involving superior officers. The independence of junior officers also prevented overloading communications networks and jamming them in critical moments.

Tanks and SPA carried their own food and water, but when necessary, they could also be supplied by infantry units to which they were attached. Additional supplies and ammunition followed in personnel carriers well behind the lead elements.

Engineers played a major role in the combat in Sidon. D-9 bulldozers were used extensively in Ayn el-Hilwe and in the center of the old city. Engineers provided their own security for some of these operations including engineers in the IDF train with combat forces and the engineering plan is an annex to the overall plan of attack.

Defender

PLO command and control was lost in the early stages of the battle, as the senior commander fled. He was the primary link with the PLO HQ in Beirut, so his departure caused a breakdown in local command and control and in communications with Beirut, as well. From this point, well before fighting actually began in Sidon or Ayn el-Hilwe, Beirut HQ ceased to be informed, except in the most general way, about the course of combat in the city or camps.

The principal PLO and PLA unit in the area, the Kastel Brigade, collapsed before the onset of combat in Sidon. Sidon lies near rivers in the north and south. Yet, despite the time required for the IDF to capture Tyre and continue

its move northward, to land amphibious forces north of Sidon and move southward, and to move through rugged, mountainous terrain with an armored force, the bridges over the nearby rivers were intact, and no serious effort was made to exact a heavy toll of the force moving through the mountains. The urban battle, particularly in the camps, was conducted by irregulars forming a kind of home guard or militia. There was little or no organized command and control per se, but leaders emerged during the conflict who seemed to take charge on a largely extemporaneous basis. The clearest example was the Muslim fundamentalist clergyman, Haj Ibrahim Ghanim, who served as the principal organizer and leader of the resistance in Ayn el-Hilwe.

COMMUNICATIONS

Attacker

The IDF signal corps was deeply and directly involved in planning the overall campaign, and network planning, composition of forces, and selection of control locations were all considered in the communications annex to the general plan. Communications netting followed classical lines, but task force regrouping, such as that described previously, required modifications and extension of the IDF communication network to facilitate the coordination among armor, artillery, and infantry. Because of the rate of advance, heavy equipment for communications with rear echelon forces was placed at the front with battalion signal corps officers. (One result was an increase in casualties of key communications officers.)

The IDF used the AN/PRC-77 radio and other standard military communications equipment. All Israeli equipment is amenable to cypher, and communications security (COMSEC) was closely observed, especially with a double cypher system. A large part of the IDF communications in this campaign was digitally based.

Defender

Little is known about PLO communications in Sidon or Ayn el-Hilwe. Appearances suggest strongly that they were secondary to individual and small group initiatives. Some radios, including CB (citizens band) radios, were used at least in Ayn el-Hilwe. Some radio communications probably continued on a sporadic basis with PLO HQ in Beirut, as well, but the flow of information between Beirut and Sidon must have been severely affected by the poor state of communications within Sidon and Ayn el-Hilwe.

The PLO had a wide variety of commercially available, and some military, communications gear. However, COMSEC was observed very unevenly among PLO forces. Nevertheless, the speed of the campaign through Sidon was such that little interception took place, and it was of marginal importance in the overall conduct of the battle.

INTELLIGENCE

Attacker

IDF intelligence about the city of Sidon was excellent. Informers had provided accurate information about arms caches, headquarters and OPs, and in some cases, even firing positions. Some information was also available about Ayn el-Hilwe, but it was less precise inside the camp than on the outskirts of the camp, and it referred more to arms caches than to organizational sites or key structures.

The Israelis understood well the objectives of the Sidon PLO military organization and knew its strengths and weaknesses. Most of this information was of little use simply because the PLO collapsed before the battle, and much less information was known (or was available) about the ad hoc defense that resulted, especially in Ayn el-Hilwe.

Defender

Defender intelligence about Israel was virtually useless. Despite the numerous reports and solid evidence of an impending major Israeli assault, and at least the clear possibility that such an assault might be a full-scale attack on all PLO assets in Lebanon, PLO leaders appear to have believed to the last (although they often said the contrary) that if the IDF actually did attack in Lebanon, it would be on a limited basis similar to the invasion of 1978.

PSYCHOLOGICAL OPERATIONS

Attacker

Both strategically and tactically, the Battle of Sidon is a fascinating example of PSYOP in urban warfare.³ From the strategic point of view, the city was to be captured in such a way as to psychologically influence the overall campaign. Moreover, the nature of the attack was also designed to affect the resistance in Sidon. The IDF planned and used a wide variety of PSYOP techniques. Ironically, overlooking or underrating a major psychological variable led to Sidon's becoming a major battleground, something the IDF had wanted to avoid. Quickly isolating Sidon and striking toward the primary objective of Beirut was intended to demoralize the PLO defenders in both cities. The IDF anticipated that the psychological shock of this maneuver would precipitate a quick PLO collapse with minimal actual combat. Initially, the concept was successful. However, the unexpected level of resistance in Sidon encouraged the PLO forces in Beirut to stand and fight. Moreover, the Sidon battle delayed reinforcement of the IDF spearhead advancing on Beirut. The delay gave the PLO in Beirut time to organize their defenses. Having lost the

³See Katz and McLaurin (1987) for a more detailed survey of the overall Israeli PSYOP experience in Lebanon.

opportunity to quickly seize Beirut, the IDF refused to resort to a potentially costly, full-scale attack. Tactically, the PSYOP techniques used in Sidon were of little value--again, ironically, for psychological reasons unforeseen at the time the attack was planned.

Some IDF planners believed that a lightning move through the South, one that left the impression that the South with its camps and cities had fallen, would demoralize the PLO in Beirut. Observers in Beirut suggest that the stunned PLO leaders and men there were quite demoralized as the spearhead of the IDF column neared the city. However, the Israelis stopped at the outskirts of Beirut and did not resume their forward movement for several days. This hesitation may have been partly because of new political problems in Israel or international pressure, but it was probably also a function of the delay in opening the road through Sidon to supplies and in mopping up resistance in Ayn el-Hilwe. This delay made a critical difference to the PLO in Beirut. Morale soared as a better understanding of the determined defense of the camps came to be known and as a conviction grew that the IDF would be unwilling to accept the level of casualties necessary to capture Beirut.

Much of the Lebanese campaign was a PSYOP rather than a purely military campaign. That is, the nature of the approach was designed to secure the military objectives without having to bear typically military costs in personnel and equipment. In the case of Sidon, for example, the IDF had excellent intelligence about the command and control of the forces present, about headquarters locations and major weapons positions, and about arms caches. The same intelligence existed with respect to all major PLO force units in the South of Lebanon. With this database, the campaign was planned to divide these units through rapid IDF movements that would soon dissolve any possibility of command and control or any semblance of organization or cohesion. The goal was to bring about the collapse of the force structure with a minimum of actual combat and a maximum of psychological pressure. It was a good and effective strategy; the Kastel Brigade around Sidon collapsed before the Battle of Sidon began.

Aware that the PLO depended on its shield of the noncombatant population and that the PLO believed that the IDF was sensitive to civilian casualties, the IDF discovered that it was important to separate combatants from noncombatants. To this end, messages were developed before the invasion that warned civilians and noncombatants and encouraged them to separate themselves from the combatants and, when possible, to proceed to specific locations that would be shielded from hostilities. Moreover, essentially standard surrender and defection propaganda messages were prepared to take advantage of the fear that the nature of the Israeli attack was expected to engender in many of the defenders. The IDF used leaflets, loudspeakers, and radio--the standard vehicles--to disseminate these messages. Warnings that bombings were to commence within specified periods were expected to generate substantial movements of the civilian population, but these warnings actually produced waves of movement that frequently came after, rather than before, combat operations and that therefore interfered with movement of troops and supplies or forced the cancellation of air attacks.

Israel also exploited the capture and cowardice of PLO leaders in an attempt to discredit and demoralize the PLO in Beirut. (It was never intended that this campaign would have much tactical effect in Sidon, but there are indications that PLO morale was adversely affected by the embarrassing behavior of PLO leaders.)

One interesting use of PSYOP was the concerted effort to dissuade the defenders in Ayn el-Hilwe from continuing their futile resistance there and to persuade them to surrender. The IDF commander used delegations of village notables, PLO prisoners captured earlier who were believed to have credibility, and a combined delegation of notables, prisoners, and children--all to no avail. He also arranged a demonstration of Israeli firepower, having the IAF come in on a prearranged schedule to destroy an area previously identified and suggesting that this was to be the fate of the holdouts in Ayn el-Hilwe. Because the resisters included many noncombatant civilians (most held against their will), part of the objective was, to at least persuade the defenders to allow some civilians (e.g., the children and women) to go. The IAF demonstration was impressive and became all the more so when the obliteration of a section of the camp was followed by napalming. (Fire is an especially unwelcome way of death in Arab culture.) The commander called on the services of a group of Israeli psychologists flown in specially from Israel, but they had no real answer to the problem either.

A consistent shortcoming of Israeli PSYOP vis-à-vis the PLO reflects Israeli prejudices. It is easy to contrast IDF PSYOP targeted at the Syrians with most of that aimed at the Palestinians, for example. The former tended to treat the enemy as an honorable military professional. The latter, by contrast, rarely rose above considering the PLO as a terrorist organization. This problem, a classic PSYOP problem affecting all users, reflects the inability of an engaged and mobilized staff to forget its own biases and to remember that in PSYOP as in other military missions, it is achieving goals that is important. PSYOP goals can only be achieved through communication, and to effect communication, one must open the channels and establish contact. This is not likely to be accomplished if one fails to recognize and accept, for the purposes of communication if not politics, the self-image of the target audience. Messages that do not transcend the concept of the PLO as a bunch of terrorist rabble are unlikely to have any psychological effect.

Defender

There was little cohesive defender PSYOP in Sidon directed toward the IDF. In part, this is a function of the collapse of the PLO and the PLA at an early stage of the campaign. In part, it is also a result of traditional Arab lack of understanding of, and apathy toward, Israel, Israeli values, or Israeli objectives. It is the mirror image of Israeli shortcomings vis-à-vis the Palestinians. One element of PSYOP is implicit in the urbanized defense, however. Clearly, the construction of a defense in the heart of the old city of Sidon was designed to communicate to the Israelis that they would have a high price to pay if they moved as far north as Sidon and that they had better be prepared to take heavy casualties to capture the city. Apart from this message, which can be viewed as a deterrent, we are left with PSYOP directed to other audiences by the defenders.

The PLO was primarily concerned with PLO survival. Consequently, in Sidon and in Beirut, heavy emphasis was placed on the duration and determination of the resistance. While much of the substance of the communications was false (some of it may have been thought to be true at times), a constant theme of continuing resistance and victories over the Israelis was evident in communications allegedly emanating from Sidon. Beirut PLO reports on the resistance were even

more effusive. While the facts were often erroneous, the reality of the resistance substantially exceeded anything most Israelis foresaw.

It is reasonable to consider PSYOP aimed at the outside world by the PLO to influence public opinion. While it is certainly true that Sidon and Ayn el-Hilwe were both exploited heavily for these purposes--so much so that Israel tried to compensate on similar grounds and did not do as well--it is also true that this was not a Sidon operation. It was guided much more from and for Beirut PLO and regional PLO purposes and followed the actual Battle of Sidon. Consequently, we shall not consider it here.

Palestinian PSYOP was also directed toward the defenders. But the defenders in Ayn el-Hilwe and to some extent in Sidon as well, were very highly motivated, something not expected by the IDF command. Even though a number of senior Israeli intelligence experts warned that previous experience showed that the Palestinians would fight when they thought their backs were against the wall and particularly when they were protecting their families and homes, the command and most IDF officers took little heed of these warnings. In fact, the warnings were in advance, because the difference between the PLO and the PLA forces that collapsed and ran and the home guards who fought to the end was precisely that the latter felt that their backs were to the wall and saw themselves as protecting the lives and honor of their families.

As Haj Ibrahim Ghanim assumed leadership of the defense of Ayn el-Hilwe, he developed the cry "Victory or Death," a message that clearly indicates that defenders must be prepared to make the ultimate sacrifice. It should be noted that Ghanim and the defenders of Ayn el-Hilwe were not Shi'as, a Muslim sect known for its self-sacrifice and oriented toward martyrdom from an early age. They were all Sunnis (i.e., members of what is generally considered the "orthodox" branch of Islam), a sect little known (except among its fanatics, who resemble religious fanatics everywhere) for bravery or martyrdom. Nevertheless, Ghanim seems to have whipped up his followers to a level near hysteria. Certainly, he gave them the highest motivation. Those who were not motivated to follow his injunction were threatened with death; in fact, death sentences were meted out to many. To block communication of Israeli PSYOP, Ghanim's followers used drums or began firing weapons or even hitting pots and pans whenever the Israelis used loudspeakers to assure surrenderees of safety. He also used rumor effectively, spreading stories of widespread Israeli rape and murder of those who had surrendered elsewhere in the city. "The Israelis," he said, "take no prisoners." As the Israeli commander used powerful images of the senses, so did Ghanim. In one case, he is reported to have had children shot in front of horrified parents, after the parents begged him to allow the children to leave. A measure of his effectiveness was that even the struggle against the last few strongholds in the camp--probably after Ghanim himself had already been killed--were met with absolute refusal of anyone to surrender and with the defiant cry, "Victory or Death!"

MEDICAL OPERATIONS

Medical operations of the IDF in Lebanon have been discussed in a previous report about the battle of Beirut (McLaurin & Jureidini, 1986, pp. 69-72). Little is known about PLO medical operations in the Sidon battle.

AIR OPERATIONS

There were eight types of air operations. The IAF flew cover for the amphibious landing north of the Awwali, an uneventful undertaking. Later, it conducted preparatory softening up of some positions before the general attack on Sidon. A third mission type was close air support during the difficult battles for the city. Fourth, more intensive bombing of areas of the city and especially of the camps, particularly Ayn el-Hilwe, was required. A fifth activity was PSYOP, described in the Psychological Operations section of this chapter. Sixth, the IAF defended the skies over the entire operation against Syrian fighters. There was minimal Syrian involvement in the South, but the Syrians did engage IAF fighters briefly near Sidon and even near Tyre. Seventh, troops and equipment, in particular, were transported by helicopter around the bottleneck that developed in Sidon. Eighth, rotary-wing aircraft were used for MEDEVAC.

Air support was very effective in Sidon in several of the roles just mentioned. The PSYOP effect may be debated, although some observers believe that it was significant in reducing the level of resistance to the most determined defenders. The air power delivered in support of the breakthrough forces when the north-south road was finally opened was significant, accurate, and perhaps decisive in accomplishing the opening of the road, although ground forces personnel tend to dispute the real value of air power.

NAVAL OPERATIONS

Naval artillery was used against the port area, but this was not a particularly decisive element of the campaign. The more important naval activities were patrolling the coast to cut off resupply, escape, and reinforcement and of course, the amphibious landing to the north of Sidon. However, the northern forces, while they played an important role in the battle by cutting off Sidon both physically and psychologically, did not play a very important role in capturing the city or the camps. In general, the naval role was less important in Sidon than it was in Beirut.

OUTCOME

Israeli forces controlled the city of Sidon and its environs, including Ayn el-Hilwe, within 1 week of the outbreak of the war. At this time, civil affairs activities began in earnest to try to win the "hearts and minds" of the Lebanese to support Israeli policy and to remain positively oriented toward Israel. In general, however, Israeli civil affairs activities were a failure in Lebanon. While it may be argued that this is a function of IDF inexperience in the field of civil affairs, it is more likely that the failure resulted from the contradictions of overall Israeli policy toward Lebanon; the internal differences within the Israeli policy and operations apparatus; the internal schisms in Israeli public opinion; and the deep divisions in Lebanon itself.

The tactical military outcome of the Battle of Sidon cannot be doubted. Israel scored a clear-cut military victory with minimal personnel or equipment costs. The political outcome is less clear-cut. Moreover, even the strategic assessment of the Sidon battle must be weighed against the effectiveness with which outnumbered, disorganized, and hopelessly doomed Palestinian irregulars in the camps succeeded in delaying the IDF timetable for the attack on Beirut. This was a considerable military accomplishment realized despite, rather than because of, the PLO.

VII

FINDINGS AND CONCLUSIONS

This chapter presents findings and conclusions based on interviews and questionnaires completed and on the literature surveyed. The findings presented here are not a summary of previous chapters of the report; they are assessments drawn by participants or observers for the most part and as such, stand apart from the earlier more descriptive chapters.

WEAPONS

Small Arms

Both sides used rifles for the substantial close combat that occurred in Sidon and Ayn el-Hilwe. Rifles were not a critical weapon in the outcome, but Palestinian sniping had a delaying effect out of proportion to the resources invested. Despite scant attention given to small arms, more than one-half of all IDF casualties came from small arms fire.

Machine Guns

Little information was collected about the use of machine guns in Sidon. The experience in Beirut demonstrated that machine guns were used relatively effectively by PLO personnel (in contrast to their ability to use other systems) but that even the PLO fighters in Beirut, who were better trained than those in Sidon, often displayed poor gunnery and fire discipline.

Grenades

Hand grenades were used extensively by both sides. The IDF used grenades in mop-up operations, but carefully limited their use of this weapon in built-up areas under other conditions. Palestinians lobbed hand grenades from upper floors at tanks and SPA, sometimes ran behind tanks and tossed grenades at them, and in the camps threw grenades from yard to yard.

Antitank Weapons

The proliferation of RPGs among the Palestinians was such that the weapon was used virtually everywhere in the city and camps. RPGs were fired against vehicles and against fixed positions. Effectiveness depended largely on the target, but frequent mention by IDF personnel suggests that they had a pronounced psychological effect on armored personnel. No consistent information about the use of AT missiles or recoilless rifles was obtained.

Mines and Explosives

Palestinians used mines to delay the IDF advance and to cut off IDF units from support. Despite the enormous quantity and variety of mines available in weapons' stores in the Sidon area, mines were used rather ineffectively. They were generally not laid with any care but were strewn on the surface and perhaps covered with something. Clearing was easy, quick, and effective. In Sidon and in the camps, individual Palestinians or groups sometimes placed mines on the roads or paths taken by IDF armor but behind lead units with the purpose of cutting off paths of retreat or preventing reinforcement. For the most part, these tactics were of no avail.

The poor use of mines, particularly the failure to mine roads and other critical LOCs before an engagement, surprised IDF personnel who had anticipated much more effective use of mines.

Explosives (demolitions) were put to great use by the attackers in the battle, particularly in Ayn el-Hilwe where the most stubbornly defended positions--defended literally to the death--were finally destroyed with explosive charges rather than artillery, armor, or aerial bombardment to which they had shown themselves resistant. Smaller charges were used to breach walls, also with relatively good effect.

Armor

Although the PLO had a number of tanks, its armor was not used in Sidon or Ayn el-Hilwe. The IDF, however, used its armor extensively in both areas, with better results in Sidon than in Ayn el-Hilwe. The armor was not entirely ineffective in the camp, but it did encounter even greater mobility problems there than in the city.

Many armies believe that the tank is a much greater liability than an asset inside cities. IDF doctrine and experience run counter to this credo, even though the Israelis have also had their painful experiences with tanks in built-up areas. The tank plays a principal role in IDF urban warfare doctrine, particularly for reducing enemy hard points, for suppressing enemy harassing fires from structures, in some cases for breaching walls (limited by the nature of the wall), and often for psychological effect.

The firepower of the tank is not the only asset it brings to city fighting in Israeli experience in Sidon. For example, the infantry moving with tanks used the tanks' laser range finders to range its own weapons, and the Israeli-developed Merkava tank served as a vehicle for evacuating wounded personnel from built-up areas.

Israeli military leaders are much more cautious in their use of APCs than in their use of tanks. They did not believe that APCs were properly equipped or sufficiently armored for city fighting. Therefore, APCs were used for transporting equipment and supplies only and were kept behind the front lines.

The APC role in Sidon was negligible, but the delay at Sidon had a marked effect on the ability to deliver the necessary APCs northward when needed to move in a timely manner toward Beirut.

Artillery was considered by many Israelis to be a critical component of the Battle of Sidon. In particular, artillery used in its direct fire (or flat trajectory) role was singled out as the most effective means of suppressing enemy fire from buildings and of breaching walls (particularly in cases when the walls were too distant or too well covered for the use of charges). Artillery was used to deliver extremely high volumes of fire on point targets, and indirect fire was also used extensively in the camps.

The PLO had many Katyushas (multiple rocket launchers) and some tube artillery around Sidon at the outset of the battle. However, the initial IDF movement into the area quickly neutralized much of the artillery. Katyushas were often mounted, as in Beirut, on truck beds, but Sidon is a much smaller city than Beirut. From the outset, the lack of hundreds of alternative escape routes combined with the narrow confines of the area greatly constrained the value of Katyushas in Sidon.

Mortars

Observers and participants placed much greater emphasis on the value of mortars in Sidon than they have in other battles we have studied. They believed them to be a valuable psychological weapon. Both sides used mortars, but Israeli forces seem to have been significantly more accurate in their use. Many heavy mortars (160mm) were captured in Ayn el-Hilwe, but all sizes were encountered.

Antiaircraft Artillery

The IDF's use of the 20mm Vulcan in direct fire against ground targets was deemed extremely valuable by IDF participants and observers. The Vulcan was a singularly effective means of suppressing hostile fire from structures.

Palestinian antiaircraft artillery was used only briefly before most of it was knocked out. It was wholly ineffective against aircraft but had some remaining utility against ground targets. However, Palestinian antiaircraft artillery assets in the city of Sidon were not as extensive as were those in Beirut, and they were not protected by the extensiveness of the built-up area. SAMs fired against aircraft in Sidon were completely ineffective.

Air-Delivered Munitions

Even though the IAF refrained from using its heaviest bombs, the cumulative effect of iron bombs and of some smart weapons (e.g., the Maverick) provided outstanding close air support of assaults, especially in Sidon itself. The IAF was much less effective in Ayn el-Hilwe, even though much ordnance was used against the camp.

Naval Gunfire

The primary role of the INF was outside the city. Naval gunfire was directed against some locations in Sidon, particularly near the port, but overall, the importance of the navy in actual combat operations in the city was negligible by contrast with that in Beirut.

TRAINING

The effectiveness of IDF training in combined operations in general, and MOUT, in particular, was visible in the city fighting in Sidon. Those units with the greatest training and experience appeared to be more confident and to better understand the hazards of city fighting. Coordination of combat, combat support, and combat service support functions, which had been exercised in training operations, was excellent. The key role of engineers and medics, for example, and the interplay between armor, artillery, and infantry were critical factors in the military effectiveness of Israeli forces in Sidon.

The collapse of the PLO in Sidon from the earliest days of the battle there precludes an analysis of PLO doctrine; it was not applied, if it exists. However, the stubborn fighters in Sidon and the camps, most of whom were not PLO regulars, showed once again that a few defenders, without doctrine and with severe constraints on movement, firepower, and support, can translate determination and sacrifice into military staying power in cities. Their on-the-job training reflected the value of a force that knows its urban environment well and can operate comfortably within it, even if cut off from outside sources of supplies and support.

COMMAND, CONTROL, COMMUNICATIONS, AND INTELLIGENCE (C³I)

IDF ground forces' doctrine stresses flexibility in organization and decision making. The attachment of armor and SPA to infantry units typifies this flexibility. Given that small units must operate with substantial autonomy in urban combat, the Israeli approach has some inherent advantages for that type of conflict.

Rarely has the importance of the quality and quantity of intelligence been more visible than in the contrast between the PLO and the IDF. The IDF was aware not only of likely PLO behavior but also of major positions, headquarters, and OPs of the defender. The PLO collapsed as a result of its own grossly inadequate assessment of IDF intentions.

MEDICAL ORGANIZATION

The IDF Medical Corps was particularly concerned about the possible urban combat that Israeli soldiers would encounter. Several changes were made in the medical organization, as a result of the lessons learned from the 1973 war and 1978 campaign in Lebanon and as a result of the urban combat concerns. Sidon

area casualties were limited by virtue of the nature of the operation and the excellent strategy that led to it. There were no KIAs among the IDF during the fighting in the city of Sidon, which is remarkable, but there were KIAs as a result of WIAs during that fighting. The bitter battle for Ayn el-Hilwe was more costly, but losses were considerably fewer than those the IDF was to suffer in Beirut.

ENGINEERS

The performance of the IDF combat engineers was remarkable and extremely valuable in Sidon. Observers remarked that aside from the excellent preparation afforded by training along with regular combat troops, the effectiveness of the engineers in the urban environments could not be overemphasized. Many strongly recommended an even greater effort to increase the numbers of combat tractors and bulldozers for future urban operations.

PSYCHOLOGICAL OPERATIONS

Israeli PSYOP demonstrated considerable sophistication in Sidon in several ways and a surprising lack of sophistication in basics such as message composition. Management of the substantial civilian population caught in the city during the battle was probably as good as can be expected during wartime, but follow-up PSYOP and civil affairs programs were woefully inadequate. Combat troop training for noncombatant aspects of military operations in the city, other than fire discipline, was insufficient but no less so than in other armies. In general, even those armies devoting considerable time to MCUT training do not address the key area of psychological operations and civil affairs, despite the fact that the residents of a city are generally its most important resource and are very often the target of the battle in the sense that it is their support or behavioral change that is sought.

VIII

REFERENCES

- Jureidini, P. A., & McLaurin, R. D. (1982). Aperçu of combat in Sidon, Tyre, and Beirut, summer 1982. [Special Report]. Springfield, VA: Abbott Associates, Inc.
- Katz, P. P., & McLaurin, R. D. (1987). Psychological operations in urban warfare: Lessons from the 1982 Middle East War (Technical Memorandum 12-87). Aberdeen Proving Ground, MD: U.S. Army Human Engineering Laboratory.
- McLaurin, R. D. (1987). The battle of Tyre (Technical Memorandum 15-87). Aberdeen Proving Ground, MD: U.S. Army Human Engineering Laboratory.
- McLaurin, R. D., & Jureidini, P. A. (1986). The battle of Beirut (Technical Memorandum 1-86). Aberdeen Proving Ground, MD: U.S. Army Human Engineering Laboratory.
- Schiff, Z., & Ya'ari, E. (1984). Israel's Lebanon war. New York: Simon & Schuster.

BIBLIOGRAPHY

- Arafat, Y. (1983). Am al-iamarat wa an-nar wa an-nur wa al-smal [Year of embers, fire, light, and hope]. Cairo: Dar al-mawqif al-'arabi lil-sihafah wa an-nashr wa at-tawzi.
- "Arafat on the Lebanon War." (1983, April-May). Shu'un filastiniyya. Journal of Palestine Studies, 12(4), 159-168. (Translated from the Arabic).
- Bettelheim, A. (1982, June 11). The ride to Sidon (Dairy of a Golani Unit's Battles). Ma'ariv, 13.
- Bloom, J. J. (1983, January/February). The Six Days-Plus-Ten-Weeks War: Aspects of Israel's summer campaign in Lebanon, 1982. Middle East Insight, 2(5), 45-55.
- Bourgi, A., & Weiss, P. (1983). Liban: La Cinquieme Guerre du Proche-Orient [Lebanon: The Fifth Middle East War]. Paris: Publisud. (French)
- Bulloch, J. (1983). Final conflict: The war in Lebanon. London: Century.
- Chamie, J. (1984). Days of tragedy, Lebanon. New Brunswick, NJ: Transaction. (French and English)
- Chamie, J. (1983). Days of wrath, Lebanon 77-82. Beirut: Author.
- The Civilians. (1982, December). IDF Journal, 1(2), 47-51.
- Claremont Research and Publications, Inc. (1982). The Israeli invasion of Lebanon press profile: June/July, 1982. Claremont, CA: Author.
- Clarke, G. M. et al. (1983). Strategic study: The 1982 Israeli War in Lebanon: Implications for Modern Conventional Warfare. Washington, DC: National War College.
- Cobban, H. (1984). The Palestinian Liberation Organization: People, power and politics. London: Cambridge University Press.
- Cordesman, A. H. (1982, August). The Sixth Arab-Israeli conflict: Military lessons for American defense planning. Armed Forces Journal International, 120(1), 28-32 ff.
- Cutter, P. S. (1983, February). "Lt. General Rafael Eitan: We learned both tactical and technical lessons in Lebanon." Military Electronics/Countermeasures, 9(2), 94-102.
- Davly, D., & Salpeter, E. (1984). Fire in Beirut: Israel's war in Lebanon with the PLO. New York: Stein & Day.

- Depuy, T. N., & Martell, P. (1985). Flawed victory: The Arab-Israeli conflict and the 1982 war in Lebanon. Fairfax, VA: Hero Books.
- Eshel, D. (1983). The Lebanon war, 1982 (2nd ed.). Tel Aviv: Eshel-Dramit.
- Gabriel, R. A. (1984). Operation peace for Galilee. New York: Hill & Wang.
- Gichon, M. (1982, December). The campaign. IDF Journal, 1(2), 11-29.
- Golani Brigade Members Interviewed on War Operations. (1982, July 2). Jerusalem Post Magazine, 10-11.
- Gutam, T. (1982, July). The "magic formula" of the F-16 pilots. Bit'a'on Heyl Ha-avir, 28, 6.
- Heller, M. A., & Tamari, D. (1983). The war in Lebanon. In M. A. Heller et al. (Ed.), The Middle East Military Balance 1983. Tel Aviv: Tel Aviv University Jaffee Center for Strategic Studies.
- Herzog, G. (1983). The Arab-Israeli wars: War and peace in the Middle East (rev. ed.). New York: Random House.
- Israel, Government of. IDF Spokesman's Office. (1982). Operation peace for Galilee. Jerusalem.
- Legum, C. (Ed.). (1983). Middle East contemporary survey (Vol. 6). New York: Holmes & Meier.
- Legum, C. (Ed.). (1984). Middle East contemporary survey (Vol. 7). New York: Holmes & Meier.
- MacBride, S., Falk, R. et al. (1983). Israel in Lebanon: The report of the international commission. London: Ithaca.
- Mas, B. (1982, September). Peace for Galilee: Main combat operations. Ma'arachot.
- McLaurin, R. D., Jureidini, P. A., McDonald, D. S., & Sellers, K. (1987). Modern experience in city combat (Technical Memorandum 5-87). Aberdeen Proving Ground, MD: U.S. Army Human Engineering Laboratory.
- Military communications in Lebanon War discussed. (1982, July 7). Bamahane, 22-23. (Hebrew)
- Orelli, P. J. (1983). Civil affairs requirements evident in the Israeli invasion of Lebanon. Carlisle Barracks, PA: U.S. Army War College.
- Pa'il, M. (1982, August-September). A military analysis. New Outlook, 25(6), 18-28.
- Rabin, Y. (1983). Ha-Milhamah Bi-Levanon [The war in Lebanon]. Tel Aviv: Am Oved. (Hebrew)

- Rabinovich, I. (1984). The war for Lebanon, 1970-1983. Ithaca, New York: Cornell University Press.
- Randal, J. C. (1983). Going all the way: Christian warlords, Israeli adventurers, and the war in Lebanon. New York: Viking.
- Sayegh, Y. (1983). Israel's military performance in Lebanon, June 1982. Journal of Palestine Studies, 13(1), 24-65.
- Sayegh, Y. (1983). Palestinian military performance in the 1982 war. Journal of Palestine Studies, 12(4), 3-24.
- Schiff, Z. (1984, February). The Palestinian surprise. Armed Forces Journal International, 121(7), 42-43.
- Weinraub, Y. (1982, December). The Media. IDF Journal, 1(2), 3-10.
- Wright, C. A. (1983). The Israeli war machine in Lebanon. Journal of Palestine Studies, 12(2), 38-53.
- Yermiya, D. (1983). My war diary. Boston: South End Press.

PERIODICAL SOURCES REVIEWED

Newspapers - English, daily

The Christian Science Monitor. Boston, MA.
The Jerusalem Post. Jerusalem, Israel.
The Los Angeles Times. Los Angeles, CA.
The New York Times. New York, NY.
The Wall Street Journal. New York, NY.
The Washington Post. Washington, DC.
The Washington Times. Washington, DC.

Newspapers - Foreign

Davar (Hebrew, reviewed in translation). Israel, daily.
Ha'aretz (Hebrew, reviewed in translation). Israel, daily.
Ma'ariv (Hebrew, reviewed in translation). Israel, daily.
L'Orient-LeJour. Lebanon, daily.
Le Monde (French). France, daily.
An-Nahar (Arabic). Lebanon, daily.
Yediot Aharonot (Hebrew, reviewed in translation). Israel, daily.

Journals - English and Foreign

Armed Forces Journal International. Washington, DC, monthly.
Army Quarterly and Defense Digest. Canberra, monthly.
Bamahane (Hebrew). Tel Aviv, monthly.
Fikr al-Istratigi al'Arabi (Arabic). Beirut, quarterly.
Halayyat (Arabic, English, and French). Beirut, quarterly.
Journal of Palestine Studies. Kuwait and Washington, DC, quarterly.
Maghreb-Machrek (French). Paris, quarterly.
The Middle East Journal. Washington, DC, quarterly.
Military Electronics/Countermeasures. Washington, DC, monthly.
Military Review. Ft. Leavenworth, monthly.
Strategic Survey. London, annual.

Other

Daily Report. U.S. Foreign Broadcast Information Service. Washington, DC, daily.
Joint Publications Research Service/Middle East North Africa.
Washington, DC, Joint Publications Research Service, occasional.

Interviews and Discussions

General Amir Drori, commanding officer, Northern Command. General Drori commanded the Israeli invasion of Lebanon (all elements except the Beqaa Forces Group).

Former commander of the medical corps of the IDF, who was responsible for military medical planning and who has a personal interest in medical matters concerning MOUT as a result of his having been chief medical officer for the southern front in 1973 (Suez City).

Former head of the psychological services branch of the IDF.

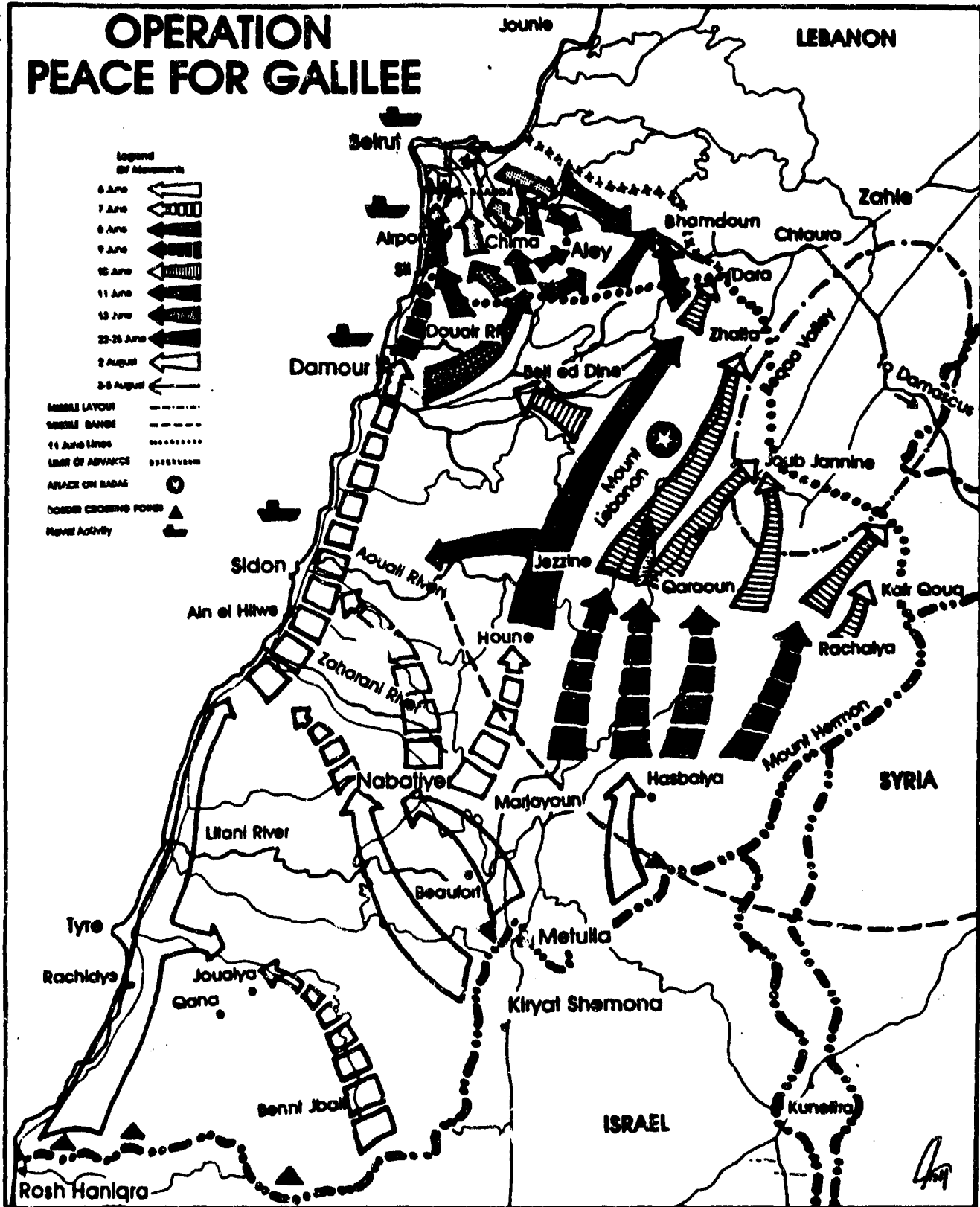
Two Israeli NCOs who fought in Sidon.

Mr. Ze'ev Schiff, defense editor, Ha'aretz. Mr. Schiff was present in Sidon during the combat in the camps, and observed this fighting from buildings in Sidon.

Two American observers, both with substantial military and analytical experience, who arrived in Sidon soon after the combat and interviewed Israeli, Palestinian, and Lebanese sources.

APPENDIX A
OPERATION PEACE FOR GALILEE (MAP)

OPERATION PEACE FOR GALILEE

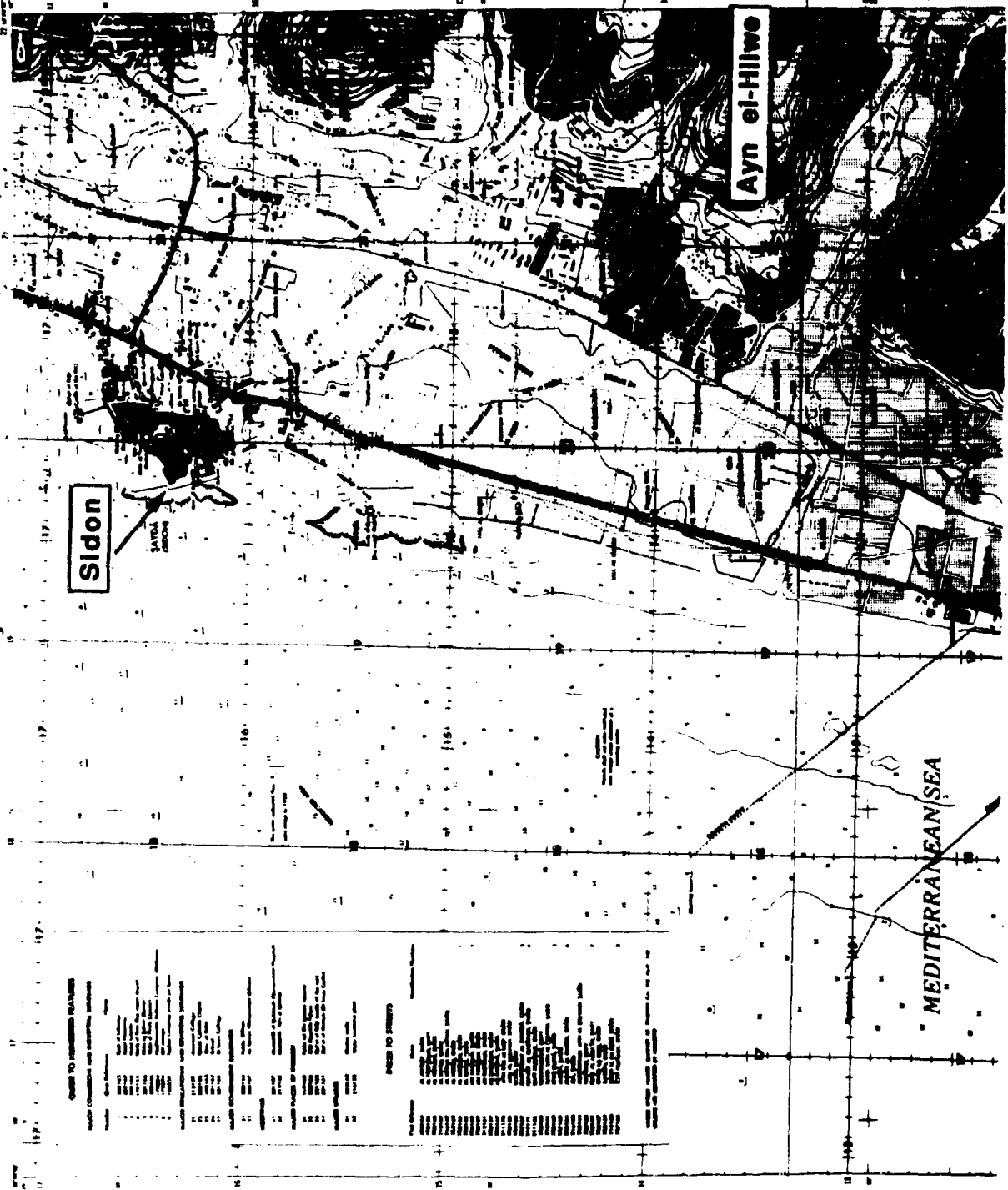


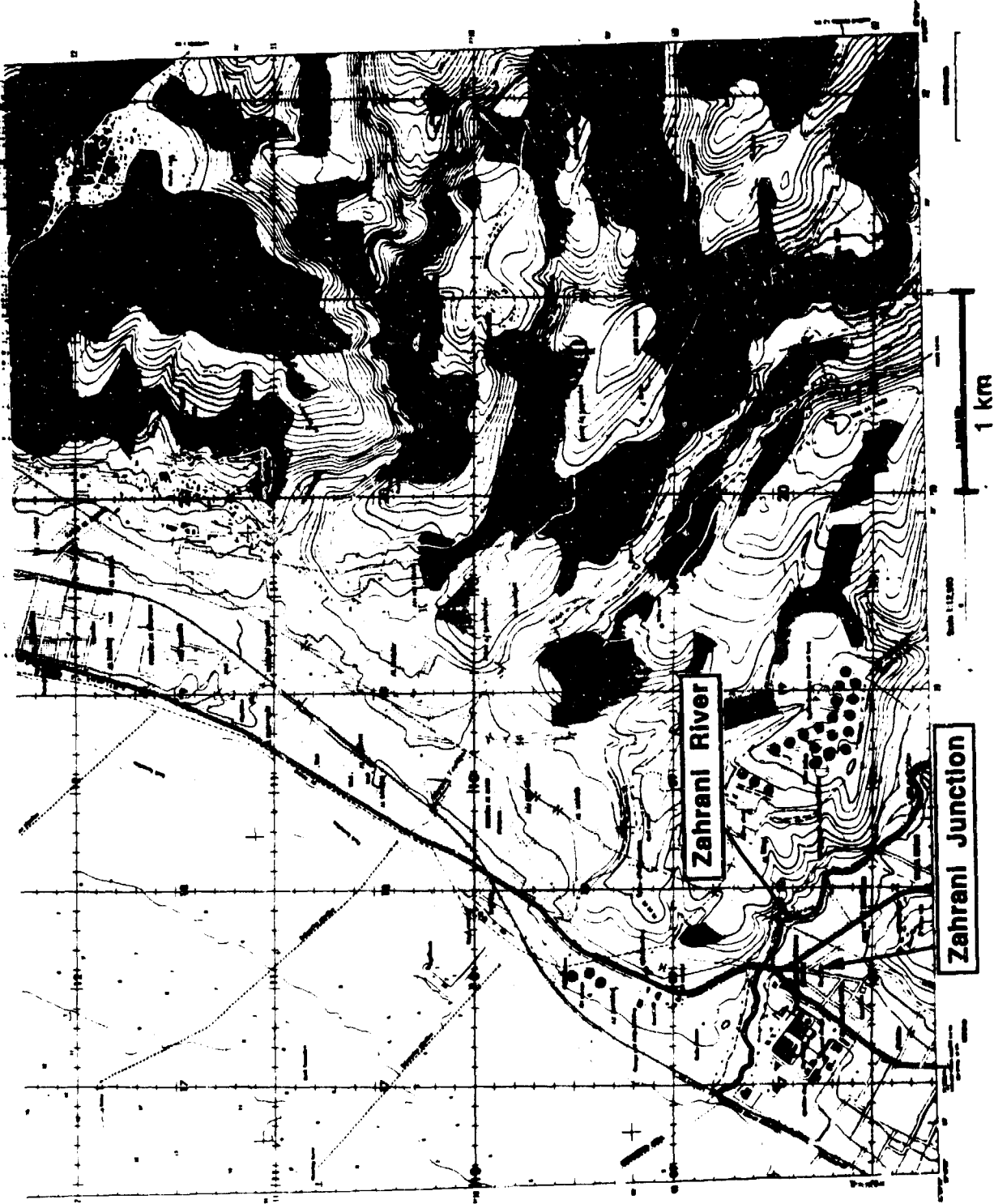
APPENDIX B
MAP OF SIDON (SAYDA)

3-IPC K921 SAYDA

SAYDA

LEBANON CITY MAPS 1:12,500





APPENDIX C

DATA COLLECTION INSTRUMENT AND INFORMATION

BATTLE OF SIDON

Planning and Tactics

1a. What appeared to be the tactical plan for the defense of PLO forces in Sidon? In the nearby camps? Where were defensive strongpoints located? How did these defenses relate to large, strong buildings? How did the defenses relate to key bridges and intersections?

1b. What was the tactical plan for the attack on Sidon? How did the IDF approach the built-up area? Enter it?

2. Had attention been given to the urban characteristics of the operation and how the IDF and the PLO might employ those characteristics?

3. Were equipment or tactical modifications made to armor, artillery, or other systems because of the urban environment?

Operations

4. To what extent was rubble a problem? How? How was it created?

5. How were buildings used offensively and defensively?

6. What tools, devices, or weapons were used? Provide estimates of quantities and manner of use.

7. Were barricades used? How? What was their composition?

8. Did personnel try to shoot through holes? How? With what? What was the effect on the target, the shooter, the aperture, and the room?

9. Was smoke used? How? Why? With what effect? How was it created?

10. Was flame used? How? Why? With what effect? How was it created?

11. Did noncombatants impede offensive or defensive operations? In what ways? To what extent?

12. Did noncombatants contribute to defensive operations? In what ways? To what extent?

13. Was the city prepared for defense? How? (Barricades? Tunnels? Wire communications? Demolitions? Etc.) Were the preparations effective? If not, why not?

14. To what extent and how were snipers used by attacker and defender? How effective were snipers? Was sniping integrated systematically into offensive or defensive operations? Were snipers used to delay an attack? Were snipers isolated?

15. Were roving antiarmor teams based on a defensive position used? How? With what effect?

16. How were snipers attacked or defended against?

17. How were parallel, perpendicular, and other dependent street patterns used in offense and defense?

18. Were topographical features exploited by the offense or defense? How?

19. How trafficable were streets after artillery shelling? Armor shelling? Mortars? Air-delivered bombs?

20. How did personnel move within buildings? Between buildings?

21. What were typical distributions and deployments of personnel within contested buildings (i.e., how many per floor or per building)? Which floors were preferred for which types of operations?

22. How were buildings cleared by the IDF (what techniques were used)? How was their security maintained once cleared? Were they reoccupied?

23. What was the organization of tactical units? Were problems observed in command and control that derived from either the organization of the units or from the city environment? What were they?

24. What was the organization for medical operations?

25. What appeared to be the PLO organization for medical operations?

26. What expedients were adopted in transportation, drugs, communications, hygiene, treatment of dead and wounded, evacuation, etc.?

27. How and to what extent did disease degrade operations?

28. How were casualties identified?

29. Break down types of wounds (% serious, % facial, % thoracic, etc.)

30. Identify causes of wounds (% artillery, % accident, % hand-to-hand, etc.)

31. Secondary wound effects a problem? What precautions were taken to guard against secondary wounds?

32. Can you answer any of these questions (26-32) for PLO forces?

33. What equipment was used by the PLO for communications? How were communications assets distributed among PLO personnel?

34. How much power did friendly and hostile communications equipment have? Were problems encountered in communicating as a result of structures or other urban phenomena?

35. To what extent did each party intercept the other's communications? What precautions were taken for communications security?

36. What notable successes and failures arose in communications?

37. What differences arose between night and day operations?

38. What types of equipment seemed to be most effective in suppressing enemy fire from buildings or other structures? What was most effective in suppressing friendly fire?

39. What types of equipment seemed to be most effective in breaching walls?

40. What types of equipment seemed to be most effective in stopping assaults?

41. Comment on employment, effects, and effectiveness of AT, mortar, and small arms. On PLO armor, AAA, and artillery. (See chart) Comment.

<u>System</u>	<u>Employment</u>	<u>Effects</u>	<u>Effectiveness</u>
Pistol			
Rifle			
Mach. Gun			
Hand Grenade			
RPG			
AT Missile			
Recoilless Rifle			
Mines			
Tanks			
APC			
Field Arty			
AAA			
Mortars			
Rocket Systems			
Bombs			
ASM			
Rockets			
Naval Guns			

42. Were energy or water source/supply for the defenders interrupted? Was the telephone interrupted? How? With what effects?

43. Was commercial telephone used by the IDF or PLO? How? How effectively?

44. What functions were performed by IDF helicopters and fixed-wing air support?

45. Were there sectors within the built-up area that were considered safe? What factors led to their status as safe?

46. Were there sectors of the built-up area free from AD?
Comment.

47. Were there any combat innovations you saw or heard about in Sidon that were singularly appropriate to fighting in cities? What are they? What was their effect.

48. Considering urban aspects of the battle, what would you do differently if you were faced with the same situation once again? That is, what lessons did you draw from the battle about fighting in cities?