



PROJECT AIR FORCE

CHILDREN AND FAMILIES
EDUCATION AND THE ARTS
ENERGY AND ENVIRONMENT
HEALTH AND HEALTH CARE
INFRASTRUCTURE AND
TRANSPORTATION
INTERNATIONAL AFFAIRS
LAW AND BUSINESS
NATIONAL SECURITY
POPULATION AND AGING
PUBLIC SAFETY
SCIENCE AND TECHNOLOGY
TERRORISM AND
HOMELAND SECURITY

The RAND Corporation is a nonprofit institution that helps improve policy and decisionmaking through research and analysis.

This electronic document was made available from www.rand.org as a public service of the RAND Corporation.

Skip all front matter: [Jump to Page 1](#) ▼

Support RAND

[Purchase this document](#)

[Browse Reports & Bookstore](#)

[Make a charitable contribution](#)

For More Information

Visit RAND at www.rand.org

Explore [RAND Project AIR FORCE](#)

View [document details](#)

Limited Electronic Distribution Rights

This document and trademark(s) contained herein are protected by law as indicated in a notice appearing later in this work. This electronic representation of RAND intellectual property is provided for non-commercial use only. Unauthorized posting of RAND electronic documents to a non-RAND website is prohibited. RAND electronic documents are protected under copyright law. Permission is required from RAND to reproduce, or reuse in another form, any of our research documents for commercial use. For information on reprint and linking permissions, please see [RAND Permissions](#).

This product is part of the RAND Corporation monograph series. RAND monographs present major research findings that address the challenges facing the public and private sectors. All RAND monographs undergo rigorous peer review to ensure high standards for research quality and objectivity.

Air Operations in
**ISRAEL'S
WAR AGAINST
HEZBOLLAH**

Learning from Lebanon and Getting It Right in Gaza

Benjamin S. Lambeth

Prepared for the United States Air Force

Approved for public release; distribution unlimited



PROJECT AIR FORCE

The research described in this report was sponsored by the United States Air Force under Contract FA7014-06-C-0001. Further information may be obtained from the Strategic Planning Division, Directorate of Plans, Hq USAF.

Library of Congress Cataloging-in-Publication Data

Lambeth, Benjamin S.

Air operations in Israel's war against Hezbollah : learning from Lebanon and getting it right in Gaza / Benjamin S. Lambeth.

p. cm.

Includes bibliographical references.

ISBN 978-0-8330-5146-2 (pbk. : alk. paper)

1. Lebanon War, 2006—Aerial operations, Israeli. 2. Arab-Israeli conflict—1993---Aerial operations, Israeli. 3. Israel. Hel ha-avir. 4. Hizballah (Lebanon) I. Title.

DS87.65L36 2011

956.9204'5248—dc22

2011009982

The RAND Corporation is a nonprofit institution that helps improve policy and decisionmaking through research and analysis. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors.

RAND® is a registered trademark.

Cover design by Pete Soriano. Photo courtesy U.S. Air Force.

© Copyright 2011 RAND Corporation

Permission is given to duplicate this document for personal use only, as long as it is unaltered and complete. Copies may not be duplicated for commercial purposes. Unauthorized posting of RAND documents to a non-RAND Web site is prohibited. RAND documents are protected under copyright law. For information on reprint and linking permissions, please visit the RAND permissions page (<http://www.rand.org/publications/permissions.html>).

Published 2011 by the RAND Corporation

1776 Main Street, P.O. Box 2138, Santa Monica, CA 90407-2138

1200 South Hayes Street, Arlington, VA 22202-5050

4570 Fifth Avenue, Suite 600, Pittsburgh, PA 15213-2665

RAND URL: <http://www.rand.org>

To order RAND documents or to obtain additional information, contact

Distribution Services: Telephone: (310) 451-7002;

Fax: (310) 451-6915; Email: order@rand.org

Preface

The RAND Corporation is providing analytical support to the U.S. Air Force (USAF) on a variety of issues having to do with the role and future potential of air and space power in counterinsurgency and counterterrorist warfare. This book is a contribution to that effort. It examines the conduct of combat operations by the Israel Air Force (IAF) against well-endowed Hezbollah irregular forces in Lebanon in July and August 2006 in a 34-day joint campaign that was dominated until its last week by an almost exclusive resort to precision standoff attacks by the Israel Defense Forces (IDF). The campaign ended inconclusively for Israel. Because the IDF's Chief of Staff at the time happened to be, for the first time in Israel's history, an IAF airman; because he chose to rely at the outset principally on standoff attacks by IAF aircraft, supplemented by IDF battlefield rockets and artillery, rather than taking the bolder and riskier step of committing Israeli ground troops to early combat in large numbers; and because the campaign, in the end, failed to produce the excessive and unattainable goals that were avowed shortly after its start by Prime Minister Ehud Olmert, a widespread belief persists to this day that the war's less than satisfactory outcome for Israel ensued from the IDF chief's allegedly unfounded convictions regarding what air power by itself could deliver by way of desired combat results. More to the point, it remains accepted wisdom in most quarters that Israel's second Lebanon war represented a "failure of air power."

The purpose of this book is to demonstrate that both of these conclusions are oversimplifications of a more complex reality that must first be clarified in order for the real causes of the IDF's flawed performance

in Lebanon to be properly understood. The book's intent is to marshal and assess the main details associated with the IDF's campaign against Hezbollah and, as appropriate, to correct the record regarding what Israeli air power did and did not accomplish (and promise to accomplish) in the course of contributing to that campaign. Toward that end, it considers IAF operations in the larger context of the numerous premises, constraints, and ultimate errors in both military and civilian leadership strategy choice that, in combination, drove the Olmert government's decisionmaking throughout its 34-day counteroffensive. The book also examines the IDF's more successful 23-day joint operation, under different leadership, against the terrorist organization Hamas in the Gaza Strip in December 2008 and January 2009, to provide points of comparison and contrast in the IDF's conduct of the latter campaign based on lessons learned and assimilated from its earlier combat experience in Lebanon.

This research was sponsored by then-Major General William Rew, USAF, at the time Director of Operational Planning, Policy, and Strategy in the Office of the Deputy Chief of Staff for Operations, Plans, and Requirements (AF/A5X), Headquarters USAF. The study, "Israeli Air Operations Against Hezbollah," was conducted within the Strategy and Doctrine Program of RAND's Project AIR FORCE as part of a larger fiscal year 2008 project titled "Emerging Threats to U.S. Interests in the Greater Middle East." It should be of interest to USAF officers and other members of the national security community concerned with strategy and force employment issues raised by Israel's joint campaigns against Hezbollah and Hamas and with the implications of those two successive experiences for force development, doctrine, and concepts of operations for air and joint warfare against asymmetric opponents.

RAND Project AIR FORCE

RAND Project AIR FORCE (PAF), a division of the RAND Corporation, is the U.S. Air Force's federally funded research and development center for studies and analyses. PAF provides the Air Force

with independent analyses of policy alternatives affecting the development, employment, combat readiness, and support of current and future aerospace forces. Research is conducted in four programs: Force Modernization and Employment; Manpower, Personnel, and Training; Resource Management; and Strategy and Doctrine.

Additional information about PAF is available on our website:

<http://www.rand.org/paf/>

Contents

Preface iii

Figures ix

Tables xi

Summary xiii

Acknowledgments xxv

Abbreviations xxxi

CHAPTER ONE

Introduction 1

CHAPTER TWO

Highlights of the Campaign 13

Initial Reliance on Standoff Attacks 20

The Standoff War Continues 33

First Signs of Emerging Doubt 41

The Move to Ground Operations 49

Countdown to a Ceasefire 56

An Inconclusive Ending 63

CHAPTER THREE

Key Israeli Air Accomplishments 73

Sustaining a New Battle Rhythm 78

Defusing the Strategic Rocket Threat 92

UAV Operations 110

Airlift and CSAR Support 126

The Ababil Downings 130

CHAPTER FOUR

Problems in Air Employment	135
The Intractable Katyusha Challenge.....	136
Failed Attempts Against Hezbollah's Leaders	154
A Polarizing Incidence of Noncombatant Fatalities.....	157
Overkill of Lebanon's Infrastructure	174
Issues in Air-Ground Coordination.....	181

CHAPTER FIVE

The Winograd Commission's Findings	199
On the IDF's Combat Performance	202
On the Olmert Government's Errors in Strategy	209
On Assessed Leadership Failings.....	215

CHAPTER SIX

A Second Chance in Gaza	221
Getting Ready for the Next Round.....	224
An Improved Showing Against Hamas	234
Highlights of the Joint Operation.....	252
Where Israel Got It Right This Time.....	259

CHAPTER SEVEN

The Second Lebanon War Reconsidered	277
Air Power in IDF Doctrine and Operational Practice.....	282
Explaining the Government's Strategy Choice	291
The Genesis and Execution of the Strategy	298
Where the Strategy Failed to Deliver.....	305
Was the Campaign Really a Lost Cause for Israel?	320

CHAPTER EIGHT

Conclusions	335
Bibliography	345
Index	367

Figures

2.1.	Lebanese Area of Operations.....	16
2.2.	Location of Hezbollah's Headquarters Compound in the <i>Dahiye</i>	17
2.3.	Hezbollah's Rocket Coverage of Israel	18
2.4.	Rocket Damage to an Israeli Civilian Residence	35
2.5.	Tunnel in an Underground Hezbollah Bunker	44
2.6.	Double Blast Protective Doors	45
2.7.	Captured Hezbollah Radio Equipment.....	53
2.8.	Hezbollah 10-Barrel In-Ground Rocket Launchers	61
3.1.	Hezbollah Mobile AAA Gun.....	76
3.2.	IAF Sortie Mix During Operation Change of Direction	81
3.3.	IAF Targets Attacked During Operation Change of Direction.....	82
3.4.	IAF Main Operating Bases.....	85
3.5.	IAF Aircraft Stack over Southern Lebanon.....	87
3.6.	Hezbollah's Headquarters Complex Before and After the Attacks	89
3.7.	Locations Struck by the IAF During the Campaign	91
3.8.	Zelzal 1 Long-Range Rocket.....	94
3.9.	IAF Organization.....	98
3.10.	Mobile 14-Barrel 220mm Rocket Launcher.....	101
3.11.	A Successful TST Attack in Progress.....	103
3.12.	Mobile 6-Barrel 302mm Rocket Launcher.....	109
3.13.	Hezbollah 220mm Rocket Launch in Progress.....	116
4.1.	Concealed "Nature Reserve" Bunker Entrance	139
4.2.	A Delayed TST Attack.....	140
4.3.	Pneumatically Actuated 10-Tube Launcher	141

4.4.	Rocket Launch from a Civilian Residence.....	142
4.5.	Daily Rate of Hezbollah's Katyusha Fire into Israel.....	145
4.6.	A "No-Signature" Weapon	147
4.7.	Susceptibility of Targets to Effective Aerial Attack.....	149
4.8.	Hardened Hezbollah Underground Facility.....	155
4.9.	Use of Civilian Residence for Launcher Concealment.....	159
4.10.	Mobile Rocket Launcher Disguised as a Civilian Truck.....	162
4.11.	Medium-Range Mobile Rocket Launcher Exiting a Residential Preserve.....	165
6.1.	Gaza Strip and Maximum Reach of Hamas Rocket Fire.....	223
6.2.	Hamas Rocket Coverage of Southern Israel.....	224
6.3.	Phases of Operation Cast Lead.....	235
6.4.	Daily Percentage of Precision Munitions Employed.....	243
6.5.	Number of Daily Hamas Rocket Launches During Operation Cast Lead	250
6.6.	Phases of IAF Air Operations Against Hamas.....	255
6.7.	Exploitation by Hamas of Urban Congestion for Weapon Placement.....	273

Tables

3.1. IAF Aircraft Inventory 74

3.2. IAF Operational Squadrons and Aircraft Types 84

3.3. Long- and Medium-Range Rockets Provided by Iran 93

6.1. Sorties Flown and Ordnance Expended in the Lebanon
and Gaza Wars 251

Summary

From July 12 until August 14, 2006, the IDF waged a 34-day campaign in Lebanon against the radical Islamist terrorist organization Hezbollah in response to a surprise incursion by Hezbollah combatants into northern Israel and the abduction of two Israeli soldiers in a well-planned provocation aimed at forcing the release of Islamist terrorists held by Israel. That campaign, code-named Operation Change of Direction, included the most complex air offensive to have taken place in the IAF's nearly 60-year history. At the same time, what eventually came to be called Israel's second Lebanon war ended up being the most inconclusive performance by the IDF in its many trials by fire since 1948, in that it represented the first time that a major confrontation ended without a clear-cut military victory on Israel's part.

As the IDF's counteroffensive got under way, Prime Minister Olmert declared that among his government's main campaign goals were the unconditional return of the two kidnapped soldiers and a permanent removal of Hezbollah as a viable fighting force in southern Lebanon. Not surprisingly in hindsight, those extravagant—indeed, unattainable—goals remained elusive throughout the 34 days of combat. Adding further to the frustration felt throughout Israel as the conflict unfolded was the fact that at no time during the campaign were IDF forces able to stem the relentless daily barrage of short-range Katyusha rockets that Hezbollah fired into civilian population centers in northern Israel until a ceasefire finally brought an end to that lethal harassment.

The IDF's Chief of Staff, who largely determined the campaign's complexion and vector, Lieutenant General Dan Halutz, had previ-

ously commanded the IAF and was, by happenstance, the first airman in Israel's history to have occupied the country's top military position at the time the crisis erupted. Because his chosen response to Hezbollah's provocation was to rely at first almost exclusively on precision standoff attacks rather than to opt for a concurrent commitment of IDF troops on the ground in large numbers, the campaign's halting progress and uncertain outcome led many in both Israel and the West to conclude afterward, and in some cases even before the fighting had ended, that because the IDF chief was an airman he had naturally allowed himself to be swayed by a parochial conviction that air power alone could somehow bring about the war's desired outcome. Furthermore, a predominant early impression among many, which persists in most quarters to this day, was that because of Halutz's initial choice of strategy, the IDF's disappointing performance in the second Lebanon war attested at bottom to a "failure of air power"—notwithstanding the fact that the IDF's counteroffensive from its very start entailed not just around-the-clock strikes by IAF fighters and attack helicopters but also thousands of daily rounds of ground-force artillery and battlefield rockets fired against enemy targets in southern Lebanon. In fact, what ultimately "failed" in the planning and conduct of Operation Change of Direction was not Israeli air power or any other instrument of warfare per se but rather a consequential blend of ill-advised civilian and military leadership judgments at the highest level regarding the nature of the adversary, the initial goals set for the campaign, the choice of alternatives for pursuing the campaign's objectives, and the management of public expectations as the counteroffensive unfolded.

As the first full day of combat drew to a close, it became clear that the preferred approach of the Olmert government, at least for the time being, would be to rely exclusively on precision standoff attacks rather than to resort to any early commitment of troops on the ground. Although the IDF had a fully developed contingency plan in hand for a joint air-ground counteroffensive designed for just such a possible circumstance, its leadership was not eager to implement that plan because of the near-certainty of high IDF casualties that any such action would generate. The IDF had no appetite whatever for a reprise of the sort of massive ground invasion that Israel had launched into Lebanon in

1982. It further presumed, rightly or wrongly, that the Israeli rank and file were not ready to countenance the large number of IDF troop fatalities that any such combined-arms operation would inevitably produce. After 18 costly and nonproductive years of previous occupation of southern Lebanon from 1982 to 2000, during which the IDF sustained more than 600 troop losses (almost as many as during the Six Day War of 1967), no one in Israel wanted to return for a replay of that experience. For Israelis, the Lebanon occupation was and remains the IDF's Vietnam. Accordingly, General Halutz rejected any idea of the IDF's going back into southern Lebanon on the ground to recapture and occupy Lebanese territory immediately north of the Israeli border.

The IDF's ground commanders were also opposed to a major land push for the simple reason that Israel's ground forces were unprepared for major combat against a robust opponent such as Hezbollah, however unconventional and asymmetric it was compared with the more classic enemy armed forces that the IDF had successfully faced in years past. Since the start of its preoccupation with the Palestinian *intifada* in 2000, the IDF had conducted virtually no periodic large-scale training of its ground troops for major combat. As a result, operational integration between the ground forces and the IAF had all but ceased to exist, and ground-force readiness for any contingency other than dealing with the Palestinian uprising had been allowed to lapse badly.

Yet at the same time, Halutz wanted to teach Hezbollah a lesson that its leaders would not soon forget. Ever since the IDF's withdrawal from southern Lebanon in 2000, Hezbollah had been continuously testing Israel's patience and limits of tolerance by means of a relentless series of unprovoked border incidents and random rocket firings into northern Israel. With the final provocation of the troop abduction, Halutz decided that the time had come to engineer a sea change in the situation by implementing a fundamentally different approach—hence the decision to code-name the IDF's counteroffensive Operation Change of Direction.

During the campaign's first seven days, the IAF flew some 2,000 fighter and attack helicopter sorties. With respect to airspace management, there were often 40 to 70 IAF aircraft operating concurrently in the compact battlespace above southern Lebanon. Most fighter opera-

tions were conducted at altitudes above 12,000 ft to keep IAF aircrews safely beyond the reach of any possible Hezbollah antiaircraft artillery and infrared-guided missile fire. However, the IAF's operating arena extended all the way from Blackhawk helicopters conducting nap-of-the-earth operations during medical evacuation missions to its Gulfstream G550 surveillance aircraft operating in the medium- to high-altitude block, often with only 1,000 ft of separation between blocks. Accordingly, there was a continual hail of munitions falling through the airspace assigned to aircraft operating on station in the lower altitude blocks, making flawless time and space deconfliction an ever-present airspace management requirement. By all indications, the IAF met that requirement with resounding success.

Despite the IDF's many combat achievements during the campaign's first week, it was becoming increasingly clear to the Olmert government's leaders that standoff air attacks and artillery and rocket fire alone would never bring about their sought-after objectives. As the counteroffensive ground on, those leaders found themselves caught in an acrimonious debate centered on the IDF's continued inability to stop the relentless Katyusha fire and the offsetting concern that any escalation to major ground operations would produce an unacceptable number of Israeli troop casualties. Eventually, with the continuing barrage of increasingly intolerable short-range rocket fire into northern Israel, ever more vocal calls began to be heard for a massive IDF ground incursion aimed at driving Hezbollah's forces out of southern Lebanon.

Israel's first significant ground move began on July 17 in a limited quest for an initial toehold north of the border. As operations with tanks and infantry got under way, they quickly came to include house-to-house fighting and responsive Hezbollah hit-and-run tactics that slowed the IDF's rate of progress. As the campaign unfolded and these initial ground forays began to falter, increasing tension arose between those in the IDF who believed that no further gains could be made without a sizable increase in committed troops and a government leadership, fearful of a resultant rise in IDF casualties, that remained reluctant to activate the IDF's reserve units.

As the decisive move to expanded ground operations neared, the IDF mobilized three reserve divisions on July 20 in its largest troop call-up in four years. Only after three weeks of strenuously resisting a ground offensive, however, did the IDF finally bow to the inevitable on August 1 and begin preparing for a major push into Lebanon. Even then, only after deliberations over ceasefire arrangements appeared to be going against Israeli interests did the government ultimately order the implementation of the expanded ground operation plan that was later approved in principle by the cabinet on August 9.

In the end, the issuance of the invasion order on August 11 left the IDF with only three days in which to make the most of its now-imminent ground offensive, rather than the initially hoped-for five or more days before the looming ceasefire went into effect. During those final 72 hours of combat, the IDF tripled its number of ground troops in Lebanon to an eventual high of around 30,000. Not surprisingly, it suffered its heaviest casualties during the last three days of peak-intensity fighting. Coordination among force elements was almost uniformly poor throughout this final phase of the conflict. In some cases, requests from embattled tank crews for immediate close air support (CAS) were denied by the IDF's Northern Command out of concern over the danger of an inadvertent friendly fire incident. The performance of IDF ground forces throughout this escalated endgame further revealed manifold shortcomings in combat tradecraft. Infantry units were often unable to coordinate with armor, and tank crews proved repeatedly nonproficient in night operations. From start to finish, IDF ground operations lacked a clearly identifiable operational pattern. Troops returning home from battle reported that Hezbollah's dug-in defenses and the combatants who manned them had proven far more resilient than expected. In the end, the IAF provided abundant on-call CAS, and many wounded IDF troops were promptly evacuated by UH-60 helicopters under heavy fire.

For the most part, in those mission areas in which it naturally excelled, the IAF performed to its usual high standards of competence throughout the 34-day engagement against Hezbollah. Indeed, the final report of the Winograd Commission, which had been established by Prime Minister Olmert after the campaign ended to investigate

and assess the performance of his government and the IDF, concluded that the IAF had registered “impressive achievements” as by far the most effective service participant in all aspects of Operation Change of Direction. Those achievements included, most notably, the IAF’s largely successful preemptive attack against Hezbollah’s known and targetable medium-range rockets during the campaign’s opening night and its subsequent highly effective time-sensitive targeting operations against the enemy’s short-range rocket launchers (and some medium-range launchers as well) within single-digit minutes after their squads had fired their weapons. The only disappointment in the IAF’s performance noted by the commission was in the realm of timely and effective CAS delivery. In some respects, IAF cooperation with the ground forces was said to have been exemplary, particularly with respect to the integration of utility helicopters and unmanned aerial vehicles (UAVs). More problematic, in contrast, was the uneven involvement of IAF fighters and attack helicopters in air-land operations owing to the absence of prior joint practice during peacetime large-force training exercises.

As for the campaign’s final tally sheet, the IAF flew a total of 18,900 combat sorties and struck some 7,000 targets at an average rate of 340 sorties a day. Roughly 12,000 of those were fighter sorties in all mission categories, with attack helicopters racking up another 2,500 sorties. More than half of the IAF’s strike sorties were flown at night, thanks to the imaging infrared technology that was available for use in fighter targeting pods, attack helicopter sensors, and UAVs. In addition, more than 1,500 surveillance sorties and around 1,300 air mobility sorties were flown during the 34-day campaign. IAF rotary-wing aircrews conducted roughly 120 combat search and rescue missions, nearly half of them inside Hezbollah-infested territory and often under heavy fire. Furthermore, 110 combat medical evacuation sorties were flown, 94 of which entailed emergency rescue operations under fire. Compared with the three weeks of major combat in Operation Iraqi Freedom by American and allied forces in March and April 2003, Operation Change of Direction lasted longer (34 days against 21), saw a release of almost as many air-delivered munitions (24,000 compared

with 29,500), and featured more than half the daily aerial munitions delivery rate (705 compared with 1,340).

Viewed in hindsight, the IDF's counteroffensive against Hezbollah in 2006 does not now appear to have been entirely the unqualified setback for Israel that many had initially presumed in its early aftermath. This is particularly evident in light of the considerably more integrated and effective IDF response in December 2008 and January 2009 to a similar set of provocations that emanated from the terrorist organization Hamas, which controlled the Gaza Strip in southern Israel. Although Operation Change of Direction, much as the IDF's subsequent Gaza operation, ended in a less than decisive outcome for Israel given the inherent nature of the opponent, Hezbollah's combat capability was severely diminished by the IDF's unexpectedly and disproportionately massive retaliatory measures. For example, the IDF killed as many as 700 of Hezbollah's most skilled and valued combatants. In addition, a considerable portion of Hezbollah's military infrastructure was either destroyed or badly damaged during the course of the IDF's relentless aerial and artillery bombardment. Furthermore, the IDF learned much about Hezbollah's organization and strategy as a result of its campaign experience, rendering both more susceptible to focused and effective attacks than they had been before. In undertaking its response with such sustained ferociousness, Israel further showed its determination to answer any future challenges from both Hezbollah and Hamas with disproportionate levels of firepower that would have a persuasive deterring effect.

Israel also gained a greatly improved security situation in southern Lebanon as a result of the campaign, and the formerly volatile border region is now more quiescent than it has been in a generation. With the singular exception of three short-range rockets that were fired into northern Israel from southern Lebanon during the IDF's subsequent 23-day campaign against Hamas in the Gaza Strip more than two years later (for which Hezbollah's leaders were quick to disavow any responsibility), not a single Hezbollah rocket has been fired from Lebanon into Israel since the conflict ended, even though Hezbollah is now assessed as harboring far more short-range rockets (as many as 50,000 or so) in its since-reconstituted arsenal than ever before. This suggests

that Hezbollah's post-campaign motivations and conduct have, at least for the time being, all but certainly been influenced for the better by the significant bloodying that the IDF dealt to it and—two and a half years later—to Hamas.

However, this came at a substantial cost to Israel. The most compelling criticism that can be levied against the IDF with regard to its conduct of Operation Change of Direction has to do with the remarkably widespread destruction that its 34-day bombing effort wrought on Lebanon's civilian infrastructure and economy as the result of a misfounded assumption that the Lebanese government had any coercive influence over Hezbollah whatsoever. By the end of the war's first week, some 500,000 Lebanese had reportedly fled their homes to escape the IDF's air and artillery attacks. Most of Israel's attacks against Lebanon's infrastructure were militarily ineffective, having little discernible effect on the campaign's outcome and raising a legitimate question in the minds of otherwise unbiased Western observers as to whether such destruction was proportional to the anticipated gain. That infrastructure damage provided ready grist for Hezbollah's propaganda mill, which was quick to exploit it to the fullest in further securing the terrorist organization's clear advantage in the information war throughout the campaign.

As noted before, the war's less than satisfying outcome in no way reflected a failure of the IAF to perform to the fullest extent of its considerable but not limitless capabilities. Rather, it stemmed from a more overarching deficiency in strategy choice, the most flawed elements of which included a failure by the IDF's leadership to duly update and exploit standing contingency plans for the immediate needs of the challenge at hand, an inconsistency between its avowed goals and the available means and will to pursue them, and the leadership's placement of friendly casualty avoidance above mission accomplishment in its rank-ordering of priorities. There was nothing wrong in principle with the government's decision to respond to Hezbollah's provocation with escalated force. Yet its response was not fully explored in all its risks and ramifications before it committed itself to action. As a result, the IDF initiated its counteroffensive without having given adequate

thought to the campaign's likely endgame and to an appropriate strategy for ending it on a high note.

The greatest problem that undermined the IDF's combat performance throughout the campaign was the pronounced asymmetry between the exorbitant goals initially declared by Prime Minister Olmert and the incapacity of his government's chosen response option to achieve them. Not only were those declared goals progressively ramped downward as the campaign unfolded, they also created initial public expectations that had no prospect of being fulfilled. Although the first two weeks of Operation Change of Direction indeed bore ample earmarks of having been an air-only effort as seen by outside observers, we now know, with the benefit of subsequent revelations regarding the Olmert government's decisionmaking process, that Halutz did not insist on this approach out of a belief that it inherently offered the most promising means of achieving declared mission objectives. Indeed, Halutz never used the term "air power" in characterizing his initial response option. Rather, what he sought to employ to useful coercive effect was precision standoff *firepower*. In clear testimony to that fact, IDF operations from the campaign's first day onward included a total of some 173,000 artillery shells and battlefield rocket rounds fired, more than were expended during the much higher-intensity Yom Kippur War of 1973.

After all is said and done, the core explanation for the Olmert government's initial strategy choice, simply put, was that no one among Israel's top leaders, military or civilian, was ready to sign up for a ground war. In hindsight, one can fairly hold General Halutz, the government's most senior uniformed representative, to task for having failed before the campaign's start, when he admittedly knew better, to resist—forcefully, if need be—Prime Minister Olmert's initial avowed goals of getting the two soldiers returned and decisively crushing Hezbollah as a viable fighting force—goals unachievable by *any* mix of combat power that the Israeli people and the international community would have been likely to tolerate. Yet the decision to start the campaign with a standoff-only counteroffensive dominated by air attacks was not just Halutz's. It was the consensus view as well among Israel's key civilian leaders because it offered the least unacceptable

option for an initial military response. The IDF leadership, Halutz included, knew full well that such a standoff campaign alone would not end Hezbollah's continuing rocket fire into northern Israel, let alone bring about Prime Minister Olmert's most extreme declared goals of getting the two abductees returned and putting Hezbollah out of business once and for all. Nevertheless, there remained a widely felt compulsion to continue deferring the fateful transition to a major ground incursion for as long as possible. To repeat, no one who mattered was calling for an early ground offensive.

The main shortcoming in the government's campaign planning was the substantial disparity that quickly emerged between the government's initially articulated goals and the IDF's actual combat capability, most notably against Hezbollah's ever-elusive short-range Katyushas, which neither Halutz nor the Olmert government's most senior civilians took seriously at first as a core strategic threat to Israel's civilian population and economy. A related problem entailed not defining more attainable mission objectives at the campaign's outset and then applying more aggressive joint measures, including a massive combined-arms response from the very start, to yield a more conclusive and satisfactory outcome.

In the end, wrongly buying into a baseless view of what air power alone could accomplish, as most observers suggested both during and after the campaign—and as many continue to believe to this day—was not the Olmert government's main failing with respect to the planning and conduct of Operation Change of Direction. On the contrary, that belief was never held either by Halutz or by any of his civilian superiors at any time from the start of the crisis. Rather, the government's greatest misstep was taking an overly unreflective view of what military power of *any* kind, unaided by a coherent and effective strategy, could accomplish in a situation in which the declared campaign goals were so unbounded and the IDF's ground troops were so unready for combat against Hezbollah's robust forces since all they had done for the preceding six years had been to conduct lower-intensity operations against the Palestinian *intifada*. That misstep, which had nothing whatever to do with the strengths or limitations of Israel's air power per se, was handily corrected by the time the IDF was ready to embark on its sub-

sequent and more successful counteroffensive against Hamas in the Gaza Strip a little more than two years later. There is a clear message in this experience for those among today's U.S. leaders who would postpone, or forgo altogether, due investment against potential high-end threats in the more distant future in order to focus their full concentration of effort against today's more immediate—but by no means exclusive—lower-intensity challenges of the moment.

Acknowledgments

Whatever credibility and merit this book may have is attributable in substantial part to the help of many individuals in the United States, United Kingdom (UK), and Israel. On the U.S. side, I am first grateful to Lieutenant General William Rew, at the time Director of Operational Planning, Policy and Strategy (AF/A5X), Headquarters USAF, whose consent to support this effort enabled its sponsorship by the Air Staff. I also am grateful to Lieutenant General Daniel Darnell, former Deputy Chief of Staff for Air, Space and Information Operations, Plans and Requirements (AF/A3/5), Headquarters USAF, for his assistance in facilitating my contacts with the IAF leadership; to General T. Michael Moseley, USAF (Ret.), former Air Force Chief of Staff, for submitting a letter on behalf of this endeavor to the IDF requesting IAF support in ensuring the book's greatest possible accuracy and thoroughness; and to my action officer, since-retired Lieutenant Colonel Guermantes Lailari, Regional Plans and Issues Division, Headquarters USAF (AF/A5XX), for providing useful documentary materials bearing on the various topic areas addressed in this assessment and giving me helpful substantive feedback as my research and writing progressed.

On the Israeli side, I owe my first word of thanks to my special friend of more than 30 years, Brigadier General Aharon "Yalo" Shavit, IAF (Res.), Israel's air attaché to the United States during the mid-1970s, for running informal interference with the IAF leadership when this research was first being considered, with the aim of determining the practicability of our enlisting the IAF's support. I also thank Major General Dan Har'el, IDF, at the time Israel's defense attaché to the United States, for having secured the endorsement of the IDF spokes-

man, which, in turn, allowed the IAF to provide the support requested by General Moseley. I am grateful as well to Brigadier General Shmaya Avieli and Lieutenant Colonel Ziv Kolker, Israel's air attaché and deputy air attaché to the United States, for their assistance in arranging a series of interviews I had with a raft of IAF and IDF leaders during two visits to Israel in March 2008 and March 2009.

In the course of my first trip, I benefited from candid discussions with Lieutenant General Dan Halutz, IAF (Res.), IDF Chief of Staff during the second Lebanon war and a personal acquaintance for more than 20 years; Major General Elyezer Shkedy, then—Commander of the IAF; Major General Amos Yadlin, IAF, Director of Military Intelligence; Brigadier General Johanan Locker, Deputy Commander and Chief of Staff of the IAF; Brigadier General Ya'akov Shaharabani, head of the IAF's Helicopter Division; Brigadier General Rami Ben-Efraim, head of the IAF's Personnel Directorate and commander of Ramat David Air Base during the second Lebanon war; Brigadier General Gabi Shachor, commander of Palmachim Air Base; and Brigadier General Itai Brun, IAF, Director of the IDF's Dado Center for Interdisciplinary Military Studies. I also had useful exchanges with several working-level officers with whom I was authorized to discuss the war experience, including Colonel Shai (last name withheld), IAF (Res.), who served as head of the IAF's Campaign Planning Department during the second Lebanon war; Lieutenant Colonel Roni Amir, head of the IAF's Doctrine Branch; Lieutenant Colonel Udi (last name withheld), commander of the IAF's UAV squadron during the war; and Lieutenant Colonel Zviki (last name withheld), deputy commander of an F-16D squadron during the war and subsequently an air liaison officer to the IDF's 91st Division, whose troops figured most predominantly in the ground fighting. In addition, I spent productive time with three retired senior IAF officers of my good acquaintance, Major General Eitan Ben-Eliahu, former Commander of the IAF; Major General Isaac Ben-Israel, IAF (Res.), former Director of Research and Development in the Israeli Ministry of Defense; and Brigadier General Ran Ronen, IAF (Res.), former commander of Tel Nof Air Base.

During a return trip to Israel in March 2009, I met again with General Shkedy, who had generously read my initial draft in its

entirety and who offered helpful suggestions and corrections of minor factual errors. I also met twice with his successor as IAF Commander, Major General Ido Nehushtan, who had previously served as head of the IDF's Planning Directorate during the second Lebanon war. In addition, I benefited from discussions with Brigadier General Nimrod Sheffer, who had been General Nehushtan's deputy in the IDF Planning Directorate during the second Lebanon war and who had subsequently moved on to become head of the IAF's Air Division; Major General David Ivry, IAF (Res.), who commanded the IAF during the early 1980s and who later served as IDF Deputy Chief of Staff and subsequently as Israel's ambassador to the United States; Colonel Shmuel Gordon, IAF (Res.), a former F-4 and F-16 pilot and now a prominent Israeli strategist; Ron Tira, a former A-4 pilot now serving part-time as a reservist in the IAF's Campaign Planning Department; Lieutenant Colonel Natan (last name withheld), IAF, commander of the IAF's UAV squadron during the 2008–2009 Gaza operation; and Lieutenant Colonel Ofir (last name withheld), commander of an AH-1 attack helicopter squadron. In addition, I am indebted to Brigadier General Asaf Agmon, IAF (Res.), Executive Director of the Fisher Brothers Institute for Air and Space Strategic Studies in Herzliya, who organized a roundtable for me on the second Lebanon war and on the subsequent Gaza operation, which he chaired and which also included Brigadier General Oded Erez, IAF (Res.), a former head of the IAF Intelligence Directorate; Brigadier General Efraim Segoli, IAF (Res.), former commander of Palmachim Air Base; and Ido Hecht and Tal Inbar, both associates of the Institute.

These exchanges were only the latest in a long sequence of contacts I have enjoyed with many IAF officers going back to my first visit to Israel as a guest of the IAF's then Colonel (and later Brigadier General) Iftach Spector in 1978. Thanks to the support of two successive IAF commanders of my acquaintance during the 1980s, Major Generals David Ivry and Amos Lapidot, and for the purpose of gaining first-hand exposure to at least a small slice of the IAF's operational style in support of my RAND research on a variety of air warfare-related matters, I had the privilege of flying on three air-to-air fighter training sorties in a dual-control Nesher (an Israeli-manufactured French Mirage

III) with 144 Squadron at Etzion Air Base in 1981; a Kfir TC2 with 101 Squadron at Hatzor Air Base in 1986; and an F-15B with one of the squadrons at Tel Nof Air Base in 1987. That experience, along with the opportunity to converse at length with dozens of active and retired IAF officers over the course of eight visits to Israel throughout the past three decades, has been of indispensable value in enabling me to place the research reflected in this book into a more informed context.

Since this product is mainly an assessment of Israeli air operations, most of my interviews were naturally conducted with IAF airmen. However, to ensure that I also reflected the ground-force perspective fairly and to the best of my ability, I sought as well the input of knowledgeable IDF ground commanders through interviews with retired Brigadier General Gal Hirsch, who commanded the IDF's 91st Division that bore the brunt of the ground fighting during the second Lebanon war; Colonel Meir (last name withheld), commander of the Doctrine Department of the IDF ground forces, who served as a brigade commander under General Hirsch during the war; and Colonel (Res.) Gabriel Siboni, former chief of staff of an IDF armored division during the second Lebanon war and now with the Institute for National Strategic Studies at Tel Aviv University. In addition, I had a helpful conversation with Major General Benjamin Gantz, who headed the IDF's ground forces during the second Lebanon war and who later became Israel's defense attaché to the United States and subsequently Deputy Chief of Staff of the IDF. General Gantz, Colonel Siboni, and Colonel Meir (last name withheld) were also kind enough to read and comment on portions of the book dealing with air-ground integration and related matters. I elicited similar feedback from Martin van Creveld, Professor Emeritus of Military History at the University of Jerusalem, and from Amos Har'el, senior military correspondent for the Israeli daily newspaper *Ha'aretz*. I must emphasize, however, that for all the extensive assistance I received from the many serving IAF and IDF officers acknowledged above over the course of preparing this book, the final product is my work alone and in no way reflects their official views or endorsement.

For their support in providing me translations of key articles from the Israeli press, I owe thanks to Brian Fishpaugh, Randy Mayer, and

Michael Wales of the U.S. Air Force Intelligence Analysis Agency. I am especially indebted to Master Sergeant Wade Kimberlin, USAF, for having translated into English an important study on the second Lebanon war by Major General (Res.) Ben-Israel that has only been published thus far in Hebrew, and to Barbara Opall-Rome, the Tel Aviv bureau chief of *Defense News*, who kindly provided me her own translation of key portions of General Halutz's memoirs that appeared in Hebrew in 2010. I also am grateful to the former Commander of Air Combat Command, General Hal Hornburg, USAF (Ret.); to Lieutenant General David Deptula, Deputy Chief of Staff for Intelligence, Surveillance and Reconnaissance, Headquarters USAF; to my former RAND colleague and now Deputy Assistant Secretary of Defense for Force Transformation and Resources, David Ochmanek; and to Pardee RAND Graduate School doctoral candidate Harun Dogo for their helpful comments on an earlier version of this book, as well as to Colonel Scott Gorman, Commandant of the USAF's School of Advanced Air and Space Studies at Maxwell AFB, Alabama, for having convened a quorum of his students from the Class of 2009 to read the initial draft and provide me critical reactions during a seminar at Maxwell on October 22, 2008.

Relatedly, I express my appreciation to Air Chief Marshal Sir Stephen Dalton, Chief of the Air Staff, Royal Air Force (RAF), for inviting me to speak at a two-day Chief of the Air Staff's biennial Air Power Workshop convened at Defence Academy Shrivenham in the UK on December 8–9, 2009, for the express purpose of exploring the IDF's use of air power in the 2006 Lebanon war and in its subsequent 2008–2009 Gaza operation. That opportunity led to helpful written critiques of an earlier draft of this book that I received from Air Vice-Marshal Paul Colley, RAF, Assistant Chief of the Defence Staff for Development, Concepts and Doctrine, UK Ministry of Defence; Air Commodore Neville Parton, former Director of Defence Studies for the RAF; and Wing Commander Jon Smith of the RAF Air Warfare Centre at RAF Waddington.

Last, I acknowledge my RAND colleagues John Gordon IV and Andrew Hoehn, as well as Eliot Cohen, Professor of Strategic Studies at the Paul H. Nitze School of Advanced International Studies, for

their helpful peer reviews of the penultimate draft of this book. I also express special thanks to Lieutenant Colonel Roni Amir of the IAF for his indispensable support in accompanying me to all of my meetings with senior IAF and IDF leaders, sharing generously of his time in offering informed insights into the many IAF contributions to the second Lebanon and Gaza wars, providing most of the figures and photographs that are included herein, and carefully vetting several earlier drafts of this book to ensure its greatest possible thoroughness and accuracy, within the obvious constraints that necessarily limited his freedom, as well as that of all other IAF and IDF officers with whom I met, to be forthcoming with certain facts and operational details. For most of the items included in the two photo galleries that follow, I wish to acknowledge the IAF, the IDF spokesman, and Nir Ben-Yosef, who kindly granted his permission for me to use his copyrighted photos.¹ Not least, finally, I owe a note of gratitude to my editor, Miriam Polon, for her usual deft touch in improving the clarity and accessibility of my writing. As always, however, responsibility for any errors of fact or interpretation that may remain in the assessment that follows is mine alone.

¹ A full selection of these photos may be found at www.xnir.com.

Abbreviations

AAA	antiaircraft artillery
AESA	active electronically scanned array
AFB	air force base
AGL	above ground level
AGM	air-to-ground munition
ALO	air liaison officer
AMAN	IDF Directorate of Military Intelligence
AOC	air operations center
AOR	area of responsibility
ATGM	antitank guided missile
ATO	air tasking order
BDA	battle damage assessment
BG	brigadier general
CAOC	combined air operations center
CAP	combat air patrol
CAS	close air support
CBU	cluster bomb unit
COMINT	communications intelligence
CONOPS	concept of operations
CSAR	combat search and rescue

DCA	defensive counterair
ELINT	electronic intelligence
ER	extended range
FAC	forward air controller
FM	field manual
FSCL	fire-support coordination line
GBU	guided bomb unit
GCI	ground-controlled intercept
GPS	Global Positioning System
IAF	Israel Air Force
IAI	Israel Aircraft Industries
IDF	Israel Defense Forces
IED	improvised explosive device
IFF	identification friend or foe
INS	Israel Navy Ship
ISR	intelligence, surveillance, and reconnaissance
JDAM	joint direct attack munition
JP	jet propellant
LGB	laser-guided bomb
MLRS	Multiple-Launch Rocket System
OCD	Operation Change of Direction
PGM	precision-guided munition
RAF	Royal Air Force
recce	reconnaissance
ROE	rules of engagement
RPV	remotely piloted vehicle
SAM	surface-to-air missile
SAR	synthetic aperture radar

SFO	standoff firepower-based operations
SIGINT	signals intelligence
SOF	special operations forces
TACP	tactical air control party
TEL	transporter-erector-launcher
TST	time-sensitive targeting
UAV	unmanned aerial vehicle
UN	United Nations
USAF	U.S. Air Force
VISINT	visual intelligence
WSO	weapons systems officer

Introduction

From July 12 until August 14, 2006, the Israel Defense Forces (IDF) waged a 34-day air and land campaign against Hezbollah, a well-armed Iranian forward proxy organization of radical Islamist terrorists based in Lebanon. That campaign was an escalated response to a long-planned Hezbollah incursion into northern Israel and the prompt abduction of two IDF soldiers, who were then spirited back into Lebanon as hostages to be used as leverage in a hoped-for trade for Islamist terrorists who had previously been incarcerated by Israeli forces.¹ At first called Operation Just Reward and soon thereafter renamed Operation Change of Direction, the campaign has since been widely regarded in both Israel and the West as the IDF's most inconclusive performance in its storied 60-year history of combat experience. Waged under the direction of Israel's prime minister, Ehud Olmert, and his minister of defense at the time, Amir Peretz, the campaign was dominated by precision standoff attacks by the Israel Air Force (IAF) and by IDF artil-

¹ Hezbollah, which means "Party of God" in Arabic, is a virulently radical transnational Islamist movement with both political and military components. It established its initial roots in Lebanon in the early 1980s and 1990s and deepened them further in the aftermath of Israel's withdrawal from southern Lebanon in May 2000 following the latter's occupation of that region for 18 years after the first Lebanon war of 1982. It is lavishly funded by Iran's Islamic Revolutionary Guards Corps and has become a major presence in the legislature of the weak democratic government of Lebanon. It has infested southern Lebanon's predominantly Shiite population and is by far the dominant military presence on Lebanon's soil, overshadowing the Lebanese Army in discipline and combat capability. It also is devoted unswervingly to the destruction of the State of Israel. For the most accessible and up-to-date introduction to the subject, see Augustus Richard Norton, *Hezbollah: A Short History*, Princeton, N.J.: Princeton University Press, 2007.

lery and battlefield rockets, with no significant commitment of conventional ground troops against Hezbollah until the last days of fighting before a United Nations (UN)–brokered ceasefire went into effect.²

What mostly accounted for the rampant frustration felt throughout Israel as the conflict unfolded was the fact that at no time during the 34 days of combat, from the campaign's unplanned start through its eventual halting endgame, were IDF forces able to stem the relentless barrage of short-range Katyusha rockets that Hezbollah militants fired into civilian population centers in northern Israel on a daily basis until the ceasefire finally brought that lethal harassment to an end. In this regard, the confrontation represented the first time that the Israeli homeland had been subjected to continuous enemy bombardment for so long.³ Beyond that, the war's achievements fell considerably short of what Prime Minister Olmert had promised the Israeli people at the campaign's beginning, namely, a prompt return of the two abducted soldiers and a decisive crushing of Hezbollah as a viable fighting force. Not only did the IDF's lackluster performance adversely affect the long-standing image of Israeli invincibility in the eyes of the Arab world and the West, it reflected manifold and consequential failures in strategy choice at the highest levels of the Israeli government, both uniformed and civilian. Those failures, in turn, prompted a groundswell of postwar recriminations throughout Israeli society in search of culprits to blame. Those reverberations have persisted in Israel to this day, albeit with much-reduced intensity by now, thanks in large part to a considerably more successful subsequent IDF operation in late December 2008 and early January 2009, under different civilian and military leadership, against the terrorist organization Hamas in

²In 2005, the IAF took control of Israel's military space operations, making it formally the Israel Air and Space Arm. In this book, however, it will be referred to for convenience throughout by its more common and familiar descriptor "Air Force" (*Chel Ha'avir* in Hebrew).

³The Katyusha, discussed in greater detail in Chapter Four, is an inaccurate unguided 107mm or 122mm rocket with an explosive front end and a range of between 12 and 20 miles. It is essentially the same weapon as that employed en masse by the Soviet Army against the Wehrmacht on the Eastern Front during World War II. Hezbollah had an estimated 13,000 or more of them stockpiled in southern Lebanon when the war began.

the Gaza Strip adjacent to southern Israel in response to that organization's increasingly intolerable firing of rockets into Israeli population centers throughout the preceding months. In the judgment of Israeli public opinion, that operation went a long way toward restoring the credibility of Israel's deterrent and the image of its combat prowess that had been diminished by the IDF's less than stellar performance against Hezbollah in Lebanon two and a half years before.

The IDF's Chief of Staff at the time who largely determined the character and course of Israel's counteroffensive against Hezbollah, Lieutenant General Dan Halutz, had previously served as Commander of the IAF. When the crisis erupted, he was, by happenstance, the first airman in Israel's history to occupy the country's top military position.⁴ Because his initial response was to rely almost entirely on precision standoff attacks for their hoped-for coercive effects rather than to opt for a concurrent large-scale commitment of IDF troops in close combat against Hezbollah on the ground, the campaign's halting progress and less than decisive outcome—despite a remarkable early success by the IAF against Hezbollah's medium- and long-range rockets—led many to conclude afterward, and in some cases even before the fighting had ended, that because the IDF's chief was an airman, he had naturally succumbed to an inherent belief that the use of air power by itself would somehow suffice in bringing about the war's declared goals.

Furthermore, in a widespread early inference that persists in many quarters to this day, those same observers adjudged that, because Halutz's initial choice of counteroffensive strategy forwent any significant use of ground forces from the campaign's start, the IDF's eventual disappointing performance in the second Lebanon war attested, at bottom, to a "failure of air power." That hasty and unfounded inference ignored the important fact that the IDF's counteroffensive, from its opening moments onward, entailed not only around-the-clock

⁴To be fair to the facts, Halutz was only the second IAF commander to have been posted as IDF Chief of Staff. The first was Chaim Laskov, who had served as IAF commander from 1951 to 1953. However, Laskov never attended pilot training and was a ground officer by background and upbringing, having commanded Israel's first armored battalion during the War of Independence in 1948. After retiring as IAF commander in 1953, he was brought back into active service and appointed to the position of Chief of Staff in 1958.

strikes by IAF fighters and attack helicopters but also thousands of daily rounds of ground-force artillery and battlefield rockets fired into southern Lebanon against enemy targets, as well as covert hit-and-run raids by Israeli special operations teams into Hezbollah-infested territory. All the same, as a British Royal Air Force officer writing almost a year after the fighting ended observed in commenting on the range of public impressions of the campaign experience to date, the idea that the IDF's flawed performance reflected a simple "failure of air power" rather than an accumulation of larger Israeli leadership sins of omission and commission "appeared at the time to be the most general understanding of this particular campaign within the more thoughtful elements of the media."⁵

In this regard, in one of the first manifestations of that opinion as Israel's combat progress slowed after a week of fighting, a *New York Times* report commenting on the failure of the IDF's standoff attacks to end the continual barrage of incoming Katyusha fire reminded readers of how "recent combat history provides a chastening lesson that air power, regardless of its accuracy and punch, cannot defeat even a conventional adversary unless it is backed by ground forces"—as though any responsible leader of any modern air force the world over would suggest otherwise.⁶ Shortly thereafter, another observer likewise cited what he called "the history of perennial overoptimism about air power" and added, in yet another assertion with which no responsible airman anywhere in the world would disagree, that "it is simply impossible to eliminate thousands of small, mobile, hidden, and easily resupplied rockets via an air campaign."⁷

Before long, ever more commentators not normally predisposed to belittle the combat capability of today's tools of air warfare began to be heard giving vent to this gathering refrain. For example, one Israeli

⁵Group Captain Neville Parton, Royal Air Force (RAF), "Israel's 2006 Campaign in the Lebanon: A Failure of Air Power or a Failure of Doctrine?" *Royal Air Force Air Power Review*, Summer 2007, p. 81.

⁶Thom Shanker, "To Disarm Shadowy Guerrilla Army, Israeli Air Power May Not Be Enough," *New York Times*, July 20, 2006.

⁷Philip H. Gordon, "Air Power Won't Do It," *Washington Post*, July 25, 2006.

journalist opined that the IDF's fitful performance at the end of more than three weeks of fighting had "served to illustrate the limitations of air power" and proved that "air power alone cannot solve the crisis."⁸ In a related vein, another Israeli writer declared soon thereafter that "technology has taken a blow in this war." He went on to predict that "the Israeli Air Force is going to come under tremendous criticism" for its failure to negate the Katyusha threat.⁹

This last prediction, which was later shown to have been completely erroneous once the smoke had cleared, was made in evident unawareness of the important fact, as will be documented in detail in the chapters to follow, that the IAF was never tasked in the first place by Israel's military and civilian leaders with the responsibility for countering Hezbollah's daily rocket fire. It was not so tasked because, by the candid admission of its own commander months before the crisis broke, Israel's air arm simply lacked the real-time target-location wherewithal to attack and eliminate small and hidden weapons like Hezbollah's Katyushas to any degree that would make a significant difference in affecting the campaign's outcome. More to the point, the above prediction was also put forward without any apparent awareness, as likewise will be documented in the ensuing chapters, that the Olmert government's most senior civilian and military leaders had entered into the campaign—in a fundamentally ill-advised strategic misjudgment, it turned out—having peremptorily dismissed Hezbollah's short-range rockets as a mere nuisance factor. For that reason, those leaders opted at the outset to forgo any serious attempt to negate them and only awakened to the realization once the campaign was well under way that the continuing rocket fire, in fact, represented a core strategic threat to northern Israel's civilian population and economy.

Notwithstanding all of that, as the IDF's counteroffensive dragged on with seemingly no end in sight, expressions of the ever-widening belief with respect to "failed air power" soon broadened to include outright finger-pointing by some retired Israeli ground-force generals who

⁸Arie Egozi, "Israeli Air Power Falls Short," *Flight International*, August 1–7, 2006, p. 21.

⁹Hillel Frisch, quoted in Molly Moore, "Israelis Confront 'New Kind of War,'" *Washington Post*, August 9, 2006.

scored Halutz for “creating expectations that the air force alone could destroy Hezbollah in the beginning” and, in so doing, having wrongly applied in his choice of strategy the allegedly “narrow tactical mentality of the pilot he once was [and actually still was].”¹⁰ During the first week after the UN-mandated ceasefire went into effect, the respected British weekly news magazine *The Economist* remarked in this vein that “the seductive idea that air power can provide swift victory with light casualties has been around almost as long as the airplane itself.” Yet it went on to declare that “in Lebanon, the Israeli Air Force found itself in the worst of both worlds, killing civilians without achieving military objectives.” In the last resort, it added, the Olmert government was forced to send in ground troops “precisely in order to create the conscious perception of tangible military victory that air power alone had failed to deliver.”¹¹ In close harmony with this increasingly prevalent view that was beginning to emerge from the campaign experience, an associate of the International Institute of Strategic Studies, in a brief overview of Israel's operations against Hezbollah, wrote that “for all the kerosene expended, air power is not the answer to the problem.” He went on to proclaim that “once again, the idea that air power can be a substitute for military skill on the ground . . . is proving beguiling but illusory.”¹²

To be sure, Israel's defense establishment did not help itself greatly in this respect, either during or after its counteroffensive in Lebanon, by its failure to provide a fuller accounting of the key facts and figures bearing on what was, in fact, a joint combat effort from the earliest moments of the IDF's response to Hezbollah's provocation. The Israeli defense community, most notably its uniformed component, has long been hypercautious by inclination when it comes to disclosing even the most basic facts about the capabilities, techniques, and operating practices of its forces—facts that would be regarded by most Western armed forces as in no way particularly sensitive. Indeed, the closed nature and consequent near-opacity of Israel's armed forces have, until

¹⁰ “The Blame Game,” *The Economist*, August 19, 2006, p. 43.

¹¹ “An Enduring Illusion,” *The Economist*, August 26, 2006, pp. 20–21.

¹² Andrew Brookes, “Air War over Lebanon,” *Air International*, September 2006, p. 23.

recent years, often appeared to rival that of the former Soviet Union. Today, with Israeli society more transparent than ever before, the once heavily shrouded IDF has begun to show increasing signs of opening itself up to outside scrutiny, at least at the margins. All the same, both during and after the campaign, the IDF divulged virtually no details about its force-employment activities that would allow outside observers to produce a reconstructed account of the fighting with any significant degree of operational richness or clear appreciation of what mix of force elements was actually in play at various stages of the fighting.

Nevertheless, a duly informed understanding of the campaign and its essence must recognize and acknowledge that the Olmert government's—and, in particular, General Halutz's—chosen opening move for responding to Hezbollah's provocation on July 12, 2006, was never simplistically an air-only gambit. Rather, it was a deliberate resort to precision standoff attacks that also included heavy IDF ground-force fires from the opening moments in a situation in which not just Halutz and his key subordinates in the General Headquarters, but also his civilian superiors in the Olmert government to a man, were not prepared at the outset to commit to a major push into southern Lebanon on the ground owing to the certainty of high Israeli combat casualties that any such move would inevitably produce. Without question, major errors in situation assessment and strategy choice were made by both Halutz and his civilian masters that were directly responsible for producing the campaign's less than satisfactory outcome for Israel. Those errors will be duly spotlighted in the chapters that follow. Yet what “failed” in this concatenation of poor leadership judgment calls was not Israeli air power. Rather, it was a consequential blend of misfounded military and civilian leadership decisions at the highest level of government with respect to the nature and aims of Israel's opponent, avowed campaign goals that were unachievable through *any* mix of military force that the Israeli people and the international community would likely countenance, the ultimate choice of alternatives for pursuing the campaign's objectives, and the management of public expectations as the counteroffensive unfolded.

The principal aim of this book is to develop and document the above proposition by marshaling the broadest range of evidence deriv-

able from the public record and from in-depth interviews with those IDF principals, from General Halutz on down, who figured most centrally in the planning of Israel's campaign against Hezbollah. Because of its unusually controversial nature, what the Olmert government only later dubbed the second Lebanon war has been the most studied episode in recent Israeli combat experience, and numerous creditable accounts now abound on various aspects of the campaign's conduct.¹³ In light of the breadth and quality of that analysis and documentation, it would serve no useful purpose here to venture yet another all-encompassing survey of the war. However, since Israeli *air* operations and what they did or did not contribute to the war's outcome continue to be regarded in many quarters as the root cause of the IDF's less than phenomenal performance, they deserve closer attention than they have thus far received in published assessments of the experience.¹⁴

¹³Among these accounts, the richest in insider observations and insights is the collection of essays by an assortment of retired IDF generals and other Israeli military-affairs experts compiled in Shlomo Brom and Meir Elran, eds., *The Second Lebanon War: Strategic Perspectives*, Tel Aviv: Institute for National Strategic Studies, 2007. Other notably insightful and well-informed treatments include Major General Isaac Ben-Israel, IAF (Res.), *The First Israel-Hezbollah Missile War*, Tel Aviv: Program for Security Studies, College of Policy and Government, Tel Aviv University, May 2007 (available in Hebrew only); Uri Bar-Joseph, "Israel's Military Intelligence Performance in the Second Lebanon War," *International Journal of Intelligence and Counterintelligence*, October 2007; Avi Kober, "The Israel Defense Forces in the Second Lebanon War: Why the Poor Performance?" *The Journal of Strategic Studies*, February 2008; and David Makovsky and Jeffrey White, *Lessons and Implications of the Israel-Hizballah War: A Preliminary Assessment*, Washington, D.C.: Washington Institute for Near East Policy, Policy Focus No. 60, October 2006. Without question the most informed, comprehensive, and thorough reconstruction thus far of both high-level Israeli government decisionmaking and the actual conduct of the war may be found in Amos Har'el and Avi Issacharoff, *34 Days: Israel, Hezbollah, and the War in Lebanon*, New York: Palgrave Macmillan, 2008.

¹⁴William M. Arkin, *Divining Victory: Air Power in the 2006 Israel-Hezbollah War*, Maxwell Air Force Base, Ala.: Air University Press, 2007, is the sole assessment of any significant heft to date that specifically considers the IAF's contribution to the 2006 campaign. That study, however, was an early look that relied mainly on media accounts and on-site inspection of targeted structures in Lebanon, and it dwelled far more on the destructive effects achieved by the IAF's bombing than on the diverse strategic and operational aspects of the war's planning and conduct. It also is uninformed by any input from senior IAF and IDF officers who actually played a first-hand part in the planning and execution of the campaign.

In providing that needed illumination, this book will remain grounded throughout on the premise that the various intimations noted above with respect to how the admitted shortcomings of the initial campaign plan pursued by General Halutz somehow “proved” yet again that air power “cannot win wars by itself” have emanated from a fundamental misunderstanding of modern air doctrine and the beliefs of its most expert practitioners worldwide. As Colin Gray pointed out well over a decade ago, “whether or not air forces can win wars by their own largely unaided action is beside the point. . . . To be recognized as an essential player in conflict, air power does not have to demonstrate that it is able to win wars independently.” On the contrary, he further observed, any suggestion that air power (or, for that matter, *any* other force element) should be “capable of winning wars on its own” entails the application of an “absurd standard that is not useful.”¹⁵ More recently, Gray expanded on this important reminder by declaring categorically that “the debate over air power versus land power is long past its sell-by date.” Rightly calling that increasingly tiresome yet seemingly unending contretemps a “dysfunctional disagreement,” he noted that strategic worldviews that privilege either air power *or* land power merely lend “fuel to a controversy that should be dead and buried. The truth is that the more sophisticated advocates of air power and the more balanced theorists for land power are both correct. The relative importance of air and ground must depend on the situation.”¹⁶

More to the point as it bears on Israel’s inconclusive counteroffensive against Hezbollah in 2006, Gray also rightly insisted a year after the campaign ended that for air power “to secure strategic results of value, it must serve a national and . . . overall military strategy that are feasible, coherent, and politically sensible. If these basic requirements are not met,” as was demonstrably the case with the manner in which Halutz and his civilian superiors collectively entered into the

¹⁵ Colin S. Gray, *Explorations in Strategy*, Westport, Conn.: Praeger Publishers, 1996, pp. 58–59.

¹⁶ Colin S. Gray, *The Air Power Advantage in Future Warfare: The Need for Strategy*, Maxwell Air Force Base, Ala.: Air Force Research Institute, Research Paper 2007-2, December 2007, pp. 2, 5.

IDF's response to Hezbollah's provocation of July 12, 2006, "[then] air power, no matter how impeccably applied tactically and operationally, will be employed as a waste of life, taxes, and, frankly, trust between the sharp end of [a nation's] spear and its shaft. . . . There is a constant danger that much more will be asked and expected of it than it can deliver." More than that, Gray went on to observe, a nation's campaign strategy can be so dysfunctional that it "cannot be rescued from defeat by a dominant air power, no matter how that air power is employed."¹⁷ That dictum is wholly applicable to the IDF's use of air power in conjunction with all of its other force elements that ultimately figured in Operation Change of Direction.

It is not the purpose of this book to chronicle the many circumstances that led to Israel's second Lebanon war to begin with, to review the IDF's campaign in all aspects of its planning and conduct, or to attempt to adjudicate, let alone apportion credit or blame for, the ultimate rights and wrongs of the many decisions that were made, for better and for worse, by Israel's most senior civilian and military leaders. Instead, the book simply seeks to present a fact-based account of the intended role of Israel's air arm in the campaign, with a view toward clarifying how it did and did not figure in the many identifiable shortcomings in the ultimate planning and conduct of Operation Change of Direction. Toward that end, the ensuing assessment first reviews the IAF's actual combat performance throughout the 34-day counteroffensive. It then considers, in the fullest possible detail, what successes it registered and what problems it encountered from the campaign's start to end. After that largely descriptive parsing of Israeli air operations during the campaign, the book then turns to a synopsis of the main findings arrived at by the Winograd Commission that was convened by Prime Minister Olmert in the early aftermath of the campaign to determine what lay at the heart of its disappointing results.¹⁸ It next offers a less comprehensive but still thorough operational overview of the more successful 23-day campaign by the IDF against

¹⁷ Gray, *The Air Power Advantage in Future Warfare*, pp. 15, 18, 20.

¹⁸ The Winograd Commission was named for its appointed chairman, Judge Eliahu Winograd, a retired president of the Tel Aviv District Court.

Hamas in the Gaza Strip in late December 2008 and early January 2009 that reflected the many lessons that the IDF learned and assimilated to improve its combat repertoire following its after-action assessment of the many problems encountered during its earlier experience in Lebanon. Finally, the book clarifies what assurances were offered with respect to what the IAF could usefully contribute to the joint conduct of Operation Change of Direction, what precautionary notes were aired before the campaign's start with respect to what the IAF could *not* be expected to deliver by way of desired results, what larger considerations ultimately lay at the root of the IDF's flawed performance in Israel's second Lebanon war, and how one should now understand that experience in light of all that has transpired in Israel's security situation during the ensuing years.

Highlights of the Campaign

The origins of the IDF's 34-day war against Hezbollah in July and August 2006 can be traced directly to the decision made by the government of Prime Minister Ehud Barak six years before to withdraw Israeli forces from southern Lebanon after an exhausting 18-year occupation that had ensued in the wake of Israel's first Lebanon war of 1982.¹ That withdrawal, which was completed in May 2000, left a power vacuum in the predominantly Shiite area south of the Litani River, which the then-nascent Hezbollah organization lost little time in filling. Hezbollah was greatly abetted in establishing this toehold by the Lebanese government's failure to deploy its own meager armed forces into the territory that had been vacated by the IDF. Eight years before that fateful move, in 1992, Hassan Nasrallah became the fledgling organization's secretary general at age 30 after his predecessor, Abbas Al Musawi, was killed by a missile fired on February 16 of that year from an IAF AH-64 Apache attack helicopter in a targeted assassination operation.

Nasrallah, who later rose to become Lebanon's most flamboyant and prominent politician, moved quickly after the IDF's withdrawal in 2000 to grow Hezbollah into a domineering presence in Lebanese soci-

¹For the standard work on that first war from an informed Israeli perspective, see Ze'ev Schiff and Ehud Ya'ari, *Israel's Lebanon War*, New York: Simon and Schuster, 1984. For an overview of the epic IAF air offensive against Syrian MiG fighters and SA-6 surface-to-air missiles over Lebanon's Beka'a Valley that preceded the IDF's incursion into Lebanon in strength on the ground in 1982, see also Benjamin S. Lambeth, *The Transformation of American Air Power*, Ithaca, N.Y.: Cornell University Press, 2000, pp. 92–96.

ety. His consuming goals entailed becoming the controlling political force within Lebanon and bending every effort to destroy the state of Israel in reprisal for its initial invasion and occupation of the country. Portrayed by one account as “a man of God, gun and government, a cross between Ayatollah Khomeini and Che Guevara, an Islamic populist as well as a charismatic guerilla tactician,” he was more recently described by Israel’s ambassador to the United States, Daniel Ayalon, as “the shrewdest leader in the Arab world—and the most dangerous.”² Under Nasrallah’s leadership, Hezbollah soon became Iran’s forward combat arm in Lebanon, with its most senior combatants receiving sophisticated military training in Iran.

Indeed, through its well-funded Hezbollah proxy in Lebanon, Iran ultimately succeeded in creating a de facto border for itself with Israel that Israel, owing to simple geography, has been unable to reciprocate. When the Olmert government’s crisis with Hezbollah first erupted on July 12, 2006, the IDF’s Directorate of Military Intelligence (*Agaf Ha’modi’in*, or AMAN for short) was reporting a presence of as many as 100 Iranian Islamic Revolutionary Guard Corps combatants operating on Hezbollah’s behalf within Lebanon’s territorial confines.³ Concurrent U.S. intelligence estimates aired in congressional testimony indicated that Iran was subsidizing Hezbollah to the tune of \$100 million to \$200 million a year in cash outlays alone.⁴

With respect to its military capability, estimates of Hezbollah’s personnel strength before the war ranged from 3,500 to 5,000 active supporters throughout Lebanon, including 500 or more hard-core combatants trained by Iran’s Islamic Revolutionary Guard Corps, the latter of whom had maintained a low-key presence in Lebanon ever since the Iranian revolution of 1979. By any measure, Hezbol-

²Robin Wright, “Inside the Mind of Hezbollah,” *Washington Post*, July 16, 2006.

³Harry De Quetteville, “Iran Blamed as Lebanon Battle Widens,” *Sunday Telegraph*, London, July 16, 2006. As the campaign unfolded, the Director of AMAN, IAF Major General Amos Yadlin, declared flatly that Iran was “in up to its neck” in Hezbollah operations in Lebanon. (Roni Sofer, “Deputy Chief of Staff: Rocket Launchings Less Effective,” *Ynet News*, Tel Aviv, July 23, 2006.)

⁴Neil MacFarquhar and Hassan M. Fattah, “At Crossroads, Hezbollah Goes on the Attack,” *New York Times*, July 16, 2006.

lah's combat component, called Islamic Resistance, has grown since its founding into a well-armed and able fighting force organized and structured along classic military lines. It is anything but just another ragtag group of angry Islamist terrorists imbued with arms and an attitude. For its part, Hezbollah's political component is one of the larger blocs in the Lebanese Parliament, having won 14 of 128 seats in the 2005 election. After the formation of the national unity government of Prime Minister Fouad Siniora, Hezbollah had one government minister and controlled 11 of 30 seats in the Lebanese government's cabinet.

On the eve of the 2006 war, Hezbollah's command structure and distribution throughout Lebanon included

- a headquarters complex centered in the so-called security quadrant in the *dahiye* in southern Beirut, principally in the Harat Harik neighborhood containing Hezbollah's operations center, as well as Nasrallah's residence and office⁵
- an operational core south of the Litani River most closely adjacent to the Israeli border controlled by the Nasser Brigade, which contained Hezbollah's stocks of short-range rockets and numerous combatants armed and fielded to resist an IDF ground invasion
- a rear area controlled by the Badr Command in the Nabatiya Heights along the coast north of the Litani and south of Beirut that offered defensive depth and a launch area for longer-range rockets
- a more remote rear-area training and logistics center in the Beka'a Valley near the Lebanese-Syrian border (see Figure 2.1 for a map of the campaign's area of operations).

The organization's headquarters complex in the *dahiye* section of Beirut was protected by security barriers and was guarded around the clock by Hezbollah combatants who carefully checked the credentials of all individuals entering and departing the compound. That complex exercised command and control over Hezbollah's extended-range rocket and unmanned aerial vehicle (UAV) units. It also housed a

⁵ *Dahiye* is the Arabic term for Beirut's southern suburbs.

Figure 2.1
Lebanese Area of Operations



RAND MG835-2.1

detachment of Iran's Islamic Revolutionary Guard Corps who supported and trained Hezbollah's military arm. (Figure 2.2 shows the location of Hezbollah's headquarters compound in the southern portion of Beirut.)

Figure 2.2
Location of Hezbollah's Headquarters Compound in the Dahiye



SOURCE: IAF.
RAND MG835-2.2

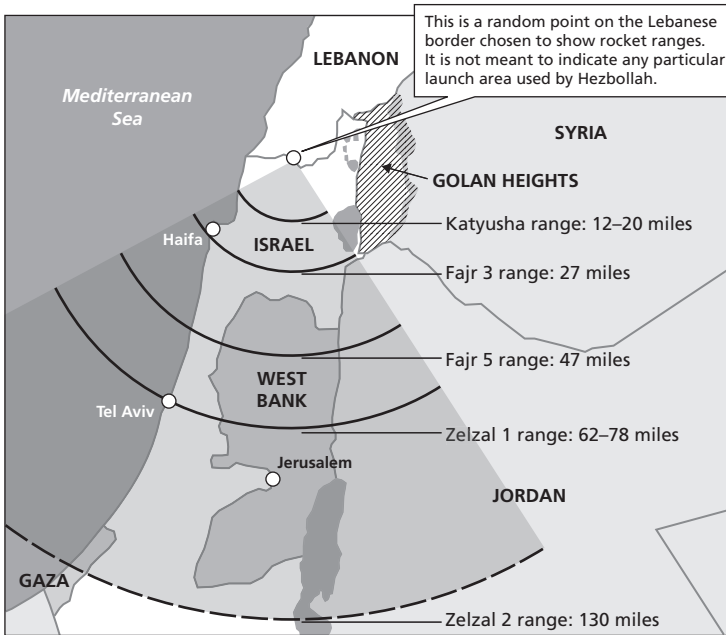
With respect to what could be fairly characterized as Hezbollah's "strategic" rocket capability, Brigadier General Yossi Baidatz, the head of AMAN's Research Department, publicly indicated at the beginning of the crisis that Hezbollah possessed "more than 100" medium-range rockets with a range of approximately 25 to 45 miles, most notably the Iranian-made Fajr 3 and Fajr 5, as well as longer-range Iranian-made Zelzal rockets with a reach of 75 miles or more, the latter of which could range as far as the heavily populated northern outskirts of Tel Aviv.⁶ Other well-informed Israeli assessments later reported as many as 1,000 known or suspected medium- and long-range rockets

⁶Ken Ellingwood, "Hezbollah Wields Improved Arsenal," *Los Angeles Times*, July 15, 2006.

in Hezbollah's arms inventory at the time the war started.⁷ (The relative reach of Hezbollah's medium- and long-range rockets, as well as of its shorter-range Katyushas, into Israel from a notional launch area in southern Lebanon near the Israeli border is graphically depicted in Figure 2.3.)

As its showdown with the IDF neared, Hezbollah's provocations along Lebanon's southern border with Israel mounted steadily in frequency and salience. One particularly notable hostile act was prompted by the killing of the commander of the Palestinian Islamic Jihad, Mah-

Figure 2.3
Hezbollah's Rocket Coverage of Israel



RAND MG835-2.3

⁷ See, for example, Ben-Israel, *The First Israel-Hezbollah Missile War*, p. 9. (The page numbers indicated hereinafter for citations from this document refer to those in an unpublished English translation from the original Hebrew that was kindly produced for the author by the U.S. Air Force Intelligence Analysis Agency.)

moud Majdov, by a bomb explosion in May 2006 in Lebanon's port city of Sidon. Suspecting Israeli complicity, Hezbollah forces retaliated by launching a disturbingly accurate rocket barrage against the IAF's northern ground-controlled intercept (GCI) radar facility located on Mount Meron in northern Israel. They also attempted a kidnapping of IDF soldiers that was thwarted by timely IDF action. Taken together, those initiatives should have been read by the IDF as clear warning of more of the same to come. On the heels of that provocation, however, General Halutz simply decreed that the next time Hezbollah undertook any such violation of Israeli sovereignty, its transgression would be viewed as more than adequate justification for the IDF to seek a "new arrangement along the border" through the application of appropriate force.⁸

The ultimate *casus belli* for the 2006 campaign came in a surprise move that, in retrospect, most now agree should have been anticipated and duly hedged against by the IDF. At 0905 on the morning of July 12, 2006, a well-armed and practiced Hezbollah snatch team crossed the Israeli border at an unmonitored point near the farming village of Shtula and ambushed an unsuspecting IDF patrol during a fleetingly vulnerable moment, killing three soldiers, capturing two more, and promptly taking the latter across the border into Lebanon. This carefully staged abduction had long been in the works, with Hezbollah merely awaiting a ripe opportunity. Nasrallah declared shortly thereafter that the attack, which caught the IDF completely by surprise, had been planned for months with a view toward forcing negotiations to win the release of numerous Islamist terrorists who were being held captive by Israel. He added that he did not seek an escalation of fighting in southern Lebanon, let alone a full-fledged war with Israel, but that "if Israel chooses confrontation, we are ready, and it should expect surprises."⁹

It was widely thought in Western capitals at the time that the precise timing of Hezbollah's abduction of the Israeli soldiers had been

⁸Har'el and Isaacharoff, *34 Days*, p. 71.

⁹Anthony Shadid and Scott Wilson, "Hezbollah Raid Opens Second Front for Israel," *Washington Post*, July 13, 2006.

dictated by Iran to draw attention away from the latter's nuclear weapons development ambitions, which had lately come under the international spotlight as a focal point of often heated discussion and debate. Israel's ambassador to the United States later suggested in this regard that "the real masterminds" behind Hezbollah's latest provocation resided in Tehran and Damascus.¹⁰ Whatever the case, Hezbollah's cross-border operation and its seizure of the two Israeli soldiers had the net effect of opening a second front for Israel after IDF forces had entered the Gaza Strip the previous month in search of an IDF soldier, Corporal Gilad Shalit, who had been captured there by Palestinian terrorists on June 25.

Initial Reliance on Standoff Attacks

Once the command post at IDF Northern Command's headquarters became aware that one of its patrols had failed to check in, it immediately declared a "Hannibal" incident (for a suspected troop abduction) and dispatched another detachment equipped with a Merkava main battle tank to search for the missing soldiers. Shortly after that newly tasked detachment crossed into southern Lebanon in pursuit of the suspected abductors, it was drawn into a well-laid Hezbollah trap, resulting in the Merkava's being blown up by a heavy mine and four more IDF soldiers being killed. The event was observed as it occurred by an IAF UAV that happened to be orbiting overhead, and streaming

¹⁰Karby Leggett, Jay Solomon, and Neil King, Jr., "Threat of Wider Mideast War Grows," *Wall Street Journal*, July 14, 2006. Halutz's predecessor as Chief of Staff, IDF Lieutenant General Moshe Ya'alon, similarly suggested that the provocation had been "masterminded" by Iran and "facilitated" by Syria, adding that its timing coincided perfectly with a deadline that had been imposed by a U.S.-led coalition for Iran to respond to an offer regarding its nuclear program. (Katie Stuhldreher, "Global Sanctions on Tehran Sought," *Washington Times*, July 20, 2006.) By one informed account, most of the medium-range rockets in Hezbollah's arsenal were of Syrian origin. Indeed, at the time the war started, Hezbollah was said to have possessed more of such rockets than the Syrian military establishment itself. (Interview with Lieutenant Colonel Roni Amir, head of the Doctrine Branch, IAF Headquarters, Ha'kirya, Tel Aviv, March 26, 2009.)

electro-optical and infrared imagery of the explosion was transmitted in real time to monitors in IDF operations centers and command posts throughout Israel.

The first Israeli air presence to enter the fray in response was a two-ship element of IAF attack helicopters that had been scrambled from an alert posture to investigate the two incidents. They arrived at 0939 at Phase Line 105 along the Israeli-Lebanese border where the abduction had occurred just half an hour before. The helicopter crews found the smoldering wreckage of the abducted patrol's Humvee and the bodies of the three slain IDF troops that had been left behind, but no sign of any Hezbollah forces or of the two captured soldiers. Shortly thereafter, in clear testimony to the Islamist organization's tight top-down discipline and control, Hezbollah's Al Manar television channel, headquartered in Beirut, gleefully reported the successful kidnapping incident for all to see at 1015, barely more than an hour after it occurred.

It did not take long for Israel's senior leadership to roll into the gathering crisis and take the lead in issuing orders with respect to initial military responses. As soon as he learned of the abduction, Minister of Defense Peretz authorized the immediate execution of two preplanned response options: attacking all of Hezbollah's fortified positions along Lebanon's southern border with Israel and closing off likely abductor escape routes deeper inside Lebanon with quick-reaction IAF air attacks. A little more than an hour after the abduction, at 1020, the initial wave of reactive air strikes crossed into Lebanese airspace, with IAF F-16s engaging and destroying all 17 of the border observation posts of Islamic Resistance along the Blue Line (the UN term for Lebanon's southern border) and also dropping the first three of many bridges across the Litani River farther north. Concurrently, units of the IDF's 91st Division initiated massive artillery fire against Hezbollah targets in southern Lebanon that had been preselected by Northern Command.

This initial round of combined-arms reaction constituted the IDF's most massive use of force since Israel's withdrawal from its 18-year presence in southern Lebanon six years before. From mid-morning onward, IAF fighters repeatedly struck dozens of assigned

targets in an effort that was described by the Olmert government as intended to slow the movement of the abducted soldiers' captors. In one early example of such attacks, IAF F-16s dropped five additional bridges in rapid succession on Lebanon's coast south of Sidon as formations of Israeli tanks and ground troops moved northward to the border to assume potential battle positions.¹¹

The next round of offensive air operations began at noon after the IDF General Headquarters issued a formal order called the Fourth Dimension, which directed aerial attacks against 69 targeted bridges in southern Lebanon, likewise ostensibly to help prevent any escape of the Hezbollah kidnappers.¹² During a subsequent impromptu planning meeting at 1245 between Defense Minister Peretz and Chief of Staff Halutz to consider a menu of options for the next steps, Halutz reportedly argued adamantly for "extremely aggressive activity along the [border]," with a view toward "creating new rules in the game." He pressed especially hard for IAF strike fighters to go after Lebanese infrastructure assets in full earnest. According to one informed account, he said: "We have to put out all the lights in Lebanon. We can shut off their electricity for a year." Peretz rightly rejected this call by Halutz to include Lebanese infrastructure in the gathering campaign's targeting objectives for a good reason that will be addressed presently. However, Halutz continued to press hard for taking every possible advantage of the looming first night so that IDF forces could fully recapture the initiative before the wheels of diplomacy took over and foreclosed any opportunity for Israel to deal a potentially fatal blow to Hezbollah. He quickly concluded, rightly, that the return of

¹¹Nicholas Blanford, "Deconstructing Hizbullah's Surprise Military Prowess," *Jane's Intelligence Review*, November 2006, p. 21. If the intent of this targeting of bridges was to prevent any access by Hezbollah to the part of Lebanon closest to the Israeli border south of the Litani River, it most likely failed to achieve its hoped-for objective. Although the dropping of bridges by the IAF definitely impeded major surface movement by large vehicles, Hezbollah still enjoyed reasonable freedom of north-south passage by advancing on foot or by using bicycles, motorcycles, or four-wheel-drive trucks and automobiles.

¹²Matt M. Matthews, *We Were Caught Unprepared: The 2006 Hezbollah-Israeli War*, Fort Leavenworth, Kan.: U.S. Army Combined Arms Center, Combat Studies Institute Press, 2008, p. 36. Many of the undocumented facts and figures in this chapter were originally released in daily IDF reports to the press.

the abducted soldiers should *not* be declared a campaign goal, since any such hope was almost certainly unattainable and thus unrealistic. But quite wrongly, he insisted repeatedly and vehemently on attacking “Hezbollah and the Lebanese government. Both of them.”¹³ For his part, the head of the IDF’s Operations Directorate, Major General Gadi Eisenkott, reportedly suggested early on that all participants should consider “simmering down and thinking matters over before acting [and] limiting the air strikes to a few hours.” His was evidently a lone voice in that respect, however.¹⁴

With respect to Hezbollah’s “strategic” rocket arsenal (that is, those rockets that could range farthest into Israel), Halutz at first wanted to defer any effort to go after the Zelzals and Fajrs out of concern that any such early preemptive venture by the IAF would merely trigger an immediate escalation by Hezbollah by initiating a nonstop barrage of Katyushas into northern Israel. On this issue, Peretz took the opposing side and elected to proceed with such an attack as a first order of business during the earliest window of opportunity that coming night, despite the fact that the IAF’s Operational Analysis Branch had predicted that between 100 and 400 Lebanese “innocent bystanders” could be killed during the operation.¹⁵ Peretz further approved an attack against the Beirut airport but not, at least yet, against any

¹³Har’el and Isaacharoff, *34 Days*, p. 78. This was not the first time that Halutz had called for such a response. In late 2005, in a planning session regarding Lebanon presided over by then–Prime Minister Ariel Sharon, Halutz proposed massive air attacks against Lebanon’s infrastructure if there was another serious provocation by Hezbollah. To that suggestion, Sharon reportedly replied emphatically: “As for operations on the Lebanese border, this has been the policy for the last five years at least. I said that whatever doesn’t have to be done over there—shouldn’t be done.” (Har’el and Isaacharoff, *34 Days*, p. 71.)

¹⁴Olmert’s advisers later said that no consideration had been given to the alternative of not responding at all. Said one adviser: “It was clear to all of us that we had to respond. . . . The nature of the response was rooted in the decisions that had been made in March 2006, when a basket of targets had been approved. In previous discussions, all the security agencies had recommended a major military operation in the event of another kidnapping attempt.” (Har’el and Isaacharoff, *34 Days*, pp. 76–77.)

¹⁵Har’el and Isaacharoff, *34 Days*, p. 79. To which Yuval Diskin, the director of Israel’s internal security service, Shin Bet, reportedly replied: “What do you mean by ‘innocent bystanders?’ These people go to sleep with rockets in their bedrooms.”

electrical power-generating facilities, on the reasonable ground that any damage done to the airport could be repaired fairly quickly and easily, but not so in the case of Lebanon's electrical power grid. Peretz additionally argued, with good reason, that any attack against the latter target set would simply unify Lebanon's citizens and turn them against Israel rather than against Hezbollah.¹⁶

At 1250 on July 12, Prime Minister Olmert convened a press conference. In his first public pronouncement regarding the abduction and what it had set in motion, he declared emphatically—in the first of many ensuing errors in situation assessment and strategic judgment on his and his government's part that ultimately accounted for the counteroffensive's indecisive outcome for Israel in the end: "The events of this morning cannot be considered a terrorist strike; they are acts of a sovereign state that has attacked Israel without cause." More reasonably, Olmert further characterized the assault on the IDF patrol and the abduction of the two soldiers as "an act of war" and promised Hezbollah a "painful and far-reaching response." He warned in addition that his government would gather that evening to decide upon a course of action and that the IDF's response would be "thundering."¹⁷

Five days later, in a speech to the Knesset that showed no indication whatever of any deep and serious prior strategy deliberation, Olmert declared, among others, the following four goals of his government's intended course of action:

- an unconditional return of the two kidnapped soldiers by Hezbollah
- the establishment of a "new situation" in Lebanon

¹⁶In this ruling, the Israeli leadership was clearly considering proportionality, but, as will be later shown, it failed to communicate this inclination clearly to the international community. In so failing, it did not extract the fullest use of its intentions in its information operations and allowed Hezbollah free rein in the information war, which the terrorist organization exploited to the limit. I am grateful to Air Vice-Marshal M. P. Colley, RAF, for calling this important point to my attention.

¹⁷Roger Cohen, "Price of Disengagement—Beirut and Gaza Burn," *International Herald Tribune*, July 15, 2006; "The Crisis Widens," *The Economist*, July 15, 2006, p. 45.

- enhanced IDF deterrence against outside threats
- the disarming and removal of all Hezbollah forces from southern Lebanon.¹⁸

The first goal was excessive to a fault, since all Hezbollah would need to do to be able to claim “victory” in the end would be to refuse to return the abducted soldiers, thus depriving Olmert of the ability to make good on his promise to the Israeli people. More important from the perspective of his government’s decisionmaking process, it also was completely counter to, and seemingly unmindful of, Halutz’s more realistic and reasonable prior determination that seeking a return of the kidnapped soldiers should be rejected forthwith as an unattainable goal—which instantly raises the most basic question as to why Halutz accepted it without challenge, as he evidently did. Olmert’s second goal was equally a reach, but at least it was achievable in principle if a wise strategy were followed. The third raised the obvious question of how. The fourth goal, finally, was as extravagant as the first. Although achievable in principle, it could only have been attained at a cost far greater than the Olmert government and the Israeli people would most likely have been willing to pay in terms of both IDF casualties incurred and, most likely, a renewed Israeli military presence in southern Lebanon with no end in sight.

The first and last of these four lofty promises, both unfulfilled in the end, would come back to haunt the Olmert incumbency once the postwar recriminations and assorted efforts to apportion blame had begun to gather momentum. Notably, moreover, these were *not* the more focused mission assignments that were transmitted to the IDF for execution by Halutz. The latter, which were more modest and attainable in scope, were

- to exact from Hezbollah a grossly disproportionate price for its provocation in kidnapping the IDF soldiers

¹⁸ Ben-Israel, *The First Israel-Hezbollah Missile War*, p. 19; Har’el and Isaacharoff, *34 Days*, pp. 107–108; address by Prime Minister Ehud Olmert to the Knesset, July 17, 2006.

- to improve the sense of security in northern Israel
- to create conditions for the return of the kidnapped soldiers
- to prevent any escalation of the fighting to include Syria.¹⁹

Viewed in hindsight, the all but total disconnect between these two clearly contradictory sets of declared goals on the part of Olmert and Halutz was the main underlying cause of the widespread perception of IDF failure after Israel's counteroffensive against Hezbollah ended, because it raised popular expectations to a level that the IDF, with its more limited mission tasking and deep-seated aversion to incurring casualties, could never satisfy. Chapter Seven explores further this disconnect and its harmful influence on the course and outcome of the ensuing campaign, as well as the associated issue of culpability on the part of the Olmert government's top security principals for the campaign's most basic failings. It also looks more deeply into the government's initially intended game plan, the decisionmaking process through which it was arrived at, and the various miscues and mistakes made along the way as the campaign unfolded—ultimately accounting for the war's inconclusive outcome for Israel.

Meanwhile, as the first day of the crisis continued to unfold, Defense Minister Peretz, echoing Olmert's initial error in situation assessment, similarly charged the Lebanese government with being "directly responsible" for the fate of the abducted Israeli soldiers—a charge that lacked any foundation from the very outset, considering the powerlessness of Lebanon's weak security establishment to influence Hezbollah's military activities in any significant way.²⁰ A later assessment of the second Lebanon war rightly called the implied presumption by Peretz and Halutz that the Lebanese Army could initiate any effective action against Nasrallah's organization both "flawed and . . . rather naïve from its inception," considering that that weak army had never before been able to enforce its will on *any* militia groups, least of all on Hezbollah, "the strongest militia force yet to have

¹⁹Interview with Lieutenant General Dan Halutz, IAF Headquarters, Ha'kiry, Tel Aviv, March 26, 2008.

²⁰Shadid and Wilson, "Hezbollah Raid Opens Second Front for Israel."

formed in Lebanon.”²¹ (For its part, the Lebanese government immediately disavowed any complicity in the cross-border raid by Hezbollah, even as it did nothing to try to persuade the organization to return the two soldiers while there remained time to avoid a war.)²² Also echoing the second of Olmert’s two plainly unattainable declared goals, Peretz further declared emphatically: “We will break Hezbollah. We will not allow this conflict to end with Hezbollah returning to the same position it held before.”²³

Halutz likewise showed an initial inclination toward impulsiveness without first considering the possible downside implications of his rhetoric when he underscored Peretz’s threat by warning that “nothing is safe” in Lebanon and that both Beirut and Hezbollah’s most valued assets in it would be targeted. He further warned, in what he should have understood instantly was a threat aimed at the wrong audience, that if the government of Prime Minister Siniora failed to indicate any willingness to intervene and ramp down the mounting confrontation, the IDF would “turn back the clock in Lebanon by 20 years.”²⁴ Later that afternoon, at around 1600, a second wave of IAF fighters hit 40 more preplanned targets throughout southern Lebanon, adding further to the more than 100 air strikes that reportedly took place during the first 12 hours of the IAF’s continuing response. According to an IDF statement that was later released to the press, the targets struck the first day included three bridges over the Litani River, two bridges

²¹ Sanu Kainikara and Russell Parkin, *Pathways to Victory: Observations from the 2006 Israel-Hezbollah Conflict*, Canberra: Royal Australian Air Force, Air Power Development Centre, October 2007, pp. 60–61. That assessment further noted that even informed Israeli observers had gone on record in pointing out that it had been a “mistake” for Peretz and Halutz “to think that Israeli military action would persuade the Lebanese government to try to disarm Hezbollah,” citing a cautionary note voiced to that effect a year *before* the outbreak of the second Lebanon war by Efraim Inbar, in “Prepare for the Next Round,” *Jerusalem Post*, August 15, 2005.

²² Greg Myre, “Israel Widens Scope of Attacks Across Lebanon,” *New York Times*, July 16, 2006.

²³ Alon Ben-David, “Israel-Hizbullah Conflict Threatens to Envelop Region,” *Jane’s Defence Weekly*, July 19, 2006, p. 5.

²⁴ David Ignatius, “Behind the Crisis, a Push Toward War,” *Washington Post*, July 14, 2006.

over the Al Zahrani River, numerous access roads leading away from the abduction site, and Hezbollah positions spread across the hillsides of southern Lebanon.

As the first day of IDF strike operations in response to the abduction neared an end, it was becoming increasingly clear that the preferred approach of the Olmert government, at least for the time being, would be to rely exclusively on standoff attacks by IAF fighters and attack helicopters, supplemented as appropriate by IDF artillery and M270 Multiple-Launch Rocket System (MLRS) fire against known Hezbollah positions south of the Litani River, rather than to resort to any early commitment of Israeli troops in a pitched battle against Hezbollah forces on the ground. Several months earlier, in planning for a possible showdown against Hezbollah of the sort that was now developing, the IDF's Directorate of Operations had developed two fairly elaborate and detailed contingency response options. The first, code-named "Icebreaker" (*Shoveret Ha'kerach* in Hebrew), called solely for a precision standoff-attack operation lasting 48 to 72 hours, along with concurrent preparations for a possible limited land counteroffensive to follow immediately thereafter. The second, called "Supernal Waters" (*Mei Marom*), entailed a major-war operation that envisaged several days of standoff-only preparation, a concurrent large-scale call-up of IDF reserve forces for possible imminent commitment, and either a halt to standoff fire alone after 48–72 hours or an escalation to combined air and ground operations aimed at decisively pushing Hezbollah's forces north of the Litani River.²⁵

²⁵ Interview with the head of the IAF's Campaign Planning Department during Operation Change of Direction, IAF Headquarters, Tel Aviv, March 26, 2008. As this since-retired IAF colonel later recalled, the ultimate intent of the "Icebreaker" option, which was conceived from the start as eventually evolving into a joint air-ground counteroffensive, was to "prepare the army to invade." An underlying premise was that the Israeli government would enlist the aid of the diplomatic process, and most particularly the involvement of the United States, at an early stage during the counteroffensive, with a view toward achieving prompt military objectives against Hezbollah followed by a politically imposed end to the fighting on terms favorable to Israel. That, however, did not occur once Operation Change of Direction was at the brink of being initiated. Instead of choosing to implement the existing and well-developed plan, the IDF chief and his civilian superiors in the Olmert government

Motivated by a determination to avoid any return to what Israel's rank and file had come to call "the Lebanese mud," Halutz elected not to implement either of the preplanned and readily available *Mei Marom* and *Shoveret Ha'kerach* options, choosing instead to pursue a standoff-only counteroffensive strategy, at least for the campaign's initial phase. If IDF precision standoff attacks alone would suffice to coerce Nasrallah into the desired behavior, Halutz wished to forgo needlessly risking early friendly troop fatalities from close combat with Hezbollah's disciplined and well-trained fighters. In this considered choice, he gained the instant assent of both Olmert and Peretz, who, for their part, feared implicitly that Israel's general populace would not be disposed to countenance the large number of IDF combat casualties that any such combined-arms operation would almost inevitably produce. Accordingly, Halutz issued the order for previously tasked IAF fighter squadrons to begin preparing to execute, later that night, their carefully preplanned and well-rehearsed operation against Hezbollah's known medium-range Fajr rocket storage sites, which had been code-named Operation *Mishkal Sguli* ("Specific Weight"). He further directed designated aircrews to begin mission planning for a limited offensive against selected aim points associated with Beirut's Rafiq Hariri International Airport and against Hezbollah's Al Manar television studio and transmission facilities in the *dahiye* section of Beirut.

Although its success was not publicized at the time either by IDF spokesmen or by representatives of the Olmert government, Operation *Mishkal Sguli* (discussed in fuller detail in Chapter Three) was carried out without an apparent hitch during the early morning hours of July 13. In the course of a 34-minute offensive involving 40 F-15I and F-16I fighters equipped with imaging infrared targeting pods and supported by a number of UAVs of several types, only some 20 Lebanese civilians (most likely Hezbollah members or supporters who happened to be occupying the targeted structures) were assessed afterward by AMAN and IAF intelligence as having been inadvertently killed in the attack, fewer than 10 percent of the number initially predicted by

elected to improvise their response to Hezbollah's last-straw provocation on July 12, 2006. (Interview at Tel Nof Air Base, Israel, March 29, 2009.)

those agencies and the IAF's Operational Analysis Branch in a worst-case assessment that they had performed on very short notice.²⁶ One of the most informed and thorough Israeli scholarly assessments of the war to date, citing what were described as "reliable IAF sources," later reported that "hundreds" of Hezbollah medium-range rockets and 44 launchers were eliminated during the carefully choreographed attack.²⁷ A senior IAF intelligence officer later characterized the performance as "a case study in operational perfection."²⁸

Not long thereafter, at 0400 on the morning of July 13, a separate formation of IAF fighters dropped four 2,000-lb laser-guided bombs (LGBs) on the main runway intersections at the Rafiq Hariri International Airport west of Beirut, the avowed purpose being to deny Hezbollah the continued use of its central hub for incoming weapons and supplies until the crisis had subsided to the IDF's satisfaction.²⁹ The initial attack cratered and closed all three of the airport's runways, but it carefully avoided hitting the terminal building. It had the intended effect of immediately diverting all incoming flights to alternate landing facilities throughout the region. An IDF spokesman later said that the IAF had closed down the Beirut airport because the latter is "a central

²⁶ Bar-Joseph, "Israel's Military Intelligence Performance in the Second Lebanon War," p. 587. The F-16I, deliveries of which began in 2004, is a two-seat multirole strike fighter developed expressly to satisfy unique IAF operational requirements. Its crew consists of a pilot in the forward cockpit who serves as aircraft commander and flies the aircraft and a weapons systems officer (WSO) in the aft cockpit who manages other complex mission details. Removable conformal fuel tanks mounted on each side of the upper fuselage just above the wing roots give the aircraft an unrefueled combat radius of more than 500 miles, which almost matches that of the F-15I, the IAF's rough equivalent of the U.S. Air Force's F-15E Strike Eagle. It is the only IAF aircraft that carries the fully integrated Litening II targeting pod. It also carries the IAF's SPICE 2000 munition, which is part of a family of standoff weapons being developed by Rafael. (Fulghum, Wall, and Barrie, "All-Arms Attack: New Satellite Surveillance System Was Key Israeli Tool in Raid on Syria," pp. 32–33.)

²⁷ Bar-Joseph, "Israel's Military Intelligence Performance in the Second Lebanon War," pp. 584–585.

²⁸ Interview with Brigadier General Itai Brun, IAF, Director, Dado Center for Interdisciplinary Military Studies, Glilot Base, Tel Aviv, March 26, 2008.

²⁹ Arkin, *Divining Victory*, p. 9.

hub for the transfer of weapons and supplies to the Hezbollah terrorist organization.”³⁰

In addition, during the early morning hours of July 13, IAF fighters bombed the main headquarters of Hezbollah’s Al Manar television station in downtown Beirut (the facility’s name means “the signpost” or “the beacon” in Arabic). This facility, a major instrument of Hezbollah information operations and an entity that had been branded a terrorist organization by both the Israeli and U.S. governments, had long played a central role in helping Hezbollah nurture a culture of deep hatred of Israel and of resistance against Western influence among Lebanon’s Shiite population and elsewhere in the region.³¹ In this instance, however, the attack did not achieve its intended effect, for the station was back on the air again after only two minutes of down time following the IAF’s strike against the facility’s main building. (It was later learned that the station had preexisting emergency plans for just such a contingency, with exits identified and staff briefed on how to get out quickly if the building were to come under attack and with alternate transmission sites ready to take over so that the station could continue broadcasting. There were further reports that the station also maintained mobile transmitters operating from vehicles and a team of ten Western-educated engineers, called “Al Manar’s fedayeen,” constantly on call to keep the station on the air.)³² The IAF’s failure to neutralize this crucial

³⁰Hassan M. Fattah and Steven Erlanger, “Israel Blockades Lebanon; Wide Strikes by Hezbollah,” *New York Times*, July 14, 2006.

³¹As described in one account, Al Manar was expressly established by Hezbollah as the first organization of its kind “for use as an operational weapon and an integral part of its plan to reach not only the citizens of Lebanon but also the broader Arab and Muslim worlds.” The television station “employs sophisticated methods to influence public opinion and behavior, targeting every segment of Palestinian society, beginning with children,” with the intent “to incite and mobilize people to take action against Israel and the United States . . . by propagating messages of hate and violence. . . .” (Lieutenant Colonel Bruce K. Johnson, U.S. Air Force (USAF), “Dawn of the Cognitive Age: Fighting Ideological War by Putting Thought in Motion with Impact,” *Air and Space Power Journal*, Winter 2007.)

³²Jay Solomon and Mariam Fam, “Lebanese News Network Draws Fire as Arm of Militant Group,” *Wall Street Journal*, July 28, 2006. The Al Manar television station, with more than 200 million reported viewers worldwide through satellite links, was described by the IDF as Hezbollah’s main tool for propaganda and incitement. In an attempted foray into cyberspace

enemy asset once and for all allowed Hezbollah to dominate the battle of narratives throughout the campaign and, after the fighting ended, to create an enduring perception among its people and throughout the Arab world that it had emerged the winner.³³ As will be seen later, this achievement by Hezbollah contrasted markedly with the Israeli leadership's poor communication in pursuit of the sympathies and support of its own people and the larger international community, both of which could have been key players in any Israeli strategy aimed at seizing and maintaining the inside track in the information war.

By the end of the IDF's first full day of combat operations, it had become clear that the Olmert government's chosen course of action in responding to Hezbollah's provocation of July 12 was centered on a studied avoidance of any early commitment of Israeli ground troops to major battle. The first formal operational order issued by the IDF General Staff on July 13, which referred to the unfolding campaign as Operation Just Reward, expressly stated that the campaign would be, at least at the outset, exclusively a standoff, fires-based, and open-ended counteroffensive. (It did *not* announce or implement what a later assessment sponsored by the U.S. Army's Combat Studies Institute incorrectly described as a "stand-alone air campaign."³⁴)

warfare, the IDF sought for a time to insert malicious signals into the station's programming. In the end, however, it was unable to stop Hezbollah from continuing to transmit throughout the 34-day campaign.

³³In what may have been a harbinger of a more generic new targeting fact of life that Western air forces will need to contend with in pursuit of better concepts of operations, the IAF's inability to shut down Al Manar was reminiscent of a similar problem encountered by U.S. Central Command's air component three years earlier during the three-week major combat phase of Operation Iraqi Freedom. In that earlier instance, the antennas of the Arabic-language Al Jazeera television station in Baghdad were struck by U.S. cruise-missile submunitions in an attempt to stop the facility from transmitting Ba'ath Party leadership interviews and other propaganda that was working to the advantage of Saddam Hussein's regime. Because of the television network's redundant broadcast systems, that attack kept the station off the air for only six hours. (Interview with Major General Daniel J. Darnell, USAF, Washington, D.C., August 6, 2006.)

³⁴Matthews, *We Were Caught Unprepared*, pp. 36–37.

The Standoff War Continues

Viewed in hindsight, the range of target types engaged by IAF aircraft and by IDF artillery and MLRS fire, the number of target aim points attacked during those operations, and the number of combat sorties flown during the first 24 hours of Israel's counteroffensive neatly typified the battle rhythm and operational focus of the IDF's standoff attacks for virtually the entire 33 ensuing days of the war. In addition to the Beirut international airport and the Al Manar television facility, targets struck on July 13 included Hezbollah headquarters complexes, training camps, munitions storage facilities, major road arteries (including the main overland highway connecting Beirut and Damascus), bridges in southern Lebanon, television and cellular telephone transmission towers, and observation posts along the border with Israel.

Perhaps not surprisingly, the sudden and unexpected combination of Operation *Mishkal Sguli* and the IAF's attack on the Al Manar television station provoked, by way of an escalated enemy response, what two Israeli journalists aptly labeled "Hezbollah's rocket war."³⁵ That sustained reprisal exposed, for the first time, the full extent of the vulnerability of Israel's home front to often deadly, if militarily ineffective, Katyusha fire from southern Lebanon. Seen in retrospect, Hezbollah's response was entirely predictable once the Olmert government chose to continue its air and artillery strikes after the first day of bombing, knowing full well that any such action would almost surely trigger an open-ended reprisal by way of sustained Katyusha attacks, against which Israel was defenseless.

In addition to the continual barrage of short-range Katyushas, a medium-range rocket landed in Haifa late in the afternoon of July 13. That was the deepest that Hezbollah had struck into Israel to that point.³⁶ Hezbollah's attack on Haifa had the almost immediate effect of shutting down Israel's third-largest city, to all intents and purposes, and sending thousands of residents of northern Israel in flight down

³⁵ Har'el and Issacharoff, *34 Days*, p. viii.

³⁶ Karby Leggett, Jay Solomon, and Neil King, Jr., "Threat of Wider Mideast War Grows," *Wall Street Journal*, July 14, 2006.

the southbound highways to escape the now-embattled city. The rapid evacuation of civilians converted Haifa almost instantly into a ghost town, with its beaches now empty, small stores and restaurants closed, the city's central business district vacant, its port closed, and all incoming ships diverted to the south. As one eyewitness account noted, Hezbollah's steady incoming rocket fire "promptly paralyzed a large swath of northern Israel, shuttering factories, offices and stores and sending large numbers of people into bunkers or searching for safe haven further south."³⁷ Of Israel's two million northern residents, a third were estimated to have evacuated southward as the rocket fire continued. This escalation of the crisis by Hezbollah led an Israeli spokeswoman on scene, Miri Eisin, to declare that the Olmert government was now ever more "determined that at the end of this war, we will be in a different strategic situation on our border."³⁸

Hezbollah also, for the first time, fired into Israel a volley of medium-range rockets with high-explosive front ends. Several of these landed deep inside the country near the town of Afula 30 miles south of the Lebanese border. (Figure 2.4 shows the substantial damage done to an apartment building located in a village well south of Israel's border with Lebanon when it was struck by a Syrian-made 220mm medium-range rocket armed with a large high-yield warhead and some 10,000 steel projectiles intended to achieve a widespread antipersonnel effect.) Impressively, orbiting IAF combat aircraft, sometimes cued by real-time UAV surveillance, repeatedly responded with time-sensitive targeting (TST) attacks that destroyed, often within single-digit minutes, the launchers that had fired the rockets. All the same, Nasrallah threatened more longer-range attacks if Israel did not promptly cease its aerial and artillery bombardment. He called Hezbollah's rocket attack on Afula "just the beginning of this stage."³⁹

³⁷ Jay Solomon, Karby Leggett, Guy Chazan, and Neil King, Jr., "In Battle to Remove Hezbollah, Both Israel, Lebanon Pay Price," *Wall Street Journal*, July 24, 2006.

³⁸ Scott Wilson and Anthony Shadid, "Israel Answers Hezbollah Strike," *Washington Post*, July 17, 2006.

³⁹ Robin Wright and Jonathan Finer, "Rice Renews Talks in Mideast," *Washington Post*, July 30, 2006.

Figure 2.4
Rocket Damage to an Israeli Civilian Residence



SOURCE: IAF.

RAND MG835-2.4

In response, the Olmert government chose to counterescalate by going after Hezbollah's nerve center in the *dahiye* section of southern Beirut in a massive way. The aerial attacks on the *dahiye* began during the early evening of July 14. All civilians were assessed as having previously evacuated the area after the IDF gave a 24-hour advance warning that it intended to attack. In the initial strike wave, a number of known and confirmed Hezbollah headquarters buildings (some of them 15 stories high) were hit by 23 2,000-lb satellite-aided GBU-31 joint direct attack munitions (JDAMs) delivered by F-15Is.⁴⁰ Subsequent battle-damage assessment (BDA) performed by the IAF concluded that 30 Hezbollah activists had been killed in the attack. Another target complex in the *dahiye* consisting of Nasrallah's personal headquarters and residence sustained 40 JDAM hits within a time window of just one

⁴⁰ Lieutenant Colonel David Eshel, IDF (Res.), "Summary of Israeli Air Force Strikes—12–21 July 2006."

minute.⁴¹ A senior Israeli official later confirmed that Nasrallah himself had been targeted in that attack. This operation against Hezbollah's leadership and command and control complex in the *dahiye* was said to have been modeled on the American "shock and awe" construct that had received so much media attention during the opening hours of Operation Iraqi Freedom in March 2003. The military benefits of the IAF's attack on the *dahiye* were negligible at best, considering that Nasrallah (and presumably other top Hezbollah leaders) were most likely protected in a buried bunker that could not be breached by the munitions that had been employed. Nevertheless, the *dahiye* was deemed to be so crucial as the most visible symbol of Hezbollah's domineering presence in Lebanon that the IDF had no choice but to attack it with all possible vigor in a determined, if ultimately vain, effort to shake Hezbollah's collective self-confidence.

Almost concurrently, Hezbollah upped the ante yet again by targeting the Israel Navy Ship (INS) *Hanit* ("Spear"), a Sa'ar 5-class corvette built in 1994 and carrying some 80 crewmembers, that was patrolling in Lebanese waters eight miles west of Beirut. The attack was conducted by what soon proved to be an Iranian-made variant of the Chinese-developed C-802 antishipping missile that AMAN reportedly did not even know was in Hezbollah's possession. The missile, fired from the vicinity of Al Awza'i, struck the stern of *Hanit* at 2042, killing four crewmembers and causing considerable damage. A second missile that was targeted against another Israeli ship overflowed *Hanit* and, apparently inadvertently, struck and sunk a foreign merchant vessel cruising 35 miles off the Lebanese coast. *Hanit*, for her part, was disabled by the C-802 missile but remained afloat, got out of the line of fire, and eventually made her way back to Ashdod for repairs under her own power. It was later determined that the antimissile radar aboard *Hanit* was out of service on the evening of the attack, that the watch officer in charge of the ship's defensive electronic systems had turned some of those systems off without informing the captain, and that the Israeli naval leadership had never directed its crews at sea to bring up their antimissile capabilities—even after the campaign was under way.

⁴¹ Ellingwood, "Hezbollah Wields Improved Arsenal."

At bottom, *Hanit's* crew did not activate its defenses against the possibility of a radar-guided cruise-missile attack because IDF intelligence had not identified such a threat.⁴² As a result, the ship was defenseless when it was attacked. IDF intelligence officials strongly suspected that a team of skilled Iranian technical experts either fired or supervised the firing of the C-802 against *Hanit*.⁴³

In yet another testament to Hezbollah's tight command and control from top to bottom, Nasrallah came up on the Al Manar television channel at 2045 that evening, just as the attack on *Hanit* was in progress, telling viewers to look to the west across the Mediterranean shoreline: "The vessel that bombed Beirut will now be demolished." (In fact, the C-802 had already struck *Hanit* three minutes before.) Nasrallah went on to declare, now in a tone of voice bordering on a rant: "This is total war that Israel is waging. . . . You will very soon discover how much your new government is stupid and inexperienced. . . . You wanted war? Believe me, the response will reach beyond Haifa and beyond that. . . . You wanted a change in the game rules—you will get it."⁴⁴ No doubt the IAF's devastating aerial assault on his sanctum sanctorum earlier that evening had captured his attention in a major way. According to informed IDF sources, the initial attack on the *dahiye* rattled Nasrallah, if only fleetingly, to a point where he was said to have come almost completely unglued.⁴⁵

⁴²Mark Mazetti and Thom Shanker, "Arming of Hezbollah Reveals U.S. and Israeli Blind Spots," *New York Times*, July 19, 2006.

⁴³The Winograd Commission later reported that earlier in the morning before the attack occurred, a senior IDF intelligence officer had raised the possibility that Hezbollah might be armed with Iranian coast-to-sea missiles, but that his statement "was rejected and was not published." The commissioners faulted the navy leadership's "disrespect for Hezbollah's ability to present a real operational threat to its vessels." (*Final Winograd Report on the Second Lebanon War*, Reston, Va.: Open Source Center, February 2008, Chapter 9, "Arms, Combat Support Units, and Special Operations," The Navy, The Strike on the Warship *Hanit*, paragraph 41, and Analysis of Implications, paragraph 45.)

⁴⁴Har'el and Isaacharoff, *34 Days*, p. 102.

⁴⁵Interview with Lieutenant Colonel Roni Amir, IAF, head of the Doctrine Branch, IAF Headquarters, Ha'kirya, Tel Aviv, March 26, 2008.

Soon after *Hanit* was struck, the head of the IDF's Operations Directorate, General Eisenkott, disclosed that the enemy combatants who had fired the C-802 had received targeting information from Lebanese naval radar stations in Beirut and elsewhere. In response, those facilities were promptly struck by IAF attack helicopters.⁴⁶ The head of the IDF's Planning Directorate, then-Brigadier General Ido Nehushtan of the IAF, subsequently reported that the air attacks on Lebanon's port areas of Jounieh and Tripoli had been aimed expressly at eliminating the radar installations that were said to have supported Hezbollah's attack on *Hanit*. He added: "We see this [C-802] attack as a very clear fingerprint of Iranian involvement." Nehushtan characterized the struck radar facilities as pop-up targets of opportunity: "Sometimes new targets come up, like the sea radar, that we will go after."⁴⁷ In all, ten Lebanese radar stations along the coast were struck on July 15 and were either destroyed or disabled by the attacks. The IDF concurrently imposed a naval blockade along Lebanon's coast, closing the main channel to both incoming and departing traffic.

As the bombing effort continued, IAF strike fighters were cleared to attack noncritical components of Beirut's main electrical plant, temporarily cutting off power to parts of the city and to southern Lebanon. They also dropped leaflets warning civilian residents to stay away from known enemy rocket storage and launch sites, munitions depots, and headquarters facilities. In addition, IAF fighters continued to pound away at Hezbollah's compound in the *dahiye* and at Lebanese military airfields and army installations in connection with what William Arkin called the IDF's "punishment strategy against the government of Lebanon."⁴⁸ In fact, it was more an attempted coercive strategy, and one that unfortunately was doomed to fail from the start, since the Lebanese government wielded no leverage to speak of over Nasrallah and his terrorist cohorts. The IAF's continuing air attacks concentrated

⁴⁶ Alon Ben-David, "Hizbullah Hits Israeli Corvette," *Jane's Defence Weekly*, July 26, 2006, p. 18.

⁴⁷ Greg Myre, "Israel Widens Scope of Attacks Across Lebanon," *New York Times*, July 16, 2006.

⁴⁸ Arkin, *Divining Victory*, p. 16.

mainly on three areas—the Shiite neighborhood of south Beirut in which Hezbollah’s leadership was concentrated; the Beka’a Valley and the adjacent Lebanese-Syrian border, which was the logistical rear area and supply route for Hezbollah; and areas in southern Lebanon from which Hezbollah’s combatants were continually launching short-range Katyushas. With respect to operations in the third area, IAF aircraft dropped leaflets for the second day in a row, warning civilian residents in southern Lebanon to move north of the Litani River to avoid being inadvertently injured or killed by IDF attacks on known Hezbollah military assets. Some 70 percent of the Shiite population living in that narrow strip of land reportedly heeded the warnings.⁴⁹ IDF spokesmen also warned that any trucks moving south of the Litani would be suspected of transporting weapons or rockets and would be susceptible to attack from the air at any time without notice.

IAF attack helicopters later reattacked the fuel storage facilities at the Rafiq Hariri International Airport as strike fighters worked the main road connecting the airport to downtown Beirut. IAF fighters also continued to attack selected roads and bridges throughout Lebanon in an effort to restrict Hezbollah’s freedom of movement. Some of those targeted roads and bridges were close to the Syrian border, and they were struck both as a tacit warning to Damascus and to seal off Lebanon’s border with Syria, thereby blocking Hezbollah’s weapon supply line from Iran. IAF aircraft also repeatedly dropped leaflets over the Hezbollah-controlled suburbs of Beirut, warning civilians to evacuate the area before the impending strikes that were slated to follow soon thereafter. At that point in the crisis, Israel’s ambassador to the United States, Daniel Ayalon, said: “It seems like we will go to the end now. We will not go part way and be held hostage again. We’ll have to go for the kill—Hezbollah neutralization.”⁵⁰

True to this prediction, IAF fighters on the campaign’s fourth day struck more than 130 announced targets, 50 of which were attacked

⁴⁹ Several hundred thousand Lebanese, mostly Shiite villagers, live south of the river, which runs east to west roughly 15 miles north of the border with Israel.

⁵⁰ Robin Wright, “Strikes Are Called Part of Broader Strategy,” *Washington Post*, July 16, 2006.

during the hours of darkness. The same day, an IDF intelligence officer reported that Iran had stepped up its shipments of arms to Hezbollah through Camp Zabadani, a base maintained by the Iranian Revolutionary Guard Corps in Syria near the Lebanese border. Subsequent transfers of those shipments from Syria to Lebanon observed by IAF surveillance aircraft included naval missiles, Katyusha short-range rockets, and Iranian-made Fajr 3 and Fajr 5 medium-range rockets. Upon confirmation of this, a reactive IAF air attack shredded an arms-laden convoy of trucks that had originated at Camp Zabadani and then entered Lebanon en route to Hezbollah consumers. Another reactive air attack occurred at Masna'a, the main crossing point between Lebanon and Syria, which targeted and destroyed the last building in Lebanon before the Syrian border, presumably with the intent to send a signal to Damascus. (The Director of AMAN, IAF Major General Amos Yadlin, later reported that Syria's military forces had been placed on their highest state of alert since 1983 as the IDF, for the first time during the crisis, called up 15,000 reservists as an initial contingency measure for possibly expanded operations yet to come.)⁵¹

In a clear measure of the unprecedented level of effort that the IAF was putting into its around-the-clock air offensive, as well as of what one senior IAF campaign planner later cited as a need for greater parsimony by the IDF in target assignments and servicing, an unexpectedly large percentage of its JDAM inventory was depleted over the course of the first five days of intensive air attacks.⁵² In response to the IDF's declaration of an urgent operational requirement for replacement munitions, the United States promptly expedited a resupply of JDAMs to Israel, as well as additional AGM-114 Hellfire antiarmor missiles for the IAF's AH-1 and AH-69 attack helicopters and an ample resup-

⁵¹ Michael Hirst and Harry de Quetteville, "Israelis Edge Closer to War with Syria," *Sunday Telegraph*, London, July 30, 2006. Yadlin took care to add that the Syrian forces were on a defensive rather than offensive alert and that "neither Syria nor Israel is interested in a military clash." He cautioned, however, that "the situation is explosive and the events may be incorrectly interpreted. This could entangle Syria in a battle with us." (Gid'on Alon, "Military Intelligence Chief: Syrian Army Now at Its Highest State of Alert," *Ha'aretz*, Tel Aviv, July 25, 2006.)

⁵² Yosi Yehoshu'a, "The Bomb Debacle," *Yedi'ot Ahronot*, Tel Aviv, October 20, 2006.

ply of JP-8 jet fuel.⁵³ Two weeks later, the Israeli government further pressed the administration of President George W. Bush for an accelerated delivery of MLRS battlefield rockets that are fired in barrages to deliver cluster bomb units (CBUs) dispensing hundreds of submunitions. With respect to that request, the U.S. government had already approved the transfer of the rockets several months before, but the weapons had not yet been delivered when the crisis with Hezbollah erupted. Some officials in the Department of State sought to delay the granting of Israel's request for accelerated delivery out of concern over the injury or death to innocents that unexploded submunitions could cause. The IDF initially had sought the rockets for contingency use against conventional armies in case Israel was invaded. When pressed, however, IDF officials frankly admitted that they wanted the rockets for use against Katyusha emplacements in southern Lebanon because other means had repeatedly failed to suppress Hezbollah's rate of fire. As a part of the multimillion-dollar arms sale package that had been approved in 2005, the United States further granted Israel the authority to purchase as many as 100 GBU-28 5,000-lb hard-target penetrator munitions for delivery by the IAF's F-15I.⁵⁴

First Signs of Emerging Doubt

On July 16, Israel's able but ineffectual National Security Council presented Prime Minister Olmert with a formal affidavit declaring that the campaign had achieved its main goal of bloodying Hezbollah and that it was now time to begin taking steps toward ending the fighting as quickly as possible. Former Prime Minister Barak and former government minister Dan Meridor likewise voiced mounting doubts over the direction that the Olmert government had taken, adding that any decision to continue the bombing would inevitably court disaster

⁵³David S. Cloud and Helene Cooper, "U.S. Speeds Up Bomb Delivery for the Israelis," *New York Times*, July 22, 2006.

⁵⁴David S. Cloud, "Israel Asks U.S. to Ship Rockets with a Wide Blast," *New York Times*, August 11, 2006.

for Israel. They further noted that the IDF was not, in their judgment, in any condition to enter southern Lebanon in force on the ground to hunt down Hezbollah's thousands of hidden Katyushas and that any attempt to do so would severely undermine what was left of the credibility of Israel's deterrent. Such protestations, however, had no effect on the Olmert government. Major General Moshe Kaplinsky, the IDF's Deputy Chief of Staff, also had a private meeting with Halutz, during which he reportedly urged Halutz to look aggressively for an exit strategy: "If the air attacks go on and we don't receive permission to mobilize the reserves," he said, "we'll have to sit down with the political echelons and ask them how to get out of this. The air force has just about used up all of its known targets." Halutz is said to have replied: "Forget about the end mechanisms for now. We are two weeks away."⁵⁵

A growing point of view now began to be expressed by many Israelis that the Olmert government had embarked on an ill-advised course by its continuing resort to overwhelming force that ran the danger of further harming Lebanon's civilian population out of a baseless hope that such operations would somehow pressure moderate Lebanese to lean on Hezbollah's leaders and change their behavior. A former director of AMAN, since-retired Major General Uri Saguy, proposed in this vein that the government should set more realistic and attainable goals, assess more carefully its expectations of what was in the realm of the achievable, and not overreach in seeking an agreeable outcome. Saguy added that it might be reasonable enough for the government to take all needed measures to push Hezbollah away from Israel's immediate northern border, but that it was impractical in the extreme for it to hope to get Nasrallah to disarm altogether or to loosen his grip on political power in Lebanon. That, he cautioned, would never happen merely as a result of Israel's elimination of the Hezbollah leader: "Nasrallah [has] certainly earned our wish to see him dead, but Hezbollah is a complex issue that won't go away by killing the Secretary General."

⁵⁵Nearly a year later, speaking to high-school students in Nahariya, Eisenkott recalled: "The operation had been planned to take from four to six days, but things got out of control. Instructions were issued for a limited operation against limited targets, but we were unable to limit the duration of the fighting." (Har'el and Isaacharoff, *34 Days*, pp. 95–97.)

A former IAF commander, Major General Eitan Ben-Eliahu, similarly suggested grounds for guarded hope if an alternative policy course were to be pursued: “Both sides opened with their surprises, recovered, and retaliated. The end always takes longer than the beginning. But once stabilization generates a feeling of satiation and exhaustion, perhaps international involvement will begin, and after this, diplomatic contacts.”⁵⁶

With respect to the growing need felt within the Israeli defense establishment to begin supplementing the standoff war with more effective ground action, the first Israeli special operations forces (SOF) teams, including the IAF’s *Shaldag* SOF unit, had already been covertly infiltrating into and out of Lebanon on the ground since the first days of the campaign. One goal of those forays was to take Hezbollah combatants alive.⁵⁷ Another was to assess the results of IAF bomb damage. Still another was to identify and validate new targets for aerial attack.⁵⁸ By one Israeli press account, *Shaldag* teams conducted “hundreds” of covert operations in Lebanon throughout the campaign, during which they “supplied the coordinates for hundreds of IAF sorties and marked out hundreds of targets on the ground.”⁵⁹

Israel’s first incursion on the ground with conventional troops began on July 17 with a push near Maroun Al Ras five days into the campaign in quest of an initial toehold north of the border. During this limited cross-border probe, IDF forces discovered, for the first

⁵⁶Laura King, “Tempted by Opportunity, Israel Gambles on Force,” *Los Angeles Times*, July 17, 2006.

⁵⁷With respect to this mission, General Yadlin, the Director of AMAN, reported in early August that an IDF SOF team had captured and brought in for interrogation one of the Hezbollah terrorists who had been directly involved in the kidnapping of the two Israeli soldiers on July 12. (Attila Somfalvi, “IDF: We Captured Soldiers’ Kidnappers,” *Ynet News*, Tel Aviv, August 6, 2006.)

⁵⁸IDF SOF units operated principally in Lebanon’s strategic depth north of the Litani River. They participated far less in covert combat operations in areas closer to the land battlefield just north of the Israeli border where IDF conventional forces were soon to predominate. (Colonel Gabriel Siboni, IDF [Res.], “The Military Campaign in Lebanon,” in Brom and Elran, eds., *The Second Lebanon War: Strategic Perspectives*, p. 67.)

⁵⁹Felix Frisch, “Night Birds,” *Ma’ariv*, Tel Aviv, October 6, 2006.

time, the full nature and extent of Hezbollah's dug-in and fortified positions, about which AMAN had previously been unaware. In one case, they found a bunker in southern Lebanon that had been built 40 meters underground, covering an area of two square kilometers, that included firing positions, operations centers, connecting tunnels, medical facilities, weapons and ammunition stockpiles, ventilation and air conditioning, bathrooms with hot and cold running water, and dormitories, all with a roof built of slabs of reinforced concrete almost three feet thick and with enough food and water to sustain a large number of combatants for weeks without resupply. Figure 2.5 depicts one of the connecting tunnels encountered by IDF ground troops inside this

Figure 2.5
Tunnel in an Underground Hezbollah Bunker



SOURCE: IAF.

RAND MG835-2.5

bunker, and Figure 2.6 shows double blast doors intended to isolate critical working and living spaces from the destructive overpressure that would be generated by a penetrating high-explosive air-delivered munition impact into the bunker.

Throughout the crisis, the Lebanese government had shown neither the inclination nor the ability to deploy its fragile army to the southern border in the midst of Hezbollah's ongoing combat operations. Taking note of that, Israel's Foreign Minister Tzipi Livni said: "In a way, Israel is doing the Lebanese government's job for it" by taking on Hezbollah in a determined showdown. With respect to that effort, General Nehushtan reported that the IAF had degraded Hezbollah's capacity to launch rockets by "about 30 percent." He added: "We have damaged Hezbollah, but they still have significant operational capacity. . . . It will take time. It's more than a matter of days on

Figure 2.6
Double Blast Protective Doors



SOURCE: IAF.
RAND MG835-2.6

the military side. We aim to change the situation and not go back to where we were.”⁶⁰

On the diplomatic front, as the second week of Israel's counteroffensive began unfolding, Lebanon's Prime Minister Siniora was pleading with the American ambassador and with any other foreign diplomats who would listen to bend every effort to engineer a halt to the Israeli attacks. Prompted by that call for help, Britain's Prime Minister Tony Blair and UN Secretary General Kofi Annan called for the deployment of multinational peacekeeping forces to southern Lebanon. U.S. officials characterized that entreaty as premature but did not reject it outright. Israel did reject it, however, categorically. With American support, the Olmert government continued to resist all calls for a ceasefire, stressing instead its determination to stick to its initially avowed unattainable goal of eliminating Hezbollah as a threat to Israel's security altogether. As Defense Minister Peretz told reporters at the time: “We intend to break this organization.” He also said: “We have no intention of occupying Lebanon, but we also have no intention of retreating from any military measures needed.”⁶¹

During the first seven days of its counteroffensive against Hezbollah, the IAF flew some 2,000 fighter and attack helicopter sorties and struck around 650 targets with more than 1,000 weapons.⁶² By the end of the first week, the IDF was claiming that it had destroyed 50 percent of Hezbollah's military infrastructure, including more than 130 rocket launch sites.⁶³ At the same time, it was becoming increasingly clear that standoff air attacks and artillery and MLRS fire alone would never bring about the Olmert government's declared objectives. On this point, the director of Tel Aviv University's Jaffe Center for Strategic Studies and former head of the IDF's Strategic Planning Director-

⁶⁰ Steven Erlanger and Jad Mouawad, “Diplomats Seek Foreign Patrols for Mideast,” *New York Times*, July 18, 2006.

⁶¹ King, “Tempted by Opportunity, Israel Gambles on Force.”

⁶² Helene Cooper and Steven Erlanger, “U.S. Appears to Be Waiting to Act on Israeli Air strikes,” *New York Times*, July 19, 2006.

⁶³ Rowan Scarborough, “Israeli Arms Overpower Hezbollah,” *Washington Times*, July 20, 2006.

ate, Zvi Shtauber, said: “The big question now is if air power alone is enough. And I don’t think so.”⁶⁴ Indeed, as early as July 14, only two days into the fighting, the IDF’s Intelligence Directorate, headed by General Yadlin of the IAF, told senior leaders that in its collective judgment, standoff attacks alone would neither compel a return of the two abducted soldiers nor reduce Hezbollah’s rocket attacks to fewer than 100 a day.⁶⁵

Yet at the same time, the IDF’s ground-force commanders were making it unquestionably clear that they had little appetite for a reprise of the sort of massive operation that Israel launched into Lebanon in 1982 and that they would vastly prefer to continue relying on precision standoff-attack operations, at least for the time being, to avoid the traps that they believed lay in store for them were they to go in on the ground in a major way. A former Chief of Staff, retired Lieutenant General Amnon Lipkin-Shahak, candidly acknowledged the IDF’s deep reluctance to commit a large number of troops on the ground, owing to the all but certain prospect of sustaining heavy losses.⁶⁶ The campaign continued, however, to enjoy strong backing from the Israeli populace. A week into the fighting, a poll taken by the daily newspaper *Yedi’ot Ahronot* reported that of those surveyed, 86 percent felt that the IDF offensive was “the right thing to do,” 81 percent wanted it to continue, 58 percent said it should continue until Hezbollah was destroyed, and only 17 percent favored a ceasefire and the start of negotiations.⁶⁷

⁶⁴ Jay Solomon, Mariam Fam, Karby Leggett, and Neil King, Jr., “Israel Weighs Ground Offensive in Southern Lebanon,” *Wall Street Journal*, July 20, 2006.

⁶⁵ Solomon et al., “Israel Weighs Ground Offensive in Southern Lebanon.” Only months after the second Lebanon war ended did it become evident that the two abducted Israeli soldiers, Ehud Goldwasser and Eldad Regev, had died either during the abduction operation or not long thereafter. Two years after the war’s onset, in a long-negotiated exchange, representatives of Hezbollah transferred to Israeli security officials coffins containing the remains of the two soldiers on July 16, 2008, in return for the convicted and incarcerated terrorist murderer Samir Kuntar, four Hezbollah militants, and the bodies of around 200 other Lebanese and Palestinian militants who had previously been captured or killed in fire-fights with the IDF. (“Regev and Goldwasser to Receive Funerals Thursday,” *Ha’aretz*, Tel Aviv, July 17, 2008.)

⁶⁶ Solomon et al., “Israel Weighs Ground Offensive in Southern Lebanon.”

⁶⁷ Anthony Shadid, “Evacuations Underway in Beirut,” *Washington Post*, July 19, 2006.

With respect to the IDF's continuing primary reliance on standoff operations, the Northern Command Chief of Staff, Brigadier General Alon Friedman, said: "It will take us time to destroy what is left."⁶⁸ As for the initial probing operations with SOF teams that had taken place to date on the ground, an IDF spokesman said: "At the moment, it's a very limited, specific incursion, but all options remain open." Echoing this, the IDF's Deputy Chief of Staff, General Kaplinsky, said of a large-scale ground invasion: "We aren't ruling it out."⁶⁹ In testimony before the Knesset after the first week of fighting, however, Halutz reported that Hezbollah had been preparing for the ongoing slugfest ever since Israel's withdrawal from southern Lebanon in 2000 and was studiously seeking to draw the IDF into a bleeding war of attrition, and that although the IDF had plans in hand for a ground counter-offensive, it was not yet ready to implement them because of the near-certainty of high casualties that any such move would generate.⁷⁰ At this point, the deputy defense minister and a former commander of IDF forces in Lebanon, Ephraim Sneh, declared: "We have no choice but go in and physically clean up Hezbollah posts on the ground. The air force can't do that." However, he added, in a testament to the IDF's continuing reluctance to commit its land forces in strength, "when we talk about a ground operation, the intention is not necessarily a massive incursion but more pinpoint operations."⁷¹

⁶⁸Jad Mouawad and Steven Erlanger, "Death Toll Rises in Mideast Fight; Bunker Bombed," *New York Times*, July 20, 2006.

⁶⁹Neil King, Jr., Karby Leggett, and Jay Solomon, "Bush's Mideast Strategy: Seek Change, Not Quick Peace," *Wall Street Journal*, July 19, 2006.

⁷⁰Abraham Rabinovich, "Hezbollah Trained for Six Years, Dug Deep Bunkers," *Washington Times*, July 21, 2006.

⁷¹Jad Mouawad and Steven Erlanger, "Marines Return to Beirut to Aid U.S. Evacuation," *New York Times*, July 21, 2006.

The Move to Ground Operations

On July 20, in its largest troop call-up in four years, the IDF mobilized three reserve divisions and concurrently broadcast warnings for all civilians residing in southern Lebanon to evacuate to safer environs north of the Litani. Those two steps together suggested a major impending ground push aimed at rooting out Hezbollah's vast hidden caches of Katyusha rockets. There had been rampant confusion over both mission and objectives when IDF troops first entered Lebanon in more than token strength the day before. This time, columns of infantry and armored forces massed along Israel's northern border, with squad-size units of a dozen or fewer troops moving across into southern Lebanon and engaging Hezbollah combatants in small-unit clashes.

The commander of the IDF's Northern Command, Major General Udi Adam, remarked that the ongoing evolution was "not an all-out, comprehensive mobilization." Halutz added that the emphasis on standoff fire would continue as before, but that the strategy would now also include "limited ground operations as necessary in order to strike at the terrorism which strikes at us." He described those impending operations as aimed at seeking out camouflaged storehouses, barracks, and rocket-launching sites that Hezbollah had had more than six years to install along Lebanon's southern border.⁷² Notably, as one assessment of the second Lebanon war later observed, the initial ground operations "were strangely mild. Ground attacks . . . lacked the focus and power that in the past had characterized IDF land assaults. The assaults were aimed at neutralizing individual targets close to the border and did not seem to be planned as part of a larger overall land campaign."⁷³ Nevertheless, a poll taken by the newspaper *Ma'ariv* at that point in the fighting showed a full 95 percent of Israelis believing that the campaign was justified, with 90 percent saying that it should continue until Hezbollah was pushed away from Israel's northern border. The poll

⁷²Edward Cody and John Ward Anderson, "Israeli Forces Mass at Border," *Washington Post*, July 22, 2006; Greg Myre and Jad Mouawad, "Israeli Buildup at Lebanese Line as Fight Rages," *New York Times*, July 22, 2006.

⁷³Kainikara and Parkin, *Pathways to Victory*, p. 52.

further showed that 78 percent were satisfied with Olmert's leadership, compared with only 43 percent before the start of the conflict.⁷⁴

Once the move to expanded ground operations neared, a new debate arose within the Israeli defense community over whether limited forays with SOF teams would suffice to meet the needs of the day or whether the IDF should now go for broke and commit larger numbers of heavy infantry and armored forces. One unnamed general predicted that the IDF would continue to rely mainly on air operations for the time being, out of a belief that the Bush administration and others in the international community would not press Israel overly hard for an early curtailment of the fighting: "We have no intent and no desire to go back in force into Lebanon. But if I'm wrong and there's not enough time and if air power proves ineffective, then we'll do it." This general recognized, however, that even a major IDF ground push would not suffice to defeat Hezbollah, since the enemy could simply continue retreating northward into Lebanon: "A ground maneuver won't solve the problem of the long-range missiles. The problem is the will to launch. We have to break the will of Hezbollah . . . by killing them. Maybe many of their soldiers are fanatics and want to be martyrs. But the leadership is clever, and it wants to live. They're rational guys, and they're hiding."⁷⁵ (As for the question of international support, the United States continued to back the IDF's actions unequivocally. On July 21, the U.S. House of Representatives passed by a 410–8 margin a resolution strongly supporting Israel in the confrontation.)⁷⁶

As IDF operations with tanks and infantry got under way in earnest, they quickly came to include house-to-house fighting and responsive Hezbollah tactics that slowed the IDF's rate of advance. Brigadier General Gal Hirsch, the commander of the IDF's 91st Division, described the ensuing encounter as "a full-contact operation. I mean direct fighting between our soldiers face to face." The fighting further

⁷⁴Cody and Anderson, "Israeli Forces Mass at Border"; Myre and Mouawad, "Israeli Buildup at Lebanese Line as Fight Rages."

⁷⁵Steven Erlanger, "Troops Ready, but Israel Bets on Air Power," *New York Times*, July 23, 2006.

⁷⁶Gerald F. Seib, "Mideast: Israel Draws Little U.S. Ire," *Wall Street Journal*, July 22, 2006.

entailed frequent situations requiring the provision of on-call close air support (CAS) by IAF fighters and attack helicopters, aided by UAVs and other surveillance platforms that were orbiting overhead or nearby.⁷⁷ Advancing tank and infantry formations encountered particularly stiff resistance from entrenched Hezbollah combatants on July 24 in the town of Bint J'beil about two miles inside the Lebanese border. An IDF lieutenant assigned to a tank battalion summed up the tactical situation this way: "They're in the forests and inside hiding places in town. They hide in holes in the ground. They have so many places to hide from the air strikes, so we have to send in the infantry. It can be dangerous."⁷⁸ During those close-combat encounters, there was one reported instance of barely averted fratricide when IDF troops were inadvertently fired on by an IAF attack helicopter that had been called in to provide CAS near Bint J'beil.⁷⁹ Another AH-64D Apache Longbow attack helicopter that was supporting these operations crashed just on the Israeli side of the border while it was holding on station, killing the crew of two (see below for further discussion). Hezbollah immediately claimed to have brought down the aircraft, but the loss was later determined to have been caused by a catastrophic main rotor failure.

With the continuing barrage of Hezbollah attacks into northern Israel with short-range Katyushas, ever more vocal calls began to be heard for a massive ground invasion aimed at driving Hezbollah's forces out of southern Lebanon. The respected Israeli military commentator Ze'ev Schiff wrote ominously in the liberal daily newspaper *Ha'aretz*: "What this terrorist organization symbolizes must be destroyed at any price. If Hezbollah does not experience defeat in this war, this will spell the end of Israeli deterrence against its enemies."⁸⁰

⁷⁷ Greg Myre and Craig S. Smith, "Israel Presses Air Raids on Lebanon, and Its Ground Forces Move into a Village," *New York Times*, July 23, 2006.

⁷⁸ Robin Wright and Scott Wilson, "Rice Outlines Proposal to Deploy Force in Lebanon," *Washington Post*, July 25, 2006.

⁷⁹ Guy Chazan and Karby Leggett, "Big Ground Campaign in Lebanon Would Present Perils for Israel," *Wall Street Journal*, July 26, 2006.

⁸⁰ Greg Myre, "Israel Approves Call-Up, but Sets No Deployment," *New York Times*, July 28, 2006.

The Olmert government, however, continued at that point to opt for maintaining the existing level of operations on the ground, recognizing that a major escalation would bring about no instant solution to the Katyusha problem.

At the same time, IDF troops returning home from battle reported that Hezbollah's dug-in defenses and the combatants who manned them had proven far more elaborate and resilient than expected.⁸¹ By now, there was little talk about the IAF's having taken out half of Hezbollah's rocket stores, as it was becoming ever more clear that *no* terrorist organization had ever before enjoyed access to anything like the sophisticated assets now known to be in Hezbollah's possession. In addition to the long- and medium-range surface-to-surface rockets already noted, those assets included advanced communications equipment, some of Syria's and Iran's best improvised explosive devices (IEDs), highly effective laser spot-homing antitank guided missiles (ATGMs), and night vision goggles, among other instruments of modern high-intensity warfare.

With respect to operational tradecraft, Hezbollah combatants almost surely did not succeed in tapping into encrypted communications on the IDF's tactical radio net, as some reports suggested. They were, however, able to monitor some IDF radio transmissions that were often made in the clear, as was attested by captured Hezbollah radios that were widely depicted in Western press accounts. (Figure 2.7 shows captured Hezbollah equipment that was used for radio frequency scanning and monitoring and for eavesdropping on unencrypted IDF communications for short-term tactical gain.) It also is unlikely, as was claimed by a Lebanese officer in 2007, that Hezbollah's signals-intelligence (SIGINT) specialists had "the ability to intercept inter-Israeli communications and know in advance where and when Israeli

⁸¹ Hezbollah's SOF combatants, in particular, proved to be surprisingly professional and able. When an Israeli SOF team encountered them on one occasion during a firefight, the Israeli team members thought at first that they had somehow become commingled with a separate detachment of Israeli SEALs. (Interview with Lieutenant Colonel Roni Amir, IAF, head of the Doctrine Branch, IAF Headquarters, Ha'kirya, Tel Aviv, March 26, 2009.)

Figure 2.7
Captured Hezbollah Radio Equipment



SOURCE: IAF.

RAND MG835-2.7

fighters and bombers would likely strike.”⁸² One informed Israeli observer rightly noted, however, that Hezbollah’s commanders were keenly mindful of Israeli SIGINT capabilities and were scrupulously careful to maintain their own high level of communications security and encryption, which Nasrallah even referred to openly in a speech. That disciplined practice made for a significant challenge for IDF intelligence.⁸³ In the face of such advanced enemy capabilities, it was scarcely surprising that Israeli media commentators were now beginning to ask why an army that had once defeated the armies of several

⁸²Lieutenant Colonel Hany T. Nakhleh, Lebanese Army, *The 2006 Israeli War on Lebanon: Analysis and Strategic Implications*, Carlisle Barracks, Pa.: U.S. Army War College, U.S. Army War College Strategy Research Project, U.S. Army War College Class of 2007, p. 8.

⁸³Yoaz Hendel, “Failed Tactical Intelligence in the Lebanon War,” *Strategic Assessment*, November 2006, p. 41.

neighboring Arab states in just days was finding it so difficult to push a militia away from Israel's northern border.⁸⁴

In the end, the skirmishing in and around Bint J'beil proved inconclusive. The IDF had sent in its much-storied Golani infantry brigade, only to have hundreds of the brigade's soldiers promptly pinned down by a Hezbollah ambush. Responding to that situation, the IAF provided abundant on-call CAS with heavy air strikes, often in so-called danger-close conditions (meaning that friendly forces in need of immediate fire support are within 600 meters of a designated target), and many wounded IDF troops were provided prompt medical evacuation by IAF UH-60 Blackhawk helicopters under heavy fire. On some occasions, the IAF even delivered 2,000-pound precision-guided bombs on request within 200 meters of friendly positions with no instances of fratricide. (In all of those cases, General Shkedy's personal authorization to drop was required, regardless of the time of day or night. In some instances, he even had to be awakened in the middle of the night to give weapons release approval in danger-close conditions.⁸⁵) After ten soldiers were killed in the fighting, including eight

⁸⁴ Jonathan Finer and Anthony Shadid, "Heavy Fighting Slows Israel's Ground Forces," *Washington Post*, July 26, 2006. Afterward, some informed U.S. electronics industry experts refuted Hezbollah's boast that it had been able to penetrate and exploit IDF tactical radio systems and thereby sow doubt in the minds of Israeli troops as to the security of their communications: "What you're witnessing," these experts suggested, "is unsophisticated technology exploited by sophisticated information operations. They scored big time in the psychological warfare department." (David A. Fulghum, "Doubt as a Weapon: Lebanon Fighting Produced an Information Warfare Coup for Hezbollah and Iran," *Aviation Week and Space Technology*, November 27, 2006, p. 26.)

⁸⁵ Ben-Israel, *The First Israel-Hezbollah Missile War*, p. 55. Throughout the course of the campaign, Shkedy was personally called on to approve the release of munitions by both fighters and attack helicopters in 900 reported danger-close situations. (Interview with Major General Elyezer Shkedy, IAF [Res.], former IAF Commander, Tel Aviv, March 26, 2009.) The danger-close criteria loosened up over the course of the ground fighting, with both fighter and attack helicopter pilots being granted increasingly greater personal discretion to make their own judgment calls toward the end. (Interview with Major General Benjamin Gantz, IDF, Israeli defense attaché to the United States, Washington, D.C., December 10, 2008.) Precision munitions were dropped either on assigned mensurated target coordinates in the case of JDAM or on laser-designator spots in the case of LGBs. There were no reported instances of IAF fighter aircrews having been asked to conduct strafing passes.

in an ambush the week before, the IDF announced a withdrawal of its troops from Bint J'beil.⁸⁶

General Nehushtan, the head of the IDF's Planning Directorate and an experienced IAF fighter pilot, later remarked that the withdrawal "doesn't mean that we won't go back in or that the mission is over."⁸⁷ True to that view, he reportedly told Halutz on July 26 that "without a major ground campaign, the IDF [cannot] stop the Katyusha rockets. You must bring this before the government. You need to tell them straight that without a major ground operation, we cannot remove the Katyusha threat. If the government does not approve it . . . we should tell them that they must stop the campaign now." The same day, General Kaplinsky also went to Halutz and said: "We can't go on like this. You must demand a ground offensive at tomorrow's cabinet meeting."⁸⁸

This time, Halutz conceded that both were right and duly acted on his changed conviction. The next day, Olmert's inner council approved a call-up of as many as 30,000 reserve ground troops (three divisions), while still ruling out, at least for the time being, a major escalation on the ground.⁸⁹ One notable, although unheralded, IAF achievement occurred the same day when a fighter leading an armed overwatch patrol was cued to a high-value target by real-time tactical intelligence. As a result of that timely targeting, the pilot succeeded in killing a senior Hezbollah leader, Nur Shalhoub, and several other terrorists while they were in a moving vehicle transporting rockets. With respect to the now-mounting incidence of IDF casualties that had begun to occur on the ground in Lebanon during the battle of Bint

⁸⁶Halutz reportedly told Adam after the setbacks at Bint J'beil: "Udi, casualties are part of the game. We must go on and do what we are committed to doing." (Har'el and Isaacharoff, *34 Days*, p. 142.)

⁸⁷Robin Wright and Jonathan Finer, "Rice Renews Talks in Mideast," *Washington Post*, July 30, 2006.

⁸⁸Quoted in "IDF Shake-Up over Hezbollah War," *JINSA Online*, Washington, D.C.: Jewish Institute for National Security Affairs, March 23, 2007.

⁸⁹Reservists make up 80 percent of Israel's total roster of ground forces.

J'beil nearly a week before, General Adam said at the time: "Human life is of supreme value, but this is a demanding operation, and we are at war. I suggest we don't count the dead until it's all over."⁹⁰

Countdown to a Ceasefire

With the IAF's around-the-clock bombing of enemy infrastructure targets continuing unabated, Prime Minister Siniora dramatically ramped up his now-daily pleas for international help in arranging an immediate ceasefire. On July 28, clearly feeling the effects of Israel's relentless hammering of its own assets, Hezbollah joined the Lebanese government in calling for a ceasefire at the earliest opportunity, to be followed by a prisoner exchange and a reinforcement of UN troops along the Lebanese border. U.S. Secretary of State Condoleezza Rice, in Jerusalem at the time for consultations aimed at bringing about an acceptable end to the fighting as soon as practicable, declared that a ceasefire was now on the immediate horizon. Up to that point, the main goal of the drawn-out U.S. diplomatic effort toward a ceasefire had been to allow the IDF as much time as possible to destroy as much of Hezbollah's military infrastructure as possible.

Then, in a major setback to ongoing efforts to arrange for a timely ceasefire, an IAF attack on a complex of targeted houses after midnight on July 30 in the southern Lebanese village of Qana inadvertently killed what were at first thought to be as many as 50 or more civilians, including women and children. (The targeted complex had been a confirmed source of as many as 150 recent Katyusha rocket launches into Israel.) The incident sparked an instant wave of interna-

⁹⁰Myre and Mouawad, "Israeli Buildup at Lebanese Line as Fight Rages." With respect to the mounting IDF troop casualties, a subsequent report from Yuval Steinitz, the head of the Defense Preparedness Subcommittee of the Knesset's Foreign and Defense Committee, cited a problem of getting needed tactical intelligence to ground units in sufficient time to be useful: "Some of the intelligence about what's on the ground," he declared, "is very sensitive, and Hezbollah did not know we had it, and there are cases where it hasn't been delivered in due time to the unit." (Steven Erlanger and Thom Shanker, "Israel Finding a Difficult Foe in Hezbollah," *New York Times*, July 26, 2006.)

tional outrage that Hezbollah's agile propaganda machine was quick to exploit to the limit. It mattered not that the collateral-damage incident (discussed in greater detail in Chapter Four) was unintended by the IAF, that senior Israeli officials promptly expressed regret and their apologies, that the actual number of noncombatants killed and injured proved to be substantially fewer than that initially reported, or even that there was a suspicious aspect of the incident (a second explosion in the targeted house apparently occurred several hours *after* the moment of impact and detonation of the IAF-delivered munition). The world was revulsed over what became widely spotlighted in every major capital as Israeli indifference to the time-honored principle of noncombatant immunity under the laws of armed conflict.

The next day, the IDF dutifully announced a 48-hour suspension of its bombing campaign, contingent on subsequent "operational developments" that might occur, while it conducted an investigation into the facts and allegations associated with the Qana incident. For its part, Hezbollah was quick to show its readiness to reciprocate by withholding its own fire, in yet another testament to the organization's seamless top-down discipline and command and control. Not a single Hezbollah rocket landed in Israel at any time during the two-day suspension of fire, after a record 156 rockets the day before and 100 the day before that. That example stood as proof positive that Hezbollah's senior leadership picked the targets, assigned the azimuths, and gave the orders to launch, with the shooters in the south simply doing what they were told.⁹¹

The IDF, however, resumed selective air strikes into southern Lebanon at around the 12-hour point into the bombing pause, declaring that its reinstatement of such attacks, an option it had reserved for itself from the start of the pause, was in response to immediate battlefield threats requiring provision of on-call CAS to embattled IDF ground troops. After the initial hue and cry raised by the Qana incident began to abate, the IDF announced its intention to review its standing rules of engagement (ROE) to further minimize the likelihood of any recur-

⁹¹ Interview with Lieutenant Colonel Roni Amir, head of the Doctrine Branch, IAF Headquarters, Ha'kirya, Tel Aviv, March 26, 2008.

rence of such an untoward mishap. At the same time, it insisted that it had no plan to rein in the initiative and latitude that had long been granted to its pilots to exercise their best judgment in real-time tactical circumstances in which their on-scene situation awareness was better than anyone else's by virtue of their proximity to the fight.

At this point, after three weeks of inconclusive IDF operations, a sympathetic American journalist declared frankly on August 1 that "Israel is losing this war." His commentary added, by way of evidence: "So far, Israel has nothing to show for its efforts. No enemy territory gained, no enemy leaders killed, no abatement of the missile barrage that has sent a million Israelis from their homes and workplaces." The comment further noted how the Olmert government had started out by speaking of "breaking" Hezbollah; then of evicting it from the immediate border area; then of "degrading" Hezbollah's capabilities; and finally of establishing an effective multinational force to police the border. Observing how the government's avowed goals had become progressively less ambitious as the war wore on, the assessment charged that the IDF's leadership had further compounded its errors "with an air power-based strategy that . . . was never going to evict Hezbollah from southern Lebanon."⁹²

In fact, as noted more than once before in the preceding pages, the combined-arms campaign featured IDF ground involvement from its first moments, with approximately 173,000 artillery shells and MLRS rounds fired at Hezbollah targets by IDF troops throughout the 34 days of fighting.⁹³ The campaign's approach up to that point would have been more correctly described as the product of a "minimum casualties-based strategy," in that *no one* in the senior Israeli civilian and military leadership was ever eager to commit Israeli ground troops to battle in any significant numbers. Even ten days into the counteroffensive, the commander of Northern Command, Major General Adam,

⁹² Bret Stephens, "Israel Is Losing This War," *Wall Street Journal*, August 1, 2006. Stephens was previously the editor of the *Jerusalem Post*.

⁹³ Brigadier General Itai Brun, IAF, "The Second Lebanon War as a 'Wake-Up Call': A Strategic Perspective and Major Lessons Learned," Gilot Base, Tel Aviv: Dado Center for Interdisciplinary Military Studies, undated briefing charts.

declared categorically in a press interview on July 21: “I do not believe that anyone wants to go back into Lebanon.”⁹⁴ Only after three weeks of mightily resisting a ground offensive did the IDF General Headquarters finally bow to the inevitable on August 1 and begin preparing for its first major ground incursion into Lebanon. The campaign now had 7,000 IDF troops in battle positions north of the border and IAF fighters flying nonstop on-call CAS missions, in addition to attacking such other targets as bridges and roads leading to suspected Katyusha launch sites, Hezbollah tunnel entrances in the Beka’a Valley, and even a hardened bunker discovered buried under a soccer field in Beirut.

At this point in the fighting, the IDF was assessing the size of Hezbollah’s active force at between 2,000 and 3,000 combatants and was claiming to have killed 250 to 300 of them in its operations to date. Emboldened by that assessment, Prime Minister Olmert declared that Israel had finally reached “the beginning of a political process that, in the end, will bring a cease-fire under entirely different conditions than before.” At the same time, however, Defense Minister Peretz reported that “we have reached the stage where we have to expand the operation.” Bearing credible witness to that latter statement, the Northern Command deputy commander, Brigadier General Shuki Shachar, noted that “the ground campaign is becoming bigger and bigger from day to day.” He reported that IDF forces already controlled the Litani River through aerial policing and artillery, as well as by means of a ground presence where the river turned closest to the Israeli border.⁹⁵ Most IDF ground operations were in the form of hit-and-run raids on suspected Hezbollah fighting positions in the villages of southern Lebanon just north of the Israeli border.⁹⁶

⁹⁴Interview in *Jerusalem Post*, July 21, 2006, as quoted in Kainikara and Parkin, *Pathways to Victory*, p. 64.

⁹⁵Craig S. Smith and Steven Erlanger, “Israel Expands Ground Forces Inside Lebanon,” *New York Times*, August 2, 2006.

⁹⁶Actual troops-in-contact situations during this phase of the second Lebanon war were infrequent. When they did occur, most air support requests came from conventional IDF troops rather than from engaged SOF teams. Attack helicopter pilots spoke over the radio directly with engaged IDF brigade commanders. Fighter aircrews, in contrast, spoke only

Meanwhile, on the diplomatic front, the Bush administration continued to insist that there could be no ceasefire until a plan was in place to disarm Hezbollah. Said Secretary of State Rice: "If we don't work for a ceasefire that will be lasting and enduring, then we're going to be right back in here in several months talking about another ceasefire."⁹⁷ As efforts toward a ceasefire continued into the war's 27th day, the Olmert government finally announced its intention to expand the offensive. Peretz reported to a Knesset committee: "I gave an order that, if within the coming days the diplomatic process does not reach a conclusion, Israeli forces will carry out the operations necessary to take control of Katyusha rocket launching sites in every location." Olmert added that there would be "no military restrictions" on stopping further Katyusha launches.⁹⁸

Hezbollah presented a uniquely demanding target array for Israel's conventional ground troops in southern Lebanon. It had the advantage of intimate familiarity with its operating arena, as well as organization in small and loosely connected secret cells that were inherently difficult to hunt down. Nevertheless, IDF ground forays soon found thousands of Katyushas stored in underground bunkers, called "nature reserves" by IDF intelligence, as well as additional caches hidden away in mosques, hospitals, and schools. (Figure 2.8 shows a typical duo of in-ground 10-barrel rocket launchers later discovered by IDF troops in the course of those forays.) The intent now was for the IDF to insert as many as 10,000 troops into southern Lebanon in an attempt to create a buffer zone free of Katyushas, with the initial contingent of troops already in or around more than a dozen towns and villages as far as four miles inside the border. As General Nehushtan put it: "In the first days,

with air controllers in the IAF's forward AOC at Northern Command's headquarters. (Interview with Brigadier General Gabi Shachor, IAF, Palmachim Air Base, March 27, 2008.)

⁹⁷ Jim Rutenberg and Thom Shanker, "U.S. Insists Cease-Fire Must Await Plan to Disarm Hezbollah," *New York Times*, August 2, 2006.

⁹⁸ Edward Cody and Molly Moore, "Israeli Jets Kill 30; No Letup in Militia Attacks," *Washington Post*, August 8, 2006.

Figure 2.8
Hezbollah 10-Barrel In-Ground Rocket Launchers



SOURCE: IAF.

RAND MG835-2.8

we concentrated very much on the air campaign. Now we want to clear Hezbollah from all areas near the border. Our plan is to push north on a much larger scale.”⁹⁹ This reluctant embrace of a major ground-assault option by the IDF as its counteroffensive continued to drag on was an all but explicit testament to the dawning realization among Israel’s top leaders, both uniformed and civilian, that precision stand-off attacks had failed to bring about the Olmert government’s avowed campaign objectives and that the continuing short-range rocket attacks were a central component of Hezbollah’s strategic concept of operations (CONOPS) against Israel.

As these moves began to unfold, the Olmert cabinet now found itself caught in the midst of an acrimonious public debate centered on growing anger over the IDF’s continuing failure to stem the Katyu-

⁹⁹Greg Myre, “Risks Escalate as Israel Fights a Ground War,” *New York Times*, August 5, 2006.

sha fire and countervailing concern that any further escalation on the ground would merely result in an unacceptably high number of Israeli combat casualties. The IAF was now conducting an almost nonstop series of daily air attacks on the *dahiye* in southern Beirut, preceded in each case by the dropping of leaflets warning all civilians to evacuate the area. Tension within the cabinet featured the former defense minister and current Minister of Transportation, Shaul Mofaz, criticizing Peretz's plan for an expanded ground operation as too far-reaching and Peretz retorting that it had been under Mofaz's watch as his predecessor that Hezbollah had been allowed to build up to its current level of strength in the first place.¹⁰⁰ In the end, the cabinet authorized an expansion of the operation. By August 5, some 10,000 IDF troops had advanced into southern Lebanon, although no more than four miles into Hezbollah-occupied territory, with another 5,000 poised on the Israeli side of the border to join them. The IDF again warned that "any vehicle of any type that moves south of the Litani River will be targeted because it will be suspected of carrying rockets and other military equipment."¹⁰¹

Five days later, the IDF still had thousands of troops camped on Israel's northern border awaiting the order from Olmert to cross into Lebanon. Olmert continued to hold back, however, hoping that the implied threat of a major escalation would lead to an early diplomatic solution that would ensure Hezbollah's return to the northern side of the Litani. In that regard, said Peretz, "we are doing everything to allow these two efforts [diplomacy and brinkmanship] to complement each other." Should the diplomatic effort fail, he added, Israel would

¹⁰⁰It should be noted in passing here that Olmert had appointed Peretz to be defense minister only about a month before the troop abduction incident. Furthermore, both Olmert and Peretz lacked any significant past military experience, a rare combination of scant background in security affairs for Israel's most senior political leaders. Peretz, a career politician, had previously dealt mainly with domestic social and economic matters.

¹⁰¹Jonathan Finer and Edward Cody, "Israel Shuffles Command of Lebanon Offensive," *Washington Post*, August 9, 2006.

“use all of the tools” to achieve the government’s avowed goals in the war. Peretz further insisted that IDF forces would not withdraw from southern Lebanon until a credible international peacekeeping force was in place.¹⁰²

An Inconclusive Ending

The meeting of Olmert’s cabinet on August 9 that ultimately produced the decision to commit IDF troops to major combat on the ground turned out to have been the most momentous Israeli leadership convocation at any time during the 34-day crisis. The day before, Minister of Transportation Mofaz had warned ominously: “If you accept this plan [for a major ground offensive], you can look forward to another two months of ground operations. Cloud formations begin in the beginning of September. This’ll make it extremely difficult to get air support, carry out air observations, and go on air rescue missions.”¹⁰³ Nevertheless, Halutz and Eisenkott presented the now-definitive ground invasion plan, called Operation Change of Direction (OCD) 11, to Olmert and his ministers. By that time, the two IDF principals had accepted the unavoidability of a major ground push if the government’s earlier directive to reduce the rate of Hezbollah’s rocket fire into northern Israel were to be honored in good faith.

In presenting the plan to Israel’s top leaders, Halutz said: “This maneuver cannot be measured by the sole question [of] how many casualties will it entail. This is the price that has to be paid so that the operation will have an impact on the entire campaign.”¹⁰⁴ Peretz concurred with Halutz’s belated recommendation—which, in hindsight, arguably should have been put forward by the IDF chief before the campaign was ever set in motion—and duly accepted it. There remained rampant reluctance at all echelons of the IDF to follow through with

¹⁰²Steven Erlanger and Warren Hoge, “Israel Holds Off on Drive to the North,” *New York Times*, August 11, 2006.

¹⁰³Har’el and Isaacharoff, *34 Days*, p. 194.

¹⁰⁴Har’el and Isaacharoff, *34 Days*, p. 195.

actual implementation of the plan, but the senior uniformed leadership saw no other alternative at that point. The deputy commander of an infantry brigade, Lieutenant Colonel Yishai Efroni, later summed up the less than supercharged feeling about the decision among the lower ranks when he said wearily: "That's the only way to solve the rocket problem. . . . Our soldiers just want to do this job and go home."¹⁰⁵

On August 10, under heavy pressure from Peretz, Olmert gave his formal approval to the plan. Viewed in retrospect, had the same option been proposed and implemented by General Halutz during the campaign's first week, it might have helped occasion a more agreeable outcome for Israel. But it came instead at the very last possible moment, just before the UN-brokered ceasefire was about to go into effect and amid pervasive unease about it throughout the IDF. Israel's defense attaché to the United States at the time, Major General Dan Har'el of the ground forces, was bitterly critical of the decision when he learned of it: "History will never forgive you. There was an agreement [the ceasefire] and the forces must be stopped. There is absolutely no sense in getting more soldiers killed."¹⁰⁶

On August 11, with the final countdown to the escalated ground offensive now approaching, the UN Security Council unanimously approved Resolution 1701, which called for a halt to the fighting and authorized the deployment of 15,000 foreign troops to the war zone to help the Lebanese Army take control of southern Lebanon. The resolution further allowed the UN force to take "all necessary action" to ensure that areas in which it would be patrolling were "not utilized for hostile activities of any kind."¹⁰⁷ Both the Israeli government and the Lebanese cabinet, which included two members of Hezbollah, acceded

¹⁰⁵ As to that judgment, an IDF lieutenant and combat engineer who had been wounded in a recent earlier ground engagement in Lebanon was not so sure. Asked whether the attacks should be intensified, he said: "Yeah, but from the air. On the ground, people get hurt. Too many people. I don't say no to ground forces, but it needs to be in a more organized way. So far, this has not been in an organized way." (Molly Moore and Jonathan Finer, "Israelis Authorize Expansion of Combat," *Washington Post*, August 10, 2006.)

¹⁰⁶ Har'el and Isaacharoff, *34 Days*, p. 213.

¹⁰⁷ Colum Lynch and Robin Wright, "Peace Resolution for Lebanon Unanimously Approved at UN," *Washington Post*, August 12, 2006.

to these terms a day later, as did Nasrallah, who affirmed that Hezbollah would honor the call for an end to hostilities. Secretary of State Rice cautioned, however, that the ceasefire would not go into effect immediately and that she and UN Secretary General Annan would need to consult first with Israel and Lebanon to set a definitive date.

The same day that UN Security Council Resolution 1701 was approved, Olmert authorized the IDF to begin final preparations for expanding its ground involvement in southern Lebanon, while at the same time announcing his intent to ask his cabinet to accept the Security Council resolution. By this time, Olmert had come under increasingly heavy fire at home. In telling testimony to the dramatically changed nature of Israeli popular feelings about the war, the country's newspaper of record, *Ha'aretz*, remarked in a front-page analysis: "You cannot lead an entire nation to war promising victory, produce humiliating defeat, and remain in power. You cannot bury 120 Israelis in cemeteries, keep a million Israelis in shelters for a month, and then say 'Oops, I made a mistake.'" A concurrent *Ha'aretz* opinion poll reported that only 20 percent of the Israeli rank and file now believed that were the war to end immediately, Israel would emerge as the winner. Thirty percent felt that Israel was losing the war, and 43 percent said that there would be no winners or losers. The majority of respondents in all polls favored expanding ground operations and faulted both the Olmert government and the IDF for not having taken more forceful ground action earlier.¹⁰⁸

Only when deliberations at the UN over ceasefire arrangements seemed to be going against Israeli interests did Olmert and Peretz finally order the implementation of the expanded ground operation plan that

¹⁰⁸ Molly Moore and Edward Cody, "Israel May Expand Ground Combat," *Washington Post*, August 12, 2006. This could be cited as further evidence that a major failing on the part of the Olmert government in its conduct of the campaign may have been poor communication regarding its actions and intentions with the Israeli population. The opinions reported above, after all, were only perceptions. The reality, arguably, was that the IDF at this stage of its counteroffensive was actually making significant progress against Hezbollah. But, as a senior RAF officer suggested, "perceptions can become a self-fulfilling reality if information operations are not bound tightly to the government's and IDF's strategy, which, in this case, they appear not to have been." (Comments on an earlier draft by Air Vice-Marshal M. P. Colley, RAF, January 11, 2010.)

had been approved in principle by the cabinet on August 9. The formal order for forward-deployed IDF units to move out reached Northern Command headquarters at 1700 on August 11. It was passed downward a half hour later to the tasked IDF brigades and battalions. In the end, the timing of the order's issuance left the IDF with only three days in which to make the most of OCD 11 rather than the initially hoped-for five or more days before the ceasefire went into effect. Accordingly, with the ceasefire now only days away, Olmert and Peretz stepped out with dispatch to escalate substantially on the ground by ordering the deployed IDF divisions to advance all the way to the Litani. That decision did not reflect a serious intent on their part to attempt to clean out all the Katyushas, but rather simply a desire to make a credible show of force in an effort to seize the last opportunity to intimidate Hezbollah's leaders. During the final 72-hour window of combat, the IDF tripled its number of troops in Lebanon and substantially ramped up the intensity of its standoff attacks to include, for the first time, the use of a significant number of rocket- and artillery-delivered CBU's. IAF air attacks also increased in number and intensity and ranged across the entire length and breadth of Lebanon. Indeed, in the campaign's final phase, the IAF flew around 5,300 combat and combat-support sorties, averaging about 380 a day. That number represented around 45 percent of all IAF sorties flown throughout the 34-day war.

On August 13, two days before the ceasefire was to go into effect, aerial attacks by the IAF and heliborne troop insertions into southern Lebanon, often under heavy fire, sought to extend the IDF's control all the way to the Litani as directed by Olmert and Peretz. The heliborne operation, which entailed the movement of hundreds of IDF troops into the war zone, was the IAF's largest such deployment of ground forces since the Yom Kippur War of 1973. Not surprisingly, the IDF suffered its highest casualty rate during the last three days of peak-intensity fighting. Coordination among force elements was said to have been uniformly poor throughout the final phase of the campaign. In some cases, requests from embattled IDF tank crews for immediate CAS were denied by Northern Command out of concern

over the danger of a possible inadvertent friendly-fire incident.¹⁰⁹ The performance of IDF ground forces throughout this escalated endgame further revealed manifold shortcomings in combat tradecraft. Infantry units were often unable to coordinate with armor, and tank crews proved repeatedly nonproficient in night operations.¹¹⁰ Moreover, from start to finish, IDF ground operations in Lebanon lacked a clearly identifiable operational pattern. Said two informed Israeli observers afterward: “If one insists on tracing the IDF’s moves on a map, it is hard to discern where the army fought and what Hezbollah did.”¹¹¹ There is no question, however, that it invariably entailed close combat, mostly in built-up areas that were often full of Lebanese civilians.

As anticipated, the ceasefire previously agreed to by all involved parties went into effect on August 14, with civilians in northern Israel at long last emerging from their bomb shelters and vehicular movement gradually resuming throughout Lebanon. Nasrallah, in keeping with his keen appreciation of the crucial importance of the war of narratives, artfully claimed to have achieved a “strategic and historic victory.”¹¹² Consistent with the terms of agreement regarding the ceasefire, the Lebanese government dispatched its troops into southern Lebanon

¹⁰⁹As one informed assessment later expanded on this revealed deficiency in tactical-level integration in the IDF’s joint air-land operations, “lack of coordination between armor, infantry, close air support, and artillery meant that initial calls for fire were denied because of the potential for fratricide. Only after all forces gained situational awareness on 12 August was the IDF able to synchronize its overwhelming firepower and take the high ground in Ghandourieyh by the morning of 13 August.” (Captain Daniel Helmer, USA, “Not Quite Counterinsurgency: A Cautionary Tale for U.S. Forces Based on Israel’s Operation Change of Direction,” *Armor*, January–February 2007, p. 11.)

¹¹⁰Elaborating further on this bill of particulars, one Israeli reporter later wrote of “tank crews who had not seen a tank in six years. . . . I saw one Armored Corps battalion commander, a career battalion commander, and when I looked him in the eye, I saw they were blank, empty, because he was going to take his battalion into Lebanon that night, and he had never led a battalion anywhere at night.” (Ben Kaspit, “Like a Surrealistic Movie,” *Ma’ariv*, Tel Aviv, September 15, 2006.)

¹¹¹Har’el and Isaacharoff, *34 Days*, p. 191.

¹¹²To which President Bush countered: “How can you claim victory when at one time you were a state within a state, safe within southern Lebanon, and now you’re going to be replaced with a Lebanese army and an international force?” (John Kifner, “Fragile Cease-Fire Allows Thousands to Return Home,” *New York Times*, August 15, 2006.)

under a compromise arrangement that allowed Hezbollah to retain some of its arms caches near the border. Finally, even before the smoke of battle had cleared, Israel's Foreign Minister Livni was citing fresh evidence that Iran and Syria had already resumed their rearmament of Hezbollah, with new shipments observed coming into Lebanon from Syria just as regularly as before.¹¹³

The first round of postwar recriminations on the Israeli home front was not long in coming, with Olmert acknowledging early on in testimony before the Knesset that there had been "deficiencies" in his government's conduct of the war and with opposition leader Benjamin Netanyahu declaring: "It must be said honestly, there were failures, many failures, failures identifying the threat. Failures in the management of the home front," and that Israelis must "learn the lessons and fix the mistakes."¹¹⁴ In an open letter to all IDF personnel, General Halutz likewise admitted to significant shortcomings in the planning and conduct of the war. He further noted that "questions will be answered professionally, and everyone will be investigated—from me down to the last soldier," acknowledging that "alongside the

¹¹³ Steven Erlanger, "As Israel Begins to Pull Troops Out, Lebanon and the UN Prepare to Replace Them," *New York Times*, August 16, 2006. An IAF officer told me that "anything smaller than a Boeing 747 can be smuggled across the Syrian border into Lebanon undetected." (Interview with Lieutenant Colonel Roni Amir, head of the Doctrine Branch, IAF Headquarters, Ha'kirya, Tel Aviv, March 26, 2008.) In this regard, it may forever remain a mystery of the second Lebanon war why General Halutz, instead of bending every possible effort to keep the fighting from spreading to Syria, did not press the Olmert leadership hard for an opposite strategic course aimed at taking advantage of Hezbollah's border provocation on July 12, to deal Syria a resounding punitive blow during the earliest moments of the IDF's counteroffensive for serving as a major supplier of short-range rockets and other arms to Hezbollah. On this count, a later assessment of the campaign noted that "a great deal of political maneuvering and posturing took place to placate Syria while it was actively resupplying Hezbollah with the latest weaponry," almost as if to suggest that "the Israeli government was sanctioning the resupply of weapons to Hezbollah so that they could be brought to bear on the IDF and other Israeli civilian areas." (Kainikara and Parkin, *Pathways to Victory*, pp. 69–70.) I am grateful to Eliot Cohen of the Paul H. Nitze School of Advanced International Studies for bringing this intriguing question to my attention.

¹¹⁴ Kifner, "Fragile Cease-Fire Allows Thousands to Return Home."

achievements, the fighting uncovered shortcomings in various areas—logistical, operational, and command.”¹¹⁵

The day after the ceasefire went into effect, Peretz announced his intention to form a committee to investigate Israel’s conduct of the war consisting of retired generals and business executives, to be chaired by former Chief of Staff Lipkin-Shahak, and to present its preliminary findings within three weeks.¹¹⁶ Other leaders, however, insisted instead on a more independent board of inquiry modeled on the Agranat Commission that had investigated the IDF’s performance after the 1973 Yom Kippur War.¹¹⁷ That demand came amid a growing popular consensus both in Israel and abroad that Hezbollah, having faced down the vaunted IDF and survived to fight another day, had essentially won the war.¹¹⁸ Predictably, also heard were the first of what soon came to be a litany of allegations in both Israel and the United States as to how the IDF’s troubled performance once again proved that “air power alone can never defeat terrorists,” as if any responsible airman

¹¹⁵ Steven Erlanger, “Israeli General Tells Troops of Weaknesses in War Effort,” *New York Times*, August 25, 2006.

¹¹⁶ Edward Cody and Colum Lynch, “Lebanon Sending Troops into South,” *Washington Post*, August 17, 2006.

¹¹⁷ The Agranat Commission, chaired by the chief justice of Israel’s Supreme Court, Shimon Agranat, deliberated through 1974 and 1975 and ultimately submitted to the government a lengthy review of the Egyptian and Syrian surprise attack that caught the IDF so completely off guard, as well as of the IDF’s subsequent conduct of the ensuing war. By one well-documented account, the commission “undertook the thankless task of assigning blame for the surprise and initial failures of the Yom Kippur War.” It ultimately concluded that none of the most responsible IDF figures should continue to serve in their then-current positions. (Eliot A. Cohen and John Gooch, *Military Misfortunes: The Anatomy of Failure in War*, New York: Vintage Books, 1990, p. 112.)

¹¹⁸ As two Australian commentators later observed regarding this first impression on the part of the Israeli rank and file, “the initial reaction to the stalemate within Israel was rooted in the public perception that every time Israel went to war, they would have the same success that they had in the 1967 war.” (Kainikara and Parkin, *Pathways to Victory*, p. 4.) Notably, no doubt anticipating a cascade of such allegations yet to come, the IDF’s chief of intelligence, General Yadlin, declared emphatically on the eve of the ceasefire on August 13 that Israel had *not* lost the war and that as a result of the IDF’s sustained joint combat operations throughout the 34-day conflict, Hezbollah was no longer what it formerly was. (Har’el and Isaacharoff, *34 Days*, p. 236.)

in Israel, the United States, or anywhere else had ever suggested that it could.¹¹⁹ Peretz at first offered to postpone the formation of his planned committee in the face of mounting criticism that it would be insufficiently independent. Eventually, bowing to that criticism, he consented to a full independent inquiry. A survey published shortly thereafter by *Yedi'ot Ahronot*, Israel's top-selling newspaper, had 63 percent of the respondents favoring Olmert's stepping down, with 74 percent recommending the resignation of Peretz and 54 percent suggesting the same for Halutz.¹²⁰

As for the war's tally sheet, the IDF's ground contribution ultimately entailed some 30,000 troops operating in southern Lebanon. At war's end, the IDF had activated about 62,000 reservists. Early accounts varied on the total number of IDF casualties incurred. In the end, the Winograd Commission's definitive final report noted 119 IDF personnel (half reservists) killed in action, 628 wounded, and 45 Israeli civilians killed by Hezbollah rocket attacks. Of the soldiers who lost their lives, 30 were members of tank crews. A total of 500 Merkava tanks were committed to combat. Five were destroyed by powerful underbelly mines, with 45 to 50 more (roughly 10 percent of the total number of tanks committed to the ground fighting by the IDF) hit by Hezbollah ATGMs and 21 penetrated, some more than once.¹²¹ IDF ground forces expended upward of a million CBU submunitions,

¹¹⁹Victor Davis Hanson, "Relearning Lessons in the War on Terror," *Chicago Tribune*, August 25, 2006.

¹²⁰Joshua Mitnick, "Poll Finds Most Want Olmert to Quit over War," *Washington Times*, August 26, 2006. In the months after the campaign ended, continuing public disapprobation of the Olmert government's performance prompted a steady series of early resignations among the IDF's main involved principals, starting with Udi Adam and Gal Hirsch and followed soon thereafter by General Halutz and the navy commander who was faulted after Hezbollah's C-802 missile struck INS *Hanit*. In the end, General Kaplinsky, who had been installed by Prime Minister Sharon as Halutz's deputy with the intention that he would succeed Halutz as Chief of Staff, was not appointed to that position and also retired. Peretz resigned from the government, and Olmert also eventually resigned, although in the wake of (and as a consequence of) an unrelated political scandal.

¹²¹Anthony H. Cordesman, "The Lessons of the Israeli-Lebanon War," Washington, D.C.: Center for Strategic and International Studies, briefing charts, March 11, 2008. See also Ben-Israel, *The First Israel-Hezbollah Missile War*, p. 45.

many of which remain, to this day, unexploded and in place where they landed. After the fighting ended, there were reports of as many as 8,500 unexploded CBU submunitions scattered about southern Lebanon that were the residue of IDF artillery and MLRS attacks against suspected Hezbollah rocket sites and other targets in open terrain.¹²²

Hezbollah claimed 81 of its fighters killed in action, although the IDF insisted that the true number was substantially higher. IDF figures indicate that Hezbollah, in fact, lost around 600 trained combatants—more than a tenth of the organization's estimated total personnel strength—many, if not most, from air attacks by the IAF.¹²³ The number of fatalities incurred on the Lebanese side in all was reported as 1,100, including Hezbollah combatants, Lebanese military personnel, and civilians. One-third of the latter were said to have been children. A total of 3,628 Lebanese civilians were reported wounded, with around 10,000 homes destroyed, 22,500 buildings badly damaged, and 73,000 more partially damaged. The assessed damage done to Lebanon's economy was between \$3 billion and \$5 billion.¹²⁴

¹²²David Enders, "Cluster Bomblets Continue to Kill," *Washington Times*, August 23, 2006.

¹²³Interview with Lieutenant Colonel Roni Amir, IAF, head of the Doctrine Branch, IAF Headquarters, Ha'kirya, Tel Aviv, March 26, 2009. See also Amos Har'el, "Israel IDF Intelligence: An Iranian Nuclear Capacity in Mid-2009," *Ha'aretz*, Tel Aviv, July 11, 2007. It bears noting here that this point has been challenged in some quarters, with one authority insisting instead that, of the more than 600 known Hezbollah fighters who lost their lives to Israeli fires in the 34 days of combat, a confirmed 484 were killed by the troops of the IDF's 91st Division. (Interview with Brigadier General [Res.] Gal Hirsch, commander of the 91st Division during the second Lebanon war, Tel Aviv, March 30, 2009.)

¹²⁴Har'el and Isaacharoff, *34 Days*, p. 249.

Key Israeli Air Accomplishments

For the most part, in those mission areas in which it naturally excelled, the IAF performed to its usual high standards of competence throughout its 34-day engagement against Hezbollah. Indeed, it exceeded the government's expectations in many respects, with any shortfalls in combat effectiveness due mainly to a known or predicted absence of adequate actionable intelligence at the tactical level when it came to the need for attacking such time-critical targets as hidden stockpiles of enemy short-range rockets. Viewed in hindsight, its accomplishments in both planning and execution stand as the principal remaining untold story of Operation Change of Direction. Although General Halutz and his civilian superiors in the Olmert government—misguidedly, as it turned out—took special pains to avoid calling the campaign a “war” and prosecuting it as such throughout its duration, the IAF, in keeping with its long-standing operational culture, comported itself from the campaign's first moments onward with a wartime mindset. Unlike Israel's ground forces, whose readiness for major combat against an able opponent had been allowed to decay badly as a result of their all-consuming preoccupation with lower-intensity operations against the Palestinian *Al Aqsa intifada* since that uprising began in September 2000, the IAF, as the IDF's only fighting arm whose mission roster covers the entire conflict spectrum from policing operations against individual terrorists to a strategic strike on Iran, was at peak readiness for its opening-round attacks on the morning the crisis erupted. (Table 3.1 offers an overview of the IAF's current combat aircraft inventory.)

Bearing credible witness to this performance, the Winograd Commission's final report, issued in January 2008, concluded that the IAF

Table 3.1
IAF Aircraft Inventory

Aircraft	Type	IAF Name	In Service
Fighters	F-15A/B/C/D	<i>Baz</i> (Falcon)	59
	F-15I	<i>Ra'am</i> (Thunder)	24
	F-16A/B	<i>Netz</i> (Hawk)	104
	F-16C/D	<i>Barak</i> (Lightning)	126
	F-16I	<i>Sufa</i> (Storm)	102
Attack helicopters	AH-1E	<i>Tsefa</i> (Viper)	28
	AH-1F	<i>Tsefa</i> (Viper)	55
	AH-64A	<i>Peten</i> (Cobra)	17
	AH-64D	<i>Sharaf</i> (Serpent)	17
Electronic intelligence	B-707 ELINT/ECM	<i>Chasida</i> (Stork)	5
	G-550 Gulfstream	<i>Nachshon</i> (Pioneer)	4
	EC-130H	<i>Karnaf</i> (Rhinoceros)	2
Tankers	KC-707	<i>Saknayee</i> (Pelican)	5
	KC-130H	<i>Karnaf</i> (Rhinoceros)	5
Heavy transports	C-130E/J	<i>Karnaf</i> (Rhinoceros)	14
Transport/CSAR helicopters	CH-53D	<i>Yas'ur</i> (Petrel)	35
Utility helicopters	UH-60A	<i>Yanshuf</i> (Owl)	10
	UH-60L	<i>Yanshuf</i> (Owl)	14

SOURCES: "Israel Air Force/Air and Space Arm (*Heyl Ha'avir*): Aircraft Order of Battle"; *The Military Balance 2007*, London: International Institute for Strategic Studies, 2007, pp. 228–230; and "Israel—Air and Space Force," *Jane's World Air Forces*, June 9, 2008.

NOTE: Excludes dozens of F-4s, A-4s, and light fixed- and rotary-wing utility aircraft.

had displayed "exceptional capabilities" and turned in some "impressive achievements" over the course of the IDF's counteroffensive. That impartial document, considered at greater length in Chapter Five, further noted that the scope of IAF operations was "unprecedented and absolutely disproportionate [in comparison] to Israel's past wars." It also concluded that the IAF both "executed most of its preplanned assignments well and . . . successfully carried out many unplanned missions that it was given in the course of the war. . . . Paradoxically, the [IAF's] availability to carry out this job despite the high risks involved and with the great heroism [that its aircrews] demonstrated . . . helped

to compensate for the severity of the ground force's failure in this area."¹ In all, Judge Winograd and his fellow commissioners found the IAF to have been by far the most effective IDF service-branch participant in all aspects of Operation Change of Direction.

As the campaign unfolded, the IAF's mission taskings were, in the following order of declared importance: to neutralize Hezbollah's medium- and long-range rockets; to interdict and deter military movements by Hezbollah both within Lebanon and from Syria into Lebanon; and, to the extent possible, to geolocate and eliminate Hezbollah's top leaders.² As Chapter Four discusses in more detail, the third of these objectives proved largely elusive throughout the 34 days of fighting. The first two, however, played to the IAF's greatest strengths and were more than satisfactorily met from the campaign's opening night onward.

To be sure, the airspace over Lebanon presented a relatively benign operating environment for the IAF. There were no air-to-air threats or significant enemy surface defenses to contend with, aside from sporadic fire from infrared surface-to-air missiles (SAMs) and antiaircraft artillery (AAA). Figure 3.1 shows one of the few Hezbollah antiaircraft guns that was geolocated and destroyed by the IAF during the 34-day campaign. IAF helicopter crews did, however, report encountering attempted man-portable SA-18 infrared SAM attacks by Hezbollah forces, and the IAF leadership was sufficiently concerned about possible access by Hezbollah to vehicle-mounted SA-8s that it insisted on the use of active countermeasures to an "unprecedented degree" to avoid losing an aircraft to enemy ground fire and thereby giving Hezbollah a victory in the propaganda war.³

In a determined effort to balance needed risk-taking against that remote possibility, the IAF Commander, Major General Elyezer Shkedy,

¹ *Final Winograd Report*, Chapter 9, "Arms, Combat Support Units, and Special Operations," The Air Force, Facts, paragraphs 8, 18, 24, and 26.

² Interview with Lieutenant General Dan Halutz, IAF Headquarters, Ha'kirya, Tel Aviv, March 26, 2008.

³ Robin Hughes, "Iran Answers Hizbullah Call for SAM Systems," *Jane's Defence Weekly*, August 9, 2006, p. 6; Cordesman, "The Lessons of the Israeli-Lebanon War," p. 36.

Figure 3.1
Hezbollah Mobile AAA Gun



SOURCE: IAF.

RAND MG835-3.1

stressed the importance of zero losses of IAF aircraft to avoid providing any exploitable grist for Hezbollah's always-alert propaganda mill. Yet, like any good commander, he also instructed IAF planners and aircrews to take all reasonable risks that they deemed essential for accomplishing their assigned missions.⁴ As combat operations unfolded, this injunction was honored to the hilt by both C-130 and UH-60 pilots toward the campaign's endgame, when those aircraft figured centrally in both day and night delivery of urgently needed supplies to engaged IDF troops and in emergency medical evacuation (medevac) operations under heavy Hezbollah fire. In addition, despite every readily imaginable precautionary measure undertaken in the circumstances, a CH-53 assault helicopter was downed by hostile fire during a night troop-insertion mission, making it the IAF's sole aircraft loss due to direct enemy action throughout the campaign. (See the Airlift and CSAR Support section below for further discussion of this incident.)

⁴Interview with Major General Elyezer Shkedy, IAF (Res.), former Commander, IAF, Tel Aviv, March 26, 2009.

As for noncombat losses, a heavily loaded F-16I operating out of Ramon Air Base in the Negev Desert blew a tire during takeoff on July 19. The pilot and WSO both ejected successfully, but the aircraft was destroyed. A day later, two AH-64A Apache attack helicopters returning from a combat mission just after midnight collided near Ramat Neftali about two miles inside the Israeli border, after the pilot of one experienced a system malfunction and was attempting to make an emergency landing. One pilot was killed in the collision and the other three crewmembers were injured, one severely. One of the Apaches was lost in the accident. The other sustained considerable damage but was said at the time to be possibly repairable.⁵ Not long thereafter, a third Apache, this one a newly acquired AH-64D Longbow version with only 300 recorded flight hours, crashed just on the Israeli side of the border, killing the two crewmembers, Colonel Tzvi Luft and Lieutenant Tom Farkash, as they were supporting IDF operations during the battle of Bint J'beil on July 24.⁶ Hezbollah propagandists promptly claimed credit for bringing the aircraft down, but the loss was quickly determined to have been caused instead by a catastrophic separation of the main rotor while the aircraft was on station at 8,000 ft above ground level (AGL), well beyond the reach of Hezbollah small-arms fire.⁷

⁵Mouawad and Erlanger, "Marines Return to Beirut to Aid U.S. Evacuation; Alon Ben-David, "Israel to Counter Hizbullah Forces," *Jane's Defence Weekly*, July 26, 2006, p. 6.

⁶Although neither crew member transmitted a radio distress call, they jettisoned their ordnance as their rotorless aircraft plummeted to the ground. (Felix Frisch, "Boeing: Apache Crashed Because of Difficult Flying Conditions," *Ma'ariv*, Tel Aviv, October 30, 2006.) The AH-64D is equipped with the Longbow AN/APG-78 mast-mounted millimetric fire-control radar and an advanced radio frequency interferometer for fire-and-forget AGM-114L Hellfire 2 missiles. It also is configured with indigenously produced command-and-control and electronic warfare systems. ("Israel—Air and Space Force," *Jane's World Air Forces*, June 9, 2008.)

⁷Immediately after this surprise occurrence, the IAF grounded its entire inventory of 17 Apache Longbows and established with Boeing, the aircraft's manufacturer, a joint panel of inquiry to investigate the loss, which reportedly had no precedent in the Apache program's history. Soon thereafter, the IAF returned its AH-64Ds to flight status, but under severe operating restrictions until the IAF and Boeing could jointly revalidate the aircraft's safe operating envelope. ("Israel—Air and Space Force.")

In all, out of a total of nearly 19,000 sorties flown throughout the campaign, the IAF experienced one aircraft lost in combat from enemy fire and three more from accidents. As that record attests, IAF aircrews were essentially able to operate with impunity throughout Lebanon's airspace, enjoying both freedom *from* attack and freedom *to* attack. In the end, the most notable combat achievements by the IAF were its hitherto-unprecedented level of sustained combat sortie-generation activity, its first-ever preemptive offensive against an enemy ballistic-missile array, its skillful integration of UAVs into both independent air operations and joint air-ground combat, its courageous mobility and combat search and rescue (CSAR) operations under fire, and its downing of two hard-to-engage Hezbollah Ababil UAVs of unknown mission intent by an air-to-air missile fired by an F-16C. The discussion that follows looks more fully in turn into each of these five achievements.

Sustaining a New Battle Rhythm

Operation Change of Direction entailed the first large-scale and sustained aerial offensive to be conducted by any country other than the United States since World War II. It also featured the most complex air-warfare effort in more than six decades of IDF service to the State of Israel. The IAF launched its offensive with no prior notice and with no opportunity for a final rehearsal of its initial strikes. Yet it reached full operational swing before the end of the first day of combat.

Throughout the campaign, the four main geographic areas of IAF combat operations were

- Beirut—Hezbollah's command and control nexus
- the Beka'a Valley—Hezbollah's supply and logistics center
- southern Lebanon—the locus of Hezbollah's military infrastructure
- the border area just north of Israel where most of the ground fighting took place.

Within these four operating areas, IAF aircraft over the course of the campaign struck some 7,000 targets (out of a total of around 15,000 identified and geolocated candidates) at a rate of roughly 340 combat sorties a day, depending on mission tasking. More than half those sorties were flown at night. As noted in Chapter Two, the first 24 hours of the war typified the air operations flow that followed over the ensuing 33 days. The overall effectiveness of the IAF's preplanned sorties dropped off dramatically after the first four days of around-the-clock strike operations, during which time the IAF and supporting ground artillery and MLRS fire effectively attacked all 83 objectives on Northern Command's most recently updated target list. After that, with so few remaining fixed and targetable enemy assets of any real military worth, most IAF air operations entailed armed overwatch patrols and TST attacks against pop-up targets of opportunity.

The daily air tasking order (ATO) was generated in the main air operations center (AOC) at IAF headquarters in Tel Aviv, where one of the five most senior IAF general officers was always on duty as the operations director and principal battle manager. In most cases, target approvals were granted with a minimum of delay in the main AOC.⁸ The baseline CONOPS for daily mission planning was the air portion of the "Icebreaker" construct described briefly in Chapter Two. General Shkedy, the IAF Commander, received a situation update every morning at 0700. The daily air tasking process was said to have been invariably responsive and fast.⁹

In servicing the 7,000 targets (including as-needed reattacks) and responding to other mission tasking, the IAF flew 18,900 combat sorties in all. Almost 12,000 of those were fighter sorties in all mission categories, with attack helicopters racking up another 2,500 sorties. (IAF fighters normally operated in two-ship elements rather than in larger

⁸All preplanned targets were approved by target category. All targeted buildings in the *dahiye* were approved personally either by General Halutz or by the head of the IDF's Operations Directorate, General Eisenkott.

⁹A less robust package of preplanned attack options for ATO planners to draw from was called "Double-Edged Sword." (Interview with the head of the IAF Campaign Planning Department during Operation Change of Direction, IAF Headquarters, Ha'kirya, Tel Aviv, March 26, 2008.)

force packages throughout the majority of the 34-day campaign.)¹⁰ In addition, more than 1,500 UAVs and manned intelligence, surveillance, and reconnaissance (ISR) sorties and around 1,300 C-130 air mobility sorties were flown over the course of the campaign.¹¹ Finally, IAF assault and utility helicopter aircrews conducted some 2,000 sorties, which included roughly 120 CSAR missions, nearly half of them inside Hezbollah-infested territory, often under heavy fire. In addition, 110 combat medevac sorties were flown, 94 of which entailed emergency rescue operations under fire. Forty of those were daylight missions carried out against all IAF safety rules, at great risk, and in the face of multiple operational hazards.¹² (Figure 3.2 depicts the approximate sortie mix.) In some cases, IAF attack helicopter pilots pressed their attacks as close to their intended targets as the tactical imperatives of the moment appeared to warrant, even though they were under IAF headquarters direction to maintain a safe standoff range. Those instances were rare, however, despite the fact that the assessed need for such close support from the perspective of engaged IDF ground commanders was both constant and high. Such aggressive fire support was especially in evidence during the heaviest fighting at Maroun Al Ras, in which, according to the 91st Division's commander, General Hirsch, the IAF's attack helicopter and Blackhawk pilots truly performed as "heroes."¹³

This overall sortie count was only slightly lower than the total number of sorties flown during the 19-day Yom Kippur War of 1973, a war in which, for a time, Israel's very survival was at stake. The

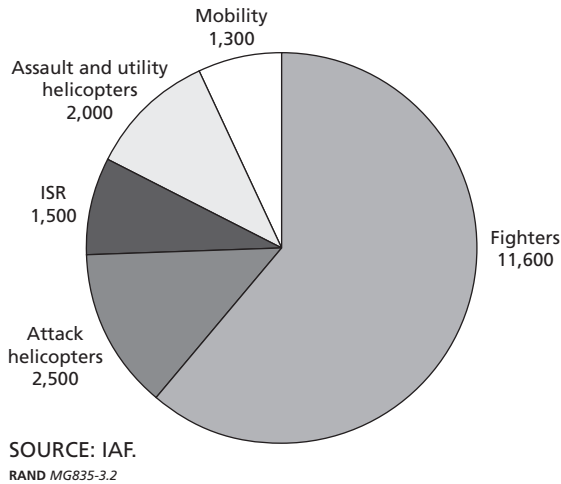
¹⁰ Interview with the former deputy commander of an F-16D squadron during Operation Change of Direction, Palmachim Air Base, Israel, March 31, 2009.

¹¹ Interview with Lieutenant Colonel Roni Amir, IAF, head of the Doctrine Branch, IAF Headquarters, Ha'kirya, Tel Aviv, March 26, 2009.

¹² *Final Winograd Report*, Chapter 9, "Arms, Combat Support Units, and Special Operations," The Ground Forces Command, Evacuation of Casualties from the Battlefield, paragraph 21; Eli Ashkenazi, Ran Reznick, Jonathan Lis, and Jack Khoury, "The Day After: The War in Numbers," *Ha'aretz*, Tel Aviv, August 18, 2006.

¹³ This did not, however, become the overall pattern. (Interview with Brigadier General [Res.] Gal Hirsch, commander of the IDF's 91st Division during the second Lebanon war, Tel Aviv, March 30, 2009.)

Figure 3.2
IAF Sortie Mix During Operation Change of Direction

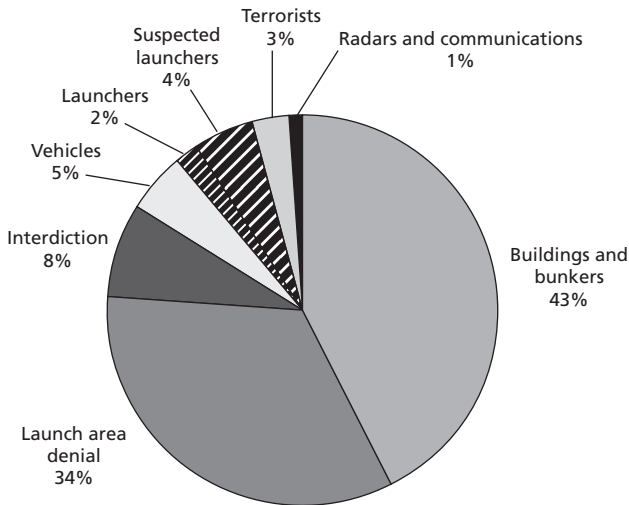


number of attack sorties flown during the second Lebanon war actually *exceeded* the number flown in the Yom Kippur War. In a related measure of note, the number of IAF attack helicopter sorties flown against Hezbollah in 2006 was twice the number flown during Operation Accountability and Operation Grapes of Wrath (the first Lebanon war) combined. Compared with the three weeks of major combat in Operation Iraqi Freedom in early 2003, Operation Change of Direction lasted longer (34 days as opposed to 21), saw the release of almost as many air-delivered munitions (21,600 compared with 29,500), and featured more than half the daily aerial munitions delivery rate (705 compared with 1,340).

In all, IAF fighters and attack helicopters expended 7,732 precision air-delivered laser-guided, satellite-aided, or electro-optically guided munitions. Of these, around 13 percent were AGM-114 Hellfire and indigenously made Israeli air-to-ground munitions fired by IAF attack helicopters.¹⁴ (The number of targets serviced by these munitions is broken down by target category in Figure 3.3.) In sum,

¹⁴ Ben-Israel, *The First Israel-Hezbollah Missile War*, p. 60.

Figure 3.3
IAF Targets Attacked During Operation Change of Direction



SOURCE: IAF.
 RAND MG835-3.3

the total number of armed fixed- and rotary-wing sorties flown during Operation Change of Direction (roughly 14,000 in all) was unprecedented in a single air offensive in the IAF's experience. As just noted above, the number exceeded that of the Yom Kippur War (11,223) and greatly exceeded that of the 1982 air war over Lebanon's Beka'a Valley (6,052).¹⁵

Even at this seemingly intense level of effort, however, the IAF and its AOC did not operate anywhere close to their maximum capacity, but rather at only around the 25- to 40-percent mark, depending on daily mission tasking. (More than a few of the most experienced mission-ready pilots in the IAF's reserve contingent, however, contributed to generating these sorties.)¹⁶ Around 100 of the IAF's 500 fight-

¹⁵ Ben-Israel, *The First Israel-Hezbollah Missile War*, p. 52.

¹⁶ Of all the IAF pilots and WSOs who flew combat sorties throughout the campaign, roughly a third were assigned to line fighter and helicopter squadrons, another third were on headquarters or other staff assignments while maintaining currency in their particular

ers and some 48 of its 160 attack helicopters were committed to conducting strike operations during any given day. In the end, aircraft from virtually all the IAF's bases and flying units took part in combat operations during the campaign, but a few bases carried a disproportionate share of the workload because of their closer proximity to the war zone. For example, the four F-16 squadrons at the IAF's northernmost Ramat David Air Base near Haifa flew more than one-quarter of the total number of fighter sorties (roughly 3,000). (Table 3.2 indicates the aircraft types and assigned squadrons at each IAF main operating base.) Participating fighter aircrews flew an average of two sorties a day during the campaign. There was little or no KC-707 tanker involvement because tanker support was not needed due to the short ranges from the IAF's main operating bases to target areas and combat air patrol (CAP) stations in or near Lebanon. Most sorties lasted only 45 minutes to 1.5 hours.¹⁷ (Figure 3.4 shows the locations of the IAF's main air bases.)

The vast majority of the fighter sorties flown during Operation Change of Direction were devoted to various ground-attack mission assignments. However, some F-16s and F-15Cs flew around-the-clock defensive counterair (DCA) orbits over the Mediterranean just west of the Lebanese coast, mainly to hedge against the possibility of a surprise launch by Hezbollah of armed Ababil UAVs and air-breathing missiles into Israeli airspace. Over the course of the 34-day campaign, the IAF flew about 1,000 DCA sorties in all. IAF F-15Cs also dropped satellite-aided JDAMs and unguided Mk 82 and Mk 84 general-purpose 500- and 2,000-lb bombs in support of the IDF's joint operations.¹⁸ These primarily air-to-air fighters are not configured with targeting pods and accordingly cannot self-designate LGBs. However, the IAF

aircraft, and the final third were mission-ready reservists who flew weekly with line squadrons to maintain their operational currency. (Interview with Lieutenant Colonel Roni Amir, IAF, head of the Doctrine Branch, IAF Headquarters, Ha'kirya, Tel Aviv, March 26, 2009.)

¹⁷ Interview with Lieutenant Colonel Roni Amir, head of the IAF Doctrine Branch, and with the former deputy commander of an F-16D squadron and then-air liaison officer to the IDF's 91st Division, Israel-Lebanon border, March 25, 2008.

¹⁸ Interview with the head of the IAF Campaign Planning Department during Operation Change of Direction, IAF Headquarters, Ha'kirya, Tel Aviv, March 26, 2008.

Table 3.2
IAF Operational Squadrons and Aircraft Types

Unit	Name	Aircraft Type
Ramat David Air Base Wing 1		
109 Sq	The Valley Squadron	F-16D Block 30
110 Sq	The Knights of the North Squadron	F-16C Block 30
117 Sq	The First Jet Squadron	F-16C Block 30
193 Sq	The Maritime Helicopter Squadron	AS565MA
Tel Nof Air Base Wing 8		
106 Sq	The Point of the Spear Squadron	F-15B/C/D
114 Sq	The Night Leaders Squadron	CH-53-2000
118 Sq	The Nocturnal Birds of Prey Squadron	CH-53-2000
133 Sq	The Knights of the Twin Tail Squadron	F-15A/B/D
601 FTC	IAF Flight Test Center	F-15I, F-16A/B/C/D
Ben Gurion International Airport Wing 27		
103 Sq	The Elephants Squadron	C-130E, KC-130H
120 Sq	The International Squadron	B-707 variants, 1124N
122 Sq	The Dakota Squadron	G-550
131 Sq	The Yellow Bird Squadron	C-130E, KC-130H
Hatzor Air Base Wing 4		
101 Sq	The First Fighter Squadron	F-16C Block 40
105 Sq	The Scorpion Squadron	F-16D Block 40
Palmachim Air Base Wing 30		
124 Sq	The Rolling Sword Squadron	UH-60, S-70A
160 Sq	The Northern Cobra Squadron	AH-1E/F
200 Sq		UAVs
Hatzerim Air Base Wing 6		
69 Sq	The Hammers Squadron	F-15I
102 Sq	The Flying Tiger Squadron	TA/A-4N
FTS	IAF Flying Training School	T-6, TA/A-4N
Nevatim Air Base Wing 28		
116 Sq	The Defenders of the South Squadron	F-16A/B
140 Sq	The Golden Eagle Squadron	F-16A/B
Ramon Air Base Wing 25		
107 Sq	Knights of the Orange Tail Squadron	F-16I
113 Sq	The Hornet Squadron	AH-64D
119 Sq	The Bat Squadron	F-16I
190 Sq	The Magic Touch Squadron	AH-64A
253 Sq	The Negev Squadron	F-16I
Ovda Air Base Wing 10		
115 Sq	The Flying Dragon Squadron	F-16A/B
161 Sq	The First Attack Squadron	AH-1E/F

SOURCES: "Israel Air Force/Air and Space Arm: Aircraft Order of Battle"; "Israel—Air and Space Force," *Jane's World Air Forces*, June 9, 2008; IAF Squadrons, GlobalSecurity.org.

Figure 3.4
IAF Main Operating Bases



RAND MG835-3.4

has long insisted, as a matter of standard acquisition practice, that it cannot afford to acquire and operate single-mission platforms. Accordingly, its light gray F-15s have always carried a secondary ground-attack mission tasking.

With respect to airspace management, there were often 40 to 70 IAF aircraft operating concurrently over the compact war zone of southern Lebanon. On average, more than 20 of those at any given

moment were UAVs.¹⁹ The aerial battlespace over that area was often highly congested as a result, and the successful deconfliction of aircraft within it throughout the 34 days of fighting, particularly at night, without a fratricide incident or midair collision was described by the head of the IAF's Air Division at the time as "a miracle."²⁰ Most fighter operations were conducted at altitudes above 9,000 ft AGL so as to keep their aircrews beyond the reach of any possible Hezbollah AAA and infrared SAM fire. However, the IAF's operating arena extended all the way from Blackhawk helicopters conducting nap-of-the-earth operations during medevac missions to its just-acquired Gulfstream G550 surveillance aircraft operating in the medium- to high-altitude block, often with only 1,000 ft of separation between blocks.²¹ (Figure 3.5 offers a notional depiction of the IAF's aircraft stack over southern Lebanon.) Accordingly, there was a continual hail of LGBs, JDAMs, and accurately aimed unguided bombs falling through the airspace assigned to IAF aircraft on station in the lower altitude blocks, making flawless time and space deconfliction an ever-present airspace management requirement over the war zone. By all indications, the IAF met that requirement with resounding success.

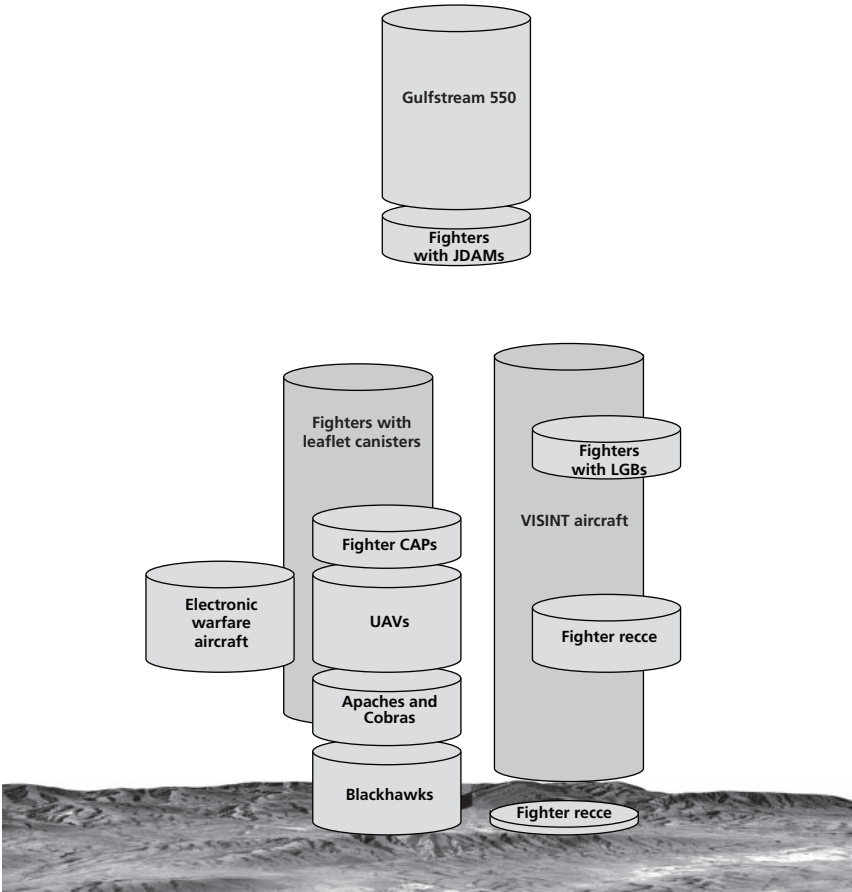
Roughly half of the campaign's 12,000 fighter sorties (mostly flown by F-16s of various types) expended munitions, with another

¹⁹ Ben-Israel, *The First Israel-Hezbollah Missile War*, p. 58.

²⁰ Interview with Brigadier General Johanan Locker, IAF Headquarters, Ha'kirya, Tel Aviv, March 27, 2008. The airspace congestion and deconfliction challenge faced by the IAF over southern Lebanon was highly reminiscent of a nearly identical situation that the air component of U.S. Central Command experienced during its ultimately successful effort to support embattled U.S. SOF and conventional ground units during the almost ill-fated Operation Anaconda in Afghanistan in March 2003. For an account of the latter experience, see Benjamin S. Lambeth, *Air Power Against Terror: America's Conduct of Operation Enduring Freedom*, Santa Monica, Calif.: RAND Corporation, MG-166-1-CENTAF, 2005, pp. 194–197.

²¹ Briefing given to the author by General Shkedy, IAF Headquarters, Ha'kirya, Tel Aviv, March 27, 2008. The G550 special electronic mission aircraft is a national collection asset tasked directly by the Ministry of Defense. In its initial deployed configuration, the aircraft is an integrated airborne SIGINT "system of systems" intended to replace the IAF's aging Boeing 707 ELINT platforms. During its acceptance ceremony, then-Minister of Defense Mofaz noted that the aircraft will be used primarily as a standoff SIGINT sensor array. ("Israel—Air and Space Force.")

Figure 3.5
IAF Aircraft Stack over Southern Lebanon



SOURCE: IAF.
RAND MG835-3.5

700 of the 2,500 attack helicopter sorties also expending munitions. More than in any previous IAF air-to-ground combat involvement, precision attack played a prominent role in Operation Change of Direction. Precision-guided munitions (PGMs) made up 36 percent of the total number of air-delivered weapons expended. Considering solely targets in built-up areas where collateral-damage avoidance was a

major concern, the use of PGMs of various sorts was more on the order of 60 percent.

In one case—namely, the IAF's repeated strikes against Hezbollah's command-and-control complex in the *dahiye* sector of south Beirut—all the weapons expended were PGMs of one sort or another. Of the 500-plus satellite-aided JDAMs that were delivered against targeted structures in the *dahiye*, a full 100 percent were reportedly released within valid parameters and presumably hit their assigned aim points, as was later attested by weapon-system video and UAV imagery, with no known misses.²² Although that success rate was partly a result of uncommonly good luck, it also reflected the IAF's unsurpassed professionalism and attention to detail when the latter truly matters. (Figure 3.6 presents side-by-side infrared images of the enclosed *dahiye* compound taken by a UAV flying directly overhead both before and after the IAF's concentrated attack against Hezbollah's headquarters facilities. The image on the right side indicates the precise nature of the strike operation. Only specifically targeted buildings were destroyed.) The IAF used unguided munitions and CBUs principally against area targets for which consistently high accuracy was not required.²³

In addition to unguided bombs, LGBs, and JDAMs, the spectrum of munition types delivered by the IAF included Israeli-developed SPICE electro-optically guided air-to-surface weapons built around a 2,000-lb Mk 84 bomb core; CBU-58 and CBU-71 cluster munitions; the AGM-114 Hellfire missile carried by the IAF's AH-1 and AH-64 attack helicopters; and perhaps one or more GBU-28 5,000-lb hard-structure munitions delivered solely by the IAF's F-15I strike fighter.²⁴

²²Interview with General Shkedy, IAF Headquarters, Ha'kirya, Tel Aviv, March 27, 2008.

²³Nonprecision general-purpose bombs were typically delivered by IAF fighter pilots from a 40-degree dive angle, generally with a hard altitude floor of 12,000 ft AGL, above which they would recover from their dive after releasing their weapon so as to avoid any risk of being hit by infrared SAM or AAA fire. (Interview with the former deputy commander of an F-16D squadron during Operation Change of Direction, Palmachim Air Base, Israel, March 31, 2009.)

²⁴The SPICE 2000 (SPICE is an acronym for "smart precision impact and cost-effective") was in service at the time of Operation Change of Direction. When configured with a wing kit, the munition has a standoff range of greater than 37 miles, considerably more than

Figure 3.6
Hezbollah's Headquarters Complex Before and After the Attacks



SOURCE: IAF.
 RAND MG835-3.6

(The IAF's two-seat F-15Is, F-16Ds, and F-16Is all carried onboard electro-optical and infrared imaging targeting pods.)²⁵ They also included several hundred electro-optically guided weapons designed and produced in Israel.²⁶ (Figure 3.7 depicts the full scope and relative intensity of IAF strike operations throughout Lebanon over the course of Israel's counteroffensive against Hezbollah, with the vast majority of

that of a JDAM. It features an electro-optical guidance sensor for terminal-phase target updates by matching a large scene with what the seeker sees. It is backed up by Global Positioning System (GPS)-aided steering. Only if an electro-optical target match cannot be made because of smoke or cloud obscurations will the munition revert to GPS navigation. (Fulghum, Wall, and Barrie, "All-Arms Attack," pp. 32–33.)

²⁵ IAF attack helicopters configured with laser target designators would sometimes "buddy-lase" targets for precision LGB attacks by single-seat F-16s that lacked their own onboard targeting pods.

²⁶ Interview with Lieutenant Colonel Roni Amir, IAF, head of the Doctrine Branch, IAF Headquarters, Ha'kirya, Tel Aviv, March 26, 2009.

the IAF's weapon drops occurring in the terrorist militia's main areas of offensive activity near and south of the Litani River in southern Lebanon.)

The provision of on-call CAS by the IAF during the campaign's last days of ground fighting was said by one observer to have been "extremely responsive," although there were recurrent issues having to do with poor air-ground integration that tended to frustrate the CAS effort on frequent occasion. These issues are discussed in greater detail in Chapter Four.²⁷ Designated kill boxes (called "fire boxes" by the IDF) for determining target locations by their geographic coordinates and for deconflicting airspace by means of a common grid reference system overlaid on the battlefield were used in joint operations by Israel's air and ground forces in much the same manner that U.S. Air Force, Navy, and Marine Corps aircrews employed them during the three weeks of major combat in Operation Iraqi Freedom in early 2003.²⁸

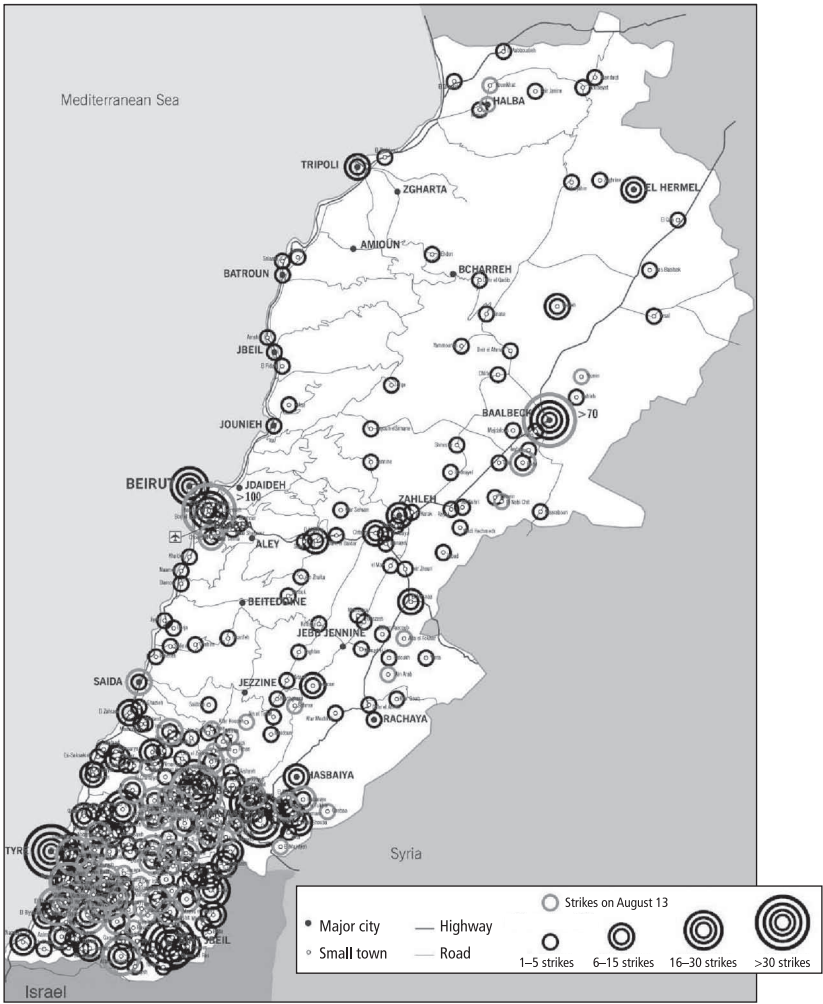
Finally, it bears mention at least in passing that Operation Change of Direction also featured the IAF's first sustained experience with full-fledged network-centric warfare. Today, thanks to the continuing revolution in global connectivity, a real-time common operating picture has now become available to IAF combatants at all levels, from the most senior leadership all the way down to operators engaged with enemy forces at the tactical level. As in the United States, however, the same net-centricity that has enabled a common operating picture for all has also made possible top-down micromanagement of operations at the lowest tactical level in a way that is unprecedented.²⁹ A

²⁷ Cordesman, "The Lessons of the Israeli-Lebanon War," p. 33.

²⁸ For a concise explanation of that system and its tactical application by a former U.S. Marine Corps F/A-18 pilot, see Jay A. Stout, *Hammer from Above: Marine Air Combat over Iraq*, New York: Presidio Press, 2005, pp. 269–270.

²⁹ For a summary perspective on the nature and implications of this recently emergent challenge to mission fulfillment in the American case, see Benjamin S. Lambeth, "The Downside of Network-Centric Warfare," *Aviation Week and Space Technology*, January 2, 2006, p. 86.

Figure 3.7
Locations Struck by the IAF During the Campaign



SOURCES: UN and Lebanese government.

RAND MG835-3.7

major lesson driven home by this new IAF experience, in the view of its current leaders, is the compelling need to decentralize air operations from the very start of combat by means of clear and actionable

strategy and policy, a clear initial mission statement, and clear rules of engagement.³⁰

Defusing the Strategic Rocket Threat

When the second Lebanon war began on July 12, 2006, Hezbollah's inventory of rockets provided by Iran that could reach deep into northern Israel was reportedly thought by AMAN to consist of as many as 500 medium-range Fajr 3 and Fajr 5 rockets and "a few dozen" longer-range Zelzal 1 and 2 rockets.³¹ The larger Zelzal (the word means "Earthquake" in Farsi) is basically an Iranian variant of the Soviet FROG 7 (free rocket over ground) battlefield artillery weapon that had equipped the Group of Soviet Forces in Germany in ample numbers throughout the many years of the Cold War. It is a single-stage, solid-propellant, road-mobile weapon armed with a single 1,300-lb high-explosive warhead. The only significant difference between the Zelzal 1 and the Zelzal 2 is that the latter is 1,000 lb heavier. With its 130-mile range (as opposed to 78 for the Zelzal 1), the Zelzal 2 can reach from central Lebanon as far into Israel as the heavily populated northern outskirts of Tel Aviv. (Table 3.3 lists the main specifications of Hezbollah's four principal extended-range rocket types provided by Iran. In addition, the terrorist organization also had an assessed inventory of hundreds of Syrian-supplied 220mm and 302mm rockets with ranges of 43 and 71 miles, respectively.)

Although the most advanced Iranian Zelzal 3 is assessed as possibly having a rudimentary inertial guidance system, the Zelzal 1 and 2 variants provided to Hezbollah by Iran are unguided and hence useful only as terror weapons with considerable explosive punch. Even when properly launched, both variants are accurate at their respective ranges

³⁰ Interview with General Locker, IAF Headquarters, Ha'kirya, Tel Aviv, March 27, 2008. General Locker served as the senior operations director and principal air battle manager in the IAF's main AOC in Tel Aviv throughout much of the 34-day war.

³¹ Seymour Hersh, "Watching Lebanon: Washington's Interests in Israel's War," *The New Yorker*, August 21, 2006.

Table 3.3
Long- and Medium-Range Rockets Provided by Iran

Long-Range Rockets		
	Zelzal 1	Zelzal 2
Length	27 ft	27 ft
Diameter	2 ft	2 ft
Weight	6,500 lb	7,500 lb
Payload	1,300 lb	1,300 lb
Range	78 mi	130 mi
Medium-Range Rockets		
	Fajr 3	Fajr 5
Length	17 ft	22 ft
Diameter	0.8 ft	1 ft
Weight	900 lb	2,000 lb
Payload	100 lb	200 lb
Range	27 mi	47 mi

only to within a mile or so of the intended impact point. (The Zelzal 2 spins in flight for added stability.) Both require a large transporter-erector-launcher (TEL), which presents a large infrared and radar signature for targeting whenever the TEL is out in the open.³² The launch vehicle for both uses a Mercedes-Benz wheeled truck chassis configured with four hydraulic stabilizing jacks that are lowered before the rocket is fired. As noted above, the poor accuracy of the rockets renders them useless militarily, but the large warhead makes them highly effective as indiscriminant countervalue weapons, which is the use to which they would have been put by Nasrallah had he succeeded in launching any against Israel. As the second Lebanon war neared the end of its first week, a senior IDF officer referred to the Zelzal as “Hezbollah’s doomsday weapon.”³³ (Figure 3.8 shows an Iranian Zelzal 1 mounted on its mobile TEL in the raised launch position.)

AMAN had ample time to get a head start on tracking the flow and covert storage sites of these rockets, which had been provided to Hezbollah by Iran via transshipment through Syria on the heels of Israel’s withdrawal from Lebanon in May 2000. Indeed, AMAN reportedly

³² Arkin, *Divining Victory*, pp. 34–36.

³³ “Hizbullah Prepares Long-Range Rockets,” Lebanese Foundation for Peace, July 28, 2006.

Figure 3.8
Zelzal 1 Long-Range Rocket



RAND MG835-3.8

first learned that Hezbollah had acquired rockets that could reach the northern suburbs of Haifa a full three months *before* the IDF's pullout from Lebanon. They were thought at the time to be stored in the Beka'a Valley, with some also covertly deployed along Lebanon's southern border with Israel.³⁴ From the earliest days after the IDF's withdrawal from Lebanon, AMAN's Unit 8200, using a skillful blend of SIGINT collection and IAF aerial reconnaissance, had worked assiduously to monitor and track Hezbollah's acquisition and covert placement of all types of rockets.³⁵ It soon learned that the medium-range Fajr rockets (*Fajr* means "Dawn" in Farsi) had been distributed in great secrecy among the most inner-core Hezbollah activists and hidden away in their homes in the Shiite-dominated villages of southern Lebanon. AMAN

³⁴"New Hezbollah Rockets Can Reach Tel Aviv and Beersheva," *Ha'aretz*, Tel Aviv, July 15, 2006.

³⁵Clive Jones, "Israeli Offensive May Not Meet Long-Term Objectives," *Jane's Intelligence Review*, September 2006, p. 25.

had followed the movement of those rockets from the very start of their influx into Lebanon and, as a result, had a reasonably good picture of where the Fajrs (as well as the Zelzals) were sequestered.³⁶ Israeli press accounts in 2004 claimed that AMAN had estimated that Hezbollah had most recently received some 220 medium- and long-range rockets of all types from Iran, with these stored in bunkers at three locations in the Beka'a Valley.³⁷ The medium-range rockets could be fired in a concentrated salvo from a single launch vehicle. Some were armed with fragmentation warheads for use against exposed personnel.³⁸

Considerable ambiguity still surrounds the actual deployment pattern of Hezbollah's Zelzals and Fajrs throughout Lebanon on the eve of the 2006 campaign. The best available reporting, however, suggests that Hezbollah established the following formations and deployment areas in Lebanon between 2000 and 2006:

- one unit of long-range Zelzal rockets between Beirut and the Awali River
- two formations of Zelzals between Beirut and the Litani River
- one unit of medium-range Fajr rockets deployed south of the Awali
- a second unit, including both medium-range Fajrs fired from vehicle-mounted launchers and extended-range Katyushas, north and south of the Litani.

The long-range Zelzals and perhaps some of the medium-range Fajr 5s were thought to be under the direct control of Hezbollah's main headquarters in Beirut, with the lesser medium-range Fajr 3s and short-

³⁶As the campaign neared its end, the outgoing head of AMAN's Research Division disclosed that, in the immediate aftermath of a major earthquake in Iran in 2003, Syrian aircraft had flown relief supplies from Lebanon to be delivered to the Iranian earthquake victims. When they returned to Lebanon, they covertly delivered loads of long-range Zelzals. (Gidi Weitz, "To Beirut If Necessary," Interview with Brigadier General Yosi Kupperwasser, IDF, head of the Military Intelligence Research Division, *Ha'aretz*, Tel Aviv, August 11, 2006.)

³⁷David C. Isby, "Iran Supplies Improved Rockets to Syria and Hizbullah," *Missiles and Rockets*, October 1, 2004.

³⁸Makovsky and White, *Lessons and Implications of the Israel-Hizballah War*, pp. 39–41.

range Katyushas having been handed off to the day-to-day control of one of two regional commands for the western and eastern sectors of southern Lebanon. In principle, the longest-range Zelzals had the ability to strike as far into Israel as the Tel Aviv–Jerusalem corridor and perhaps farther to Ashdod. However, Hezbollah would not likely have fielded its long-range rockets close enough to Israel's northern border to reach that far, so the main threat that those rockets presented in fact was primarily to the civilian population north of the Haifa–Tiberius line.³⁹

In all events, throughout the six years that spanned the IDF's withdrawal from Lebanon in 2000 and the start of Israel's war against Hezbollah in 2006, the country's intelligence services succeeded in acquiring highly accurate targeting information regarding the location of Hezbollah's medium-range rockets, many of which were stored in apartment buildings in special hideaways that AMAN analysts referred to colloquially as "timmers" (the word is both German and Yiddish for "rooms"). That breakthrough, which allowed the geolocation of many of the medium-range rocket storage sites and a refined targeting of IAF GPS-aided weapons down to an average miss distance of less than one meter, turned out to have been Israel's single most significant intelligence achievement associated with the war.⁴⁰ By one seemingly well-informed account, AMAN since mid-2000 had run three extensive collection networks throughout Lebanon that had focused not only on the locations of Hezbollah's long- and medium-range rocket and launcher storage sites but also on the constantly changing whereabouts of Hezbollah's key leaders and the details of the organization's underground munitions storage bunkers. This collection effort was said to have ultimately informed an IAF master target roster that contained mensurated coordinates for more than 4,600 identified target aim points of interest throughout Lebanon. If it is to be believed, one of the above-noted networks reportedly even succeeded in installing miniaturized SIGINT equipment within three

³⁹ Makovsky and White, *Lessons and Implications of the Israel-Hizballah War*, pp. 39–41.

⁴⁰ Bar-Joseph, "Israel's Military Intelligence Performance in the Second Lebanon War," p. 587.

Hezbollah command bunkers while members of another network, just before the start of Operation Change of Direction, managed to sprinkle a special phosphorescent powder, observable only through special night-vision goggles worn by IAF aircrews, outside structures in Lebanon known to store Hezbollah's Zelzal and Fajr rockets.⁴¹

Because Hezbollah's strategic rocket threat had been identified, tracked, and understood by AMAN from as early as 2000, the initial planning for what eventually evolved into Operation *Mishkal Sguli* began at roughly the same time. The underlying CONOPS was fine-tuned by the IAF many times over the course of those six years and was practiced repeatedly in large-force training exercises against a simulated layout of the target complex that the IAF had built in southern Israel. The concurrent advent of satellite-aided JDAMs into the IAF's munitions inventory gave the plan further possibilities by unburdening air campaign planners of such inherent constraints as inclement target-area weather that have traditionally hampered the combat employment of LGBs.⁴² As noted in the preceding chapter, in the course of the Olmert government's deliberations on first-day response options during the early evening of July 12, Minister of Defense Peretz gave the green light for the execution of *Mishkal Sguli* later that night with the intent to keep major counteroffensive pressure on Hezbollah. In connection with that option, Israel's Attorney General, Meni Mazuz, rendered a formal determination that the international laws of armed conflict negated the noncombatant immunity status of any Lebanese civilians who knowingly chose to live in structures that housed the medium-range Fajrs.⁴³

Shortly before the scheduled execution of the attack plan, which was to be personally commanded by General Shkedy from the IAF's main AOC, a planning cell in the IAF's Air Division, in close coopera-

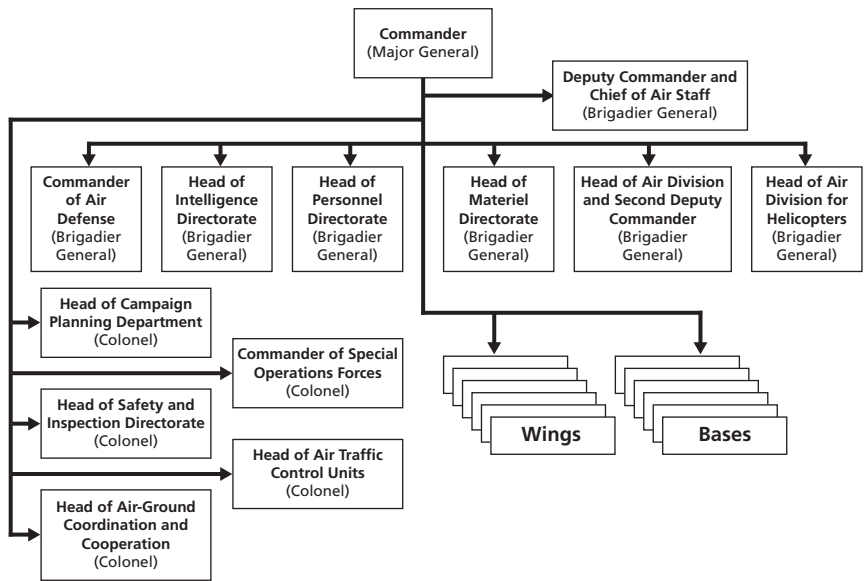
⁴¹ Prasun K. Sengupta, "Fighting Tips: The Recent Israel-Hezbollah War Holds Lessons for the IAF [Indian Air Force]," *Force*, New Delhi, October 2006.

⁴² Interview with General Halutz, IAF Headquarters, Ha'kirya, Tel Aviv, March 26, 2008.

⁴³ Peretz dismissed any civilian Hezbollah sympathizers who elected to allow Fajrs to be stored in their homes as "a family with a pet rocket in the living room." (Har'el and Isaacharoff, *34 Days*, p. 86.)

tion with AMAN and the IAF's Intelligence Directorate, conducted a final update of the tactical details of Operation *Mishkal Sguli*. (See Figure 3.9 for a depiction of the IAF's lean and flat organizational structure.) At that point, the fighter squadrons that had been tasked with carrying out the operation were cleared to begin their final mission planning and aircrew briefing. The strike force consisted of 40 F-15I and F-16I multirole fighters in all, plus additional F-16 variants and a supporting array of UAVs of various types. According to a former director of AMAN, the IAF received its targeting intelligence for the rocket attacks from AMAN, whose target intelligence staff produced 14-digit grid coordinates that could then be programmed into a strike

Figure 3.9
IAF Organization



SOURCE: IAF.
RAND MG835-3.9

aircraft's navigation system and JDAMs.⁴⁴ Target assignments were then disseminated down to the squadron level, and an arrangement was put in place to provide both regular updates and new targeting information as necessary for rapid-response situations.⁴⁵

In a span of just 34 minutes shortly after midnight on July 13, the 40 involved aircraft successfully struck 93 assigned targets in all, with all munitions reportedly hitting their assigned aim points, which were primarily associated with medium-range Fajr 3 and 5 rockets. Most of the munitions used for precision target attack were satellite-aided JDAMs. In prosecuting the operation, the IAF relied on a previously compiled rack of intelligence information on Hezbollah's rocket dispositions throughout Lebanon, reportedly using Hermes 450 UAVs to transmit real-time target information directly into the cockpits of IAF fighters. Former IAF Commander Major General Ben-Eliahu later remarked that the IAF had destroyed 50 Fajrs based on accurate prior target intelligence.⁴⁶

From the individual fighter aircrew's perspective from the cockpit, Operation *Mishkal Sguli* was essentially effortless in the execution. All participating aircraft were data-linked to each other and to the IAF's main AOC, making for near-perfect situation awareness for all players. Participating aircrews were able to perform effective real-time BDA in many cases through the use of their onboard infrared targeting pods.⁴⁷ Only 12 hours elapsed from the initial tasking of the assigned squadrons to bombs on target, and the IAF claimed a 90- to 95-percent success rate the following morning, even though the Olmert government chose not to make a special point of publicizing that reported suc-

⁴⁴ Bar-Joseph, "Israel's Military Intelligence Performance in the Second Lebanon War," p. 596.

⁴⁵ Major General Aharon Ze'evi Farkash, IDF (Res.), "Intelligence in the War: Observations and Insights," in Brom and Elran, eds., *The Second Lebanon War: Strategic Perspectives*, pp. 80–81. This writer, an informed and credible source, was General Yadlin's predecessor as AMAN director.

⁴⁶ Yossi Melman, "How Many Missiles Will Be Fired from Iran, Syria, and Lebanon in the Next War?" *Ha'aretz*, Tel Aviv, July 4, 2008.

⁴⁷ Interview with the former deputy commander of an F-16D squadron during Operation Change of Direction, Palmachim Air Base, Israel, March 31, 2009.

cess. The IAF later determined that probably around 50 percent of the Fajrs had actually been destroyed in the initial attack.⁴⁸ AMAN and IAF intelligence had initially projected that Lebanese civilian casualties incurred during Operation *Mishkal Sguli* could be as high as 300 to 500. In the end, however, around 20 Lebanese civilians (most likely Hezbollah supporters or sympathizers) were killed in the operation, 10 to 20 times fewer than the number that had been originally anticipated.⁴⁹ (The fact that the Olmert government was ready to accept an anticipated 300 to 500 noncombatant casualties as a necessary buy-in cost was a clear, if silent, testament to the importance that it attached to the successful completion of the mission.)

The first after-action accounts of the operation's assessed success were highly inconsistent. By the end of the campaign's fifth day, on July 16, the head of the IAF's Intelligence Directorate, Brigadier General Ram Shmueli, reported that IAF fighters had destroyed 60 percent of Hezbollah's extended-range rocket inventory, including some 100 fixed launch positions and 11 mobile launchers.⁵⁰ That assessment, for reasons to be addressed below, was entirely plausible. Although the IDF's leadership made no express declaration to this effect, it is likely that a substantial number of the Fajrs were destroyed inside their hidden storage sites during the campaign's first night. In addition, on July 14, an IAF fighter attacked a truck confirmed to have been carrying Zelzals when the force of the bomb's detonation sent one rocket flying into the air. (The rocket's solid motor reportedly ignited, but the Zelzal fizzled, with its warhead remaining unexploded as the rocket hit the ground.)⁵¹ Before the campaign's first week was over, General Eisenkott, the head of the IDF's Operations Directorate,

⁴⁸ Interview with General Shkedy, IAF Headquarters, Ha'kiry, Tel Aviv, March 27, 2008.

⁴⁹ Bar-Joseph, "Israel's Military Intelligence Performance in the Second Lebanon War," p. 587.

⁵⁰ Ya'akov Katz and Amir Mizroch, "Martial Law in North as Rockets Hit Tiberias," *Jerusalem Post*, July 16, 2006.

⁵¹ Peter Spiegel and Sebastian Rotella, "Hezbollah's Skill More Military Than Militia," *Los Angeles Times*, July 20, 2006.

reported that several trucks that had entered Lebanon from Syria, carrying 15 Zelzals in all, had been destroyed.⁵²

In sum, the IAF's effort to destroy Hezbollah's inventory of medium-range Fajrs during the campaign's first night was an achievement of major note, if not a complete success. In the immediate aftermath of Operation *Mishkal Sguli*, AMAN officials were said to have believed that most of the Fajr 3s had been prepositioned and accordingly taken out during the opening-night attack. Not long thereafter, however, mobile transporters equipped with 14 launch tubes began making an appearance and firing rockets intermittently into the vicinity of Haifa. Figure 3.10 shows a Syrian-made 14-barrel mobile 220mm rocket launcher attempting to enter a hiding site inside a residential complex within a Lebanese village. This infrared image, extracted from full-motion video transmitted from the sensor in the attacking munition's warhead, was taken roughly two minutes after the launcher had fired a rocket from a launch site a few hundred meters away and had been geolocated and targeted. Seconds later, the launcher was destroyed.

Figure 3.10
Mobile 14-Barrel 220mm Rocket Launcher



SOURCE: IAF.

RAND MG835-3.10

⁵² "Israel Links Missile Defense Assets as Attacks Increase," WorldTribune.com, July 19, 2006.

(The Fajr 5 also emerged in both prepositioned and mobile versions, with the latter version featuring up to four rockets per launcher.)

Throughout the six years following Israel's withdrawal of its forces from Lebanon in 2000, IAF UAVs and fighters configured with reconnaissance pods had reconnoitered southern Lebanon almost on a daily basis in search of clandestine rocket movement. Yet they evidently missed detecting much of Hezbollah's medium-range rocket capability because, with the rockets largely hidden away in the private homes of Hezbollah's most trusted leaders and combatants, little or no activity could be detected. The discovery during the war's first week that, despite the success of Operation *Mishkal Sguli*, Hezbollah's medium-range rockets remained a significant threat to northern Israel thrust the IAF into a new and largely untested mode of real-time TST operations. In the process, its aircrews quickly learned how to manage the medium-range rocket threat using an approach that yielded an effective integration of command and control, ISR, and strike assets for going after pop-up targets of opportunity. Before long, the IAF was consistently able to target and destroy detected mobile launchers within 45 seconds to a minute after their rockets were fired by means of closely fused UAV imagery, counterbattery radar, and precision munitions.⁵³ Its consistent success rate over time all but surely had the intended cumulative effect of impressing upon Hezbollah's rocket crews the mortal danger of their continued attempts at such high-risk "shoot-and-scoot" tactics. IAF armed overwatch patrols also had considerable apparent effectiveness in interdicting the flow of resupply rockets coming in from Syria. These were all significant combat accomplishments by the IAF. (In a revealing illustration of such accomplishments, Figure 3.11 presents a composite time-series picture of a TST attack in progress against a Syrian-made 6-barrel 302mm medium-range rocket launcher. The two infrared images on the left were taken by a UAV as the launcher had fired a rocket just after having been detected by a previous launch flash and geolocated. In the third image to the right, the launcher is seconds

⁵³ Steven Erlanger, "Israel Committed to Block Arms and Kill Nasrallah," *New York Times*, August 20, 2006.

Figure 3.11
A Successful TST Attack in Progress



SOURCE: IAF.

RAND MG835-3.11

from being destroyed before it could fire its fifth rocket. The kill cycle from detection to target destruction in this instance was no more than a minute.)

General Shkedy later reported that his fighter crews had successfully struck about half of Hezbollah's medium-range rockets at the start of the IDF's offensive and, soon thereafter, most of the targeted longer-range Zelzals. As he described the evolution of the IAF's effort to neutralize Hezbollah's more extended-range rocket threat, "later on, we created a . . . plan that closed the circle to allow immediate detection and destruction of more than 90 percent of the medium-range launchers that fired on Israel. It was a combination of collecting and analyzing intelligence, using command and control, and putting a relevant weapon system at the right place and time so that they don't hear you and so that you can strike with precision."⁵⁴ With respect to tactics, techniques, and procedures, the IAF's General Nehushtan added: "The ability to integrate intelligence and precision-guided munitions in a short amount of time [produced] advantages in destroying missile launchers. Once you have these capabilities integrated, you can react quickly to precise intelligence. It's all about pinpoint results and the integration of intelligence, analyses, and the ability to project. Timing

⁵⁴David A. Fulghum and Robert Wall, "Learning on the Fly: Israeli Analysts Call for More Flexibility and Renewal of Basic Combat Skills," *Aviation Week and Space Technology*, December 3, 2007, pp. 63–65.

is important. If you have all the ingredients but you're a minute late, you're irrelevant."⁵⁵

In all, based on reliable real-time post-attack BDA and some subsequent visual confirmation by IDF SOF teams on the ground in Lebanon, the IAF leadership believes that it all but completely negated the Zelzal threat. No Zelzals were ever launched into Israel or even readied for launch by Hezbollah's Syrian- and Iranian-trained rocket crews, and the relatively modest rate of Fajr fire decreased radically following the successful execution of Operation *Mishkal Sguli* and the IAF's repeatedly effective TST attacks against mobile Fajrs and other medium-range rockets that commenced soon thereafter.⁵⁶

Perhaps prompted by the paucity of subsequent official reporting on the IAF's preemptive-attack operation in any detail, an early American assessment of Israel's air war against Hezbollah in 2006 expressed pointed doubt about the veracity of the IDF's claims regarding Operation *Mishkal Sguli*. That account went so far as to dismiss the operation all but out of hand as a "mythical attack," suggesting further that "the facts do not exist to substantiate whether 90 percent of Hezbollah's medium- and long-range rockets were indeed destroyed . . . on the first night of the war." The study additionally declared, in a statement that was either misinformed or misspoken, that "Hezbollah subsequently carried out extensive long-range rocket strikes, a fundamental reality that seems to call into question whether Israel had intelligence of such fidelity . . . to . . . validate the original . . . assessment." (In fact, as noted above, the long-range Zelzals were not even targeted during Operation *Mishkal Sguli* but were systematically attacked and eliminated later by IAF fighters. Also as noted above, *no* long-range Zelzals and relatively few medium-range Fajrs were successfully fired into Israel by Hezbollah.) The above-mentioned study finally concluded, in one of the most bizarre judgments rendered by anyone regarding the IAF's combat performance during the second Lebanon war, that "the whole legend [of

⁵⁵Fulghum and Wall, "Learning on the Fly: Israeli Analysts Call for More Flexibility and Renewal of Basic Combat Skills."

⁵⁶Interview with Lieutenant Colonel Roni Amir, head of the Doctrine Branch, IAF Headquarters, Ha'kirya, Tel Aviv, March 26, 2009.

Mishkal Sguli] could be untrue. . . . The tale is repeated mostly by IAF and IDF defenders in Israel who think they are countering an unfair indictment of air power.”⁵⁷

Given the persistent uncertainty that continues to surround many of the few known facts and figures associated with Operation *Mishkal Sguli* and the IAF’s subsequent effort to eliminate the Zelzal threat, there is plainly room for legitimate questioning, at least at the margins, as to the precise extent of effectiveness of the IAF’s attempt to target and negate Hezbollah’s strategic rockets. But it is far-fetched in the extreme to suggest that, despite all the authoritative Israeli leadership pronouncements about the IAF’s counter-rocket attack in the operation’s early aftermath, including that of the investigating Winograd Commission, *Mishkal Sguli* was, in the end, nothing more than an artful concoction of the Israeli government’s disinformation machine. Even the most outspoken Israeli critics of the IDF’s performance throughout the campaign have not gone so far as to render such an outlandish indictment of the Israeli security establishment.

In the end, the IDF determined that good target intelligence and capable and timely force employment had allowed the IAF to knock out preemptively most of Hezbollah’s Fajrs and other medium-range rockets during the campaign’s first two days. Knowledgeable IAF officers have also expressed confidence that subsequent well-targeted attacks against identified and geolocated Zelzal storage facilities also largely negated that pivotal Hezbollah capability, thus preventing Nasrallah from making good on his recurrent threats to fire longer-range rockets at Tel Aviv.⁵⁸ On August 3, Nasrallah thundered ominously: “If you [Israelis] strike Beirut, we will strike Tel Aviv.”⁵⁹ Not long thereafter, the IAF boldly reattacked Hezbollah’s leadership facilities in the heart of downtown Beirut, and no retaliatory Zelzal fire against Tel Aviv occurred. The fact that no Zelzal was ever launched into Israel at

⁵⁷ Arkin, *Divining Victory*, pp. 127–129.

⁵⁸ Interview with Lieutenant Colonel Roni Amir, head of the Doctrine Branch, IAF Headquarters, Ha’kiryat, Tel Aviv, March 26, 2009.

⁵⁹ Bar-Joseph, “Israel’s Military Intelligence Performance in the Second Lebanon War,” p. 571.

any time during the crisis suggests either that the Iranians had leaned hard on Nasrallah and directed him not to fire them or that the IAF had essentially deprived Hezbollah of that capability through its preemptive air attacks. Both hypotheses are equally plausible.⁶⁰ After the ceasefire went into effect, General Halutz testified before the Knesset's Foreign Affairs and Defense Committee on August 16 that some 90 percent of the Zelzals had been destroyed at an early point in the campaign, noting also that Hezbollah had successfully fielded a number of dummy launchers with fake infrared signatures, which also were erroneously struck in the mistaken belief that they were valid targets.

Both Operation *Mishkal Sguli* and the subsequent TST attacks against Hezbollah's mobile medium-range rockets and longer-range Zelzals that ensued throughout the remainder of the campaign were later described by the head of the IAF's Air Division at the time as a "huge achievement" that represented both the validation of a complex CONOPS and the final fulfillment of the dream of modern air power through the fusion of intelligence and targeting into a rapid-response capability in which the sensor-to-shooter link had been reduced to single-digit minutes.⁶¹ (As a rule, the tight sensor-to-shooter loop was enabled by digital data transfer. In rare instances in which a digital data link was not available, target coordinates were passed by encrypted

⁶⁰ On this point, it bears acknowledging that Israeli officials generally presumed throughout the campaign that, although any remaining Zelzals and Fajrs might be technically in Nasrallah's possession, they could not be launched without express permission from Tehran. (Ben Kaspi, "Liquidate Him," *Ma'ariv*, Tel Aviv, July 17, 2006.) As one Israeli press report noted on this point toward the campaign's end, any firing of the missiles "will require explicit authorization from Tehran, and it is not convenient for the Iranians now—ahead of the Security Council deliberations about its nuclear program—to demonstrate to the Europeans what a Persian missile can do to a Western city." (Amir Oren, "Loss of Momentum," *Ha'aretz*, Tel Aviv, August 4, 2006.)

⁶¹ Interview with General Locker, IAF Headquarters, Ha'kirya, Tel Aviv, March 27, 2008. As for downsides of this achievement, the apparent success of Operation *Mishkal Sguli* has already driven Hezbollah to build a larger and more dispersed rocket array north of the Litani, as well as in the Beka'a Valley and north of Beirut. By the same token, the repeated IAF heavy attacks on the *dahiye* very likely prompted a dispersal of Hezbollah's main offices and command posts.

radio voice communications.⁶²) Those two efforts were also described by the head of AMAN as the first-ever preemptive attack against an enemy ballistic-missile array.⁶³ Prime Minister Olmert later called the operation “an impressive and perhaps unprecedented achievement.” Two respected Israeli defense reporters likewise called it “the most impressive military action in the second Lebanon war.”⁶⁴ More than a few government aides were said to have compared it favorably to the IAF’s legendary Operation *Moqed* (“Focus”) against Egyptian, Jordanian, and Syrian air bases that inaugurated the Six Day War of 1967, in which hundreds of enemy aircraft were preemptively attacked and destroyed on the ground.⁶⁵

In all, the IAF successfully attacked some 100 verified mobile Hezbollah rocket launchers of all types during the course of the campaign. It also continued to refine this TST capability throughout the 34 days of fighting. From the fifth day onward, every detected medium-range Hezbollah rocket launcher in southern Lebanon was destroyed by aerial attack either before or immediately after launching its first weapon. In the medium-range rocket hunt, thanks to timely real-time target detection and aircrew cueing, 20 percent of the launchers were successfully struck before launch. The other 80 percent of the launch positions were destroyed within minutes after the launch. As the IAF’s Deputy Commander and Chief of Staff at the time, Brigadier General Amir Eshel, later remarked: “There is no equivalent in the history of world military aviation for the ‘closing-the-circle’ operations that we conducted in the hunt for the launchers. It was an unprecedented challenge.”⁶⁶ Although no Zelzals were launched into Israel, 92

⁶² Ben-Israel, *The First Israel-Hezbollah Missile War*, p. 58.

⁶³ Interview with General Yadlin, IDF Headquarters, Ha’kirya, Tel Aviv, March 26, 2008.

⁶⁴ Har’el and Isaacharoff, *34 Days*, p. 92.

⁶⁵ Har’el and Isaacharoff, *34 Days*, p. 92. See also Amir Rapaport, “IDF Estimate: We Destroyed Most Missile Launchers,” *Ma’ariv*, Tel Aviv, July 14, 2006.

⁶⁶ Ya’el Bar and Li’or Estlein, “No Equivalent in History of World Military Aviation for ‘Closing-the-Circle’ Operations We Conducted in Hunt for Launchers,” interview with Brigadier General Amir Eshel, IAF Chief of Staff, *Bita’on Chel Ha’avir*, Tel Aviv, October 2006, pp. 8–9. This recollection would appear to put a decisive lie to the view expressed by a

medium-range 220mm and 302mm rockets and some Fajrs reportedly landed in the Haifa area before the campaign's eventual ceasefire, with a total of 169 such rockets fired into Israel altogether.⁶⁷ In nearly all those instances, however, IAF fighters destroyed their launchers within as little as 45 seconds to a minute after the moment of launch.⁶⁸ (Figure 3.12 shows an expanded infrared image of a 302mm launcher taken by a UAV in the midst of a firing sequence just moments before it was destroyed in the TST attack described above.)

The development, refinement, and formal adoption of this demanding CONOPS was aggressively pursued by General Ben-Eliahu during his tenure as IAF Commander in the late 1990s. Although the IDF's Chief of Staff at the time, Lieutenant General Lipkin-Shahak, was said to have been skeptical, Ben-Eliahu nonetheless pressed hard to have the CONOPS adopted as a core mission of the IAF. He granted that not all of the enemy's hidden rockets could be destroyed by means of such a CONOPS, but he insisted on allocating the necessary intelligence resources, command and control improvements, and planning and training efforts toward perfecting the CONOPS to the fullest extent possible. That effort evidently bore tangible fruit during Operation Change of Direction.⁶⁹

In the end, the IAF's sensor-to-shooter kill chain proved to be shorter in elapsed time than the actual rocket launch sequence itself. The relatively modest number of medium-range rockets from Hezbollah's total inventory that later landed in the Haifa area was almost certainly a direct result of the IAF's repeatedly successful TST operations over time. Even the head of the IDF's ground forces, Major General

normally authoritative and credible source to the effect that the IAF's ISR and targeting systems during the campaign "proved to have limited ability to track Hezbollah rocket batteries in real time and the service's command systems had a limited ability to direct counter-fire once the rockets were detected." ("Israel—Air and Space Force.") "Closing the circle" is an IAF term for tightening the sensor-to-shooter loop.

⁶⁷ Interview with Lieutenant Colonel Roni Amir, head of the Doctrine Branch, IAF Headquarters, Ha'kirya, Tel Aviv, March 26, 2009.

⁶⁸ Noam Ophir, "Look Not to the Skies: The IAF vs. Surface-to-Surface Rocket Launchers," *Strategic Assessment*, November 2006.

⁶⁹ Amir Oren, "Loss of Momentum."

Figure 3.12
Mobile 6-Barrel 302mm Rocket Launcher



SOURCE: IAF.

RAND MG835-3.12

Benjamin Gantz, freely acknowledged that IAF air power had “set an historic precedent for its ability to identify launchers, pinpoint their exact location, and very quickly close the sensor-to-shooter loop.”⁷⁰ Yet neutralizing Hezbollah’s thousands of short-range Katyusha rockets dispersed throughout southern Lebanon just across the Israeli border, considered in detail in Chapter Four, remained essentially an impossible mission throughout the campaign because of the abiding elusiveness of those rockets that could not be detected and targeted from the air. However, to repeat an important point expressed at the outset of this book, the Katyushas were *never* a responsibility that the IDF had ever assigned to the IAF. On the contrary, from the campaign’s first day onward, they were wholly a part of the mission tasking of the IDF’s Northern Command and its subordinate 91st Infantry Division.

⁷⁰ Barbara Opall-Rome, “Interview: Major General Benjamin Gantz, Commander, Israel Defense Forces Army Headquarters,” *Defense News*, August 28, 2006, p. 38.

With respect to this one downside aspect of the IAF's otherwise effective role in negating Hezbollah's Zelzals and medium-range rockets, because the IAF was never assigned formal responsibility for countering the more elusive Katyushas, it did no prior intelligence collection and analysis, options planning, and targeting in connection with that largely hidden and hence undetectable target set. For its part, the IDF's Northern Command, which *did* have assigned responsibility for addressing the short-range rocket threat, likewise made no prior effort of any note to compile actionable real-time intelligence on the location and deployment pattern of Hezbollah's Katyushas. That failure clearly reflected the fact that, until it was actually confronted with what amounted to a strategic rocket war initiated by Hezbollah against Israel's civilian population, the IDF had dismissed the Katyusha threat as being of little military consequence. As a result, the troop-abduction incident and the resultant need for a prompt and forceful Israeli response represented a classic instance of the IDF's being caught unprepared. This serious failure on the IDF's part, which had much to do with the frustrations felt by the Israeli people with respect to the relentless Katyusha fire into northern Israel, was a major factor accounting for the widespread perception afterward, especially throughout the Arab world, that Israel "lost" the war. Because of its importance to a proper understanding of what went wrong in the IDF's initial chosen response to Hezbollah's border provocation of July 12, 2006, it will be addressed in greater detail in Chapter Four.

UAV Operations

Israel's heavy reliance on a variety of UAVs in Operation Change of Direction was hardly surprising, since the IAF had long been the pioneer service with respect to the development and use of such platforms for battlefield surveillance and reconnaissance. That country's first-generation UAVs were initially owned and operated by AMAN. However, the IAF soon fought for and eventually gained full control over them. Long before UAV involvement had become a routine aspect of American air operations, the IAF made effective tactical use of its

early unmanned surveillance platforms during its 1982 showdown over Lebanon's Beka'a Valley against Syrian SAM sites and fighters, at a time when UAVs were still referred to worldwide simply as "drones." During that brief but extremely high-intensity air offensive, the IAF, in its opening move, used UAVs as fighter decoys to prompt the Syrian SAM operators to activate their engagement radars, which, in turn, exposed them to prompt lethal fire from IAF strike fighters that quickly destroyed 17 of the 19 deployed SA-6 batteries, along with several SA-2 and SA-3 sites. Throughout this operation, orbiting Scout and Mastiff UAVs provided continuous real-time electro-optical surveillance of ongoing events for the ground-based IAF strike force commander. At the same time, airborne Scout UAVs used their electro-optical zoom lens and digital data link to provide real-time video imagery of Syrian fighters at their bases as they taxied into position for takeoff. Once the incipient Syrian response was detected, the UAVs then cued an E-2C surveillance aircraft that was orbiting offshore over the Mediterranean to pick up the MiGs on its 200-mile-range radar as soon as they were airborne and to relay intercept vectors to primed and ready F-15s and F-16s holding on airborne CAP stations near the battle zone. The ensuing air-to-air melee, in which the IAF downed 23 Syrian MiG-21 and MiG-23 fighters while sustaining no losses of its own, remains to this day the largest in the history of Middle East aerial warfare.⁷¹

Since the IDF's withdrawal from Lebanon in 2000 and the concurrent rise of the *intifada* in the occupied territories, the IAF has continued to make extensive use of its ever-expanding and improving UAV inventory for policing the territories and tracking down targeted Palestinian terrorist leaders, while at the same time keeping an eye on Hezbollah's activities in Lebanon. The IAF's main UAV unit, based at Palmachim Air Base on the Mediterranean coast just south of Tel Aviv, initially ramped up its combat-support operations for the IAF in prompt response to the rise of the *intifada*. For nearly seven straight years thereafter, it had been conducting around-the-clock ISR moni-

⁷¹ By the time this epic offensive was over, the final kill ratio was 85–0 in favor of the IAF. For a fuller account of this casebook episode and its ultimate results, see Lambeth, *The Transformation of American Air Power*, pp. 92–96.

toring in support of IDF low-intensity warfare against Palestinian terrorists operating out of the West Bank and Gaza Strip.

Despite that primary focus, however, heightened UAV monitoring of southern Lebanon by the IAF commenced well before the kidnapping incident of July 12, 2006, starting the preceding June 25 when the IDF's still-incarcerated Corporal Gilad Shalit was kidnapped and held for a prisoner trade by Palestinian militants on the Israeli side of the Gaza Strip's southern border. On that occasion, the IAF's UAV squadron immediately moved to a higher readiness status, with its commander personally taking the initiative in ramping up to full operating capacity in accordance with the IAF's timeless unwritten rule of operational life that if one has not been expressly told otherwise, it is one's own judgment call to make. Thanks to that timely decision, the squadron was already at full readiness status when the July 12 abduction incident on the Israeli-Lebanese border occurred.⁷²

When he learned of the incident in the immediate aftermath of the kidnapping, the squadron commander did not await orders from IAF headquarters. Instead, he promptly took the lead on his own, marshaled the squadron's entire personnel contingent, informed his assembled subordinates that the nation was at war, and went immediately to a wartime alert footing, advising the families of all unit personnel that the squadron could be working around the clock at peak capacity for a long time.⁷³ The commander further made an immediate move to try to acquire additional UAVs directly from industry as soon as possible through his assigned reservists working at Israel Aircraft Industries (IAI), in what he described as "a highly nonstandard manner."⁷⁴ As a result of his effort, he succeeded in getting two new Searcher 2 and two new Heron 1 UAVs promptly delivered (the latter in both their SIGINT and electronic intelligence [ELINT] variants). Afterward, he

⁷²Interview with the commander of the IAF's UAV squadron, IAF Headquarters, Ha'kirya, Tel Aviv, March 26, 2008.

⁷³An official Ministry of Defense order was required, however, before he could formally activate his assigned reservists.

⁷⁴Most of the squadron's UAV controllers and technicians were reserve officers who worked full-time in civilian life as engineers or managers in Israel's UAV industry.

asked IAF headquarters essentially to “take care of it” (that is, follow through with the considerable nontrivial paperwork and payment details) after the fact. Thanks to that highly responsive and committed industry support, the squadron was soon able to double its normal full-time level of effort.

The IAF’s UAV squadron operated both the Searcher 1 and 2 and Heron 1 platforms, maintaining one supporting ground-control system for each type in continuous operation throughout the campaign. Its UAVs operated primarily out of Palmachim Air Base, but also as necessary from forward airstrips in the north that were normally used by civilian crop dusters before short-range Katyusha rockets began landing in that vicinity after the fighting broke out. The squadron remained at its maximum sustainable operational and personnel tempo throughout all 34 days of the campaign. The abiding rule handed down by its commander was: “We start out at 100 percent and build up from there.” Another rule was to break any and all rules as may be required to meet mission needs. Unit operators were told by their commander to “work your problem, don’t bring it to me.” Individual initiative reigned supreme down to the squadron’s lowest level. The standing watchword was that if a UAV was in imminent danger of an in-flight failure, then the controller on duty should abort the mission and bring it home. Otherwise, controllers were directed to press ahead with their missions even if some aircraft systems were operating in a degraded mode or had failed.⁷⁵

By the IAF’s frank admission, UAVs were the principal instruments of real-time ISR support for both air and ground commanders, and Operation Change of Direction saw a greater sustained use of UAVs than in any previous Israeli combat experience. Indeed, a former Director of Research and Development for Israel’s Ministry of Defense, retired IAF Major General Isaac Ben-Israel, characterized the campaign as the “coming-of-age exam” for UAVs.⁷⁶ In all, IAF UAVs flew some 1,350 sorties and logged more than 16,500 flight hours

⁷⁵Interview with the commander of the IAF’s UAV squadron, IAF Headquarters, Ha’kirya, Tel Aviv, March 26, 2008.

⁷⁶Ben-Israel, *The First Israel-Hezbollah Missile War*, p. 60.

over the course of the campaign, with the average UAV sortie lasting around 10 hours.⁷⁷ Significant numbers of Searcher and Heron UAVs were constantly airborne on assigned stations over either Lebanon or northern Israel, offering extended dwell time for IAF battle managers. Not a single troops-in-contact situation ever occurred without at least one monitoring UAV on station overhead.

To ensure adequate and prompt UAV availability, the tasked platforms were operated in a stack over various sectors of the battlefield at altitudes from which they could not be heard and often not even seen from the ground. An entering UAV would join the stack on arrival, hold on station until it was needed, perform its mission until it reached its minimum fuel state or was called off, then return to Palmachim or to a forward operating location in northern Israel. All UAVs were assigned identification friend or foe (IFF) transponder codes, and all contributed to a common operating picture that was available on demand for IDF combatants at both the command and execution levels. One immediate change for the better occasioned by the second Lebanon war from the IAF's previous pattern of UAV operations was a summary decision that General Shkedy was able to extract from higher civilian authorities in the government to allow his UAVs to operate more freely within Israeli national airspace. Thanks to that decision, one-way aerial "tubes" were established into and out of Lebanon through Israel's airspace structure, so that UAVs operating out of Palmachim and elsewhere could move quickly to and from the battlespace to the north while remaining safely deconflicted from civil traffic by a few thousand feet.⁷⁸

Most of the UAV squadron's mission taskings during the campaign entailed assisting IDF ground maneuver and facilitating associated IAF CSAR and medevac operations. For example, squadron UAVs

⁷⁷Interview with Lieutenant Colonel Roni Amir, head of the Doctrine Branch, IAF Headquarters, Ha'kirya, Tel Aviv, March 26, 2009. See also Alon Ben-David, "Questions Remain over IDF's Use of Armed UAVs," *Jane's Defence Weekly*, September 16, 2006, p. 17.

⁷⁸Interview with the commander of the IAF's UAV squadron, IAF Headquarters, Ha'kirya, Tel Aviv, March 26, 2008.

would routinely vector and overfly IAF UH-60 Blackhawk helicopter pilots safely into and out of hostile airspace over southern Lebanon through assigned ingress and egress routes that had been presurveyed and determined to be safe. Another major tasking entailed a continuous monitoring of known or suspected medium- and long-range rocket operating areas in search of vehicle transporters for Zelzals and Fajrs. With respect to this TST tasking, the squadron's operations officer said that in Lebanon where the IAF was operating, "you have to stay on top of the target to see something like a small rocket launcher and strike it before the launch crew flees. You can't look for [such] targets over a long distance, because urban areas often mask what you want to see. So your mission is to slave your UAV to a certain target. As a result, it's better to have a lot of small UAVs than a few large ones."⁷⁹

Yet a third mission tasking entailed target validation and ROE enforcement. On this crucially important point, an IAF lieutenant serving as a UAV controller said candidly: "Although we don't push the trigger, we are the ones that say, 'OK, this is a target.' We don't aim at innocent buildings. If it was bombed, something was there."⁸⁰ By the same token, squadron controllers said that the real-time imagery provided by their platforms had often been sufficient to allow them to abort as many as two-thirds of the preplanned attacks against fixed targets that had been ordered up by IAF headquarters. (As is the case in U.S. Air Force practice, all UAV operators in the IAF are officers.)

With respect to UAV monitoring of the battlespace in support of real-time TST operations against Hezbollah rocket emplacements within the often narrow time frame during which those emplacements would be exposed and targetable, previous IAF investments to shorten the sensor-to-shooter cycle time were shown to have paid off well, particularly in the realm of integrated UAV and attack-helicopter operations. For example, Tadiran Spectralink's Givolit data-link system enabled IAF aircrews to react quickly to such pop-up targets as Katyu-

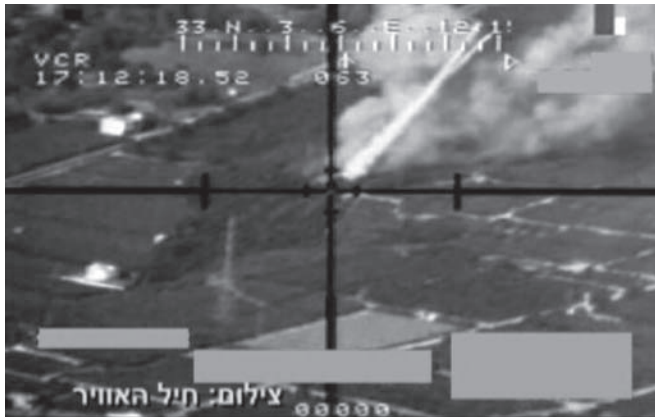
⁷⁹David A. Fulghum, "UAV Boom Continues: Israeli Developers See Opportunities in Both High- and Low-End Markets," *Aviation Week and Space Technology*, February 4, 2008, pp. 51–52.

⁸⁰Joshua Mittnick, "Israelis Rely on Drones in War," *Washington Times*, August 5, 2006.

sha and other rocket launchers by relaying still UAV electro-optical or infrared images directly into the cockpits of AH-64s and allowing their pilots to dispatch weapons promptly toward geolocated and validated targets from a safe standoff distance.⁸¹ Said one informed IAF source regarding this continuous cat-and-mouse game: "In many cases, we [actually] had to detect the launch flash to determine the location of the launcher."⁸² (Figure 3.13 shows one such flash observed in real time by a UAV of a medium-range Hezbollah 220mm rocket upon being launched into northern Israel. The launcher was promptly geolocated, targeted, and destroyed by the IAF within minutes thereafter.)

On the same point, with respect to the time-urgency of the targeting challenge, the chief executive officer of Elbit, a key Israeli industry supplier of UAVs, added: "During the Lebanon war, targets would disappear in 2 to 5 minutes. For command and control and fast sensor-to-shooter response, it's *all, all, all* about electronics, and it has noth-

Figure 3.13
Hezbollah 220mm Rocket Launch in Progress



SOURCE: IAF.

RAND MG835-3.13

⁸¹Arie Egozi, "Israel Praises UAV Abilities During Operation Change of Direction," *Flight International*, August 29–September 4, 2006, p. 21.

⁸²Egozi, "Israel Praises UAV Abilities During Operation Change of Direction."

ing to do with platforms.”⁸³ As just noted in an example given above, UAVs also provided target imagery and refined target coordinates that allowed missile-firing IAF attack helicopters to remain safely outside the lethal engagement range of infrared SAMs, AAA, and small-arms fire and to conduct precision standoff attacks with relative impunity. (Because of these assessed threats and the seriousness with which they were regarded, IAF attack helicopter aircrews operated far more conservatively than their U.S. Army and Marine Corps counterparts and almost never ventured below 5,000 ft AGL.)

Some reports claimed that as many as 100 UAVs were committed to the IDF’s 2006 campaign against Hezbollah. The UAV squadron’s operations officer, however, indicated that the actual number had, in fact, been more modest. The UAV types that were employed by the IAF during Operation Change of Direction included the Searcher, Hermes 450, Heron 1, and Skylark. For its part, the Searcher, classed as a medium-altitude, long-endurance platform and flown by a three-person ground crew, offered an operating radius of some 120 miles, could orbit over an assigned target as high as 20,000 ft AGL, and was able to remain on station for more than 15 hours. Representatives of IAI, the manufacturer, said that the IAF’s Searcher inventory flew “thousands of mission hours” with outstanding reliability.⁸⁴

Elbit Systems’ Hermes 450, however, was by nearly all accounts the real UAV workhorse of the second Lebanon war, with a reported 92-percent mission success rate over a course of three months from the start of the campaign. Three of these platforms in all were lost during the 34 days of fighting, two due to onboard systems malfunctions and one as a result of reported operator error. In one case, IAF F-16s quickly geolocated the crash site and bombed the wreckage so as to keep any exploitable sensitive components out of hostile hands.⁸⁵ The other two

⁸³David A. Fulghum, “Electronics Rule: The Concept ‘It’s Payloads Not Platforms That Matter’ Becomes a Business Model,” *Aviation Week and Space Technology*, February 4, 2008, p. 53.

⁸⁴Peter La Franchi, “Israel Fields Armed UAVs in Lebanon,” *Flight International*, August 8–14, 2006, p. 5.

⁸⁵Egozi, “Israel Praises UAV Abilities During Operation Change of Direction.”

failed UAVs were recovered from the sea.⁸⁶ The IAF reportedly used its Searchers and Hermes 450s for, among other things, transmitting real-time still imagery of objects of interest to the cockpits of fighters and attack helicopters that were holding on station nearby, ready to conduct immediate TST attacks as directed. By one account, both UAV types were said to have been able to transmit, via secure wide-band satellite communications data links, digital imagery and refined target coordinates directly to airborne strike fighters on armed overwatch stations. That practice resulted in a number of direct hits against medium-range rocket launchers that were firing their rockets in salvos. The repeatedly successful operating mode that the practice entailed all but eliminated the sensor-to-shooter gap.⁸⁷

The Heron 1, referred to as the *Shoval* or *Machatz* 1 in IAF service, was also, like Searcher, developed in the UAV division of IAI. This brand-new platform had just become operational in July 2006 and was still in initial acceptance testing at the time the second Lebanon war started. Accordingly, the UAV got its baptism by fire in line service throughout the fighting by looking for Hezbollah rocket sites and gathering ELINT and communications intelligence (COMINT).⁸⁸

Comparable to the American RQ-1 Predator in general size and mission applications, the Heron 1 is 29 ft long, has a wingspan of 54 ft, and a normal gross weight of 2,500 lb. It can fly more than 2,000 miles at an altitude of up to 33,000 ft and has a modest airspeed of 113 knots. The aircraft navigates using an internal GPS receiver and either a preprogrammed or manually directed flight profile. Its 550-lb payload includes IAI's Tamam electro-optical and infrared Multimission Optronic Stabilized Payload, a DSP-1 dual-sensor surveillance system, and Elta's EL/M-2055 synthetic aperture radar (SAR) multi-target track-while-scan system, as well as electronic warfare payloads and satellite communications systems. The UAV communicates with

⁸⁶Interview with Lieutenant Colonel Roni Amir, head of the Doctrine Branch, IAF Headquarters, Ha'kirya, Tel Aviv, March 26, 2009.

⁸⁷Sengupta, "Fighting Tips: The Recent Israeli-Hezbollah War Holds Lessons for the IAF [Indian Air Force]."

⁸⁸"IAI Heron," Wikipedia, August 17, 2010.

its ground control stations either directly, through line-of-sight data link, or via an airborne or satellite relay. After the ceasefire went into effect, IAI reported that the Heron 1 had performed “beyond expectations” by flying “hundreds” of day and night sorties, often deep into Lebanon, and accumulating thousands of flight hours with high reliability and no reported mission aborts, while at the same time demonstrating the full extent of the aircraft’s endurance capability. It was also said to have been a major source of intelligence for IDF commanders.⁸⁹

An even newer-generation IAI UAV, called Heron 2 (known as *Eitan* and *Machatz 2* in the IAF), first flew covertly in July 2006. There is no indication that it was used in combat during the second Lebanon war. This very large UAV, with an 85-ft wingspan and general dimensions more along the lines of the U.S. RQ-4 Global Hawk, was publicly displayed for the first time a year later at the Paris Air Show in June 2007. It is equipped with a pusher turboprop engine, and its maximum takeoff weight is 8,800 lb or more. Its payload includes a high-precision IAI/Elta radar-warning receiver with enough reported discrimination capability to enable single-ship geolocation of emitters, which will allow it to identify and respond immediately to new enemy emitters appearing in the war zone.⁹⁰

To mention just briefly the contribution of two new mini-UAVs that were operated by the IDF’s ground forces, Elbit’s Skylark and Rafael’s Skylite B, the Skylark had been undergoing initial service trials before the start of the conflict, and a limited number were accordingly committed to combat support during the campaign. One IDF source said: “They surprised us with their flexibility and ease of operation.” Another stressed the need for improved payloads: “We need to make them capable of not only detecting a person, but recognizing him positively.”⁹¹ In a similar vein, the Rafael Armament Development Authority offered to operate “several” of its still-developmental Skylite B mini-UAVs for the ground forces. Catapult-

⁸⁹“IAI Heron.”

⁹⁰David A. Fulghum, “Israel’s Secret New UAV,” *Aviation Week and Space Technology*, May 21, 2007, p. 32.

⁹¹Egozi, “Israel Praises UAV Abilities During Operation Change of Direction.”

launched, the Skylite B has a 90-minute flight endurance and an operating block of between 300 and 2,000 ft AGL. It was designed for use at the battalion level and below. Said a Rafael spokesman: "We offered the systems to the IDF, and they allocated them to different units." In all, Skylite Bs reportedly flew "dozens" of hours, sometimes under "severe" weather conditions, and operated out to a maximum range of seven miles forward of the controlling ground unit.⁹²

As for other mission applications, most UAVs operated by the IAF are now equipped with laser target designators, making them key players in shortening the time required to bring fighter and attack-helicopter munitions to bear on assigned targets. UAVs also conducted post-strike BDA, particularly after the IAF's repeated attacks against the *dahiye* complex in south Beirut. Streaming UAV video imagery otherwise went generally to wherever there was the most pressing tactical need for it at the moment, usually at the IDF brigade level and higher.⁹³ IAF ground-based terminal-attack controllers attached to the service's *Shaldag* SOF unit had not yet acquired an equivalent of the U.S. ROVER laptop computer capability or any comparable way of directly accessing air-derived ground target-area imagery, although both were on order.⁹⁴ Finally, UAVs provided persistent overhead surveillance with their electro-optical, infrared, and SAR sensors. Video and infrared sensors were also integrated into the targeting pods carried by the IAF's two-seat F-16s and F-15Is. UAV imagery is usually preferable to targeteers, however, because UAVs are usually parked 9,000–15,000 ft directly overhead an area of interest looking straight down, with a minimum of atmospheric and haze distortion.

⁹²Ben-David, "Questions Remain Over IDF's Use of Armed UAVs," p. 17.

⁹³An IDF brigade is smaller than a U.S. Army brigade.

⁹⁴ROVER, which stands for "remotely operated video-enhanced receiver," is essentially a reinforced laptop computer with antennas configured to allow ground forces to see what a fighter pilot and WSO see on their targeting pod's cockpit display. It streams real-time video imagery from both fighter targeting pods and UAV sensors directly to ground-based terminal attack controllers and their supported ground-force personnel.

It also bears mentioning that the IAF supplemented its UAV contributions during Operation Change of Direction with highly effective ISR collection from both manned aircraft and space platforms. At the time of the campaign, the IAF maintained on orbit three satellites in the 660-lb class that provided electro-optical, infrared, and SAR imagery with a reported resolution of less than 3 feet. Collectively, its Ofeq 5 and Eros A and B satellites provided both AMAN and the IAF's Intelligence Directorate with hundreds of quality images each day, as did the strap-on imagery pods carried by F-15s and F-16s that have long since replaced the IAF's RF-4 Phantoms in the manned reconnaissance role.⁹⁵

With respect to the matter of armed UAVs and their tactical employment, the IDF as a matter of practice does not discuss the subject and treats it without exception as a classified domain. Thus one can only make informed guesses about the extent of the possible kinetic applications that were employed by the IAF's uninhabited platforms during Operation Change of Direction. To cite just a few straws in the wind, one U.S. press account referred to an armed Israeli UAV firing a missile at a moving vehicle.⁹⁶ Another press report claimed, correctly as far as it went, that the IAF had used its attack helicopters both reluctantly and carefully in combat due to the ever-present possibility of their being engaged by short-range infrared SAMs. It then suggested, although citing no evidence, that the IAF instead had made substantial use of armed UAVs fitted with Hellfire or Spike-ER anti-

⁹⁵A year later, on June 11, 2007, Israel launched its Ofeq 7 satellite, which carries multi-spectral and high-resolution electro-optical sensors offering, according to industry officials, a improved resolution down to one and one-half feet and a tactical downlink for transmitting imagery directly to engaged forces. Later, on February 6, 2008, Israel launched its new TecSAR satellite from India's Satish Dhawan Space Center in Sri Harikota. That new satellite, which carries a synthetic aperture radar in a 220-lb payload offering all-weather capability, soon thereafter returned its first images during a stormy night of snow and hail that enveloped virtually all of Israel. (Barbara Opall-Rome, "Israel Tests Cloud-Piercing Radar Satellite," *C4ISR Journal*, April 2008, p. 8.)

⁹⁶Joshua Mittnick, "Limits of Israeli High-Tech Power," *Christian Science Monitor*, August 1, 2006.

armor missiles.⁹⁷ One Lebanese source quoted in the Arabic-language press reported that the Hermes 450 had been armed and employed in a precision-strike role.⁹⁸ Another report appeared in the U.S. press of an armed Israeli UAV firing on a Hezbollah convoy.⁹⁹ (It is openly known in this regard that the IAF made a special effort to seal the Syrian border using UAVs supported by SIGINT.)

In addition, by several Western accounts, the Hermes 450 was thought to have been used heavily throughout the second Lebanon war as an uninhabited strike platform. It is widely believed to carry and employ Israel's homegrown Spike-ER missile, which offers a slant range of eight miles and a dual electro-optical and infrared seeker head to help the weapon home unerringly on concealed targets.¹⁰⁰ One report, in particular, noted that both the Hermes 450 and the Searcher can be configured to carry at least two Spike missiles. It further claimed that Operation Change of Direction provided "the first clear evidence

⁹⁷ Blanford, "Deconstructing Hizbullah's Surprise Military Prowess," p. 25.

⁹⁸ Cited in *Flight International*, August 8–14, 2006.

⁹⁹ Joseph Panossian, "Report: Israeli Drone Hits Convoy, Kills Six Refugees," *Houston Chronicle*, August 12, 2006.

¹⁰⁰ The Spike-ER (for "extended range") was developed by the Rafael Armament Development Authority. A new addition to the family of fourth-generation multipurpose guided missiles developed initially to be carried by the IAF's attack helicopters, IDF light infantry vehicles, and Israel Navy surface naval vessels, the basic Spike was designed expressly for urban and antiterror operations against tanks and other high-value targets while offering minimal collateral-damage effects. The penetration, blast, and fragmentation (PBF) warhead of the Spike-ER detonates only after the missile breaches a target's outer shell, such as a wall, thus minimizing unwanted collateral damage. The weapon offers both fire-and-forget and fire-observe-and-update operating modes. The IAF's AH-64s can reportedly carry 16 of the munitions as improvements on the basic AGM-114 Hellfire for some tactical applications. The AH-1 also can carry the weapon in an unreported number. The weapon has a fiber-optic bidirectional data link that allows the shooter to watch video taken by the seeker head both before launch and during flight to the target. It can be boresighted onto a specific aim point, such as a designated window in a targeted structure. It further offers an extremely low likelihood of missing the target, as well as the ability to change targets after launch, to perform real-time surveillance and BDA, and even to abort the attack after launch, if necessary, by being steered away harmlessly at the last minute from a target determined to be false. See "Spike ER Helicopter System" and "Extended Range Multipurpose Missile," Haifa, Israel: Rafael Advanced Defense Systems Ltd.

that Israel has armed a number of UAVs to reduce engagement times for time-sensitive targets.” Another report noted that Rafael had been pushing Spike as a weapon for UAVs for at least the preceding two years and that, at the Paris Air Show in 2005, Sagem had displayed an early mock-up of its Sperwer-B UAV equipped with a single Spike dispenser tube under each wing.¹⁰¹

Moreover, it might be noted also that the U.S. Army’s RQ-5 Hunter UAV, which is a direct derivative of the Hunter developed earlier for the IAF, also exists in an armed version called the MQ-5 and carries the GBU-44 Viper Strike weapon.¹⁰² In addition, an American-operated version of Heron called Hunter 2 can mount four Hellfire missiles, onboard targeting sensors, and weapons pylons.¹⁰³ Finally, if the IAF used its Harpy UAV, designed and produced by IAI, during the second Lebanon war, then by definition it employed an armed unmanned platform, since that vehicle is expressly designed around a 70-lb high-explosive warhead. It was fielded to attack enemy radar systems and other electromagnetic emitters, the latter of which Hezbollah’s forces may well have used and relied upon.¹⁰⁴

Given these many, varied, internally consistent, and plausible hints, one would think that there could be more than a grain of truth beneath them. After all, the IAF has been the world’s pacesetter in

¹⁰¹ La Franchi, “Israel Fields Armed UAVs in Lebanon,” p. 5. Elbit Systems, the manufacturer of the Hermes 450, has said simply that the UAV provided the IAF with intelligence and other “required capabilities.” One report, however, claimed that some variants of the UAV were configured with twin underwing-mounted AGM-114A Hellfire laser-guided antiarmor missiles and that such platforms, operating as stand-alone hunter-killers, “routinely flew for almost 50 hrs nonstop at altitudes of 3,000 ft, with at least three of them being airborne at any given time.” The report added that these combat-configured UAVs were managed by a ground-based imagery exploitation system that collected and processed intelligence information requests in real time via an intranet connection that was accessible by airborne manned combat aircraft. (Sengupta, “Fighting Tips: The Recent Israel-Hezbollah War Holds Lessons for the IAF [Indian Air Force].”)

¹⁰² “IAI RQ-5 Hunter,” Wikipedia.com, October 2010.

¹⁰³ “News Breaks,” *Aviation Week and Space Technology*, March 12, 2007, p. 19.

¹⁰⁴ Powered by a 37-hp Wankel reciprocating engine fitted with a pusher propeller, it is more than 8 feet long with a 6-foot wingspan, has a takeoff gross weight of 300 lb, and can fly as far as 300-plus miles at 100 kts. (“IAI Harpy,” Wikipedia, September, 2010.)

UAV development from the very outset, and the U.S. Air Force has evolved its own UAV posture in emulation to a point where it now operates the MQ-9 Reaper in both Iraq and Afghanistan with the ability to carry four 500-lb JDAMs or LGBs, giving it essentially the same kinetic attack capability as that offered by a manned fighter. Surely with such a robust U.S. example in line service, it is not hard to presume that the IAF must be not far behind—or, just as likely, even ahead of the United States in armed UAV development.

To pursue the logic of this line of speculation a step further, nearly all targeted Hezbollah medium- and short-range rocket launchers after the campaign's first few days were said by the IAF to have been destroyed within single-digit minutes of their geolocation. It is difficult to imagine that an IAF fighter or attack helicopter could have been overhead and available to account for each and every one of those combat successes. Clearly implying a role for armed UAVs in achieving success in such TST operations, a senior IAF pilot was quoted as saying: "If you want continuous monitoring of hostile territory and the ability to react quickly, you have to be there. A UAV can be in the air for two days with large payloads [presumably weapons] and long range. A pilot can't."¹⁰⁵ In an underscoring of this point categorically, retired IDF Brigadier General Shimon Naveh, in an interview with the U.S. Army's Combat Studies Institute at Fort Leavenworth, Kansas, admitted outright in November 2007 that IDF SOF teams would hide near previously identified Hezbollah launch sites, detect Hezbollah launch preparations in real time, and preempt those launchings in a timely manner "by guiding [both] fixed-wings [and], in most cases . . . armed RPVs [remotely piloted vehicles] capable of shooting really very quickly. . . . They managed to kill about 50 launchings."¹⁰⁶

¹⁰⁵Fulghum and Wall, "Learning on the Fly," pp. 63–65.

¹⁰⁶Quoted in Matt M. Matthews, "Interview with BG (Res.) Shimon Naveh," Fort Leavenworth, Kan.: Operational Leadership Experiences Project, Combat Studies Institute, November 1, 2007. Similarly, an assessment of the IDF's subsequent retaliatory campaign against the terrorist organization Hamas in the Gaza Strip in December 2008 and January 2009 (examined in detail in Chapter Six) goes so far as to include in its title the presumption that the IAF operates armed UAVs. That study reports that the IAF's primary armed UAVs are the Hermes and Heron, the first of which can carry two Spike-MR (medium-range) mis-

Whatever the true story may be with respect to the IAF's armed UAV repertoire, that story is not likely to be elaborated on by the IDF any time soon. Indeed, considering the uniquely tough neighborhood in which Israelis live on a daily basis, the IDF's nondisclosure policy with respect to this particular capability makes sense. At a minimum, it will keep Hezbollah forever fearing the worst yet knowing little or nothing for sure about the extent of the IDF's capability in this realm.¹⁰⁷

By way of conclusion, Israel's campaign against Hezbollah in 2006 yielded at least two UAV-related lessons that are worth mentioning in passing. First, the campaign experience prompted both the IAF and the IDF's ground commanders to begin working more harmoniously toward implementing a joint CONOPS that will enable the two services' ever-growing inventories of UAVs to combine assets so as to enable the provision of a richer real-time picture of an area of common interest to combatants at all levels in both services. In this regard, Israeli sources have particularly noted a need for improved optical payloads for day and night use and a more integrated joint operating pattern that links the IAF's Hermes 450 and the IDF's Skylark mini-UAV. The same sources have also suggested a growing need for the IAF to begin equipping at least some of its higher-end UAVs with threat countermeasures comparable to those now carried by its manned combat aircraft.¹⁰⁸ Second, in a conclusion that will come as no surprise to any American with recent combat experience in Iraq or Afghanistan, Elbit's vice president and general manager for UAV systems touched the heart of the main UAV predicament worldwide today, for Israel no less than

siles and the second of which can carry up to four. (Marc Garlasco, *Precisely Wrong: Gaza Civilians Killed by Israeli Drone-Launched Missiles*, New York: Human Rights Watch, June 2009, pp. 11–12. See also Amos Har'el, "IAF Gets New Drone for Offensive Operations," *Ha'aretz*, Tel Aviv, March 8, 2007.)

¹⁰⁷With respect to the above discussion, however, a remark made by General Shkedy in a different context during an interview in May 2008, shortly before his retirement, may be directly pertinent: "I can only say that I welcome what foreign sources are saying about us and the [IAF] in connection with deterrence and our operational capacity." (Barbara Opall-Rome, "Interview with Major General Elyezer Shkedy, Commander, Israel Air and Space Force," *Defense News*, May 19, 2008.)

¹⁰⁸"Israel Praises UAV Abilities During Operation Change of Direction."

for other users of that capability, when he observed: "One of the lessons [of the 2006 Lebanon fighting] is that you need a lot of UAVs because the users are getting addicted. Once they realize they can have this guardian angel above them, they want it all the time."¹⁰⁹

Airlift and CSAR Support

The IDF and IAF have released few facts and figures regarding air mobility operations during the second Lebanon war. Yet those operations warrant more than cursory mention and recognition, since they figured prominently in the untold story of Israel's air contribution to Operation Change of Direction by often being decisive in aiding embattled IDF ground units when the latter found themselves in tight situations and unable to fend for themselves.¹¹⁰ Once the ground fighting got under way, air mobility assets expressly dedicated to Northern Command—specifically, the IAF's C-130s and its UH-60 and CH-53D utility and assault helicopters—performed day and night heavy-lift operations, emergency troop medvac, and CSAR missions into and out of southern Lebanon with textbook professionalism and often in daylight conditions under intense Hezbollah fire. Real-time

¹⁰⁹Fulghum, "UAV Boom Continues," p. 51.

¹¹⁰A major reason that the IAF's mobility assets were called upon to enter the fray at the last minute in this regard was the total breakdown of the IDF's recently introduced "regional logistics" concept under the stress of actual combat. According to an informed report by a serving Indian Army major general who had done considerable homework on the issue, "this concept proved to be a complete disaster during the fighting in Lebanon. Most units operating behind the Blue Line [the UN term for the Israeli-Lebanese border] received little or no logistics support. Some units were left for days without food, water, supplies of ammunition, and spare parts. There were several cases of troops suffering from dehydration. Northern Command was slow in breaching logistics routes, and after several days of fighting, the IAF had to be called in to drop emergency supplies." Commenting later on this disturbing experience, retired IAF Major General Isaac Ben-Israel, a former Director of Research and Development in the Israeli Ministry of Defense and now head of Security Studies at Tel Aviv University, stated emphatically: "The concept of regional logistics should be immediately abandoned and the [IDF] units should return to providing their own logistics." (Major General G. D. Bakshi, "Military Lessons," *Indian Defence Review*, New Delhi, January 1–March 31, 2007, pp. 111–122.)

improvisation routinely abounded during these operations because no mobility mission ever went exactly in accordance with formal doctrine.

Although General Shkedy was a fighter pilot by background and experience, he personally commanded the IAF's C-130 operations into southern Lebanon from the IAF's main AOC as the campaign neared its endgame. He later indicated that the manner in which the C-130s had been used—for example, in night operations to deliver needed materiel to beleaguered ground units with pilots ingressing at nap-of-the-earth altitudes and slow speeds and crewmembers in the back of the aircraft rolling supply pallets out the rear cargo door with no illumination while wearing night-vision goggles—had been completely unanticipated in the IAF's normal procedures for C-130 employment, as well as in day-to-day operating practices. In essence, the IAF's C-130 aircrews went almost overnight from being unsung cargo haulers to becoming *de facto* SOF assets conducting dangerous missions with the barest minimum of prior specialized training.¹¹¹ Other IAF lift missions flown in support of Northern Command included frequent on-call delivery into the combat zone of food, water, and ammunition replenishments brought in aboard C-130s, CH-53s, and Blackhawks.

With respect to helicopter operations, the IAF has two CH-53 squadrons and two Blackhawk utility helicopter squadrons. Although none of those four units were particularly trained for or expected to provide CSAR and medical evacuations under fire, they all ended up performing that mission both repeatedly and well. Half of the IDF's wounded soldiers were exfiltrated by air, and some 350 (around 100 of whom had been wounded seriously) were evacuated promptly back to Israel for emergency treatment. More than 90 percent of the most badly injured soldiers were evacuated under fire within 12 miles of the Israeli border. Medevac operations were almost always conducted under Hezbollah fire, and the IAF came close to having two Blackhawks shot down while performing such missions. There also was more than one barely averted helicopter midair collision during those operations. In

¹¹¹ Interview with General Shkedy, IAF Headquarters, Ha'kirya, Tel Aviv, March 27, 2008.

all, however, these CSAR operations were considered a resounding success by the IDF leadership.

During the second half of the campaign, in what ended up as its biggest helicopter operation since 1973, the IAF used dozens of helicopters to lift a detachment of Nahal troops into the high ground around Ghandouriyeh to provide cover for an IDF armored column that was advancing from the east through Wadi Salouqi.¹¹² In a similar but smaller foray, called Operation Sharp and Smooth, two large SOF teams numbering more than 100 troopers in all were flown by CH-53 helicopters into the town of Ba'albek in the Beka'a Valley on a mission to capture five suspected Hezbollah guerrillas. After their aircraft had completed night in-flight refuelings over the Mediterranean and proceeded at treetop level to their objective area, dozens of SOF troopers disembarked and split into two groups upon landing. The first group, a *Sayeret Matkal* team assigned to AMAN, was tasked to take the Dar Al Hikma hospital that was thought by AMAN to be a base for Iran's Islamic Revolutionary Guards Corps. A second detachment from the IAF's *Shaldag* SOF unit, based at Palmachim Air Base, swept the Sheikh Havit neighborhood a mile and a half away from the hospital, taking five suspected Hezbollah fighters as captives.¹¹³ (All five of the abducted individuals were later determined to be innocent civilians and were released.) This operation was closely monitored by overhead UAVs and other ISR platforms and, in addition, was protected throughout by

¹¹²Nahal, a contraction of *Noar Halutzi Lohan* ("Fighting Pioneer Youth"), is a storied IDF infantry brigade alongside the Golani Brigade, Givati Brigade, and other elite units.

¹¹³The IAF's *Shaldag* SOF component, based at Palmachim Air Base, is formally known as Unit 5101 (the Kingfisher Unit). Composed of some 40 to 50 highly trained combatants in all, it is divided into five or six teams of eight to nine operators each. Established in 1974 after the Yom Kippur War, it was initially operated as a *Sayeret Matkal* reserve company under the command of AMAN and was transferred to the IAF in the mid-1980s during Major General Amos Lapidot's incumbency as IAF commander. In addition to its numerous other SOF functions, it is home to the IAF's ground-based terminal attack controllers who identify and validate targets of interest and laser-designate them for precision attacks by IAF fighters. (See "Shaldag Unit," Wikipedia, July 2010.) Other SOF entities in the IAF's Special Forces Command include Unit 5757, based at Hatzirim Air Base, which reportedly specializes in eyes-on BDA, and Unit 669, based at Tel Nof Air Base, which is the IAF's dedicated CSAR unit. ("Israel—Air and Space Force.")

kinetic top cover provided by IAF fighters and attack helicopters. The teams were on the ground from 2230 on August 1, when the mission commenced, until 0300 the following morning when they joined up to be exfiltrated.¹¹⁴ The operation was later described to the media in broadest outline by General Halutz to dramatize the IDF's reach.¹¹⁵

In another conventional troop-insertion operation just two days before the cease-fire went into effect, more than 20 helicopters were assembled to deliver two IDF battalions into southern Lebanon. This particular push was delayed an hour and a half from its originally scheduled launch time, which meant that the insertion would occur after the moon had already risen, exposing the aircraft to enemy fire. One CH-53, after delivering its load of paratroopers, immediately lifted off from just south of Yater village four miles north of the Israeli border. Seconds after it was airborne, it took what on-scene observers later described as an ATGM hit, which downed the aircraft and killed its crew of five, including Israel's only female combat fatality, Sergeant Major Keren Tendler, an enlisted IAF reserve helicopter maintenance technician. Had the aircraft been struck before landing, its entire load of paratroopers would also have perished. General Shkedy was informed of this event over an encrypted telephone line immediately after it occurred and determined that the helicopter support would continue in the face of such threats despite the loss of the CH-53.¹¹⁶ Shortly after the aircraft went down, a combined *Shaldag* detachment and team from the IAF's 669 CSAR unit made their way to the crash site to recover the remains of the five crewmembers. They finally succeeded the second night in locating and retrieving the body of Sergeant Major Tendler in dense undergrowth near the wreckage of the downed helicopter.¹¹⁷

¹¹⁴ "Operation Sharp and Smooth," Wikipedia, 2010.

¹¹⁵ Ya'akov Katz, "Israeli Commando Missions Come Out of Shadows," *USA Today*, August 13, 2006.

¹¹⁶ Har'el and Isaacharoff, *34 Days*, p. 233, and interview with Brigadier General Ya'akov Shaharabani, head of the IAF Helicopter Division, IAF Headquarters, Ha'kirya, Tel Aviv, March 27, 2008.

¹¹⁷ Felix Frisch, "Night Birds," *Ma'ariv*, Tel Aviv, October 6, 2006.

In this manner, the IAF repeatedly came to the assistance of the IDF's ground forces. During the campaign's final days, the IAF came up with the idea of using, at significant risk, first UH-60 Blackhawks and later C-130s to deliver equipment and supplies to troops in urgent need of them. A reported 360 tons of materiel reached the troops this way during the campaign's final week and a half, of which 30 tons were delivered by Blackhawks in 30 missions.¹¹⁸ It was an impressive improvised-on-the-run operation organized through the greatest IAF effort. In nearly all cases, the friendly troops being supported were just three to six miles inside Lebanon. More than 90 percent of the decorations that were awarded to IDF personnel after the campaign ended were earned for participation in medevac and other air mobility operations of various types. (In almost every case, however, the awards presented were unit citations rather than medals given to individuals, since the involved aircrews were deemed by their commanders to simply be performing their normal duties.) In its final report on the campaign, the Winograd Commission was fulsome in its praise of the IAF for this eleventh-hour contribution, noting that the service had not initially been expected to conduct supply and evacuation operations so close to the border; that Northern Command's troops were supposed to have opened and secured logistical routes into southern Lebanon on their own; and that, when the latter proved unable to do so, the IAF played a "critical role" by stepping into the breach at the last minute in "providing supplies to the combat forces and in evacuating the casualties."¹¹⁹

The Ababil Downings

Finally, in a footnote to the air-war experience that remains of notable interest as a benchmark tactical event, IAF F-16s succeeded in downing two Hezbollah Ababil UAVs over Israel's northern territory, the first at

¹¹⁸ Interview with Lieutenant Colonel Roni Amir, head of the Doctrine Branch, IAF Headquarters, Ha'kirya, Tel Aviv, March 26, 2009.

¹¹⁹ *Final Winograd Report*, Chapter 9, "Arms, Combat Support Units, and Special Operations," The Air Force, Facts, paragraph 24.

night on August 7 off the coast of Akka on the Bay of Haifa opposite northern Israel and the second overland just inside Israel's northern border shortly before dawn on August 13. (Ababil means "Swallow" in Farsi.) Both UAVs were flying at around 1,000 ft AGL when they were engaged. (A third Ababil launched the same evening ended up crashing inside Lebanon near Tyre before it could proceed any further on its mission.)

The Ababil, developed and produced in Iran, is an unmanned reconnaissance platform that also can carry an 88-lb high-explosive warhead. It can fly as far as 150 miles at an airspeed of 120 knots and at a maximum altitude of 14,000 ft. In its surveillance configuration, the UAV carries digital communications equipment and an electro-optical camera.¹²⁰ The IDF has reported openly that Hezbollah had received more than 12 of these platforms before the start of the campaign, so AMAN was not surprised by the appearance of the Ababils in an operational role. As noted earlier, in its contingency planning for the war, the IAF had even hedged from the very start against one or more possible Ababil incursions by positioning F-15 and F-16 fighter CAPs adjacent to the battlespace off the Lebanese coastline to intercept and down any UAVs that might seek to penetrate Israeli airspace.¹²¹ The main significance of these two events is that they were among the first-ever successful air-to-air engagements by modern, high-performance fighters against small and difficult-to-target slow movers with virtually no infrared or radar signature due to their makeup and small size.

Earlier, in April 2005, a Hezbollah UAV (presumably also an Ababil) was launched into Israeli airspace from just north of the border and flew unscathed for nearly nine minutes over Israeli settlements in western Galilee before returning safely to Lebanon. The UAV carried a small television camera that was claimed by Hezbollah to have imaged the UAV's ground track throughout the entire 18-minute sortie, portions of which were later broadcast on a Web site controlled by Hezbollah and ballyhooed as yet another humiliating jab against the Jewish

¹²⁰"Ababil," Wikipedia, May 2010.

¹²¹Dan Ephron, "Hizbullah's Worrisome Weapon," *Newsweek*, September 11, 2006, p. 28.

state.¹²² As for who might have been providing technical support for these operations, the Iranian government has denied from the beginning that it had advisers or trainers in Lebanon. Yet papers were found on the bodies of some enemy soldiers killed in southern Lebanon on August 9 that clearly identified them as members of Iran's Revolutionary Guard Corps. That gave AMAN and Western military intelligence every reason to presume Iranian complicity in the C-802 attack against INS *Hanit* the previous month and in Hezbollah's subsequent UAV operations. As one U.S. intelligence officer commented with regard to the Iranians who were killed: "There's a possibility they could have been operating systems, but they weren't necessarily fighting. It could have been a case of [their having just been] at the wrong place at the wrong time."¹²³ IDF sources have put the assessed number of Iranian advisers working for Hezbollah at around 100. They also have indicated that obtaining the Ababils and learning how to launch them and program their flight would most definitely have required outside technical assistance.

In the case of the first downing, a released segment of streaming infrared imagery from a UAV operating high overhead graphically showed the attack sequence, which was performed by a Block 30 F-16C from Ramat David Air Base. The Ababil was first detected by the UAV while the latter was still over Lebanese territorial waters heading south. The F-16 was then vectored toward it by the IAF's northern control and reporting center, at which point the pilot made initial moves to set up the ensuing engagement. Then, just before pulling abreast of the Ababil, he fired a Python 4 infrared missile using his helmet-mounted sight for high off-boresight targeting. The missile made a high-g turn of more than 100 degrees and struck the UAV just as the F-16

¹²²Anthony Shadid, "Israel, Hezbollah Vow Wider War," *Washington Post*, July 15, 2006. The first alleged Hezbollah incursion into Israeli airspace with a UAV was in late 2004. ("Iranians Advising Hezbollah on the Use of Missiles, UAVs," *Aerospace Daily and Defense Report*, August 10, 2006.)

¹²³David A. Fulghum and David Barrie, "The Iranian Connection: New Operations, Advanced Weapons, Iranian Advisers Are Influencing the Course of Lebanon-Israel Conflict," *Aviation Week and Space Technology*, August 14, 2006, pp. 20–22.

passed it abeam.¹²⁴ As was later indicated by videotaped cockpit imagery of the F-16's head-up display symbology, the intercepting aircraft had slowed to an airspeed of 200 knots and was below an altitude of 1,000 ft above sea level when the pilot distinctly reported via radio voice communication: "I have positive eye contact [*keshet ayin*] with an Ababil."¹²⁵ The Israel Navy later retrieved the wreckage from the water offshore.¹²⁶ The entire engagement, including the initial target acquisition, identification, and final interception phases, took no more than 10 minutes.¹²⁷ IAF tacticians had previously worked hard to develop a concept and specific tactics, techniques, and procedures for engaging a slow-moving target that presented a scant radar and infrared signature, including conducting actual day and night air-to-air rehearsals. Thanks to that effort, the IAF was ready to meet the Ababil challenge when the time came.

It should be noted in passing that the IAF's downing of the Ababil was not, as was reported by one analyst, the first instance in which a combat aircraft had shot down a UAV. That honor goes to the Iraqi MiG-25 that downed a U.S. Air Force RQ-1 Predator that had been sent up as bait during Operation Southern Focus in early 2003 shortly before the onset of major combat in Operation Iraqi Freedom. The same analyst, the IAF's retired General Ben-Israel, further reported that the Ababil had been loaded with an explosive warhead and had evidently been intended for use by Hezbollah as a "poor man's cruise missile" targeted against Tel Aviv once Nasrallah's threat to fulfill that promised mission by means of Zelzals was thwarted by timely IAF action.¹²⁸

¹²⁴Fulghum and Barrie, "The Iranian Connection," pp. 20–22.

¹²⁵Personally observed by the author at IAF Headquarters, Ha'kiryat, Tel Aviv, March 26, 2009.

¹²⁶Edward Cody and Molly Moore, "Israeli Jets Kill 30; No Letup in Militia Attacks," *Washington Post*, August 8, 2006.

¹²⁷La Franchi, "Iranian-Made Hezbollah UAV Shot Down by Israeli Fighter," p. 16.

¹²⁸Ben-Israel, *The First Israel-Hezbollah Missile War*, p. 54.

Problems in Air Employment

Despite its achievements described in the preceding chapter, the IAF experienced its share of challenges throughout the course of Operation Change of Direction. Two problem areas—contending with Hezbollah's short-range rockets that were proliferated across southern Lebanon and the IAF's unsuccessful attempts to eliminate Hezbollah's most senior leaders—were occasioned by an absence of adequate real-time tactical intelligence regarding the location of those enemy assets at any given time. Two other areas in which the IAF was fairly faulted both during and after the war—the extent of Lebanese noncombatant casualties incurred during its bombing operations and the associated damage that was done to Lebanon's infrastructure and economy—were the natural results, for better or for worse, of conscious targeting choices on the part of the Olmert government. Finally, in the realm of air-land integration once ground combat operations got under way, both the IAF and the IDF's ground forces later acknowledged multiple breakdowns in their attempts at coordinated joint-force employment that predictably ensued from not having routinely conducted joint large-force training exercises throughout the preceding six years, during which time the IDF had largely been fixated on the more immediate and pressing problem of dealing with the Palestinian *intifada* in the occupied territories. This chapter addresses, in turn, each of these five identified problem areas in IAF combat performance during the second Lebanon war.

The Intractable Katyusha Challenge

In the aftermath of the heavily air-centric Persian Gulf War of 1991, the IDF chose to gradually shift its own doctrinal emphasis toward precision standoff attack operations, as opposed to classical ground maneuver, in its evolving concept of warfare.¹ The IAF became particularly influenced by this new reliance on standoff air operations in the wake of the similarly air-dominated subsequent U.S. combat successes in Operations Deliberate Force, Allied Force, Enduring Freedom, and Iraqi Freedom.

All the while, as we now know in hindsight, Hezbollah's strategists were taking due measure of this new IDF emphasis on precision standoff attacks. In response, they developed and adopted an asymmetric counterstrategy aimed at negating Israel's standoff advantage by means of some 13,000 short-range Katyusha rockets hidden away throughout southern Lebanon just north of the Israeli-Lebanon border. This rocket arsenal, which offered Hezbollah the ability to hold Israel's northern territory at constant risk with virtual impunity, was sufficiently large, concealed, and dispersed that *no* number of attempted suppressive air attacks by the IAF, in the absence of near-perfect real-time tactical intelligence regarding the locations of those weapons, could have prevented the terrorist organization from launching sustained barrages of Katyushas against northern Israel at will.

The Katyusha, the most primitive of rocket artillery weapons, first entered service in the Soviet Army in 1939 and saw extensive use against the Wehrmacht on the Eastern Front throughout World War II. Ordinarily mounted in multiples on trucks for rapid mobility to avoid prompt reactive counterbattery fire, the 122mm (4.8-in diameter) Katyusha can deliver an antipersonnel explosive charge as far as 20 miles, although the maximum range of most of the Katyushas that Hezbollah fired into Israel in 2006 was more on the order of

¹This important point was noted in Amir Kulick, "Hizbollah vs. the IDF: The Operational Dimension," *Strategic Assessment*, November 2006, pp. 29–33.

12 miles.² Israeli defense analysts had long been duly respectful of this threat to Israel's citizens living closest to the Lebanese border—thanks to Iranian largesse and Syrian complicity in stocking Hezbollah's arms coffers throughout the six years that followed the IDF's withdrawal from southern Lebanon in 2000. To note but one early example of this appreciation, two years before the start of Operation Change of Direction, former IAF fighter pilot Shmuel Gordon remarked at a conference on air power and terrorism that “due to the fact that Hezbollah has an array of surface-to-surface missiles, both in large number and range, we are pretty careful when exercising our power. We don't want rockets falling on our settlements.”³ In what later turned out to be a revealing preview of worse to come, Hezbollah combatants, as briefly noted before, fired eight Katyushas against the IAF's northern GCI radar site in May 2006, in response to a perceived Israeli provocation. One of the rockets actually landed, although without any destructive effect, in the heart of an antenna farm near the site's operations center.

During the campaign's first week, Hezbollah fired some 720 Katyushas into northern Israel. Six days of relentless IAF attacks on the terrorist organization's military and infrastructure assets throughout Lebanon had done nothing whatever to dissuade Nasrallah from continuing his rocket war against Israel. Nor did those attacks reduce, to any significant degree, Hezbollah's ability to keep firing Katyushas into Israel virtually at will. By the start of the campaign's third week, a steady rain of incoming rockets, at an average rate of 170 or more a day, had driven more than a million residents of northern Israel either into bomb shelters or to safe haven farther south. At one point during

²The weapon's nickname, which literally means “Katie,” is the Russian diminutive for *Katya* (which, in turn, is the diminutive of *Yekaterina*, or Catherine). As one account has it, Red Army troops during World War II adopted the name from Mikhail Isakovsky's popular wartime song *Katyusha* about a girl yearning for her loved one who was away on military service. By another account, the rocket got its name from Soviet soldiers who did not know its real name, which was classified, and accordingly deduced it from the small letter “k” that was inscribed on its transporter trucks. (The “k” actually stood for the Kominform factory in Voronezh.)

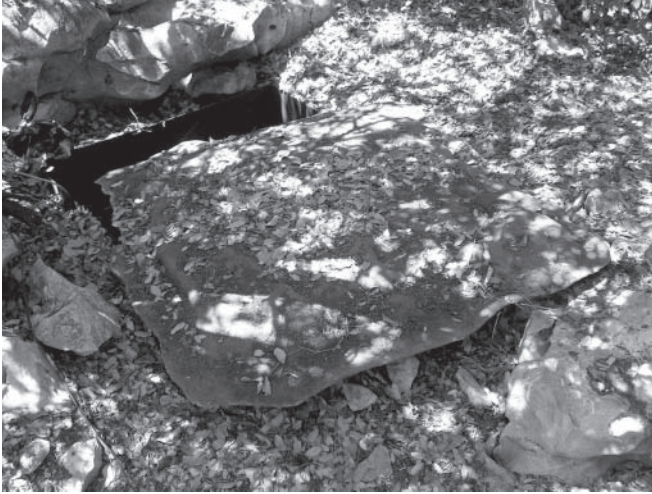
³Colonel Shmuel Gordon, IAF (Res.), in *The War Against Terror Is a Major IAF Mission: Summary of Lectures*, Herzliya, Israel: The Fisher Brothers Institute for Air and Space Strategic Studies, August 2004.

the campaign, a Katyusha exploded just 100 feet away from one of Israel's most important weapons research facilities in the Haifa area, raising concern that Hezbollah may have acquired accurate intelligence on Israel's most sensitive military facilities.⁴ On August 6, in the single deadliest short-range rocket attack of the war, an incoming Katyusha landed near Kfar Giladi directly on a truck full of reserve paratroopers who had just been called to active service, killing all 12 aboard. That major misfortune finally drove home among Israel's defense and security principals that the short-range rocket challenge presented by Hezbollah was a threat not just to Israel's civilian population but also to its military rear. Thereafter, Israeli public support for the war declined precipitously.

The heart of the IDF's predicament here lay in the fact that the Katyushas were essentially untargetable for standoff attacks. Concentrated within a six-mile-deep strip along Israel's northern border with Lebanon, the rockets were typically hidden away in nondescript buildings and special storerooms attached to private homes. In the latter case, Hezbollah's operatives would rent homes from among the southern Shiite population, whose owners were under no illusions as to the nefarious uses to which their residences were being put. In addition, there were reportedly as many as 600 separate Hezbollah munitions storage bunkers spread across the swath of Shiite territory south of the Litani. No single Hezbollah commander knew the location of each bunker. The rockets were covertly distributed among houses, apartments, and garages throughout the civilian population of southern Lebanon, as well as hidden away in metal-lined underground tunnels and bunkers with entrances covered by metal lids and disguised with leaves and branches. Hezbollah combatants relied on topography and dense vegetation to hide the entrances to what AMAN called their "nature reserves" for storing Katyushas. (Figure 4.1 shows the uncovered entrance to one of Hezbollah's many camouflaged underground rocket and other munitions storage bunkers proliferated throughout southern Lebanon.)

⁴Neil King, Jr., Karby Leggett, and Jay Solomon, "Bush's Mideast Strategy: Seek Change, Not Quick Peace," *Wall Street Journal*, July 19, 2006.

Figure 4.1
Concealed “Nature Reserve” Bunker Entrance

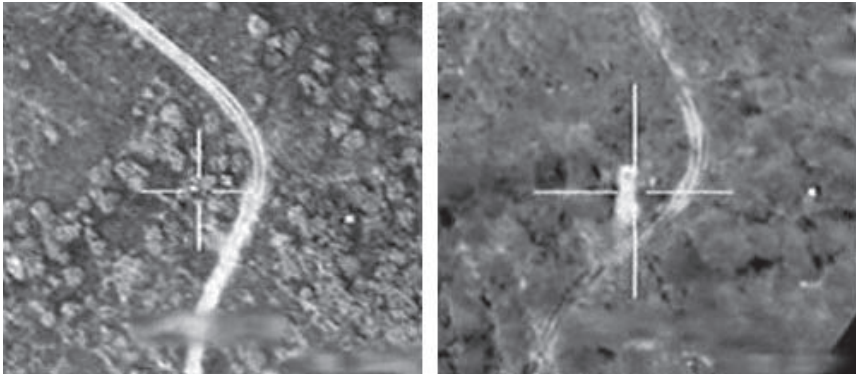


SOURCE: IAF.
RAND MG835-4.1

Target identification was accordingly a major problem for the IAF. It was all but impossible for fighter aircrews looking through their targeting pods from altitudes of 20,000 ft or higher to distinguish a rocket launcher from its surroundings, thanks to Hezbollah's accomplished techniques of camouflage, concealment, dispersal, and collocation of its Katyushas throughout the civilian population. Rapid real-time targeting was possible if an aircrew or a UAV happened to observe a rocket launch, which immediately branded the source of the plume as a target. That, however, required constant staring ISR to detect, geolocate, target, and attack a launcher before its crew had time to reposition it. Even then, there was the ever-present danger of causing inadvertent collateral damage because the IAF was forced to operate against combatants who purposely embedded themselves among innocent civilians, whom they used without compunction as human shields. That obliged IAF aircrews and their supporting command-and-control and ISR assets to go to the greatest lengths to retaliate effectively while minimizing civilian casualties. One senior IAF planner well captured

Israel's moral predicament in attempting to get at Hezbollah's Katyushas before they were fired: "If we attack and their civilians are injured, it's bad for us. If we don't, and our civilians are injured, it's still bad for us."⁵ Figure 4.2 shows an instance in which a TST attack in progress was delayed by an IAF pilot after a rocket launcher was geolocated and targeted but not immediately struck, out of concern on the pilot's part that a Lebanese farmer might be nearby. Seconds later, the rocket was fired into northern Israel, killing at least one innocent civilian. One always-available palliative measure was for an IAF fighter to drop leaflets before an impending air attack warning innocent civilians to vacate the area. (Throughout the campaign's duration, the IAF delivered 17.3 million such leaflets in all.)⁶ The problem with that option, of course, was that the leaflets also alerted enemy combatants to flee while there was still time.

Figure 4.2
A Delayed TST Attack



SOURCE: IAF.

RAND MG835-4.2

⁵David A. Fulghum and Robert Wall, "Defense Crunch: Israel Wants to Lighten the Burden of Military Spending on the Economy," *Aviation Week and Space Technology*, December 17, 2007, p. 51.

⁶Interview with Lieutenant Colonel Roni Amir, head of the Doctrine Branch, IAF Headquarters, Ha'kirya, Tel Aviv, March 26, 2009.

The IAF's targeting problem was further compounded because Hezbollah's rocket crews frequently employed "shoot-and-scoot" tactics, making it doubly difficult to geolocate and fix the launch site by means of counterbattery radar in sufficient time. The rockets could be launched either in groups or singly, and they required the barest minimum of personnel and logistical support. Some Katyusha launchers were mounted on pneumatically actuated platforms that could be raised and lowered from camouflaged holes in the ground. (See Figure 4.3 for an illustration of one such hidden underground launch position.)

Other launchers were transported on the backs of flatbed trucks. Short-range rockets could also be launched remotely by means of timers, allowing the launch crew to be well out of harm's way before the rockets were fired. In almost every case, the Katyushas were exposed only for seconds before launch, making for an all but insurmount-

Figure 4.3
Pneumatically Actuated 10-Tube Launcher



SOURCE: IAF.

RAND MG835-4.3

able targeting problem for the IAF. (Hezbollah combatants rarely fired Katyushas after sunset, since the rockets left a trail of flame across the night sky, making it easier for the IDF to geolocate and target the launch site.) Most of the Katyushas were fired individually or in small clusters from presurveyed and prepared launch positions, including from within homes through open windows, with a time of flight of only a minute or two. (Figure 4.4 depicts real-time UAV imagery of one such Hezbollah rocket firing into northern Israel through the window of a civilian apartment building in a Shiite village in southern Lebanon.) Many suspected Katyusha storage and launch areas in southern Lebanon were attacked toward the end of the campaign by CBU's that were essentially fired for effect. Through such operations, the IDF succeeded in destroying some 50 Katyusha emplacements, an insignificant achievement considering the vastly greater number of emplacements and storage sites that escaped attack. (In almost every instance of a successful CBU hit, however, Hezbollah's launch crews

Figure 4.4
Rocket Launch from a Civilian Residence



SOURCE: IAF.
RAND MG835-4.4

at least stopped firing and fled the area immediately after the attacks.) With their average miss distance of more than 1,000 ft from their intended aim point at the rocket's maximum range of 12 miles, the Katyushas, like Iraq's unguided Scuds in 1991, had no tactical utility whatever against military targets. However, they offered great psychological and strategic leverage, and that is the way in which they were used by Hezbollah.⁷

Active defense against the Katyushas was also impossible. As General Ben-Israel explained this conundrum: "The shorter the range, the more difficult it is to do something against it. The time between preparing the rockets and hitting the targets is seconds. There is nothing you can really do to intercept them."⁸ In 1996, during Israel's occupation of southern Lebanon and following a barrage of hundreds of rockets that Hezbollah fired into Israel, President Bill Clinton and Israeli Prime Minister Shimon Peres agreed to the joint development of a laser system intended to destroy such rockets in flight. In September 2005, however, after more than \$300 million spent on the project, both countries shelved further development of the technology demonstrator because of its bulkiness, high cost, and poor results against salvo launches and in cloudy weather. Approximately the size of six buses, the prototype system was made up of interconnected modules that included a command center, an acquisition radar, a telescope for tracking targets, a chemical laser as the weapon core, tanks to feed tons of fuel to the laser, and a rotating mirror to direct its beam toward incoming targets. Tested in 2000 at the U.S. Army's White Sands Proving Ground in New Mexico two years behind schedule, the prototype destroyed an incoming Katyusha and later two dozen more, although

⁷Makovsky and White, *Lessons and Implications of the Israel-Hizballah War*, pp. 39–41.

⁸Scott Wilson, "Missile War Is a New Challenge to Israel's Long Rule of the Sky," *Washington Post*, July 19, 2006. The IAF's sophisticated Patriot and Arrow theater anti-ballistic missile systems were designed and acquired to intercept larger, more advanced, and longer-range rockets that fly for hundreds of miles. They are ill-suited against swarms of Katyushas because the trajectories of the latter are unpredictable and their time of flight is so short.

never more than two at a time.⁹ It never came close to showing affordable effectiveness in realistic operating conditions.

Because Hezbollah's Katyushas could not be intercepted in flight, the IAF's only alternative was to attempt to attack their launchers while they were still in hiding or immediately after they were exposed before launch, an approach that required near-perfect real-time intelligence and targeting capability. That requirement made for the ultimate challenge in time-sensitive targeting. The IAF also devoted considerable efforts to cutting Hezbollah's resupply lines from Syria. Toward that end, its Kingfisher SOF unit had teams deployed in the Beka'a Valley from the campaign's start, followed trucks suspected of carrying rockets and launchers into Lebanon from Syria, and maintained an accurate fix on their location once the trucks were detected and confirmed to be carrying contraband. Only 15 percent of the targeted vehicles were reportedly attacked, however, because the IAF ranked the mission at the bottom of its priority list given its exceptional difficulty and minimal prospects of success.¹⁰

More important yet, the IAF put minimal effort into attempting to deal with the Katyusha conundrum because that responsibility, in light of the very nature of the mission, had been assigned by the IDF General Headquarters to the ground forces of Northern Command rather than to Israel's air arm. For Northern Command to have executed the mission, however, would have required a major IDF ground-force incursion into southern Lebanon all the way to the Litani River in a concerted effort to locate and physically eliminate Hezbollah's ample stocks of short-range rockets that were hidden away throughout that area. Such an initiative, however, was neither conducted nor even considered by the IDF at any time during the 34-day campaign.

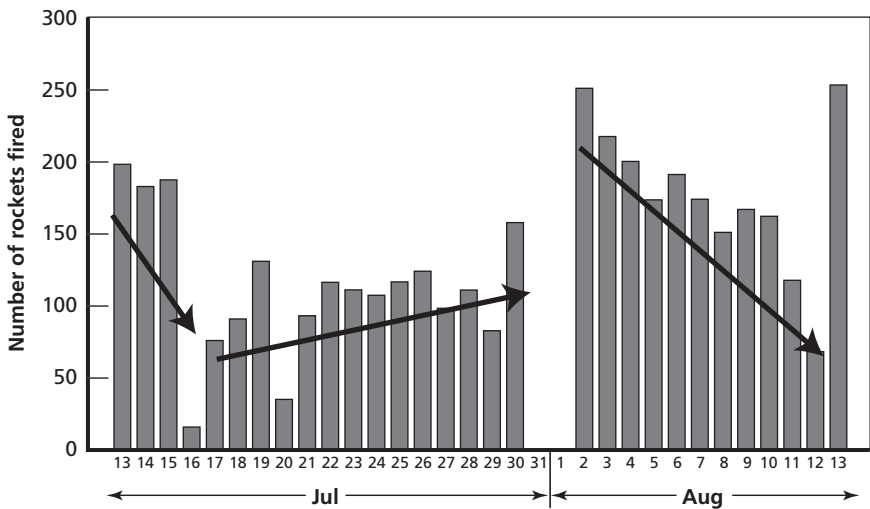
In the end, although the IAF destroyed as many as 300 Katyusha launchers in prompt TST attacks over the course of the war, it was unable to come close to halting the firing of Katyushas by Hezbollah

⁹ William J. Broad, "U.S. and Israel Shelved Laser as Defense," *New York Times*, July 30, 2006.

¹⁰ Bar-Joseph, "Israel's Military Intelligence Performance in the Second Lebanon War," p. 589.

altogether. To be sure, there were eight days during the 34-day campaign in which fewer than 100 were launched, suggesting that IAF strike operations and IDF artillery fire were having at least some suppressive effect (see Figure 4.5).¹¹ Nevertheless, by the time the cease-fire went into effect, Hezbollah had managed to lob 4,228 rockets into Israel, about 95 percent of which were short-range Katyushas and 23 percent (more than 900) of which, unfortunately, landed in populated areas.¹² Indeed, the rate of fire during the last day of fighting reached an all-time high of 250 launches.¹³ Roughly 80 percent of all of the Katyushas were fired from a distance of less than 12 miles from the Israeli border. Israeli casualties incurred as a result of the rocket attacks included 53 civilians killed and 2,000 wounded, 200 seriously. The

Figure 4.5
Daily Rate of Hezbollah's Katyusha Fire into Israel



SOURCE: IAF.
RAND MG835-4.5

¹¹ Alon Ben-David, "Limited Israeli Achievements Made in Lebanon," *Jane's Defence Weekly*, August 16, 2006, p. 4.

¹² "Katyusha," Wikipedia, June 2010.

¹³ Alon Ben-David, "Israel Revives Plan for Anti-Rocket Laser System," *Jane's Defence Weekly*, September 6, 2006, p. 18.

northern part of the country was essentially paralyzed by Hezbollah's rocket offensive, with one million Israeli civilians living in shelters and 40 percent of the area's industry stalled. The estimated economic cost inflicted on Israel by the Katyusha offensive was \$5.5 billion.

General Halutz later recalled the persistent daily harassment by Hezbollah's Katyushas as a "major source of frustration" for the Olmert government throughout the 34 days of fighting.¹⁴ Yet the IDF's failure to undertake any concerted effort to negate the short-range rocket threat or even take it seriously until the campaign's last week was the main reason for the counteroffensive's indecisive ending and the associated perception that Hezbollah's survival to fight another day represented an IDF failure. From a purely tactical perspective, of course, Hezbollah's Katyushas were like mosquitoes at worst—annoying in the extreme but of no real military consequence. The total number of Israelis killed by Katyusha fire in the end was barely more than that caused by a couple of typical isolated Palestinian suicide bombings. The typical miss distance of the short-range Katyushas was as much as 5 percent of their range, which rendered them ineffective against point targets and useful only as weapons for sowing fear and panic among targeted civilians. Yet the IDF's leadership never fully recognized, comprehended, internalized, and duly acted on the fact that they were comparable in effect to Iraq's Scuds in 1991 when it came to their psychological, political, and strategic utility from Hezbollah's perspective. The problem was not so much the actual physical destruction, injuries, and fatalities caused by the Katyushas as the intolerable spectacle of large numbers of Israeli citizens hunkered down in shelters for days on end. As one report noted toward the campaign's end: "Never before [had] Israelis faced such a sustained, indiscriminate bombardment in their own homes; by comparison, Saddam Hussein's Scud missiles of 1991 were a passing squall."¹⁵

Yet for all of the IDF's inability to halt the Katyusha fire by any means short of a major land invasion, even the most directly affected

¹⁴Interview with General Halutz, IAF Headquarters, Ha'kirya, Tel Aviv, March 26, 2008.

¹⁵"The War Beyond the War," *The Economist*, London, August 5, 2006, p. 13. Iraq fired just 39 Scuds at Israel, in marked contrast to Hezbollah's more than 4,000 Katyushas.

Israeli citizens were continuing to show near-total support for the policies of the Olmert government as the campaign unfolded. To that extent, as one assessment noted, Hezbollah's rocket attacks could be viewed as "at once a tactical success and a strategic failure. Tactically, Hizballah managed to sustain a [more or less] consistently heavy rate of rocket fire against northern Israel throughout the war. . . . At the same time, however, Hizballah's rockets did not have their desired effect of breaking the will of northern Israel and instead—as is often the case with aerial bombardments—stiffened the resolve of the population under fire."¹⁶

Nevertheless, from an ISR and targeting perspective, the undeniable fact was that the Katyushas, as well as about half of Hezbollah's medium-range rockets and a few of its Zelzals, were not just low-signature weapons; to all intents and purposes, they were *no*-signature weapons. (See Figure 4.6 for a classic representation of such an essen-

Figure 4.6
A "No-Signature" Weapon



SOURCE: IAF.
RAND MG835-4.6

¹⁶Andrew Exum, *Hizballah at War: A Military Assessment*, Washington, D.C.: Washington Institute for Near East Policy, Policy Focus No. 63, December 2006, p. 12.

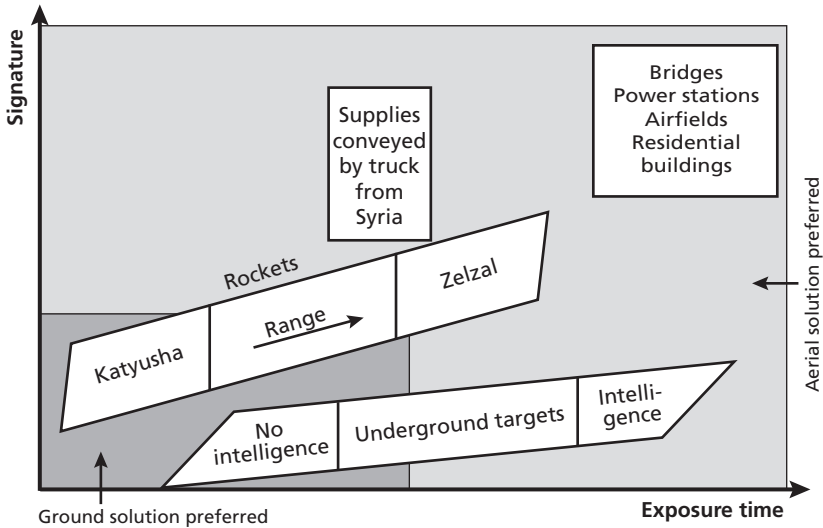
tially untargetable weapon—in this case, a recoilless tube hidden under foliage for the remote-controlled firing of a single Katyusha.) That meant that as long as they remained hidden and undetectable from the air, only a long and costly ground offensive, which both Halutz and his superiors in the Olmert government sought by every means to avoid, would offer any realistic chance of finding them, rooting them out, and destroying them. In this regard, in a thoughtful subsequent essay on the war experience, an accomplished Israeli fighter pilot and former IAF second-in-command, retired Major General Giora Rom, well spotlighted the ineffectiveness of air power in dealing preemptively with the Katyusha threat when he noted that “the lower the signature and the shorter the exposure time, the less possible it is to deal with a target from the air.” In a graphic representation of this point (see Figure 4.7), he added: “While the vast majority of targets can be dealt with from the air, short-range Katyushas must be dealt with primarily through ground operations.”¹⁷

At bottom, to negate the Katyusha threat in a timely manner, the IDF would have *had* to go in on the ground in large numbers, at least to a distance ranging from Israel's northern border to the Litani River. Moreover, it could have done so with decisive strategic results, albeit not without incurring many combat casualties along the way. A major problem confronting any IDF attempt to press into southern Lebanon on the ground, drive Hezbollah's combatants north of the Litani beyond effective range of Israel, and root out all their Katyusha stocks was that the area was brimming with enemy ambush squads and prepositioned IEDs that would have killed many Israeli soldiers. In the end, it was not a false belief in the coercive potential of Israeli air power, but rather a determination by the Olmert government to avoid incurring such high casualties, that drove the IDF to rely on standoff attack operations rather than to undertake a major land offensive.¹⁸

¹⁷Major General Giora Rom, IAF (Res.), “A Test of Two Strategies: Two Ships Passing in the Night,” in Brom and Elran, eds., *The Second Lebanon War: Strategic Perspectives*, p. 56.

¹⁸Israeli ground troops did, however, manage to locate and destroy dozens of Katyusha stockpiles in various isolated raids.

Figure 4.7
Susceptibility of Targets to Effective Aerial Attack



SOURCE: Institute for National Strategic Studies, Tel Aviv University.

RAND MG835-4.7

With respect to the general absence of significant actionable intelligence regarding the location and disposition of Hezbollah's Katyusha stocks, there was predictable finger-pointing both within and outside the IDF at the military intelligence community after the war ended. To note one case in point, not long after the campaign's dust had settled, a senior IAF officer charged AMAN with failing to provide enough information for the IAF to target the launchers. Other critics, while admitting the profound challenge presented by Hezbollah's Katyushas, suggested that more actionable information regarding target location could have been provided to the IAF by AMAN had the priority assigned to the short-range rockets in the IAF's hierarchy of mission objectives been higher. Still others argued that the IDF would have been better served by a timely transfer of responsibility for targeting the Katyushas from the intelligence directorate of Northern Com-

mand directly to the IAF, which, in the end, was the principal consumer of that intelligence.¹⁹

Yet another reported problem with effective intelligence dissemination was an alleged excess of sensitive information compartmentalization. For example, in January 2006, AMAN issued a 130-page document at the highest level of classification ("limited violet") called "Hezbollah's War Conception," which accurately reported the location of many of Hezbollah's short-range rocket assets in underground "nature reserves." Because of that document's high classification level, however, few outside of AMAN's Research Department were granted access to it.²⁰ For example, the intelligence officer of Northern Command's 91st Division was allowed to read it, but his division commander, Brigadier General Gal Hirsch, could not. As a result of such restrictions, key operators were sometimes denied access to tactical data that might have enabled them to perform their jobs better.²¹

In sum, in marked contrast to the IAF's remarkably effective operations against Hezbollah's medium- and long-range rockets, its more limited attempts to suppress the rate of short-range Katyusha fire were unsuccessful. It scarcely follows from this, however, as one Israeli analyst subsequently maintained, that, in light of the thousands of short-range Katyushas Hezbollah managed to fire into northern Israel with impunity, the comparatively fewer instances in which the IAF achieved

¹⁹ Amos Har'el and Amir Oren, "IAF Source: Poor Intelligence Hurt Fight Against Katyushas," *Ha'aretz*, Tel Aviv, September 18, 2006, and Amir Oren, "Intelligence Is Not Only Early Warning," *Ha'aretz*, Tel Aviv, October 10, 2006.

²⁰ Indeed, the very existence of Hezbollah's short-range rocket hideaways, and even the term "nature reserve" itself, was classified Top Secret within the Israeli system at the time. Few operators even knew about them. (Interview with the head of the IAF's Campaign Planning Department during the second Lebanon war, Tel Nof Air Base, Israel, March 29, 2009.)

²¹ Bar-Joseph, "Israel's Military Intelligence Performance in the Second Lebanon War," p. 591. On this point, General Halutz later said frankly in a press interview: "The question is not the existence of the information but its availability to the forces, the operational unit, the fighter. One of the things that we are looking into is whether due to too much classification and compartmentalization, the information did not reach those it should have reached." (Rani Raviv and Lilakh Shoval, "We'll Speed Up the Amendment and Change Processes," interview with Lieutenant General Dan Halutz, IDF Chief of Staff, *Bahamane*, Tel Aviv, September 25, 2006.)

real-time TST hits on medium- and long-range rockets were “largely irrelevant.”²² The medium-range Fajrs and long-range Zelzals carried substantially larger warheads than the Katyushas and also had sufficient reach to bring Israel’s main urban areas under fire. Accordingly, they presented a greater destructive threat to Israeli civilians. Insofar as they also represented Nasrallah’s ultimate “strategic” weapon against Israel, the IAF’s neutralization of that asset was a major setback for both Hezbollah and its Iranian benefactors.

Not long after the ceasefire went into effect, many were quick to chastise the IAF for “failing” to negate the Katyusha threat. One Israeli scholar insisted in this regard that “despite all the justified praise heaped on the air force, the bottom line cannot be erased. The air force did not succeed in stopping the short-range rocket attacks on northern Israel.”²³ This analyst further wrote that anyone who had thought that air power alone could eliminate the short-range rocket threat to Israel was “mistaken,” adding that “the dominant impression was that the air force [had] failed in its mission” by not stopping the Katyushas.²⁴ That charge, however, was baseless, since no one in the IAF had ever claimed that negating the Katyushas was something Israel’s air assets could effectively attempt, let alone guarantee. On the contrary, on more than one occasion, the IAF’s leaders frankly espoused the opposite view, and their clear stance in that regard was well known by the Olmert government long before Operation Change of Direction was initiated.

In clear testimony to these facts, as early as 2002 Northern Command submitted a draft CONOPS for its area of responsibility (AOR) called Defense of the Land. That proposed plan envisaged several days of air strikes against Hezbollah and Syrian forces, should the latter still be in Lebanon, after which several IDF divisions would conduct offensive ground operations. Two conventional divisions would proceed a short distance into southern Lebanon while elite SOF teams would be delivered by assault helicopters directly to the Litani River in a vertical

²²Ophir, “Look Not to the Skies.”

²³Ophir, “Look Not to the Skies.”

²⁴Ophir, “Look Not to the Skies.”

flanking envelopment. Instead of capturing villages seriatim, the idea was for the IDF to concentrate on hunting down Katyusha stocks and launch sites and destroying them by seizing key positions and going in on the ground to take them out under the cover of on-call CAS. The plan was developed under then-Chief of Staff Lieutenant General Mofaz and was retained by his successor, Lieutenant General Moshe Ya'alon. Ya'alon later indicated that the plan's follow-on phase could last as long as six weeks, during which offensive air operations by the IAF would continue as IDF ground forces attacked specific Hezbollah targets, at the end of which the IDF would withdraw and redeploy close to the Lebanese border after having established a more agreeable situation on the ground in southern Lebanon.²⁵ With the withdrawal of Syrian forces from Lebanon in April 2005, the rationale for that CONOPS was gone.

Later, a revised plan referred to before called "Supernal Waters" (*Mei Marom*) was drafted by the Operations Directorate of the IDF General Headquarters and submitted up the line for approval and adoption. Essentially a carbon copy of Defense of the Land except for the latter's contingency options against Syria, its baseline assumption likewise held that the Katyushas could *not* be negated by air operations and that ground action involving active and reserve units would be required in addition to concurrent air attacks to accomplish the mission successfully. In May 2006, General Halutz reviewed this revised plan and approved it. The following month, the plan was rehearsed in an IDF command-post exercise called Arm in Arm that began with an abduction incident much like the one that eventually triggered Operation Change of Direction. At the time, the IAF Commander, General Shkedy, made it clear from the start of the exercise that the IAF could *not* prevent Hezbollah from launching short-range rockets at will, that its success rate against the enemy's Katyusha stocks would be only around 3 percent at best, and that any effective neutralization of those dispersed and hidden rockets would require determined IDF ground operations.²⁶ Similarly, well before the abduction incident of July 12,

²⁵ Har'el and Isaacharoff, *34 Days*, p. 61.

²⁶ Har'el and Isaacharoff, *34 Days*, p. 62.

AMAN had presented to the government a formal estimate of a Hezbollah arsenal of more than 10,000 Katyushas, along with a judgment that AMAN's tactical collection capability was insufficient to preempt a barrage of those rockets on a scale of 150–200 a day by any means other than a major ground offensive to occupy southern Lebanon. In keeping with the earlier conclusion put forward by General Shkedy, AMAN's director and Shkedy's fellow airman, General Yadlin, also conceded that the counter-Katyusha mission could *not* be successfully conducted from the air.²⁷

As the campaign unfolded, the head of the IDF's Planning Directorate, then–Brigadier General Nehushtan of the IAF, freely acknowledged the many difficulties associated with locating Hezbollah's hidden Katyushas and the prohibitive expense of using precision munitions against elusive enemy rockets that cost only hundreds of dollars. In reference to the Katyusha challenge, he declared candidly: "There are things you cannot find from the air." Accordingly, he said, "we won't be looking for the last missile in Lebanon."²⁸ In the end, the consensus throughout the IDF was that the only way the Katyusha threat could be effectively negated was either by means of concerted ground action or by urging Israel's citizens to seek shelter until the threat subsided.²⁹ An important lesson driven home by this experience for the IAF was its absolute need from the very start of any future such crisis to be more forceful in controlling the expectations of both the leadership and the

²⁷ Bar-Joseph, "Israel's Military Intelligence Performance in the Second Lebanon War," pp. 584–585.

²⁸ Greg Myre and Craig S. Smith, "Israel Presses Air Raids on Lebanon, and Its Ground Forces Move into a Village," *New York Times*, July 23, 2006.

²⁹ Interestingly in this regard, once it became clear to all in the Olmert government that Hezbollah's Katyusha fire would continue without relief in the absence of more forceful IDF action to stem it, the two IAF generals on the IDF's General Staff, Major Generals Nehushtan and Yadlin, were among the first to call for a ground operation to take control of southern Lebanon up to the Litani at a time when the IDF's ground-force generals, notably the head of the IDF Operations Directorate, Major General Eisenkott, continued to resist such action. (Ben-Israel, *The First Israel-Hezbollah Missile War*, p. 25.)

rank and file regarding what air power can and cannot be expected to deliver by way of desired outcomes.³⁰

Failed Attempts Against Hezbollah's Leaders

Throughout the six years that followed Israel's withdrawal from Lebanon in 2000, the Mossad and AMAN worked diligently to collect and archive tactically usable information on the ever-changing whereabouts of Hezbollah's top leaders, including not only Nasrallah but also Imad Mughniyeh, who, by informed accounts, was the chief architect of the July 12 abduction incident, and Haj Halil Hareb, the commander of Hezbollah's elite Unit 1800. Among other things, those organizations carefully tracked various Hezbollah leaders by their given names, *noms de guerre*, addresses, cellular telephone numbers, and radio call signs.³¹ Once Israel's response to the July 12 kidnapping provocation was in full swing, General Halutz and the IDF's Operations Directorate proposed an attempted targeted killing of those leaders by means of a concerted strike operation analogous in scale and intended effect to Operation *Mishkal Sguli*. In the end, however, the Olmert government declined to approve it, since the IDF's counteroffensive had not up to that point been conceived of as a full-fledged war.

Once Hezbollah's counteroffensive by way of sustained short-range rocket fire was unleashed a day later, however, that initial reluctance quickly gave way to a determined effort by the IDF to target Nasrallah and to eliminate his key subordinates as a major campaign goal. Had the IAF been cleared to go massively against known Hezbollah leadership targets in Beirut at the outset of the crisis, such a surprise attack might well have caught the enemy leadership unawares and achieved at least some of its objectives. In the event, however, once the Olmert government finally gave the IAF a green light to attack the *dahiye* complex in south Beirut, Hezbollah's leaders had been sufficiently forewarned to take anticipatory countermeasures against such

³⁰Interview with General Locker, IAF Headquarters, Ha'kiry, Tel Aviv, March 27, 2008.

³¹Arkin, *Divining Victory*, p. 74.

an attack. As noted earlier, more than 40 JDAMs were dropped on a single Hezbollah structure in the *dahiye* in Beirut, yet they failed to breach the reinforced bunker that was known to lie buried beneath it and that, in all likelihood, housed Nasrallah and his key deputies. Hezbollah's most hardened and deeply buried targets of that nature were sited 90 to 150 feet or more beneath hard limestone and were virtually indestructible, even by the 5,000-lb GBU-28 hard-structure munition that was expressly designed to penetrate such targets. Those facilities were said to have been better designed than most other military command posts throughout the region. In the end, they showed themselves to be survivable against any conventional munition in the IAF's inventory. (Figure 4.8 shows, in the center of the UAV's infrared image, one such buried Hezbollah bunker site outside the *dahiye* on which the IAF dropped more than a dozen JDAMs to no apparent destructive effect.)

Figure 4.8
Hardened Hezbollah Underground Facility



SOURCE: IAF.
RAND MG835-4.8

Nevertheless, in the immediate wake of the IAF's crushing assault on Nasrallah's command and control nexus in Beirut, as noted before, the Hezbollah leader was said to have become all but completely unhinged for a brief time.³² Unlike Stalin, however, who was put out of the fight in complete psychological shock for two weeks after the Wehrmacht's surprise attack on the Soviet Union in 1941, Nasrallah pulled himself back together fairly quickly. Shortly after the IAF demolished his headquarters complex but failed to breach the bunker beneath it, a plainly rattled Nasrallah appeared theatrically on Al Jazeera television and threatened defiantly: "Hezbollah has absorbed your strike and retaken the initiative. We have more surprises to come."³³ He went on to proclaim, now in a tone of inflamed outrage: "You wanted an open war, and we are ready for an open war. . . . You want to change the rules of the game? You don't know who you're fighting."³⁴

As the campaign progressed, the IDF claimed to have killed one Hezbollah leader and 20 to 30 additional Hezbollah fighters in a close battle in the area of Bint J'beil and Maroun Al Ras. After the ceasefire went into effect however, an IAF officer informed the *Jerusalem Post* that a shortage of real-time actionable intelligence had severely hindered such efforts to target Hezbollah's leaders as a general rule.³⁵ In the end, according to one well-informed account, Israel's air power had a "minimal impact" in attacking Hezbollah's leadership.³⁶ A U.S. official tacitly confirmed that assessment in noting that "we are unaware of any senior [Hezbollah] leadership being killed."³⁷ Some reports during the campaign suggested that Nasrallah was operating out of the base-

³²Interview with Lieutenant Colonel Roni Amir, IAF, head of the Doctrine Branch, IAF Headquarters, Ha'kiry, Tel Aviv, March 26, 2008.

³³Jay Solomon and Karby Leggett, "Amid Ties to Iran, Hezbollah Builds Its Own Identity," *Wall Street Journal*, July 21, 2006.

³⁴Christopher Dickey, Kevin Peraino, and Babak Dehghanpish, "The Hand That Feeds the Fire," *Newsweek*, July 24, 2006, p. 24.

³⁵Bill Gertz, "Mossad Missed Hezbollah Threat," *Washington Times*, August 16, 2006.

³⁶Cordesman, "The Lessons of the Israeli-Lebanon War," p. 26.

³⁷Rowan Scarborough, "U.S. Doubts Israeli Figures About Damage of Air War," *Washington Times*, July 22, 2006.

ment of the Iranian embassy in Beirut amid associated accounts that he “moves around a lot.” Said another U.S. official in this regard: “If the State of Israel figures out where he is, you can expect to see a plume of smoke going up from that location. He knows that as well and doesn’t spend a whole lot of time in one location.”³⁸

As later reported by a senior IDF commander, Nasrallah remained a target throughout the 34-day campaign, and he took all appropriate measures to look out for his survival as a result. Ultimately, the failure of the IAF’s repeated attempts to target and kill him and his key subordinates was a direct result of AMAN’s inability to penetrate Hezbollah’s command and control network to any significant degree.³⁹ Viewed in hindsight, had the IAF been able to destroy or debilitate Hezbollah’s command and control system from the top down during the campaign’s opening round, the subsequent rate of Katyusha fire, which remained unrelenting throughout the campaign, may well have ended up being just localized and sporadic, with no central direction.⁴⁰ That, however, was unfortunately a mission beyond its means, bearing out once again the apt expression that, in the end, air power is about targeting and targeting is about intelligence.

A Polarizing Incidence of Noncombatant Fatalities

After the ceasefire went into effect, the Lebanese government reported that the 34 days of bombing had resulted in 1,183 Lebanese civilians

³⁸ Bill Gertz, “Hezbollah Forces Were Ready for Israeli Retaliation,” *Washington Times*, August 1, 2006.

³⁹ On the plus side, it bears noting here that there were no reported IAF lost opportunities against fleeing leadership targets during the second Lebanon war as a result of delays in the issuance of target-attack approval, as U.S. Central Command may have experienced in the case of Mullah Omar and other elusive high-value Taliban targets during the first days of Operation Enduring Freedom in Afghanistan in late 2001. (On that possibility, see Lambeth, *Air Power Against Terror: America’s Conduct of Operation Enduring Freedom*, pp. 312–314.) All Hezbollah leadership targets of that nature were preapproved by the IDF leadership and Olmert government from the campaign’s first day onward.

⁴⁰ Bar-Joseph, “Israel’s Military Intelligence Performance in the Second Lebanon War,” p. 588.

killed and 4,054 wounded.⁴¹ Even before that, the UN's humanitarian chief, Jan Egeland, had noted that nearly a third of those mounting fatalities were children, adding: "There is something fundamentally wrong with a war where there are more dead children than armed men. It has to stop."⁴² Indeed, even before the first week of fighting had ended, the U.S. military had begun evacuating the first of some 25,000 American citizens from Lebanon after the IAF's attacks inadvertently killed more than two dozen Lebanese civilians, with U.S. marines landing in Beirut on July 20 for the first time in 20 years to help with the evacuation.

For their part, all IAF officers who provided inputs to this book and offered subsequent comments on its content made a special point of stressing that, in keeping with the IAF's professional ethics and responsibilities, every target selected by the IDF and ultimately struck during the counteroffensive's 34-day course was first double-checked by campaign planners and duly vetted by IAF lawyers to ensure that there was a military justification for attacking it and that all attacks were duly conducted in accordance with binding international laws of armed conflict. With respect to the IDF's efforts against selected targets in the most challenging built-up areas, the IAF's Deputy Commander and Chief of Staff at the time, General Eshel, declared frankly that "Hezbollah has established its infrastructure in the heart of a peaceful civilian population, and our challenge is to attempt to target this infrastructure accurately while exerting the greatest efforts to avoid harming noncombatants."⁴³ Figure 4.9 provides a telling illustration of Hezbollah's routine practice of using civilian homes and apartment buildings as hideouts for its mobile rocket launchers, with one shown here in UAV infrared imagery only moments before being destroyed by

⁴¹David S. Cloud, "Inquiry Opened into Israeli Use of U.S. Bombs," *New York Times*, August 25, 2006. The British weekly news magazine *The Economist* similarly reported more than 1,000 Lebanese civilians killed and around 3,500 injured. ("The Search for Peace—and a Way to Rebuild the Country," *The Economist*, London, August 12, 2006, pp. 36–37.)

⁴²Edward Cody and Jonathan Finer, "Hezbollah Joins New Call for Cease-Fire," *Washington Post*, July 29, 2006.

⁴³BBC Worldwide Monitoring, "Israeli Officials Vow to Remove Hezbollah from Border," quoted in Arkin, *Divining Victory*, p. 12.

Figure 4.9
Use of Civilian Residence for Launcher Concealment



SOURCE: IAF.
 RAND MG835-4.9

a precision IAF weapon just before entering such a residence with its protective human shields. An IDF spokeswoman echoed this refrain, noting that the IDF was “doing everything we can to keep civilians and the Lebanese military out of harm’s way.” As for the Lebanese civilians who had been inadvertently killed during the war’s first few days, an Israeli cabinet minister, Isaac Herzog, said simply: “There are some tragic circumstances. We are sorry.”⁴⁴ General Eisenkott similarly insisted on July 16 that “Lebanese civilians are not targets of IDF activities” and that IDF forces were “bombarding known locations only against terror targets and only with precise weapons.”⁴⁵

For its part, the IAF has always striven to be maximally scrupulous in vetting its target nominations. Throughout Operation Change of Direction, military lawyers played a constant and prominent role in target approval. As has long been the case with U.S. target vetting

⁴⁴ Thomas Frank and Ya’akov Katz, “Americans Leaving Lebanon,” *USA Today*, July 17, 2006.

⁴⁵ IDF news release, head of Operations Directorate, “IDF’s Target Is Terrorists,” July 16, 2006, quoted in Arkin, *Divining Victory*, p. 173.

for collateral-damage mitigation and proportionality, the IAF's target approval process was said to have been both systematic and orderly. Some target categories were preapproved en masse by General Halutz. Others had to be approved on a case-by-case basis by the minister of defense or even by the prime minister. Occasionally the prime minister would request additional information before giving the green light. For the most part, the target vetting and approval process was not a major constraint on the effective conduct of air operations. The only real source of occasional friction was the involvement of the military lawyers, which one informed observer characterized as inescapable.⁴⁶ On this crucial matter of tradecraft, while he was still the IAF Commander two years before, General Halutz emphasized that "there is not one procedure of present operations that is not accompanied by legal analysis, not even a fragment of an operation."⁴⁷

By the same token, IAF aircrews were highly sensitized to the principle of noncombatant immunity. In more than a few instances when there was aircrew uncertainty about an assigned target or an assessed possibility of achieving inadvertent collateral damage once an LGB had been released, the pilot or WSO would slew his aiming cursor away from the assigned aim point to cause the guiding bomb to miss its intended target rather than risk killing innocent civilians. In other measures to help insulate Lebanese civilians from the effects of the IAF's bombing, private homes in southern Lebanon received taped phone calls in Arabic warning their inhabitants to vacate the area, since ensuing air strikes would soon be attacking from house to house. IAF fighters also repeatedly performed show-of-presence operations by making low supersonic passes over targeted areas in an effort to disperse crowds of civilian onlookers.⁴⁸ In all cases, assigned targets were not struck unless there was high confidence that no civilians were nearby.

⁴⁶Interview with Major General Isaac Ben-Israel, IAF (Res.), Tel Aviv, March 23, 2008.

⁴⁷Major General Dan Halutz, IAF, in *The War Against Terror Is a Major IAF Mission: Summary of Lectures*, Herziliya, Israel: The Fisher Brothers Institute for Air and Space Strategic Studies, August 2004.

⁴⁸Hannah Allam, "Tour Weaves a Path Through Destruction," *Miami Herald*, July 21, 2006.

Furthermore, as noted earlier, all the 500 air-delivered munitions that went into downtown Beirut were satellite-aided JDAMs, every one of which was reportedly dropped within valid release parameters for its intended aim point. As a result, there was a high probability that most, if not all, landed on their assigned target coordinates as intended. In silent testimony to this high probability, there was no outburst of complaints from either Hezbollah or the Lebanese government about any unseemly incidence of civilian casualties in the immediate aftermath of the IAF's attack on the *dahiye* complex.⁴⁹

As an added testament to their sensitivity to the need for avoiding noncombatant casualties at every reasonable cost, IAF pilots—even well into the second day of fighting—were still routinely asking the AOC at IAF headquarters for approval to drop their weapons before attacking detected targets of opportunity. In one early illustration that well attested to the moral dilemma at work here, an IAF fighter pilot on July 13 observed a truck moving suspiciously south of the Litani close to Israel's northern border. Suspecting the truck to be a mobile rocket launch platform, he asked the IAF's AOC for permission to attack it. While he awaited a response to his query, the truck stopped and fired a barrage of rockets into northern Israel, at least one of which killed Israeli civilians just seconds thereafter. Only after that event did the pilot receive clearance to attack, at which point he eliminated the truck and its operating crew with a well-aimed LGB.⁵⁰ It was days thereafter before most IAF fighter pilots finally accepted the wartime rules of engagement at face value.⁵¹ The photograph in Figure 4.10, taken at an unidentified location in the Middle East, shows a mobile 9-tube terrorist rocket launcher disguised as an official-looking civil-

⁴⁹ As General Shkedy later noted in an interview with an American defense reporter: "If only one of our bombs had struck a high-rise there and killed 100 innocents, I probably wouldn't be here talking to you today." (Barbara Opall-Rome, "Interview with Major General Elyezer Shkedy, Commander, Israel Air and Space Force," *Defense News*, May 19, 2008.)

⁵⁰ Interview with Lieutenant Colonel Roni Amir, IAF, head of the Doctrine Branch, IAF Headquarters, Ha'kirya, Tel Aviv, March 26, 2008.

⁵¹ Briefing to the author by Brigadier General Rami Ben-Efraim, head of the IAF Personnel Directorate and commander of Ramat David Air Base during the second Lebanon war, IAF Headquarters, Ha'kirya, Tel Aviv, March 27, 2008.

Figure 4.10
Mobile Rocket Launcher Disguised as a Civilian Truck



RAND MG835-4.10

ian truck, complete with a placard on the door asking observers to report any traffic rules violation by the driver. This image dramatically captures Hezbollah's bending of every effort to blur the distinction between civilian and military with respect to its development and fielding of military equipment.

All the same, there were mishaps aplenty. In one such instance on July 14, an IAF fighter inadvertently struck a bus full of refugees escaping to Tyre from the southern village of Marwahin, killing 21 civilians. Photos of the shredded bodies were televised around the world within minutes.⁵² There was another report of an IAF munition that hit a minibus, unintentionally killing 12 civilians as they were riding through a seaside town south of Beirut. On July 24, an errant IAF munition hit a UN outpost in southern Lebanon near the Israeli border, killing four international observers. Israeli government officials later insisted that UN personnel had not been targeted and declared that an investigation would be conducted. The incident occurred just hours after Prime Minister Olmert had promised to lift Israel's 14-day air and naval blockade of Lebanon to allow shipments of humanitarian

⁵²Har'el and Isaacharoff, *34 Days*, p. 98.

aid to reach displaced Lebanese civilians.⁵³ An IDF spokesman commenting on the inadvertent attack said that the involved aircrew had been attempting to engage a rocket-launching battery and had erred in programming target coordinates into the JDAM, which resulted in the unintended incident.⁵⁴ UN Secretary General Kofi Annan promptly issued a statement declaring that he was “shocked and deeply distressed by the [IDF’s] apparently deliberate targeting” of the UN post—to which Israel’s ambassador to the UN, Dan Gillerman, promptly countered with an expression of “deep regret” for the deaths, an adamant denial that the post had been intentionally targeted, and a personal note that he was “deeply distressed” by Annan’s charge, which he dismissed as “premature and erroneous.”⁵⁵ On August 4, an IAF fighter accidentally bombed a packing station on the Syrian side of the eastern Lebanese border where it was thought that Iranian- and Syrian-made weapons were being assembled for transshipment to Hezbollah. As many as 34 Syrian civilian workers were said to have been killed in that attack. (The Syrian government elected not to respond.)⁵⁶

With respect to such inadvertent collateral-damage incidents, Israeli officials were understandably of divided sentiments in light of Hezbollah’s wanton targeting of Israeli civilians with its incessant Katyusha fire. In taking the high road on this issue, General Nehush-tan pointed out that every attacked target had a military rationale and that “the Israeli military tries our utmost to avoid civilian casualties.” Yet Foreign Minister Livni was unapologetic for any Hezbollah sympathizers who may have lost their lives as a result of IAF attacks against legitimate enemy targets: “Terrorists use the population and live among them. It’s difficult to target like a surgery. Unfortunately, civilians sometimes pay the price of giving shelter to terrorists. When you go to

⁵³Scott Wilson and Robin Wright, “Israeli Airstrike Hits UN Outpost,” *Washington Post*, July 26, 2006.

⁵⁴Greg Myre, “A Larger and More Powerful Rocket Hits Deeper in Israel, Adding a New Dimension,” *New York Times*, July 29, 2006.

⁵⁵Greg Myre and Helene Cooper, “Israel to Occupy Area of Lebanon as Security Zone,” *New York Times*, July 26, 2006.

⁵⁶Har’el and Isaacharoff, *34 Days*, pp. 154–155.

sleep with a missile, you might find yourself waking up to another kind of missile.” Livni further pointed out that “the Israeli targets are only Hezbollah. But some of the missiles were in private houses, so we had to target these places. In order to avoid civilian casualties—although I think that someone who sleeps with a missile can expect an attack—we called on civilians to leave their houses by warning them on television and radio that we were going to bomb. The pictures are not nice when you see people leaving places, but we had no alternative.”⁵⁷ Figure 4.11 well captures the essence of Livni’s observation in its depiction, via real-time UAV infrared imagery, of a Hezbollah medium-range mobile rocket launcher emerging from the civilian residence in southern Lebanon in which it had been hiding. The launcher was destroyed by the IAF as soon as it cleared its residential safe haven.

In a similar spirit, with respect to the recurrent charge that Israel was using “disproportionate” force against Hezbollah, Ambassador Gillerman replied to a rally of supporters in New York: “You’re damn right we are.”⁵⁸ On this point, one conservative American commentator wrote that “the real problem is that Israel’s response has been all too proportional . . . showing superhuman restraint by not, at the very least, ‘accidentally’ bombing the Syrian and Iranian embassies in Beirut, which serve as Hezbollah liaison offices.”⁵⁹ Then—opposition leader and now Prime Minister Benjamin Netanyahu added: “To suggest, as some have, that Israel is not acting with restraint is preposterous. Unlike Hezbollah, which is indiscriminately launching hundreds of missiles a day at Israeli cities and towns to kill as many civilians as possible, Israel is using only a fraction of its firepower and is, in fact, acting with great care to minimize harm to civilians. But because Hezbollah not only targets civilians but also uses them as human shields by hiding missile launchers in population centers, Hezbollah has delib-

⁵⁷Lally Weymouth, “‘The Axis of Hatred,’” *Newsweek*, Interview with Israeli Foreign Minister Tzipi Livni, July 31, 2006.

⁵⁸Steven Erlanger, “With Israeli Use of Force, Debate Over Proportionality,” *New York Times*, July 19, 2006.

⁵⁹Max Boot, “Let Israel Take the Gloves Off,” *Los Angeles Times*, July 19, 2006.

Figure 4.11
Medium-Range Mobile Rocket Launcher Exiting a Residential
Preserve



SOURCE: IAF.

RAND MG835-4.11

erately placed innocent Lebanese civilians in harm's way."⁶⁰ The Chief of Staff of Northern Command, Brigadier General Shachar, likewise commented frankly: "This is a war, and in war sometimes there are mistakes. . . . The reason for the evacuation [of Lebanese Shiite civilians] is to leave us open space and an open area to hit military and terrorist targets and not to deal with the problem of civilians."⁶¹

In a sympathetic reflection on the collateral-damage issue, American legal theorist Alan Dershowitz raised the interesting question of "just who is a 'civilian' in the age of terrorism?" Dershowitz suggested the merit of a new construct in the Middle East which he called "the continuum of civilianity," noting that whereas "the line between Israeli soldiers and civilians is relatively clear," there is "a vast difference—

⁶⁰ Benjamin Netanyahu, "No Ceasefire in the War on Terror," *Wall Street Journal*, July 22, 2006.

⁶¹ Craig S. Smith, "Israel Weighs Foreign Troops on Border," *New York Times*, July 24, 2006.

both moral and legal—between a 2-year-old who is killed by an enemy rocket and a 30-year-old civilian who has allowed his house to store Katyusha rockets. . . . There is also a difference between a civilian who merely favors or votes for a terrorist group and one who provides financial or other material support for terrorism. Finally, there is a difference between civilians who are held hostage against their will by terrorists who will use them as involuntary shields and civilians who voluntarily place themselves in harm's way in order to protect terrorists from enemy fire.”⁶²

Amplifying further on the increasingly fractious issue of civilian fatalities, Avi Dichter, the former director of Israel's internal security service Shin Bet, remarked unsentimentally: “Air war is not a surgical operation. You identify the targets, bombs are sophisticated and accurate. But you see a cement truck and from the air it looks just like a Katyusha truck. Sometimes from the air you hit the wrong target.”⁶³ Two other American attorneys similarly affirmed the legality of Israel's air operations, noting that no state has the right to permit a foreign military force to use its territory to launch attacks on another country and that every state has an obligation to control its territory. They further pointed out that Lebanon's airports, bridges, and electrical power grid are dual-use assets, as are the country's roads that are used by Hezbollah as supply lines. In light of such considerations, they added, all claims about Israeli “war crimes” were without merit: “Unfortunately, heavy civilian casualties are the inherent and inevitable result of the type of asymmetric warfare deliberately waged by Hezbollah and similar groups. They intentionally operate from civilian areas, both to protect their military capabilities from attack and to increase civilian deaths, which can then be trumpeted for propaganda purposes. . . . Responsibility for any additional civilian casualties must be attributed to these groups, not to Israel.”⁶⁴

⁶²Alan Dershowitz, “‘Civilian Casualty’? It Depends,” *Los Angeles Times*, July 22, 2006.

⁶³Craig S. Smith and Greg Myre, “Border Clashes Intensify as Israel Hunts Militants,” *New York Times*, July 25, 2006.

⁶⁴David B. Rivkin and Lee A. Casey, “Israel Is Within Its Rights,” *Washington Post*, July 26, 2006.

Despite such principled protestations, however, it was becoming increasingly clear to neutral outside observers that Hezbollah had seized the inside track in the propaganda war. In but one of many illustrations of the gains that the terrorist organization had begun to rack up in exploiting the collateral-damage issue, after an IAF attack on the civil defense headquarters in the port city of Tyre reportedly killed 20 civilians and wounded 50 more, video footage of the strike's results, broadcast from the Arabic-language Al Manar and Al Jazeera television stations, showed ambulances filled with bloodied, dirt-covered bodies and a wounded man shouting: "God is great! Hezbollah will prove victorious."⁶⁵ Later, on July 30, Hezbollah's propaganda machine reaped a major windfall when a night attack by the IAF on a targeted house in the village of Qana that was a known Katyusha launching site reportedly killed as many as 54 civilians, including 34 children. That attack, which collapsed a building full of civilians who had evidently sought shelter in the basement, was instantly reminiscent of the infamous Al Firdos bunker attack during Operation Desert Storm, in which a U.S. precision strike on a targeted Iraqi command bunker inadvertently killed hundreds of women and children who, unbeknown to allied intelligence, had sought overnight shelter in it. The almost instant international outrage that the Qana incident provoked proved yet again that tactical errors can have strategic consequences.

In the case of Qana, however, it soon became apparent that extenuating circumstances were associated with the attack. To begin with, the structure that had been engaged was clearly a legitimate military target. The IAF's Chief of Staff, General Eshel, reported soon after the story broke that, since the war started nearly three weeks before, as many as 150 Katyushas had been fired from Qana and the surrounding area: "Within the village itself, we have located a diverse range of activities connected to firing of rockets, beginning from forces commanding this operation . . . and logistical sites that serve this end. . . . All of the targets are being meticulously sifted." Not only that, the IDF reported soon thereafter that the targeted structure had collapsed only

⁶⁵ Scott Wilson and Anthony Shadid, "Israel Answers Hezbollah Strike," *Washington Post*, July 17, 2006.

hours after the strike and that Hezbollah munitions may have been stored in it. On this point, General Eshel noted that the attack had occurred between midnight and 0100, yet the targeted structure only collapsed at about 0700 the next morning, suggesting that the collapse may have been caused by secondary explosions within the building.⁶⁶ He then added: "It could be that inside the building, things that could eventually cause an explosion were being housed, things that we could not blow up in the attack, and maybe remained there. I'm saying this very carefully, because at this time I don't have a clue as to what the explanation could be for this gap [in time]."⁶⁷ Later, a Human Rights Watch investigation confirmed only 28 noncombatant fatalities from the incident in Qana, just half the initial report of 54.⁶⁸

Be that as it may, the incident nonetheless triggered a major spike in global anger. In particular, the Arabic-language media throughout the region gave heavy and emotional play to the event and milked the errant attack for every ounce of propaganda value. To cite just two examples, the *Arab News* in Saudi Arabia ran a headline that read: "Israel Massacres Kids." The *Daily Star* in Beirut similarly referred to "Israel's unabashed butchery in Qana."⁶⁹ An American foreign-affairs reporter attributed the allegedly "appalling widespread collateral damage from Israeli air raids" exemplified by the Qana mishap to poor intelligence regarding Hezbollah's force dispositions that had been served up by a system configured against more conventional threats.⁷⁰ Worse yet, the Olmert government and the IDF both received withering criticism from a noted Israeli columnist, Nachum Barnea, who, fairly or not, faulted Defense Minister Peretz, in particular, for having described "proudly how he relieved the army of restrictions on harm-

⁶⁶Steven Erlanger and Hassan M. Fattah, "Israel Halting Air Raids After Dozens Die," *New York Times*, July 31, 2006.

⁶⁷Hanan Greenberg, "IDF: Qana Building Fell Hours After Attack," *Israel News*, July 30, 2006.

⁶⁸Kim Murphy, "Officials Say 28 Died in Qana, Not 54," *Los Angeles Times*, August 4, 2006.

⁶⁹Quoted in Jefferson Morley, "World Opinion Roundup: The Qana Tipping Point," *Washingtonpost.com*, August 1, 2006.

⁷⁰Jim Hoagland, "Spy Lessons from Israel," *Washington Post*, July 30, 2006.

ing civilian population that lives alongside Hezbollah operatives. I can understand accidentally harming civilians in the course of combat. But a blanket directive regarding the entire civilian population of southern Lebanon and the Shiite neighborhoods of Beirut is a hasty and light-headed act, which courts disaster.”⁷¹

After the unexpectedly consequential collateral-damage incident in Qana, the Olmert government agreed to a unilateral pause in its air attacks for 48 hours. In announcing this decision, an official in Olmert’s office declared: “Israel will be suspending aerial activity over southern Lebanon for 48 hours until the end of the Israeli investigation into Qana.” Prime Minister Olmert expressed regret for the incident but went on to insist that the IDF would still need another 10 to 14 days to secure its war aims. He and the IDF also blamed Hezbollah for having fired “hundreds” of rockets from the vicinity of Qana, a known Hezbollah stronghold. An IDF statement later noted that the Israeli government had warned the residents of Qana “several days in advance” to leave their homes, as a result of which “responsibility for any civilian casualties rests with Hezbollah, who have turned the suburbs of Lebanon into a war front by firing missiles from within civilian areas.” U.S. Secretary of State Condoleezza Rice reportedly elicited the 48-hour bombing suspension by the Olmert government. She did not, however, concurrently call for a ceasefire at that time, thus tacitly indicating the Bush administration’s continued determination to help Israel finish the job that it was handed by Hezbollah’s July 12 provocation.⁷²

In its declaratory statements, the U.S. government continued to back the Israelis unambiguously, with the White House adamantly denying all intimations that the United States was coordinating its

⁷¹Craig S. Smith and Steven Erlanger, “Israel Pushes on Despite Agreeing to Airstrike Lull,” *New York Times*, August 1, 2006.

⁷²Helene Cooper, “From Carnage, U.S. Gains a Concession,” *New York Times*, July 31, 2006. As President Bush himself later recalled on this count in his memoirs, “I wanted to buy time for Israel to weaken Hezbollah’s forces. I also wanted to send a message to Iran and Syria. They would not be allowed to use terrorist organizations as proxy armies to attack democracies with impunity.” (George W. Bush, *Decision Points*, New York: Crown Publishers, 2010, p. 414.)

strategy with Israel or was offering the IDF strategic counsel. Said White House Press Secretary Tony Snow: "We're not colluding, we're not cooperating, we're not conspiring, we're not doing any of that. The Israelis are doing what they think is necessary to protect their borders." Nevertheless, there were mounting reports that Washington was privately urging Israel to consider the humanitarian crisis that its counter-offensive had created and the need to avoid more civilian casualties in its targeting decisions. The U.S. government reportedly cautioned the IDF to be particularly careful of both inadvertent collateral damage to and willful destruction of Lebanese infrastructure out of the Bush administration's avowed desire not to further undermine Lebanon's weak democratic government. On this point as well, President Bush subsequently remarked in his memoirs that the IDF's bombing campaign "struck targets of questionable value," leading him ultimately to "worry that Israel's offensive might topple Prime Minister Siniora's democratic government."⁷³ On this delicate issue, one unnamed U.S. official remarked sympathetically that the IDF faced "a terrible problem" as a result of Hezbollah's conscious practice of placing its equipment and arms in civilian neighborhoods: "They make mistakes, and there are accidents. It is impossible for them [in those circumstances] to avoid all the collateral damage."⁷⁴ In general, the administration's underlying view at the time seemed to be that as long as the IDF continued to go easy on Lebanon's civilian population, Washington was prepared to cut the Olmert government all the slack that the latter felt it needed to prosecute the campaign to a satisfactory conclusion.

A subsequent IDF inquiry into the Qana bombing incident determined that, indeed, only 28 civilians in the targeted structure had been killed, not 54 as had initially been reported. The IDF report further indicated that more than 150 rockets had been fired "from within the village of Qana itself and the immediate surrounding area" since July 12. It also affirmed that "the residents of Qana and the villages surrounding it [had been] warned several times, through various

⁷³Bush, *Decision Points*, pp. 413–414.

⁷⁴Robin Wright and Colum Lynch, "U.S. at Odds with Allies on Mideast Conflict," *Washington Post*, July 20, 2006.

media, to evacuate.” Finally, it insisted that the IDF had been unaware that Lebanese noncombatants were gathered in the building: “Had the information indicated that civilians were present in the building, the attack would not have been carried out.”⁷⁵

Regarding the errant attack on the ill-fated residence in Qana, a former U.S. State Department legal adviser later spotlighted Israel’s moral predicament concerning noncombatant casualties when he wrote: “International law has three major prohibitions relevant to the Qana incident. One forbids deliberate attacks on civilians. Another prohibits hiding forces in civilian areas. . . . A third prohibition, the proportionality restriction that Israel is accused of violating, involves a complicated and controversial balancing test. . . . At Qana, Israeli aircraft fired toward a building to stop Hezbollah from shooting rockets at its cities. The aircraft did not deliberately target civilians; but Hezbollah rockets are targeted at civilians, a clear war crime. . . . Israel did not expect civilian casualties; it warned civilians to leave Qana, and Israel’s official investigation has concluded its military attacked based on “information that the building was not inhabited by civilians and was being used as a hiding place for terrorists.” This American expert pointedly added: “The law of war recognizes that mistakes are inevitable and does not criminalize soldiers who seek in good faith to avoid them.”⁷⁶

Echoing this refrain, the director of the American Jewish Committee wrote in an attempt to counter rising complaints about Israel’s alleged bombing of innocent civilians: “If we are serious about winning the war against Islamic extremists, the West will have to fight against an enemy that hides missiles in family homes and cynically exploits the inevitable results. It will occasionally have to take military action that it knows in advance will cause civilian casualties, even as it tries to minimize those casualties. And when those casualties do occur, it will have to place the blame where it belongs—on the extremists

⁷⁵Richard A. Oppel, Jr., and Steven Erlanger, “12 Israelis Die; Sheik Threatens to Bomb Tel Aviv,” *New York Times*, August 4, 2006.

⁷⁶Ordre F. Kittrie, “A War Crime at Qana?” *Wall Street Journal*, August 5, 2006.

and their supporters—and then go on with the war.”⁷⁷ Despite such efforts to explain and justify the Israeli action, however, a *Washington Post*–ABC poll conducted the first week of August reported an even split (47 percent each way) on the question of whether Israel had done right in attacking what the inquiry called Hezbollah targets in civilian areas, with 54 percent of polled Americans saying that Israel “should do more” to avoid civilian casualties.⁷⁸

For Nasrallah, the timing of the Qana incident could not have been more auspicious, in that it allowed him to stave off a looming ceasefire that could have been perceived otherwise as a humiliating surrender on Hezbollah's part. The event clearly undid any possibility of an immediate ceasefire. By that point, moreover, Secretary Rice and the Bush administration were beginning to sense that the IDF's bombing and artillery attacks were causing more harm than good. True enough, as American journalist Marvin Kalb wrote, “Israel defended its military operations by citing two relevant articles in international law: using civilians for military cover was a war crime, and any target with soldiers hiding among civilians was considered a military target.”⁷⁹ Ambassador Gillerman likewise insisted that the IDF was duly “sensitive” to the issue of noncombatant casualties and was not in the business of wanton killing of innocents: “This is not our intention. And because we are doing it so carefully, it is taking longer and we are suffering more casualties.”⁸⁰ Nevertheless, international opinion continued to move in the opposite direction.

Indeed, considering the extent of structural damage that the IAF's bombing had caused throughout Lebanon, the number of civilian fatalities incurred was remarkably low. Most of the targeted build-

⁷⁷David Bernstein, “A Price of Fighting Terrorism,” *Washington Post*, August 10, 2006.

⁷⁸Michael A. Fletcher and Robin Wright, “Lebanon's Proposals Change Dynamics,” *Washington Post*, August 8, 2006.

⁷⁹Marvin Kalb and Carol Saivetz, “The Israeli-Hezbollah War of 2006: The Media as a Weapon in Asymmetrical Conflict,” *Harvard International Journal of Press/Politics*, Summer 2007, p. 47.

⁸⁰Christopher Dickey and Rod Nordland, “The Wider War,” *Newsweek*, August 7, 2006, p. 28.

ings were unoccupied at the time they were struck. Moreover, much of the reported “collateral damage” to civilian infrastructure caused by the IAF was anything but. No facility was targeted by the IAF without a valid military reason backed up by validated intelligence. IAF strike planners had initially estimated that more than 200 civilian fatalities would result from the initial attacks against the *dahiye* complex in Beirut. Yet the actual number incurred was far less. Throughout the campaign, IAF commanders and planners remained invariably sensitive to the importance of collateral-damage avoidance in their weapon-eering and target vetting.⁸¹

To amplify further, the Qana incident was partly a reflection of mounting frustration on the IAF’s part over its persistently unsuccessful efforts to deal with the Katyusha threat. Ever since the campaign began, IAF planners had steadily improved the effectiveness of their TST attacks against the medium-range Fajrs and their launchers. Doing anything comparably effectively against the Katyushas, however, continued to be maddeningly difficult. Accordingly, in late July, the IAF began identifying and designating houses on the outskirts of villages in southern Lebanon that had previously been shown to have a “circumstantial connection” to the launch of Katyushas during the immediately preceding days. The targeted structure in Qana that resulted in the collateral-damage outrage was a legitimate military target that had been generated in a legitimate manner based on reliable visual intelli-

⁸¹ Interview with General Shkedy, IAF Headquarters, Ha’kiryā, Tel Aviv, March 27, 2008. In a candid reflection on the divided feelings that this sensitivity often engendered, however, the head of the IAF’s Air Division at the time, Brigadier General Locker, expressed his view on the matter this way: “The moral dilemma that you always face is the attempt to avoid hitting uninvolved civilians. It’s a dilemma, but when I come to the moment of truth, things are unequivocally clear to me. First of all, I am defending the citizens of the State of Israel. Only afterward am I trying to avoid harming uninvolved civilians of the enemy state. When, for example, I need to bomb a building’s parking lot where I know there are missiles and launchers, I do it. I don’t have any dilemma, although people living in the building will get hurt. They know where they are living. When I know that they are firing at Haifa, Zefat, and Nahariyya, I have no dilemma about what is the right thing to do.” Asked how he sleeps when he saw the pictures of the dead Lebanese on television, Locker responded: “I go to sleep with the pictures of the Katyushas and the dead and injured in Zefat, Nahariyya, and Haifa.” (Hen Kotes-Bar, “Not in One Fell Swoop,” interview with Brigadier General Johanan Locker, IAF, *Ma’ariv*, Tel Aviv, July 21, 2006.)

gence (VISINT) and ELINT. Indeed, the yard directly in front of the targeted building had repeatedly been used as a Katyusha launch site.⁸²

Nevertheless, even the most professional and dispassionate IDF efforts at damage control with respect to public opinion by that time could not undo the initial impressions that had been formed and thereby stem the mounting outcry. In the end, the IDF and the Olmert government failed completely to manage external perceptions. As much as Hezbollah's propaganda machine had cynically overblown the extent of actual damage done, it mattered little in the eyes of the outside world. As valid as its counter-protestations after the fact may have been strictly on their merits, the IDF was remarkably tone-deaf when it came to external perceptions and assessments. As a result, despite the IAF's unswerving efforts at disciplined force employment, Israel ended up projecting itself to much of the rest of the world as aggressively indifferent to the loss of civilian innocents. In all, the Olmert government may have been right on the finer points of international law. However, it plainly lost the propaganda war to Nasrallah.⁸³

Overkill of Lebanon's Infrastructure

The harshest criticism levied against the IDF with respect to its conduct of Operation Change of Direction had to do with the remarkably

⁸²Interview with General Halutz, IAF Headquarters, Ha'kiryá, Tel Aviv, March 26, 2008.

⁸³In an interesting post-campaign reflection on this predicament that relentlessly plagued the Israeli government with respect to inadvertent civilian casualties incurred throughout the IDF's counteroffensive, one assessment noted sympathetically how the pertinent legal guidance in this domain has increasingly "been misrepresented in such a way that now it is interpreted as [meaning] *totally* avoiding civilian casualties. The time-honored test of proportionality and discrimination has been put aside in this new humanitarian mindset. . . . The IDF consistently tried to ensure that its actions would be proportional to the threat as the IDF understood it. . . . However, the laws of war do not shape general perceptions, and the civilian targets that the IDF were forced to attack somehow gave the impression that the attacks were out of proportionality to the actual military need. International value judgments are made on perceptions, and Israel was not able to project the actual threat to its existence in a credible manner to the rest of the world." (Kainikara and Parkin, *Pathways to Victory*, p. 82, emphasis added.)

widespread destruction that its 34-day bombing campaign wrought on Lebanon's civilian infrastructure and economy. As many as 150 to 200 buildings were struck in the Haret Hreik sector of the *dahiye* alone during the campaign's first week, with a total of more than 700 structures altogether eventually destroyed or damaged in that confined area.⁸⁴ In addition, an air attack against the Jiyye electrical power plant in Beirut's southern outskirts reportedly sent at least 10,000 tons of heavy fuel oil into the Mediterranean, set the plant's fuel tanks ablaze, cut the supply of electrical power to many areas of Beirut and south Lebanon, and released toxic fumes into the air.⁸⁵ By the end of the war's first week, some 500,000 Lebanese had reportedly fled their homes to escape the IDF's air and artillery attacks.⁸⁶ Indeed, the first week of those attacks thrust Lebanon into a full-fledged humanitarian and economic crisis, with not only a half-million displaced civilians but also a financial system on the verge of breakdown as foreign currency supplies ran low. Some Lebanese villages reportedly looked as though they had been hit by an earthquake. In a reaction that typified emergent international attitudes toward the IDF's seemingly indiscriminant counteroffensive against Hezbollah, the UN's human rights chief, Louise Arbour, was driven so far as to suggest that the scale of destruction could involve war crimes.⁸⁷ For their part, as in the instance of the allegations noted above with respect to Lebanese civilian casualties unduly incurred during the course of the campaign, all IAF and IDF officers consulted during the preparation of this book were quick to counter such charges by stressing once again that each target chosen and struck during Operation Change of Direction was first checked

⁸⁴ Arkin, *Divining Victory*, p. 80.

⁸⁵ Rana Fil, "Fuel Oil and Fumes Spill from Power Plant Bombed by Israelis," *Boston Globe*, July 28, 2006.

⁸⁶ Toward the end of the campaign, about 750,000 Lebanese citizens were reported to have been displaced out of a total population of around 4 million—about one in six in a country smaller than the state of Connecticut.

⁸⁷ Warren Hoge, "Attacks Qualify as War Crimes, Officials Say," *New York Times*, July 20, 2006. Arbour is a former Canadian Supreme Court justice who, as chief prosecutor for the International Criminal Tribunal for the former Yugoslavia, indicted former Yugoslav President Slobodan Milosevic.

with all due care to ensure that it was militarily justified and in compliance with international law.

As the implementation of the ceasefire neared, initial reports indicated that the IDF's strikes over the course of the campaign had taken out 71 bridges and inflicted more than \$2 billion in damage to Lebanon's infrastructure, all of which had been painstakingly rebuilt over the preceding decade after years of civil strife. Subsequent estimates of the total damage pointed to a loss of 15,000 housing units and as much as \$10 billion in economic and infrastructure setbacks. No bridges were left standing over the Litani River. In addition, almost every road throughout southern Lebanon was cratered by Israeli bombs, and Lebanon's superhighways were all badly damaged and rendered unusable. The main road from Beirut to Damascus was severed to a point of being impassable, including four major bridges that had been built along that access route.⁸⁸

The European Union was the first to criticize Israel for its alleged "disproportionate use of force" against Hezbollah. UN Secretary General Kofi Annan likewise condemned the IDF's operations as an "excessive use of force." A Lebanese diplomat, Nouhad Mahmoud, pleaded to the 15-nation Security Council that the IAF's attacks had been intended to bring Lebanon "to its knees." Another account referred plaintively to an "ocean of civilians [who were] suffering from the IAF attacks."⁸⁹ For his part, Lebanon's Prime Minister Siniora wrung his hands before a group of foreign diplomats, including the American ambassador, that he had convened and said: "The country has been torn to shreds. Can the international community stand by while such callous retribution by the State of Israel is inflicted on us?"⁹⁰

Both General Halutz and his political superiors in the Olmert government seemed genuinely not to appreciate the extent to which

⁸⁸John Kifner and Steven Erlanger, "Israeli Air Raids Destroy Bridges North of Beirut," *New York Times*, August 5, 2006, and Thanassis Cambanis and Rana Fil, "Weeks of Bombing Leave Lebanon in Ruin," *Boston Globe*, August 5, 2006.

⁸⁹Har'el and Isaacharoff, *34 Days*, p. 117.

⁹⁰Jad Mouawad and Steven Erlanger, "Death Toll Rises in Mideast Fight; Bunker Bombed," *New York Times*, July 20, 2006.

the widespread destruction being caused by the IDF's bombing and artillery campaign would so quickly undermine global support for Israel's cause in countering Hezbollah's latest provocation. Even the Bush administration, most notably in the person of Secretary Rice, soon evinced growing concern over what the IDF's strategy portended for Lebanon's infrastructure if allowed to continue unabated. In this respect, there were indications of a mounting inability within the administration to make sense of the rationale underlying the IDF's decisions regarding such targets as airports, harbors, roads, and villages that mainly affected Lebanese civilians. These concerns were pointedly communicated to the Olmert government, with some U.S. officials vocally disappointed that earlier expressions of such concern had gone unheeded.⁹¹ As one senior administration official put it, "there has been considerable damage to [Lebanon's] infrastructure and civilians. We're puzzled by some of the targets. So this question is point number one."⁹² There were related manifestations of a growing sense in Washington that continued U.S. support for Israel and for a lasting solution to the situation in southern Lebanon would require the IDF to refine its target roster and further discipline its choice of target categories.

For his part, General Halutz was unapologetic about the extent of damage that the IAF's bombing had inflicted on Lebanon's civilian infrastructure: "The restraint which we showed over the course of the years [after Israel's withdrawal from Lebanon in 2000] is interpreted by those among the terrorists as weakness. On this count, they made a horrible mistake by assuming that we would persist in holding back and restraining ourselves." Halutz added that a major goal of the IDF's strategy was to "restore [Israel's] military deterrence against terror organizations."⁹³ His sentiment in that regard was echoed by Ambassador Gillerman, who remarked that the Lebanese government had brought its current crisis upon itself by having failed to honor a

⁹¹ David Ignatius, "To Save a Revolution," *Washington Post*, July 21, 2006.

⁹² Michael Abramowitz and Robin Wright, "Saudi Arabia Asks U.S. to Intervene in Lebanon," *Washington Post*, July 24, 2006.

⁹³ Steven Erlanger, "Troops Ready, But Israel Bets on Air Power," *New York Times*, July 23, 2006.

long-standing Security Council resolution requiring it to assert control over southern Lebanon and to disarm Hezbollah. By so failing, he said, Lebanon had elected "to succumb to terror rather than vanquish it."⁹⁴

The bulk of worldwide opinion regarding the damage done to Lebanon's infrastructure by the IAF's bombing, however, was anything but sympathetic to this attempt at self-justification by the Israeli government. One thoughtful and responsible Israeli journalist maintained that however purposeful the bombing may have been from a purely military perspective, the outside world understandably viewed it as having inflicted "wanton destruction."⁹⁵ A similar American comment voiced pointed criticism of Israel's "brutal—and increasingly inexcusable—air war against Lebanon."⁹⁶

To be sure, there were predictable exaggerations by some with parochial axes to grind. For example, one particularly tendentious anti-Israeli tract went plainly over the top in insisting that the IAF had bombed "without any restraint" and had "inflicted a disaster on the Lebanese Shiites through an extensive and devastating bombing campaign that deliberately flattened whole villages and killed hundreds and hundreds of civilians" in an orgy of "destructive and murderous fury."⁹⁷ Indeed, even the most thorough and generally even-handed treatment of the damage inflicted by the bombing to date arguably crossed the line of fairness to the facts when it suggested that a plentitude of attacked civilian buildings in Lebanon had been "promiscuously" designated by the IDF as Hezbollah "structures."⁹⁸ However, a UN Commission of Inquiry reported what it described as "a significant pattern of excessive, indiscriminate and disproportionate use of force by [the] IDF against Lebanese civilians and objects," all of which,

⁹⁴Peter Baker and Colum Lynch, "Bush Declines to Call for Israeli Cease-Fire," *Washington Post*, July 15, 2006.

⁹⁵Har'el and Isaacharoff, *34 Days*, p. 82.

⁹⁶James Carroll, "America Transforms the Middle East, but Not as Envisioned," *Boston Globe*, July 31, 2006.

⁹⁷Gilbert Achcar with Michel Warschawski, *The 33-Day War: Israel's War on Hezbollah in Lebanon and Its Consequences*, London: Paradigm Publishers, 2006, pp. 35, 38, 49.

⁹⁸Arkin, *Divining Victory*, p. xxii.

it added, suggested an “overall lack of respect [on the IDF’s part] for the cardinal principles regulating the conduct of armed conflict, most notably distinction, proportionality, and precaution.”⁹⁹ No less telling in this regard was the stern comment by Anthony Cordesman that “unless the IDF shows that . . . Hezbollah lost a major amount of weaponry in such [infrastructure] attacks, the attacks may have done Israel as much harm in terms of future hostility as good in terms of immediate tactical benefits.”¹⁰⁰ With respect to the same point, another commentator wrote that although there was a wholly legitimate “case for a full-scale Israeli ground offensive against Hezbollah,” the IDF’s chosen course of a standoff bombing campaign that could not cripple Hezbollah but that was destroying Lebanon’s infrastructure on the installment plan had achieved “the worst of both worlds,” as a result of which “Hezbollah [had] acquired heroic status, while Israel [had] both damaged its reputation as a regional superpower and made itself a villain in the eyes of the world.”¹⁰¹

Granted, since Hezbollah was, in effect, an unaccountable state-within-a-state inside Lebanon, it would naturally follow from the perspective of a prudent Israeli war planner that many aspects of Lebanon’s and Hezbollah’s infrastructures overlapped, in that they consisted of such dual-use assets as roads and bridges. Nevertheless, as in the instance discussed above of the noncombatant fatalities caused by the bombing, the resultant damage done to Lebanon’s infrastructure was instant grist for Hezbollah’s propaganda machine, which quickly made the most of it, further cementing the terrorist group’s position of clear advantage in the information war. Skillful Hezbollah image manipulation and shepherding of foreign reporters through selected sites of IAF bombing led inevitably to press exaggerations, as in one reporter’s

⁹⁹United Nations, “Report of the Commission of Inquiry on Lebanon Pursuant to Human Rights Council Resolution,” S-2/1, A/HRC/3/2, November 2006, p. 3, cited in Arkin, *Divining Victory*, p. 149.

¹⁰⁰Anthony H. Cordesman, “Preliminary ‘Lessons’ of the Israeli-Hezbollah War,” Washington, D.C.: Center for Strategic and International Studies, Working Draft, August 17, 2006, p. 5.

¹⁰¹Paul Krugman, “Shock and Awe,” *New York Times*, July 31, 2006.

breathless on-scene observation that nine days of IAF bombing attacks had “reduced most of Beirut’s vast Shiite Muslim suburbs to uninhabitable rubble.” (The Hezbollah representative who was escorting the reporters said that the attacked facility had been the construction site for a mosque.)¹⁰² Similarly, after the IAF’s initial massive attack on the *dahiye*, Hezbollah propagandists escorted foreign reporters through the rubble to point out the damage done to what they called “civilian residences.”¹⁰³

In his on-scene inquiry into the effects of the IAF’s bombing campaign, William Arkin fairly concluded that many accounts of the resultant damage inflicted on Lebanon’s civilian infrastructure had been “grossly exaggerated, misleading, or patently false.”¹⁰⁴ Yet at the same time, his overall take with respect to the IDF’s attacks against that infrastructure in its effort to induce the Siniora regime to lean hard on Hezbollah was generally consistent with the views of many otherwise sympathetic Western military professionals who had been steeped in the criticality of avoiding indiscriminate infrastructure damage to the greatest possible extent beginning as far back as Operation Desert Storm. Among other things, Arkin portrayed the IDF’s attacks against Lebanon’s infrastructure and economy as reflective of a “punishment strategy rather than . . . a campaign of interdiction.” He further charged that the IDF “bombed too much and bombed the wrong targets, falling back on cookie-cutter conventional targeting in attacking traditional military objects.”¹⁰⁵ In addition, in a judgment that would have struck a resonant chord with many Western airmen who were likewise perplexed at the seeming indiscipline of much of the IDF’s chosen targeting strategy, Arkin charged the Olmert government with having undertaken “an intentionally . . . destructive and ultimately counterproductive air campaign, wielding high technology

¹⁰²Hannah Allam, “Tour Weaves a Path Through Destruction,” *Miami Herald*, July 21, 2006.

¹⁰³Scott Wilson and Edward Cody, “Israel, Hezbollah Intensify Ground Conflict in Lebanon,” *Washington Post*, July 21, 2006.

¹⁰⁴Arkin, *Divining Victory*, p. 76.

¹⁰⁵Arkin, *Divining Victory*, p. xxii.

to Neanderthal levels of precision.”¹⁰⁶ In so doing, he added, the IAF “conducted its campaign with inexcusable abandon . . . [and] satisfied itself with conventional measures of ‘success’—counting rockets hit, dead fighters, destroyed infrastructure—with utter disregard for the day after.”¹⁰⁷

That sweeping and judgmental assertion, of course, left unanswered the crucial question of whether the IAF leadership’s choice or top-down instructions from the General Staff and the Olmert government’s civilian principals had largely accounted for that alleged “inexcusable abandon” on the IAF’s part. Arkin was, however, correct in concluding that the IAF’s bombing campaign, whatever the provenance of its targeting directives, had created an outcome with respect to Lebanon’s civilian infrastructure that was “far more ruinous than anything the U.S. military—specifically the U.S. Air Force—has undertaken in the era of precision warfare.”¹⁰⁸ In addressing that infrastructure damage, even the IAF’s Brigadier General Itai Brun freely conceded afterward that “Israel paid a heavy price for these attacks in terms of its tarnished image in the international community.”¹⁰⁹

Issues in Air-Ground Coordination

In its final report, the Winograd Commission found that the IAF’s supporting involvement in ground operations during the campaign’s second half had revealed “many flaws” emanating from previously

¹⁰⁶William M. Arkin, “Israel’s Failed Strategy of Spite,” *Washingtonpost.com*, August 15, 2006. For example, a senior RAF airman, commenting on the IAF’s performance during the second Lebanon war, noted correctly that “the region’s most powerful air force is able to hit selected targets almost with impunity.” He then, however, asked rhetorically: “But was it able to select the *right* targets?” (Air Commodore M. P. Colley, RAF, “IAF Operations in 2006,” presentation to the RAF Chief of Air Staff’s Air Power Conference, Defence Academy Shrivenham, United Kingdom, December 8, 2009, emphasis in the original.)

¹⁰⁷Arkin, “Israel’s Failed Strategy of Spite.”

¹⁰⁸Arkin, “Israel’s Failed Strategy of Spite.”

¹⁰⁹Brigadier General Itai Brun, IAF, “The Second Lebanon War, 2006,” in John Andreas Olsen, ed., *A History of Air Warfare*, Washington, D.C.: Potomac Books, Inc., 2010, p. 320.

identified shortcomings in planning, readiness, and training processes that had to do with “cooperation [or lack thereof] among the IDF branches.” The report added that these flaws, which “were not corrected during the war,” were attributable to the IAF and to the IDF’s ground forces in equal measure owing to their having “not planned, drilled, [and] assimilated” the requisite measures for proper air-ground coordination during their normal peacetime training exercises in years past.¹¹⁰ This conclusion, with which the IAF and IDF ground-force leaderships were quick to voice their complete concurrence, had in mind such diverse areas of air-land interaction as organizational and command relationships, the allocation of “supported” and “supporting” roles between the IDF’s land and air components, effective CAS delivery, deconfliction of often dangerously congested airspace, and the inexorable contrasts in culture and operational style between the IDF’s land and air warfare communities.

With respect to command relationships, Operation Change of Direction represented the first time in the IDF’s 60-year history that the IAF had ever been assigned overall command of a regional area of operations. Within this division of labor mandated by General Halutz and the IDF’s General Headquarters, the narrow band of territory between Israel’s northern border and the Litani River was Northern Command’s designated AOR. The remainder of Lebanon north of the Litani was the IAF’s AOR, making General Shkedy the supported commander for the so-called “deep” theater. For all operations south of the Litani, the IAF was the supporting command under Northern Command’s Major General Adam. That latter area of opera-

¹¹⁰ *Final Winograd Report*, Chapter 9, “Arms, Combat Support Units, and Special Operations,” The Air Force, Lessons, paragraph 30. It bears noting in passing here that there is no “Israel Army” per se that stands as an analogous and equal service counterpart to the IAF. The latter organization, like the small but highly professional Israel Navy (IN), is a separate service branch with a real de jure commander and its own internal chain of command. In contrast, the head of Israel’s ground forces, although a two-star peer of the IAF’s and IN’s commanders in rank, does not “command” anything but is instead a purely headquarters general with the responsibility for organizing, training, and equipping his forces. Because the IDF Chief of Staff has traditionally been a ground-forces general, he has always fulfilled the role of army “commander” when it comes to the combat employment of Israel’s ground forces.

tions featured not only IAF mobility support and around-the-clock CAS delivery but also independent air missions in support of Northern Command's operations (including TST attacks against identified and geolocated enemy rocket facilities in that region).¹¹¹

As for issues involving the operational and tactical control of forces, the IDF's master CONOPS rooted in its formal joint doctrine had designated both the commander of Northern Command and the IAF commander as coequal campaign commanders. In practice, however, the IDF General Staff assumed day-to-day responsibility for overseeing the Lebanese theater, with General Halutz serving as the *de facto* joint-force commander and with General Adam of Northern Command and General Shkedy of the IAF functioning essentially as land and air component commanders throughout the second Lebanon war. Before the IDF's new defense doctrine was put into effect in early 2006, the in-theater operational commander, typically an IDF ground-forces major general, was the central manager of all regional combat operations. Under the new arrangement, however, the chief of staff was given the overall reins of command, on the reasonable premise that "only he perceives the full systemic picture and thus is capable of commanding all the IDF's operational theaters." The chief of staff, in turn, empowered his subordinate commanders to exercise operational control in each AOR, assigned missions and apportioned assets to each subordinate commander, and decided on the overall "planning and execution constraints," presumably including rules of engagement and special instructions for each subordinate commander as the chief may deem appropriate.¹¹² (The Israel Navy, naturally enough, exercised its own independent command and control of forces in the maritime AOR.)

For its "deep-theater" AOR north of the Litani, the IAF implemented a full top-down command and control process loosely analogous to the air tasking cycle that has long predominated in U.S. combined air operations centers (CAOCs) around the world. That process included the receipt and promulgation of daily orders from the chief of

¹¹¹ Siboni, "The Military Campaign in Lebanon," pp. 63–65.

¹¹² Siboni, "The Military Campaign in Lebanon," pp. 70–71.

staff, the issuance of a daily ATO, strike force planning and weapon-eering, oversight of mission execution, and end-of-cycle mission assessment. By one informed account, the IAF “struggled” to implement fully this authority that had been granted to it by the IDF General Headquarters. In effect, according to this account, it ended up operating “more as a firepower and targets contractor,” perhaps as a predictable result “of the operational culture of the air force and the manner in which historically it [has perceived] its role in warfare.” This account went on to note that in future wars in which the IAF will be granted similar responsibility, “it will be required to generate such a process as quickly as possible in order to enhance the effectiveness of its theater command.”¹¹³

In addition to its main AOC in Tel Aviv, the IAF also maintained a forward AOC at Northern Command’s headquarters to control supporting air operations in that AOR. The main AOC managed the overall daily air tasking cycle and produced the master 24-hour ATO for independent air operations in the IAF’s AOR north of the Litani River each night before the planned execution the following day. The forward-deployed repeater AOC at Northern Command wrote the special daily ATO for IAF assets expressly subordinated to General Adam’s AOR. It also coordinated and deconflicted manned aircraft and UAV operations in that airspace. Brigadier General Ya’akov Shahrabani, at the time a colonel, and his designated IAF alternates were seconded to Northern Command as senior air liaison officers (ALOs) for the duration of the campaign. Each colonel served a 12-hour rotating shift in turn. They operated out of the forward AOC attached to Northern Command and had real-time access to all needed intelligence for informing IAF operations in support of General Adam.

¹¹³ Siboni, “The Military Campaign in Lebanon,” p. 65. A different informed perspective on this observation, however, suggests that the failure may not have rested entirely with the IAF. According to a senior headquarters staff officer who would surely know, the IAF’s Campaign Planning Department indeed did not plan the air portion of Operation Change of Direction as the latter ultimately unfolded. However, he added, although the IAF leadership had wanted to be the architect of the plan, it ended up serving, in effect, merely as a subcontractor for the IDF. (Interview with the head of the IAF’s Campaign Planning Department during the second Lebanon war, Tel Nof Air Base, Israel, March 29, 2009.)

With respect to problems associated with the allocation of “supported” and “supporting” roles at the component level, a retired IAF general recalled: “The air force did a good job in taking out the medium- and long-range missiles. Northern Command was the problem [when it came to dealing with the short-range Katyushas]. The air force could attack [within short-range missile launch areas] only if it got permission [from General Adam and his battle staff, since] Katyushas and other short-range missiles were the responsibility of the artillery and Northern Command.”¹¹⁴ Only toward the end of the campaign was the mission of attacking targetable short-range rockets assigned by the IDF General Headquarters directly to the IAF in the interest of circumventing that needless delay in the sensor-to-shooter cycle.

A knowledgeable former IDF colonel commenting on this aspect of the war experience reported that “in practice, the link between [the IAF’s forward AOC] and the Northern Command headquarters failed to operate effectively.”¹¹⁵ This account further suggested that Northern Command encountered difficulty in coordinating the various air, land, maritime, and SOF efforts in its AOR in substantial part because the IDF’s new operational concept had been implemented only “a short time before the war [began] and the change process [through which the new doctrine would be assimilated] was supposed to take several years.” The assessment also suggested that “findings about the inadequate coordination between the air force and ground forces in the combined-forces battle and in close air support [indicated a need for] thorough intervention by the [IDF] General Staff in order to rectify it by making the necessary integration among the different services and branches.” This analysis went on to propose that in its newly assigned role as the supported command for operations north of the Litani, “it is questionable whether the air force succeeded in effectively realizing its [full] authority over this . . . theater. The air force [instead had] operated over the years as a targets contractor or as the executor of [an] aerial campaign. . . . Prior to the 2006 war in Lebanon, the air force had never undertaken an operational theater command. Initial exami-

¹¹⁴ Fulghum and Wall, “Learning on the Fly,” pp. 63–65.

¹¹⁵ Siboni, “The Military Campaign in Lebanon,” p. 65.

nation indicates that the air force has yet to realize this kind of command authority effectively.”¹¹⁶

By the recollection of IAF commanders who were personally involved in liaison with the ground forces, there were more than a few instances in which problematic relations between IAF headquarters and Northern Command were IAF-generated. Significantly in this regard, neither the ground-force nor IAF leaderships had had recent experience with the conduct of major joint combat operations. Their collective command exposure had instead largely consisted of their respective learning derived from six years of nonstop counterterrorist operations against the *intifada* in the occupied territories. Informed principally by that narrow base of experience, IAF headquarters was said to have had a pronounced tendency to want to micromanage operations at the tactical level. To cite a case in point, the IAF had assigned a number of qualified ALOs and forward air controllers (FACs) to mobilized IDF ground units at the division level. Yet those skilled and able tacticians were given no say whatever when it came to risk assessment in connection with friendly troops in contact with enemy forces. The only accepted authority in that domain was the IAF commander personally, a prerogative that was deemed by many tactical-level operators to be unduly high up the chain of command for the provision of timely and effective CAS.¹¹⁷

Once the ground war began, the all-important matter of commander's intent was often not clear at the planning and execution levels. For example, General Adam, the commander of Northern Command, was the *de facto* combatant commander south of the Litani. At the

¹¹⁶ Siboni, “The Military Campaign in Lebanon,” p. 74.

¹¹⁷ To expand on this point, in one Israeli press account that still begs for further clarification, it was claimed that General Shkedy preferred to retain tight personal control over all IAF aircraft operating in the war zone over Lebanon, including those that were directly tasked to support the IDF's Northern Command, and that the IDF's ground commanders typically had to wait until Shkedy's principal deputies, Brigadier Generals Eshel and Locker, took their turns in the AOC's senior duty-officer rotation before they could get timely air support that they could truly count on. (See Amir Oren, “Complex, but Not Impossible,” *Ha'aretz*, Tel Aviv, October 20, 2007, and, by the same writer, “Clever, Not Smart,” *Ha'aretz*, Tel Aviv, August 2, 2008.)

same time, however, the IDF General Headquarters in Tel Aviv was fully in the command-and-control loop and was constantly asserting its presence and preferences. There also was most definitely a recurrent competition for “supported” and “supporting” roles between the ground and air components, yielding a tendency toward irresolution that did not improve over time. One example proffered as a case in point concerned the hypothetical question of who should wield tactical control over attack helicopters working with IDF ground units—the IAF commander or the senior engaged ground commander. On the books, the IAF had agreed to formal joint doctrine for such a situation with respect to the allocation of tactical control. For example, control of IAF attack helicopters could be delegated to a ground commander for 24 to 48 hours. There also was a published provision for the assignment of ALOs to ground commanders. However, such doctrinal contracts on paper often broke down in practice.

A related problem was a persistent reported “glass ceiling” between IAF operational planners and headquarters commanders. As a result, the air campaign in actual execution was characterized by the head of the IAF’s Campaign Planning Department during the war as “a conceptual and practical mess.”¹¹⁸ Among other identified undesirable consequences of this untoward situation, the all but profligate expenditure of jet fuel, flight hours, and costly munitions over the course of the 34-day campaign made for a most inefficient and uneconomical military operation.

The only real disappointment in the IAF’s combat performance noted by the Winograd Commission was in the realm of timely and effective CAS delivery to IDF ground troops. In many respects, IAF cooperation with the ground forces was exemplary, particularly the integration of utility helicopters and UAVs into ground operations. Less commendable was the participation of IAF attack helicopters and fixed-wing fighters in joint air-land operations. The main recurrent issue in the latter instances had to do with a lack of clarity about who was “supported” and who was “supporting.” Ground commanders repeatedly complained about inadequate support from attack helicopters owing to

¹¹⁸ Interview at IAF Headquarters, Ha’kirya, Tel Aviv, March 26, 2008.

the IAF's understandable reluctance to employ those aircraft at lower altitudes and closer slant ranges in the face of an ever-present threat posed by AAA and man-portable infrared-guided SAMs.¹¹⁹

Because so much of the war in its last two weeks entailed ground combat in or near built-up villages, there was no fire-support coordination line (FSCL) in southern Lebanon. Instead, the IDF used designated kill boxes. That approach, however, did not work as well as it might have otherwise because IDF ground commanders often lacked a clear picture of their battlespace. For their part, airborne aircrews could never be sure that friendly ground troops were not inside a given kill box. Fortunately, there was no fratricide occasioned by IAF strike or CAS operations, whereas there were ultimately more than 20 instances of fratricide resulting from surface-to-surface friendly fire as the IDF's ground fighting gradually ramped up.¹²⁰ (Although a Blue Force Tracker-type capability for IDF ground forces was well along in the works, it had not yet been fielded at the time of the second Lebanon war.)¹²¹

To make matters worse, even though there was no FSCL to complicate the IAF's freedom to operate in its assigned AOR in southern Lebanon, there was, once the IDF's ground push got under way, a battlespace bisector just north of Israel's border with Lebanon that was comparable to the FSCL in its impact on the efficiency of joint combat operations if not in its intent. At the IAF's insistence, a "yellow line" running east and west parallel to Israel's northern border not far south of the Litani River was drawn on operational maps used by both services to allow IAF aircrews unfettered freedom to attack any of Hezbollah's Fajrs and other medium-range rockets as they emerged and

¹¹⁹ Alon Ben-David, "Israel Introspective After Lebanon Offensive," *Jane's Defence Weekly*, August 23, 2006, pp. 18–19.

¹²⁰ Interview with the former deputy commander of an F-16D squadron during the second Lebanon war, Palmachim Air Base, Israel, March 31, 2009.

¹²¹ Interview with Brigadier General Gabi Shachor, IAF, Palmachim Air Base, March 27, 2008. Blue Force Tracker is a U.S.-developed system enabled by GPS that consists of transponders mounted on friendly surface vehicles and aircraft. The transponders transmit to all interested command posts the geographic coordinates, direction, and speed of each platform at any moment as they all move about the battlespace.

were detected and geolocated, on the premise that if there were no commingled IDF troops on the ground in that battlespace to be deconflicted, there would be no requirement for the IAF to conduct time-consuming prior close coordination of any TST attacks with Northern Command and its engaged brigade commanders. This “yellow line” was very much like the FSCL in American practice and entailed many of the same associated interservice disagreements and tensions regarding ownership and control of jealously guarded joint battlespace that have long been familiar to American combatants at the operational and tactical levels of warfare.¹²²

To provide some pertinent background that may help to clarify this issue, in the cross-service division of roles within the IDF regarding Hezbollah’s diverse unguided rocket capability, the IAF had been assigned formal intelligence and operational responsibility for the medium- and long-range rockets. The IDF’s Northern Command was assigned similar responsibility for the Katyushas and other short-range rockets. The “yellow line” was accordingly proposed by the IAF, and accepted by the ground forces, as the most convenient means for managing and deconflicting these respective mission taskings. Northern Command bore full responsibility for all targets and combat operations from the yellow line southward to Israel’s northern border. Everything north of the line up to the Litani River was the IAF’s responsibility as the supported command in the TST hunt for medium-range rockets in that area of operations.

Much as in the recent experience of American joint-force operations inside the roughly similar FSCL, a problem predictably arose in the relatively thin band of crucially important battlespace between the Litani River and the yellow line, from which a reported 69 percent of all Hezbollah short-range Katyushas were fired and within which any IAF strike operations required close prior coordination with Northern Command—since IDF troops were also operating on the ground in that battlespace. By one informed account, there was continual tension and disagreement between the IAF and Northern Command over the

¹²²Interview with the head of the IAF’s Campaign Planning Department during the second Lebanon war, Tel Nof Air Base, Israel, March 29, 2009.

placement of the yellow line. The IAF wanted the line moved as far southward from the Litani as possible so that it would have to conduct the barest minimum of coordination with Northern Command in the course of its pursuit of rocket-related TSTs; Northern Command, for its part, wanted the line placed as far *northward* as possible, out of an understandable concern that otherwise, it would bear the brunt of any criticism that might arise after the war ended for having failed to address the Katyusha threat satisfactorily. In the end, Northern Command prevailed. The line was occasionally moved in small increments by mutual consent between the IAF and Northern Command, but it mostly remained fixed at around four to five miles north of the Israeli border, where it embraced most of the terrain of southern Lebanon that contained Hezbollah's stocks of dispersed Katyushas. In that area, the IAF could not operate without prior close coordination with Northern Command. As a result, very few short-range rocket storage and launch sites were hunted down and neutralized by either service.¹²³

The war experience also brought to the surface some serious disagreements within the IAF's most senior leadership ranks with respect to issues concerning command and control and centralization versus decentralization in the use of attack helicopters in joint air-land operations. For their part, General Shkedy and his immediate subordinates in the IAF's forward AOC that was collocated with Northern Command sought to retain close tactical control of participating Apache and Cobra attack helicopters as IAF assets to be committed at IAF discretion to IDF ground units in need of immediate fire support. In sharp contrast, Brigadier General Gabi Shachor, commander of Palmachim Air Base, one of the IAF's main helicopter bases, countered strenuously that this approach constituted "a major mistake" and that a flight of attack helicopters ought instead be more properly viewed as an organic extension of an engaged IDF ground combat unit.

Ten days before the ceasefire brought an end to Operation Change of Direction, Shachor finally confronted Shkedy face-to-face over this hotly contested issue. He later flew a Blackhawk to Israel's northern border and pressed the same argument with then-Colonel Shahara-

¹²³ Ben-Israel, *The First Israel-Hezbollah Missile War*, p. 64.

bani, a fellow helicopter pilot who was the senior IAF representative to the IDF's Northern Command. (That second effort by Shachor, however, only occurred on the campaign's last day and accordingly came too late to be of any use.) In both exchanges, Shachor stressed that the essence of CAS was responsiveness and that the latter could never be met if the IAF leadership controlled its attack helicopters from the AOC rather than assigning them directly as available on-call assets as needed by engaged ground commanders. In claiming the exercise of tactical control over the IAF's attack helicopters as a rightful prerogative of the IAF, said Shachor, General Shkedy was overriding established doctrine and was accordingly failing to "honor the books" when it came to the provision of timely support to the IDF's ground forces in life-threatening situations. As he expressed it to Shkedy in their showdown over the issue: "Not only you but even God must not come between an attack helicopter formation's flight lead and the supported ground commander" when it came to meeting the latter's requirement for immediate and responsive fire support.¹²⁴

The deconfliction of airborne aircraft worked reasonably well in the end, despite the presence of as many as 70 IAF aircraft simultaneously over southern Lebanon operating within the same block of airspace at any time of day or night. As discussed in Chapter Three, such deconfliction was managed from the IAF's main AOC by means of assigned altitude blocks for the various aircraft types that participated, as well as by carefully managed time and space separation of the many platforms that were either ingressing, egressing, or operating within the congested battlespace at any given moment. For UAV coordination, a telephone hotline connection between the IAF's UAV squadron and the senior IAF duty officer assigned to Northern Command headquarters was kept constantly open. The UAV squadron commander felt in hindsight, however, that in the interest of adjudicating conflicting demands and extracting the greatest efficiencies from his unit's limited assets, it would have helped enormously to have squadron representa-

¹²⁴Interview with Brigadier General Gabi Shachor, IAF (Res.), Palmachim Air Base, Israel, March 31, 2009.

tives physically sitting both in the main AOC at IAF Headquarters and at Northern Command.¹²⁵

With respect to helicopters, achieving the desired deconfliction in the end turned out to be simply the result of a decision by IAF Headquarters to stay out of the process. IAF helicopter pilots worked especially well with the ground forces. As the campaign unfolded and increasingly saw the involvement of IDF ground troops, a consensus quickly developed across service lines that both utility and attack helicopters should properly be viewed as the ground commander's assets when it came to tactical control and that risk management with respect to the commitment of helicopters in the face of enemy fire should be conducted directly by means of a mutually agreed contract between the engaged ground commander and those helicopter pilots tasked at any moment to work his particular problem. With respect to lessons regarding the provision of helicopter support, the IAF's helicopter commanders concluded that the most painless and sure-fire approach would be simply for the IAF to make its helicopters available on demand as may be needed by the requesting ground commander.¹²⁶

A different situation prevailed entirely, however, when it came to the integration of fixed-wing fighters into the scheme of ground operations. In particular, manifold problems arose with the coordination of jets into and out of the fight. One such problem entailed nothing more complex than the use of conflicting terms of reference by fighter aircrews and ground combatants. Often the same targets had as many as three different names, depending on whose maps were being referred to. The engaged ground commander often would not know whether a requested target had been successfully attacked. Another unresolved issue for a time concerned the question of who had the ultimate authority to determine the extent of risk to be taken by fighter pilots and when a tactical situation requiring immediate CAS entailed danger-close conditions for IDF ground troops.

¹²⁵Interview with the commander of the IAF's UAV squadron, IAF Headquarters, Ha'kirya, Tel Aviv, March 26, 2008.

¹²⁶Interview with General Shachor, Palmachim Air Base, Israel, March 27, 2008.

Once the IDF's ground involvement began in earnest, aircraft and artillery operated together closely, often even interchangeably. There was reportedly no attempt by the IAF to deconflict flight operations from artillery fire because doing so with any exactitude would have been, in the words of one IAF officer, "practically impossible."¹²⁷ That apparent choice almost surely would not have been reached with similar equanimity in U.S. joint-warfare practice. The apex of artillery fire is typically about half its range, meaning that some rounds could have reached as high as 50,000 ft. With as many as 173,000 or more rounds of artillery fired altogether by IDF ground forces over the course of the 34-day campaign, the avoidance of even a pretense at airspace deconfliction constituted a colossal gamble that an in-flight fratricide event would not occur sooner or later. As for MLRS, General Halutz, speaking as an airman, indicated that he was content for Israel's ground forces to operate the system so long as the rocket's range was restricted to 25 miles or less. Deconfliction of MLRS with IAF aircraft during the campaign was also said to have been "not a problem."¹²⁸

The earlier-cited Israeli analysis went so far as to complain that the IAF's efforts to provide on-call CAS to IDF ground units "proved inadequate" and that "the use of air assets in the Northern Command theater failed to achieve its objectives." In light of the subsequent first-hand testimony of IAF commanders who were the providers of that service, that judgment sounds excessively categorical. On this point, the IAF's Chief of Staff at the time, General Eshel, later remarked that "together with the claims about a lack of cooperation, there has also been reference to excellent cooperation. There is no doubt that we made errors during the operation, and we are at the peak of the debriefings in order to get to the bottom of things and sort out the problems. . . . On the other hand, there were instances where the evacuation of injured soldiers was held up due to orders from ground commanders. . . . I want to emphasize that in all places and at all times where it was made clear that the lives of injured soldiers were in danger,

¹²⁷Interview with Lieutenant Colonel Roni Amir, head of the Doctrine Branch, IAF Headquarters, Ha'kirya, Tel Aviv, March 26, 2008.

¹²⁸Interview with General Halutz, IAF Headquarters, Ha'kirya, Tel Aviv, March 26, 2008.

air force personnel went in without hesitation, even in daylight and under fire. In these cases, nothing stopped us from saving lives.”¹²⁹

Most IAF officers, however, would concur completely with the more balanced judgment that the IDF's “ability to use close air support [had] declined in recent years, largely due to the degeneration of the liaison system that [had been] established in the past between the air force and the ground forces.”¹³⁰ As the IAF Commander at the time, General Shkedy, later explained, a major part of the reason for this lapse in joint peacetime training was simply the fact that “it's hard to practice [CAS delivery] with a ground force that isn't practicing.”¹³¹ Since the start of its preoccupation with the *intifada* in 2000, the IDF had conducted virtually no periodic large-scale training involving all joint-force elements in which the entire command and control system was tested and exercised. For that reason, operational integration between the IAF and the ground forces had become highly deficient, and ground-force training for any combat contingencies other than dealing with the *intifada* had been allowed to lapse badly. That failure largely accounted for the post-campaign report that most of the IDF's operational-level commanders “did not have the skills and training needed to operate a combined force professionally.”¹³² The Director General of the Ministry of Defense, Pinchas Buchris, later conceded the obvious in this respect when he noted that “integration [among the services] is difficult. You have to practice all the time.”¹³³ He added that the weight of responsibility for the IDF's failure to ensure such integration lay directly at the feet of a succession of chiefs of staff and key generals in both services.

A major lesson learned from the IAF's rocky experience with CAS delivery in 2006 was the criticality of having an authoritative senior IAF representative attached directly to the commander of all of the

¹²⁹Bar and Estlein, “No Equivalent in History of World Aviation.”

¹³⁰Siboni, “The Military Campaign in Lebanon,” p. 65.

¹³¹Interview with General Shkedy, IAF Headquarters, Ha'kirya, Tel Aviv, March 27, 2008.

¹³²Siboni, “The Military Campaign in Lebanon,” p. 67.

¹³³Fulghum and Wall, “Learning on the Fly,” pp. 63–65.

IDF's regional commands (Central and Southern as well as Northern) as, in effect, the IAF's designated air component coordinating element (ACCE) to the land component. Most ground-force officers' knowledge of the IAF's combat capabilities and limitations was minimal at best. To be sure, there was never a reported instance in which a ground commander asked the IAF for a measure of air support that was manifestly unreasonable. However, there was often a lack of sufficient ground-force understanding and appreciation of what the IAF can and cannot do on the ground commander's behalf. All too often, the tendency of ground commanders was to ask for a platform or a munition rather than for a desired effect. The most important next step was widely seen to be the institution of a serious air-ground dialogue on a routine basis in peacetime, with periodic scheduled joint planning and training to spotlight still-unsatisfied challenges and operational needs. At bottom, as General Shaharabani expressed it, "it takes two to tango—the ground forces must understand that CAS is *their* responsibility also."¹³⁴

Another lesson driven home by the ground fighting in southern Lebanon was the need for the IAF to think, plan, and train in closer conjunction with the ground forces. In particular, CAS delivery by the IAF was widely said to have been "not good enough." For six years, as a result of the ground forces' operational distraction by the *intifada*, the IAF had essentially put itself out of the business of CAS provision and found itself obliged to rediscover the most basic principles of the mission as the IDF's ground operations against Hezbollah unfolded. Because it was not the most polished mission profile in the IAF's war-fighting repertoire, CAS was provided only in truly life-threatening circumstances when friendly troops were in close proximity to Hezbollah combatants. In such circumstances, the overriding principle was that "you do whatever you need to do." In many cases, flight leaders were empowered to make the key life-or-death tactical decisions on their own, on the premise that they had the most detailed and up-to-

¹³⁴Interview with General Shaharabani, IAF Headquarters, Ha'kiryā, Tel Aviv, March 27, 2008.

date picture of the situation at the immediate point of contact with the enemy.¹³⁵

At bottom, the IAF was not prepared for the full spectrum of demands for CAS delivery in 2006 because it had had little reason or opportunity to rehearse that mission in peacetime. As the fighting in southern Lebanon progressed, much real-time learning occurred. Israeli airmen at all levels drew the major conclusion that the IAF needed to enhance its CAS repertoire by periodically exercising the entire system in day-to-day joint peacetime training. In response to this wake-up call, the IAF completely enmeshed itself in day-to-day peacetime ground-force planning and training. As will be discussed in greater detail in Chapter Six, which addresses the Gaza campaign, the IAF's AOC now routinely uses 10-digit mensurated geographic coordinates for accurate targeting, and it communicates through a digital system that represents a major improvement over past practice. Moreover, IAF and ground-force combatants down to the lieutenant colonel level are now collocated in the planning and operations cells of the two services.

In early 2008, the head of the IAF's Air Division during the second Lebanon war, General Locker, described this new stress on joint peacetime planning and training as "crucial" in enabling both services to arrive at a better understanding of what each can expect from the other and of the limits of the possible with respect to CAS delivery. The experience of Operation Change of Direction forcefully drove home the fact that each service's expectations of the other were in dire need of adjustment. At times, IDF ground-force commanders simply did not know what to ask for. Today, as will be noted again in Chapter Six, field-grade officers in Israel's ground forces are periodically invited to ride along on tactical mission orientation sorties in IAF attack helicopters and fighters so that they can observe at first hand both the IAF's capabilities and its limitations. This is the first time ever that the IDF has undertaken such cross-service dialogue at such a low level and on such a large scale.¹³⁶

¹³⁵Interview with General Shachor, Palmachim Air Base, Israel, March 27, 2008.

¹³⁶Interview with General Locker, IAF Headquarters, Ha'kirya, Tel Aviv, March 27, 2008.

The war experience also confirmed that because of their failure to train together over the preceding six years, the IAF and Israel's ground forces essentially spoke different languages and, to all intents and purposes, had become entities that did not even know each other. In an instructive contrast in the respective mindsets and cultures of the two service arms, immediately after the July 12 kidnapping incident and entirely on his own initiative and authority, General Shkedy increased the IAF's readiness state from Alert Posture A to B (with Posture D being all-out war). Yet the IDF General Headquarters did not concurrently activate the IDF's master command post, and IDF reservists were not immediately called up, even though General Halutz had expressed his personal determination to change the playing arena and terms of reference regarding Hezbollah in southern Lebanon.¹³⁷

Relatedly, although the IAF continued to conduct regular and intensive training in its primary mission areas of independent strike operations and air-to-air combat, ground-force training at the IDF's National Training Center in the Negev Desert had been steadily whittled back since Israel's withdrawal from Lebanon in 2000, and virtually no joint air-ground training took place there or anywhere else. Not only that, the IDF's ground forces had progressively lost their ability and readiness to engage in major combat as a result of their constant preoccupation with lesser policing actions against Palestinian terrorists in the Gaza Strip and the West Bank. Not surprisingly as a result, they felt that their primary need going into Operation Change of Direction was to avoid incurring casualties rather than to accomplish an unclear and unfamiliar mission.

In sum, there were numerous instances of identified friction in air-ground integration during the second half of Operation Change of Direction, and the overall experience of the campaign's attempted joint operations made for a major awakening by the IAF and by the IDF's ground forces in equal measure. After the ceasefire went into effect, the IDF's Directorate of Operations conducted a systematic lessons-learned exercise to correct those deficiencies and to revise and, as necessary, update joint tactics, techniques, and procedures. So did the IAF

¹³⁷Interview with General Shkedy, IAF Headquarters, Ha'kirya, Tel Aviv, March 27, 2008.

leadership and senior staff. As General Shkedy put it in an interview in 2008: "We're developing better coordination between air and ground echelons so that each service can do what it does best."¹³⁸

¹³⁸Opall-Rome, "Interview with Major General Elyezer Shkedy, Commander, Israel Air and Space Force."



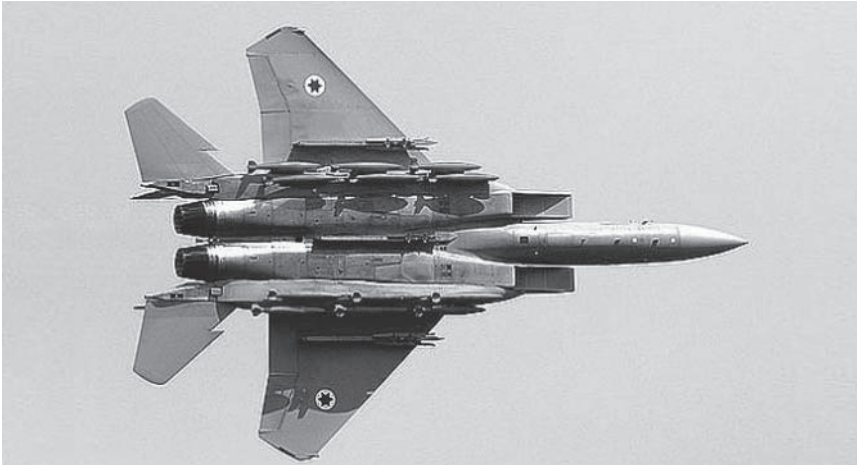
A first for the IAF. In 2005, Lieutenant General Dan Halutz, shown here while still the two-star Commander of the IAF, became Israel's first airman ever to rise to the post of IDF Chief of Staff with responsibility for all of Israel's military forces. A year later, he also became Israel's first airman tasked with planning and conducting a major campaign when confronted with the second Lebanon war.



The perpetrator. Hassan Nasrallah, the fiery leader of the terrorist organization Hezbollah, instigated the abduction of two IDF soldiers on the Israeli-Lebanese border on July 12, 2006, that prompted Israel's escalated 34-day response. Although he later claimed to have achieved a "divine victory" at the end of the inconclusive war, his organization was badly battered in the ensuing fighting.



Alert launch. Immediately after IDF Northern Command determined that one of its patrols along the Lebanese border had failed to check in, two AH-1 *Tsefa* ("Viper") attack helicopters like this one pressed from Palmachim Air Base to investigate. Upon arrival at Phase Line 105, their pilots found the smouldering wreckage of the patrol's Humvee and the three dead soldiers who had been left behind.



Heavy hitter. The F-15I *Ra'am* (“Thunder”), depicted also on the cover of this book, is a variant of the USAF’s F-15E Strike Eagle especially missionized to meet IAF operational requirements. The aircraft shown here in a steeply banked turn to the left is configured with twelve 500-lb unguided Mk 82 general-purpose bombs, six of which are mounted on each of the aircraft’s two conformal fuel tanks.



Stormbirds on CAP. Two F-16I *Sufa* (“Storm”) multirole fighters hold on station in a racetrack pattern awaiting their next target assignment by their controlling AOC or by a ground FAC. Equipped with conformal fuel tanks that give it an unrefueled combat radius of 500 miles, almost that of the larger F-15I, the *Sufa* is the only IAF fighter that carries the fully integrated Litening II targeting pod.



Going through the checklist. This F-16I WSO has just finished strapping into the aft cockpit and is in the process of setting up his crew station for engine start. Three multifunction displays (two on the instrument panel and a larger one at eye level) provide him a repeater of the pilot's head-up display, as well as radar and targeting-pod symbology, threat indications, weapons status, and a moving map display.



Ready to taxi. With its engine running at idle, its navigation lights on, and external electrical power still connected, this F-16I in its shelter has just had its wheel chocks removed and is about to launch on another day combat mission. Configured with three external fuel tanks for extended time in its likely operating area, it also sports a Litening II targeting pod and two 2,000-lb JDAMs.



Big-picture provider. Two Gulfstream G550 airborne warning and control aircraft, each equipped with three conformal AESA radars but otherwise uniquely configured to perform different ISR functions, were used by the IAF throughout the second Lebanon war to provide precise geolocation and identification of ground targets and electronic monitoring of Hezbollah's radio frequency emitters.



Actions speak louder than words. On August 3, 2006, nearly two weeks before the ceasefire went into effect, Nasrallah threatened that if the IAF struck Beirut again, Hezbollah would retaliate by attacking Tel Aviv with long-range rockets. Shortly thereafter, the IAF bombed Hezbollah's leadership facilities in the heart of downtown Beirut, with no return Zelzal fire against Tel Aviv ever occurring.



An unblinking eye over the battlefield. A Searcher UAV flying low along the Mediterranean shoreline approaches Palmachim Air Base, one of the IAF's UAV operating facilities. This and other UAV types were true workhorses during the second Lebanon war, flying some 1,350 sorties averaging 10 hours in duration and logging more than 16,500 flight hours throughout the campaign.



UAV cockpit. The IAF maintained ground facilities like this control van, which is manned by two IAF first lieutenants, for each UAV type in continuous operation over Lebanon. Many UAV controllers in the IAF are part-time reservists who work principally as engineers or managers in the UAV division of Israel Aircraft Industries. As in the case of the USAF, all IAF UAV operators are officers.



Forward AOC. In addition to its main air operations center in Tel Aviv, the IAF also manned a smaller AOC collocated with Northern Command to provide direct air support to IDF ground troops. Operators like those shown here maintained constant radio contact with airborne aircraft throughout the war zone to convey target assignments, conduct airspace deconfliction, and request BDA reports.



Arming up. IAF munitions technicians (a major and first lieutenant) ready a 2,000-lb GBU-31 satellite-aided JDAM for being loaded onto one of the underwing weapons stations of an F-16I. The IAF expended an unexpectedly large number of these weapons during the first five days of Operation Change of Direction. Its near-depleted inventory was soon thereafter replenished by the United States.



Counterair fighter. Although Hezbollah presented no air threat of major note, the IAF nonetheless maintained constant air defense CAPs over the Mediterranean as a contingency measure against any try by the terrorist militia to launch armed UAVs or air-breathing missiles into Israel. F-15C air-to-air fighters like this one taking off from Tel Nof Air Base figured prominently in those operations.



Real-time update. The IAF's Commander during the second Lebanon war, Major General Elyezer Shkedy (pictured here in the IAF's main AOC in Tel Aviv), briefs Prime Minister Ehud Olmert and General Halutz on the day's air activities. Various monitors located throughout this particular AOC cell show, among other things, radar imagery from the G550 and full-motion video from airborne UAVs.



Base visit. Here, General Shkedy (left) and Brigadier General Rami Ben-Efraim (pointing), then-commander of Ramat David Air Base, explain ongoing operations to Minister of Defense Amir Peretz (center) and IDF Deputy Chief of Staff Major General Moshe Kaplinsky (behind Peretz's left shoulder). The four F-16C squadrons at this northernmost base flew a high percentage of the IAF's strike sorties.



In the war zone. General Halutz (right) with the commander of the IDF's 91st Division, Brigadier General Gal Hirsch (pointing), observe combat operations in progress south of the Litani River opposite Israel's northern border with Lebanon. General Hirsch's troops bore the brunt of combat against Hezbollah's well-trained fighters during the war's ground engagements, often in face-to-face contact.



Air assault asset. CH-53 *Yas'ur* ("Petrel") heavy-lift helicopters played a key role in airlifting IDF troops into southern Lebanon, typically under heavy fire, as ground combat ramped up during the campaign's third week. One was downed immediately after takeoff during a night mission two days before the ceasefire, making for the IAF's only loss to direct enemy action during the 34-day war.



Combat airlifter. As the ground fighting peaked during the last week of Operation Change of Direction, IAF C-130s delivered needed supplies both around the clock and typically under intense fire to IDF troops engaged in battle. This C-130 performs a rocket-assisted takeoff, a technique sometimes used when heavily laden aircraft need to operate from short runways or during hot weather conditions.



A medevac must. The IAF's UH-60 medium-lift helicopters were star performers in conducting CSAR and medevac operations during the second Lebanon war's end-game. Many wounded Israeli troops were quickly exfiltrated under fire and flown to safety by UH-60s, whose crews earned most of the individual decorations and unit citations awarded for valor to IDF personnel after the war ended.



Chief battlefield airman. Brigadier General Gabi Shachor, a UH-60 and AH-1 pilot and commander of Palmachim Air Base during Israel's war against Hezbollah, was the most outspoken IAF leader when it came to providing effective attack helicopter support to beleaguered IDF units in the ground fighting. He once went head-to-head with General Shkedy on a point of principle in this respect.



Two more airmen who mattered. Major General Amos Yadlin (left), an IAF fighter pilot, headed IDF Military Intelligence during the second Lebanon war and was among the first senior leaders to call for early ground action. Brigadier General Amir Eshel (right), the IAF's Deputy Commander during the campaign, was a major force behind the improved air-ground integration that ensued soon thereafter.

The Winograd Commission's Findings

As noted before, in response to mounting public pressure for an impartial investigation following the IDF's disappointing performance in its counteroffensive against Hezbollah, the Olmert government established what was officially described as "the commission of inquiry into the events of the military engagement in Lebanon in 2006."¹ The commission was chaired by retired Judge Eliahu Winograd and was made up of four additional members—Ruth Gavison, a law professor at Hebrew University in Jerusalem; Yehezkel Dror, a political science professor also at Hebrew University; and two retired IDF major generals, Menachem Eitan and Chaim Nadel. The panel was given the same broad mandate as that of a formal Israeli state commission, except that its members were not appointed by the Supreme Court, meaning that any recommendations they might make, particularly with respect to leadership resignations, would not carry the same legal weight as those of a state commission. Judge Winograd and his fellow commissioners held their first organizing meeting on September 18, 2006, barely more than a month after Operation Change of Direction had ended. They began hearing testimony from subpoenaed witnesses on November 2 of that year, including from IAF Commander General Shkedi in a classified session on December 6. At roughly the midway point in

¹Also as noted earlier, a precursor inspection probe initially announced by Defense Minister Peretz as the campaign's dust was still settling and headed by former IDF Chief of Staff Lieutenant General (Res.) Amnon Lipkin-Shahak was disbanded on August 22 after only five days of work in the face of mounting public calls for a more impartial commission. (See "Winograd Commission," Wikipedia, 2010.)

their prolonged deliberations, the commissioners released a 170-page preliminary report on April 30, 2007, which was harshly critical of the Olmert government. Their long-awaited final report (some 700 pages in all) was issued on January 30 the following year.²

The interim report noted that the commission had been constituted in the first place “due to a strong sense of a crisis and deep disappointment with the consequences of the campaign and the way it was conducted.”³ The final report took pains to stress that the purpose of the commission’s investigation was not “to place responsibility on any specific person . . . but to indicate findings, processes, and reasons and causes that could focus attention on an understanding of events and on improving [IDF] preparedness and performance.”⁴ All the same, in the view of two informed and well-regarded Israeli journalists, the conclusions ultimately reached by the Winograd Commission added up to “probably the most vituperative verdict ever passed on an Israeli prime minister.”⁵

The commission’s final report marshals the main facts and figures of the campaign, explores day-to-day decisionmaking and the issues that arose within the Olmert government, and addresses recurrent tensions between the IDF’s service arms with respect to operational matters associated with the campaign’s conduct. Notably, although the commissioners determined in the end that General Halutz had, in his choice of options going in, shown “excessive faith” in the ability of standoff attacks to achieve the government’s avowed goals without a need to commit to significant ground action, they did *not* fault the government, as did many outside onlookers during the second Lebanon

²For the most readily accessible English-language translation of that document, see The Commission for the Examination of the Events of the 2006 Campaign in Lebanon—The Winograd Commission, *The Second Lebanon War*, Final Report, Volume I, Tel Aviv: January 2008.

³“Winograd Commission Submits Interim Report,” Tel Aviv: Ministry of Foreign Affairs, media release, April 30, 2007.

⁴*Final Winograd Report*, Chapter 9, “Arms, Combat Support Units, and Special Operations,” General, paragraph 5.

⁵Har’el and Isaacharoff, *34 Days*, p. 88.

war's course and early aftermath, for being swayed by any alleged conviction on Halutz's part that Israeli air power would naturally achieve the campaign's hoped-for outcome all by itself.⁶ On the contrary, the commissioners found that both Halutz and his superiors in the Olmert government had gambled, in what amounted to an act of faith on their part, that a standoff-only option (including not only air but also massive artillery and MLRS attacks) would, in due course, prompt the desired response on Hezbollah's part and thereby obviate any need to initiate a major ground incursion into southern Lebanon, with the attendant certainty of generating high Israeli troop casualties—which *no* one in the IDF, the Olmert government, or the Israeli rank and file was eager to undertake. As the interim report clearly concluded on this score, "even though the Chief of Staff was aware . . . of the fact that no effective response existed from the air to the short-range rocket fires, he believed—contrary to the foundational assumptions of all the military plans—that if the military would be given enough time, it would be able to hurt Hezbollah in a significant way from the air and to provide military and political successes without the 'complications' of issues like control of territory, friction, and heavy losses."⁷

Taken together, the Winograd Commission's interim and final reports rendered a lengthy roster of judgments on the IDF's combat performance, on identified shortcomings in the Olmert government's strategy choices, and on alleged leadership failings at the highest levels on the part of Prime Minister Olmert himself for having thrust the nation into a major war without first thinking the war and its implications through. As a result of these cumulative shortcomings and failings, the campaign produced what the commissioners called a "serious missed opportunity"—namely, for a more conclusive blow against Hezbollah if the government had pursued a more disciplined and determined approach and been willing, if need be, to pay the required price for such an outcome.⁸ This chapter summarizes the highlights

⁶Hanina Levine, "Behind the Headlines of the Winograd Commission's Interim Report," Washington, D.C.: Center for Defense Information, World Security Institute, May 29, 2007.

⁷"Winograd Commission Submits Interim Report."

⁸*Final Winograd Report*, Chapter 11, "Summary and Conclusions on the IDF," General.

of the commission's findings in these three areas, the essence of which was not a simple indictment of Halutz for an improper reliance on air power to the exclusion of all other options but rather a more searching assessment of a collective failure in strategy choice on both his and the civilian leadership's part for having "authorized a military campaign without considering how to exit it."⁹

On the IDF's Combat Performance

If anything, the Winograd Commission was most approving in its appraisal of the IAF's contributions and most uncompromising in its critique of Israel's ground forces in their respective campaign showings. Indeed, the commissioners concluded, virtually all of the most disturbing facts that they had uncovered during the course of their investigation were to be found "in all the levels and ranks of the ground forces."¹⁰ Furthermore, they reported, recent IDF budget cuts were "not the direct cause of the flaws" that they had unmasked.¹¹ Rather, those flaws were the predictable result of conscious prior investment choices that had been made by a succession of IDF chiefs to concentrate ground-force training, readiness, and equipment toward meeting

⁹David A. Fulghum, "Lebanon Critique: Israel's Winograd Commission Lays Blame for Last Summer's Military Debacle," *Aviation Week and Space Technology*, May 7–14, 2007, p. 38.

¹⁰*Final Winograd Report*, Chapter 12, "Recommendations for the IDF," Introduction.

¹¹*Final Winograd Report*, Chapter 11, "Summary and Conclusions on the IDF," General. To be sure, a succession of defense budget cuts since 2000 had prompted the IDF to reduce their investment in periodic ground-force exercises in both the active and reserve forces, based on their acceptance of a calculated risk that they would have sufficient time to bolster their conventional combat capability in case of a major regional contingency that threatened to escalate into a high-intensity war. Those successive cuts were not occasioned by the IAF's having garnered the bulk of available funds for force sustainment, but rather from general strains on the military budget and from the IDF's assessed need to concentrate its efforts on here-and-now challenges emanating from the West Bank and Gaza. As a result, there was a decline in cross-service peacetime training throughout the IDF, and the annual exercises that did occur were largely command-post evolutions on paper rather than actual large-force training events in the field. These cuts, however, did not affect the IAF, which continued to train at its usual high level of intensity for most mission areas, albeit not in joint operations with the ground forces.

the immediate needs of combating Palestinian terrorist operations in the occupied territories, on the misguided premise that a major war against a coalition of “first-circle” Arab countries was of an increasingly low likelihood and that the main focus needed to be placed instead on here-and-now asymmetrical threats posed by the *intifada*.¹²

As for the IAF's contributions, the commissioners noted that the principal expectations of Israeli air power throughout the war, in descending order of priority, were (1) attacking Hezbollah's medium- and long-range rockets; (2) defending Israel's air sovereignty against potential enemy aerial intrusions; (3) hitting “secondary” targets involving Hezbollah assets, such as the *dahiye* in Beirut; (4) restricting the movement of weapons and equipment into Hezbollah's hands from Syria and Iran; (5) hunting down Hezbollah's short-range rockets (this was *not*, it bears repeating, a mission that had ever been formally assigned to the IAF by the IDF's General Headquarters); (6) imposing an aerial embargo on Lebanon; (7) supporting IDF ground operations; and (8) to a degree, supporting Israeli maritime operations.¹³ The commissioners further noted that the IAF's greatest strengths in fulfilling its missions across this spectrum of taskings were its “competence, readiness, and flexibility.”¹⁴ Finally, they congratulated the IAF on its “very impressive achievements” emanating from careful planning and skilled execution, most notably its largely successful operation against Hezbollah's medium- and long-range rockets and its TST responses against rocket launchers often minutes (and sometimes even seconds)

¹²On this important point, retired IDF Brigadier General Shimon Naveh, who in other contexts had little good to say about the IAF and its leadership, was unabashed in his criticism of this redirected ground-force focus and its consequences: “Basically, I think that the IDF was totally unprepared for this kind of operation [against Hezbollah], both conceptually, operationally, and tactically. . . . The IDF fell in love with what it was doing with the Palestinians. In fact, it became addictive. When you fight a war against a rival who's by all means inferior to you, you may lose a guy here or there, but you're in total control. It's nice. You can pretend that you fight the war and yet it's not really a dangerous war. This kind of thing served as an instrument corrupting the IDF.” (Matthews, “Interview with BG (Ret.) Shimon Naveh.”)

¹³*Final Winograd Report*, Chapter 9, “Arms, Combat Support Units, and Special Operations,” The Air Force, General, paragraph 16.

¹⁴*Final Winograd Report*, Chapter 9, “Arms, Combat Support Units, and Special Operations,” The Air Force, Facts, paragraph 18.

after they had fired their weapons. Insofar as Israel's air power may arguably have let the nation and its people down, the commissioners faulted not the IAF itself, but rather the "baseless hope" of the Olmert government and General Halutz that the IAF's admittedly impressive capabilities could, by themselves, "prove decisive in this war."¹⁵

The Winograd Commission also determined that the IAF's and AMAN's intelligence efforts were "successful in several very important spheres."¹⁶ For example, the commissioners concluded, it was an honest recognition of the limitations of intelligence that had been "one of the important reasons . . . for the assessment [that] aerial strike would not, by itself, be able to create decisive and equation-changing results . . . and would not be able to halt or significantly reduce a massive attack by surface-to-surface rockets on the Israeli home front."¹⁷ They likewise concluded that intelligence breakthroughs that had long preceded the July 12 abduction incident had "enabled the decisions made at the onset of the war and the air force's success in attacking Hizballah's system-wide targets."¹⁸ Thanks to those breakthroughs, they added, the success of Operation *Mishkal Sguli* was "unprecedented in the whole world."¹⁹ Noting the exceptional difficulty of finding and hitting mobile targets in a timely manner, as the U.S. Air Force had discovered 15 years before in the course of its failed Scud hunt during Operation Desert Storm, they determined that "important deterrent

¹⁵ Robert Wall, "Harsh Reality," *Aviation Week and Space Technology*, February 4, 2008, p. 23.

¹⁶ *Final Winograd Report*, Chapter 6, "Military Intelligence in the War," General, paragraph 6.

¹⁷ *Final Winograd Report*, Chapter 6, "Military Intelligence in the War," Part One: Intelligence Preparations from 2000 Until the Outbreak of the War, Collection Coverage, paragraph 6.

¹⁸ *Final Winograd Report*, Chapter 6, "Military Intelligence in the War," Part Two: Intelligence During the War, Intelligence at the Outbreak of the War, paragraphs 27–28.

¹⁹ *Final Winograd Report*, Chapter 9, "Arms, Combat Support Units, and Special Operations," The Air Force, Facts, paragraph 21.

elements were strengthened as a result of major operations, mainly by the air force.”²⁰

The commission's final report made a clear distinction between AMAN's support to air operations and ground operations, noting that actionable intelligence provided to the IAF generally met combat requirements, whereas “the situation regarding the ground forces was characterized by gaps and deficiencies.”²¹ On the plus side, the report cited an “intimate, continuous dialogue between intelligence sources at Northern Command and the General Staff and their colleagues in the [IDF's] operations branch and at air force headquarters,” which “derived from a long-standing tradition as well as from outright mutual dependence.”²² A key unmet challenge for both AMAN and the IAF's Intelligence Directorate, it added by way of a downside finding, is to work harder toward converting *all* threat-related knowledge into actionable intelligence for targeting.

The commissioners also found that the IAF had played “a critical role in providing supplies to the [IDF's ground] combat forces and in evacuating casualties.” In this regard, they noted that Northern Command's ground forces were supposed to open logistical routes into southern Lebanon and that the IAF had not been expected to conduct supply and evacuation operations so close to the Lebanese border. Expanding on this point, the commissioners determined that friction in the day-to-day relationship between Northern Command and IDF General Headquarters in Tel Aviv “contributed to weaknesses in the IDF's performance during the war” and “forced [the IAF] to supply the [ground] forces at great risk.”²³

²⁰ *Final Winograd Report*, Chapter 11, “Summary and Conclusions on the IDF,” General.

²¹ *Final Winograd Report*, Chapter 6, “Military Intelligence in the War,” Part One: Intelligence Preparations from 2000 Until the Outbreak of the War, Collection Coverage, paragraph 20.

²² *Final Winograd Report*, Chapter 6, “Military Intelligence in the War,” Part One: Intelligence Preparations from 2000 Until the Outbreak of the War, Collection Coverage, paragraph 21.

²³ *Final Winograd Report*, Chapter 11, “Summary and Conclusions on the IDF,” The IDF's Management of the War, paragraph 69.

The commissioners did not dwell on the hot-button issues of non-combatant casualties and the damage done to Lebanon's civilian infrastructure by the IDF's standoff attacks, noting simply that, from the first moments of the campaign onward, the IAF had made commendable efforts to avoid causing civilian fatalities. Concerning the use of cluster munitions, they commented in an appendix to the final report that in the course of their investigation, they "did not hear any allegations about civilians being hit by cluster bombs." They further noted an IDF ruling that General Halutz had to personally approve any CBU use and that he had issued a blanket order banning any employment of CBUs in built-up areas. The only significant problems with CBU use, the commissioners reported, was with respect to "fragmentation munitions in the artillery corps, since the cluster bombs employed by the [IAF] met all the requirements."²⁴ The commissioners added that the IDF's Military Advocate General had determined that "the use of fragmentation munitions during the second Lebanon war was carried out in a manner commensurate with the rules of warfare in international law" and occurred only against valid targets after a "concrete military need" had arisen to stem the rate of incoming Katyusha fire. They further reported that CBUs were used only in circumstances "in which the military commander believed that the damage that could be caused to civilians and to civilian property . . . [was] not excessive when weighed against the military advantage [of using such weapons] . . . in a manner commensurate with the principle of proportionality."²⁵

To be sure, the commission's complimentary words for the IAF were not without qualification. For example, its final report noted that even though the service had displayed "exceptional" performance owing to its superior quality, it does not offer a silver-bullet answer to all conceivable contingency requirements. More to the point, the report observed that the IAF "should not be regarded as a 'miracle solution' for every wartime need" and that "one should be particularly

²⁴ *Final Winograd Report*, "Appendix: The Use of Cluster Bombs in the Second Lebanon War," Findings, paragraphs 5–7.

²⁵ *Final Winograd Report*, "Appendix: The Use of Cluster Bombs in the Second Lebanon War," Analysis, paragraph 10.

wary of entertaining excessive expectations with respect to its [standoff capabilities] in a confrontation with a well-prepared guerrilla enemy such as Hezbollah.”²⁶ It added that the IAF must “operate optimally, [not only] with a full and realistic awareness of its many abilities, but [also] with an acknowledgment of its limitations, among other things due to poor strategic thinking.”²⁷ The latter point was an allusion to the widely acknowledged tendency of Israeli airmen, as a rule, to think in narrow target-servicing terms rather than with a broader strategic vision.

Expanding on this theme, the commissioners suggested that, “due to its centrality” and to the often determining impact of its mode of operations on the larger IDF and on the nation, the IAF leadership had an obligation “to engage in thinking that goes beyond the execution of its mission and [in a manner conducive to playing] a key role in shaping the campaign as a whole.”²⁸ Citing a case in point, the final report noted that although the IAF’s leaders had been clear from the campaign’s very start that the short-range rocket threat presented by Hezbollah was an impossible mission for Israeli air power, the fact remains that the IAF did not succeed in limiting Katyusha damage to Israel’s home front. That fact, the commissioners suggested, warranted “greater General Staff and air force focus, both before and during the war, to find alternative ways to deal with the problem”—perhaps starting with assigning a higher priority to the mission despite its manifold and admitted difficulties.²⁹

The commissioners also spotlighted a number of areas in which the IAF could improve its exploitation of its allotted command authority and its coordination with the ground forces. On the first count,

²⁶ *Final Winograd Report*, Chapter 9, “Arms, Combat Support Units, and Special Operations,” The Air Force, Lessons, paragraph 26.

²⁷ *Final Winograd Report*, Chapter 9, “Arms, Combat Support Units, and Special Operations,” The Air Force, General, paragraphs 8–10.

²⁸ *Final Winograd Report*, Chapter 9, “Arms, Combat Support Units, and Special Operations,” The Air Force, Lessons, paragraphs 27–28.

²⁹ *Final Winograd Report*, Chapter 9, “Arms, Combat Support Units, and Special Operations,” The Air Force, Lessons, paragraph 30.

their final report noted that one such area in need of examination and improvement entailed the integration of the air contribution to “the entire framework of operational plans for a certain front.” The report acknowledged that the allocation of responsibilities by the IDF for Operation Change of Direction had, at least on paper, cast the IAF’s commander not only as the component commander of all aerial assets (including surface-to-air defenses and subordinated SOF units), but also “as commander of a battle front or an operations theater”—namely, the deep theater north of the Litani River. It also acknowledged, however, that some in the IDF had harbored doubts about the IAF’s ability to perform effectively in the latter capacity in actual practice and that in the 2006 war, given the dominant role of the Chief of Staff as the *de facto* joint-force commander, it was clear that “the [deep] battle and battle front were neither managed exclusively by the air force, nor was it expected to manage them.”³⁰ Commenting on this inconsistency, the commissioners observed that the IDF’s new doctrine, promulgated in early 2006, had granted the IAF the opportunity in principle to be the supported command of a major sector in a theater of operations but that if this were to be the standard practice henceforth, the allocation of expanded authority would need to be “reexamined,” provided with express “regulations,” and formalized in joint doctrine in language that all can readily understand.³¹

On the second count, the commissioners noted several negative aspects of the IAF’s on-call CAS delivery, most of which emanated from an absence of adequate preplanning and prior peacetime joint air-ground training. The commissioners found “significant deficiencies” in peacetime IAF training for cross-service integration. In particular, they concluded, operations plans must include “patterns of integration among the forces, such as the ways in which the air force will be incorporated into the ground forces’ operations. This integration must be

³⁰ *Final Winograd Report*, Chapter 9, “Arms, Combat Support Units, and Special Operations,” The Air Force, General, paragraphs 10, 13–14.

³¹ *Final Winograd Report*, Chapter 9, “Arms, Combat Support Units, and Special Operations,” The Air Force, Lessons, paragraph 29.

assimilated [and] be based on an ongoing discourse, as well as on regular [peacetime joint-force training exercises].”³²

In conclusion, the Winograd Commission’s final report declared categorically that the flaws in the IDF’s combat performance were “mainly in the ground forces and in the integration among the forces.”³³ Not surprisingly, the IAF leadership was deeply relieved by this summary judgment. In commenting on it not long afterward, the IAF Commander, General Shkedy, noted that a state commission expressly constituted to find fault had given the IAF not just a passing grade but unambiguous praise. He further remarked that the IAF’s combat performance throughout Operation Change of Direction was one in which all Israeli airmen were entitled to feel justifiable pride.³⁴

On the Olmert Government’s Errors in Strategy

Far more fundamental than any assessed shortcomings in the IDF’s performance, in the view of the commissioners, was the inappropriateness of the overarching strategy pursued by the Olmert government in responding to the abduction incident of July 12. The Winograd Commission granted that Hezbollah’s provocation was rightly regarded by the government as an act of unprovoked aggression, as well as a calculated attempt by Nasrallah to push Israel into a two-front confrontation (the other already existed in Gaza) aimed at producing an asymmetrical exchange of prisoners. It further granted that this challenge was unacceptable and the government’s chosen response was understandably aimed at radically redefining the context of Israel’s relationship with Hezbollah. All of that notwithstanding, however, the commissioners felt compelled to maintain as their principal judgment

³² *Final Winograd Report*, Chapter 12, “Recommendations for the IDF,” General Recommendations.

³³ *Final Winograd Report*, Chapter 11, “Summary and Conclusions on the IDF,” General.

³⁴ Interview with General Shkedy, IAF Headquarters, Ha’kiryat, Tel Aviv, March 27, 2008.

regarding the matter that even an optimistic assessment would have to conclude “that the military operation did not yield a clear victory.”³⁵

The IDF leadership's decision to respond to Hezbollah's provocation with an escalated campaign of standoff attacks, in the view of the commissioners, reflected a growing belief in IDF circles that, just as the United States had experienced in a succession of military conflicts since Desert Storm, the IDF's hoped-for objectives could be achieved coercively by directly targeting Hezbollah's leadership and core support infrastructure using precision munitions, with any IDF ground involvement largely limited to SOF actions aimed at finding, identifying, and designating high-value targets. That belief, they further noted, emanated from a new force employment doctrine that the IDF had adopted and promulgated earlier in 2006. The commissioners observed that the assessed need for such a new CONOPS had been driven by the IDF's leadership's acknowledgment of “the quantum leap [that had occurred over the preceding decade and a half] in the development and implementation of a variety of technological means and weapons, especially—but not only—from the air, which have the ability to identify distant targets and hit them with great precision.”³⁶

In effect, this new approach, which had been developed not by the IAF but by the Doctrine Branch of the IDF's Operations Directorate in the years that followed Israel's withdrawal from Lebanon in 2000, was grounded on the premise that the country would rely on its superior and proven air capability as the foundation on which to build an asymmetrical advantage against its regional adversaries. In this construct, as explained by one informed observer, the IAF “would become the predominant offensive element . . . that would operate against the terrorists or guerrillas wherever they were located. . . .” The new approach called for a combination of UAVs to provide persistent ISR, strike fighters armed with precision munitions to apply kinetic effects, a robust command-and-control system to enable successful TST operations, and helicopters to conduct both aerial attack and mobility opera-

³⁵ *Final Winograd Report*, Chapter 11, “Summary and Conclusions on the IDF,” General.

³⁶ *Final Winograd Report*, Chapter 7, “Operational Concept, Plans, and Preparedness on the Eve of the War,” General, paragraph 10.

tions. In it, “ground forces would be expected to operate in defense of Israel’s borders, but offensively would only be used in small, rapid operations in enemy territory to handle groups of the enemy who could not easily be dealt with from the air or where the aim was to capture individuals or equipment.”³⁷

Reduced to basics, the new doctrine held that air-centric joint combat operations by the IDF would, as a rule, rely on carefully tasked and focused SOF teams rather than on large formations of conventional ground troops. As an RAF commentator on Israel’s war against Hezbollah rightly noted, the underlying idea was that Israeli air dominance “would produce battle-winning results, and it was politically acceptable because it meant that known weaknesses in the IDF ground forces could be ignored.”³⁸ The new doctrine also embraced the now well-established Israeli preference for leveraging technology as a way of avoiding friendly casualties in land warfare, particularly in urban combat situations.

With respect to this new warfighting concept, the Winograd Commission noted that the main thrust of the IDF’s previous approach had been “to concentrate a large ground force, with support from the air force, to transport the war quickly into enemy territory and to attain a quick decision of the battle by capturing enemy territory and defeating the [enemy] army.”³⁹ The new doctrine, the commissioners pointed out, entailed shifting the role of precision standoff attacks (first and foremost those conducted by the IAF) “from being a supportive element to serve as a central component” in achieving desired combat outcomes.

³⁷ Parton, “Israel’s 2006 Campaign in the Lebanon: A Failure of Air Power or a Failure of Doctrine?” p. 82.

³⁸ Parton, “Israel’s 2006 Campaign in the Lebanon.” For an early public articulation of this doctrine by a knowledgeable former IAF fighter pilot while it was still crystallizing within the IDF’s classified doctrine development process, see Colonel Shmuel Gordon, IAF (Res.), *The Vulture and the Snake: Counter-Guerrilla Air Warfare—the War in Southern Lebanon*, Mideast Security and Policy Studies No. 39, Ramat Gan, Israel: Begin-Sadat Center for Strategic Studies, Bar-Ilan University, July 1998. (The “vulture” referred to in the title is a metaphorical allusion to Israel’s air power, with the “snake” being Hezbollah and its combatants.)

³⁹ *Final Winograd Report*, Chapter 7, “Operational Concept, Plans, and Preparedness on the Eve of the War,” General, paragraph 9.

It spotlighted “the aerial medium and its superiority as a central element” enabling more effective exploitation of “maneuver, collection, destruction, and control capabilities” for both deep and close combat while minimizing friction caused by asymmetrical enemy capabilities. It also envisaged a reduced need for such operations as “deep, large-scale ground maneuver” and a “massive takeover of enemy territory.” In all, the IDF’s new doctrine reflected a clear “preference for the use of direct precision-guided ground and air fire . . . and the avoidance of a large-scale ground operation.”⁴⁰ The commissioners added that these revolutionary departures could be traced back to the early 1990s following the successful example of the air component’s pivotal contribution to the course and outcome of Operation Desert Storm and that in the ensuing years, the IDF had “been in a process of systematically consolidating, adopting, and assimilating a new operational concept” aimed at allowing it to make the most of its “new circumstances.”⁴¹

The IDF’s new doctrine, moreover, included not only a changed CONOPS, but also a new approach to military organization and a “modern, innovative vocabulary.” In the previous IDF practice, the commission noted, the commander of Northern Command, for example, would typically have responsibility for an area of operations of a “strategic depth that was far beyond its capabilities as a regional command.” To correct this assessed problem, the new command arrangements introduced by General Halutz in 2006 granted operational and tactical control of assets to those entities that had the best situation awareness in a given area and the greatest capacity to conduct effective force employment, as was assigned to the IAF for operations north of the “yellow line” during the second Lebanon war.

In the assessment of the commissioners, however, those new organizational arrangements “were incomplete; they had not been practiced

⁴⁰ *Final Winograd Report*, Chapter 7, “Operational Concept, Plans, and Preparedness on the Eve of the War,” Essential Elements, paragraphs 23, 25.

⁴¹ *Final Winograd Report*, Chapter 7, “Operational Concept, Plans, and Preparedness on the Eve of the War,” General, paragraph 11.

and . . . assimilated.”⁴² Another problem with the new doctrine was that “unclear language interfered with the application of simple principles of common sense.”⁴³ Most egregiously, however, in the harsh judgment of the commissioners, the government’s most senior civilian and military leaders, in launching into their high-intensity standoff campaign in response to Hezbollah’s provocation, failed completely to understand and internalize the fact that they had signed up, in effect, for a full-fledged war, not just a retaliatory operation. They also failed to appreciate sufficiently that Hezbollah was a tough and worthy opponent, with an annual cash flow of at least \$250 million and a combat capability more typical of a conventional army than of a guerrilla force, including fixed training bases, well-trained artillerymen, rocket-launching facilities, and the use of advanced communications. Given the high likelihood that such a well-endowed and determined opponent would be unsusceptible to coercive measures short of an all-out annihilation campaign, the commissioners added, the expectation by “some” members of the IDF’s leadership that the nation’s precision standoff capability could decide the outcome of the war without a major supporting ground action was “wrong.”⁴⁴ More to the point, wrote the commissioners, there was an insufficient appreciation by the IDF leadership of the inherent limitations of precision standoff attacks against dispersed irregular forces. Judge Winograd and his associates noted that among the avowed goals of the IDF’s offensive were to decapitate Hezbollah’s top leadership, cut off southern Lebanon from the influx of arms and

⁴² *Final Winograd Report*, Chapter 7, “Operational Concept, Plans, and Preparedness on the Eve of the War,” Main Principles of the Operational Concept, General, paragraphs 13, 17, and 18.

⁴³ *Final Winograd Report*, Chapter 7, “Operational Concept, Plans, and Preparedness on the Eve of the War,” Language of the Operational Concept, paragraph 26.

⁴⁴ *Final Winograd Report*, Chapter 9, “Arms, Combat Support Units, and Special Operations,” The Air Force, Lessons, paragraphs 27–28. With respect to Hezbollah’s ideologically rooted imperviousness to Israeli standoff attacks, a Hezbollah team leader in his early 40s who was fluent in English told a Western reporter that the main source of the organization’s strength “is the matter that we are not afraid of death. It is the center of the training of the fighter, to make him unafraid of death, so you prefer to die rather than live humiliated.” (Thanassis Cambanis, “Devotion and Discipline Fuel Hezbollah’s Fight,” *Boston Globe*, August 1, 2006.)

materiel from Syria and Iran, and obstruct critical routes by which the abducted soldiers might be transferred from Lebanon to Syria or Iran. For these challenges, the commissioners concluded, standoff attacks proved to be necessary but not sufficient.

To be sure, the commissioners did not limit their attention solely to the government's excess of faith in the coercive potential of standoff operations, a faith that did not emanate from any particular tenets of Israel's air doctrine and theory but rather more fundamentally from a simple misplaced hope on General Halutz's part that such operations alone would produce the desired effect on Hezbollah's behavior. They also found numerous failings in the way in which the IDF approached its *ground* operations as the campaign neared its endgame. To begin with, the commissioners noted, the IDF went to war with a CONOPS on paper that had never been validated by actual joint-force training and that lacked a "full and validated operative plan" on the eve of the ground offensive. As a result, they remarked, "every division individually chose the plan according to which it would prepare."⁴⁵

The commissioners further found "discernible weakness in adherence to the mission" among some of the more senior ground commanders. Even though individual IDF combatants frequently fought with great valor, they reported, their commanders would tend to halt operations as soon as a rise in casualties occurred. The commissioners also cited as consequences of poor strategy application such indicators as "unclear goals, frequent changes, and the absence of field intelligence." In their assessment, IDF ground commanders repeatedly failed to insist that their forces meet agreed timetables. As a result, their combat activities often did not entail "progress . . . toward conquest and the delivery of a serious blow to the enemy," but rather all too often isolated and unconnected raids that were "very limited in time and range" and for which "guidelines included limiting them to night-only operations and other restrictions." Not surprisingly, added the commissioners, subordinate unit commanders and their troops "did not

⁴⁵ *Final Winograd Report*, Chapter 11, "Summary and Conclusions on the IDF," Operative Plans, paragraph 52.

always understand why it was crucial for them to place their lives in jeopardy.”⁴⁶

To make matters worse, thanks to the IDF's improved reach-back capability and the potential, through better communications and a resultant real-time common operating picture, to enable command from a distance, many ground commanders directed their units from behind the lines inside Israeli territory, not even close to the Lebanese border but rather from command centers in the rear. Although modern communications and desktop plasma displays may provide today's ground commanders a better awareness picture than they would enjoy if they were forward-deployed with their troops, said the commissioners, that same wherewithal often prevented them from fulfilling their more classic responsibility to serve as role models and to heighten morale among their soldiers by fighting alongside them. In all, declared the commissioners, the IDF must remain relentlessly focused on winning as the overarching goal of any campaign. In their most hard-hitting summary judgment of the government's flawed strategy going into the 34-day campaign, they added: “If it is known in advance that there is neither the willingness nor an option for achieving such a victory, it is advisable to avoid launching a war *a priori* or even engaging in moves that might deteriorate into war.”⁴⁷

On Assessed Leadership Failings

The Winograd Commission reserved its harshest conclusions for those in the government's most senior civilian and military leadership, from Prime Minister Olmert on down, who, by having authorized and sustained combat operations guided by an inappropriate strategy and by deficient concepts of operations, arguably failed to fulfill their responsibilities of stewardship over the nation's security. In this regard, in placing principal accountability for the campaign's unmet goals on

⁴⁶ *Final Winograd Report*, Chapter 11, “Summary and Conclusions on the IDF,” Adherence to the Mission and Striving for Victory, paragraphs 27, 29.

⁴⁷ *Final Winograd Report*, Chapter 12, “Recommendations for the IDF,” Introduction.

the prime minister, the minister of defense, and the uniformed chief of staff, the commissioners cited “very serious failings” in the decisions arrived at and in the manner in which they were made by all three. For example, their interim report charged that “the decision to respond with an immediate, intensive military strike was not based on a detailed, comprehensive and authorized military plan, based on careful study of the complex characteristics of the Lebanon arena.” It added that “some of the declared goals of the war were not clear and could not be achieved, and in part were not achievable by the authorized modes of military action.”⁴⁸ The commission’s final report went further yet in its stern finding that Prime Minister Olmert made “mistaken and hasty judgments and did not manage events, but [rather] was dragged along” by ill-advised options proposed by General Halutz.

Noting that Operation Change of Direction was, in every respect, an optional war, the commissioners observed in addition that the alternatives of reacting “below the threshold of escalation” or initiating a more dramatic move that could degenerate into war were entirely Israel’s and that the government “decided, on its own initiative, to launch a move whose purpose entailed dealing Hezbollah a significant blow and a change in the rules of the game on the Lebanese front.” Yet at the same time, the commissioners reported, Prime Minister Olmert and Minister of Defense Amir Peretz “were not presented [by General Halutz] with the limitations of the [available] intelligence information regarding Hizballah targets.”⁴⁹ Although operational-level leaders within the IDF had the big picture and clearly understood the limitations of standoff fires unbacked by supporting ground action, they added, “with the political-strategic echelons, the picture was different. There was a sharp transition from the close, detailed acquaintance of the former leadership [of Prime Minister Ariel Sharon] with the topic

⁴⁸ “Winograd Commission Submits Interim Report,” Tel Aviv: Ministry of Foreign Affairs, media release, April 30, 2007.

⁴⁹ *Final Winograd Report*, Chapter 6, “Military Intelligence in the War,” Part Two: Intelligence During the War, Intelligence at the Outbreak of the War, paragraphs 27–28.

to a loose acquaintance [on the Olmert government's part] that was not comprehensively filled in until the outbreak of the war."⁵⁰

The commissioners faulted General Halutz, in particular, for having allowed a disjuncture to develop between the IDF's actual capabilities and the civilian leadership's understanding of those capabilities, as well as false confidence among the government's civilian principals in the outcome-producing potential of Israel's precision standoff attack capability. They further charged that the IDF General Staff "did not, in effect, have a full and updated operative plan for war on the Lebanese front and that the absence of such a plan "not only severely encumbered the ability to advance quickly . . . but also limited effective readiness on other levels."⁵¹ In addition, they concluded that in the immediate aftermath of the abduction incident, General Halutz "responded impulsively," failed to alert the political leadership to the actual complexity of the situation, did not warn the leadership of "serious shortcomings in the . . . fitness of the armed forces for an extensive ground operation," and "did not present information, assessments, and plans that were available in the IDF" and that "would have enabled a better response to the challenges [at hand]." They added that any such assessment would all but surely have concluded that the IDF's ability to achieve significant military gains "was limited" and that any Israeli

⁵⁰ *Final Winograd Report*, Chapter 6, "Military Intelligence in the War," Part One: Intelligence Preparations from 2000 Until the Outbreak of the War, Collection Coverage, paragraph 26. Interestingly, had Sharon (who suffered a severe stroke and lapsed into a vegetative coma the previous January 4) been in position as prime minister in lieu of his far less militarily literate successor Olmert, Operation Change of Direction would almost surely have unfolded differently, and Halutz would very likely have retired three years later after a full and successful final career assignment as IDF Chief of Staff because he would have had his sponsor and mentor Sharon close at hand to dissuade him from pursuing any ill-considered course of action. As a well-informed Israeli account of the second Lebanon war observed in this respect: "Around the time of Halutz's appointment, Sharon was asked whether he was convinced that the air force commander was suited for the job. The prime minister replied positively. . . . [He] believed that he and defense minister [and former Chief of Staff army Lieutenant General (Ret.) Shaul] Mofaz would remain on the scene to restrain the Chief of Staff if matters started getting out of control. When Halutz's moment of truth arrived, Sharon and Mofaz were gone. . . ." (Har'el and Isaacharoff, *34 Days*, p. 66.)

⁵¹ *Final Winograd Report*, Chapter 7, "Operational Concept, Plans, and Preparedness on the Eve of the War," Operative Plans, paragraphs 33, 35.

military action would “inevitably lead to missiles [being] fired at the Israeli civilian north.”

The commissioners also noted that there was no alternative option for responding effectively to such rocket attacks other “than an extended and prolonged ground operation to capture the areas from which the missiles were fired,” a move that they admitted would have been costly and that lacked popular support. Yet they charged that these difficulties “were not explicitly raised with the political leaders before the decision to strike was taken.” As a result, they concluded, in deciding to go to war in the manner that it did, “the government did not consider the whole range of options, including that of continuing the policy of containment, or combining political and diplomatic moves with military strikes below the escalation level, or military preparations without immediate military action.”⁵² In this regard, the commissioners went out of their way to note that some IDF leaders recognized early on that the standoff-only option chosen by General Halutz would not work and that such skepticism was aired both in internal IDF deliberations and with the defense minister. “Nevertheless,” reported the commissioners, “these senior officers did not demand that the issue be brought up for an orderly discussion.” Regarding that failure, the commissioners added: “We take a grave view of this phenomenon. It harmed the contribution of the Supreme Command and reflected an unacceptable organizational culture.”⁵³

With respect to another flawed leadership decision that they attributed to General Halutz, the commissioners noted that “the fact that the Supreme Command Post [at IDF General Headquarters] was not activated in an orderly . . . fashion was a failure . . . [that] caused operational and command problems that could have been easily avoided.” That alleged failure, they added, telegraphed a message to subordinate commands that the General Headquarters was not “really” at war and was content to improvise from its normal working spaces

⁵² “Winograd Commission Submits Interim Report,” Tel Aviv, Israel: Ministry of Foreign Affairs, media release, April 30, 2007.

⁵³ *Final Winograd Report*, Chapter 11, “Summary and Conclusions on the IDF,” The IDF’s Management of the War, paragraph 68.

in the IDF's compound in Tel Aviv. Amplifying on the "operational and command problems" alluded to above, the commissioners noted, by way of example, that activities that should have been under the exclusive jurisdiction of Northern Command "underwent approval [instead] by the General Staff Command." In addition, they reported, "the [exclusion] of some of the regular participants from the [higher] thinking and decisionmaking process . . . severely impaired Northern Command's understanding of the Chief of Staff's intention and its transmission in the correct spirit to subordinate commands."⁵⁴ The commissioners referred in addition to "the lack of trust between the General Staff Command and Northern Command," which eventually reached "high levels," "weakened the functioning of the commander of Northern Command, and led to enhanced involvement on the part of the General Staff Command in Northern Command's area of responsibility." Ultimately, it occasioned Halutz's eleventh-hour dispatch of his principal deputy, IDF Major General Moshe Kaplinsky, to serve as his personal "representative" to Northern Command. The effect of that latter move on the subsequent course and outcome of the war, said the commissioners, was "neither good nor bad," but they found the circumstances that had prompted a perceived need for such a step on Halutz's part to have been "grave."⁵⁵

In the end, charged the commissioners, "Israel went to war without being ready to pay the price demanded by war." In their most sweeping indictment of all involved in the campaign's planning and execution, they declared that the IDF "did not manage the war properly, did not give sufficient weight to the continual attack on civilians which was made possible because of the way in which the war was conducted, did not exhaust the forces that were put at its disposal, took action to limit the number of casualties . . . in ways that sometimes affected their assignments and the pursuit of victory, and continued not to exhaust military options up until the last stage of Change of

⁵⁴ *Final Winograd Report*, Chapter 11, "Summary and Conclusions on the IDF," The IDF's Management of the War, paragraphs 62, 65–66.

⁵⁵ *Final Winograd Report*, Chapter 11, "Summary and Conclusions on the IDF," Organizational Culture, paragraph 81.

Direction.” Thanks to those assessed failings and oversights, the commissioners concluded, the war’s outcome “was not in favor of the IDF, even on [style] points.” For example, they observed, the continual rain of Katyusha fire into northern Israel throughout the campaign ended only when the ceasefire went into effect, not as a result of any IDF action.

The commissioners went on to acknowledge that Israel’s “enemies from the outside, as well as some of its critics from within, [had] described the war as an Israeli defeat.” They stressed that they themselves did *not* concur with that characterization, owing in large measure to the “quality [of] intelligence and [to] professional and accurate air force operations.” At the same time, they frankly declared that “when the strongest army in the Middle East goes out to fight against Hezbollah and does not reach a conclusive victory over it, this has far-reaching negative implications [for] Israel’s status. This is a result that Israel should have avoided,” they concluded, by either having conducted just a “sharp yet short reaction” that would not have resulted in a “prolonged real war” or else, in effect, having gone all the way from the very start with a combined-arms strategy that would have ensured an IDF victory despite the predictably high price.⁵⁶

⁵⁶ *Final Winograd Report*, Chapter 11, “Summary and Conclusions on the IDF,” General.

A Second Chance in Gaza

If there ever was an instance of lessons indicated by a disappointing combat performance becoming truly lessons learned and assimilated by a defense establishment in preparation for its next challenge, the IDF's response to its experience during the second Lebanon war offered a classic illustration of institutional adaptability and self-improvement. As the director of the IDF's Dado Center for Interdisciplinary Military Studies recounted in an after-action reflection on the implications of Israel's response to Hezbollah's provocation of July 12, 2006, the conclusions internalized by the IDF as a result of the errors in planning and readiness that occasioned that war's inconclusive outcome included a broadly understood need for

- significant increases in regular and reserve ground-force training
- a renewed emphasis on high- as well as low-intensity warfare contingencies in IDF planning, training, and force development
- a sharper focus by AMAN on producing actionable target information
- a need to update the IDF's overall CONOPS
- a need to improve the content of professional military education for commanders and other senior officers
- greater stress on jointness in force development, systems acquisition, and training.¹

¹ Brun, "The Second Lebanon War as a 'Wake-Up Call.'"

For their part, the IAF's leaders reached a similar set of more service-specific conclusions gleaned from their own rocky experience at working with Israel's ground forces during the second Lebanon war. Those conclusions included a need for

- far deeper and more intimate mutual acquaintance and understanding between Israel's air and land warfare communities
- joint planning of IDF ground schemes of maneuver that routinely include IAF participation from the very start
- renewed joint large-force training at the IDF's National Training Center
- stronger IAF representation at the IDF's division and brigade levels
- decentralized control of attack helicopter operations in joint air-land warfare.²

The IDF's revealed shortcomings in readiness for meeting the new demands of hybrid warfare against a rocket-wielding nonstate opponent were first showcased during Israel's 34-day counteroffensive against Hezbollah. This rude awakening clearly energized both the IAF and Israel's ground forces, which together lost little time thereafter in implementing a new approach to combat that would address these insufficiencies and better prepare them for the next test.

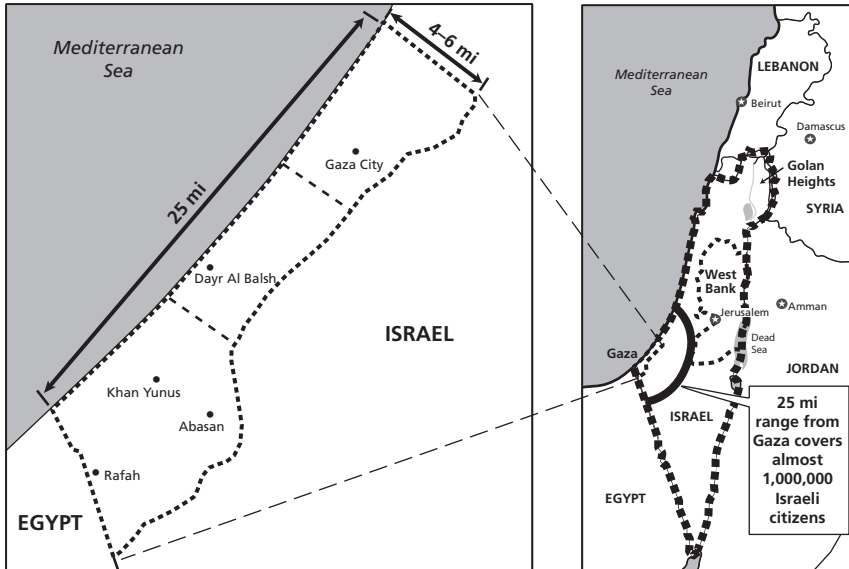
At the same time, the leaderships of the two services were quick to identify the radical Islamist terrorist organization Hamas as the next likely provocateur that would require, sooner or later, a substantial response by the IDF.³ That hard-core sect of radical Palestinians who ruled the Gaza Strip as a de facto enemy enclave within Israel's ter-

²Interview with Brigadier General Ya'akov Shaharabani, head of the IAF Helicopter Division, IAF Headquarters, Ha'kirya, Tel Aviv, March 31, 2009.

³"Hamas" is a contraction of the Arabic-language *Harakat Al Muqawama Al Islamia* ("Islamic Resistance Movement"). A well-researched sociocultural treatment of the organization prompted by Hamas's victory in the January 2006 Palestinian elections and written after the IDF's counteroffensive against it in 2008–2009 is offered in Asher Susser, *The Rise of Hamas and the Crisis of Secularism in the Arab World*, Waltham, Mass.: Brandeis University, Crown Center for Middle East Studies, February 2010.

ritorial borders had repeatedly fired short-range rockets into southern Israel's population centers in a continuing display of defiant hostility ever since the Sharon government voluntarily withdrew both its forces and all civilian Israeli inhabitants from Gaza in 2005. (Figure 6.1 shows the location of the Gaza Strip and the extent of coverage of Hamas's longest-range Grad rocket fire into southern Israel. Figure 6.2 depicts in greater detail the coverage of Hamas's shorter-range Qassams and Katyushas as well as its longer-range Grads.) After the organization's violent takeover of Gaza two years later, and no doubt emboldened by the example set by Hezbollah the preceding summer, Hamas ramped up its provocations along Gaza's border with southern Israel even further by firing more than 7,200 rockets and mortar rounds into southern Israel over the next two years. Most of those landed without causing any actual physical destructive effects. Yet they registered a

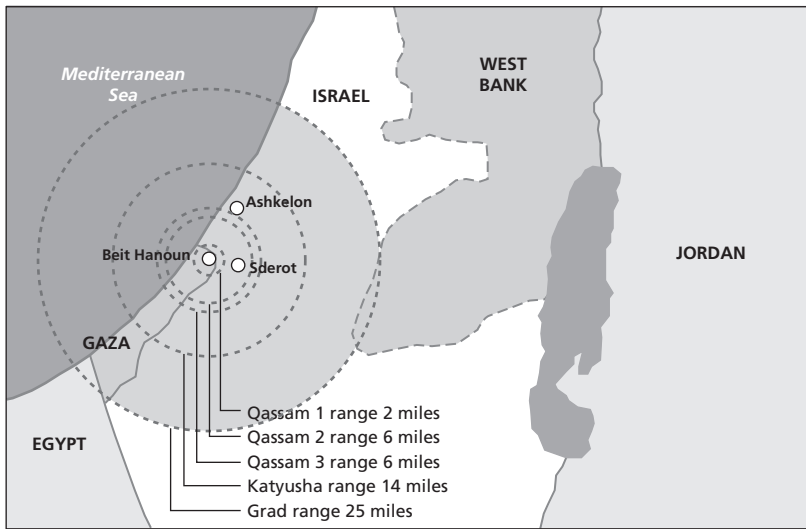
Figure 6.1
Gaza Strip and Maximum Reach of Hamas Rocket Fire



SOURCE: IAF.

RAND MG835-6.1

Figure 6.2
Hamas Rocket Coverage of Southern Israel



RAND MG835-6.2

considerable terrorizing effect on the targeted Israeli populace and were launched by Hamas against innocent civilians with brazen impunity.⁴ Finally, in December 2008, the Olmert government decided that it had had enough of that occasionally lethal daily harassment and elected to proceed with a determined effort to put a stop to it once and for all. By that time, both the IAF and the IDF's ground forces were ready with a new combat repertoire that had been carefully honed and validated through repeated joint planning efforts and large-force training exercises over the preceding two years.

Getting Ready for the Next Round

In the wake of the ceasefire that ended Israel's war against Hezbollah in 2006, the IDF's leaders moved out smartly to assess and correct the deficiencies in joint-force readiness that had come to be widely

⁴"Rocket Statistics," Tel Aviv: Israel Defense Force Spokesperson Report, January 3, 2009.

recognized as figuring centrally in accounting for the war's less than decisive outcome. Before resigning as Chief of Staff on the heels of the Winograd Commission's interim findings, General Halutz oversaw a broad-ranging and brutally honest exercise by all three Israeli services aimed at identifying the main shortcomings in need of attention that lay at the root of the IDF's flawed performance in Operation Change of Direction. The systematic application of the resultant lessons learned by the IDF continued as its key leaders were gradually replaced over time. Olmert remained on as Israel's prime minister. However, upon the departure of Amir Peretz and General Halutz in the early aftermath of the second Lebanon war, Ehud Barak became the new Minister of Defense and Lieutenant General Gabi Ashkenazi of the IDF's ground forces was appointed Halutz's successor as Chief of Staff.

For his part, General Shkedy was among the first to concede that the IAF's fighters had not performed as well as they might have in the CAS role during the second Lebanon war.⁵ There was, of course, a ready explanation for that deficiency stemming from a division of labor that both the IAF and the IDF's ground forces had jointly agreed to several years before. After the IDF withdrew its military presence from Lebanon in 2000, the IAF's leaders had made a command decision to remove their fixed-wing fighters from the CAS mission area altogether, on the presumption that with the advent of the Palestinian *intifada* and the growing preeminence of lower-intensity terrorist threats on the home front, the era of "big" Middle Eastern wars was over, at least for the near-term future. Indeed, from that point until the start of the second Lebanon war six years later, there was actually a signed contract between the IAF and Israel's ground forces that the latter would provide their own fire support with organic artillery and MLRS, leaving the IAF free to focus exclusively on whatever independent "deep-battle" taskings might be assigned to it by the IDF General Staff.⁶ Even during its earlier years going back to the 1970s and before,

⁵Interview with Major General Elyezer Shkedy, IAF (Res.), former Commander, IAF, Tel Aviv, March 26, 2009.

⁶Interview with Brigadier General Johanan Locker, Deputy Commander and Chief of Staff, IAF, Tel Nof Air Base, Israel, March 29, 2009.

the IAF tended to shy away from using the term “close air support,” strictly speaking, because of its limiting and confining connotations. Instead, Israeli airmen preferred to think and speak more broadly in terms of “the intelligent participation of air power in joint warfare.”⁷

In fact, as one direct outgrowth of the IDF's experience against Hezbollah in 2006, it quickly became clear to all that the IAF had evolved by that time into two almost separate air arms within the same service—its fixed-wing fighters and its attack helicopter community—in terms of operational mindset and culture. It also became apparent that a similar divide had come to separate the IAF and Israel's ground forces when it came to institutional practice at the operational and tactical levels. To all intents and purposes, each service planned and trained as though the other did not exist. Plainly determined to put an end to that unhealthy state of affairs, General Locker, then still the head of the IAF's Air Division, initiated a dialogue with the new commander of Northern Command, Major General Eisenkott, not long after the imposition of the ceasefire that ended the second Lebanon war. That measure, which General Shkedy fully endorsed and supported, soon led to a series of joint command-post exercises between the IAF and Israel's ground forces aimed at inculcating a new pattern of regular joint contingency planning and training. Every other month, Locker took senior IAF headquarters staffers to Northern Command's headquarters to observe the new process at work and to help build closer trust relations and a more common language between the two services. He also pursued a similar initiative with the IDF's Central and Southern Commands.⁸

In a concurrent effort to engineer a major departure from past practice, General Shachor invited each IDF division commander and his senior deputies to visit Palmachim Air Base, the main function of which was (and remains) providing support to the IDF's ground forces. He and his helicopter and UAV squadron commanders similarly made the rounds of all IDF armored and infantry divisions. In all such cases,

⁷Numerous conversations between the author and active-duty and retired IAF general officers since 1978.

⁸Conversations between the author and active-duty and retired IAF general officers.

the visitors received a day of orientation regarding the host unit's overall mission, operations, capabilities, and support needs. Regular brigade and battalion commanders (some 20 percent of the total at that level) were given orientation flights in the AH-1 Cobra and invited to sit at UAV control stations to observe real-time imagery streaming down from various ISR platforms.⁹

Informed by its still-fresh memories of flawed joint operations in Lebanon in 2006, the IAF further arranged to convene periodic cross-service roundtables at Tel Nof Air Base, in which IAF squadron commanders and regular-force IDF brigade commanders met to engage in capability briefings and discussion of identified joint issues. As a part of this dialogue, the IAF also flew a few brigade commanders in the back seats of fighters so they might gain a more intimate appreciation for the strengths and limitations of high-performance aircraft in air-land operations. In all such instances of cross-service interaction, there was little intramural swordplay over doctrinal differences and related issues. On the contrary, all participants seemed genuinely committed to forging better ways to work together.¹⁰ Before long, combat units in both services in ever-increasing numbers found themselves training together in live exercises, including scenarios that involved the participation of tanks and other heavy armored vehicles. In each case, the two services proceeded systematically from identification of lessons indicated to joint planning, followed by joint application of the resultant learning in actual field training exercises. General Nehushtan, who relieved General Shkedy as IAF Commander in May 2008 upon the latter's on-schedule retirement from active service, personally attended every division-level training evolution.¹¹

In the course of this steady development of ever-closer ties between the IAF and the IDF's ground forces, the IAF also took a new

⁹Interview with Brigadier General Gabi Shachor, IAF (Res.), Palmachim Air Base, Israel, March 31, 2009.

¹⁰Interview with Brigadier General Ya'akov Shaharabani, head of the IAF Helicopter Division, IAF Headquarters, Ha'kirya, Tel Aviv, March 31, 2009.

¹¹Interview with Major General Ido Nehushtan, Commander, IAF, Tel Nof Air Base, Israel, March 29, 2009.

look at its existing habit patterns to seek better ways of conducting integrated combat operations. Throughout the second Lebanon war, General Shkedy had insisted on retaining close control of the IAF's attack helicopters that were supporting IDF ground operations, out of a legitimate concern that even one major tactical error, such as an egregious friendly fire incident, could have a disproportionate strategic downside effect on Israeli public opinion and on the overall image of Israel's combat prowess. Yet the inefficiencies that this insistence introduced into attack helicopter operations during CAS delivery toward the end of Operation Change of Direction were later acknowledged by all to have been a source of friction that demanded immediate corrective attention. Not only did significant changes occur in the IDF's techniques and procedures with respect to helicopter CAS provision as a result of this recognition, the issue and its many implications were also reflected in duly amended course syllabi in the IAF's professional military educational establishment.¹²

To be sure, in addition to their offerings in the realm of CAS, the IAF's attack helicopters retain an independent deep-strike responsibility for which they remain under the tactical control of the IAF commander. When their immediate tasking is on-call CAS, however, they are now controlled directly by the brigade commanders who are the intended beneficiaries of their support.¹³ In a clear response to lessons learned from Lebanon, the IAF leadership consented to assign to each combat brigade a tactical air control party (TACP) that includes at least one terminal attack controller with the rank of major or lieutenant colonel to ensure that all would have their own dedicated fighter, attack helicopter, and UAV support. As a result of this changed mindset on the IAF's part, the application of air power in integrated air-land operations, which had been centralized in the IAF's main AOC throughout most of the second Lebanon war, was now pushed down to

¹²Interviews with Brigadier General Gabi Shachor, IAF (Res.), Palmachim Air Base, Israel and Brigadier General Ya'akov Shaharabani, head of the IAF Helicopter Division, IAF Headquarters, Ha'kirya, Tel Aviv, March 31, 2009.

¹³Interview with Brigadier General Gabi Shachor, IAF (Res.), Palmachim Air Base, Israel, March 31, 2009.

the brigade level and, in some cases, even lower. In addition, the IAF's main AOC took on a permanent battlefield coordination detachment staffed by officers from the IDF's ground forces.¹⁴

At a higher level of long-range planning, the IDF further responded to the experience gained during Operation Change of Direction by launching a new five-year plan on September 3, 2007, called Teffen 2012. That plan had the two-fold objective of enhancing Israel's wherewithal for dealing with the most imminent developing threats and modernizing the IDF's ground forces, with special emphasis on improving their maneuverability.¹⁵ It emanated from a prior identification by the IDF of four fundamental challenges that its leadership determined the State of Israel would need to confront in the decade ahead. These included

- countering conventional threats from regular state armed forces such as those maintained by Syria
- neutralizing asymmetric challenges from hybrid nonstate opponents like Hezbollah
- confronting the prospect of having to contain a nuclearized Iran
- grappling with the possibility of further regional destabilization occasioned by the rise of radical Islamist fundamentalism.

The Teffen 2012 plan further spotlighted nine essential mission areas and capabilities that the IDF leadership determined to be in need of continued maintenance and further upgrading to ensure Israel's lead over any and all possible regional challengers. These included

- decisive ground maneuver capability

¹⁴After the Gaza operation ended, however, IAF leaders hastened to emphasize to the IDF ground-force community that although the IAF could again promise the latter the luxury of providing each brigade commander his personal TACP for close-controlling air-delivered fire support in future engagements of that relatively modest scale, such an arrangement would *not* work in the event of a future larger war in which there would be an insufficiency of IAF personnel trained to provide that service to go around. (Interview with Major General [Res.] Elyezer Shkedy, former Commander, IAF, Tel Aviv, March 26, 2009.)

¹⁵See Alon Ben-David, "IDF Favors Land Forces in New Five-Year Plan," *Jane's Defence Weekly*, September 12, 2007, pp. 28–29.

- air dominance
- precision conventional strike capability
- enhanced reach
- maritime supremacy
- active defense against surface-to-surface rockets and missiles
- intelligence dominance
- effective command and control
- adequate munitions stocks.

Commenting on this initiative, one assessment of the second Lebanon war described it as indisputable testimony that the experience of July and August 2006 had forced the IDF to “sit up and take note of some fundamental changes that [had] taken place on what it [had] always perceived as its own turf.”¹⁶

IAF planning for a possible future contingency involving Hamas began very soon after the second Lebanon war ended in August 2006, with the head of the Air Division at the time, General Locker, serving as the chief architect and orchestrator of the air operations plan that ultimately emerged. The first step in that direction was a systematic compilation of actionable intelligence, after which the IAF's Campaign Planning Department, in the course of a working-level dialogue initiated by Southern Command, developed target folders that would enable a *Mishkal Sguli*-like operation against all known Hamas leaders should any future acts of aggression on their part against innocent civilians in southern Israel be deemed by the government to warrant such a response. IAF planners also worked closely with their counterparts in Southern Command, the cognizant IDF combatant command for the Gaza theater, with General Shkedy personally explaining to the theater commander, Major General Yoav Galant, his intended use of the target intelligence that underlay the CONOPS for the IAF's planned initial attacks. The concept was further refined and practiced repeatedly by IAF aircrews in actual training missions over the course of the next two years. (Shkedy later recalled that it had taken time for him to convince Ehud Barak and General Ashkenazi, the new minister

¹⁶Kainikara and Parkin, *Pathways to Victory*, p. 105.

of defense and IDF Chief of Staff, that the IAF had an answer to the challenge of targeting Hamas's military assets and that its emerging plan for any future campaign in the Gaza Strip would work.)¹⁷

By way of further background to this anticipatory move on the IDF's part, the previous Israeli government under Prime Minister Sharon had voluntarily withdrawn not only all IDF forces but also, under severe and vocal protest from many quarters, all Israeli civilians (some 8,000 in all from 19 residential settlements) from the Gaza Strip in August 2005 in a hopeful "land-for-peace" gesture, while retaining control of the strip's airspace, land access, and maritime approaches.¹⁸ Not long thereafter, an emboldened Hamas returned the favor by commencing the firing of short-range rockets into southern Israel's population centers in a new daily practice. These primitive but lethal rockets, mostly of the Qassam variety, with ranges of up to 12 miles but also some that could reach farther, were made of metal tubing, filled with solid propellant consisting of potassium nitrate and sugar, and fitted with a locally made explosive front end.¹⁹ A few landed in the major southern cities of Ashdod and Beersheva. Soon thereafter, Hamas won legislative elections in Gaza and, in June 2007, forcibly threw out its more moderate Fatah rivals and seized control of the Palestinian Arab enclave. In response, Israel imposed an economic blockade on the Gaza Strip on the ground that the new ruling authority there had ostentatiously refused to recognize Israel's right to exist, to renounce acts of violence against the Jewish state, and to honor previous Palestinian agreements arrived at with Israel.

Tension continued to mount in the months that followed, eventually culminating in a resumption of Hamas rocket fire into southern Israel after a shaky six-month truce negotiated between Israel and Hamas in June 2008 expired the following December 19. Hamas justi-

¹⁷Interview with Major General (Res.) Elyezer Shkedy, former Commander, IAF, Tel Aviv, March 26, 2009.

¹⁸Telephone conversation with Lieutenant Colonel Roni Amir, head of the IAF Doctrine Branch, September 23, 2009.

¹⁹Lauren Gelfand, "Hamas Deploys Rocket Arsenal Against Israel," *Jane's Defence Weekly*, January 14, 2009, p. 5.

fied its resumption of rocket attacks as an appropriate response to an Israeli strike the previous November 4 on a tunnel that had been dug by Hamas from the Gaza Strip into Israel. The IDF maintained, for its part, that the tunnel had been dug for the purpose of capturing Israeli soldiers to be held by Hamas as hostages. In the course of the joint IDF air and ground attack on the tunnel, six Hamas militants were killed, prompting the terrorist movement to fire 35 rockets into Israel in what a Hamas spokesman described as "a response to Israel's massive breach of the truce."²⁰ Hamas's rocket attacks into Israel escalated sharply thereafter, eventually approaching levels of daily harassment that had been the norm before the truce was agreed to. A week before, on December 13, the Olmert government had expressed its desire to keep the ceasefire in effect as long as Hamas would consent to continue adhering to the agreement's conditions. The day after the ceasefire expired, however, Hamas declared that it would no longer honor the agreement, using as yet another pretext Israel's continued blockade of the Gaza Strip.²¹

Earlier, as a contingency measure undertaken shortly after the second Lebanon war ended, the IDF's intelligence and operations directorates, in conjunction with Southern Command and Israel's Shin Bet domestic security service, had compiled a target roster of hundreds of identified enemy assets in the Gaza Strip. This target bank included rocket launch positions, command centers, and other facilities associated not only with Hamas, but also with Islamic Jihad and the Palestinian Popular Resistance Committees.²² Once the Olmert government had satisfied itself that Hamas had no intention of continuing to honor the existing ceasefire beyond its scheduled expiration date of December 19, the IDF wrapped up final preparations for a surprise attack against

²⁰James Hicks, "Six Die in Israeli Attack over Hamas 'Tunnel' Under Border to Kidnap Soldier," *The Times*, London, November 6, 2008. See also Rory McCarthy, "Gaza Truce Broken as Israeli Raid Kills Six Hamas Gunmen," *The Guardian*, November 5, 2008.

²¹For a retrospective overview of the IDF's economic blockade of the Gaza Strip, see Omar Karmi, "Gaza Stripped: Israeli Blockade Leaves Gaza Vulnerable," *Jane's Intelligence Review*, January 2009, pp. 24–27.

²²Amos Har'el, "Most Hamas Bases Destroyed in Four Minutes," *Ha'aretz*, Tel Aviv, December 29, 2008.

the organization and coordinated its campaign plan with the IAF. This shift in strategy came together on December 19 after Hamas made it clear that it was determined to resume firing rockets into southern Israel on a massive and open-ended scale. The day before, Olmert and Barak convened at the IDF General Headquarters to approve the counteroffensive plan in principle, while holding off on actual execution for the moment to see whether Hamas would withhold further rocket fire once the six-month ceasefire expired the following day.

As the clock was running out, Olmert's office intentionally misled the media into believing that the next cabinet meeting would address issues associated with global jihad. Only when the session was finally under way were the ministers informed that the main discussion topic, in fact, would be the IDF's impending counteroffensive against Hamas. What unfolded next was a five-hour deliberation over the now-imminent operation, during which the ministers were given detailed briefings by all involved principals in the IDF's senior leadership. Afterward, the ministers voted unanimously to approve the operation, leaving it to Olmert, Barak, and Foreign Minister Livni to decide on the exact timing and other final details. Said one minister later: "Everyone fully understands what sort of period we are heading into and what sort of scenarios this could lead to." The minister added that the five-hour review of the campaign's operational aspects and their potential ramifications affirmed that the conclusions reached earlier by the Winograd Commission regarding the uneven performance of Israel's decisionmakers during the second Lebanon war had been "fully internalized."²³

Later, Barak recalled that the government had opted to proceed with the counteroffensive as a natural result of Israel's "patience [with Hamas] running out."²⁴ In what, viewed in retrospect, almost certainly entailed a conscious effort at last-minute deception, the government on December 26 reopened a number of previously closed border crossings and allowed 90 trucks to enter the Gaza Strip carrying rice, flour, fuel,

²³Barak Ravid, "Disinformation, Secrecy and Lies: How the Gaza Offensive Came About," *Ha'aretz*, Tel Aviv, June 2, 2009.

²⁴Ravid, "Disinformation, Secrecy and Lies."

medicine, and other humanitarian aid supplies. For its part, Hamas in reply continued to rain dozens of rockets and mortar rounds into southern Israel's population centers the same day. Accordingly, the following morning, the IDF struck back hard and with complete surprise in what it dubbed Operation Cast Lead, catching Hamas off guard and killing many targeted combatants in the opening round of air attacks that preceded a major air-land operation launched a week later aimed at bringing the terrorist organization to heel.²⁵ At long last, an opportunity for Israel's defense establishment to erase once and for all its image of irresolute performance created more than two years before during the second Lebanon war was now at hand.

An Improved Showing Against Hamas

The IDF's carefully planned counteroffensive kicked off with an air-only phase that lasted eight days, with a view toward paving the way for a joint air-land effort to follow as soon as possible thereafter.²⁶ Its second phase entailed an air-supported ground assault into the heart of Hamas's main strongholds in the Gaza Strip, followed by an endgame consisting of a unilateral ceasefire declared by Israel on January 18, which Hamas duly honored with a reciprocal ceasefire announced 12 hours later. This endgame phase saw episodic Hamas rocket fire into Israel for a time thereafter, in each case followed

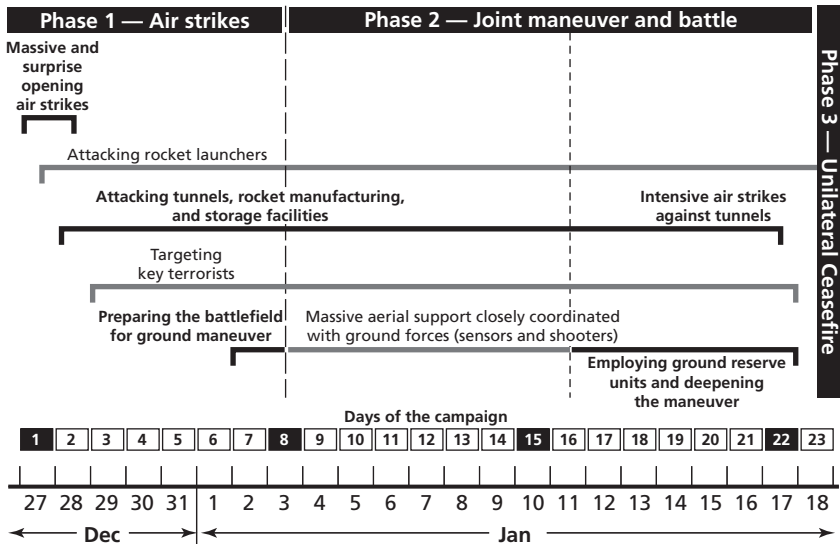
²⁵The name assigned to the counteroffensive by IDF planners emanated from the Jewish custom of playing with a four-sided top (called a dreidel) during the holiday of Hanukkah. Dreidels used to be made out of molten lead poured into a mold. The dreidel is spun and eventually lands on one of four sides, each of which bears a Hebrew letter determining whether the player gets to take all of the pot (consisting of nuts, pennies, raisins, or chocolate coins used as tokens), half of the pot, none of the pot, or must add one token to the pot. By happenstance, the IDF's counteroffensive against Hamas began on December 27, 2008, two days before the end of that year's Hanukkah festival.

²⁶The day before Operation Cast Lead was set in motion, General Nehushtan met personally with General Galant, the commander of Southern Command, whose troops would conduct the ground combat portion of the operation, to review the final details of the now-imminent air-land counteroffensive. (Interview with Major General Ido Nehushtan, Commander, IAF, Tel Nof Air Base, Israel, March 29, 2009.)

promptly by IAF retaliatory attacks, after which an uneasy calm finally settled on the area. (Figure 6.3 offers a retrospective timeline depicting the sequencing of Operation Cast Lead throughout its 23-day course.)

The opening round began at 1130 on Saturday morning, December 27, with 88 IAF fighters and attack helicopters systematically working around 120 Hamas targets over the course of the counteroffensive's first day. In the initial attack wave, upward of 40 F-15Is struck multiple police, paramilitary, and government facilities throughout the Gaza Strip. Nearly all bombs released were reported as "alpha" hits, which is IAF aircrew jargon for direct weapon impacts on designated aim points.²⁷ This first wave of preplanned bombing, with no forewarning provided to the enemy whatever, yielded confirmed kills of more than a hundred targeted Hamas combatants in a span of just 3 minutes

Figure 6.3
Phases of Operation Cast Lead



SOURCE: IAF.

RAND MG835-6.3

²⁷Har'el, "Most Hamas Bases Destroyed in Four Minutes."

40 seconds.²⁸ The IAF later claimed a 95-percent success rate in that initial wave, with an IDF spokesman declaring: "Apparently, we did not have any misses, although we had some munition failures where bombs didn't eject or a pilot chose not to release for various technical reasons."²⁹

A second wave of fighters and attack helicopters then struck dozens of underground rocket launch positions and storage facilities, reportedly eliminating several hundred Qassam launchers. In all, the IAF destroyed more than 170 fixed Hamas assets during the counter-offensive's first day, in the process killing some 140 Hamas security personnel, including Gaza City's chief of police, Tawfiq Jabber. Those enemy assets included a multitude of known homes of Hamas commanders, with an IDF spokesman later stating: "Destruction of hundreds of Hamas leaders' homes [is] one of the keys to the offensive's success." The spokesman added that the targeted homes were known to have been used by Hamas as headquarters buildings and weapons storage facilities.³⁰

After its initial attacks launched in successive waves during the operation's first day, the IAF transitioned into an around-the-clock hunter-killer mode of operations, using no fewer than a dozen simultaneous UAV orbits and manned surveillance aircraft to conduct visual and SIGINT monitoring of the entire Gaza Strip.³¹ To support this effort, two Gulfstream G550 airborne early warning and control aircraft, each configured with three conformal active electronically scanned array (AESA) radars, were employed by the IAF and AMAN for precise geolocation and identification of ground targets. Spokesmen for the IAF reported that these aircraft were used exten-

²⁸ Interview with Brigadier General Ya'akov Shaharabani, head of the IAF Helicopter Division, Ha'kirya, Tel Aviv, March 31, 2009.

²⁹ Barbara Opall-Rome, "In Gaza, Both Sides Reveal New Gear," *Defense News*, January 5, 2009.

³⁰ Hanan Greenberg, "IDF Ponders Response to Rocket Attacks," *Israel News*, Tel Aviv, January 18, 2009.

³¹ *The 2008/09 Gaza Conflict—An Analysis*, RAF Waddington, United Kingdom: Air Warfare Centre, The Air Warfare Group, 2009, p. 4.

sively for command and control and battlespace picture generation. Their onboard avionics complement featured a dual-band AESA radar, an IFF transceiver, various electronic surveillance capabilities, and a self-protection system against short-range surface-to-air missiles. It also included a secure communications suite to enable network-centric operations. The IAF's similar G550 special electronic mission aircraft provided electronic order-of-battle information by detecting and fixing Hamas radio-frequency emitters. Both surveillance platforms also enabled a mapping of the enemy's communications network, as well as radio transmission intercepts and analysis of enemy radio voice communications. Through the use of these electronic-warfare platforms, all means of radio and telephone communication employed by Hamas were jammed by the IAF to a point of being unusable.³²

On the counteroffensive's second day, Defense Minister Barak made it clear that the IDF was committed to "an all-out war against Hamas."³³ The Olmert government declared as its immediate combat objectives the infliction of severe structural damage to the terrorist organization and its military assets, a decrease in the rate of its daily rocket fire, an increase in the valuation of Israel's deterrent by all observers who mattered, and an avoidance of any escalation on other fronts. An avowed longer-term goal of the counteroffensive was to produce a more enduring end to further rocket and other terrorist attacks against Israel emanating from the Gaza Strip.³⁴

As the air-only phase of Operation Cast Lead entered its third day, the IAF's now-expanded target roster was said to include not only individual Hamas combatants and their weapons and equipment but also the entire support structure within the Gaza Strip that enabled the terrorist organization to remain in power and operate. Said a senior

³² "New Twists on Israeli Intel," *Aviation Week and Space Technology*, February 9, 2009, p. 22.

³³ Griff Witte and Sudarsan Raghavan, "'All-Out War' Declared on Hamas: Israel Expands List of Targets to Include Group's Vast Support Network in Gaza," *Washington Post*, December 30, 2008.

³⁴ "Operation Cast Lead: IAF Missions and Operations," unclassified briefing charts provided to the author by Brigadier General Nimrod Sheffer, IAF, head of the Air Division, IAF Headquarters, Ha'kirya, Tel Aviv, March 31, 2009.

IDF official in this regard: "There are many aspects of Hamas, and we are trying to hit the whole spectrum, because everything is connected and everything supports terrorism against Israel." Another official added that the main aim of the counteroffensive was to "hit Hamas disproportionately and [thereby] create an image that Israel is ready to go berserk in response to rocket fire from Gaza."³⁵ Speaking before the weekly cabinet meeting in Jerusalem, Barak promised that the IDF would "deepen and broaden its actions as needed" and would "continue to act," not with a view toward reoccupying the Gaza Strip, from which it unilaterally withdrew in 2005, but simply "to restore normal life and quiet to residents in the south" of Israel.³⁶

Well before the start of the counteroffensive, AMAN reportedly had conducted a meticulous intelligence preparation of the battlefield throughout the Gaza Strip, precisely geolocating and mapping out likely IED placement sites and other Hamas targets of interest.³⁷ As an RAF analysis later described this effort, "prior to the conflict, the area was subject to an 'intelligence soak' which employed a comprehensive approach supported by civilian and military intelligence services."³⁸ Using the intelligence archive that AMAN had systematically compiled since the end of the second Lebanon war, the IAF developed an initial target list of 603 identified Hamas paramilitary facilities, including headquarters buildings, training camps, command posts, weapons storage caches, and underground rocket-launching positions. Armed with this information, IAF campaign planners and targeteers divided the battlespace controlled by Hamas into four sectors—the smuggling route through which Hamas covertly infiltrated rockets and other munitions into the Gaza Strip from Egypt, weapons storage

³⁵ Alon Ben-David, "Shoots of Recovery: Israeli Operation Leaves Hamas Weak but Alive," *Jane's Intelligence Review*, March 2009, p. 15.

³⁶ Taghreed El Khodary and Isabel Kershner, "Israeli Troops Mass Along Border; Arab Anger Rises," *New York Times*, December 29, 2008.

³⁷ David A. Fulghum, David Eshel, and Douglas Barrie, "New War, Fresh Ideas: Israel's Battles in the Gaza Strip Appear to Show Innovation and Might," *Aviation Week and Space Technology*, January 12, 2009, p. 26.

³⁸ *The 2008/09 Gaza Conflict—An Analysis*, p. 4.

and paramilitary training facilities in southern Gaza, command and control centers in Gaza City, and forward fighting positions along the strip's northern border with Israel.³⁹

During the counteroffensive's air-only phase, the IAF demolished 275 targeted public facilities; private residences; and schools, universities, and mosques (15 percent of the total number of targets assigned to IAF fighters) that were known to have been used by Hamas to manufacture and store munitions. It also worked hard on the underground tunnel complex that Hamas used to smuggle in weapons and other contraband from Egypt. These tunnels ran along the so-called Philadelphi corridor paralleling the Gaza Strip's southern border with Egypt. IAF attacks on them (against some 600 tunnel-related targets that had been identified and geolocated in all) began on the operation's first night and continued almost daily. They concentrated mainly on tunnel entrances and underground pathways, in the end requiring 311 fixed-wing fighter sorties and accounting for 17 percent of the targets assigned to IAF fighters in all.⁴⁰

In its initial attacks against some 40 Hamas tunnels, the IAF employed reduced-yield explosives in its 500-pound Mk 82 bombs and 2,000-pound Mk 84 bombs with a view toward the greatest possible collateral-damage mitigation. It also employed the indigenous Israeli 2,000-pound PB500A1 LGB with a hard-target penetration capability against Hamas bunkers, buried weapons storage facilities, and some of the more challenging aim points associated with the underground tunnel complex.⁴¹ Even unguided general-purpose bombs delivered with the aid of the F-16's continuously computed impact point (CCIP) weapon aiming system were almost uniformly effective when used later against targets for which the possibility of collateral damage was not a concern and when pinpoint accuracy was accordingly not required.⁴² In the end, more than 80 percent of the enemy's tunnel complex was

³⁹ *The 2008/09 Gaza Conflict—An Analysis*, p. 4.

⁴⁰ "Operation Cast Lead: IAF Missions and Operations."

⁴¹ Fulghum, Eshel, and Barrie, "New War, Fresh Ideas," p. 26.

⁴² Interview with Major General Ido Nehushtan, Commander, IAF, Tel Nof Air Base, Israel, March 29, 2009.

thought to have been destroyed in the bombing attacks. One key lesson from the initial week of air-only operations, according to General Nehushtan, was “preparing your intelligence in advance, having the precision-strike capabilities, and practicing the plan until it becomes ingrained.” He added as a good tactical rule of thumb in principle that if the IAF can “manage in the opening strike to hit many targets with precision and surprise, it can significantly influence the rest of the campaign.”⁴³

After eight days of air-only operations, the IDF ramped up its counteroffensive by unleashing its preplanned air-land assault against Hamas. Starting during the early hours of darkness at around 2000 on January 3, dismounted elements of four infantry-based brigades, aided by night-vision goggles and supported by IAF attack helicopters, moved into targeted Hamas strongholds. Most of the troops (around 10,000 in all) committed to the ground incursion consisted of four active brigades under the command of the Gaza Division.⁴⁴ The ground combat phase made the greatest possible use of night fighting techniques in which the IDF maintained a pronounced qualitative edge, relying on infantry rather than tanks and taking scrupulous care to avoid confined areas and tight zones of fire. Repeatedly throughout the joint air-land portion of the campaign, IDF ground maneuver elements supported the IAF, rather than the other way around, by shaping Hamas force dispositions and thereby creating both targets and a clear field of fire for IAF fighters and attack helicopters.⁴⁵

At this point in the counteroffensive, in a clear application of the IAF's learning from its earlier experience during the second Lebanon war, its main weight of effort shifted from preplanned attacks against fixed targets and interdiction of emerging time-critical targets to on-

⁴³Barbara Opall-Rome, “Major General Ido Nehushtan, Commander, Israel Air and Space Force,” *Defense News*, August 3, 2009, p. 30.

⁴⁴Comments on an earlier draft by Colonel Meir (last name withheld), Commander, Doctrine Department, IDF Ground Forces, October 4, 2009. See also David Eshel and David A. Fulghum, “Two Steps Forward. . . Israeli Technologies and Coordination Detailed in Gaza Strip Combat Analyses,” *Aviation Week and Space Technology*, February 9, 2009, p. 62.

⁴⁵Telephone conversation with Lieutenant Colonel Roni Amir, head of the IAF Doctrine Branch, September 23, 2009.

call CAS as required by ground commanders. Although the majority of these support missions were performed by attack helicopters and by F-15I and F-16 multirole strike fighters, the IAF's two F-15C squadrons, although mainly fielded as air-to-air units, had recently been certified to deliver satellite-aided 2,000-lb GBU-31 JDAMs. Accordingly, they also took part in the counteroffensive's strike and CAS operations. With regard to the latter, said one F-15C squadron commander: "Never before have we provided such close support for ground forces using precision munitions in such great proximity to the forces operating on the ground."⁴⁶

All ground engagements were planned down to the finest detail possible and were informed by generally fresh and accurate battlefield intelligence. As a result, there were few troops-in-contact situations that required immediate and urgent CAS.⁴⁷ The IDF had learned the hard way from its earlier skirmishes with Hezbollah in Bint J'beil and Maroun Al Ras during the second Lebanon war that unanticipated close combat was almost sure to result in friendly casualties. Accordingly, Southern Command bent every effort this time to minimize operations in crowded neighborhoods and other built-up areas in which its troops would be exposed to enemy ambushes and sniper fire.

In that regard, Hamas's leaders anticipated the Israeli ground assault and accordingly prepared for that event ahead of time by prepositioning numerous IEDs along key routes of advance into Gaza City and other towns and villages. Once the IDF's incursion in force was actually under way, however, Hamas's IED operators fled the scene before they could detonate their emplaced charges. As a result, the IEDs did not impede the IDF's offensive operations on the ground. Both CSAR and medevac operations were assigned top priority whenever they were under way. Some of these operations during the air-land phase were conducted directly into the heart of ongoing IDF fighting in the Gaza Strip. They numbered 32 sorties in all, and 81 soldiers who

⁴⁶ Alon Ben-David, "Battle Picture Helps IDF Target Hamas Tunnels," *Jane's Defence Weekly*, January 21, 2009, p. 4.

⁴⁷ Interview with Colonel Meir (last name withheld), Commander, Doctrine Department, IDF Ground Forces, at an IDF installation near Tel Aviv, March 30, 2009.

had been wounded during the operation were airlifted by UH-60 utility helicopters from the battle zone to a safer area, either near or on the Israeli side of the border.⁴⁸

By the end of the counteroffensive's second week, thanks to continued jamming efforts by the IAF and AMAN, a senior infantry commander with the Palestinian Authority, Major General Younis Al Assi, reported that Hamas leaders in Gaza City were unable to communicate with their counterparts in the central and southern parts of the strip and were incapable of sustaining a coherent fighting strategy. As this report attested, Israel's intelligence services had cultivated substantial support from the Palestinian Authority, including the provision of actionable intelligence regarding the locations of Hamas headquarters and shelters, as well as maps of tunnels under Gaza City, by members of the group who had successfully infiltrated Hamas.⁴⁹

In clear testimony to the IDF's overarching concern for avoiding collateral damage to the greatest extent possible, the IAF used precision-guided munitions exclusively during the first three days of air-only operations. Over the course of the counteroffensive's first ten days, roughly 90 percent of the munitions expended by the IAF were PGMs. In all, in what the IAF commander rightly called an "unprecedented" achievement in the annals of air warfare, 81 percent of the munitions used in Operation Cast Lead were precision-guided, compared with only 36 percent during the second Lebanon war.⁵⁰ In the most heavily populated areas of the Gaza Strip, the IAF employed PGMs exclusively. General Nehushtan later indicated that the only targets for which unguided general-purpose bombs were used were in "open areas,

⁴⁸"Operation Cast Lead: IAF Missions and Operations."

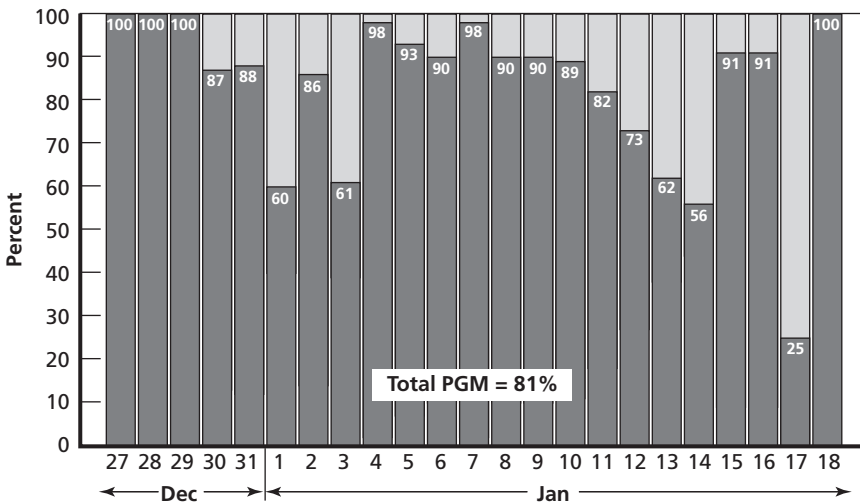
⁴⁹Mohammed Najib, "Hamas Is 'On the Defensive' in Gaza Crisis," *Jane's Defence Weekly*, January 14, 2009, p. 5.

⁵⁰Opall-Rome, "Major General Ido Nehushtan, Commander, Israel Air and Space Force," p. 30. In contrast, the PGM percentages of total U.S. and allied aerial munitions delivered during Operations Desert Storm, Allied Force, Enduring Freedom, and the three-week major combat phase of Iraqi Freedom were 8 percent, 35 percent, 60 percent, and 68 percent, respectively. (Ben-Israel, *The First Israel-Hezbollah Missile War*, p. 61, and Lambeth, *Air Power Against Terror*, p. 249.)

such as the smuggling tunnels in the south.”⁵¹ (Figure 6.4 indicates the daily balance of the IAF’s precision and nonprecision munitions use.)

A new approach to collateral-damage mitigation developed by the IAF for use in precision strikes into built-up urban areas entailed forewarning the occupants of a targeted house that an aerial bombing attack was imminent. Once a house associated with Hamas was targeted and slated for attack, an AMAN or Shin Bet officer would place a phone call to the occupants advising them that the structure was scheduled to be struck and to vacate it within 10 to 15 minutes. In some cases, the IAF also delivered a small nonfragmenting precursor munition of low yield (weighing less than 50 pounds) into a corner of the roof of a targeted house as a figurative “knock on the door” warning occupants to vacate it.⁵² (On occasion this tactic backfired, sending the occupants to the roof instead to stand defiantly as human shields,

Figure 6.4
Daily Percentage of Precision Munitions Employed



SOURCE: IAF.
RAND MG835-6.4

⁵¹ Opall-Rome, “Major General Ido Nehushtan.”

⁵² *The 2008/09 Gaza Conflict*, p. 3. See also “IDF Phones Gaza Residents to Warn Them of Imminent Strikes,” *Ha’aretz*, Tel Aviv, January 3, 2009.

causing the scheduled attack to be aborted due to its certainty of causing civilian fatalities.)⁵³

In all, the IDF and Shin Bet made upward of 165,000 individual telephone calls to civilian residents of the Gaza Strip warning them beforehand of an impending air attack. They also dropped some 2.5 million leaflets, some of which urged civilians to distance themselves from military targets and others directing residents to leave a particular location and move to a designated safe zone by a certain route within a defined period of time.⁵⁴ One report suggested that the IDF further sought to avoid causing collateral damage in the most built-up areas by using, for the first time and on a still-experimental basis, munitions filled with dense inert metal explosives (called DIME for short) intended to create a localized and highly concentrated blast effect that dissipates rapidly without expelling shards of lethal shrapnel. (The purpose of such tailored weapon effects is to minimize damage beyond the immediate point of the bomb's detonation.)⁵⁵

With respect to subsequent charges by Palestinian sympathizers that IDF combat operations indiscriminately caused innocent civilian fatalities in Gaza City and elsewhere, an Israeli after-action review of the demographics of a casualty list published by the Palestinian Center for Human Rights (PCHR) and supplemented by Hamas and other Palestinian websites indicated that between 63 and 75 percent of the Palestinians killed during Operation Cast Lead were combat-aged males. Name checks further revealed that many of those alleged by the PCHR to have been "civilians" killed by the IDF had, in fact, been openly hailed by Hamas as "militant martyrs." Others similarly listed turned out to have been members of the rival Palestinian Fatah organization who had been killed, some execution-style, by Hamas militants.

⁵³ Amos Har'el and Yoav Stern, "IDF Targets Senior Hamas Figures," *Ha'aretz*, Tel Aviv, January 4, 2009.

⁵⁴ *The Operation in Gaza: 27 December 2008–18 January 2009*, Tel Aviv: The State of Israel, Intelligence and Terrorism Information Center, July 29, 2009, p. 99.

⁵⁵ Mohammed Najib, "IDF May Be Using DIME in Gaza," *Jane's Defence Weekly*, January 21, 2009, p. 16. The United States also has developed such air-deliverable munitions but has yet to field them with Air Force, Navy, and Marine Corps line units.

By a multitude of accounts, Hamas and its allies, as a central element of their operational style, bent every effort to maximize the extent to which noncombatant civilians in the Gaza Strip would be exposed to IDF fire should Israel respond with force to Hamas's rocket and mortar attacks against Israeli towns.⁵⁶ In contrast, for the IAF's part, as General Nehushtan later remarked, numerous approved targets were not struck in the end and munitions in flight were sometimes steered away from their designated aim points by pilots or WSOs at the last moment due to concerns that collateral damage to noncombatant property and accidental civilian deaths might otherwise be incurred.⁵⁷

As Israel's counteroffensive reached full swing toward the end of the second week of January, an IDF source declared that "the message of this operation is that Israel is willing to respond disproportionately for every rocket coming out of Gaza. We want Hamas to consider this before they fire again."⁵⁸ Added an IAF general: "It's obvious that air power can't win the battle. [Yet] it played the major role in the first hours with the element of surprise and its psychological effect [on Hamas's leadership]." The general added that Israel's air power "has made the other side pay and will serve as a deterrent."⁵⁹

In a clear sign that the Olmert government was eager to bring about the earliest possible end to its counteroffensive, an official spokesman said as early as the second day of the campaign's air-land phase that the prime minister was, at that very moment, in ongoing discussions with foreign leaders aimed at seeking means for implementing a ceasefire and that in the meantime, the IDF's goal, as before, was "to reach a situation where there will be quiet in the south and interna-

⁵⁶Avi Mor, Tal Pavel, Don Radlauer, and Yael Shahar, *Casualties in Operation Cast Lead: A Closer Look*, Herziliya, Israel: International Institute for Counterterrorism, 2009.

⁵⁷Opall-Rome, "Major General Ido Nehushtan," p. 30.

⁵⁸Alon Ben-David, "Israel Aims for 'New Security Reality' in Gaza," *Jane's Defence Weekly*, January 14, 2009, p. 4.

⁵⁹David A. Fulghum, "Gaza: Phase Three—Israel Defense Forces Could Wrap Up Gaza Ground Campaign in Two Weeks," *Aviation Week and Space Technology*, January 19, 2009, p. 27.

tional support for that quiet.”⁶⁰ Another spokesman announced that the IDF's joint combat operations in the Gaza Strip would conclude “when Israel understands that the civilian population in the south of the country will no longer be on the receiving end of Hamas rockets.”⁶¹

As Operation Cast Lead neared its endgame, Prime Minister Olmert declared at a weekly cabinet meeting that “Israel is getting close to achieving the goals it set for itself. But patience, determination, and effort are still needed to achieve these goals in a manner that will change the security situation in the south.”⁶² Olmert's top two security deputies, Defense Minister Barak and Foreign Minister Livni, were said to have been of different opinions over when and how the operation should end, whether or not the IDF should seize and occupy the entire Gaza Strip or at least the Philadelphi corridor at its southern end, and whether the government of Israel should seek a negotiated ceasefire with Hamas or simply declare victory unilaterally and withdraw. That difference in outlook between the two ministers notably affected the timing of the campaign's last two phases and ultimately occasioned a major push by the IAF to disable as much as possible of Hamas's underground tunnel complex during the campaign's final day before the ceasefire went into effect.⁶³ No one this time, however, was calling for the IDF to seek an attempted “knockout” of the terrorist organization. As General Yadlin, the head of AMAN, frankly remarked during the meeting, Hamas “is not expected to raise a white flag.”⁶⁴

With the United States and Egypt both actively facilitating Israel's effort to engage Hamas on the diplomatic front, the Olmert gov-

⁶⁰ Ethan Bronner, “Israeli Attack Splits Gaza; Truce Calls Are Rebuffed,” *New York Times*, January 5, 2009. At the UN, the United States blocked the Security Council from issuing a statement calling for an immediate ceasefire, on the ground that there was no indication yet that Hamas would abide by any such arrangement.

⁶¹ Griff Witte, “Israeli Forces Enter Gaza Strip: ‘This Will Not Be Easy or Short,’ Top Official Says; Hamas Calls for Suicide Attacks,” *Washington Post*, January 4, 2009.

⁶² Griff Witte, “Israelis Push to Edge of Gaza City: Move Could Signal a Long Urban Battle,” *Washington Post*, January 12, 2009.

⁶³ Griff Witte, “Israel Advances on Cities in Gaza: Declares It Is Close to Reaching Aims,” *Washington Post*, January 12, 2009.

⁶⁴ Witte, “Israel Advances on Cities in Gaza.”

ernment began laying down the final underpinnings for a ceasefire arrangement, with the intent that IDF ground troops would remain in place along Israel's border with the Gaza Strip as the last details were worked out and as the area gradually quieted down. As the ceasefire was about to go into effect, Foreign Minister Livni, who had been vocal in emphasizing the need for the IDF to continue pressing its counter-offensive, noted that "Israel embarked on the campaign in order to change the equation and restore its deterrent capacity. We did that a few days ago, in my opinion." She then warned: "It has to be put to the test. If Hamas shoots, we'll have to continue. And if it shoots later on, we'll have to embark on another campaign."⁶⁵

Finally, on January 17, the Olmert government declared a unilateral ceasefire in the Gaza Strip, stating that it had achieved its avowed goals of damaging Hamas, discouraging further rocket fire into Israel, and stemming the smuggling of arms into Gaza. The actual ceasefire went into effect early the next morning on January 18, with IDF troops and tanks beginning a phased withdrawal from the Gaza Strip. About 12 hours later, a visibly discomfited Hamas and other militant Palestinian groups in the strip announced a reciprocal week-long ceasefire, with the terrorist organization's top leaders remaining in hiding. This time, in marked contrast to the aftermath of the earlier ceasefire that ended the second Lebanon war in August 2006, a widespread feeling of triumph prevailed among Israelis as radio stations throughout the country played classic Zionist songs. Said Foreign Minister Livni with an air of quiet confidence: "We had achievements that for a long time Israel did not have. And therefore, you also have to know when to stop and look. If Hamas got the message that we sent so harshly, then we can stop. If Hamas tries to continue to shoot, then we will continue."⁶⁶

Three days later, on January 21, the IDF completed its withdrawal of forces from the Gaza Strip. The ensuing shaky truce was momentarily broken on January 28 by a fringe assortment of former Hamas

⁶⁵ Ethan Bronner and Mark Landler, "Israeli Cabinet Appears Ready to Declare a Gaza Ceasefire," *New York Times*, January 17, 2009.

⁶⁶ Ethan Bronner, "Israel Speeds Gaza Withdrawal as Efforts to Buttress Ceasefire Continue," *New York Times*, January 20, 2009.

militants under the sway of Al Qaeda, who attacked and killed three Israeli soldiers who were conducting a routine patrol along the border. The IDF responded with a sharp renewal of air strikes against preselected Hamas targets, accompanied by concurrent pronouncements by both Barak and Livni threatening Hamas with a "harsh response" to any further breaches of the ceasefire.⁶⁷

As for effects achieved by the IDF against Hamas's leaders, the latter clearly saw a counteroffensive coming sooner or later once they resumed their short-range rocket fire into Israel on December 19, and most went underground before the onset of Operation Cast Lead. As a result of that timely move on their part, no senior leaders of Hamas were killed during the counteroffensive's first day. As noted earlier, the only reasonably high-level figure of note who lost his life during the initial air attacks was Gaza City's chief of police and Hamas backer, General Jabber. On January 1, however, Hamas lost in an IAF air strike one of its most revered figures, Nizar Rayyan, a cleric who had served as liaison between Hamas's political and paramilitary wings. Rayyan had called repeatedly for renewed Palestinian suicide bombings inside Israel and had refused to go into hiding when Operation Cast Lead began. He was killed, along with his four wives and nine of his 12 children, in an air attack on a known Hamas weapons cache that was hidden under his house. (The IDF reportedly was not aware that he had been in the house at the time of the attack.)⁶⁸ Later, on January 4, three targeted Hamas paramilitary commanders, Hussam Hamdan, Muhammad Hilou, and Mohammed Shalpokh, were said to have been killed in bombing attacks.⁶⁹

During the counteroffensive's last days, the IDF tracked down the number-three figure in Hamas's political hierarchy, Interior Minister Said Siyam, and killed him in a bombing attack on his brother's home on January 15, along with the head of Hamas's internal security, Salah

⁶⁷ Alon Ben-David, "Militant Attacks, Israeli Reprisals Rock Gaza Truce," *Jane's Defence Weekly*, February 20, 2009, p. 18.

⁶⁸ Griff Witte, "Senior Hamas Leader Killed: Israelis Stand Ready to Invade Gaza by Land," *Washington Post*, January 2, 2009.

⁶⁹ "Gaza War," Wikipedia, October 2010.

Abu Sharah.⁷⁰ However, Hamas's top political leaders, Prime Minister Ismail Haniyah and Foreign Minister Mahmud Zahar, as well as its top military commanders, Ahmad Ja'abri and Muhammad Deif, survived the counteroffensive. All of the brigade commanders in Hamas's paramilitary organization likewise went into seclusion shortly before Operation Cast Lead began, and none were killed. The IDF's 23-day counteroffensive did, however, succeed in killing some 50 of Hamas's most experienced explosives experts.⁷¹

In the end, roughly 70 percent of all Hamas combatants killed during the counteroffensive met their fate at the hands of Israeli air power, with IAF aircrews having achieved a reported 97-percent success rate in putting precision munitions on their assigned aim points throughout the operation.⁷² Accurate actionable intelligence was crucial in enabling that achievement.⁷³ In contrast, combat casualties sustained by the IDF were unexpectedly light, with only nine Israeli servicemen lost throughout the course of the ground incursion, four of whom succumbed to inadvertent friendly ground fire. (There were no instances of fratricide caused by air-delivered weapons.)

With respect to the short-range rocket threat presented by Hamas, in marked contrast to the IDF's inability to reduce significantly the rate of daily Katyusha fire from southern Lebanon into northern Israel more than two years before, Southern Command this time was expressly designated by the IDF General Staff as the warfighting element responsible for dealing with the Qassams and Grads. The IAF supported that assigned tasking through two concurrent efforts that entailed, respectively, real-time detection, tracking, and kinetic engage-

⁷⁰ Ben-David, "Shoots of Recovery," p. 16.

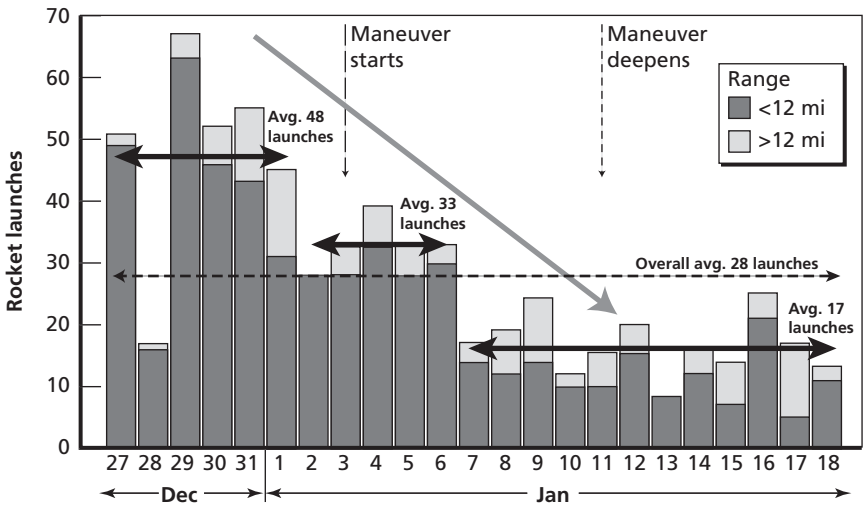
⁷¹ Mohammed Najib, "Hamas Investigates Poor Military Response to IDF," *Jane's Defence Weekly*, January 28, 2009, p. 16.

⁷² Interview with Brigadier General Ya'akov Shaharabani, head of the IAF Helicopter Division, Ha'kiryah, Tel Aviv, March 31, 2009.

⁷³ In this regard, General Locker reiterated the often-heard American airman's refrain that "air power is targeting and targeting is intelligence." (Interview with Brigadier General Johanan Locker, Deputy Commander and Chief of Staff, IAF, Tel Nof Air Base, Israel, March 29, 2009.)

ment of Hamas's rocket launch squads and preplanned attacks against launch facilities that had previously been identified and geolocated by prior intelligence collection and analysis. In all, Hamas terrorists fired 650 rockets into southern Israel over the course of the IDF's counteroffensive, with a sharply declining rate of daily fire once the air-ground phase got under way. As always, that imprecise rocket fire was militarily ineffective, although it had a significant terrorizing effect on those Israeli civilians who lived within its range. (Figure 6.5 depicts the daily rate of Hamas rocket fire by type and the declining trend line produced by the IDF's counteroffensive.) The IDF later determined that it destroyed some 1,200 enemy rockets in its combined aerial attacks and ground fighting.⁷⁴ Most were 12-mile-range indigenous Qassam or 25-mile-range Chinese-made Grad 122mm rocket types.

Figure 6.5
Number of Daily Hamas Rocket Launches During Operation Cast Lead



SOURCE: IAF.
RAND MG835-6.5

⁷⁴Ben-David, "Shoots of Recovery: Israeli Operation Leaves Hamas Weak but Alive," p. 16.

Although Operation Cast Lead lasted only 23 days compared with the IDF's 34-day counteroffensive against Hezbollah in 2006, it featured more precision munitions fired from attack helicopters (1,120 compared with 1,070 during the second Lebanon war), reflecting the closer involvement of the IAF's AH-1 Cobras and AH-64 Apaches in integrated support of IDF ground operations.⁷⁵ This and similar contrasts in force-employment efficiency between the second Lebanon war and Operation Cast Lead well attest to the much-improved level of air-ground cooperation within the IDF since 2006 that was made possible by better air-ground liaison, improved concepts of operations (including more decentralized control of air assets), better joint campaign planning, and more relevant aircrew training. (Table 6.1 presents a full rundown of the comparisons in the numbers of total sorties and sorties by aircraft type, the number of flight hours flown and munitions expended, and the number of targets attacked in each operation.) The IAF employed mixed-force tactics in these operations, with Cobras and Apaches working conjointly. Aircrews in squadrons at different bases typically conducted their mission briefings either by telephone or

Table 6.1
Sorties Flown and Ordnance Expended in the Lebanon and Gaza Wars

	Second Lebanon War	Operation Cast Lead
Duration (days)	34	23
Total sorties	18,900	5,650
Total flight hours	48,500	20,650
Jet sorties (strike)	11,600 (8,200)	2,000 (1,700)
Attack helicopter sorties	2,500	1,150
ISR flight hours	19,150	12,450
Total ordnance	21,700	5,400
Total PGMs used	36%	81%
Jet ordnance (%PGM)	19,440 (28%)	3,150 (67%)
Attack helicopter ordnance	1,070	1,120
Total targets	7,000	3,430

SOURCE: IAF.

⁷⁵“Operation Cast Lead: IAF Missions and Operations.”

by video teleconference before their scheduled takeoff times. Because there was no significant enemy surface-to-air threat, attack helicopter pilots were allowed to press close in to their targets whenever they deemed it necessary for providing needed fire support.⁷⁶ Their overall mission effectiveness was considerably greater as a result. After the ceasefire went into effect, IDF ground commanders, in mass debriefings convened to review and critique the performance of all participants, uniformly heralded the IAF's attack helicopters as the preferred platform for aerial ground-attack operations in such built-up areas as Gaza City.

Highlights of the Joint Operation

As a subsequent appraisal conducted by the Air Warfare Centre of the Royal Air Force noted with respect to the IDF's counteroffensive against Hamas, "in contrast to the 2006 Lebanon war, which was a reactive campaign from the Israeli perspective, this event was deliberate and the subject of considerable preparation."⁷⁷ To summarize that counteroffensive's main distinguishing features, Operation Cast Lead was the most intense and sustained use of military force to have taken place in the Gaza Strip since Israel first took control of that contested slice of terrain during the Six Day War of 1967. Throughout the operation, the IAF's principal assigned missions were to

- target and kill key Hamas leaders and other known Palestinian terrorists
- destroy all targetable Hamas infrastructure and symbols of power
- attack Hamas's rocket array and decrease its rate of rocket firing

⁷⁶This is not to say that the IAF was at liberty to operate its aircraft over Gaza as though there were *no* surface-to-air threat. Hamas possessed a modest inventory of SA-7 man-portable SAMs and AAA weapons, as well as an abundance of rocket-propelled grenades and heavy machine guns. (Telephone conversation with Lieutenant Colonel Roni Amir, head of the IAF Doctrine Branch, September 23, 2009. See also Amos Har'el, "Sources: Hamas Fired Antiaircraft Missiles at IAF Planes," *Ha'aretz*, Tel Aviv, January 12, 2009.)

⁷⁷*The 2008/09 Gaza Conflict—An Analysis*, p. 3.

- destroy key Hamas weapons manufacturing and storage facilities
- destroy the tunnels that Hamas used to smuggle weapons in from Egypt
- prepare the battlefield for eventual IDF ground operations
- provide CAS on request for engaged IDF troops
- provide CSAR and medevac support to IDF ground units as needed.⁷⁸

In fulfilling these missions, the main elements of the IAF's air contribution to the counteroffensive included

- massive opening strikes aimed at achieving tactical surprise
- constant and unrelenting provision of real-time ISR to engaged IDF ground units
- extensive use of PGMs to decrease the likelihood of noncombatant fatalities and unwanted collateral damage to civilian infrastructure
- precision strike operations in a densely populated urban environment
- the shortest possible sensor-to-shooter information cycle time.⁷⁹

This contribution was conducted in six phases, each carefully crafted beforehand by the IAF's Campaign Planning Department in close coordination with IDF Southern Command:

- initial air-only attacks
- continued air-only damage to Hamas assets
- preparation of the battlefield for the impending ground maneuver
- air support to initial IDF ground operations
- continued air support to an expanded ground offensive
- working toward a successful political conclusion.⁸⁰

⁷⁸“Operation Cast Lead: IAF Missions and Operations.”

⁷⁹“Operation Cast Lead: IAF Missions and Operations.”

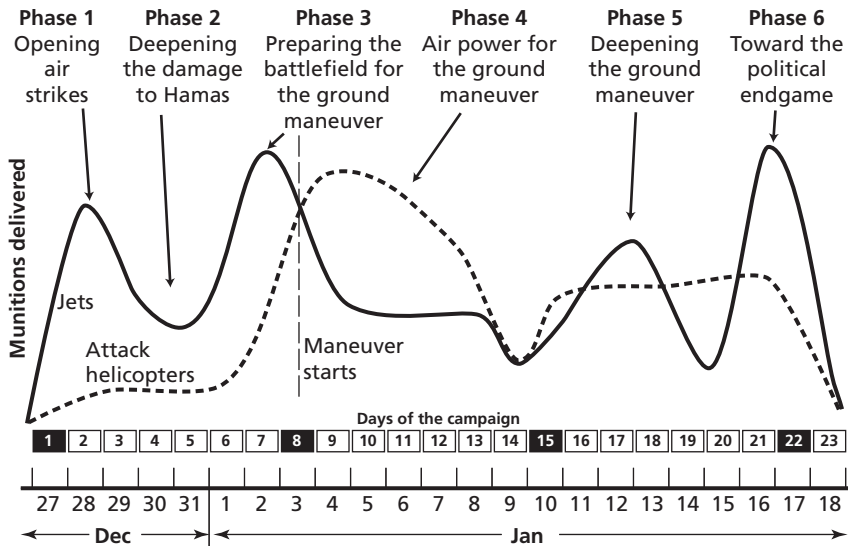
⁸⁰“Operation Cast Lead: IAF Missions and Operations.”

The first phase was dominated by concentrated air attacks against targeted Hamas individuals, as well as against geolocated Hamas smuggling tunnels and short-range rocket arrays. The second entailed further air attacks against Hamas rocket squads and rocket manufacturing and storage facilities. The third, conducted primarily by fixed-wing IAF fighters, featured attacks on identified IED emplacements and other targeted enemy facilities. The fourth, once the initial ground push was under way, entailed close integration between participating IAF aircraft and IDF infantry units and featured heavy supporting involvement by attack helicopters and UAVs that were dedicated to each committed IDF brigade. The fifth phase, essentially a continuation of the fourth, saw additional provision of on-call CAS by the IAF, with the IDF's ground maneuvers enhancing the effectiveness of IAF targeting. The sixth and final phase, as the operation's endgame approached, included a massive effort by the IAF to destroy all remaining geolocated and targetable Hamas smuggling tunnels. Figure 6.6 offers a post hoc reconstruction by the IAF of the timeline and flow of these six campaign phases, as well as the daily pattern of fighter and attack helicopter operations throughout each. The first four phases were carefully preplanned, with the last two more improvised as the campaign approached its endgame. As the relative number of target attacks for each day clearly show, IAF fighter operations predominated throughout most of the eight-day air-only phase. Attack helicopters accounted for the majority of munitions delivered as combat operations transitioned to the integrated air-land phase until the last two days, when a final effort was made by IAF fighters to service all remaining and targetable Hamas smuggling tunnels, with the needed cueing provided by extensive human intelligence sources and by synthetic-aperture and ground-penetrating radars.⁸¹

In some respects, the operating arena that the IDF faced in the Gaza Strip bore a close resemblance to the familiar environment that Israeli forces encountered a little more than two years before in Lebanon. Most notably, these included a Hezbollah-like opponent in Hamas, which stored rockets and other weapons inside public facilities,

⁸¹ *The 2008/09 Gaza Conflict—An Analysis*, p. 4.

Figure 6.6
Phases of IAF Air Operations Against Hamas



SOURCE: IAF.

RAND MG835-6.6

mosques, hospitals, and private homes and apartments; positioned and fired rockets in close proximity to schools and residential buildings; and systematically exploited innocent civilians as human shields to inhibit IDF attacks against its military assets. By one informed account, as of early December 2008, Hamas had more than 20,000 armed operatives who were directly subordinated to the organization's military wing. It divided these forces into semimilitary formations throughout the Gaza Strip and fielded them in territorial brigades, each consisting of more than 1,000 combatants.⁸² In many ways, Hamas as a fighting organization was also much like Hezbollah in its tactics, techniques, and procedures, only less competent and less well-endowed with front-line weapons and equipment. (For example, unlike Hezbollah, Hamas possessed no long- and medium-range rockets, only short-range Qassams and

⁸² *The Operation in Gaza: 27 December 2008–18 January 2009*, p. 28.

Grads.) Also like Hezbollah, Hamas sought not to “win” but merely to survive in the face of far superior Israeli combat power.

However, there were significant differences as well. To begin with, the battlespace in the Gaza Strip was notably unlike what the IDF had confronted in southern Lebanon, because Gaza presented a far more concentrated population and much denser urban areas in which IDF forces were obliged to fight. Gaza contains upward of 1.5 million residents packed into just 139 square miles of mostly built-up terrain, making it one of the most heavily populated areas anywhere in the world. Gaza City, in particular, presented a notably greater urban warfare challenge to the IDF than did the scattered Shiite villages throughout southern Lebanon when it came to the need to mitigate collateral damage.

In addition, the IAF faced far more confined airspace over the IDF's immediate area of operations in the Gaza Strip than it did in southern Lebanon, as well as the presence of numerous nongovernmental organizations whose staffers were commingled with Hamas combatants and the surrounding civilian population. Furthermore, given that Operation Cast Lead took place in late December and early January, inclement winter weather adversely affected more than half of all the IAF's combat sorties flown throughout the 23-day counteroffensive. Although marginal weather conditions never forced any significant mission cancellations, attack helicopters often operated below a 3,000-ft ceiling, with fighters armed with various PGM loadouts holding in orbits high above the cloud deck. Apache attack helicopters and UAVs operating under cloud cover provided, respectively, persistent precision firepower and live streaming ISR imagery over the battlefield. For their part, fighter aircrews cued by UAVs operating below the cloud deck that provided them real-time target laser illumination and aim-point coordinates dropped LGBs and satellite-aided JDAMs from high altitudes through the weather with consistent accuracy.⁸³

On the plus side, one advantage that worked in Israel's favor was that the IDF largely controlled access to the Gaza Strip, which had not been the case in southern Lebanon. Another was the far superior tacti-

⁸³“Operation Cast Lead: IAF Missions and Operations.”

cal information regarding enemy force dispositions and resultant prior intelligence preparation of the battlefield that the IDF enjoyed in Gaza compared with southern Lebanon in 2006. Still another was the fact that Hamas was a considerably less well-organized, well-resourced, and combat-proficient enemy than were Hezbollah's more disciplined and adept combatants in the second Lebanon war.

With respect to the efficiency of combat operations, force connectivity was much better in Operation Cast Lead than it had been during the IDF's earlier counteroffensive against Hezbollah in Lebanon. New ISR technologies allowed the identification, tracking, and targeting of individual Hamas combatants in a crowd.⁸⁴ Also, unlike during their war against Hezbollah in 2006, the IDF's ground forces possessed a capability roughly comparable to the American GPS-based Blue Force Tracker system that provided a real-time indication of the exact location of all engaged IDF ground units on situation displays in the IAF's main AOC and in other command posts that were linked into the overall network.⁸⁵ The digital software that powered the IDF's command-and-control system allowed all services to have a common operating picture of the battlespace showing the location of friendly forces, as well as intelligence-generated information on enemy force dispositions. Once a target was designated from information shown on the display, the most appropriate available munition would be assigned to attack it. At times, the sensor-to-shooter cycle time was reduced to less than 60 seconds, and more often to as little as one to two minutes, thanks to closely fused target information.⁸⁶

As for the impact of the IDF's combat performance on the credibility of Israel's deterrent, a former director of Israel's National Security Council, Major General Giora Eiland, IDF (Res.), noted shortly after the counteroffensive ended: "This hasn't solved the problem. . . . But

⁸⁴Eshel and Fulghum, "Two Steps Forward . . . Israeli Technologies and Coordination Detailed in Gaza Strip Combat Analyses," p. 61.

⁸⁵Interview with Major General Elyezer Shkedy, IAF (Res.), former Commander, IAF, Tel Aviv, March 26, 2009.

⁸⁶Interview with Major General Elyezer Shkedy, March 26, 2009.

it has introduced a completely different cost calculation for Hamas.”⁸⁷ As just one testament to that fact, not long after the ceasefire went into effect, Hamas launched an openly publicized inquiry into the unimpressive performance of its military wing both before and during the execution of the IDF's campaign. Special criticism was directed at the rocket team commanders who had unilaterally chosen to end the truce with Israel on December 19 at a time when preparation by Hamas for the IAF's inevitable retaliation by fully digging out tunnels and securing communications links had not yet been completed.⁸⁸ Fortunately for the relative success of Israel's counteroffensive in the end, Hamas underestimated the extent of Israel's likely response to its continual firing of rockets into southern Israel, just as Hezbollah had done two and a half years before. As an Israeli security-affairs scholar pointed out in this regard, “Hezbollah's survival in 2006 [had] allowed Nasrallah to market a narrative of victory, and two and a half years later Hamas was tempted to try the same recipe.”⁸⁹ This time, however, unlike the case in Lebanon after Hezbollah's abduction of the two IDF soldiers in July 2006, when Nasrallah was primed and ready for an Israeli retaliation, the IDF achieved clear and effective tactical surprise in its opening move against Hamas in December 2008.

The IDF's conduct of Operation Cast Lead also had a perceptible impact on Hezbollah, which was by no means an uninterested observer of Israel's operations in the Gaza Strip. Notably in this respect, three Katyusha rockets were fired into northern Israel from southern Lebanon on January 8 in what was first presumed (and feared) to have been the initial round of a delayed reaction by Hezbollah to the IDF's incursion into Gaza in a probe to see what the possibilities might be for Nasrallah's opening a second front in Israel's northern theater of

⁸⁷ Quoted in Michael Gerson, “Tackling a Fallacy in Gaza,” *Washington Post*, January 30, 2009.

⁸⁸ Najib, “Hamas Investigates Poor Military Response to IDF,” p. 16.

⁸⁹ Shai Feldman, “Deterrence and the Israel-Hezbollah War: Summer 2006,” paper presented at a conference on “Framing Deterrence in the 21st Century” sponsored by the Royal United Services Institute, the Center for Defence Studies at King's College, London, and the U.S. Air Force Research Institute, London, England, May 18–19, 2009, p. 8.

operations. However, Hezbollah's top leaders and militant Palestinian groups in Lebanon alike lost no time in denying any responsibility for those isolated attacks, suggesting strongly that Israel's deterrence of Hezbollah was still holding firm.⁹⁰ Almost surely the three rockets that landed harmlessly in northern Israel were anything but events of which Nasrallah had no prior knowledge, since he must have felt compelled to show at least *some* seeming "contribution" to Hamas's cause. Yet the terrorist leader also faced a profound dilemma, in that he had by no means forgotten the devastation that the IDF had dealt to his organization in 2006 and accordingly was in no mood to invite another round of such punishment.

Where Israel Got It Right This Time

In the end, Operation Cast Lead sent a sufficiently impressive message to Hamas to induce its leaders to accept and honor a ceasefire within just three weeks and two days from the start of the IDF's counter-offensive. To be sure, much as in the case of Israel's earlier experience against Hezbollah during the second Lebanon war of 2006, the operation's results were less than definitive for the Olmert government, as attested by Hamas's living on to fight another day and Iran's quick resumption of covert rearmament of the terrorist organization once the ceasefire went into effect. Said the IDF's Chief of Staff, General Ashkenazi, on this important point as the smoke was still clearing: "The Gaza campaign is over but not done with."⁹¹ Yet although Operation Cast Lead, like Operation Change of Direction before it, failed to provide total closure for Israel in that it left Hamas intact as a challenge still to be dealt with, the Olmert government and the IDF unquestionably showed a more effective approach to goal-setting, as well as a much-improved joint combat repertoire, the second time around.

⁹⁰Nicholas Blanford, "New Gaza Front Unlikely Despite Lebanon Rockets," *Jane's Defence Weekly*, January 14, 2009, p. 6.

⁹¹Alon Ben-David, "Iran 'Is Rearming' Hamas in Gaza," *Jane's Defence Weekly*, January 28, 2009, p. 7.

To begin with, at the strategic level, the operation ended on a decidedly more upbeat note as far as Israel's leadership and rank and file were concerned. In a clear departure from the equivocations in Israeli government pronouncements that ensued after the war against Hezbollah ended in August 2006, Prime Minister Olmert immediately declared both categorically and confidently following the cease-fire accepted by Hamas on January 18, 2009: "We won." Olmert added that the IDF's objectives had been "obtained in full," that Hamas had been "surprised and badly beaten," and that this time his government had "made decisions responsibly and wisely."⁹²

With potentially game-changing national elections looming in little more than a month, great pressure had been building on the Olmert government before the IDF's counteroffensive was finally under way to go further this time and seek not just to "degrade" Hamas but to deal it a mortal blow.⁹³ Yet the prime minister held firm in the end by settling for more modest and achievable goals. Operation Cast Lead, as one observer later noted, was "limited in scope, duration, and intensity," with the IDF having used only a small fraction of the combat power that had been available to it.⁹⁴ Shortly after the second Lebanon war ended, the IDF had begun developing multiple response options against the increasingly intolerable cross-border rocket and other terrorist provocations by Hamas, ranging from retaliatory air strikes of limited scope and duration to a full invasion and reoccupation of the Gaza Strip and destruction of Hamas once and for all. Wishing to avoid getting caught up in another open-ended quagmire as the IDF had done in Lebanon between 1982 and 2000, however, Olmert and his cabinet opted in the end for a more limited operation aimed simply, as the prime minister explained, at creating a "new security reality" in

⁹²Aluf Benn, "Israel Declares Victory in Gaza, but at What Cost?" *Ha'aretz*, Tel Aviv, January 20, 2009.

⁹³Barak later said disapprovingly of that highly vocal public pressure that "this chatter would have made Entebbe or the Six Day War impossible." (Ravid, "Disinformation, Secrecy and Lies: How the Gaza Offensive Came About.")

⁹⁴Jeffrey White, "Examining the Conduct of IDF Operations in Gaza," Washington, D.C.: The Washington Institute for Near East Policy, Policy Watch No. 1497, March 27, 2009.

Gaza.⁹⁵ As General Nehushtan later stressed in the same vein in hindsight, “Cast Lead was not a war. It was an operation with limited goals for a specific scenario.” Although some IAF assets, such as attack helicopters and UAVs, operated at “near capacity,” he pointed out, other force elements worked at only 10 percent of their full potential.⁹⁶

Senior officials with fresh memories of the bitter recriminations that followed on the heels of the IDF’s less than stellar performance in the second Lebanon war also well appreciated the power of domestic and international perceptions and the absolute need for Israel to bend every effort this time to control them. Said one spokesman on this point: “If there is a ceasefire and a perception that Hamas was defeated, it will put even more pressure on them, and on the Iranians, to strive to achieve a balance. It’s a war of the narrative. The one who controls the narrative is the one who wins.”⁹⁷ Toward that end, as an RAF analysis of Operation Cast Lead subsequently reported, “perhaps the most striking aspect of the Israeli information operations campaign was the ‘secondary’ war fought in cyberspace. Israeli citizens were recruited into active blogging teams . . . which set up social media war rooms to fight for the Israeli cause by influencing online discussion.” In addition, “the IDF launched its own YouTube channel to deliver a positive spin on activities such as targeting; the site was visited more than 5 million times in its first week of operation.”⁹⁸

In addition, the Olmert government went to unusual lengths this time to ensure the barest minimum of first-hand reporting of any sort that might have worked to advance Hamas’s cause. The IDF leadership likewise recognized the importance of perceptions management and accordingly minimized media coverage of the counteroffensive by prohibiting journalists, both Israeli and foreign, from entering the Gaza Strip and reporting on combat events once Operation Cast Lead was under way. It also prohibited its troops from bringing personal cell

⁹⁵ Ben-David, “Shoots of Recovery,” p. 15.

⁹⁶ Opall-Rome, “Major General Ido Nehushtan,” p. 30.

⁹⁷ Sebastian Rotella, “Israel Hopes Iran and Hezbollah Get Message of Gaza Offensive,” *Los Angeles Times*, January 18, 2009.

⁹⁸ *The 2008/09 Gaza Conflict—An Analysis*, p. 4.

phones into the war zone, out of its recognition that Hezbollah's ability to locate and monitor the sources of unencrypted IDF cell-phone traffic had caused significant problems on several occasions during the second Lebanon war.⁹⁹

The Olmert government also did much better this time at controlling public expectations by working especially hard to ensure that the operation would be as brief as possible once it was under way. Having been badly stung once by its headlong resort to *force majeure* in Lebanon without having given adequate prior thought to a viable exit strategy, it took special care to set attainable goals, rejecting all temptations to seek a regime change in the Gaza Strip by attempting to reintroduce rule by the Palestinian Authority and Fatah, to disarm Hamas once and for all as a terrorist fighting force, or to reoccupy the Gaza Strip with an open-ended IDF troop presence. It also moved from being reactive to proactive in its approach to dealing with Hamas's continuing cross-border provocations. Once Operation Cast Lead was finally ready for execution, it had been planned down to the last conceivable operational and tactical detail, thanks to a clear prior understanding by all that whenever the next time for a major showdown came, the IDF would *have* to be universally perceived afterward as having prevailed. Largely owing to those careful preparatory measures, polls and street interviews conducted by the Israeli media throughout the 23-day counteroffensive showed that nearly 90 percent of Israel's populace not only favored the operation, but backed it strongly and to its very end.¹⁰⁰ In sum, their exposure to a new sort of asymmetric and hybrid enemy in southern Lebanon in 2006 that combined elements of a nonstate entity with those of a conventional threat array taught both the Olmert government and the IDF that the ultimate challenge for senior leadership in wars against such elusive and resilient opponents is to "under-

⁹⁹ Anthony H. Cordesman, "The 'Gaza War': A Strategic Analysis," final draft circulated for comment and updating, Washington, D.C.: Center for Strategic and International Studies, February 2, 2009, p. 15. During Operation Change of Direction, Hezbollah SIGINT operators in southern Lebanon were able to locate the position of IDF ground forces by triangulating mobile cell phone emissions. (*The 2008/09 Gaza Conflict—An Analysis*, p. 4.)

¹⁰⁰ Ethan Bronner, "Israel United on War as Censure Rises Abroad," *New York Times*, January 13, 2009.

promise and overdeliver.”¹⁰¹ That is what both finally got right in their 23-day operation against Hamas in the Gaza Strip.

Finally, at the operational and tactical levels, the extent of cross-service cooperation displayed by the IAF and the IDF’s land forces in the joint counteroffensive was unprecedented in its seamlessness when it came to the integration of UAVs and attack helicopters with the ground scheme of maneuver. This greatly improved performance was a direct result of the heightened interaction between the two services that first developed during the early aftermath of the second Lebanon war. Between the end of Operation Change of Direction and the start of Operation Cast Lead more than two years later, the IAF aggressively pursued a closer working partnership with the IDF’s ground forces at all echelons. Indeed, from the earliest and most tentative contingency planning and training workups in preparation for a possible showdown against Hamas, an integrated air-ground operation was naturally presumed by all to offer the best course of action to meet the anticipated demands of such a challenge.¹⁰²

As a first step in that direction, soon after Israel’s war against Hezbollah ended in August 2006, the IAF, for the first time in six years, initiated a regular regimen of joint training with the IDF’s ground forces. Its Air-Ground Coordination and Cooperation Unit played a key role in planning and implementing those exercises. Before long, 70 to 80 percent of the IDF’s exercises at the brigade level included dedicated CAS provided by IAF fighters and attack helicopters. Shortly before the Olmert government committed itself to combat against Hamas, those ground units that were slated to take part in the operation engaged in a major large-force training exercise with the IAF. That experience and others like it before spotlighted for both communities the capabilities and operating needs of each.

¹⁰¹Interview with Major General Ido Nehushtan, Commander, IAF, Tel Nof Air Base, Israel, March 29, 2009. For a fuller characterization of this new asymmetric challenge to conventional defense establishments around the world, see Frank G. Hoffman, *Conflict in the 21st Century: The Rise of Hybrid Wars*, Arlington, Va.: Potomac Institute for Policy Studies, 2007.

¹⁰²Interview with Brigadier General Ya’akov Shaharabani, head of the IAF’s Helicopter Division, IAF Headquarters, Ha’kiryá, Tel Aviv, March 31, 2009.

By the time Operation Cast Lead was set in motion on December 27, 2008, much had changed with respect to Israeli air-land integration since 2000 when, with the consent of Israel's ground-force leaders, the IAF had removed its ALOs from the IDF's brigades on the presumption that the latter would henceforth be tasked mainly to deal with lower-intensity threats, such as that presented by the Palestinian *intifada*, against which standoff air support was deemed to have become largely irrelevant. Accordingly, in July 2006, when the Olmert government launched the second Lebanon war, there were *no* ALOs assigned to IDF units at the point of contact with enemy forces. (During Operation Change of Direction, the only ALOs provided by the IAF to Israel's ground units were at the division level, where they were not directly engaged in the fight.) Nor was there any formal IDF doctrine for the provision of CAS by the IAF to requesting ground units.

In all, most of the combat effectiveness displayed by the IDF throughout Operation Cast Lead was due directly to the greatly improved force integration that the leaders of the IAF and of the IDF's ground forces had forged during the two years that followed the end of the second Lebanon war. During Operation Change of Direction, in a comparatively inefficient use of resources, the IAF's attack helicopters and UAVs had been under the exclusive tactical control of the IAF's forward AOC that was collocated with Northern Command. In Operation Cast Lead, those assets were now instead directly subordinated to the IDF's engaged brigade commanders, with each able to count on dedicated, around-the-clock support from them on request.¹⁰³ General Nehushtan also ceded to brigade commanders the prerogative of exercising direct tactical control over the IAF's attack helicopters. Indeed, by the time the counteroffensive against Hamas was ready to be launched, the IAF's attack helicopter force had become, to all intents

¹⁰³ General Nehushtan was clear to point out, however, that although brigade commanders now had the lead in exercising tactical control of joint air-land operations, "professional considerations" regarding precisely how and under what circumstances Israel's air assets could and should be used in combat remained the IAF's final call. (Opall-Rome, "Major General Ido Nehushtan," p. 30.)

and purposes, army aviation in the manner in which it was used.¹⁰⁴ Heron, Searcher, and Hermes 450 UAVs contributed to the ISR effort and were also tasked and controlled at the brigade level.¹⁰⁵

Also for the first time in Operation Cast Lead, the brigade headquarters was the nerve center for all combat activity, and it exercised a substantial degree of autonomy from higher headquarters both at Southern Command and in the IDF's General Staff compound back in Tel Aviv. With respect to air operations, the brigade headquarters controlled all IAF attack helicopter, UAV, and ISR assets, along with some fixed-wing fighters. To ensure the fullest and most effective exploitation of IAF air power in support of IDF ground operations, the joint-force commander within the brigade headquarters, an army brigadier general, had an IAF colonel constantly at his side, who saw to the uninterrupted provision of direct air influence on the planning and conduct of combat operations. The associated presence of IAF squadron officers in the brigade headquarters contributed pivotally to the development and maintenance of a high degree of trust and understanding between the headquarters and engaged front-line units. This proven approach toward ensuring the fullest possible exploitation of air power in joint warfare has a direct bearing on current U.S. and allied counterinsurgency operations in both Iraq and Afghanistan in its testimony to the need for decentralized control of air assets against hybrid opponents and a robust command and control entity below the level of the AOC staffed by high-quality airmen of the appropriate rank and experience to provide a suitable level of air influence in joint combat at the tactical level.¹⁰⁶

Beyond the improved arrangements at the brigade headquarters level described above, every participating ground-force brigade had an embedded TACP consisting of five IAF team members who sorted raw incoming information and converted it into actionable intelligence for

¹⁰⁴Interview with Colonel Meir (last name withheld), Commander, Doctrine Department, IDF Ground Forces, at an IDF installation near Tel Aviv, March 30, 2009.

¹⁰⁵Fulghum, Eshel, and Barrie, "New War, Fresh Ideas: Israel's Battles in the Gaza Strip Appear to Show Innovation and Might," p. 26.

¹⁰⁶*The 2008/09 Gaza Conflict—An Analysis*, pp. 5, 7.

time-critical targeting. Each TACP included both an attack helicopter pilot and a fighter pilot or WSO as assigned ALOs, some of whom were veteran reservists up to the age of 60. The TACP members also coordinated CAS attacks and deconflicted the airspace over each brigade's area of operations.¹⁰⁷ Each brigade also now had the support of a dedicated attack helicopter squadron, which provided a pilot to the TACP who communicated with airborne attack helicopter aircrews. To reduce the workload on brigade commanders and on the IAF's Air-Ground Coordination and Cooperation Unit, TACP members were authorized to call in air support on their own initiative. ALOs also had constant access to real-time streaming UAV imagery. New operating procedures allowed attack helicopters to deliver fire support, in some cases, to within 100 feet of friendly troop positions.¹⁰⁸ They also gave attack helicopter flight leaders essentially unrestricted freedom of tactical decision throughout the Gaza operation. (Fighter strikes were coordinated at the division level with the IAF's main AOC in Tel Aviv; preplanned target attacks were overseen by IAF combat controllers in Southern Command's main command post.)

In addition, during the IDF's counteroffensive against Hezbollah in 2006, General Shkedy's personal approval had been required for IAF aircrews to conduct CAS in danger-close conditions. In the subsequent Gaza operation, IAF terminal attack controllers assigned to engaged ground units were cleared to grant that approval, which naturally entailed a great deal of personal responsibility on their part.¹⁰⁹ Moreover, in a major departure from its practice throughout the second Lebanon war, the IAF's main AOC this time was completely out of the command-and-control loop other than for transmitting rules of

¹⁰⁷The IDF's ground commanders would like to see this initiative pressed even further down to the battalion level. A major limiting factor preventing that, however, is a lack of enough properly trained and certified IAF pilots and WSOs on hand to go around. (Interview with Colonel Meir [last name withheld], Commander, Doctrine Department, IDF Ground Forces, at an IDF installation near Tel Aviv, March 30, 2009.)

¹⁰⁸Eshel and Fulghum, "Two Steps Forward . . . Israeli Technologies and Coordination Detailed in Gaza Strip Combat Analyses," p. 61.

¹⁰⁹Interview with the commander of an AH-1 attack helicopter squadron, Palmachim Air Base, Israel, March 31, 2009.

engagement and special instructions to participating IAF aircrews. Most nonpreplanned targets were now nominated by the IDF's brigade commanders. To further fine-tune the integration of ongoing air and ground operations while the fighting was actually under way, the IAF's senior leaders met with their ground-force counterparts a week after the start of the counteroffensive and again ten days before Operation Cast Lead concluded. Once engaged in the counteroffensive, IAF aircrews reportedly found their efforts against Hamas to be relatively undemanding, thanks in large part to their earlier cooperative training with the ground forces that familiarized them beforehand with virtually any cross-service issue and friction point that might arise. In all, a former IAF Commander and later Deputy Chief of Staff of the IDF remarked in a post-campaign reflection that the Gaza operation was a "major improvement" in air-ground coordination compared with that displayed during the more troubled second Lebanon war.¹¹⁰

The campaign's integrated air-land phase also saw an unprecedented unity of effort between the IDF's ground forces and Israel's internal security agency, Shin Bet. The IAF and Shin Bet likewise, for the first time on that scale, merged their capabilities to create new sources of real-time intelligence for hunting down a variety of TSTs. Shin Bet embedded its representatives in various IDF command posts, as well as in forward-deployed combat units. The latter operatives gathered valuable human intelligence to supplement what AMAN and the IAF were collecting by means of their SIGINT and standoff ISR assets.

The IAF also learned well from its earlier experience in Lebanon with respect to independent aerial strike operations. Recognizing in hindsight that a carefully preplanned effort like Operation *Mishkal Sguli* against Hezbollah's known and targetable "nature reserves" in southern Lebanon could have gone far toward mitigating the threat of Katyusha rocket fire against Israel's civilian population, the IAF conducted a thorough mission preparation for the first day's air attacks against Hamas very much along the lines of its similar planning four years earlier for *Mishkal Sguli* before launching into Operation Cast

¹¹⁰ Interview with Major General David Ivry, IAF (Res.), Tel Aviv, March 25, 2009.

Lead.¹¹¹ The shorter kill chain that the IAF developed and validated during the second Lebanon war quickly obliged Hamas's rocket teams to cease grouping their rocket-launch sites in clusters because of their heightened susceptibility to prompt counterbattery fire from the air.¹¹²

New technology reportedly used by the IAF for the first time in combat included an enhanced automatic gain control that allowed forward-looking infrared sensors to peer through a weapon detonation fireball to conduct instant BDA.¹¹³ To speed up the BDA process, IAF analysts assumed that any JDAM that had been successfully released within proper parameters had achieved a valid hit on its designated target aim point due to the weapon's proven reliability over time.¹¹⁴ Live streaming video imagery from UAVs also allowed ALOs to view a real-time picture of any area of interest, thereby facilitating their assistance with route clearing, targeting of IEDs, and eliminating enemy force concentrations that might threaten advancing IDF forces.

After it was over, CAS delivery by the IAF to engaged IDF troops was uniformly adjudged to have been more than satisfactory, reflecting a clear payoff from the greatly intensified joint training and associated cross-service trust relationships that the IAF and IDF had nurtured during the two years that followed the end of the second Lebanon war. As General Nehushtan later remarked, the main lesson to be drawn from the integrated air-land counteroffensive against Hamas was the IAF's "full partnership with the ground forces," which enabled "well-planned, well-rehearsed, truly joint operations based on a suit of capabilities specifically sewn for their missions." Essential to this, the IAF commander added, was "intimate cooperation between all relevant intelligence branches, which allowed commanders to constantly replenish their target banks during the course of the fighting." Even

¹¹¹ Interview with Brigadier General Johanan Locker, Deputy Commander and Chief of Staff, IAF, Tel Nof Air Base, Israel, March 29, 2009.

¹¹² Fulghum, "Gaza: Phase Three—Israel Defense Forces Could Wrap Up Gaza Ground Campaign in Two Weeks," p. 27.

¹¹³ Fulghum, Eshel, and Barrie, "New War, Fresh Ideas."

¹¹⁴ Interview with Major General Ido Nehushtan, IAF Commander, IAF Headquarters, Ha'kirya, Tel Aviv, March 31, 2009.

more so, he further added, was the intimate cooperation down to the lowest tactical levels that both the IAF's and the ground forces' most senior leaders had painstakingly cultivated over the preceding two years. IAF aircrews and UAV operators, General Nehushtan pointed out, worked directly with Israel's ground commanders from the earliest stages of joint mission planning, each in his own assigned sector, to a point where "they knew one another. They recognized each other's voices over the network and could smell each other's sweat."¹¹⁵

The only major downside aspect of what otherwise was a highly successful combat performance by the IDF was the Olmert government's all but complete failure in the unending battle of narratives when it came to its handling of the inadvertent civilian fatalities that were incurred as a result of air- and ground-delivered IDF fires throughout the Gaza Strip. That failure was ascribable in large part to the government's manifest inability to stay abreast of Hamas's effective and well-oiled propaganda machine in the contest for international perceptions and opinion because of its overly lethargic approach to conducting information operations. To cite just one of a number of examples of this politically consequential failure on the Olmert government's part, on January 6, some 40 civilian fatalities occurred in the vicinity of a UN school in Gaza as a result of an alleged IAF attack targeted against a concentration of Hamas gunmen who were said to have sought sanctuary in the school. It later turned out that the IDF had not targeted the school, nor were any civilian deaths incurred in the school. Yet Israel's information establishment was a day late in issuing a rebuttal to the allegation once the truth was determined and understood.¹¹⁶

Nevertheless, a nontrivial number of noncombatant Gazan fatalities were incurred over the course of the campaign as a direct, if unintended, byproduct of IDF combat actions. To its credit, the Olmert

¹¹⁵ Opall-Rome, "Major General Ido Nehushtan," p. 30. In an interesting ground-force perspective on this heightened cross-service cooperation within the IDF, the Commander of Southern Command, General Galant, was said to have commented affectionately that in its culture, the IAF showed by its performance in Operation Cast Lead that it had moved from participation to partnership in the ground campaign. (Telephone conversation with Lieutenant Colonel Roni Amir, head of the IAF Doctrine Branch, September 29, 2009.)

¹¹⁶ *The 2008/09 Gaza Conflict—An Analysis*, p. 5.

government was both quick and totally frank in owning up to these incidents and expressing its regret that they had taken place. That did not, however, suffice to head off what soon thereafter blossomed into a vocal outpouring of charges from various human rights groups regarding the allegedly irresponsible and even arguably criminal casualties among the noncombatant civilian population of Gaza caused by the IDF's putatively indiscriminant and wanton target choices and use of munitions. The two most prominent of these investigatory charges against the Israeli government emanated, respectively, from the privately endowed nongovernmental organization Human Rights Watch headquartered in New York and from the Human Rights Council of the United Nations.

The first of these two briefs against the IDF's conduct of Operation Cast Lead appeared in June 2009 and focused on six separate alleged UAV attacks by the IAF that were said to have killed a total of 29 innocent Palestinian civilians in the Gaza Strip. The brief charged that in all six instances, the IDF "either failed to take all feasible precautions to verify that the targets were combatants . . . or they failed to distinguish between combatants and civilians and to target only the former." It further charged that in all instances, the IDF "repeatedly failed to verify that its targets constituted military objectives" and that in each and every case, the IAF's UAV operators "should have" been able to distinguish between Hamas fighters and civilians by means of the UAV's high-resolution electro-optical sensors.¹¹⁷ This brief ended with a "recommendation" that the government of Israel "fully cooperate" with the commission of inquiry established by the UN's Human Rights Council noted above.¹¹⁸ It offered no such "recommendation" for the leadership of Hamas or, for that matter, any reference whatever to that organization's openly avowed and even boastful willful targeting of innocent Israeli citizens as the centerpiece of its chosen terrorist strategy.

At least the above-noted document produced by Human Rights Watch made a pretense of being objective in its presentation of the

¹¹⁷ Garlasco, *Precisely Wrong*, pp. 4, 17, 19, 22.

¹¹⁸ Garlasco, *Precisely Wrong*, p. 33.

pertinent facts and arguments. That was not the case, however, with the similar but far more massive 575-page tome issued the following September 15 by the “fact-finding mission on the Gaza conflict” established the previous April 3 by the UN’s Human Rights Council and headed by Justice Richard Goldstone, a former judge of the Constitutional Court of South Africa and former prosecutor of the international criminal tribunals for the former Yugoslavia and Rwanda (hereinafter referred to as “the Goldstone report”). The latter indictment, which was mandated by the UN “to investigate all violations of international human rights law and international humanitarian law that might have been committed at any time in the context of the military operations that were conducted in Gaza,” was a manifestly one-sided and partisan screed against the government of Israel that paid no heed whatever to the conduct of Hamas but instead was devoted in its entirety toward elaborating the core allegation that the IDF, in conducting Operation Cast Lead, committed “grave breaches of the Fourth Geneva Convention in respect of [sic] willful killings and willfully causing great suffering to protected persons and, as such, thereby [giving] rise to individual criminal responsibility.”¹¹⁹ The Goldstone report further charged that the IDF-inflicted “incidents and patterns of events” examined throughout the course of the UN mission’s inquiry were “the result of deliberate planning and policy decisions” on the part of the IDF and the Israeli government.¹²⁰

¹¹⁹ *Human Rights in Palestine and Other Occupied Arab Territories: Report of the United Nations Fact-Finding Mission on the Gaza Conflict*, New York: United Nations: Human Rights Council, Twelfth Session Agenda Item 7, September 15, 2009, pp. 1, 16.

¹²⁰ *Human Rights in Palestine and Other Occupied Arab Territories*, p. 21. Ten days after its release, Israel’s minister of defense, who oversaw the planning and conduct of Operation Cast Lead, gave vent to his “outrage” at the UN document’s accusations, branding the Goldstone report “a shameful document” and “a political statement—not a legal analysis.” He further dismissed the UN mission that produced it as a “kangaroo court” and added forthrightly: “Israel is not perfect. As much as we try to uphold the IDF’s ethical code, mistakes sometimes happen. . . . And when we are told that things may not be right, we check it out and, when necessary, prosecute those involved. We are now pursuing two dozen criminal investigations regarding events that occurred in Gaza. We don’t need the Human Rights Council, Richard Goldstone, or anyone else to teach us how to maintain the democratic principles which are our lifeblood.” (Ehud Barak, “At the UN, Terrorism Pays,” *Wall*

Well aware that these and other charges of alleged human-rights violations by the IDF during the Gaza campaign were in the works, and in an anticipatory effort to preempt those imminent indictments of the IDF's operational conduct, the government of Israel wasted no time gearing up to prepare its own legal brief in defense of its and the IDF's combat actions. That substantial document, released on July 29, 2009, freely admitted on its first page that the IDF was still in the process of "conducting comprehensive field and criminal investigations into allegations regarding the conduct of its forces" during Operation Cast Lead.¹²¹ Apart from that, however, the document was adamant throughout in insisting that "Israel's resort to force in the Gaza operation was both a necessary and proportionate response to Hamas's attacks" and that in all cases, "Israeli commanders and soldiers were guided by International Humanitarian Law, including the principles of distinction and proportionality." It further insisted that "where incidental damage to civilians or civilian property could not be avoided, the IDF made extraordinary efforts to ensure that it would not be excessive."¹²²

In addition, in developing a crucial theme that neither the complaint issued by Human Rights Watch nor the Goldstone report saw fit to address, the Israeli government's brief on behalf of the IDF's actions in Operation Cast Lead declared outright that "Hamas committed clear violations of international law [that included] launching of rocket attacks from within densely populated areas near schools and protected UN facilities, the commandeering of hospitals as bases of operations and ambulances for transport, the storage of weapons in mosques, and the booby-trapping of entire civilian neighborhoods so that an attack on one structure would devastate many others." It likewise pointed

Street Journal, September 25, 2009.) For a more reflective and analytical dissection of the Goldstone report that essentially arrived at the same conclusions, see Moshe Halbertal, "The Goldstone Illusion: What the UN Report Gets Wrong About Gaza—and War," *The New Republic*, November 6, 2009. The author of the latter article is a professor of philosophy at Hebrew University and professor of law at the New York University School of Law.

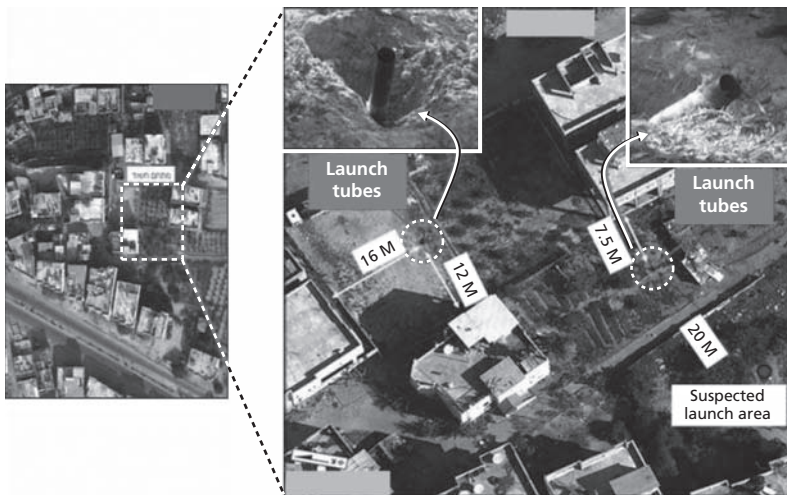
¹²¹ *The Operation in Gaza: 27 December 2008–18 January 2009*, p. 1.

¹²² *The Operation in Gaza*, p. 2.

out that “many of the civilian deaths and injuries, and a significant amount of the damage to property during the Gaza operation, [were] attributable to Hamas’s tactic of blending in with the civilian population and its use of, or operations near, protected facilities and civilian property.”¹²³ The expanded picture in Figure 6.7 provided by high-resolution Israeli UAV imagery presents clear evidence of Hamas’s tactic of using the protection of a civilian urban environment for conducting offensive operations against Israel with short-range rocket fire.

In defending Israeli combat actions, the brief further stressed that “the IDF not only checked and cross-checked targets and used the least destructive munitions possible to achieve legitimate military objectives; it also implemented an elaborate system of warnings . . . to alert civilians to leave specific areas before IDF operations commenced.” It added that “even the most sophisticated systems and the most rigorous training cannot prevent all civilian casualties and damage to public

Figure 6.7
Exploitation by Hamas of Urban Congestion for Weapon Placement



SOURCE: IAF.
RAND MG835-6.7

¹²³ *The Operation in Gaza*, p. 2.

and private property” and that to make matters even worse for innocent Gazan civilians, “ Hamas’s cynical choice of tactics—including the unlawful strategy of deliberately shielding their operatives and munitions in civilian buildings and protected sites—made difficult, complex, and hazardous battlefield decisions by the IDF even *more* difficult, *more* complex, and *more* hazardous.” Finally, the document punctuated its vigorous defense of the IDF’s actions by highlighting the universally accepted stipulations of the law of armed conflict that “mistakes made in combat do not, as such, constitute war crimes,” that “military operations that cause *unintended* and unwanted damage to civilians do not constitute violations of the law of armed conflict, much less a war crime,” and that “in accordance with the law of armed conflict, civilian facilities that served military purposes did not enjoy protection from attack.”¹²⁴

All in all, the Israeli government has thus far well withstood the above-cited charges of willful or negligent human-rights violations. It has most recently been aided in this respect, moreover, by a windfall revelation on November 1, 2010 by Fathi Hamad, the interior minister of Hamas’s administration in Gaza, that as many as 700 Hamas military and security operatives were killed as a direct result of IDF combat operations throughout the course of Operation Cast Lead. This number, consistent with earlier official Israeli findings, is substantially higher than the numbers disclosed previously by Hamas and used in the UN’s Goldstone Report, and it belies that report’s allegation that only one of five Palestinian fatalities incurred during the campaign was a bona fide Hamas “combatant.” In an interview given that day to the London-based forum *Al Hayat* and published concurrently in Hamas’s organ *Felesteen* in the Gaza Strip, Hamad further disclosed that on the campaign’s first day, the IAF’s bombing of the Gaza City police headquarters and its immediate environs killed 250 members of Hamas and its various factions, in addition to 200–300 additional operatives from the Al Qassam brigades. As to why Hamas was moved belatedly to reveal these actual facts when its past practice had been to mask the true number of its operatives killed by the IDF, the best guess

¹²⁴ *The Operation in Gaza*, pp. 3, 8, 41–42, 86 (emphasis in the original).

is that Hamas's leadership has lately felt a mounting need to show that its forces had played a major role in the fighting against the IDF during Cast Lead so as to rebut charges from local opponents that the "people of Gaza" rather than Hamas had borne the brunt of Palestinian losses throughout the 23 days of fighting.¹²⁵

For its part, the IDF showed in its conduct of Operation Cast Lead that it had ridden a clear learning curve from the second Lebanon war to Gaza, perhaps most notably by having entered the latter campaign from its first moments with an unambiguous wartime mindset. In marked contrast, the Olmert government and IDF went into their earlier counteroffensive against Hezbollah with the thought in mind that their response would simply be a small-scale and time-limited "operation." After the 34-day counteroffensive ended, it took the government a full year to come around to calling Operation Change of Direction a war. The net result of that flawed approach, in the words of the head of the IAF's Helicopter Division, General Shaharabani, was an unpreplanned and only gradually escalating campaign that could be compared in its ultimate evolution to "slowly boiling a frog."¹²⁶ The IDF's failure to engage Hezbollah from the very start with the thought in mind that it was in mortal combat with an able and determined opponent adversely affected its performance in almost every respect, from its excessively low propensity to assume risk and its ensuing risk management to its initial unwillingness to pay the needed price to achieve its desired objectives.

In its very different lead-up to Operation Cast Lead, the IDF, having drawn the right conclusions from its earlier experience in Lebanon, envisaged a joint air-ground campaign from the first moments of its options planning and fully accepted the possibility of incurring more than occasional troop losses as an inescapable buy-in cost toward achieving its declared goals. (In the end, its actual casualties during the

¹²⁵ "The Number of Hamas Operatives Killed in Operation Cast Lead According to Fathi Hamad, Interior Minister of the De Facto Hamas Administration," Tel Aviv: The Meir Amit Intelligence and Terrorism Information Center, November 3, 2010.

¹²⁶ Comments on an earlier draft by Brigadier General Ya'akov Shaharabani, IAF, head of the IAF Helicopter Division, November 4, 2009.

campaign's air-land phase were far lower than anticipated.) It further showed a willingness to run greater risks this time by putting attack helicopters into airspace above hot areas on the ground that were concurrently being serviced by bomb-dropping fighters, thus increasing the efficiency and effectiveness of its CAS efforts. It also went from providing on-call CAS to offering up proactive CAS, in which the IAF took the initiative by asking all the engaged brigade commanders what they needed, via daily phone conversations, rather than waiting passively for emergency requests for on-call CAS from IDF troops in actual contact with enemy forces.¹²⁷ Summing up the collective impact of these many improvements in cross-service operational practice, Anthony Cordesman aptly portrayed Operation Cast Lead as "a case study in how Israeli capabilities [had] changed since the fighting with Hezbollah in 2006."¹²⁸

¹²⁷Comments on an earlier draft by Brigadier General Ya'akov Shaharabani.

¹²⁸Cordesman, "The 'Gaza War': A Strategic Analysis," p. 1.



New moves toward air-ground cooperation. One of the main lessons learned by the IDF from its inconclusive war against Hezbollah was the need for closer integration of air and land operations on a regular basis in routine peacetime training. Not long after that lesson was duly assimilated, air-land exercises like the one depicted here had become familiar events at the IDF's National Training Center.



Change of command. On May 13, 2008, General Shkedy (right) retired as IAF commander after the IDF's closer air-land integration had become well established. He was succeeded by Major General Ido Nehushtan (left), who headed the IDF's Planning Directorate during the second Lebanon war, at a ceremony led by Lieutenant General Gabi Ashkenazi (center), General Halutz's successor as Chief of Staff.



Qassam launch. Two years after Israel withdrew from the Gaza Strip as a conciliatory move in 2005, the radical terrorist group Hamas violently overthrew the more moderate Palestinian authority there and began firing Qassam rockets like the one shown here into southern Israel. After more than 7,000 of such Hamas provocations by late 2008, the Olmert government finally decided it had had enough.



Fam ride for a land warrior. As planning for Operation Cast Lead moved into high gear in a setting of unprecedented air-ground cooperation in the IDF, the IAF gave selected army leaders familiarization flights in IAF fighters so they could observe the battle arena from an airman's perspective. Here, Major General Yoav Galant, commander of IDF Southern Command, prepares for an F-15D orientation sortie.



Cast Lead's combat principals. Defense Minister Ehud Barak (left) and Chief of Staff Lieutenant General Gabi Ashkenazi (center) meet with troops of the IDF's Gaza Division on the eve of offensive operations against Hamas. Before retiring as IAF Commander, General Shkedy worked hard—with ultimate success—to convince both that air power could be effective in the impending campaign.



Air commander. Major General Ido Nehushtan, the IDF's chief planner during the second Lebanon war, moved up to relieve General Shkedy as IAF Commander just as the workups for Israel's war against Hamas were getting under way. Unlike in Western air arms, all IAF pilots and WSOs on headquarters assignment, including the commander, stay mission-ready by flying at least once a week.



Mission brief. Pilots and WSOs of a four-ship formation of F-16Is about to launch from their base hear their flight lead (a lieutenant colonel seated at the right on the platform) go over the final tactical details of their upcoming mission, during which they will most likely assume a medium-altitude CAP station off the Gaza Strip and await tasking from the IAF's forward AOC or from ground FACs.



Stepping to their jets. Having donned their g-suits, torso harnesses, and other personal life-support equipment, these F-16I pilots and WSOs depart the squadron for the flight line to board their aircraft and fly the combat mission they just briefed. Scenes like this were around-the-clock happenings in IAF fighter squadrons during Israel's war against Hezbollah and its subsequent campaign against Hamas.



Out of the chocks. This two-seat F-16I, its overwing conformal fuel tank for enabling extended on-station time clearly visible here, has departed its shelter and been cleared to taxi to the active runway at its base for an imminent takeoff just as soon as the squadron's ground maintenance technicians have given the aircraft a final lookover in the arming area and cleared it for launch.



Precision strike. During the initial wave of IAF attacks against Hamas, as many as 40 F-15Is struck multiple aim points throughout the Gaza Strip—many in dense urban settings—within a span of just 3 minutes 40 seconds. The IAF later reported a 95-percent success rate in that opening round, with nearly all bombs achieving direct “alpha” hits and causing little harm to surrounding civilian infrastructure.



Long loiterer. The Heron 2 UAV, called *Eitan* and *Machatz 2* by the IAF, was still in development during the second Lebanon war but was fully operational by the time of the subsequent Operation Cast Lead. An approximate counterpart to the USAF's RQ-4 Global Hawk, it has an 85-ft wingspan, carries a multispectral sensor package, and can remain airborne at 45,000 ft for as long as 36 hrs or more.



An ISR workhorse. The IAF's Hermes 450 UAV had a 92-percent mission success rate during the second Lebanon war. It also figured prominently in the IDF's ISR effort in Cast Lead, this time tasked and controlled at the brigade level rather than by the IAF's AOC. It could transmit still images of targets directly into the cockpits of IAF fighters holding overhead to conduct immediate TST attacks.



Sometimes a soldier's best friend. Attack helicopters like this AH-64D Apache Longbow, known in the IAF as the *Sharaf* ("Serpent"), were used more aggressively and fired more precision munitions in support of IDF troops during the 23-day Gaza campaign than during the 34-day war against Hezbollah, reflecting much-improved air-ground coordination and more decentralized control of air assets



Vertical envelopment. As the air-land phase of Cast Lead began on the campaign's eighth day, IDF ground troops at first moved into the Gaza Strip in dismounted elements at night, aided by night-vision goggles and supported by IAF attack helicopters. Later, by the end of the air-land offensive's first week, daytime air assaults like this insertion of troops by the IAF on January 6 became more common.



Combat diplomat. A member of the Likud Party at the start of her political career in 1996, Tzipi Livni later became a founding member of the Kadima Party in late 2005 and served as Israel's foreign minister during both the second Lebanon war and the subsequent Operation Cast Lead against Hamas. Throughout both campaigns, she was unrelenting in her spirited defense of Israeli combat operations.



Master air planner for Gaza. Brigadier General Johanan Locker, while still head of the IAF's Air Division, was the prime mover behind the IAF's establishment of a closer dialogue with the ground forces in the early aftermath of the second Lebanon war. Later, as the IAF's Deputy Commander (and the first-ever WSO to serve in that position), he was the chief architect for Cast Lead's air operations.

The Second Lebanon War Reconsidered

In a separate assessment of the two IDF combat experiences explored above, RAND's David Johnson concluded that "the . . . single most important change in the IDF between the 2006 second Lebanon war and the [more] recent operation in Gaza was the clear understanding by senior Israeli political and military leaders that ground operations are an essential component of military operations. They no longer believe that standoff attack alone, principally by air, can create success."¹ Whether or not any of those leaders ever actually harbored such a belief so starkly defined, even at the outset of Operation Change of Direction, is a question that informed observers of Israel's defense establishment can reasonably debate. There is no doubt, however, as Johnson rightly noted, that Israel's security principals emerged from their flawed engagement in 2006 with a realization that any effective effort to cope militarily with hybrid and rocket-armed nonstate opponents like Hezbollah and Hamas must ultimately include determined combat action on the ground to achieve a satisfactory resolution of the assessed problem at hand.² The impact of that realization on the course

¹David E. Johnson, *Military Capabilities for Hybrid Wars: Insights from the Israel Defense Forces in Lebanon and Gaza*, Santa Monica, Calif.: RAND Corporation, OP-285, 2010, p. 6.

²Even before a proof-test of this proposition was provided to the IDF by the end of the Gaza campaign in January 2009, two Australian observers of the second Lebanon war more than a year earlier had already felt safe in concluding from the experience of Operation Change of Direction that "no one branch of military power—sea, land, or air—can solve a national security issue. The only possible way forward is to harness the capabilities resident within the entire armed forces of a nation to increase their effectiveness in a seamless manner, and then

and outcome of the IDF's very different campaign in the Gaza Strip two and a half years later was both deep and profound. In what General Yadlin two months after the latter campaign ended characterized as a real-world enactment of what could be aptly called "The Empire Strikes Back," the IDF demonstrated to both Hamas and Hezbollah that it had a counterstrategy against their rocket provocations that worked and that the Israeli government and people were fully prepared to pay the necessary price to unleash it if need be.³ The net effect was to replenish Israel's stock of deterrence in the eyes of its closest enemies that had been all but depleted in the early aftermath of the second Lebanon war.

As the first five chapters of this book documented in detail, the inconclusive conduct of Israel's war against Hezbollah in 2006 did not represent a "failure of air power" per se, a gross oversimplification of the Olmert government's admittedly flawed strategy which remains the predominant view among most observers to this day.⁴ Rather, in the words of two commentators who wrote one of the best assessments of the counteroffensive during its early aftermath, the second Lebanon war was, in fact, "a very complex event, one in which both sides had gains and losses and both sides made mistakes, and whose outcomes [at the time were] still emerging." They went on to suggest that "the passage of time and serious analysis will be required to arrive at firm conclusions as to what happened in this war, why it happened the way it did, and what the real meaning is."⁵ A year later, in a rich and serious

integrate military power into the larger national power structure through effective strategies." (Kainikara and Parkin, *Pathways to Victory*, p. 2.)

³Interview with Major General Amos Yadlin, IAF, Director of Military Intelligence, IDF Headquarters, Ha'kirya, Tel Aviv, April 1, 2009.

⁴For example, in commenting on a post-campaign study that faulted the IDF's allegedly excessive reliance on air attacks for occasioning the second Lebanon war's less than satisfactory outcome for Israel, retired U.S. Army Major General Robert Scales remarked two years afterward that "the Israelis could have put 2,000 F-16s over Lebanon and it would not have made a lick of difference," as though any senior Israeli military leader, including General Halutz, ever thought otherwise. (Tom Vanden Brook, "U.S. Learns from Israel-Hezbollah War: Pentagon Uses Study to Retool Combat Tactics," *USA Today*, February 14, 2008.)

⁵Makovsky and White, *Lessons and Implications of the Israel-Hizballah War*, p. 35.

assessment of the war from a political-military and strategic perspective, two other thoughtful analysts similarly observed that “there are no clear answers to the vexed questions of what goals were achieved by either protagonist; who won the conflict and who won the peace.”⁶

Yet despite such apropos clarifications and cautionary notes, the initial belief among many that the numerous frustrations experienced by Israel’s leaders and rank and file alike during the second Lebanon war all emanated simply from the parochial pursuit of an “air-only” strategy by the fighter pilot who happened to be serving at the time as the IDF’s Chief of Staff has remained remarkably persistent throughout the ensuing years, notwithstanding the progressive accumulation of ever-mounting countervailing evidence that the actual explanation for the campaign’s disappointing outcome for Israel is more multifaceted than that overly reductionist interpretation would suggest. For example, in its annual survey of the international security scene issued several months after the war ended, the usually balanced and authoritative London-based International Institute for Strategic Studies concluded that General Halutz, IAF airman and presumed air power enthusiast, “convinced the militarily naïve [Israeli] political leadership . . . that air power *alone* could bring Hezbollah to its knees.”⁷ Similarly, a former British Army officer insisted at around the same time that the campaign’s denouement appeared to “demonstrate, once again, an excessive faith in the ability of air forces to achieve decisive results through independent air operations.” This former officer further asserted, completely without foundation in fact, that the IAF “believed it could defeat Hezbollah rocket attacks by aerial bombardment alone.”⁸

Even a full two years after Operation Change of Direction had ended, a study sponsored by the U.S. Army’s Combat Arms Center at Fort Leavenworth, Kansas, continued to perpetuate the view that the difficulties encountered by the IDF throughout the campaign were all attributable to a new doctrine that allegedly “vigorously embraced

⁶Kainikara and Parkin, *Pathways to Victory*, p. xv.

⁷*Strategic Survey 2007: The Annual Review of World Affairs*, London: International Institute for Strategic Studies, 2007, p. 231, emphasis added.

⁸Jim Storr, “Reflections on the War in Lebanon,” *RUSI Journal*, April 2007, p. 71.

air power at the expense of a classic ground-maneuver campaign” and that this was “a major factor in the IDF’s disappointing performance.”⁹ That study further suggested that the IDF, under Halutz’s leadership, “attempted to orchestrate the strategic collapse of Hezbollah through the use of air power and precision firepower-based operations” in a campaign that intentionally sacrificed “ground mobility on the altar of high-tech wizardry.”¹⁰ It went on to charge that the ultimate culprit in all of this was “a new EBO [effects-based operations] doctrine [that] . . . allocated monetary resources to air power and technology at the expense of IDF ground forces.”¹¹

In fact, as General Halutz made it a point to emphasize two years after his resignation as Chief of Staff in the wake of the second Lebanon war, neither the notion of “effects-based operations” nor the IDF’s recently promulgated new doctrine manual had any bearing whatever on his planning and goal-setting for Operation Change of Direction. Nor, he added, did either have any influence on the subsequent conduct of combat operations at any time during the IDF’s counteroffensive. The doctrine manual had been issued far too recently (only two months before, in May 2006) to have been widely read, let alone accepted and assimilated, throughout the IDF. The EBO construct, Halutz added, was regarded within the IDF General Headquarters solely as an options-planning methodology, not a “how-to” guide to combat action. Halutz did concede that the EBO construct as a new approach to strategy development had not been well managed at lower echelons of the ground forces by well-meaning field-grade officers who did not understand its intent and limitations well. Although the construct was never intended for use at the tactical level, it nonetheless was so regarded by some ground units all the same, with predictable confusion when it came time for commanders at the battalion level and below to explain it to the rank and file as a guide to action. That

⁹ Matthews, *We Were Caught Unprepared*, p. 61.

¹⁰ Matthews, *We Were Caught Unprepared*, p. 27.

¹¹ Matthews, *We Were Caught Unprepared*, p. 2.

said, Halutz stressed, EBO was not a product of the IAF, and it never figured in any senior leadership meetings as a guide to the strategies pursued in the second Lebanon war.¹²

In commenting on the U.S. Army-sponsored study referred to above, William Arkin pointed out how its core argument was based on an implicit presumption that Israel's alleged "failure on the battlefield" was somehow "the fault of everyone else but the misunderstood and starved ground forces," as well as an associated belief that Israel's "ground forces—properly employed—would have succeeded where air power 'failed.'"¹³ Elsewhere, Arkin wrote with respect to such denigrations of Israeli air power that all would have readers believe "that somehow a full-fledged ground war with the same mission against this tricky and dug-in force would have been both more successful and less destructive."¹⁴ As for the associated charge that Israeli air power was unable to be "decisive" in the campaign, another commentator rightly added: "If that is the standard, [then] no military service anywhere would pass the test. One might ask the critics: When was the last time the Israeli Army won a war all by itself? Or the U.S. Army?"¹⁵

With respect to this persistent issue, a thoughtful Israeli treatment of the campaign that appeared as the dust of war was still settling spoke to "the so-called failure of the air force to achieve the operation's objectives" and concluded: "A full assessment of the actual situation shows that aerial power did *not* fail in Lebanon, just like it would be

¹²Lieutenant General Dan Halutz, IDF (Res.), lecture at the RAND Corporation, Santa Monica, Calif., September 3, 2008. Since-retired Brigadier General Gal Hirsch, who commanded the IDF's 91st Division during the second Lebanon war, likewise declared emphatically that the new "EBO" content of Israel's updated military doctrine issued in April 2006 had not been refined to a point where it could be deemed operationally usable and was not even remotely a factor in tactical planning at the brigade level and below. Because the IDF's rank-and-file troops had not read the doctrine or, for the most part, even been made aware of it, they could not have been influenced by it in any significant way. (Interview with Brigadier General Gal Hirsch, IDF [Res.], Tel Aviv, March 30, 2009.)

¹³William M. Arkin, unpublished review of Matthews, *We Were Caught Unprepared*, 2008.

¹⁴Arkin, *Divining Victory*, p. xxi.

¹⁵Robert S. Dudley, "The Air War over Hezbollah," *Air Force Magazine*, September 2006, p. 2.

wrong to say that it single-handedly won the [1999] war in Yugoslavia.” True enough, this assessment noted, the IAF admittedly lacked the needed wherewithal to find and engage such no-signature and highly time-sensitive targets as Hezbollah’s Katyushas. Yet insofar as its other operations may have contributed to “creating the conditions” that led to the campaign’s ultimate outcome as it has since evolved, the IAF “did not disappoint in the [second] war in Lebanon. Rather, it did what it can do. . . . This is neither a failure nor a disappointment—this is reality.”¹⁶

Air Power in IDF Doctrine and Operational Practice

The first point to be made in any effort to achieve closure on this still-percolating issue is that the IDF’s combat doctrine that prevailed on the eve of the second Lebanon war (and that remains on the books and accepted to this day) was in no way air-centric beyond the bounds of reason for the diverse challenges that Israel’s defense establishment currently faces across the conflict spectrum. Although he was a career fighter pilot who naturally believed implicitly in the transformed character and capability of today’s air weapon, General Halutz had, on repeated occasion, given voice to duly balanced views on the evolved role of air power in joint warfare. For example, while he was still the IAF Commander, he remarked that the ultimate test for Israeli air power “is its ability to keep on adapting to the tasks at hand. If we don’t do this, the air force is a wasted investment and its entire budget should be transferred to the Golani [an elite IDF infantry brigade]—maybe they can do it better.” He added that every morning throughout his incumbency as IAF Commander, he grappled with the vexing question of “how we can be more relevant in the war against terror. Not whether or not we should be taking part in it, but how to be more

¹⁶Noam Ophir, “Back to Ground Rules: Some Limitations of Air Power in the Lebanon War,” *Strategic Assessment*, August 2006, p. 32.

useful, more effective, more accurate, and more lethal where necessary and less lethal elsewhere.”¹⁷ He later freely admitted his long-standing recognition and acceptance that an air arm by itself, whatever the extent of its capabilities, “cannot stick the flag on a hilltop.”¹⁸

More important yet, the IDF’s recent doctrinal elevation of precision standoff attack over more classic ground maneuver warfare as its preferred approach to modern warfighting was not, as some have suggested, a forced concoction of Halutz’s derived from his natural prejudices in favor of air power. On the contrary, that redirection was first instituted a number of years before by then–Chief of Staff Ehud Barak, a ground-forces general, who had determined on his own that, in light of recent technology improvements and the accumulation of American aerial warfare successes since Desert Storm, the primary focus of options planning for major contingencies by the IDF should now be, as one Israeli scholar put it, “on fire and not on maneuver, on neutralizing the enemy and not on decisively defeating it via conquest of territory.”¹⁹ Israel’s bitter memory of its 18-year entrapment in the Lebanese “mud,” as the IDF’s prolonged presence there came to be widely known among the country’s rank and file, inevitably engendered a “never-again” syndrome after the IDF’s withdrawal from Lebanon in 2000, in which the military leadership determined to leverage its comparative advantage in precision standoff-attack capability in any future counter-guerilla involvement of that nature.

The changed warfighting doctrine that eventually emerged from that awakening was initially developed in the IDF’s Institute for Cam-

¹⁷ Major General Dan Halutz, IAF, quoted in *The War Against Terror Is a Major IAF Mission: Summary of Lectures*, Herzliya, Israel: The Fisher Brothers Institute for Air and Space Strategic Studies, August 2004.

¹⁸ Egozi, “Israeli Air Power Falls Short.”

¹⁹ Ofer Shelah, *The Israeli Army: A Radical Proposal*, Tel Aviv: Kinneret Zmora-Bitan, 2003, p. 37. On this point, while he was still the IAF Commander, Halutz similarly maintained that “we . . . have to part with the concept of a land battle [as the central organizing construct for joint campaign planning]. We have to talk [instead] about the integrated battle and about the appropriate force [for conducting] it.” (Quoted in Matthews, *We Were Caught Unprepared: The 2006 Hezbollah-Israeli War*, p. 15.)

paign Doctrine Studies and was ultimately refined and ratified by its Operations Directorate in the General Headquarters in April 2006.²⁰ As was well described by the RAF's Director of Defence Studies at the time, "the basic concept was that Israel would rely on its proven air supremacy to build an asymmetric advantage. Under this construct, the Israeli Air Force would become the predominant offensive element . . . that would operate against the terrorists or guerillas wherever they were located. . . . Ground forces would be expected to operate in defense of Israel's borders, but offensively would only be used in small, rapid operations in enemy territory to handle particular groups of the enemy who could not be easily dealt with from the air. . . . In other words, such actions would effectively only use special forces. . . . [It] was politically acceptable because it meant that known weaknesses in the IDF ground forces could be ignored. It also played to a long-standing Israeli preference to use technology as a means of avoiding losses of their own people in ground warfare."²¹

Notably, the IAF's leaders have not been prone to overstatement in their portrayal of air power's strengths and limitations in the IDF's struggle against Israel's newly emergent asymmetric opponents. For example, more than a year before the start of Operation Change of Direction, General Shkedy admitted that the IAF "is designed to fight countries with which we have no common borders" and that "at the beginning of [the Palestinian *intifada*], we had no operational solutions for precise, targeted fire." He also freely conceded that the IAF remained "far from obtaining [the] capability . . . to hold ground from the air," adding that "jointness" represented the key to addressing Israel's new security challenges.²² At the same conference, his principal deputy, Brigadier General Eshel, likewise frankly declared that Israel's classic air-power advantage in years past was now "being clearly eroded"

²⁰Interview with Lieutenant Colonel Roni Amir, head of the IAF Doctrine Branch, IAF Headquarters, Ha'kiry, Tel Aviv, March 27, 2009.

²¹Parton, "Air Power's Illusion? Israel's 2006 Campaign in the Lebanon," p. 155.

²²Major General Elyezer Shkedy, IAF, "The IAF Air Campaign in the Intifada," in *Air Power Counter Terrorism*, Herziliya, Israel: The Fisher Brothers Institute for Air and Space Strategic Studies, International Conference Report, November 2005, pp. 32–35.

by the new means of attack possessed by terrorist organizations, most notably their easily concealable short-range rockets that will be “small, rapid [in their use] and more difficult to locate because [their] signature will be smaller.” Moreover, like General Shkedy, he stressed that the IAF “cannot control a given [piece of] terrain from the air,” even though there are new ways emerging in integrated air-land operations in which “the ground force is [now] working for air power” rather than the other way around “until now, [when the] ground force goes on a mission . . . [and the IAF] gives support from the air.” Yet that notwithstanding, he too concluded that although “air power [in recent years] has become ever more dominant,” it will never “by itself . . . be able to win the war on terror. The key [for such] success lies in jointness.”²³

Most other senior IAF officers have also traditionally held duly joint-minded views on the capabilities and limitations of air power. For example, a former F-15 squadron commander, Colonel (Res.) Dror Ben-David, was unabashed in conceding the limitations of air power in counterterrorist operations during a presentation to an air warfare conference sponsored by Israel’s Fisher Brothers Institute for Air and Space Strategic Studies in May 2007: “The only way to fight Hezbollah is to find them. This means you have to create friction so that they come out. You can only do this with ground forces.”²⁴ Similarly, a former IAF Commander and later IDF Deputy Chief of Staff and Director General of the Ministry of Defense, Major General David Ivry, remarked at a Fisher Brothers Institute forum that air power alone cannot be decisive in the war against Islamist extremists because of the criticality of real-time tactical intelligence that cannot be attained solely from the air.²⁵

As if to punctuate this point, while he was still serving as IAF Commander in early 2008, General Shkedy went out of his way to stress the need for all to understand that air power cannot accomplish

²³Brigadier General Amir Eshel, IAF, “The IAF Doctrine of Counterterror Air Warfare,” in *Air Power Counter Terrorism*, pp. 95–98.

²⁴“Israel Air Force Seeks Joint Ops,” *Middle East Newslines*, Montreal, May 15, 2007.

²⁵Ze’ev Schiff, “The Foresight Saga,” *Ha’aretz*, Tel Aviv, August 11, 2006.

everything single-handedly in modern warfare. He added that no one in the IAF, from its commanders on down, has ever claimed otherwise.²⁶ To repeat a point mentioned before, two years earlier during an exercise called Arm in Arm conducted just a month before the start of Operation Change of Direction, Shkedy warned with emphatic frankness that no one in the government should expect that the IAF would be able to prevent or negate a continuing barrage of short-range rockets emanating from southern Lebanon if Nasrallah chose to undertake such an initiative. He added, with equally brutal honesty: "Expect a success of no more than 1 to 3 percent in [our] hitting the Katyushas."²⁷ After the campaign ended, Shkedy repeated what he had said before on that score: "Answers for the short-range rockets are the responsibility of the territorial command, in coordination and with support from the IAF. You can't strike from the air something you can't see."²⁸ The reasons that the Katyusha mission was not assigned to the IAF were legion—hundreds of distributed and proliferated targets of unknown location and low-to-no signature, a high likelihood of collateral damage in any attempted target attacks, competing force-employment demands (right or wrong) of higher assessed priority, and an extremely low assessed likelihood of achieving overall mission success, even in the best of circumstances in which the IAF had good actionable target intelligence.²⁹

The new IDF doctrine also did not inspire the initial strategy choices made by Halutz and his superiors in the immediate wake of Hezbollah's provocation on July 12, 2006—at least in any literal and mechanistic way. That doctrine, which, as noted above, had been disseminated to IDF units only two months before the start of the second Lebanon war, centered on the notion that instead of following the clas-

²⁶ Interview with General Shkedy, IAF Headquarters, Ha'kirya, Tel Aviv, September 27, 2008.

²⁷ Shelah and Limor, *Captives in Lebanon*, p. 138, quoted in Kober, "The Israel Defense Forces in the Second Lebanon War: Why the Poor Performance?" p. 24.

²⁸ Opall-Rome, "Interview with Major General Elyezer Shkedy, Commander, Israel Air and Space Force."

²⁹ Interview with Lieutenant Colonel Roni Amir, IAF, head of the Doctrine Branch, IAF Headquarters, Ha'kirya, Tel Aviv, March 27, 2009.

sic route to victory by seizing enemy territory and destroying an enemy's military forces in detail, offensive operations should rather seek to engage the enemy as a system so that traditional, large-scale ground maneuvering would no longer be necessary. On this point, the manual stipulated: "The use of precision firepower and the integration of land, sea, and air forces against the enemy's entire system's layout will cause him greater problems than if piecemeal linear actions are taken."³⁰ In an earlier exposition of such thinking while he was still serving as IAF Commander, Halutz said to students at the IDF's National Defense College: "A land force is not sent into action as long as there is an effective alternative. . . . The IAF is a partner in or decides [the course and outcome of] wars. This obliges us to part with a number of anachronistic assumptions. First of all, that victory means territory. Victory means achieving the strategic goal and not necessarily territory."³¹

That perspective was entirely in keeping with the strategic concepts that underlay the American joint-warfare experience from Operation Desert Storm in 1991 through the three weeks of major combat in Operation Iraqi Freedom in March and April 2003. The problem, as we will see again toward the end of this chapter, was that it turned out to be almost completely inapplicable to the Lebanese military theater. On this issue, two well-informed Israeli commentators on the campaign later suggested that the IDF had performed suboptimally in Lebanon not because of the doctrine manual *per se* or any allegedly misguided CONOPS that it represented, but rather because of improvised ideas "that were not translated into clear moves on the ground [and] that were unsuited to the Lebanese battlefield."³²

Finally, Halutz was scarcely, by virtue of his background and upbringing as an airman, uncredentialed in principle to serve as IDF Chief of Staff. On the contrary, with respect to intimations from some quarters that he had spent his entire career growing up in a sterile airman's world totally removed from the gritty realities of the "boots-on-

³⁰Har'el and Isaacharoff, *34 Days*, p. 60.

³¹Quoted in Kober, "The Israel Defense Forces in the Second Lebanon War: Why the Poor Performance?" p. 22.

³²Har'el and Isaacharoff, *34 Days*, p. 59.

the-ground” environment, Halutz, upon entering the general-officer ranks, in fact gained an uncommon degree of exposure to ground-force issues for an airman, thanks to a succession of senior seasoning assignments in Israel's joint arena.³³ Beginning in 1998, he served a two-year tour as head of the IDF's Operations Directorate. After his subsequent four-year stint as IAF Commander starting in 2000, he moved up in 2004 to become the IDF's Deputy Chief of Staff before being selected in 2005 by then-Prime Minister Sharon to become the first IAF general to be trusted with the nation's top military leadership position. Mindful of that uncommon joint-arena background for an airman, Halutz testified to the Winograd Commission that upon assuming the position of Chief of Staff, he felt that he had entered office with “a large measure of familiarity with the essence of ground operations.” He added that when then-Minister of Defense Barak had appointed him IAF Commander in 2000, Barak had commented that Halutz was already “the greenest blue helmet in the IDF.”³⁴

In addition, Halutz reminded the commissioners, the Chief of Staff “does not work alone. He has a very broad staff of people who are expected to—and in fact do—support him in the relevant aspects.” As a past head of the IDF's Operations Directorate and later as Deputy Chief of Staff, Halutz had occupied positions that afforded him both daily contact and intimate operational and planning familiarity with the ground forces. In light of that breadth and depth of exposure, he

³³One of the more outspoken of the intimations alluded to above emanated from the always voluble and typically abrasive retired Brigadier General Shimon Naveh of the IDF's ground forces, who complained in a press interview shortly after the ceasefire that Halutz had “brought with him this inferior air force culture. . . .” Naveh further complained about how IAF pilots allegedly “only care about hit or miss. . . . Everything is measurable and precisely quantifiable because that's how these guys work. . . . A pilot wakes up in his bed, showers, puts on his [flight suit], and drives to the squadron. Everything there is squeaky clean. He goes to the pilots' club, has a sandwich, a cup of coffee, and joins his comrades in the briefing room. . . . At the briefing, they all speak the same language. . . .” (Amir Rapaport, “Halutz Is a Bluff,” *Ma'ariv*, Tel Aviv, October 1, 2006.)

³⁴“Testimony by Lieutenant General Dan Halutz, IDF Chief of Staff, to the Winograd Commission Investigating the Second Lebanon War,” unpublished English translation from the original Hebrew, Jerusalem, Israel, January 28, 2007.

insisted, plausibly enough, that his exposure to the IDF's land-warfare component was "appropriate, adequate, and profound."³⁵ By virtue of his prior experience as the IAF Commander, Halutz had been purposefully selected by Sharon to oversee a streamlining of the IDF's weapons acquisition process, with a view toward enforcing the implementation of a more modern and less armor-heavy force mix. Prime Minister Olmert aptly described him a month after the second Lebanon war ended as "an extraordinary man" and "one of the greatest warriors Israel [has] had for decades."³⁶ If he can be faulted for having erred in his dealings with his civilian superiors as IDF chief and for his recommended course of action for responding to Hezbollah's provocation of July 12, 2006—and he plainly can, as will be explained more fully in the pages that follow, it is in no way merely because he was an airman. As an early critical reviewer of his memoirs remarked on this important point, "I was convinced, years before Halutz served as head of the IDF's General Staff, that the post could be filled by a person from the air force or even the navy, and I still think so."³⁷ What matters is not a chief's service upbringing or career field per se so much as how he contributes to high-level decisionmaking on the most important issues of goal-setting and strategy once he assumes the top uniformed position.

True enough, to outside observers unversed in the details of ongoing combat operations, the first two weeks of Operation Change of Direction indeed bore ample signs on the surface of being an air-only effort as it was still under way. We now know, however, with the benefit of subsequent revelations regarding the Olmert government's inner decisionmaking process, that Halutz never insisted on such an approach out of a conviction that it offered the most promising solution to mission needs. On the contrary, after the campaign ended,

³⁵Alex Fishman and Ariela Ringel-Hoffman, "The Cost of War Is Hard for Me to Bear," Interview with Lieutenant General Dan Halutz, IDF Chief of Staff, *Yedi'ot Ahronot*, October 1, 2006.

³⁶Ben Kaspit, "Interview with Prime Minister Ehud Olmert," *Ma'ariv*, Tel Aviv, September 22, 2006.

³⁷Dov Tamari, "A View from on High," *Ha'aretz*, March 11, 2010. The writer is a retired IDF ground-forces brigadier general who served with distinction in the Yom Kippur War and later became the IDF's first chief intelligence officer.

he declared categorically in response to charges that he had wrongly sought to achieve the government's goals with an air-only strategy: "I never said an aerial campaign would suffice [for the IDF] to prevail. The original plan was to combine an aerial campaign with a [possible eventual] ground maneuver."³⁸ Halutz further noted repeatedly that he had never used the term "air power" in characterizing his counteroffensive plan. Rather, what he had sought to employ to useful operational effect was standoff *firepower*. The IDF's response to Hezbollah's provocation of July 12, Halutz rightly stressed, was neither initiated nor ever envisaged as being an air-only campaign. In clear testimony to that fact, IDF operations from the campaign's first day until the ceasefire went into effect also included some 173,000 artillery shells and MLRS rounds fired, more than were expended during the much higher-intensity Yom Kippur War of 1973.³⁹

To be sure, Halutz was quick to grant that at the outset of the gathering showdown, he had presented only the standoff-attack option to Olmert and Peretz, adding that "there was an option that we would go to a ground move which I did not recommend at that point." He went on to assert, however: "I never said that there would not be a ground operation. On the first day, at the cabinet, I said: 'At this point, my recommendation is not to launch a ground operation.' The general atmosphere around the deliberation tables outside the General Staff command was against a ground operation. . . . Within the army, in the IDF, the mood during the first two or three days was not in favor of a ground operation, although there was support for preparations for a ground operation." Halutz added that it was clear to all from the very start of the counteroffensive that "if the response extended and stretched over time, there was a chance—although I assessed it to be small—that we would reach a wide-scale ground move."⁴⁰

³⁸ Ben-David, "Israel Introspective After Lebanon Offensive," pp. 18–19.

³⁹ Interview with General Halutz, IAF Headquarters, Ha'kirya, Tel Aviv, March 26, 2008.

⁴⁰ "Testimony by Lieutenant General Dan Halutz, IDF Chief of Staff, to the Winograd Commission Investigating the Second Lebanon War." Halutz admitted candidly in hindsight, however, that he felt that he had erred in not preparing the IDF's reserve forces for a ground option "more comprehensively, more broadly, and earlier."

With respect to the Katyusha threat, Halutz clearly testified to the Winograd Commission: “No one ever said that the air force alone [would] solve the problem of rockets from Lebanon.”⁴¹ He further noted his appreciation that from start to finish, “this fighting [would not result in] a knock-out [of Hezbollah] and that whoever enters that boxing ring must know that he, too, would get a blow. We knew that the Israeli home front would be a part of the campaign.”⁴² In all, in his many responses to critics of the government’s ultimate strategy choice, Halutz repeatedly stressed that he had never held blind faith in the promise of air power and had never underestimated what the ground forces could contribute.⁴³ As to the question of whether the leadership had allowed itself to remain “too dependent on air power” throughout the campaign, former Prime Minister Shimon Peres similarly replied in a subsequent interview: “No. We used air power and ground power for different reasons. We used the air power to bomb the headquarters of Hezbollah. . . . Now we are using ground forces because they hide weapons in private homes and villages.”⁴⁴

Explaining the Government’s Strategy Choice

If the IDF’s flawed performance during its 2006 campaign against Hezbollah did not emanate from misplaced reliance on the assumed promise of air power out of an erroneous belief in its inherent superiority as the tool of first choice, then where does the explanation for that flawed performance lie? Summarized in a nutshell, the core reason behind the Olmert government’s ultimate starting strategy choice was

⁴¹ Fishman and Ringel-Hoffman, “The Cost of War Is Hard for Me to Bear.”

⁴² In his farewell address to the nation upon relinquishing his post as Chief of Staff, Halutz expanded this observation from the experience of Hezbollah’s effective rocket campaign against northern Israel right up to the second Lebanon war’s last day into a general proposition that “the front and the homeland have [now] become one.” (Quoted in Barbara Opall-Rome, “Israel Fights to Reclaim Decisiveness, Victory,” *Defense News*, May 14, 2007, p. 6.)

⁴³ Ze’ev Schiff, “Ground Forces vs. Air Force,” *Ha’aretz*, September 8, 2006.

⁴⁴ Lally Weymouth, “Interview: ‘We Are at War,’” *Newsweek*, August 14, 2006, p. 27.

simply that *no one* among the most senior leadership, military or civilian, wanted a ground war. It was not as though Halutz and those above him were somehow “guilty of ‘preventing’ the ground forces from otherwise carrying out *their* preferred and *the* optimum plan.”⁴⁵ The IDF’s ground commanders were equally opposed to a major land push for manifold reasons, not least of which was the fact that Israel’s ground forces were unprepared for major combat against a robust opponent. As Arkin rightly noted, Halutz’s decision to rely solely on standoff attacks at the start of the IDF’s counteroffensive should be viewed “not as some air power daydream,” but rather as reflecting a well-founded desire on his and everyone else’s part “to avoid a protracted battle, an occupation, and all of the subsequent killing and destruction that would follow.”⁴⁶

As they grappled with the question of what to do in response to Hezbollah’s provocation of July 12, Halutz and his principal deputies in the General Headquarters faced a major conundrum. Had they proposed at the outset to invade southern Lebanon with a major ground force and had the government accepted that recommendation, they would have been instantly perceived around the world once again as occupiers. After 18 costly and nonproductive years of previous occupation of southern Lebanon from 1982 to 2000, during which time the IDF sustained more than 600 troop fatalities (almost as many as during the Six Day War of 1967), no one in Israel was eager to go back for a replay of that experience. The country’s unhappy involvement in the Lebanese “mud” reached its ultimate low toward the end of its long

⁴⁵ Arkin, *Divining Victory*, p. 134, emphasis in the original.

⁴⁶ Arkin, *Divining Victory*, p. xxiii. There was, to be sure, one conspicuous exception to this general consensus that prevailed among the senior leadership in the form of former IDF general, later defense minister, and, at the time, cabinet member Benjamin Ben-Eliezar, who was the Labor Party’s minister of energy and infrastructure and who argued adamantly, although unsuccessfully, for a commitment of two or three ground-force divisions to the counteroffensive from its very start. He was a constant thorn in Halutz’s side for insisting on the IDF’s “cleaning the area” of Katyusha rockets and Hezbollah fighters from southern Lebanon irrespective of the possible cost in friendly troop losses. Halutz later remarked in his memoirs that Ben-Eliezer was “the main driver who injected the concept of ‘failure’ into the consciousness of the public.” I am grateful to Barbara Opall-Rome, Tel Aviv bureau chief of *Defense News*, for bringing this noteworthy point to my attention in an e-mail communication on April 25, 2010.

presence in that quagmire when a bloody train of events in counter-insurgency combat was followed in short order by an IAF helicopter accident in which 73 IDF soldiers were killed. That event triggered a massive public outcry that had a major impact on the Barak government's ultimate decision to withdraw all IDF forces once and for all.⁴⁷ For Israelis, that failed invasion and 18-year occupation was, and remains, the IDF's Vietnam. Accordingly, Halutz rejected any idea of the IDF's going back into southern Lebanon on the ground to recapture and occupy Lebanese territory immediately north of the Israeli border. Any move of that magnitude, he felt, would have had major negative global repercussions, in addition to the unacceptable burdens that it would have imposed on the State of Israel for an indeterminate length of time.⁴⁸

At the same time, Halutz wanted to teach Hezbollah a lesson that its leadership and rank and file would not soon forget. Ever since the IDF's withdrawal from southern Lebanon in 2000, Nasrallah's combatants had systematically moved into the breach and taken up entrenched positions in areas that had been vacated by the departing Israeli forces. The preeminent challenge for the IDF in that discomfiting situation, it naturally followed, was to bend every effort to contain Hezbollah's looming military presence, notwithstanding the many tactical advantages that the terrorist organization accrued from its new forward-deployed perch just across the Blue Line from northern Israel.

During his previous assignment as IAF Commander, Halutz believed and maintained that the Barak government's policy of answering Hezbollah's provocations with restraint following the IDF's withdrawal from Lebanon in 2000 had been ill-advised and was counterproductive to Israel's security interests. He later testified to the Winograd Commission that, after Hezbollah's abortive kidnapping attempt in May 2006, "I asked that the next time, if another incident should occur, we would change our mode of operation along the northern border line and exploit it to destroy Hezbollah's infrastructure along that line." Halutz also demanded a concrete plan toward that end in an

⁴⁷ Brun, "The Second Lebanon War, 2006," in Olsen, ed., *A History of Air Warfare*, p. 300.

⁴⁸ Interview with General Halutz, IAF Headquarters, Ha'kirya, Tel Aviv, March 26, 2008.

internal order issued in May 2006 to the IDF Operations Directorate “instructing them to follow my order because I felt that we could not continue to employ the same *modus operandi*.”⁴⁹

In that latter regard, Halutz was emphatic that, should another provocation occur, the IDF “should take advantage of it to effect a different arrangement along the border.” With respect to the government’s previous strategy of containment, he said, “we imposed upon ourselves a great deal of restrictions that made the fulfillment of our mission very difficult. In an analogy to soccer, it is like a goalie who does not budge from the goal line and stands there waiting for the ball, instead of venturing into the 5-meter box.”⁵⁰ Naturally, given that mindset, Halutz’s main point of departure in determining the IDF’s initial response to the July 12 provocation was that in the aftermath of the abduction incident, it was intolerable that the Israeli government and people should continue living with a culture of “containment” in southern Lebanon. Ever since the IDF’s withdrawal from southern Lebanon in 2000, Hezbollah had been continuously testing Israel’s patience, tolerance, and limits by means of a relentless series of unprovoked border incidents and random short-range rocket firings into northern Israel. With the final provocation of the troop abduction, Halutz decided that the time had come to engineer a sea change in the situation by implementing a fundamentally different approach—hence the eventual decision to code-name the IDF’s counteroffensive Operation Change of Direction.

The decision to begin with a standoff-only counteroffensive was not just Halutz’s. It was the consensus view among the Israeli leadership because it appeared to be Israel’s best available option as an initial military response. No one of major note in the government was calling for an early ground offensive. As former IDF Chief of Staff Lieutenant General Shaul Mofaz, a land combatant and serving member of Olmert’s cabinet, explained in his testimony to the Winograd Commission: “If you can do it from the air, it is better. I do not believe any of us would want to use ground forces if you can attain [your objec-

⁴⁹ “Testimony by Lieutenant General Dan Halutz, IDF Chief of Staff, to the Winograd Commission Investigating the Second Lebanon War.”

⁵⁰ “Testimony by Lieutenant General Dan Halutz, IDF Chief of Staff.”

tives] otherwise. Once you reach the conclusion that you cannot do this in any other way, or you have reached that conclusion in advance, then do it on land. I did not rule out ground activity. I only said that for the State of Israel, operating infantry and armored forces in the Lebanese territory . . . should not be our supreme but our second priority.”⁵¹

Another former Chief of Staff and land combatant, Lieutenant General Amnon Lipkin-Shahak, likewise remarked as the campaign was still under way that he did not see any particular connection between Halutz’s background as an airman and his conduct of the war: “I am not sure that any other Chief of Staff would have used the [IAF] less. In Operation Accountability and Operation Grapes of Wrath [both of which Lipkin-Shahak commanded as Chief of Staff], the air force had most of the action. Any other Chief of Staff would have made a similar use of force. Aerial capabilities have developed greatly over the past decade, and it would be a mistake not to make the most of them.”⁵² Even Olmert himself, while visiting Hatzor Air Base during the campaign’s second week, voiced the same sentiment to a gathering of IAF personnel when he declared flatly: “In every combat situation, the preference is to act from the air and not on the ground.”⁵³

Another part of the reason for the government’s choice of a standoff-only option was that most believed—wrongly, as it turned out—that such a response might suffice to produce the desired outcome relatively quickly. Indeed, the consensus view at the time among Israel’s uniformed leadership was that the IDF would conduct 15 days of standoff-only operations before any conventional ground push would be undertaken. On this important point, Halutz said: “We didn’t want to do any ground assault and thought we could create the conditions for a cease-fire without a major ground assault.”⁵⁴

Again, as misfounded and erroneous as that initial hope turned out to be, this was not just Halutz’s personal perspective; it was the

⁵¹ “Testimony by Lieutenant General Dan Halutz, IDF Chief of Staff.”

⁵² Yo’av Qeren, “From the Quagmire to the Pit,” *Ma’ariv*, Tel Aviv, July 28, 2006.

⁵³ Scott Wilson and Edward Cody, “Hezbollah Proves a Formidable Foe,” *Washington Post*, July 27, 2006.

⁵⁴ “Testimony by Lieutenant General Dan Halutz, IDF Chief of Staff.”

consensus view of the entire Israeli leadership. Mofaz added that the cabinet had been unanimously opposed to starting the counteroffensive with a ground invasion and that he had initially believed that the IDF could achieve the government's avowed campaign goals after nine or ten days using aerial action alone.⁵⁵ Public Security Minister Avi Dichter similarly testified to the Winograd Commission: "I can definitely say that the feeling was that we were going to war that would last a few days."⁵⁶ For his part, Halutz frankly recalled: "I had no idea [at the outset that] it would last 33 days. I did not estimate on the 12th day of the fighting that it would go on for 33 days. . . . I thought that a battle fought with [precision standoff] fire could lead to an earlier ceasefire, and if it did not, then we would be moving on to the next phase; there was also the option that we would embark on a broad-scale ground move."⁵⁷

Yet another reason for initiating the counteroffensive with standoff-only attacks was the leadership's nagging awareness that Israel's ground forces were not ready for major combat. As one IDF unit commander later recalled in this regard, "our main problem was that everyone in the army knew what had to be done and [yet] no one wanted to do it, especially since we knew that it would cost us a lot of casualties."⁵⁸ In a related recollection that offers a powerful refutation to any allegation that Halutz was somehow mesmerized by a belief that the IAF's air power offered a magic solution, the head of the IDF's ground forces, Major General Gantz, frankly declared afterward: "There was absolutely no one in any military leadership position who claimed air power alone could deliver the goods. I was sure it would not and that we would have to go inside. By exploiting the air war, we could have gotten in simultaneously in full force and taken over the entire area, cleansing it from within. But that would have required . . .

⁵⁵ Ben Kaspi, "Mofaz: Olmert Is the Main Culprit in Mishaps," *Ma'ariv*, Tel Aviv, September 12, 2006.

⁵⁶ "Testimony by Lieutenant General Dan Halutz, IDF Chief of Staff, to the Winograd Commission Investigating the Second Lebanon War."

⁵⁷ "Testimony by Lieutenant General Dan Halutz, IDF Chief of Staff."

⁵⁸ Har'el and Isaacharoff, *34 Days*, p. 119.

decisive ground maneuver warfare, not the stage-by-stage operations that were ultimately executed.”⁵⁹

Such decisive ground maneuver warfare, however, entailed a strategy alternative that *no one* in Israel’s most senior leadership was prepared to undertake at any time during the IDF’s 34-day counteroffensive. On this crucial point, in a television interview shortly after the campaign ended, Halutz adamantly defended his decision not to respond immediately to Hezbollah’s provocation with a massive ground invasion. Had the IDF pressed into southern Lebanon with such an invasion at the start of its counteroffensive, he said, “we would have found ourselves thrown out . . . with our tail between our legs.”⁶⁰ In his memoirs published four years later, he amplified on this point of apparent genuine conviction on his part: “Also today, I wouldn’t recommend a wide ground war in Lebanon, because I assess that it would end with results no less good than what were achieved. In addition, I believed a wide ground war would end in many casualties, much more than we actually suffered. It was reasonable to assume that until this very day, we would still be mired in the mud of Lebanon. . . . We wouldn’t wipe out terror from Lebanon. . . . We would further provoke outrage from the international community. We would serve to unite factions in Lebanon against the Israeli occupation. And the lack of quiet on the northern border would persist, just like it did in the 18 years when rockets were fired despite our presence.”⁶¹

With regard to that abiding belief maintained and defended by Halutz, it bears recalling that during the senior leadership’s initial deliberations over such a daunting counteroffensive option, General Kaplinsky and other land-force generals warned Prime Minister

⁵⁹ Opall-Rome, “Interview: Major General Benjamin Gantz, Commander, Israel Defense Forces Army Headquarters.”

⁶⁰ Har’el and Isaacharoff, *34 Days*, p. 235.

⁶¹ Dan Halutz, *Begova Einayim* (At Eye Level), Tel Aviv: Yedi’ot Ahronot Books, 2010 (in Hebrew only). For a brief synopsis of the book’s highlights with regard to Operation Change of Direction, see Barbara Opall-Rome, “Israel’s Lebanon War Chief Defends Strategy,” *Defense News*, February 22, 2010, pp. 14, 16.

Olmert that a major land invasion could cost the IDF as many as 400 soldiers killed in action.⁶²

The Genesis and Execution of the Strategy

Both Operation Change of Direction and Hezbollah's last-straw provocation that occasioned it were, in a sense, preordained by the Barak government's insistence on Israeli restraint in the face of Hezbollah's repeated taunts by way of periodic rocket fire into northern Israel that had followed the IDF's withdrawal from southern Lebanon in 2000. As two Israeli analysts remarked in that regard, "the latent assumption likely underlying the political approach chosen by Israel upon its withdrawal from Lebanon was that restraint and moderation by Israel would be matched by restraint and moderation by Hezbollah. . . . The restraint, however, failed to produce the reciprocal response in Hezbollah."⁶³ As was later described accurately by the commander of Northern Command in his post-campaign testimony to the Winograd Commission, the practical consequence of this conscious government policy choice was "relinquishing Israeli sovereignty on the northern border [with Lebanon] and giving Hezbollah a free hand on the border."⁶⁴

For his part, despite Prime Minister Olmert's over-the-top and ill-advised pronouncement during the campaign's first week that promised otherwise, Halutz never believed that it would be possible for the IDF to drive Hezbollah out of southern Lebanon in a single military operation, whatever the eventual magnitude of any such operation might be. In light of that, the more reasonable and attainable goals that he laid down for the IDF on the eve of its counteroffensive, as noted earlier in Chapter Two, were to

⁶²Har'el and Isaacharoff, *34 Days*, p. 172.

⁶³Zaki Shalom and Yoaz Hendel, "Conceptual Flaws on the Road to the Second Lebanon War," *Strategic Assessment*, June 2007, p. 28.

⁶⁴Shalom and Hendel, "Conceptual Flaws."

- exact from Hezbollah a grossly disproportionate price for its provocation in kidnapping the IDF soldiers
- change fundamentally the situation in southern Lebanon and the sense of insecurity in northern Israel
- create conditions conducive to the return of the two abducted soldiers
- avoid any escalation that would threaten to engage Syria in a shooting war.⁶⁵

In his subsequent memoirs that appeared in 2010, Halutz reminded his readers of these more modest goals that he had issued to the IAF and to Northern Command by reiterating that “the IDF embarked on the Lebanon II war with predefined aims. These aims were limited. Not one of them defined the war as aiming to destroy, crush, or wipe out the Hizbollah organization from the map of Lebanese reality.”⁶⁶ Yet the inescapable fact for the former IDF chief in this regard remains that his prime minister had avowed *precisely* such a goal, to all intents and purposes, in a public pronouncement just five days into the campaign. That declaration by the nation’s top leader gave instant rise to an early and unrealistic expectation on the part of Israel’s rank and file and one that the IDF lacked the ability to fulfill with *any* combination of air and ground force employment that Israeli and international opinion would likely countenance. Worse yet, it played perfectly into Nasrallah’s hands by allowing him to claim at the campaign’s end, with complete credibility in the eyes of the Arab world and of most Western observers, that Hezbollah had emerged “victorious” from the IDF’s counteroffensive simply by having survived the latter’s failed attempt to drive the organization out of southern Lebanon.

On this crucially important point when it comes to a proper understanding of where the IDF’s counteroffensive went wrong, Halutz remarked in passing in his memoirs, seemingly all but dismissively, that “among the public and also at the political level, there were unrealistically high expectations that were built, among other

⁶⁵Interview with General Halutz, IAF Headquarters, Ha’kiryá, Tel Aviv, March 26, 2008.

⁶⁶Halutz, *Begova Einayim*.

things, by flawed public relations.”⁶⁷ Yet as correct as that statement was as far as it went, it was *exactly* that palpable—and, in the end, most consequential—disconnect between what the prime minister had promised the Israeli people during the campaign's first week and what the IDF had set about attempting to accomplish more modestly on the battlefield that yielded an ultimate outcome for Operation Change of Direction that gave both self-interested and neutral onlookers alike every reason to conclude that the 34-day counteroffensive had ended in “failure” on the IDF's part. More specifically in this regard, Prime Minister Olmert, seemingly on impulse when viewed in hindsight, promised considerably more at the campaign's outset than the IDF (not just Israeli air power but *all* of Israel's forces) could possibly have delivered at a price that anyone in the Israeli government or rank and file was willing to pay. For his part, General Halutz evidently failed to preempt that overreach by his political superior by making it unambiguously clear to him from the start what the IDF's forces could and could not do. Henceforth throughout the campaign, he and Olmert continued, in effect, to march to different drummers, which was largely responsible for the mounting sense among the Israeli people and most outside observers, as the endgame neared, that Israel had failed to achieve its avowed goals—a point that Nasrallah lost no time in leveraging to its maximum propaganda value in claiming a “divine victory” for Hezbollah as the ceasefire went into effect.

To amplify further on this point, Halutz, as not just the Chief of Staff but also “the commander of the IDF who is given the authority to call all of the army's resources into action,” had a duty to inform his civilian masters both in a timely way and in no uncertain terms what the IDF was and was not capable of delivering and to intervene as forcefully as may have been needed—*before* the die was cast—by putting Prime Minister Olmert on notice that his avowed goal of getting the two kidnapped soldiers returned unconditionally and clearing out Hezbollah's presence as a fighting force in southern Lebanon once and for all was an impossible mission for Israel's defense establishment by

⁶⁷ Halutz, *Begova Einayim*.

any reasonable means at its disposal.⁶⁸ Yet by all indications, he appears not to have done that. As the above-noted reviewer of Halutz's memoirs rightly observed in this regard, "the role of the Chief of Staff is to teach politicians from the ground up." More than that, the reviewer went on to say, "the IDF's top commander is political by virtue of his status, because he is supposedly an expert in using force to gain political goals, and his involvement in dealing with political issues is an integral part of the military's response. . . . The chances that a minister will understand that in wartime [any half-baked or unrealistic] ideas are irrelevant are not very great if the Chief of Staff does not explain this in advance and in real time to members of the government."⁶⁹

At bottom, informed observers can reasonably disagree in hindsight about the strategic perspicacity (or lack thereof) of Halutz's resort to a standoff-only response as an initial move for Operation Change of Direction. That choice, it bears repeating, was shared at first not only by the civilian leaders of the Olmert government but also uniformly by the most senior leadership of the IDF's ground forces. Yet it is all but impossible to avoid concluding that, for whatever reason, he failed to prevent his prime minister from, in effect, writing a check on the campaign's fifth day that the IDF could not cash by articulating unattainable goals that were allowed to persist in the minds of Israeli citizens and outside onlookers alike. This lapse had profound consequences for the worse in the way the campaign has been viewed ever since by most observers, however tolerably—and even positively—it may actually have turned out for Israel at the operational and tactical levels.⁷⁰

⁶⁸ Gabriel Siboni, "Command and Authority in the IDF: The Winograd Challenge," *Strategic Assessment*, August 2007. The writer, who spotlighted this key power and responsibility on the IDF chief's part, is a retired IDF colonel who served as chief of staff of an armored division during the second Lebanon war.

⁶⁹ Tamari, "A View from on High."

⁷⁰ On this score, an able and reflective assessment of the campaign experience a year later similarly observed categorically that "the position of the senior military leadership in [the national security] decision-making process is at the apex, and therefore it becomes clear that there was an absence of diligent advice [at the outset of campaign planning]. While decisions of national consequence are made at the political level, their military veracity is almost

(In the end, the IDF indeed achieved Halutz's more modest campaign goals itemized above.)

As the IDF's initial retaliatory operations unfolded, one press review noted that the much-escalated counteroffensive appeared to outside observers to have been a "crazily disproportionate response."⁷¹ Yet one must view that response from the Israeli government's perspective. As the size of Hezbollah's inventory of rockets of all ranges continued to grow over the six years that followed Israel's withdrawal from southern Lebanon, the IDF sensed that this inventory could some day expand into a truly strategic threat that would have to be dealt with forcefully sooner or later. As the director of the Jaffee Center for Strategic Studies at Tel Aviv University and former head of the IDF's Planning Directorate, Zvi Shtaubert, put it, "it was clear we couldn't live with the missiles. The question was when to do it."⁷²

The day after Hezbollah's border provocation, the IAF's General Eshel announced that the air attacks over the preceding 24 hours had been "extremely complex" and that the campaign had already shaped up to be the IAF's largest in history to date, "if you measure it in the number of targets hit in one night." Eshel frankly added that there was "no instant solution or trick" for preventing short-range rocket attacks against Israel by Hezbollah and that it might well take "a very prolonged campaign" to deal decisively with that challenge. He also declared: "I suggest that we begin thinking in terms of more than days." With respect to the Katyusha threat, he said: "We cannot prevent them from doing this, but we are making a very intensive effort to reduce both the scope and accuracy of their strikes."⁷³ That was an honest statement that did not promise any more from Israeli air power than the latter could deliver.

As the counteroffensive entered its second week, Deputy Chief of Staff Kaplinsky recommended to Halutz that a halt be called to

completely dependent on the senior [uniformed] leadership to provide free and frank advice to the government at the strategic level." (Kainikara and Parkin, *Pathways to Victory*, p. 92.)

⁷¹ "The Accidental War," *The Economist*, London, July 22, 2006, p. 13.

⁷² "Ending Will Be Harder," *The Economist*, London, July 22, 2006, p. 30.

⁷³ Quoted in Arkin, *Divining Victory*, pp. 132–133.

the operation at that point lest the IDF's exertions degenerate into an effort without direction: "We have exhausted the [aerial] effort; we have reached the peak; from now on we can only descend."⁷⁴ Yet a higher government leadership, which had committed itself to extravagant campaign goals but had been unwilling to authorize an executable strategy and run risks that might offer a reasonable chance of achieving them, declined to accept that recommendation. A contingency plan code-named Country's Shield had been developed several years before by the previous commander of Northern Command, General Gantz, aimed at taking control of the southernmost portion of Lebanon between Israel's northern border and the Litani River. The plan envisioned a six-week offensive effort by IDF ground troops to scour the area, neutralize the Katyusha threat by hunting down and destroying Hezbollah's stocks of short-range rockets, and then withdraw. Due to a leadership concern over the certainty of incurring a potentially intolerable number of IDF casualties, however, General Gantz's plan was never implemented. As a result, what started out as a limited retaliatory operation on July 12 metamorphosed out of its own inertia into a wholly improvised campaign featuring no preplanned timelines and escalation alternatives. (Halutz later testified that during the initial phase of the IDF's response, he was thinking in terms not of war but of a retaliatory operation. He also testified that he had directed his subordinates in the IDF to refrain from calling the operation a war.)⁷⁵

As the campaign unfolded and the first tentative and improvised ground forays began to falter, increasing tension arose between some in the IDF who believed that no further progress could be made without a sizable increase in committed troops on the ground and a political leadership, fearful of a resultant increase in IDF casualties, that remained reluctant to activate the IDF's reserve units. There was an associated government concern that a lengthy ensuing ground slog with

⁷⁴ Ofer Shelah and Yo'av Limor, *Captives in Lebanon*, Tel Aviv: Yedi'ot Ahronot, 2007, pp. 117–118, quoted in Kober, "The Israel Defense Forces in the Second Lebanon War: Why the Poor Performance?" p. 4.

⁷⁵ Shela and Limor, *Captives in Lebanon*, p. 44, quoted in Kober, "The Israel Defense Forces in the Second Lebanon War: Why the Poor Performance?" p. 9.

no imminent end in sight would give rise to an impression in neighboring Arab eyes that the IDF had lost its fighting edge. During a mid-course review of the campaign's progress in Halutz's office on July 26, Generals Nehushtan, the head of the IDF's Planning Directorate, and Yadlin, the chief of AMAN (both IAF fighter pilots), concluded that in light of the IAF's continued inability to stem the nonstop Katyusha fire, an escalation to major ground combat was unavoidable if the IDF wished to maintain its counteroffensive momentum. Defense Minister Peretz, however, insisted on continuing with standoff-only operations, on the premise that any move to major ground operations would both unduly prolong the campaign and lead to prohibitive losses in terms of IDF casualties.⁷⁶

The IDF leadership, for its part, had determined early on that precision standoff attacks alone would not achieve the Olmert government's goal of severely diminishing, if not fully destroying, Hezbollah as a viable fighting organization. Yet there remained a widely felt compulsion to continue deferring the fateful transition to a major air-land campaign. As the deputy commander of Northern Command during Operation Change of Direction later recalled, "our Chief of Staff . . . came from the air force, and he believed that we would achieve our objectives by fire and hitting targets. I . . . hoped it would work, but I must say that I didn't believe in it. . . . After a week, I realized that the fire concept, his concept, was not working. I tried to convince him that

⁷⁶ Kober, "The Israel Defense Forces in the Second Lebanon War: Why the Poor Performance?" p. 25. On this count, one thoughtful retrospective assessment of the Olmert government's decisionmaking process throughout the second Lebanon war suggested that the government's abiding reluctance to commit ground troops to battle earlier on and in numbers that could have made a significant difference reflected a "complete misalignment between the Israeli leadership and the people." Although one can never know for sure, this assessment speculated that "in 2006, the population would have absorbed greater casualties if, by doing so, the Hezbollah threat could have been effectively ended." It went on to propose that the leadership's "misunderstanding of the [country's] societal strength not only made for a lost opportunity, but also showed up as an almost fatal weakness in the IDF. . . . The IDF could have used this opportunity to deliver a debilitating blow to Hezbollah capability and perhaps also contained their spread terminally. However, the opportunity was squandered. . . ." (Kainikara and Parkin, *Pathways to Victory*, pp. 72–73.)

it wasn't working. But his main argument was that he would achieve his objective by influencing the Hezbollah leadership."⁷⁷ In hindsight, the head of the IAF's Campaign Planning Department during the second Lebanon war conceded that the IDF should have immediately moved three or four armored divisions to the Lebanese border after the abduction as a demonstration of the seriousness with which the government viewed Hezbollah's latest provocation.⁷⁸ That option was discussed at the highest levels within the IDF. In the end, however, Halutz chose not to forward it to the cabinet as a recommendation. By early August, with respect to this continuing reluctance to escalate the ground fighting substantially, an IDF source declared that "the result is a hybrid, neither a strict aerial campaign nor a ground operation that utilizes all of the IDF's capabilities."⁷⁹

Where the Strategy Failed to Deliver

There was nothing wrong in principle with the Olmert government's decision to respond to Hezbollah's provocation with escalated force. As General Halutz insisted, entirely reasonably, in his memoirs, "the decision . . . to act in Lebanon in the summer of 2006 was correct and justified. It manifested an understanding of the unbearable reality we were stuck in that had to change."⁸⁰ Yet the government's chosen response, viewed in retrospect, was not adequately explored in all its risks and ramifications before being committed to action. Clearly there was more than one alternative force-employment option available to the IDF in the immediate wake of the provocation. Yet by all signs, those alternatives were not systematically assessed and rank-ordered

⁷⁷Major General Eyal Ben-Reuven, IDF (Res.), interview with Russell Glenn, RAND Corporation, Tel Aviv, March 25, 2007.

⁷⁸Interview with the former head of the IAF Campaign Planning Department, IAF Headquarters, Ha'kirya, Tel Aviv, March 26, 2008.

⁷⁹Alon Ben-David, "Israel Fears Syrian Clash as It Expands Lebanon Incursion," *Jane's Defence Weekly*, August 2, 2006, p. 4.

⁸⁰Halutz, *Begova Einayim*.

or even seriously considered by Israel's civilian leadership and General Halutz. As a result, the IDF initiated its counteroffensive without having given sufficient thought to the campaign's likely endgame.

As the IAF's Brigadier General Brun later summed up the main failing here, Israel's national security principals "made no clear basic assessment of political objectives before [taking the country] to war." More than that, he added, "most ministers did not realize that Israel had entered a genuine war, and many of them considered the . . . military engagement a retaliation of limited time and scope." As a result, he concluded, "no serious debate was held concerning the wider meaning of an Israeli retaliation operation and its political objectives." Instead, he noted, "the government concerned itself more with the extent and magnitude of the Israeli military response than with any political gains that might result. In essence, Israel's government decided to conduct a military operation [solely] in order to convey a clear message that would prevent future kidnappings rather than to wage war."⁸¹ Two Israeli journalists concluded with respect to this decisionmaking process: "It is doubtful whether Israel ever went to war in so slapdash a fashion."⁸²

At a minimum, the IDF had the following alternative response options:

- Forgo a major military reprisal and settle for more modest political objectives, on the premise that "restraint is strength."
- Initiate a limited war against Hezbollah, but with combat action deferred long enough for the IDF to have several months to prepare adequately.
- Launch an immediate retaliatory air operation of only 24–48 hours in duration aimed at high-value Hezbollah targets (such as long-range rockets of known location) and any Lebanese infrastructure that gave direct and manifest support to Hezbollah.

⁸¹ Brun, "The Second Lebanon War, 2006," in Olsen, ed., *A History of Air Warfare*, pp. 303–304.

⁸² Har'el and Isaacharoff, *34 Days*, p. 88.

- Initiate an offensive with more extensive goals, such as hunting down and cleaning out Hezbollah's stocks of Katyushas, which would entail not only air strikes but also extensive ground operations lasting for several weeks.
- Unleash a major campaign employing maximum military force in the shortest length of time, including the immediate mobilization of all needed IDF reserve units, aimed at securing southern Lebanon and pushing Hezbollah's forces north of the Litani River.

With respect to this hierarchy of alternatives, doing nothing was ruled out by the government as unacceptable from the very start. A deferred response would, in all likelihood, have lacked legitimacy in the eyes of Israeli and world opinion in the event that the government ever actually followed through with such a delayed reprisal. On this count, Halutz remarked in his memoirs: "We could have recommended being content with a pinpoint response. We also could have thought about deferring our response for an organized time and condition of our choosing, which, in our reality, would never have come about."⁸³ The final option, as all understood only too well, would have necessitated a protracted occupation of southern Lebanon with no clear avenue of eventual escape for the IDF. That left the two more modest options in between, which the government, in effect, executed in sequence over the course of the counteroffensive's 34 days. The problem lay in the mismatch between those chosen means and the government's initially avowed campaign goals.

An especially glaring deficiency of the government's chosen approach from the very start was that it offered no ready way of dealing with Hezbollah's Katyusha fire in the event that the attempted effort at coercion solely by means of standoff fires failed to produce the desired result. An equally glaring failure of situation assessment and strategy was that, until the campaign's very last days, stemming the rate of short-range rocket fire into northern Israel was never high on the IDF's list of priorities. The most towering leadership failure, however, as noted above, was the gaping disconnect between the extrava-

⁸³Halutz, *Begova Einayim*.

giant goals initially declared by Prime Minister Olmert and the clear incapacity of the government's chosen response option to achieve them. Recall that in contrast to the more modest objectives handed down to the IDF by General Halutz listed above, Olmert had insisted on nothing less than a return of the two kidnapped soldiers and a decisive crushing of Hezbollah as a significant military threat, in addition to enhancing Israel's deterrent posture and changing the strategic landscape of southern Lebanon.

Not only did these goals become progressively less ambitious as the campaign unfolded, they created initial public expectations, as was recalled by former IAF Major General Giora Rom, that "did not match the discourse between the military and the civilian leadership."⁸⁴ The Olmert government's declaration of such extravagant initial goals with an insufficient commitment of means needed to achieve them further ignored the once-central tenet of Israel's security doctrine articulated as early as 1948 by the country's founding Prime Minister—and, by one informed account, the "father of the IDF"—David Ben-Gurion, that any war started by Israel should be immediately taken to the enemy's terrain and have a short and well-defined timetable.⁸⁵

By way of a brief elaboration on that once-central credo of the IDF, on the eve of the Sinai Campaign in late 1956, a well-founded assessment of Israel's early political-military thought recalled how Ben-Gurion, at the time prime minister and minister of defense, had counseled that "action must be as swift as possible in order to establish a fait accompli before political, military, and economic pressures would be exerted against Israel." Accordingly, that assessment went on to note, "the element of speed became one of the most fundamental axioms of the Israeli political-military doctrine and its strategic and tactical planning," on the ground that "a small nation like Israel cannot afford to maintain for any extended period a state of full mobilization."⁸⁶

⁸⁴Rom, "A Test of Two Strategies: Two Ships Passing in the Night," p. 50.

⁸⁵Eliot A. Cohen, *Supreme Command: Soldiers, Statesmen, and Leadership in Wartime*, New York: The Free Press, 2002, p. 170.

⁸⁶Michael I. Handel, *Israel's Political-Military Doctrine*, Cambridge, Mass.: Harvard University, Center for International Affairs, Occasional Papers No. 30, July 1973, p. 33.

Former Prime Minister Shimon Peres likewise remarked regarding Ben-Gurion's teaching before both the Sinai Campaign and Israel's earlier War of Independence in 1948 that "the aim was to make [both wars] as short as possible to keep casualties—to both sides—to the minimum."⁸⁷

True enough, Israel's later defense leaders had long ago lost sight of Ben-Gurion's sage dictum, as best attested by their war of choice in Lebanon, beginning in 1982, that resulted in an 18-year quagmire before the IDF's final withdrawal in 2000.⁸⁸ Nevertheless, that dictum remained just as pertinent as ever for the counteroffensive against Hezbollah on which the Olmert government embarked in July 2006. As a former head of the IAF's Intelligence Directorate remarked in hindsight three years later, one of the main realizations that emanated from the IDF's 34-day showdown with Hezbollah was simply that "Israel cannot afford a long war."⁸⁹

Once the government, after repeated hesitancy and delays, reached a definitive decision to send in IDF ground troops in significant strength, both Northern Command and its subordinate commanders proceeded to issue contradictory and ever-changing orders about the IDF's combat objectives. Moreover, the many well-known deficiencies in IDF combat proficiency and readiness due to years of neglect soon became all too apparent. Nevertheless, the principals in the Olmert government had concluded by that time that they had no choice but to press ahead with a too-little-and-too-late ground offensive if the campaign was to produce a minimally acceptable outcome.⁹⁰

⁸⁷ Shimon Peres, *David's Sling*, New York: Random House, 1970, pp. 180–181. On that same theme, see also Edward Luttwak and Dan Horowitz, *The Israeli Army*, New York: Harper and Row, 1975, p. 172, and Jonathan Shimshoni, *Israel and Conventional Deterrence: Border Warfare from 1953 to 1970*, Ithaca, N.Y.: Cornell University Press, 1988, p. 106ff.

⁸⁸ I am indebted to Eliot Cohen of the Paul H. Nitze School of Advanced International Studies for bringing this important point to my attention.

⁸⁹ Comment by Brigadier General Oded Erez, IAF (Res.) during a roundtable discussion on the second Lebanon war convened for the author at the Fisher Brothers Institute for Air and Space Strategic Studies, Herzliya, Israel, March 31, 2009.

⁹⁰ Clive Jones, "After the Storm: Israel and the Future of Olmert's Government," *Jane's Intelligence Review*, January 2007, p. 9.

The problems encountered by the ground forces during the campaign's second half were a predictable result of long-standing influences that had steadily undermined the IDF's capacity for major combat throughout the six years that followed its withdrawal from southern Lebanon in 2000. Those influences included, among other things, a sharp decline in the assessed likelihood of a full-scale Arab-Israeli war against a major challenger like Syria or Iraq before the allied invasion of the latter in early 2003, a government fixation on immediate security concerns emanating from terrorist insurrection in the occupied territories, and reduced IDF funding for ground-force training for any other contingencies. A succession of IDF chiefs had argued for forgetting about the contingency of major wars that were not of immediate concern and for focusing instead only on the terrorists of the *intifada* that were the most pressing challenge of the moment. As a result, the IDF's ground forces forgot how to fight larger wars. Thanks to those earlier decisions, IDF battalion commanders took their troops into combat against Hezbollah's forces in 2006 without ever before having commanded a battalion-level exercise.

One retired ground-force general summed up the explanation for this spectacle of poor performance outright: "Many IDF officers did not believe that they would ever confront conventional warfare again, and as a result, they did not prepare."⁹¹ Amplifying further, a former armored brigade commander wrote that "the IDF let itself be dragged into the only model of fighting it knew—fighting against irregular forces. . . . Predictably, the result could not have been other than a sequence of failures that turned into a series of rescue and withdrawal battles, some of them heroic."⁹² As a former head of the IDF's Planning Directorate and later of Israel's National Security Council, retired Major General Giora Eiland, recalled with respect to those oversights: "For four years, we put the army at grave risk that, in retrospect, may have been unreasonable. We dismantled units, cut back training sched-

⁹¹ Major General Uri Saguy, IDF (Res.), interview with Russell Glenn, RAND Corporation, Tel Aviv, March 26, 2007.

⁹² Colonel Yehuda Wegman, IDF (Res.), "The Struggle for Situation Awareness in the IDF," *Strategic Assessment*, February 2008, pp. 20–21.

ules, and reduced the replenishment of ammunition. We thought that the regional and budgetary realities necessitated this and that we'd have enough time to take the necessary steps to fill in the gaps if the situation worsened. But Israel surprised itself with the decision to go to war. The ministers didn't even know how to ask the IDF what its real state of affairs was; and the army made no effort to divulge."⁹³

Notwithstanding those readiness deficiencies, it seems clear in hindsight that the Olmert government's most senior leaders, especially including General Halutz, were so convinced at the campaign's outset that massive standoff attacks alone would induce the desired response on Hezbollah's part that they delayed the initiation of a major ground counteroffensive for too long.⁹⁴ As one account suggested in this regard shortly after the ceasefire went into effect, reliance on such attacks "wound up limiting Israel's options rather than delivering the rapid crippling of Hezbollah that Israel's leaders [had] hoped for."⁹⁵ Said Dan Meridor, a former Knesset member and author of a study looking at the desired composition of the IDF in ten years: "The problem is that we attacked without setting goals or asking what the target is and without giving clear orders. . . . We went to war without telling the forces what they should accomplish. . . . If you go to war, don't wait and use your strength at the end of it. We had a very good excuse to go to war, but nobody asked the question, 'Can we win?'"⁹⁶

With respect to this sin of omission, minister without portfolio Eitan Cabel, an IDF reservist who later resigned from his cabinet post over the campaign's flawed conduct, charged that the government's leaders did not even attempt to do what the lowest unit in the combat forces does before committing to action: "Prior to each operation in the reserves, no matter how simple it is, the level of preparations is higher than what took place in the government that [first] evening. In

⁹³Har'el and Isaacharoff, *34 Days*, p. 73.

⁹⁴Halutz later told the Winograd Commission that delaying a call-up of the reserves had been a mistake.

⁹⁵Guy Chazan, Karby Leggett, and Neil King, "Why Israel's Plans to Curb Hezbollah Went So Poorly," *Wall Street Journal*, August 19, 2006.

⁹⁶Fulghum and Wall, "Learning on the Fly," pp. 63–65.

every operation, we ask what the objective is, where the entry point and retreat routes are, where we're going, who we can expect to encounter. Nobody in the government meeting said: 'These are the objectives, this is the timetable.'"⁹⁷

Another mistake made by the IDF in its planning and conduct of the campaign was its leadership's widely recognized failure, from General Halutz on down, to comprehend the true nature of the opponent it was facing. In this regard, a former head of the IDF's Planning Directorate, Brigadier General Shlomo Brom, spoke of the government's "basic misunderstanding" of the "special nature" of the war that it had signed up for.⁹⁸ Israel's confrontation with Hezbollah in July and August 2006 was in a completely different league than were the nation's higher-intensity conventional wars of 1967, 1973, and 1982. In the latter case, the government failed to appreciate fully from the campaign's opening moments that it was really fighting not just Hezbollah, but a well-equipped and resourced forward vanguard of Iran. A core associated issue here had to do with what was needed to engage and defeat a stateless opponent, a challenge that entailed a fundamentally new paradigm of combat. One reporter accurately described the new form of asymmetrical warfare that the IDF was experiencing as one "that pits finders against hidens and favors the hidens," the latter of whom are a new type of enemy "with the sophistication of a national army . . . and the lethal invisibility of a guerrilla army."⁹⁹ Against that kind of resilient and elusive opponent, said former IAF Commander Major General Ben-Eliahu, a classic "knockout" victory was unattainable and, accordingly, unrealistic. Yet the expectations of the gov-

⁹⁷ Har'el and Isaacharoff, *34 Days*, p. 85.

⁹⁸ Brigadier General Shlomo Brom, IDF (Res.), "Political and Military Objectives in a Limited War Against a Guerilla Organization," in Shlomo Brom and Meir Elran, eds., *The Second Lebanon War: Strategic Perspectives*, Tel Aviv: Institute for National Strategic Studies, 2007, p. 13.

⁹⁹ Thom Shanker, "A New Enemy Gains on the U.S.," *New York Times*, July 30, 2006.

ernment's leadership were nonetheless, in his words, "as high as the moon."¹⁰⁰

Nasrallah, as IAF Brigadier General Brun later pointed out, "correctly identified Israel's need for a clear and unambiguous victory in a short war. Thus, Hezbollah only had to survive" and to demonstrate its survivability by continuing to fire rockets on the last day at peak rate right up to the ceasefire. Hezbollah's strategy was, at its heart, "victory through nondefeat."¹⁰¹ With respect to this crucial point, the specific instructions handed down by Halutz and the IDF General Headquarters to combat units in all services at the counteroffensive's outset did *not* specifically call for an elimination of the Katyusha threat. Moreover, it was not as though Hezbollah had sought to make any great secret of its short-range rocket capability. On the contrary, in his May 2005 "Resistance and Liberation Day" speech more than a year before the second Lebanon war broke out, Nasrallah had proudly declared that his organization maintained a stockpile of "more than 12,000 rockets" that had every likelihood of preventing any attack by the IDF against Hezbollah's most vital assets.¹⁰² Yet remarkably, as one assessment of the second Lebanon war later observed, "while Israel appreciated the growing threat to its northern areas, when the attacks actually took place later in 2006, there was a visible lack of preparation and anticipation of the realities of the prolonged campaign that was to unfold."¹⁰³

Indeed, viewed in hindsight, the entire political and strategic significance of the Katyushas was misunderstood by both the IDF leadership and the Olmert government until the very end, when both finally came to realize the corrosive effect of the rockets on Israeli public opinion and morale. Before, the tendency had been to dismiss them as a mere nuisance. As General Brun later put it bluntly, "both the polit-

¹⁰⁰Interview with Major General Eitan Ben-Eliahu, IAF (Res.), former IAF Commander, Tel Aviv, March 24, 2008.

¹⁰¹Brun, "The Second Lebanon War, 2006," in Olsen, ed., *A History of Air Warfare*, p. 314.

¹⁰²Uzi Rubin, *The Rocket Campaign Against Israel During the 2006 Lebanon War*, Ramat Gan, Israel: The Begin-Sadat Centre for Strategic Studies, Bar-Ilan University, Middle East Security and Policy Studies No. 71, June 2007, p. 3.

¹⁰³Kainikara and Parkin, *Pathways to Victory*, p. 49.

ical leadership and the military high command underestimated the importance of the short-range rockets and largely overlooked their central place in Hezbollah's strategic and operational concepts."¹⁰⁴ In fact, Hezbollah had paid close attention to Israel's emerging new doctrine from the very beginning and had studied it carefully, after which it had developed, in response, an offsetting strategy that would allow the terrorist organization to survive any such Israeli attacks and continue to operate effectively. With respect to the crisis that erupted after the abduction of the two Israeli soldiers on July 12, 2006, as the RAF's Director of Defence Studies at the time explained, "in one way, Hezbollah's war aims could be seen as simply being defined by those of Israel—if Israel wanted to release the prisoners and destroy Hezbollah, then all Hezbollah needed to do to 'win' was to retain the prisoners and remain in being."¹⁰⁵

More to the point, as retired Air Commodore Jasjit Singh of the Indian Air Force later suggested, "the end result was that the two sides were fighting a war at different planes, with different strategies, seeking to exploit asymmetric vulnerabilities in targeting different centers of gravity. Israel targeted Hezbollah's military assets and infrastructure, while Hezbollah targeted Israel's civilian community."¹⁰⁶ A former IAF A-4 pilot gave voice to the same point even more graphically: "It was as though Lance Armstrong had been pitted against Tiger Woods."¹⁰⁷ As for the IDF's culpability in this unexpected turn of events, Air Commodore Singh went on to note that its "force employment was not

¹⁰⁴Brun, "The Second Lebanon War, 2006," p. 306.

¹⁰⁵Parton, "Air Power's Illusion? Israel's 2006 Campaign in the Lebanon," p. 160. For a more thorough treatment of Hezbollah's unique strategy and operational style, see Stephen Biddle and Jeffrey A. Friedman, *The 2006 Lebanon Campaign and the Future of Warfare: Implications for Army and Defense Policy*, Carlisle, Pa.: Strategic Studies Institute, U.S. Army War College, September 2008.

¹⁰⁶Air Commodore Jasjit Singh, Indian Air Force (Ret.), "Interpreting the Lebanon War of 2006," *Air Power Journal*, New Delhi, Winter 2006, p. 46.

¹⁰⁷Interview with Ron Tira, Tel Aviv, March 25, 2009.

consistent with the (unrealistic) aims of the war . . . [and] was not tailored to a correct assessment of how the enemy would fight, in spite of excellent intelligence about the specific capabilities of the enemy being known.” He insightfully added that this circumstance “makes the traditional debate about air power versus ‘boots on the ground’ irrelevant to the real issues.”¹⁰⁸

To be sure, while he was still the IAF Commander two years before, General Halutz noted that the challenges that the IAF had come to confront in its most recent fight against terror were “incomparably more complicated than what was required of us in the Yom Kippur War.”¹⁰⁹ Nevertheless, viewed in retrospect, the IDF simply struck at Hezbollah targets rather than fighting the organization’s CONOPS, which would have entailed a different strategy and an earlier coupling of force employment with attempted diplomacy. As attested by that misdirected focus, a major revealed shortfall in the IDF’s performance during Operation Change of Direction was its excessive fixation on the tactical level of war at the expense of operational- and strategic-level considerations.

In earlier wars, it was all but received wisdom in Israel’s military culture that if the IAF and IDF performed brilliantly at the tactical level, they would invariably win as well at all higher levels. As thoughtful Israeli airmen have increasingly come to recognize in recent years, however, this is no longer the case with respect to today’s asymmetrical warfare challenges.¹¹⁰ Regarding these new challenges, General Nehushtan said frankly as the campaign neared its final week: “It is the most difficult kind of warfare ever.”¹¹¹ In reflecting on this first major campaign experience against such a new kind of opponent, the IAF’s Deputy Commander, General Locker, likewise noted that a

¹⁰⁸ Singh, “Interpreting the Lebanon War of 2006,” pp. 47, 53.

¹⁰⁹ Major General Dan Halutz, IAF, in *The War Against Terror Is a Major IAF Mission: Summary of Lectures*, Herziliya, Israel: The Fisher Brothers Institute for Air and Space Strategic Studies, August 2004.

¹¹⁰ Interview with Brigadier General Itai Brun, IAF, Glilot Base, Tel Aviv, March 26, 2007.

¹¹¹ Scott Wilson and Edward Cody, “Hezbollah Proves a Formidable Foe,” *Washington Post*, July 27, 2006.

major mindset adjustment had been required for the service to switch its powers of concentration from the relatively low-intensity demands of dealing with Palestinian terrorists in Gaza and the West Bank to the quite different requirements of higher-intensity combat against a more capable asymmetric adversary in the form of Hezbollah. A major challenge confronting the IAF in the wake of that campaign experience, he added, now entails recognizing and fully assimilating the uniquely different nature of Israel's most proximate enemy of the moment.¹¹²

In the view of the most balanced assessments of Operation Change of Direction, including the Winograd Commission's final report, the most significant shortcomings in the government's planning and conduct of the campaign were the substantial disparity that quickly emerged between its initially avowed aims and the IDF's actual combat capability, most notably against Hezbollah's short-range Katyushas, and the IDF's unwillingness to press for an adequate ground option until it was too late—even as its leadership was fully aware all along of the magnitude of the Katyusha challenge and what it would take to negate it. An additional problem in strategy choice entailed not defining realistic and attainable campaign goals and then applying appropriate measures to produce a more conclusive result. As a former IDF armored brigade commander later reflected on these failings, in internalizing lessons drawn from the American air warfare experience in Iraq and Kosovo, the IDF ignored the fact that those lessons “are not necessarily relevant to Israel, since these were wars won by a super-power that was not subject to time, financial, or international diplomacy constraints and, most important, whose civilians' routine lives were not at all disrupted when the military was pounding the enemy from the air over the course of many weeks.”¹¹³

On this point, the previously cited former A-4 pilot now serving as a reservist in the IAF's Campaign Planning Department observed that the leverage offered by precision standoff attacks and their ability to generate desired combat effects is not absolute but rather heavily

¹¹² Interview with General Locker, IAF Headquarters, Ha'kirya, Tel Aviv, March 27, 2008.

¹¹³ Colonel Yehuda Wegman, IDF (Res.), “A Distorted Self-Image: On the IDF and Its Responsibility for Civilians,” *Strategic Assessment*, August 2007, p. 27.

context-dependent and that “in Israel’s security reality,” unlike that of the United States with respect to Iraq and Kosovo, “there is no alternative to maneuvering and conquering territory in order to win wars.” Considering that in any future Israeli showdown against Hezbollah, the home front will again be subjected to rocket fire that cannot be negated by standoff attacks, the IDF’s “conquering [of enemy] territory may serve as a clear indicator of victory that successfully exacts the heavy price of war.” This planner further cautioned that although there is nothing inherently wrong with standoff firepower-based operations (SFO) in the right context and with the right challenge and target set, “in many cases, the SFO concept may not suit the nature of a specific war,” as was the case with the IDF’s campaign in 2006. In light of that, he rightly concluded, SFO “must be viewed as an additional instrument in the orchestra conducted by the commander, rather than as a solo instrument.”¹¹⁴

After the campaign ended, Halutz’s predecessor as Chief of Staff, Lieutenant General Ya’alon, charged that the government’s actions had failed to honor the carefully honed plan that had been developed for a comparable provocation during his tour of duty. As Ya’alon recalled, “the IDF was supposed to respond with an aerial attack and the mobilization of reserve divisions, which would act as a threat to the Syrians and to Hizballah and would encourage Lebanon and the international community to take action to achieve the desired goal. If the threat itself did not achieve the goal, a ground move would have begun within a few days aimed primarily at seizing dominant terrain as far as the Litani River and the Nabatiya plateau. . . . The ground entry was supposed to be carried out speedily, for an allotted time, without the use of tanks, and without entering houses or built-up areas.” However, Ya’alon went on to say, “they [specifically Olmert, Peretz, and Halutz] overused force. And instead of coordinating with the Americans for them to stop us when the operation was at its height, and setting in motion a political process to disarm Hizballah, we asked the Ameri-

¹¹⁴ Ron Tira, *The Limitations of Standoff Firepower-Based Operations: On Standoff Warfare, Maneuver, and Decision*, Tel Aviv: The Institute for National Strategic Studies, Tel Aviv University, Memorandum 89, March 2007, pp. 9–10, 14.

cans for more time. We let the Americans think that we have some sort of gimmick that will vanquish Hizballah militarily. I knew there was no such gimmick. . . . [After the first week] I lost all connection with events. . . . Because the goals of the war were not defined and because no one clarified what the army was capable of doing and what it cannot do, the pursuit began of an impossible achievement. . . . They improvised, improvised, and then improvised again. Instead of grabbing political achievements at the right moment, they went on with the use of force. The excessive use of force in a situation like this is ruinous.”¹¹⁵

With respect to the missed opportunities alluded to by Ya'alon, a Western diplomat who had been in close contact with Hezbollah representatives reported that up until around July 17, Nasrallah had become persuaded by the continuing weight of the IDF's counteroffensive to make major concessions to bring an end to the conflict. He had not anticipated such a massive response, and his forces had been beaten up badly by it. Yet Olmert's continuing public insistence on a return of the abducted soldiers and a crushing military defeat of Hezbollah by the IDF left Nasrallah with no choice but to dig in for the long haul. As that account noted, “the moment [Olmert] set unattainable stipulations, Hezbollah only had to dig in, stiffen its position, hang on until the end of the war, and then present itself as the victor.” At that point, Olmert's government, by its own choices, lost any opportunity for an early strategic exit from the continuing confrontation. As a UN delegation member later recalled in this connection, “we saw that Hezbollah were interested in a ceasefire. But the approach we encountered in Jerusalem was ‘forget it. We're going to win.’”¹¹⁶ In hindsight, perhaps with such missed opportunities in mind, Halutz admitted that “with the data we had [and] with the means that were at our disposal, we could have achieved far more if we had been more determined—not necessarily more daring, but more determined, if we had shown more

¹¹⁵ Ari Shavit, “No Way to Go to War,” Interview with Moshe Ya'alon, *Ha'aretz*, Tel Aviv, September 15, 2006.

¹¹⁶ Shavit, “No Way to Go to War.”

initiative, and if we were more responsible.”¹¹⁷ As it turned out, however, the war’s outcome was a close call for the Olmert government, in that it represented, in the words of General Ben-Israel, “the first time when someone in the Middle East truly challenged the State of Israel and almost got away with it. . . . For the first time in the history of the nation, we did not exact a heavy enough price from those enemies who tried to use force against us, and we did not prove [beyond a doubt] that the path to peace is more profitable than that of force.”¹¹⁸

Viewed in retrospect, the situation for the Olmert government in the face of Hezbollah’s last-straw provocation on July 12, 2006, was clear and simple. If going in on the ground massively from the very start had been deemed to be an unacceptable response option, reasonable or not, over the near-certain likelihood that significant IDF troop casualties would have been incurred as a result, then the indicated response should have been a sharp and powerful but brief stand-off counteroffensive with the finite goal of causing as much damage to Hezbollah’s military assets and infrastructure in as short a time as possible and making Nasrallah feel the maximum possible pain for his unthinking transgression, after which the counteroffensive would be promptly halted by the IDF in the sublime satisfaction that a clear message had been sent and a lesson had been taught to Hezbollah and its Iranian and Syrian sponsors in equal measure. If, alternatively, the Olmert government had deemed it essential to eradicate physically Hezbollah’s ability to rain short-range rocket fire on Israeli civilians at will, then a resolute and properly targeted campaign of precision stand-off attacks accompanied by a concurrent large-scale ground counteroffensive so that the IDF could control all of southern Lebanon up to

¹¹⁷ “Testimony by Lieutenant General Dan Halutz, IDF Chief of Staff, to the Winograd Commission Investigating the Second Lebanon War.”

¹¹⁸ Ben-Israel, *The First Israel-Hezbollah Missile War*, pp. 34, 40. President Bush later arrived at essentially the same conclusion when he wrote in his memoirs: “The Israelis had a chance to deliver a major blow against Hezbollah and their sponsors in Iran and Syria. Unfortunately, their mishandled their opportunity. . . . The result for Israel was mixed. Its military campaign weakened Hezbollah and helped secure its border. At the same time, the Israelis’ shaky military performance cost them international credibility.” (Bush, *Decision Points*, pp. 413–414)

the Litani River was the only feasible option. Either way, the image of Israel's deterrent would have been preserved. No halfway solution would have worked—yet that is exactly the course that the Olmert government elected to pursue in the end.¹¹⁹

Was the Campaign Really a Lost Cause for Israel?

Although Operation Change of Direction yielded a less than satisfactory outcome for Israel, it would be wrong to conclude from that acknowledged fact, as one commentator did, that playing up the campaign's accomplishments, of which there were many, "is a little like saying that the operation was successful but the patient died."¹²⁰ Reflecting the glass-half-empty perspective on this issue, an Israeli scholar suggested that owing to the war's inconclusive denouement, "the IDF's enormous strength has . . . lost its significance, as it was used against an enemy it could not overcome. . . . Israel turned a local incident into a war in order to consolidate its deterrence. The political and military leadership did not recognize that with an organization like Hezbollah, there has never been, will not be, and cannot be any deterrence—as it is not a state that takes responsibility and it does not have a backbone that can be crushed."¹²¹

On a more upbeat note, however, General Halutz insisted during his testimony to the Winograd Commission that "whatever was or was not achieved [during the campaign] must be judged in the perspective of time."¹²² Prime Minister Olmert likewise suggested in the cam-

¹¹⁹ As General Ben-Israel later pointed out, had the latter option been selected by the Olmert government, "a ground invasion would not have prevented entirely the firing of rockets by Hezbollah. However, it would have made possible a lowering of the number of rockets fired from an average of around 150 a day (and around 200 during the last days of the war) to a level of just a few isolated rockets a day." (Ben-Israel, *The First Israel-Hezbollah Missile War*, p. 27.)

¹²⁰ Arkin, *Divining Victory*, pp. 147.

¹²¹ Quoted in Ofer Shelah, "Anti-War," *Strategic Assessment*, November 2006, pp. 2, 5.

¹²² "Testimony by Lieutenant General Dan Halutz, IDF Chief of Staff, to the Winograd Commission Investigating the Second Lebanon War."

paign's early aftermath that the results of the second war in Lebanon would look better with the passage of time. Consistent with these early official counsels of optimism, the war experience has since come to be viewed differently in Israel than it was when the smoke of battle was first clearing in August 2006. Now, a new debate has gained momentum among Israelis over "whether or not we actually lost the war."¹²³

To begin with, it was easy enough for Nasrallah to claim in the campaign's early aftermath that he had "prevailed" in the war simply by virtue of having survived. In fact, as a result of the IDF's counteroffensive, his organization sustained a major beating, suffered significant setbacks, and paid an exceedingly high price for its abduction of the Israeli soldiers. The IDF killed as many as 700 of his most seasoned combatants and wounded around a thousand more.¹²⁴ In addition, a considerable portion of Hezbollah's military infrastructure in Beirut, Ba'albek, and southern Lebanon was either laid waste or badly damaged as a result of the IDF's relentless aerial and artillery bombardment. To review only the most important of the IDF's other accomplishments, the majority of Hezbollah's medium-range rockets were eliminated preemptively by the IAF during the counteroffensive's first hours. Nasrallah's command and control nexus in the *dahiye* section of Beirut was also all but completely destroyed.¹²⁵

Furthermore, during the course of the campaign, the IDF learned much about Hezbollah's infrastructure and strategy, rendering both more vulnerable to focused and effective attacks than they had been before. The organization's hitherto covert system of underground bunkers and tunnels was exposed, and many of those facilities were geolocated and successfully struck. Hezbollah's network of observation posts and defensive positions along the Israeli-Lebanese border was also badly disrupted. Finally, multiple-barrel Hezbollah rocket launchers were repeatedly struck and destroyed very shortly after their launch

¹²³Interview with Brigadier General Itai Brun, IAF, Director, Dado Center for Interdisciplinary Military Studies, Gilot Base, Tel Aviv, March 26, 2008.

¹²⁴Halutz, *Begova Einayim*.

¹²⁵Interview with Major General Amos Yadlin, IAF, Director of Military Intelligence, IDF Headquarters, Ha'kirya, Tel Aviv, March 26, 2008.

crews had fired the first of their rockets into northern Israel. The IAF's impressive rate of success in these TST attacks will very likely have a significant deterrent effect on any future use of such launchers by Hezbollah and will drive its combatants to opt instead for single-barrel launchers that can only fire one rocket at a time before being reloaded.¹²⁶

In addition, despite Nasrallah's continuing claim to have won a "divine victory" in the second Lebanon war, Hezbollah's combat capability and threat potential were severely diminished, at least for a time, by the IDF's unexpectedly massive counteroffensive. As retired IAF Major General Ben-Israel rightly noted, Operation Change of Direction "overturned the notion that Israel is not ready to fight with anyone who holds a sword over the heads of its civilians." In addition, he pointed out, "the destruction of a section of an Arab capital city, even a section that was directly associated with Hezbollah's main headquarters in Lebanon, set a precedent that should make Israel's enemies think twice the next time."¹²⁷

The campaign also made for a timely and instructive experience for the IDF in that it unmasked the true nature of Hezbollah as an enemy, its strengths and weaknesses, how it fights, and the lethality of its Iran-supplied rockets and antitank weapons. Moreover, in undertaking its response with such sustained intensity and vigor, Israel showed its determination to deal with Hezbollah using grossly disproportionate measures should a future challenge be deemed to require such *force majeure*.¹²⁸ Israeli military historian Martin Van Creveld pointed out in this regard that "if anybody had predicted, a few days before the war, that in response to the capture of two of its soldiers, Israel would launch an air campaign over all of Lebanon, mobilize three of its divi-

¹²⁶Amir Kulick, "The Next War with Hezbollah," *Strategic Assessment*, December 2007, p. 45. A possible downside of any such response by Hezbollah is that its rockets will become more dispersed, requiring more Israeli UAVs on station across southern Lebanon.

¹²⁷Ben-Israel, *The First Israel-Hezbollah Missile War*, p. 33.

¹²⁸As General Halutz in his memoirs later characterized this predisposition against such neighboring adversaries as Hezbollah and Hamas, "we must create deterrence [by acting] with resolve and occasionally in a manner of 'the landlord went crazy.'" (Halutz, *Begova Einayim*.)

sions and send them across the border, and keep up the pressure for over a month while taking thousands of rockets and suffering more than a hundred casualties in dead alone, he would have been considered stark raving mad.”¹²⁹ In all, added Van Creveld, in light of that massive response and the implied promise of more like it should Israel again be similarly provoked, “Nasrallah has good reason to think twice before engaging in another adventure of the same kind.”¹³⁰

In sum, the IDF’s 34-day counteroffensive against Hezbollah in 2006 was not quite the unqualified setback for Israel that many initially thought. Consider, in this regard, the new post-campaign strategic reality that the second Lebanon war occasioned for both Hezbollah and Israel. From the very first weeks of his selection as Hezbollah’s commander in 1992, Nasrallah had, with impunity, lobbed short-range rockets into northern Israel from time to time with maddening regularity all the way up to the start of Operation Change of Direction. Yet not a single rocket was fired from Lebanon into Israel during the years since the campaign ended until three were launched, desultorily and without effect, during the IDF’s subsequent 23-day operation against Hamas in December 2008 and January 2009. Even though Hezbollah by that time had accumulated more short-range rockets (as many as 40,000 or more) in its since-reconstituted inventory than ever before, its leaders were quick to disavow any responsibility for those launches.

This suggests that Nasrallah’s post-campaign motivation and conduct have most definitely been affected by the significant bloodying that was dealt to his organization by the IDF in Operation Change of Direction. Certainly, his behavior since the implementation of the

¹²⁹Martin Van Creveld, “Israel’s Lebanese War: A Preliminary Assessment,” *RUSI Journal*, October 2006, p. 43.

¹³⁰Van Creveld, “Israel’s Lebanese War.” On this point, a senior RAF officer noted insightfully that such disproportionate employment of firepower can entail “a double-edged sword for Israel. While it has without doubt restored some level of deterrence (and Hezbollah doctrine always recognized the danger of pushing Israel too far), the disproportionate element is always open to criticism by the international community and exploitation by Hezbollah. The generally accepted (Western-based) laws of armed conflict specifically seek to encourage proportionate and discriminate responses. Israel arguably sails much closer to the wind in this area.” (Comments on an earlier draft by Air Vice-Marshal M. P. Colley, RAF, January 11, 2010.)

ceasefire has not been a product of the Lebanese Army's or of the UN's military presence in southern Lebanon. The lesson taught him by the IDF in 2006 has almost surely kept him from any further firings of rockets into northern Israel, a lesson that was doubtless reinforced by Israel's equally devastating subsequent counteroffensive against Hamas in the Gaza Strip. Moreover, as a result of his keen awareness that he remains targeted by the IDF and the Mossad, he and his most senior deputies have been forced to command from their bunkers and, with but few exceptions, have not appeared in public during the years since the second Lebanon war ended.

In this regard, commenting on a highly publicized "victory parade" that Nasrallah staged in Beirut in mid-September 2006 about a month after the fighting ended, a senior Israeli source close to the prime minister said: "Nasrallah doesn't look good. He looks exactly like someone who has been spending his time in a bunker, far from the sun, since July 12. For his sake, we hope that he has returned to his den." This source further noted that on the eve of Nasrallah's much-ballyhooed event, the Israeli security establishment had engaged in a debate over whether to seize the opportunity to go after him even at the potential risk and cost of causing hundreds of casualties among those Lebanese civilians who were surrounding him. In the end, the government decided not to proceed with a targeted assassination operation after its most senior principals concluded that such an attack during a public appearance by the terrorist leader at the likely price of many innocent Lebanese also killed would have done Israel more harm than good. However, added the Israeli source: "The man will spend many more years in the bunker. He's a dead man."¹³¹

Furthermore, Israel gained a significantly improved strategic situation in southern Lebanon, to Hezbollah's detriment, as a result of the campaign experience. Now that the leadership in Beirut has regained a modicum of control over southern Lebanon, Israel can deal with Lebanon as a country again rather than as simply a neighboring battle-

¹³¹ Ben Kaspi and Jackie Hugi, "Speech of the Panicked Mice," *Ma'ariv*, Tel Aviv, September 25, 2006.

field to its immediate north.¹³² As a senior IDF commander observed within just a week after the campaign ended, “this is the huge change [that] this operation created.”¹³³ Another Israeli commentator similarly noted a year later that “the last few months have been the quietest period on the northern border since Operation Peace for Galilee in June 1982.” This observer further noted, rightly, that “focusing the public debate [solely] on the failure in the second Lebanon war and ignoring its achievements entirely may [adversely] influence the IDF’s ability to learn from experience and draw the proper conclusions.”¹³⁴

Indeed, in reflecting on the various elements of guarded good news for Israel as a result of the campaign outcome, a retired Israeli intelligence officer concluded that, although the second Lebanon war featured some short-run tactical setbacks on the IDF’s part, in the longer run it yielded four distinct positive accomplishments for Israel:

- It provided the IDF with timely insights into Hezbollah’s most advanced combat capabilities.
- It helped reduce anxieties regarding what actions Iranian proxies might take against Western interests.
- It gave Israel an early look at what it will need to do to retool its capabilities and posture for its next confrontation with Hezbollah.
- It gave politicians an incentive to rethink the wisdom of their policy of giving up land for peace, as they did in Gaza and in parts of the West Bank in 2005.¹³⁵

¹³²Before, as Israeli scholar Mark Heller put it, Lebanon was not an enemy of Israel in and of itself, but rather “a theater in which the enemy operates.” (Quoted in Steven Erlanger, “Beware the Siren Lebanon,” *New York Times*, May 6, 2007.)

¹³³Erlanger, “Israel Committed to Block Arms and Kill Nasrallah.”

¹³⁴Gabriel Siboni, “From Gaza to Lebanon and Back,” *Strategic Assessment*, June 2007, pp. 67–69.

¹³⁵Cited in Guermantes E. Lailari, “The Information Operations War Between Israel and Hizballah During the Summer of 2006,” in James J. F. Forest, ed., *Influence Warfare: How Terrorists and Governments Fight to Shape Perceptions in a War of Ideas*, Westport, Conn.: Praeger Security International, 2009, p. 322.

Looking back over the campaign experience, one can further ask fairly whether Nasrallah, in planning his abduction operation in 2006, fundamentally miscalculated Israel's fortitude by so grossly underestimating the probable intensity of the IDF's response. Even as the Israeli counteroffensive was still under way, the deputy chief of Hezbollah's political arm, Mahmoud Komati, told Western reporters that he had been surprised by the force of the Israeli response and that Hezbollah's leaders had anticipated only "the usual, limited" reprisal by the IDF, such as commando raids or limited air attacks.¹³⁶ For his part, shortly after the ceasefire went into effect, Nasrallah himself frankly admitted that he would never have ordered the capture of the IDF soldiers had he known beforehand what would follow by way of an IDF response: "You ask me if I had known on July 11 . . . that the operation would lead to such a war, would I do it? I say no, absolutely not."¹³⁷ Toward the end of the campaign's second week, as the IDF's response was just moving into high gear, columnist Thomas Friedman, against the grain of the still-fashionable belief in many quarters that Nasrallah was the most "brilliant" and "strategic" Arab player, offered perhaps a more accurate assessment that "when the smoke clears, Nasrallah will be remembered as the most foolhardy Arab leader since Egypt's Gamal Abdel Nasser miscalculated his way into the Six Day War."¹³⁸

This latter assessment can claim considerable strength from the premature frittering away of much of Iran's long-term investment in Hezbollah that Nasrallah's headstrong provocation in 2006 most definitely occasioned. Indeed, Iran's provision of rockets of all types to Hezbollah could arguably be compared in overarching intent to the Soviet Union's forward deployment of medium-range ballistic missiles to the Western hemisphere that culminated in the Cuban Missile Crisis of 1962, with the IDF having finally implemented measures analogous to those of the United States in dealing with the challenge militarily.

¹³⁶ Myre and Cooper, "Israel to Occupy Area of Lebanon as Security Zone."

¹³⁷ "Hezbollah Chief Revisits Raid," *Washington Post*, August 28, 2006.

¹³⁸ Thomas L. Friedman, "Not So Smart," *New York Times*, July 19, 2006.

As one informed Israeli observer noted, Iran built up Hezbollah's well-stocked inventory of rockets with the idea that the latter would constitute, in effect, a "forward aircraft carrier" stationed close to Israel's border. In his judgment, this capability "was supposed to remain concealed until the moment of truth—a military conflict between Israel or the United States and Iran over Iran's nuclear weapons program. Their premature discovery, in light of the terrible blow they could have struck [against Israel], caused a strategic loss for Hezbollah and for its Iranian suppliers that cannot be denied."¹³⁹ As if to bear out that judgment, the Iranian National Security Council, according to one account, received an internal document not long after the fighting ended indicating deep irritation over Hezbollah's "waste of Iran's most important military investment in Lebanon merely for the sake of a conflict with Israel over two kidnapped soldiers."¹⁴⁰ Such a reaction by Iran's ruling mullahs would not be surprising, considering that IDF operations during the 34-day war essentially wiped out much of the \$4 billion to \$6 billion that the Iranian treasury had sunk into building up Hezbollah's military strength, thereby necessitating a costly emergency Iranian outlay to reconstitute Hezbollah's military infrastructure and weapons stocks.

In all events, Hezbollah's role as a forward combat arm of Iran was starkly dramatized by the campaign experience, thereby bringing into sharper focus the IDF's already considerable appreciation of the seriousness of the Iranian threat and giving its leaders an enhanced understanding of the threat that they also faced from Hamas.¹⁴¹ In

¹³⁹ Ben-Israel, *The First Israel-Hezbollah Missile War*, p. 33.

¹⁴⁰ Cited in Storr, "Reflections on the War in Lebanon," p. 71.

¹⁴¹ Interestingly in this regard, with respect to the IAF's subsequent tasking by the IDF to prepare for a prospective future preemptive strike against Iran's growing potential for developing nuclear weapons, more than 100 IAF F-15s and F-16s (nearly a quarter of the IAF's entire fighter inventory) conducted a training exercise of unprecedented scale in early June 2008 over Greece and the eastern Mediterranean, along with supporting tankers for in-flight refueling and CH-53 helicopters for simulated CSAR support, which ranged more than 900 miles, roughly the same distance as that between Israel and Iran's nuclear enrichment plant at Natanz. The exercise was plainly intended as a dress rehearsal for such a strike operation aimed both at validating mission employment tactics and sending a message to Iran and other interested audiences. (Michael R. Gordon and Eric Schmitt, "U.S. Says Exercise by Israel Seemed Directed at Iran," *New York Times*, June 20, 2008.) For a thoughtful assess-

addition, Hezbollah's image as a "guardian" of Lebanese interests was badly tarnished by the costly consequences of Nasrallah's rashly considered provocation for Lebanon's economy and civilian infrastructure. The terrorist leader now has a new understanding of the Israeli mindset and of the extent of what he can and cannot get away with in the future. Thanks to the scale and extent of its response, Israel demonstrated to Hezbollah that it is prepared to pay a high price in effectively retaliating against future provocations and tests of its resolve. The experience also spotlighted serious readiness problems in the IDF's ground forces and deficiencies in air-ground integration that have since been rectified, as was attested by the IDF's far more effective subsequent performance in Operation Cast Lead against Hamas in December 2008 and January 2009.

Moreover, at the strategic level, Israel's sobering experience during the second Lebanon war drove home the emergent reality that a non-state adversary of Hezbollah's relatively sophisticated armament and orientation was more than a mere nuisance factor in the nation's security planning. On the contrary, given its ability to hold large numbers of Israeli civilians at risk with its short-range rocket inventory, the radical Islamist movement had, in fact, become what one Israeli analyst aptly described "a strategic threat of the first order."¹⁴² As two Australian scholars later commented, the proliferation of such cheap but effective terror weapons throughout the region had the almost instant effect of undermining "the historical importance of air power as the main instrument of Israel's deterrence policy."¹⁴³

In a related vein, American defense analyst Andrew Krepinevich well characterized the second Lebanon war as "the proverbial canary in the coal mine" in the way in which it spotlighted how "a

ment of the IAF's operational and technical wherewithal for conducting such a mission based solely on information available in the public domain, see Whitney Raas and Austin Long, "Osirak Redux? Assessing Israeli Capabilities to Destroy Iranian Nuclear Facilities," *International Security*, Spring 2007, pp. 7–33.

¹⁴²Ron Tira, "Shifting Tectonic Plates: Basic Assumptions on the Peace Process Revisited," *Strategic Assessment*, June 2009, pp. 100, 102.

¹⁴³Kainikara and Parkin, *Pathways to Victory*, p. 17.

new, more deadly form of irregular conflict . . . under high-technology conditions” had underscored the increasingly pronounced difficulty of defending major military installations, economic infrastructure, and densely populated rear areas against hybrid opponents, like Hezbollah and Hamas, armed with what he calls “RAMM” (rocket, artillery, mortar, and missile) capabilities.¹⁴⁴ Clearly concluding from its fresh memories of Lebanon that standoff-only attacks could not offer an adequate answer to this new category of challenge, the IDF got it right the second time around in Gaza by applying its emergent realization that the only way of realistically dealing with such “RAMM” threats was by “taking control of enemy launching areas. . . . Thus, [in Gaza], Israel once again [came] to rely on a large maneuvering force, and the principle of waging battle on enemy territory [returned].”¹⁴⁵ Another reason the IDF did better in Gaza than it did during the second Lebanon war was that its leadership and the Olmert government this time were willing, if need be, to sustain troop losses that, in the end, proved to be far less than anticipated.

In all the above respects, said one Israeli commentator, “it is almost as if Israel should thank Hezbollah for the wake-up call.”¹⁴⁶ A big part of that wake-up call was the dawning realization that in fighting Hezbollah, the IDF was actually engaging a forward combat arm of Iran. Said one Israeli: “A huge, dark, perpetual forest of Katyushas is blooming in front of us. It is the State of Israel’s tremendous good

¹⁴⁴Andrew F. Krepinevich, Jr., “The Pentagon’s Wasting Assets: The Eroding Foundations of American Power,” *Foreign Affairs*, July–August 2009, p. 24.

¹⁴⁵Tira, “Shifting Tectonic Plates,” p. 102. In the view of other Israeli security experts, both the Lebanon and Gaza experiences, with Hezbollah and Hamas leveraging a new “strategic” hybrid-war capability in the form of incessant rocket fire, should have given the Israeli defense establishment a powerful incentive to seek an active defense capability against this newly emergent threat that would negate any need for IDF forces to go in on the ground to root it out house-by-house and bunker-by-bunker. They insist that current technology can address this challenge if the needed investment is made. Even were a laser defense to be only 80-percent effective, they add, it would still be worth having for its value of depriving asymmetrical challengers a viable strategic option against Israel. (Conversation with Major General David Ivry, IAF [Res.], Tel Aviv, March 25, 2009.)

¹⁴⁶Roni Bart, “The Second Lebanon War: The Plus Column,” *Strategic Assessment*, November 2006, pp. 16–17.

fortune that it is happening now and not later.” This commentator added: “Nasrallah has lost the ability to deter us. He said that what goes for Beirut goes for Tel Aviv, and before he even finished talking we leveled another ten buildings in Beirut. He understands we are no longer afraid of him—no longer frozen. . . . He’s the one who’s [now] in an existential battle.”¹⁴⁷ In light of the major setback that was dealt both to Hezbollah as a terrorist organization and to Iran’s strategic interests by the IDF’s counteroffensive during the second Lebanon war, to say nothing of the uninterrupted calm that has prevailed along Israel’s northern border ever since the ceasefire went into effect in August 2006, one can safely say in hindsight about the aftermath of Operation Change of Direction what Mark Twain once said about Wagnerian opera—“it’s not as bad as it sounds.” The only significant remaining downside, as the IAF’s Brigadier General Brun frankly admitted in an after-action reflection on the campaign experience, is that “we [the IDF and the Olmert government] failed to protect Israel’s civilian population and did not succeed in shortening the war.”¹⁴⁸

To be sure, thanks to Syria’s continuing financial largesse and technical support, Hezbollah is now assessed as having accumulated an inventory of as many as 50,000 short-range rockets of the Katyusha variety. Moreover, according to information reportedly acquired by Israeli intelligence and recently leaked to the press by Israel’s president, Shimon Peres, Syria also has provided Hezbollah with a shipment of Scud-B missiles that possess the range and payload capability to hit any city in Israel with a 2,000-pound warhead.¹⁴⁹ If that report is correct, the transfer of Scuds to Nasrallah would make his terrorist orga-

¹⁴⁷ Ben Kaspit, “First, Let’s Win,” *Ma’ariv*, Tel Aviv, August 11, 2006.

¹⁴⁸ Brun, “The Second Lebanon War as a ‘Wake-Up Call.’” On this same point, Halutz’s successor as Chief of Staff, Lieutenant General Gabi Ashkenazi of the IDF’s ground forces, said the year after the campaign ended: “Looking back, I am convinced that the war in Lebanon achieved a few important accomplishments for the security of Israel and strengthened Israel’s deterrence. At the same time, I am now just as convinced that these accomplishments, and possibly even greater ones, could have been accomplished more quickly and at a lower cost.” (Quoted in Brun, “The Second Lebanon War as a ‘Wake-Up Call.’”)

¹⁴⁹ Bret Stephens, “Plotting the Next Mideast War,” *Wall Street Journal*, April 10, 2010. See also Alon Ben-David, “Going Ballistic: Syria Comes Under Diplomatic Scrutiny for Alleg-

nization the first nonstate entity to possess such highly destructive (if unguided and inaccurate) surface-to-surface weapons.

On the negative side of the ledger, however, Hezbollah has experienced a surfeit of highly publicized setbacks in recent times. For example, on July 14, 2009, an explosion destroyed a major ammunition dump maintained by the terrorist organization in the southern Lebanese village of Hirbet Salim. The following October, another secret munitions bunker maintained by Hezbollah in southern Lebanon blew up under mysterious circumstances. Both events caused Hezbollah perceptible discomfiture by revealing the organization to be in violation of UN Security Council Resolution 1701 that prohibits the stockpiling of weapons south of the Litani River. To make matters worse for the organization's public image, Hezbollah combatants, aided and abetted by Lebanese Army troops, prevented foreign inspectors from examining the site of the latter incident, thereby exposing the Lebanese Army's lack of neutrality and its provision of active aid and support to Hezbollah.¹⁵⁰

On top of that, more than a year before, in February 2008, Hezbollah's military commander and Nasrallah's single most valued associate, Imad Mughniyeh, was killed in Damascus by a car bomb explosion. To this day, Nasrallah has not exacted his promised revenge for this devastating blow that was dealt to his organization's fighting edge. (Among numerous other acts of notoriety committed by that uniquely diabolical terrorist mastermind, Mughniyeh was strongly suspected of having planned and overseen the July 12, 2006 kidnapping incident that set off the second Lebanon war.)¹⁵¹

In addition, Hezbollah has been a lightning rod for gradually mounting Lebanese popular discontentment since the end of the IDF's counteroffensive in 2006 for having been adjudged the main instigator of Israel's retaliatory bombardment that generated such widespread

edly Supplying Scuds to Hezbollah," *Aviation Week and Space Technology*, April 19, 2010, pp. 40–41.

¹⁵⁰ Ronen Bergman, "Israel's Secret War on Hezbollah," *Wall Street Journal*, October 10, 2009.

¹⁵¹ Bergman, "Israel's Secret War on Hezbollah."

damage to Lebanon's civilian infrastructure and economy. For that reason, Nasrallah fully appreciates that he cannot afford to be viewed by the Lebanese rank and file as the cause of yet another painful Israeli retaliation against Lebanon. Also for that reason, only at the greatest risk to Hezbollah's own interests as an infectious presence within Lebanon can he commit any act of aggression or provocation against Israel sufficiently grave as to precipitate an even more massive response by the IDF.¹⁵²

Israel's intelligence monitoring of Hezbollah is said to be greatly improved over what it was before the second Lebanon war, and the current leadership of Northern Command has exuded quiet confidence that the indecisive outcome of Operation Change of Direction in 2006 will not be repeated if another military showdown with Hezbollah should come to pass.¹⁵³ Said one of its senior officers in October 2009: "By all means let the Hezbollah try. The welcome party that we are preparing for them [this time] is one that they will remember for a very long time." Not only that, Israel's current political leadership has left no room for doubt that because Hezbollah has insinuated itself even further into the Lebanese government, any future act of aggression by the terrorist organization against Israel would be deemed an act undertaken by that government, thereby rendering Lebanon's infrastructure and economy legitimate targets for massive retaliation by the IDF. In addition, with Hezbollah's hard-line sponsors in Tehran now facing troubles of their own on the domestic front, Nasrallah can no longer count on the automatic support of Iran in case of another Israeli assault on his most valued assets in Lebanon—at least for the time being. In the words of a well-informed Israeli defense reporter, "despite the fact that Hezbollah today is substantially stronger in purely military terms than it was [in 2006], its political stature and autonomy have been significantly reduced. It is clear that Nasrallah is cautious, and he will

¹⁵² Bergman, "Israel's Secret War on Hezbollah."

¹⁵³ For an informed and thoughtful anticipatory assessment of such a possible contingency, see Jeffrey White, *If War Comes: Israel vs. Hizballah and Its Allies*, Washington, D.C.: The Washington Institute for Near East Policy, Policy Focus No. 106, September 2010.

weigh his options very carefully before embarking on any course of action that might lead to all-out war with Israel.”¹⁵⁴

Finally, it bears noting that, in large measure due to the manifold incentive generated by Israel’s having experienced two successive rocket wars in a span of less than three years, compounded further by the persistent threat of worse challenges perhaps yet to come from Hezbollah and Hamas, Israel’s high-technology research and development establishment has made substantial gains since 2006 toward fielding a serviceable active defense against the Grads, Katyushas, Qassams, and other short-range rockets that caused such headaches for the IDF and the Israeli people alike during the second Lebanon war and in the months that preceded Operation Cast Lead in Gaza. In addition to its Arrow 2 and Arrow 3 antimissile systems against long-range ballistic threats and to its David’s Sling interceptor aimed at destroying lower- and slower-flying cruise missiles, the IDF in 2010 began deploying its Iron Dome system against short-range rockets of the sort fielded in large numbers by Hezbollah and Hamas.

Initially, the mobile Iron Dome launchers will be placed around towns and facilities closest to the Gaza Strip. Eventually, however, they will be positioned at sites throughout Israel. The hoped-for effect will be to undermine, ultimately severely, the attack tactic currently most favored by those two hybrid terrorist groups. Partly financed by the United States and incorporating advanced American radar and other technology, the system has not proven effective against mortars. Moreover, concern has been voiced by some that militant groups like Hezbollah and Hamas could attempt to overwhelm the system by firing heavy barrages of cheap short-range rockets, thereby forcing the IDF to spend as much as tens of thousands of dollars a shot to negate them. However, as an IDF spokesman commented, “there is a bigger issue here than how much it costs. [The Iron Dome system] is going to give us some answers.”¹⁵⁵

¹⁵⁴ Bergman, “Israel’s Secret War on Hezbollah.”

¹⁵⁵ Howard Schneider, “Israel Finds Strength in Its Missile Defenses,” *Washington Post*, September 19, 2009.

In a summary statement to the Winograd Commission that well captured the case for this more encouraging outlook across the board, General Halutz said: "When I judge the results [of the campaign] in light of the targets [that were attacked], and when I look at the military outcome where an improved military situation has been created, where Hezbollah has been weakened, and where the Lebanese establishment has understood that it must implement its responsibility over Lebanon . . . I think that with respect to the issue of the military predicament, the starting point today is substantially superior to what it was before the outbreak of the fighting. I cannot tell how long this will last, but what I can say is that even today, this is the longest period of time ever in which such a reality has existed along the border. . . . From the military point of view, [Hezbollah] has been dealt a blow like it had never felt before."¹⁵⁶

¹⁵⁶ "Testimony by Lieutenant General Dan Halutz, IDF Chief of Staff, to the Winograd Commission Investigating the Second Lebanon War."

Conclusions

Without question, Operation Change of Direction represented the first time in Israel's six-decade history that a major confrontation ended without a clear-cut military victory on Israel's part. The campaign's less than satisfactory outcome did not flow from any particular single-point failure, but rather, in the astute words of two Israeli commentators, from "an overall accumulation of circumstances."¹ As it pertains to the focus of this book, the war's outcome in no way reflected a failure of Israel's air assets to perform to the fullest extent of their considerable but not limitless capabilities. Rather, it reflected an overarching deficiency in strategy choice, the most flawed elements of which included a failure by the IDF General Headquarters to update standing contingency plans for the immediate needs of the challenge at hand, an inconsistency between avowed goals and the available means and will to pursue them successfully, and the leadership's placement of friendly casualty avoidance over mission accomplishment in its rank-ordering of combat priorities.² In the measured judgment of one of the best assessments of the campaign and its underlying decision sequence, Olmert, Peretz, and Halutz collectively erred by "not taking decisions at critical crossroads; by embarking on a campaign without preparing the field

¹ Har'el and Isaacharoff, *34 Days*, p. ix.

² On the issue of heightened Israeli sensitivity to friendly military casualties, one IDF commander noted: "I realized [there was a problem on] the first day of the war when a . . . brigade commander said that his main task was to bring all his soldiers home safely." (Brigadier General Gideon Avidor, IDF [Res.], interview with Russell Glenn, RAND Corporation, Haifa, Israel, March 23, 2007.)

for the next steps; by sidestepping the potential for ending the war at an earlier stage; by . . . insisting on continuing the campaign from the air when it was obvious that such action was not going to provide the desired results; by not understanding the [Katyusha-caused] damage to the home front (and not dealing with it); and . . . by embarking on the final, fruitless, and extremely costly [ground] attack.”³

Nor were the problems encountered by the IDF at the strategic level during the second Lebanon war the result of any inappropriate application by the IDF of “effects-based operations” principles imported ill-advisedly from the United States. On the contrary, if anything, as one American commentator perceptively suggested, the IDF’s difficulty in matching ends with means emanated from force-employment choices that were arrived at by the Olmert leadership “in *contravention* to the effects-based principles [currently] advocated by the U.S. military in its own doctrine.” According to this assessment, the IDF operated against the grain of effects-based thinking “in three fundamental ways: its failure to properly analyze both the problem and the enemy, its reversion to a mindset focused on servicing a list of targets rather than creating desired effects, and, perhaps most important, its failure to determine a coherent end state for the campaign.”⁴

³Har’el and Isaacharoff, *34 Days*, p. 253.

⁴Lieutenant Colonel J. P. Hunerwadel, USAF (Ret.), “Israel’s Failure: Why?” *Air and Space Power Journal*, Winter 2007, p. 22. To clarify the essence of a campaign-planning approach that has been both misunderstood and mischaracterized in many quarters, “effects-based operations” are what tie tactical actions to intended strategic results. They are not about measurable inputs, such as the number of bombs dropped or targets attacked, but rather about intended combat *outcomes*. They depend on good understanding of the enemy as a system and entail measures undertaken to ensure that declared goals and operations in pursuit of them are relevant to a commander’s strategic needs. At bottom, they serve to remind commanders to stay focused on desired results rather than falling into the trap of believing that the most easily quantifiable inputs, such as the number of strike sorties flown per day, offer measures of anything other than simple weight of effort. A classic example of effects-based targeting is selectively bombing enemy ground troops or SAM sites to induce paralysis or to inhibit their freedom of operation rather than just attacking them seriatim to achieve some predetermined level of desired attrition through physical destruction. For the most concise and readily accessible synopsis of the construct, see then-Colonel David A. Deptula, USAF, *Firing for Effect: Change in the Nature of Warfare*, Arlington, Va.: Aerospace Education Foundation, 1995, updated in 2001 under the title *Effects-Based Operations*.

Viewed in retrospect, it was clearly an impulsive and unthinking overreach for Prime Minister Olmert to declare as a key objective of his government's response to the border provocation of July 12, 2006, the manifestly outsize goal of extirpating, in a single and limited combat operation, Hezbollah's deeply entrenched military organization and capability. As a former IDF major general later observed, the government's decision to rely principally on precision standoff attacks rather than to commit in strength on the ground from the campaign's very start stemmed, at least in the first instance, not from any preexisting doctrinal bias in favor of air power on Halutz's part, but rather more simply from his superiors' "setting unrealistic objectives . . . and [then] creating the illusion that they were achievable . . . at a low price." Although the initial phase of the counteroffensive was successful, this former general added, it was never clear at any time in the minds of the IDF's subordinate commanders "what mechanism . . . was supposed to translate these military achievements into the ambitious goals set at the start of the war."⁵ In effect, Israel's national security principals, in the end, lost sight of Clausewitz's cardinal teaching about never confusing the war you are in with the one you would like to be in.

More to the point, having bought wrongly into a baseless view of what air power (or, more correctly, standoff firepower) alone could accomplish by way of coercing desired enemy behavior, as many observers suggested both during and after the campaign—and as some continue to believe to this day—was not the most basic error committed by the Olmert government. On the contrary, that was never a documentable belief held either by Halutz or by any of his civilian superiors at any time from the start of the crisis onward. Rather, the government's greatest misstep was taking an overly unreflective view of what military power of *any* kind, unaided by a coherent and effective strategy, could accomplish in a situation in which the declared campaign goals were as unbounded as they were and when the IDF's ground troops were so unprepared for combat against Hezbollah's robust forces. (All that those troops had done for the preceding six years had been to

⁵Brom, "Political and Military Objectives in a Limited War Against a Guerilla Organization," in Brom and Elran, eds., *The Second Lebanon War: Strategic Perspectives*, p. 20.

conduct lower-intensity operations against the Palestinian *intifada*.) Speaking to this important point as the IDF's response was still under way, former IAF commander Ben-Eliahu noted that Israel's frustrations in engaging Hezbollah's forces did not just reflect limitations on the IAF's part. "Air power or ground power or a combination of these alone," he cautioned, "cannot achieve" the avowed campaign goals of the Olmert government. Ben-Eliahu added that without supporting diplomatic initiatives in the chemistry of crisis management, which at that point remained desultory at best, the effect of pure military might "is greatly reduced."⁶

Writing in a similar vein after the campaign ended, a former U.S. Air Force intelligence officer suggested that in the sort of conflict that Israel had experienced against Hezbollah in 2006, not just Israel's air power but "perhaps [its] military force more generally" was limited in its extent of likely strategic effectiveness, implying that "only a comprehensive strategy that integrates air power and military force into a broader political strategy will ultimately bring this kind of adversary to its knees." This observer went on to propose that the explanation for the problems that the IDF had encountered throughout its campaign "is more nuanced than simply arguing that air power was again a perennial failure." She further suggested that the right conclusion to be drawn from the IDF's disappointing experience "is perhaps not that air power is a categorical failure, but that it does not promise the antiseptic elixir that some leaders are seeking. . . . If leaders are serious about providing security, they must identify their strategic objectives and match them with appropriate and realistic instruments and be willing to use those instruments even at the risk of incurring casualties."⁷ She punctuated this observation with an on-target conclusion that against an asymmetric enemy like Hezbollah, "not just air power, but military force in general may have limited effectiveness" in the absence of a coherent and guiding strategy.⁸ An RAF officer similarly remarked

⁶Egozi, "Israeli Air Power Falls Short," p. 21.

⁷Sarah E. Kreps, "The 2006 Lebanon War: Lessons Learned," *Parameters*, Spring 2007, p. 82.

⁸Kreps, "The 2006 Lebanon War," p. 82.

that “this was not a failure of air power per se. Instead, it represented a failure at the strategic level to define an end-state that was militarily achievable, or to consider the desired end-state and apply the most appropriate levers of power to achieve it. *No* form of military power was likely to have resulted in the stated aims being achieved, and in that sense, air power at the theoretical and practical levels cannot be held culpable.”⁹

Commenting on recurrent intimations during the campaign’s early aftermath that air power had “failed” to achieve singlehandedly the Olmert government’s avowed campaign goals, former U.S. Air Force Chief of Staff General John Jumper rightly countered that “no strategically successful military leader has expected one service to be ‘decisive’ on its own. To say that Israeli air power failed because it did not unilaterally defeat an entrenched Hezbollah guerrilla force is just as wrong as to blame ground forces for failing to seize and hold ground alone without help from air, sea, and space.”¹⁰

U.S. Air Force Colonel Mace Carpenter likewise rightly noted that “air power was only one aspect of the overall Israeli campaign against Hezbollah. . . . Israeli land, air, and sea forces all faced challenges and common intelligence shortfalls. . . . Any knowledgeable air strategist understands that air power has strengths and weaknesses, capabilities and limitations, costs and relative savings . . . [and] is best employed when closely integrated with other aspects of military force.”¹¹

Perhaps not surprisingly, there was a brief flurry of post-campaign speculation in some circles that when Halutz assumed the position of IDF Chief of Staff, the mandated reform initiatives directed by Prime

⁹Parton, “Israel’s 2006 Campaign in the Lebanon: A Failure of Air Power or a Failure of Doctrine?” pp. 89–90, emphasis added.

¹⁰General John P. Jumper, USAF (Ret.), “Better Military Amid Uncertainties,” *Washington Times*, September 6, 2006.

¹¹Colonel Mace Carpenter, USAF, “By Air, Land and Sea,” *Washington Times*, September 5, 2006. Both General Jumper and Colonel Carpenter were responding to a comment in the U.S. press alleging a “failure of Israel’s air campaign” and how that ostensible “failure” allegedly showed once again how “air force after air force promise[s] far more than it can deliver.” (Fred Reed, “Technology: Enemies Adapt to Military Air Power,” *Washington Times*, August 18, 2006.)

Minister Sharon in the force-development arena had “created opposition in the army that exacerbated the resentment already felt from the air force’s move into the senior uniformed military position.”¹² One report in this vein noted hints of “a deeper story of professional jealousy and bureaucratic betrayal” within the IDF, in which Halutz was allegedly “not provided with the proper support by senior army officials, particularly in assessing the army’s capabilities when the fighting switched from an air war . . . to a ground war. . . .” In this regard, an unnamed IAF general said that Halutz had been “given the [Chief of Staff] job with the idea of streamlining the military, making it more efficient, and changing the investments from heavy land forces to aerial assets that provide the long-range capabilities needed to defend against ballistic missiles.” The general added that once the IDF’s counteroffensive against Hezbollah was under way, Halutz “didn’t get the practical advice he needed about fighting a ground war. The army’s senior commanders just stood back and let him get into deeper trouble.”¹³

It only stands to reason, at first glance, that at least some of the IDF’s ground-force commanders might have harbored a natural inner resentment at the installation, for the first time ever, of an airman in the position of IDF Chief of Staff that had been occupied by an army general ever since the founding of the State of Israel. Yet there is no evidence to suggest that the IDF’s land-warfare principals consciously set out to sabotage Halutz out of crass considerations of interservice rivalry. After all, as noted above more than once, those generals were in no way itching to get into a test of institutional manhood by launching headlong into a slugfest with Hezbollah on the ground so long as there was an alternative of using standoff-only measures that promised a reasonable chance of success.¹⁴

¹²Fulghum, “Lebanon Critique,” p. 36.

¹³Fulghum, “Lebanon Critique,” p. 36.

¹⁴At the same time, there was almost certainly some chemistry at work here that bore at least indirectly on the interpersonal relations that prevailed in the IDF’s most senior leadership circles during Halutz’s tenure as Chief of Staff. Although Halutz never once suggested or acted as though he believed that air power could “do it alone” in the second Lebanon war, many ground-force generals were said to have labored under the misimpression that that was his private belief as a natural result of his IAF upbringing and his manifest charisma and

Far more important, to repeat a point emphasized throughout this book, there also is no evidence to suggest, as some have implied, that the campaign's unsatisfying outcome was, in any way, due to the fact that the Chief of Staff was an IAF general who was naturally inclined by both background and upbringing to pursue an air-centric campaign strategy out of a belief that air power could somehow produce the desired outcome all by itself. The hard fact is that both the IDF's ground commanders and the government's civilian leaders were no less disinclined than was Halutz's to press immediately into a major land counteroffensive, for all of the reasons outlined above. All the same, from a more narrow and purely IAF service-interest point of view, a distinct downside byproduct of the war's less than resounding outcome is that there will most likely not be another Israeli airman picked to occupy the position of Chief of Staff for quite a few years yet to come, thanks to the likely enduring memories in many circles of Halutz's association with the campaign's troubled course and outcome.¹⁵

In one of the most incisive appraisals to date of the planning pathology that afflicted Israel's choice of response options after being spurred into action by Hezbollah's provocation, another U.S. Air Force intelligence officer concluded that the Olmert government's national security principals, in the end, "proceeded to prosecute a linear attrition strategy that failed to produce linear and anticipated consequences." This observer added: "Although immediate post-conflict appraisals quickly

self-assurance. Also, as the first airman ever to have been chosen for the position of Chief of Staff, he was arguably insufficiently attuned to ground-force sensibilities when he assigned both the positions of director of AMAN and head of the IDF's Planning Directorate to fellow IAF generals (Yadlin and Nehushtan), with General Nehushtan's principal deputy, then-Colonel Nimrod Sheffer, also having been an IAF fighter pilot, even if, from a purely objective point of view, those three individuals may well have been the most qualified senior officers for those positions at the time they were appointed. Some ground-force generals reportedly resented those choices and were quietly hoping at some level for Halutz to fail, even if they did not actively sabotage him. (These perspectives were put forward during conversations with several sympathetic and still-engaged retired IAF general officers in Tel Aviv, on March 25, 2009.)

¹⁵By the same token, a related likely by-product of the campaign experience is that there also will not be another Israeli minister of defense chosen for quite some time without previous IDF chief-of-staff experience.

devolved into debates over the merits of air power, subsequent reviews [more correctly attributed] Israel's disappointing results to a flawed grand strategy centered on an ineptly prepared military solution." To be sure, the writer noted, the course of events that ultimately ensued was in no way preordained once combat operations got under way: "Israel had a . . . learning opportunity to alter its ineffective strategy early in the war, but failed to exploit it." As a result, the IDF "slugged its way through a 34-day war for which it was not adequately prepared while combating an enemy who was."¹⁶

A fellow American airman similarly concluded that the IDF's initial reliance on precision standoff attacks to the exclusion of a counter-offensive on the ground did not, at bottom, reflect any "incapacity of air power to bring about a decision," as many suggested early on and continue to believe to this day. What it showed instead was both "a failure of Israeli grand strategy in the years leading up to the conflict and a failure to strategize at all when the conflict with Hezbollah started."¹⁷ Those mistakes, which had nothing whatever to do with any strengths or limitations of Israel's air power per se, were handily corrected by the time of the IDF's planning workups to and subsequent execution of Operation Cast Lead against Hamas in the Gaza Strip a little more than two years later. In marked contrast to the Olmert government's flawed conduct of the second Lebanon war, the latter campaign was dominated by better preparation and a far more realistic matching of desired ends with available means, as well as by a greater willingness

¹⁶Major Chad J. Hartman, USAF, "Field-Testing the Intelligence Estimate: A Strategy for Genuine Learning," Maxwell AFB, Ala., thesis presented to the faculty of the School of Advanced Air and Space Studies, Air University, June 2008, pp. 48–49. On this seminal point, an analysis published by the Royal Australian Air Force's Air Power Development Centre similarly concluded: "[A]n uncharacteristic inertia within the IDF created a hesitancy to change completely the direction of the campaign and realign the operational focus. This created a scenario wherein the political time frame available to conclude a conflict on favorable terms ran out before the IDF was able to achieve the war aims even partially." (Kainikara and Parkin, *Pathways to Victory*, p. 67.) As two respected Israeli journalists put the same point more directly and uncompromisingly, "the Olmert-Peretz-Halutz triumvirate not only committed many mistakes but also obstinately pursued them to the war's end, against all evidence brought to it in real time." (Har'el and Isaacharoff, *34 Days*, p. 70.)

¹⁷ Hunerwadel, "Israel's Failure: Why?" p. 25.

on the part of Israel's political and military leaders, if need be, to risk paying the campaign's likely price of entry. In the more disciplined way in which they planned it and carried it out, those leaders substantially erased any residual doubts about the IDF's combat prowess and the credibility of Israel's deterrent against future would-be challengers. There is a clear message in this experience for those among today's U.S. leaders who would postpone or forgo altogether due investment against potential high-end threats in the more distant future in order to focus our full concentration of effort against today's more immediate—but by no means exclusive—low-intensity challenges of the moment.

Bibliography

The 2008/09 Gaza Conflict—An Analysis, RAF Waddington, United Kingdom: Air Warfare Centre, The Air Warfare Group, 2009.

“Ababil,” Wikipedia, May 2010. As of October 11, 2010:
<http://en.wikipedia.org/wiki/Ababil>

Abramowitz, Michael, and Robin Wright, “Saudi Arabia Asks U.S. to Intervene in Lebanon,” *Washington Post*, July 24, 2006.

“The Accidental War,” *The Economist*, London, July 22, 2006.

Ahcar, Gilbert, with Michel Warschawski, *The 33-Day War: Israel’s War on Hezbollah in Lebanon and Its Consequences*, London: Paradigm Publishers, 2006.

Address by Prime Minister Ehud Olmert—the Knesset, July 17, 2006. As of October 10, 2010:
<http://www.pmo.gov.il/PMOEng/Archive/Speeches/2006/07/speechknesset170706.htm>

Allam, Hannah, “Tour Weaves a Path Through Destruction,” *Miami Herald*, July 21, 2006.

Alon, Gid’on, “Military Intelligence Chief: Syrian Army Now at Its Highest State of Alert,” *Ha’aretz*, Tel Aviv, July 25, 2006.

Arkin, William M., “Israel’s Failed Strategy of Spite,” *Washingtonpost.com*, August 15, 2006.

———, *Divining Victory: Air Power in the 2006 Israel-Hezbollah War*, Maxwell Air Force Base, Ala.: Air University Press, 2007.

———, “Divine Victory for Whom? Air Power in the 2006 Israel-Hezbollah War,” *Strategic Studies Quarterly*, Winter 2007.

———, unpublished review of Matt M. Matthews, *We Were Caught Unprepared: The 2006 Hezbollah-Israeli War*, Fort Leavenworth, Kan.: U.S. Army Combined Arms Center, Combat Studies Institute Press, 2008.

Ashkenazi, Eli, Ran Reznick, Jonathan Lis, and Jack Khoury, "The Day After: The War in Numbers," *Ha'aretz*, Tel Aviv, August 18, 2006.

Baker, Peter, and Colum Lynch, "Bush Declines to Call for Israeli Cease-Fire," *Washington Post*, July 15, 2006.

Bakshi, Major General G. D., "Military Lessons," *Indian Defence Review*, New Delhi, January 1–March 31, 2007.

Bar, Ya'el, and Li'or Estlein, "No Equivalent in History of World Military Aviation for 'Closing-the-Circle' Operations We Conducted in Hunt for Launchers," Interview with Brigadier General Amir Eshel, IAF Chief of Staff, *Bita'on Chel Ha'avir*, Tel Aviv, October 2006.

Barak, Ehud, "At the UN, Terrorism Pays," *Wall Street Journal*, September 25, 2009.

Bar-Joseph, Uri, "Israel's Military Intelligence Performance in the Second Lebanon War," *International Journal of Intelligence and Counterintelligence*, Vol. 20, No. 4, October 2007.

Bart, Roni, "The Second Lebanon War: The Plus Column," *Strategic Assessment*, November 2006.

Ben-David, Alon, "Israel-Hizbullah Conflict Threatens to Envelop Region," *Jane's Defence Weekly*, July 19, 2006.

———, "Hizbullah Hits Israeli Corvette," *Jane's Defence Weekly*, July 26, 2006.

———, "Israel to Counter Hizbullah Forces," *Jane's Defence Weekly*, July 26, 2006.

———, "Israel Fears Syrian Clash as It Expands Lebanon Incursion," *Jane's Defence Weekly*, August 2, 2006.

———, "Limited Israeli Achievements Made in Lebanon," *Jane's Defence Weekly*, August 16, 2006.

———, "Israel Introspective After Lebanon Offensive," *Jane's Defence Weekly*, August 23, 2006.

———, "Israel Revives Plan for Anti-Rocket Laser System," *Jane's Defence Weekly*, September 6, 2006.

———, "Questions Remain Over IDF's Use of Armed UAVs," *Jane's Defence Weekly*, September 16, 2006.

———, "IDF Favors Land Forces in New Five-Year Plan," *Jane's Defence Weekly*, September 12, 2007.

———, "Israel Aims for 'New Security Reality' in Gaza," *Jane's Defence Weekly*, January 14, 2009.

———, "Battle Picture Helps IDF Target Hamas Tunnels," *Jane's Defence Weekly*, January 21, 2009.

———, "Iran 'Is Rearming' Hamas in Gaza," *Jane's Defence Weekly*, January 28, 2009.

———, "Militant Attacks, Israeli Reprisals Rock Gaza Truce," *Jane's Defence Weekly*, February 20, 2009.

———, "Shoots of Recovery: Israeli Operation Leaves Hamas Weak but Alive," *Jane's Intelligence Review*, March 2009.

———, "Going Ballistic: Syria Comes Under Diplomatic Scrutiny for Allegedly Supplying Scuds to Hezbollah," *Aviation Week and Space Technology*, April 19, 2010.

Ben-Israel, Major General Isaac, IAF (Res.), *The First Israel-Hezbollah Missile War*, Tel Aviv: Program for Security Studies, College of Policy and Government, Tel Aviv University, May 2007 (available in Hebrew only).

Benn, Aluf, "Israel Declares Victory in Gaza, but at What Cost?" *Ha'aretz*, Tel Aviv, January 20, 2009.

Bergman, Ronen, "Israel's Secret War on Hezbollah," *Wall Street Journal*, October 10, 2009.

Bernstein, David, "A Price of Fighting Terrorism," *Washington Post*, August 10, 2006.

Biddle, Stephen, and Jeffrey A. Friedman, *The 2006 Lebanon Campaign and the Future of Warfare: Implications for Army and Defense Policy*, Carlisle, Pa.: U.S. Army War College, Strategic Studies Institute, September 2008.

"The Blame Game," *The Economist*, London, August 19, 2006.

Blanford, Nicholas, "Deconstructing Hizbullah's Surprise Military Prowess," *Jane's Intelligence Review*, November 2006.

———, "New Gaza Front Unlikely Despite Lebanon Rockets," *Jane's Defence Weekly*, January 14, 2009.

Boot, Max, "Let Israel Take the Gloves Off," *Los Angeles Times*, July 19, 2006.

Broad, William J., "U.S. and Israel Shelved Laser as Defense," *New York Times*, July 30, 2006.

Brom, Shlomo, Brigadier General, IDF (Ret.), "Political and Military Objectives in a Limited War Against a Guerilla Organization," in Shlomo Brom and Meir Elran, eds., *The Second Lebanon War: Strategic Perspectives*, Tel Aviv: The Institute for National Strategic Studies, 2007.

Brom, Shlomo, and Meir Elran, eds., *The Second Lebanon War: Strategic Perspectives*, Tel Aviv: The Institute for National Strategic Studies, 2007.

Bronner, Ethan, "Israeli Attack Splits Gaza; Truce Calls Are Rebuffed," *New York Times*, January 5, 2009.

———, "Israel United on War as Censure Rises Abroad," *New York Times*, January 13, 2009.

———, "Israel Speeds Gaza Withdrawal as Efforts to Buttress Ceasefire Continue," *New York Times*, January 20, 2009.

Bronner, Ethan, and Mark Landler, "Israeli Cabinet Appears Ready to Declare a Gaza Ceasefire," *New York Times*, January 17, 2009.

Brookes, Andrew, "Air War over Lebanon," *Air International*, September, 2006.

Brun, Brigadier General Itai, IAF, "The Second Lebanon War as a 'Wake-Up Call': A Strategic Perspective and Major Lessons Learned," Gilot Base, Tel Aviv, Israel: Dado Center for Interdisciplinary Military Studies, undated briefing charts.

———, "The Second Lebanon War, 2006," in John Olsen, ed., *A History of Air Warfare*, Washington, D.C.: Potomac Books, 2009.

Bush, George W., *Decision Points*, New York: Crown Publishers, 2010.

Cambanis, Thanassis, "Devotion and Discipline Fuel Hezbollah's Fight," *Boston Globe*, August 1, 2006.

Cambanis, Thanassis, and Rana Fil, "Weeks of Bombing Leave Lebanon in Ruin," *Boston Globe*, August 5, 2006.

Carpenter, Colonel Mace, USAF, "By Air, Land and Sea," *Washington Times*, September 5, 2006.

Carroll, James, "America Transforms the Middle East, but Not as Envisioned," *Boston Globe*, July 31, 2006.

Chazan, Guy, and Karby Leggett, "Big Ground Campaign in Lebanon Would Present Perils for Israel," *Wall Street Journal*, July 26, 2006.

Chazan, Guy, Karby Leggett, and Neil King, "Why Israel's Plans to Curb Hezbollah Went So Poorly," *Wall Street Journal*, August 19, 2006.

Cloud, David S., "Israel Asks U.S. to Ship Rockets with a Wide Blast," *New York Times*, August 11, 2006.

———, "Inquiry Opened into Israeli Use of U.S. Bombs," *New York Times*, August 25, 2006.

Cloud, David S., and Helene Cooper, "U.S. Speeds Up Bomb Delivery for the Israelis," *New York Times*, July 22, 2006.

Cody, Edward, and John Ward Anderson, "Israeli Forces Mass at Border," *Washington Post*, July 22, 2006.

Cody, Edward, and Jonathan Finer, "Hezbollah Joins New Call for Cease-Fire," *Washington Post*, July 29, 2006.

Cody, Edward, and Colum Lynch, "Lebanon Sending Troops into South," *Washington Post*, August 17, 2006.

Cody, Edward, and Molly Moore, "Israeli Jets Kill 30; No Letup in Militia Attacks," *Washington Post*, August 8, 2006.

Cohen, Eliot A., *Supreme Command: Soldiers, Statesmen, and Leadership in Wartime*, New York: The Free Press, 2002.

Cohen, Eliot A., and John Gooch, *Military Misfortunes: The Anatomy of Failure in War*, New York: Vintage Books, 1990.

Cohen, Roger, "Price of Disengagement—Beirut and Gaza Burn," *International Herald Tribune*, July 15, 2006.

Colley, Air Commodore M. P., RAF, "IAF Operations in 2006," presentation to the RAF Chief of Air Staff's Air Power Conference, Defence Academy Shrivenham, United Kingdom, December 8, 2009.

The Commission for the Examination of the Events of the 2006 Campaign in Lebanon—The Winograd Commission, *The Second Lebanon War*, Final Report, Volume I, Tel Aviv: January 2008.

Cooper, Helene, "From Carnage, U.S. Gains a Concession," *New York Times*, July 31, 2006.

Cooper, Helene, and Steven Erlanger, "U.S. Appears to Be Waiting to Act on Israeli Airstrikes," *New York Times*, July 19, 2006.

Cordesman, Anthony H., "Preliminary 'Lessons' of the Israeli-Hezbollah War," Washington, D.C.: Center for Strategic and International Studies, working draft, August 17, 2006.

———, "The Lessons of the Israeli-Lebanon War," Washington, D.C.: Center for Strategic and International Studies, briefing charts, March 11, 2008.

———, "The 'Gaza War': A Strategic Analysis," final draft circulated for comment and updating, Washington, D.C.: Center for Strategic and International Studies, February 2, 2009.

"The Crisis Widens," *The Economist*, London, July 15, 2006.

Deptula, Colonel David A., USAF, *Firing for Effect: Change in the Nature of Warfare*, Arlington, Va.: Aerospace Education Foundation, 1995, updated in 2001 under the title *Effects-Based Operations*.

De Quetteville, Harry, "Iran Blamed as Lebanon Battle Widens," *London Sunday Telegraph*, July 16, 2006.

Dershowitz, Alan, "'Civilian Casualty'? It Depends," *Los Angeles Times*, July 22, 2006.

Dickey, Christopher, and Rod Nordland, "The Wider War," *Newsweek*, August 7, 2006.

Dickey, Christopher, Kevin Peraino, and Babak Dehghanpish, "The Hand That Feeds the Fire," *Newsweek*, July 24, 2006.

Dudney, Robert S., "The Air War over Hezbollah," *Air Force Magazine*, September 2006.

Egozi, Arie, "Israeli Air Power Falls Short," *Flight International*, August 1–7, 2006.

———, "Israel Praises UAV Abilities During Operation Change of Direction," *Flight International*, August 29–September 4, 2006.

Eiland, Giora, "The Decision Making Process in Israel," in Shlomo Brom and Meir Elran, eds., *The Second Lebanon War: Strategic Perspectives*, Tel Aviv, Israel: The Institute for National Strategic Studies, 2007.

———, "The Changing Nature of War: Six New Challenges," *Strategic Assessment*, June 2007.

El-Khodary, Taghreed, and Isabel Kershner, "Israeli Troops Mass Along Border; Arab Anger Rises," *New York Times*, December 29, 2008.

Ellingwood, Ken, "Hezbollah Wields Improved Arsenal," *Los Angeles Times*, July 15, 2006.

Enders, David, "Cluster Bomblets Continue to Kill," *Washington Times*, August 23, 2006.

"Ending Will Be Harder," *The Economist*, London, July 22, 2006.

"An Enduring Illusion," *The Economist*, London, August 26, 2006.

Ephron, Dan, "Hizbullah's Worrisome Weapon," *Newsweek*, September 11, 2006.

Erlanger, Steven, "With Israeli Use of Force, Debate Over Proportionality," *New York Times*, July 19, 2006.

———, "Troops Ready, but Israel Bets on Air Power," *New York Times*, July 23, 2006.

———, "As Israel Begins to Pull Troops Out, Lebanon and the UN Prepare to Replace Them," *New York Times*, August 16, 2006.

———, "Israel Committed to Block Arms and Kill Nasrallah," *New York Times*, August 20, 2006.

———, "Israeli General Tells Troops of Weaknesses in War Effort," *New York Times*, August 25, 2006.

———, “Beware the Siren Lebanon,” *New York Times*, May 6, 2007.

Erlanger, Steven, and Hassan M. Fattah, “Israel Halting Air Raids After Dozens Die,” *New York Times*, July 31, 2006.

Erlanger, Steven, and Warren Hoge, “Israel Holds Off on Drive to the North,” *New York Times*, August 11, 2006.

Erlanger, Steven, and Jad Mouawad, “Diplomats Seek Foreign Patrols for Mideast,” *New York Times*, July 18, 2006.

Erlanger, Steven, and Thom Shanker, “Israel Finding a Difficult Foe in Hezbollah,” *New York Times*, July 26, 2006.

Eshel, Brigadier General Amir, IAF, “The IAF Doctrine of Counterterror Air Warfare,” in Oded Marom (ed.), *Airpower and the Asymmetric Conflict*, Herziliya, Israel: Fisher Institute for Air and Space Strategic Studies, 2007, pp. 95–98.

Eshel, Lieutenant Colonel David, IDF (Res.), “Summary of Israeli Air Force Strikes—12–21 July 2006.” As of February 19, 2010:
<http://www.defense-update.com/2006/07/summary-of-israeli-air-force-strikes.html>

Eshel, Lieutenant Colonel David, and David A. Fulghum, “Two Steps Forward . . . Israeli Technologies and Coordination Detailed in Gaza Strip Combat Analyses,” *Aviation Week and Space Technology*, February 9, 2009.

“Extended Range Multipurpose Missile,” Haifa, Israel: Rafael Advanced Defense Systems Ltd. As of November 29, 2010:
<http://www.rafael.co.il/Marketing/332-893-en/Marketing.aspx>

Exum, Andrew, *Hizballah at War: A Military Assessment*, Washington, D.C.: The Washington Institute for Near East Policy, Policy Focus No. 63, December 2006.

Farkash, Major General Aharon Ze’evi, IDF (Ret.), “Intelligence in the War: Observations and Insights,” in Shlomo Brom and Meir Elran, eds., *The Second Lebanon War: Strategic Perspectives*, Tel Aviv: The Institute for National Strategic Studies, 2007.

Fattah, Hassan M., and Steven Erlanger, “Israel Blockades Lebanon; Wide Strikes by Hezbollah,” *New York Times*, July 14, 2006.

Feldman, Shai, “Deterrence and the Israel-Hezbollah War: Summer 2006,” paper presented at a conference on “Framing Deterrence in the 21st Century” sponsored by the Royal United Services Institute, the Center for Defense Studies at King’s College London, and the U.S. Air Force Research Institute, London, May 18–19, 2009.

Fil, Rana, “Fuel Oil and Fumes Spill from Power Plant Bombed by Israelis,” *Boston Globe*, July 28, 2006.

Final Winograd Report on the Second Lebanon War, Reston, Va.: Open Source Center, February 2008.

Finer, Jonathan, and Edward Cody, "Israel Shuffles Command of Lebanon Offensive," *Washington Post*, August 9, 2006.

Finer, Jonathan, and Anthony Shadid, "Toll Climbs in Mideast as Fighting Rages On," *Washington Post*, July 18, 2006.

———, "Heavy Fighting Slows Israel's Ground Forces," *Washington Post*, July 26, 2006.

Fishman, Alex, and Ariela Ringel-Hoffman, "The Cost of War Is Hard for Me to Bear," Interview with Lieutenant General Dan Halutz, IDF Chief of Staff, *Yedi'ot Ahronot*, October 1, 2006.

Fletcher, Michael A., and Robin Wright, "Lebanon's Proposals Change Dynamics," *Washington Post*, August 8, 2006.

Frank, Thomas, and Ya'akov Katz, "American Leaving Lebanon," *USA Today*, July 17, 2006.

Friedman, Thomas L., "Not So Smart," *New York Times*, July 19, 2006.

Frisch, Felix, "Night Birds," *Ma'ariv*, Tel Aviv, October 6, 2006.

———, "Boeing: Apache Crashed Because of Difficult Flying Conditions," *Ma'ariv*, Tel Aviv, October 30, 2006.

Fulghum, David A., "Doubt as a Weapon: Lebanon Fighting Produced an Information Warfare Coup for Hezbollah and Iran," *Aviation Week and Space Technology*, November 27, 2006.

———, "Lebanon Critique: Israel's Winograd Commission Lays Blame for Last Summer's Military Debacle," *Aviation Week and Space Technology*, May 7–14, 2007.

———, "Israel's Secret New UAV," *Aviation Week and Space Technology*, May 21, 2007.

———, "Electronics Rule: The Concept 'It's Payloads Not Platforms That Matter' Becomes a Business Model," *Aviation Week and Space Technology*, February 4, 2008.

———, "UAV Boom Continues: Israeli Developers See Opportunities in Both High- and Low-End Markets," *Aviation Week and Space Technology*, February 4, 2008.

———, "Gaza: Phase Three—Israel Defense Forces Could Wrap Up Gaza Ground Campaign in Two Weeks," *Aviation Week and Space Technology*, January 19, 2009.

Fulghum, David A., and David Barrie, "The Iranian Connection: New Operations, Advanced Weapons, Iranian Advisers Are Influencing the Course of Lebanon-Israel Conflict," *Aviation Week and Space Technology*, August 14, 2006.

Fulghum, David A., David Eshel, and Douglas Barrie, "New War, Fresh Ideas: Israel's Battles in the Gaza Strip Appear to Show Innovation and Might," *Aviation Week and Space Technology*, January 12, 2009.

Fulghum, David A., and Robert Wall, "Learning on the Fly: Israeli Analysts Call for More Flexibility and Renewal of Basic Combat Skills," *Aviation Week and Space Technology*, December 3, 2007.

———, "Defense Crunch: Israel Wants to Lighten the Burden of Military Spending on the Economy," *Aviation Week and Space Technology*, December 17, 2007.

Fulghum, David A., Robert Wall, and Douglas Barrie, "All-Arms Attack: New Satellite Surveillance System Was Key Israeli Tool in Raid on Syria," *Aviation Week and Space Technology*, November 5, 2007.

Garlasco, Marc, *Precisely Wrong: Gaza Civilians Killed by Israeli Drone-Launched Missiles*, New York: Human Rights Watch, June 2009.

"Gaza War." As of February 19, 2010:
http://en.wikipedia.org/wiki/Gaza_War

Gelfand, Lauren, "Hamas Deploys Rocket Arsenal Against Israel," *Jane's Defence Weekly*, January 14, 2009.

Gerson, Michael, "Tackling a Fallacy in Gaza," *Washington Post*, January 30, 2009.

Gertz, Bill, "Hezbollah Forces Were Ready for Israeli Retaliation," *Washington Times*, August 1, 2006.

———, "Mossad Missed Hezbollah Threat," *Washington Times*, August 16, 2006.

Gordon, Michael R., and Eric Schmitt, "U.S. Says Exercise by Israel Seemed Directed at Iran," *New York Times*, June 20, 2008.

Gordon, Philip H., "Air Power Won't Do It," *Washington Post*, July 25, 2006.

Gray, Colin S., *Explorations in Strategy*, Westport, Conn.: Praeger Publishers, 1996.

———, *The Air Power Advantage in Future Warfare: The Need for Strategy*, Maxwell Air Force Base, Ala.: Air Force Doctrine Development and Education Center, Air Power Research Institute, Research Paper 2007-2, December 2007.

Greenberg, Hanan, "IDF: Qana Building Fell Hours After Attack," *Israel News*, Tel Aviv, July 30, 2006.

———, "IDF Ponders Response to Rocket Attacks," *Israel News*, Tel Aviv, January 18, 2009.

Halbertal, Moshe, "The Goldstone Illusion: What the UN Report Gets Wrong About Gaza—and War," *The New Republic*, November 6, 2009.

Halutz, Dan, *Begova Einayim* (At Eye Level), Tel Aviv: Yedi'ot Books, 2010.

Handel, Michael I., *Israel's Political-Military Doctrine*, Cambridge, Mass.: Center for International Affairs, Harvard University, Occasional Papers No. 30, July 1973.

Hanson, Victor Davis, "Relearning Lessons in the War on Terror," *Chicago Tribune*, August 25, 2006.

Har'el, Amos, "IAF Gets New Drone for Offensive Operations," *Ha'aretz*, Tel Aviv, March 8, 2007.

———, "Israel IDF Intelligence: An Iranian Nuclear Capacity in Mid-2009," *Ha'aretz*, Tel Aviv, July 11, 2007.

———, "Most Hamas Bases Destroyed in Four Minutes," *Ha'aretz*, Tel Aviv, December 29, 2008.

———, "Sources: Hamas Fired Antiaircraft Missiles at IAF Planes," *Ha'aretz*, Tel Aviv, January 12, 2009.

Har'el, Amos, and Avi Issacharoff, *34 Days: Israel, Hezbollah, and the War in Lebanon*, New York: Palgrave Macmillan, 2008.

Har'el, Amos, and Amir Oren, "IAF Source: Poor Intelligence Hurt Fight Against Katyushas," *Ha'aretz*, September 18, 2006.

Har'el, Amos, and Yoav Stern, "IDF Targets Senior Hamas Figures," *Ha'aretz*, Tel Aviv, January 4, 2009.

Hartman, Major Chad J., USAF, "Field-Testing the Intelligence Estimate: A Strategy for Genuine Learning," Maxwell Air Force Base, Ala., thesis presented to the faculty of the School of Advanced Air and Space Studies, Air University, June 2008.

Helmer, Captain Daniel, USA, "Not Quite Counterinsurgency: A Cautionary Tale for U.S. Forces Based on Israel's Operation Change of Direction," *Armor*, January–February 2007.

Hendel, Yoaz, "Failed Tactical Intelligence in the Lebanon War," *Strategic Assessment*, November 2006.

Hersh, Seymour, "Watching Lebanon: Washington's Interests in Israel's War," *The New Yorker*, August 21, 2006.

"Hezbollah Chief Revisits Raid," *Washington Post*, August 28, 2006.

Hicks, James, "Six Die in Israeli Attack over Hamas 'Tunnel' Under Border to Kidnap Soldier," *The Times*, London, November 6, 2008.

Hirst, Michael, and Harry de Quetteville, "Israelis Edge Closer to War with Syria," *London Sunday Telegraph*, July 30, 2006.

Hizbullah Prepares Long-Range Rockets,” Lebanese Foundation for Peace, July 28, 2006. As of October 11, 2010:

<http://www.free-lebanon.com/LFPNews/2006/July/July18/July18a/july18a.html>

Hoagland, Jim, “Spy Lessons from Israel,” *Washington Post*, July 30, 2006.

Hoffman, Frank G., *Conflict in the 21st Century: The Rise of Hybrid Wars*, Arlington, Va.: Potomac Institute for Policy Studies, 2007.

Hoge, Warren, “Attacks Qualify as War Crimes, Officials Say,” *New York Times*, July 20, 2006.

Hughes, Robin, “Iran Answers Hizbullah Call for SAM Systems,” *Jane’s Defence Weekly*, August 9, 2006.

Human Rights in Palestine and Other Occupied Arab Territories: Report of the United Nations Fact-Finding Mission on the Gaza Conflict, New York: United Nations Human Rights Council, Twelfth Session, Agenda Item 7, September 15, 2009.

Hunerwadel, Lieutenant Colonel J. P., USAF (Ret.), “Israel’s Failure: Why?” *Air and Space Power Journal*, Winter 2007.

“IAF Squadrons,” GlobalSecurity.org, undated. As of October 11, 2010:

<http://www.globalsecurity.org/military/world/israel/iaf-squadrons.htm>

“IAI Harpy,” Wikipedia, September, 2010. As of October 12, 2010:

http://en.wikipedia.org/wiki/IAI_Harpy

“IAI Heron,” Wikipedia, August 17, 2010. As of October 12, 2010:

http://en.wikipedia.org/wiki/IAI_Heron

“IAI RQ-5 Hunter,” Wikipedia, October 2010. As of October 12, 2010:

http://en.wikipedia.org/wiki/RQ-5_Hunter

“IDF Phones Gaza Residents to Warn Them of Imminent Strikes,” *Ha’aretz*, Tel Aviv, January 3, 2009.

“IDF Shake-Up over Hezbollah War,” *JINSA Online*, Washington, D.C.: Jewish Institute for National Security Affairs, March 23, 2007.

Ignatius, David, “Behind the Crisis, a Push Toward War,” *Washington Post*, July 14, 2006.

———, “To Save a Revolution,” *Washington Post*, July 21, 2006.

Inbar, Efraim, “Prepare for the Next Round,” *Jerusalem Post*, August 15, 2005.

“Iranians Advising Hezbollah on the Use of Missiles, UAVs,” *Aerospace Daily and Defense Report*, August 10, 2006.

Isby, David C., “Iran Supplies Improved Rockets to Syria and Hizbullah,” *Missiles and Rockets*, October 1, 2004.

"Israel Air Force/Air and Space Arm (*Heyl Ha'avir*): Aircraft Order of Battle." As of October 11, 2010:

<http://www.scrumble.nl/il.htm>

"Israel Air Force Seeks Joint Ops," *Middle East Newslite*, Montreal, May 15, 2007.

"Israel—Air and Space Force," *Jane's World Air Forces*, June 9, 2008.

"Israel Links Missile Defense Assets as Attacks Increase," *WorldTribune.com*, July 19, 2006.

"Israel Praises UAV Abilities During Operation Change of Direction." As of October 10, 2010:

<http://www.flightglobal.com/articles/2006/08/29/208706/israel-praises-uav-abilities-during-operation-change-of-direction-anti-hezbollah-lebanon.html>

Johnson, Lieutenant Colonel Bruce K., USAF, "Dawn of the Cognitive Age: Fighting Ideological War by Putting Thought in Motion with Impact," *Air and Space Power Journal*, Winter 2007.

Johnson, David E., *Military Capabilities for Hybrid Wars: Insights from the Israel Defense Forces in Lebanon and Gaza*, Santa Monica, Calif.: RAND Corporation, OP-285, 2010. As of October 10, 2010:

http://www.rand.org/pubs/occasional_papers/OP285/

Jones, Clive, "Israeli Offensive May Not Meet Long-Term Objectives," *Jane's Intelligence Review*, September 2006.

———, "After the Storm: Israel and the Future of Olmert's Government," *Jane's Intelligence Review*, January 2007.

Jumper, General John P., USAF (Ret.), "Better Military Amid Uncertainties," *Washington Times*, September 6, 2006.

Kainikara, Sanu, and Russell Parkin, *Pathways to Victory: Observations from the 2006 Israel-Hezbollah Conflict*, Canberra: Royal Australian Air Force, Air Power Development Centre, October 2007.

Kalb, Marvin, and Carol Saivetz, "The Israeli-Hezbollah War of 2006: The Media as a Weapon in Asymmetrical Conflict," *Harvard International Journal of Press/Politics*, Summer 2007. As of February 4, 2010:

<http://hij.sagepub.com/content/vol12/issue3/>

Karmi, Omar, "Gaza Stripped: Israeli Blockade Leaves Gaza Vulnerable," *Jane's Intelligence Review*, January 2009.

Kaspi, Ben, "Liquidate Him," *Ma'ariv*, Tel Aviv, July 17, 2006.

———, "First, Let's Win," *Ma'ariv*, Tel Aviv, August 11, 2006.

———, "Mofaz: Olmert Is the Main Culprit in Mishaps," *Ma'ariv*, Tel Aviv, September 12, 2006.

- , “Like a Surrealistic Movie,” *Ma’ariv*, Tel Aviv, September 15, 2006.
- , “Interview with Prime Minister Ehud Olmert,” *Ma’ariv*, Tel Aviv, September 22, 2006.
- Kaspit, Ben, and Jackie Hugi, “Speech of the Panicked Mice,” *Ma’ariv*, Tel Aviv, September 25, 2006.
- “Katyusha,” Wikipedia, June 2010. As of October 12, 2010:
<http://en.wikipedia.org/wiki/Katyusha>
- Katz, Ya’akov, “Israeli Commando Missions Come Out of Shadows,” *USA Today*, August 13, 2006.
- Katz, Yaakov, and Amir Mizroch, “Martial Law in North as Rockets Hit Tiberias,” *Jerusalem Post*, July 16, 2006.
- Kifner, John, “Fragile Cease-Fire Allows Thousands to Return Home,” *New York Times*, August 15, 2006.
- Kifner, John, and Steven Erlanger, “Israeli Air Raids Destroy Bridges North of Beirut,” *New York Times*, August 5, 2006.
- King, Laura, “Tempted by Opportunity, Israel Gambles on Force,” *Los Angeles Times*, July 17, 2006.
- King, Neil, Jr., Karby Leggett, and Jay Solomon, “Bush’s Mideast Strategy: Seek Change, Not Quick Peace,” *Wall Street Journal*, July 19, 2006.
- Kittrie, Ordre F., “A War Crime at Qana?” *Wall Street Journal*, August 5, 2006.
- Kober, Avi, “The Israel Defense Forces in the Second Lebanon War: Why the Poor Performance?” *The Journal of Strategic Studies*, Vol. 31, No. 1, February 2008.
- Kotes-Bar, Hen, “Not in One Fell Swoop,” Interview with Brigadier General Johanan Locker, IAF Air Group Commander, *Ma’ariv*, Tel Aviv, July 21, 2006.
- Krepinevich, Andrew F., Jr., “The Pentagon’s Wasting Assets: The Eroding Foundations of American Power,” *Foreign Affairs*, July–August 2009.
- Kreps, Sarah E., “The 2006 Lebanon War: Lessons Learned,” *Parameters*, Spring 2007.
- Krugman, Paul, “Shock and Awe,” *New York Times*, July 31, 2006.
- Kulick, Amir, “Hizbollah vs. the IDF: The Operational Dimension,” *Strategic Assessment*, November 2006.
- , “The Next War with Hezbollah,” *Strategic Assessment*, December 2007.
- La Franchi, Peter, “Israel Fields Armed UAVs in Lebanon,” *Flight International*, August 8–14, 2006.
- , “Iranian-Made Hezbollah UAV Shot Down by Israeli Fighter,” *Flight International*, August 15–21, 2006.

Lailari, Guermantes E., "The Information Operations War Between Israel and Hizballah During the Summer of 2006," in James J. F. Forest, ed., *Influence Warfare: How Terrorists and Governments Fight to Shape Perceptions in a War of Ideas*, Westport, Conn.: Praeger Security International, 2009.

Lambeth, Benjamin S., *The Transformation of American Air Power*, Ithaca, N.Y.: Cornell University Press, 2000.

———, *Air Power Against Terror: America's Conduct of Operation Enduring Freedom*, Santa Monica, Calif.: RAND Corporation, MG-166-1-CENTAF, 2005. As of October 10, 2010:

<http://www.rand.org/pubs/monographs/MG166-1/>

———, "The Downside of Network-Centric Warfare," *Aviation Week and Space Technology*, January 2, 2006.

Leggett, Karby, Jay Solomon, and Neil King, Jr., "Threat of Wider Mideast War Grows," *Wall Street Journal*, July 14, 2006.

Levine, Hanina, "Behind the Headlines of the Winograd Commission's Interim Report," Washington, D.C.: World Security Institute, Center for Defense Information, May 29, 2007.

Luttwak, Edward, and Dan Horowitz, *The Israeli Army*, New York: Harper and Row, 1975.

Lynch, Colum, and Robin Wright, "Peace Resolution for Lebanon Unanimously Approved at UN," *Washington Post*, August 12, 2006.

MacFarquhar, Neil, and Hassan M. Fattah, "At Crossroads, Hezbollah Goes on the Attack," *New York Times*, July 16, 2006.

Makovsky, David, and Jeffrey White, *Lessons and Implications of the Israel-Hizballah War: A Preliminary Assessment*, Washington, D.C.: The Washington Institute for Near East Policy, Policy Focus No. 60, October 2006.

Matthews, Matt M., "Interview with BG (Ret.) Shimon Naveh," Fort Leavenworth, Kan.: Operational Leadership Experiences Project, Combat Studies Institute, November 1, 2007.

———, *We Were Caught Unprepared: The 2006 Hezbollah-Israeli War*, Fort Leavenworth, Kan.: U.S. Army Combined Arms Center, Combat Studies Institute Press, 2008.

Mazetti, Mark, and Thom Shanker, "Arming of Hezbollah Reveals U.S. and Israeli Blind Spots," *New York Times*, July 19, 2006.

McCarthy, Rory, "Gaza Truce Broken as Israeli Raid Kills Six Hamas Gunmen," *The Guardian*, Manchester, England, November 5, 2008.

Melman, Yossi, "How Many Missiles Will Be Fired from Iran, Syria, and Lebanon in the Next War?" *Ha'aretz*, Tel Aviv, July 4, 2008.

The Military Balance 2007, London: International Institute for Strategic Studies, 2007.

Mittnick, Joshua, "Limits of Israeli High-Tech Power," *Christian Science Monitor*, August 1, 2006.

———, "Israelis Rely on Drones in War," *Washington Times*, August 5, 2006.

———, "Poll Finds Most Want Olmert to Quit over War," *Washington Times*, August 26, 2006.

Moore, Molly, "Israelis Confront 'New Kind of War,'" *Washington Post*, August 9, 2006.

Moore, Molly, and Edward Cody, "Israel May Expand Ground Combat," *Washington Post*, August 12, 2006.

Moore, Molly, and Jonathan Finer, "Israelis Authorize Expansion of Combat," *Washington Post*, August 10, 2006.

Mor, Avi, Tal Pavel, Don Radlauer, and Yael Shahar, *Casualties in Operation Cast Lead: A Closer Look*, Herzliya, Israel: International Institute for Counterterrorism, 2009.

Morley, Jefferson, "World Opinion Roundup: The Qana Tipping Point," *Washingtonpost.com*, August 1, 2006.

Mouawad, Jad, and Steven Erlanger, "Death Toll Rises in Mideast Fight; Bunker Bombed," *New York Times*, July 20, 2006.

———, "Marines Return to Beirut to Aid U.S. Evacuation," *New York Times*, July 21, 2006.

Murphy, Kim, "Officials Say 28 Died in Qana, Not 54," *Los Angeles Times*, August 4, 2006.

Myre, Greg, "Israel Widens Scope of Attacks Across Lebanon," *New York Times*, July 16, 2006.

———, "Israel Approves Call-Up, but Sets No Deployment," *New York Times*, July 28, 2006.

———, "A Larger and More Powerful Rocket Hits Deeper in Israel, Adding a New Dimension," *New York Times*, July 29, 2006.

———, "Risks Escalate as Israel Fights a Ground War," *New York Times*, August 5, 2006.

Myre, Greg, and Helene Cooper, "Israel to Occupy Area of Lebanon as Security Zone," *New York Times*, July 26, 2006.

Myre, Greg, and Jad Mouawad, "Israeli Buildup at Lebanese Line as Fight Rages," *New York Times*, July 22, 2006.

Myre, Greg, and Craig S. Smith, "Israel Presses Air Raids on Lebanon, and Its Ground Forces Move into a Village," *New York Times*, July 23, 2006.

Nakhleh, Lieutenant Colonel Hany T., Lebanese Army, *The 2006 Israeli War on Lebanon: Analysis and Strategic Implications*, Carlisle Barracks, Pa.: U.S. Army War College, U.S. Army War College Strategy Research Project, U.S. Army War College Class of 2007.

Najib, Mohammed, " Hamas Is 'On the Defensive' in Gaza Crisis," *Jane's Defence Weekly*, January 14, 2009.

———, "IDF May Be Using DIME in Gaza," *Jane's Defence Weekly*, January 21, 2009.

———, " Hamas Investigates Poor Military Response to IDF," *Jane's Defence Weekly*, January 28, 2009.

Netanyahu, Benjamin, "No Ceasefire in the War on Terror," *Wall Street Journal*, July 22, 2006.

"New Hezbollah Rockets Can Reach Tel Aviv and Beersheva," *Ha'aretz*, Tel Aviv, July 15, 2006.

"New Twists on Israeli Intel," *Aviation Week and Space Technology*, February 9, 2009.

"News Breaks," *Aviation Week and Space Technology*, March 12, 2007.

Norton, Augustus Richard, *Hezbollah: A Short History*, Princeton, N.J.: Princeton University Press, 2007.

"The Number of Hamas Operatives Killed in Operation Cast Lead According to Fathi Hamad, Interior Minister of the De Facto Hamas Administration," Tel Aviv: The Meir Amit Intelligence and Terrorism Information Center, November 3, 2010.

Olsen, John Andreas, ed., *A History of Air Warfare*, Washington, D.C.: Potomac Books, Inc., 2010.

Opall-Rome, Barbara, "Interview: Major General Benjamin Gantz, Commander, Israel Defense Forces Army Headquarters," *Defense News*, August 28, 2006.

———, "Israel Fights to Reclaim Decisiveness, Victory," *Defense News*, May 14, 2007.

———, "Israel Tests Cloud-Piercing Radar Satellite," *CAISR Journal*, April 2008.

———, "Interview with Major General Elyezer Shkedy, Commander, Israel Air and Space Force," *Defense News*, May 19, 2008.

———, "In Gaza, Both Sides Reveal New Gear," *Defense News*, January 5, 2009.

———, "Major General Ido Nehushtan, Commander, Israel Air and Space Force," *Defense News*, August 3, 2009.

———, "Israel's Lebanon War Chief Defends Strategy," *Defense News*, February 22, 2010.

"Operation Cast Lead: IAF Missions and Operations," unclassified briefing charts provided to the author by Brigadier General Nimrod Sheffer, IAF, Head of the Air Division, IAF Headquarters, Ha'kiry, Tel Aviv, March 31, 2009.

The Operation in Gaza: 27 December 2008–18 January 2009, Tel Aviv: The State of Israel, Intelligence and Terrorism Information Center, July 29, 2009.

"Operation Sharp and Smooth," Wikipedia, 2010. As of October 11, 2010: http://en.wikipedia.org/wiki/Operation_Sharp_and_Smooth

Ophir, Noam, "Back to Ground Rules: Some Limitations of Air Power in the Lebanon War," *Strategic Assessment*, August 2006.

———, "Look Not to the Skies: The IAF vs. Surface-to-Surface Rocket Launchers," *Strategic Assessment*, November 2006.

Oppel, Richard A., Jr., and Steven Erlanger, "12 Israelis Die; Sheik Threatens to Bomb Tel Aviv," *New York Times*, August 4, 2006.

Oren, Amir, "Loss of Momentum," *Ha'aretz*, Tel Aviv, August 4, 2006.

———, "Intelligence Is Not Only Early Warning," *Ha'aretz*, Tel Aviv, October 10, 2006.

———, "Complex, But Not Impossible," *Ha'aretz*, Tel Aviv, October 20, 2007.

———, "Clever, Not Smart," *Ha'aretz*, Tel Aviv, August 2, 2008.

Panossian, Joseph, "Report: Israeli Drone Hits Convoy, Kills Six Refugees," *Houston Chronicle*, August 12, 2006.

Parton, Group Captain Neville, RAF, "Israel's 2006 Campaign in the Lebanon: A Failure of Air Power or a Failure of Doctrine?" *Royal Air Force Air Power Review*, Summer 2007.

Peres, Shimon, *David's Sling*, New York: Random House, 1970.

Qeren, Yo'av, "From the Quagmire to the Pit," *Ma'ariv*, Tel Aviv, July 28, 2006.

Raas, Whitney, and Austin Long, "Osirak Redux? Assessing Israeli Capabilities to Destroy Iranian Nuclear Facilities," *International Security*, Spring 2007.

Rabinovich, Abraham, "Hezbollah Trained for Six Years, Dug Deep Bunkers," *Washington Times*, July 21, 2006.

Rapaport, Amir, "IDF Estimate: We Destroyed Most Missile Launchers," *Ma'ariv*, Tel Aviv, July 14, 2006.

———, "Nasrallah's Egomania," *Ma'ariv*, Tel Aviv, August 4, 2006.

———, "Halutz Is a Bluff," *Ma'ariv*, Tel Aviv, October 1, 2006.

Ravid, Barak, "Disinformation, Secrecy and Lies: How the Gaza Offensive Came About," *Ha'aretz*, June 2, 2009.

Raviv, Rani, and Lilakh Shoval, "We'll Speed Up the Amendment and Change Processes," Interview with Lieutenant General Dan Halutz, IDF Chief of Staff, *Bahamane*, Tel Aviv, September 25, 2006.

Reed, Fred, "Technology: Enemies Adapt to Military Air Power," *Washington Times*, August 18, 2006.

"Regev and Goldwasser to Receive Funerals Thursday," *Ha'aretz*, Tel Aviv, July 17, 2008.

Rivkin, David B., and Lee A. Casey, "Israel Is Within Its Rights," *Washington Post*, July 26, 2006.

"Rocket Statistics," Tel Aviv, Israel Defense Force Spokesperson Report, January 3, 2009.

Rom, Major General Giora, IAF (Ret.), "A Test of Two Strategies: Two Ships Passing in the Night," in Shlomo Brom and Meir Elran, eds., *The Second Lebanon War: Strategic Perspectives*, Tel Aviv: The Institute for National Strategic Studies, 2007.

Rotella, Sebastian, "Israel Hopes Iran and Hezbollah Get Message of Gaza Offensive," *Los Angeles Times*, January 18, 2009.

Rubin, Uzi, *The Rocket Campaign Against Israel During the 2006 Lebanon War*, Ramat Gan, Israel: The Begin-Sadat Centre for Strategic Studies, Bar-Ilan University, Middle East Security and Policy Studies No. 71, June 2007.

Rutenberg, Jim, and Thom Shanker, "U.S. Insists Cease-Fire Must Await Plan to Disarm Hezbollah," *New York Times*, August 2, 2006.

Scarborough, Rowan, "Israeli Arms Overpower Hezbollah," *Washington Times*, July 20, 2006.

———, "U.S. Doubts Israeli Figures About Damage of Air War," *Washington Times*, July 22, 2006.

Schiff, Ze'ev, "The Foresight Saga," *Ha'aretz*, Tel Aviv, August 11, 2006.

———, "Lessons of War: War Could Have Been Shorter," *Ha'aretz*, Tel Aviv, August 28, 2006.

———, "Ground Forces vs. Air Force," *Ha'aretz*, Tel Aviv, September 8, 2006.

Schiff, Ze'ev, and Ehud Ya'ari, *Israel's Lebanon War*, New York: Simon and Schuster, 1984.

Schneider, Howard, "Israel Finds Strength in Its Missile Defenses," *Washington Post*, September 19, 2009.

"The Search for Peace—and a Way to Rebuild the Country," *The Economist*, London, August 12, 2006.

Seib, Gerald F., "Mideast: Israel Draws Little U.S. Ire," *Wall Street Journal*, July 22, 2006.

Sengupta, Prasun K., "Fighting Tips: The Recent Israel-Hezbollah War Holds Lessons for the IAF [Indian Air Force]," *Force*, New Delhi, October 2006.

Shadid, Anthony, "Israel, Hezbollah Vow Wider War," *Washington Post*, July 15, 2006.

———, "Evacuations Underway in Beirut," *Washington Post*, July 19, 2006.

Shadid, Anthony, and Scott Wilson, "Hezbollah Raid Opens Second Front for Israel," *Washington Post*, July 13, 2006.

"Shaldag Unit," Wikipedia, July 2010. As of October 11, 2010:
http://en.wikipedia.org/wiki/Shaldag_Unit

Shalom, Zaki, and Yoaz Hendel, "Conceptual Flaws on the Road to the Second Lebanon War," *Strategic Assessment*, June 2007.

Shanker, Thom, "To Disarm Shadowy Guerrilla Army, Israeli Air Power May Not Be Enough," *New York Times*, July 20, 2006.

———, "A New Enemy Gains on the U.S.," *New York Times*, July 30, 2006.

Shavit, Ari, "No Way to Go to War," Interview with Moshe Ya'alon, *Ha'aretz*, Tel Aviv, September 15, 2006.

Shela, Ofer, *The Israeli Army: A Radical Proposal*, Tel Aviv: Kinneret Zmora-Bitan, 2003.

———, "Anti-War," *Strategic Assessment*, November 2006.

Shela, Ofer, and Yo'av Limor, *Captives in Lebanon*, Tel Aviv: Yedi'ot Ahronot, 2007.

Shimshoni, Jonathan, *Israel and Conventional Deterrence: Border Warfare from 1953 to 1970*, Ithaca, N.Y.: Cornell University Press, 1988.

Siboni, Gabriel, "The Military Campaign in Lebanon," in Shlomo Brom and Meir Elran, eds., *The Second Lebanon War: Strategic Perspectives*, Tel Aviv: The Institute for National Strategic Studies, 2007.

———, "From Gaza to Lebanon and Back," *Strategic Assessment*, June 2007.

Singh, Air Commodore Jasjit, Indian Air Force (Ret.), "Interpreting the Lebanon War of 2006," *Air Power Journal*, New Delhi, Winter 2006.

Smith, Craig S., "Israel Weighs Foreign Troops on Border," *New York Times*, July 24, 2006.

Smith, Craig S., and Steven Erlanger, "Israel Pushes on Despite Agreeing to Airstrike Lull," *New York Times*, August 1, 2006.

———, "Israel Expands Ground Forces Inside Lebanon," *New York Times*, August 2, 2006.

Smith, Craig S., and Greg Myre, "Border Clashes Intensify as Israel Hunts Militants," *New York Times*, July 25, 2006.

Sofer, Roni, "Deputy Chief of Staff: Rocket Launchings Less Effective," *Ynet News*, Tel Aviv, July 23, 2006.

Solomon, Jay, and Mariam Fam, "Lebanese News Network Draws Fire as Arm of Militant Group," *Wall Street Journal*, July 28, 2006.

Solomon, Jay, Marian Fam, Karby Leggett, and Neil King, Jr., "Israel Weighs Ground Offensive in Southern Lebanon," *Wall Street Journal*, July 20, 2006.

Solomon, Jay, and Karby Leggett, "Amid Ties to Iran, Hezbollah Builds Its Own Identity," *Wall Street Journal*, July 21, 2006.

Solomon, Jay, Karby Leggett, Guy Chazan, and Neil King, Jr., "In Battle to Remove Hezbollah, Both Israel, Lebanon Pay Price," *Wall Street Journal*, July 24, 2006.

Somfalvi, Attila, "IDF: We Captured Soldiers' Kidnappers," *Ynet News*, Tel Aviv, August 6, 2006.

Spiegel, Peter, and Sebastian Rotella, "Hezbollah's Skill More Military Than Militia," *Los Angeles Times*, July 20, 2006.

"Spike ER Helicopter System" Haifa, Israel: Rafael Advanced Defense Systems Ltd. As of November 29, 2010:

<http://www.rafael.co.il/Marketing/333-894-en/Marketing.aspx>

Stephens, Bret, "Israel Is Losing This War," *Wall Street Journal*, August 1, 2006.

———, "Plotting the Next Mideast War," *Wall Street Journal*, April 10, 2010.

Storr, Jim, "Reflections on the War in Lebanon," *RUSI Journal*, April 2007.

Stout, Jay A., *Hammer from Above: Marine Air Combat over Iraq*, New York: Presidio Press, 2005.

Strategic Survey 2007: The Annual Review of World Affairs, London: International Institute for Strategic Studies, 2007.

Stuhldreher, Katie, "Global Sanctions on Tehran Sought," *Washington Times*, July 20, 2006.

Susser, Asher, *The Rise of Hamas and the Crisis of Secularism in the Arab World*, Waltham, Mass.: Brandeis University, Crown Center for Middle East Studies, February 2010.

Tamari, Dov, "A View from on High," *Ha'aretz*, March 11, 2010.

Tira, Ron, "Breaking the Amoeba's Bones," *Strategic Assessment*, November 2006.

———, *The Limitations of Standoff Firepower-Based Operations: On Standoff Warfare, Maneuver, and Decision*, Tel Aviv: The Institute for National Security Studies, Tel Aviv University, Memorandum 89, March 2007.

———, "Shifting Tectonic Plates: Basic Assumptions on the Peace Process Revisited," *Strategic Assessment*, Tel Aviv, June 2009.

United Nations, "Report of the Commission of Inquiry on Lebanon Pursuant to Human Rights Council Resolution S-2/1," A/HRC/3/2, November 2006.

Van Creveld, Martin, "Israel's Lebanese War: A Preliminary Assessment," *RUSI Journal*, October 2006.

Vanden Brook, Tom, "U.S. Learns from Israel-Hezbollah War: Pentagon Uses Study to Retool Combat Tactics," *USA Today*, February 14, 2008.

Wall, Robert, "Harsh Reality," *Aviation Week and Space Technology*, February 4, 2008.

Wall, Robert, David A. Fulghum, and Douglas Barrie, "Harsh Trajectories: Israel Continues to Attack Hezbollah's Rocket Arsenal, But Larger and More Destructive Threats Loom," *Aviation Week and Space Technology*, August 7, 2006.

The War Against Terror Is a Major IAF Mission: Summary of Lectures, Herzliya, Israel: The Fisher Brothers Institute for Air and Space Strategic Studies, August 2004.

"The War Beyond the War," *The Economist*, London, August 5, 2006.

Wegman, Colonel Yehuda, IDF (Res.), "A Distorted Self-Image: On the IDF and Its Responsibility for Civilians," *Strategic Assessment*, August 2007.

———, "The Struggle for Situation Awareness in the IDF," *Strategic Assessment*, February 2008.

Weitz, Gidi, "To Beirut If Necessary," Interview with Brigadier General Yosi Kupperwasser, IDF, head of the Military Intelligence Research Division, *Ha'aretz*, Tel Aviv, August 11, 2006.

Weymouth, Lally, "The Axis of Hatred," Interview with Israeli Foreign Minister Tzipi Livni, *Newsweek*, July 31, 2006.

———, "We Are at War," Interview with Israeli Vice Prime Minister Shimon Peres, *Newsweek*, August 14, 2006.

White, Jeffrey, "Examining the Conduct of IDF Operations in Gaza," Washington, D.C.: The Washington Institute for Near East Policy, Policy Watch No. 1497, March 27, 2009.

———, *If War Comes: Israel vs. Hizballah and Its Allies*, Washington, D.C.: The Washington Institute for Near East Policy, Policy Focus No. 106, September 2010.

Wilson, Scott, "Missile War Is a New Challenge to Israel's Long Rule of the Sky," *Washington Post*, July 19, 2006.

Wilson, Scott, and Edward Cody, "Israel, Hezbollah Intensify Ground Conflict in Lebanon," *Washington Post*, July 21, 2006.

———, "Hezbollah Proves a Formidable Foe," *Washington Post*, July 27, 2006.

Wilson, Scott, and Anthony Shadid, "Israel Answers Hezbollah Strike," *Washington Post*, July 17, 2006.

Wilson, Scott, and Robin Wright, "Israeli Airstrike Hits UN Outpost," *Washington Post*, July 26, 2006.

"Winograd Commission," Wikipedia, 2010. As of October 2010:
http://en.wikipedia.org/wiki/Winograd_Commission

"Winograd Commission Submits Interim Report," media release, Ministry of Foreign Affairs, Tel Aviv, April 30, 2007.

Witte, Griff, "Senior Hamas Leader Killed: Israelis Stand Ready to Invade Gaza by Land," *Washington Post*, January 2, 2009.

———, "Israeli Forces Enter Gaza Strip: 'This Will Not Be Easy or Short,' Top Official Says; Hamas Calls for Suicide Attacks," *Washington Post*, January 4, 2009.

———, "Israel Advances on Cities in Gaza: Declares It Is Close to Reaching Aims," *Washington Post*, January 12, 2009.

———, "Israelis Push to Edge of Gaza City: Move Could Signal a Long Urban Battle," *Washington Post*, January 12, 2009.

Witte, Griff, and Sudarsan Raghavan, "'All-Out War' Declared on Hamas: Israel Expands List of Targets to Include Group's Vast Support Network in Gaza," *Washington Post*, December 30, 2008.

Wright, Robin, "Inside the Mind of Hezbollah," *Washington Post*, July 16, 2006.

———, "Strikes Are Called Part of Broader Strategy," *Washington Post*, July 16, 2006.

Wright, Robin, and Jonathan Finer, "Rice Renews Talks in Mideast," *Washington Post*, July 30, 2006.

Wright, Robin, and Colum Lynch, "U.S. at Odds with Allies on Mideast Conflict," *Washington Post*, July 20, 2006.

Wright, Robin, and Scott Wilson, "Rice Outlines Proposal to Deploy Force in Lebanon," *Washington Post*, July 25, 2006.

Index

- AAA (antiaircraft artillery), 75
- Ababil UAVs, 131
 - and defensive counterair sorties, 83
 - IAF downing of, 130–33
- abduction of Israeli soldier (2005), 112
- abduction of Israeli soldiers (2006), 19–20
 - and campaign goals, 2, 23–26
 - capture of one kidnapper, 43n57
 - IAF/IDF response to, 20–22, 294
 - remains of soldiers traded to Israel, 47n65
 - UAV operations following, 112
- accomplishments of IAF (Operation Change of Direction), 73–133
 - Ababil downings, 130–33
 - airlift and CSAR support, 126–30
 - defusing strategic rocket threat, 92–110
 - sustaining new battle rhythm, 78–92
 - UAV operations, 110–26
- accomplishments of IDF (Operation Cast Lead), 259–60
- Adam, Udi, 49
 - on casualties, 56
 - early resignation of, 70n120
 - on ground involvement, 58–59
 - as land component commander, 183
 - as supporting commander, 182
- Afula, 34
- AGM-114 Hellfire missiles, 81, 88
- Agranat Commission, 69
- AH-1 Cobra helicopters, 251
- AH-64A Apache attack helicopters, 77
- AH-64 Apache attack helicopters, 251
- AH-64D Longbow helicopters, 77
- aircraft (IAF)
 - deconfliction of, 86
 - inventory of, 73, 74
 - for ISR operations, 121
 - losses of, 76–78
 - and operational squadrons, 83, 84
 - See also specific aircraft*
- air-ground coordination (Operation Cast Lead), 264–67
- air-ground coordination (Operation Change of Direction), 181–98
 - CAS delivery to IDF ground troops, 187–88, 193–96
 - centralization vs. decentralization of, 190–91
 - and commander's intent concept, 186–87
 - command relationships, 182–83
 - deconfliction of aircraft and airspace, 86, 191–92, 266
 - and “glass ceiling” problem, 187
 - integration of fighters and ground operations, 192–94
 - and kill boxes replacing FSCLs, 188–90
 - lessons learned about, 221
 - need for joint planning, 195–96
 - need for joint training, 195–97

- operational and tactical control, 183–84
- and relations between IAF headquarters and Northern Command, 186
- “supported” and “supporting” roles, 185–86
- air liaison officers (ALOs), 264
 - assignment of, 187
 - in Operation Cast Lead, 266
 - in Operation Change of Direction, 184, 186
- airlifts (Operation Change of Direction), 126–30
- air operations (Operation Cast Lead), 254, 255, 267–68
 - air-land assault, 240–42
 - air-only attacks, 234–40, 267
 - hunter-killer mode of, 236–37
- air operations (Operation Change of Direction)
 - Al Manar television station bombing, 31–32
 - Beirut attack, 35–36
 - for close air support, 51
 - at end of campaign, 66–67
 - during first seven days, 46
 - Fourth Dimension, 22
 - JDAMs used in, 40–41
 - legality of, 166
 - main geographic areas of, 78
 - Mishkal Sguli* operation, 29–30
 - on naval radar stations, 38
 - number and effectiveness of sorties, 79
 - problems encountered in (*see* problems in air employment)
 - as punishment against Lebanese government, 38–39
 - Qana attack, 56–57
 - Rafiq Hariri International Airport bombing, 30–31
 - in response to abduction of soldiers, 21–22
 - success of (*see* accomplishments of IAF)
 - supporting ground troops, 54
 - targets on first day, 27–28
 - terrorists killed in, 55
 - time-sensitive targeting attacks, 34
 - against weapons shipments to Lebanon, 40
 - See also specific types of operations, e.g.:* standoff attacks
- air operations centers (AOCs)
 - in Operation Cast Lead, 266–67
 - in Operation Change of Direction, 184, 185
- air power
 - commentaries on use of, 4–6
 - in dealing with Katyushas, 148
 - in doctrine and practice, 282–91
 - fullest exploitation of, 265
 - Colin Gray on, 9–10
 - against Hezbollah leadership, 156
 - “intelligent participation of,” 226
 - in new IDF doctrine, 210–11
 - in Operation Cast Lead, 245
 - Zvi Shtauber on, 47
- airspace management
 - in Operation Cast Lead, 256, 266
 - in Operation Change of Direction, 85–86, 89, 114, 191–92
- air tasking order (ATO), 79
- Air Warfare Centre, Royal Air Force, 252
- Al Aqsa intifada*, 73
- Al Firdos bunker attack, 167
- Al Jazeera television station, 32n33, 156, 167
- Al Manar television station, 21, 31–32, 37, 167
- ALOs. *See* air liaison officers
- Al Qaeda, 248
- AMAN. *See* Directorate of Military Intelligence (*Agaf Ha'modi'in*)
- Annan, Kofi, 46, 163, 176
- antiaircraft artillery (AAA), 75
- AOCs. *See* air operations centers
- AOR (areas of responsibility), 182–86
- Arab News*, 168
- Arbour, Louise, 175

- areas of combat operations, 78
- areas of responsibility (AOR), 182–86
- Arkin, William, 38, 180–81, 281
- armed UAVs, 121–25
- Arrow anti-ballistic missile system, 143n8, 333
- Ashkenazi, Gabi, 225, 230, 259, 330n148
- Assi, Younis Al, 242
- asymmetrical warfare, 314–16
- ATO (air tasking order), 79
- attack helicopters (in general), 74
 - as army aviation, 264–65
 - as separate IAF air arm, 226
- attack helicopters (Operation Cast Lead), 235–36, 241, 251, 252
- attack helicopters (Operation Change of Direction)
 - conservative operation of, 117
 - and deconfliction of aircraft, 192
 - munitions expended by, 81–82, 87
 - Shkedy's personal control over, 228
 - sorties flown by, 79–81
 - strike operations by, 83
 - tactical control over, 187
 - taskings of, 228
- automatic gain control, 268
- Ayalon, Daniel, 14, 39

- Badr Command (Hezbollah), 15
- Baidatz, Yossi, 17
- Barak, Ehud, 225
 - on air power, 283
 - on all-out war against Hamas, 237, 238
 - on ceasefire, 258
 - doubts expressed by, 41–42
 - on ending Operation Cast Lead, 246
 - on Goldstone report, 271n120
 - on Halutz, 288
 - and Hamas contingency plan, 230
 - and Israeli withdrawal from Lebanon, 13
 - and Operation Cast Lead plan, 233
- Barak government
 - restraint policies of, 298
 - and withdrawal from Lebanon, 293
- Barnea, Nachum, 168–69
- battle rhythm (Operation Change of Direction), 33, 78–92
 - airspace management, 85–86
 - areas of combat operations, 78
 - and capacity of IAF, 82–84
 - daily tasking order, 79
 - defensive counterair sorties, 83
 - munitions expended, 81–82, 86–89
 - and network-centric warfare, 90–92
 - number of sorties flown, 79–81
 - on-call CAS, 90
- Beirut
 - air attacks on, 35–36, 39, 88, 89, 154–55, 161
 - destruction of infrastructure in, 175
 - Hezbollah headquarters in, 15–17
- Beka'a Valley
 - air attacks on, 39
 - rockets stored in, 94
- Beka'a Valley air war (1982), 82, 111
- Ben-David, Dror, 285
- Ben-Eliahu, Eitan, 43
 - on campaign goals, 338
 - CONOPS pursued by, 108
 - on destruction of Fajrs, 99
 - and nature of Hezbollah, 312
- Ben-Eliezar, Benjamin, 292n46
- Ben-Gurion, David, 308–9
- Ben Gurion International Airport, 84
- Ben-Israel, Isaac, 113, 126n110
 - on Ababil downing, 133
 - on ground operations, 320n119
 - on Israel's readiness to fight, 322
 - on Katyushas, 143
- Ben-Reuven, Eyal, 304–5
- Bint J'beil, 51, 54–56
- Blackhawk helicopters, 127
 - deliveries to troops made by, 130
 - medevac missions of, 86, 127
- Blair, Tony, 46
- Blue Force Tracker, 188, 257

- board of inquiry (Operation Change of Direction), 69–70, 199n1
- bridges, destruction of, 21, 22, 27–28, 39, 176
- Brom, Shlomo, 312
- Brun, Itai, 181, 306, 313–14, 330
- Buchris, Pinchas, 194
- bus casualties, 162
- Bush, George W., 67n112, 169n72, 170, 319n118
- Bush administration
 - and bombing suspension after Qana, 169
 - and ceasefire, 60
 - and curtailment of fighting, 50
 - on giving help to Israel, 169–70
 - and harm from IDF attacks, 172
 - and infrastructure destruction within Lebanon, 177
 - and weapons for Israel, 41
- C-130 aircraft, 76, 80, 127, 130
- C-802 antishipping missile, 36–38, 132
- Cabel, Eitan, 311–12
- campaign goals
 - for Operation Cast Lead, 246, 247, 260
 - for Operation Change of Direction, 2, 22–26, 58, 298–300, 308, 316–18
- Campaign Planning Department (IAF), 184n113, 187
- Carpenter, Mace, 339
- CAS. *See* close air support
- casualties. *See* civilian casualties...; troop casualties...
- CBUs. *See* cluster bomb units
- ceasefire (Operation Cast Lead), 231–32, 234–35, 245–47
- ceasefire (Operation Change of Direction), 6, 56–68
 - and escalation of ground offensive, 63–66
 - and Qana attack, 56–57
 - and UN Security Council Resolution 1701, 64–65
- centralization of command and control, 190–91
- CH-53 assault helicopter, 76
- CH-53 helicopter squadrons, 127
- Chief of Staff, 340–41
 - command of, 183
 - Halutz on role of, 301
 - support for, 288
 - Winograd Commission on, 201, 219
- civilian buildings and areas
 - destroyed in Lebanon, 175, 176
 - Hamas' use of, 236, 272–74
 - Hezbollah's use of, 139–41, 158–59, 161–62, 164–65, 169, 170
- civilian casualties (Operation Cast Lead)
 - Goldstone report on, 271
 - Israeli government brief on, 272–74
 - mitigation of, 242–45
 - Olmert government's handling of, 269–75
 - review of, 244–45
- civilian casualties (Operation Change of Direction), 70, 71, 157–74
 - children as, 158
 - divided official sentiments about, 163–64
 - and goals of Operation, 23
 - and Hezbollah's propaganda war, 167
 - and Hezbollah's use of civilian buildings, 158–59
 - incidents of, 162–63
 - and infrastructure damage, 172–73
 - international commentary on, 164–66, 171–72
 - Israel's care to avoid, 158–62
 - from Katyusha rockets, 145, 146
 - Lebanese government report of, 157–58
 - in *Mishkal Sguli*, 100
 - moral predicament concerning, 171
 - in Operation *Mishkal Sguli*, 29–30
 - at Qana, 56–57, 167–74

- and U.S. support for Israelis, 169–70
- Winograd Commission on, 206
- civilians, negation of noncombatant status for, 97
- Clinton, Bill, 143
- close air support (CAS), 80, 90
 - at Bint J'beil, 54
 - for ground fighting, 51
 - in Operation Cast Lead, 241, 266, 268–69, 276
 - problems in delivery of, 187–88, 193–96
 - Winograd Commission on, 208–9
- cluster bomb units (CBUs), 88, 142–43, 206
- collateral damage. *See* civilian casualties...
- Combat Arms Center, U.S. Army, 279–81
- combat doctrine (IDF)
 - air power in, 282–91
 - of Ben-Gurion, 308–9
 - on EBO content of, 281n12
 - new approach to, 210–11, 286–87
- combat medevac sorties, 80, 86
- combat objectives, contradictory, 309
- combat performance (Operation Cast Lead), 257–58, 263
- combat performance (Operation Change of Direction)
 - causes of problems in, 310–11
 - lessons learned from, 221–22
 - Winograd Commission on, 202–9, 214–15
- combat readiness (Operation Change of Direction)
 - of ground forces, 73, 296, 310–11
 - of IAF, 73
- combat search and rescue (CSAR)
 - in Operation Cast Lead, 241–42
 - in Operation Change of Direction, 80, 126–30
- commander's intent, 186–87
- command relationships (Operation Change of Direction), 182–83
- commission of inquiry (of Olmert government), 199. *See also* Winograd Commission
- communications
 - of Hamas, jamming of, 237, 242
 - Hezbollah's interception of, 52–53
- concept of operations (CONOPS)
 - for Hamas contingency plan, 240–41
 - against Hezbollah strategic rocket threat, 108
 - from "Icebreaker" construct, 79
 - master, for Operation Change of Direction, 183
 - for *Mishkal Sguli*, 97
 - for UAVs, 125
 - Winograd Commission on, 210–14
- Cordesman, Anthony, 179
- Country's Shield plan, 303
- credibility of Israeli's power, 3
- cross-service cooperation, 227, 263
- CSAR. *See* combat search and rescue
- cyberspace operations, following Operation Cast Lead, 261
- Daily Star*, 168
- David's Sling interceptor, 333
- decentralization of command and control, 190–91
- deconfliction
 - of aircraft and airspace, 86, 191–92, 266
 - of flight operations from artillery fire, 193
 - of mission taskings, 189
- "deep-theater" AOR, 182–83
- Defense of the Land CONOPS, 151–52
- defensive counterair sorties (Operation Change of Direction), 83
- Deif, Muhammad, 249
- dense inert metal explosives (DIME), 244
- Dershowitz, Alan, 165–66
- Dichter, Avi, 166, 296

- DIME (dense inert metal explosives), 244
- Directorate of Military Intelligence (*Agaf Ha'modi'in*) (AMAN), 14, 44
- Hezbollah arsenal estimate from, 153
- information compiled on Hezbollah leaders, 154
- information on Hamas targets, 238
- initial UAVs ownership and operation by, 110
- and intelligence on Katyushas, 149
- sensitive information compartmentalization by, 150
- and strategic rocket threat, 93–101
- Winograd Commission on, 204, 205
- disclosure of military information, 6–7
- Diskin, Yuval, 23n15
- “disproportionate” force
- in Operation Cast Lead, 245
 - in Operation Change of Direction, 164, 174n83, 176, 178–79, 302, 322
- dreidels, 234n25
- Dror, Yehezkel, 199
- EBO (effects-based operations), 280–81, 336
- economic blockade, on Gaza Strip, 231, 232
- economic damage
- to Israel, 146
 - to Lebanon, 174–81
- The Economist*, 6
- effects-based operations (EBO), 280–81, 336
- Efroni, Yishai, 64
- Egeland, Jan, 158
- Eiland, Giora, 257–58, 310–11
- Einan, Menachem, 199
- Eisenkott, Gadi, 23, 38, 42n55
- on civilians as targets, 159
 - on destruction of Zelzals, 100–101
 - on ground invasion plan, 63, 153
 - and joint dialogue with IAF, 226
- Eisin, Miri, 34
- Elbit Systems, 115, 117, 119, 123n101
- electronic intelligence (IAF), 74
- emergency rescue operations, 80.
- See also* combat search and rescue (CSAR); medevac missions
- Eros A and B satellites, 121
- Eshel, Amir, 107, 158, 186n117
- on air power, 284–85
 - on close air support, 193–94
 - on complexity of air attacks, 302
 - on Qana attack, 167, 168
- European Union, criticism of Israel from, 176
- F-15 fighters (Operation Cast Lead)
- F-15C, 241
 - F-15I, 235, 241
 - support missions of, 241
- F-15 fighters (Operation Change of Direction)
- F-15C, 83, 85, 132–33
 - F-15I, 29–30, 88, 89
 - imagery pods carried by, 121
- F-16 fighters (Operation Change of Direction)
- Ababil UAVs downed by, 130–31
 - F-16D, 89
 - F-16I, 29–30, 77, 89
 - imagery pods carried by, 121
- FACs (forward air controllers), 186
- “failed air power” (Operation Change of Direction)
- assessments of, 338–39
 - public misperception of, 3–6, 151, 277, 279–82
- failure of strategies (Operation Change of Direction), 58, 305–20
- and Ben-Gurion's central credo, 308–9
 - causes of, 7
 - challenges of asymmetrical warfare, 314–16

- conclusions about and assessments of, 335–43
- contradictory combat objectives, 309
- culpability for, 26
- deficiencies of preparation and planning, 311–12
- disparity between goals and actual combat capability, 316–18
- due to government decisionmaking, 306–8
- and hierarchy of alternatives, 306–7
- and initial goals of campaign, 308
- lack of combat readiness, 310–11
- missed opportunities, 318–19
- in neutralizing Katyusha threat, 151
- public perception of cause of, 3–5, 26
- reliance on standoff attacks, 311
- and significance of Katyushas, 313–14
- and understanding of opponent's true nature, 312–15
- Fajr rockets, 92
 - AMAN tracking of, 94–95
 - deployment patterns of, 95–96
 - destroyed in *Mishkal Sguli*, 100–102, 104, 105
 - destructive threat of, 151
 - monitoring transporters for, 115
 - number of, 92
 - Operation *Mishkal Sguli* targeting storage sites for, 29–30
 - specifications of, 93
- Farkash, Tom, 77
- fighters (in general), 74
- fighters (Operation Cast Lead), 235–36
- fighters (Operation Change of Direction)
 - integration of ground operations and, 192–94
 - in *Mishkal Sguli*, 99
 - munitions expended by, 81–82, 86
 - number of sorties flown by, 79–80, 83
 - as separate IAF air arm, 226
 - strike operations by, 82–83
- fire-support coordination lines (FSCLs), 188–90
- Fisher Brothers Institute for Air and Space Strategic Studies, 285
- five-year plan, 229–30
- force-employment efficiency (Operation Cast Lead), 251–52
- forward air controllers (FACs), 186
- Fourth Dimension, 22
- Friedman, Alon, 48
- FROG 7, 92
- FSCLs (fire-support coordination lines), 188–90
- fuel storage facilities, attacks on, 39
- Galant, Yoav, 230, 245n26, 269n115
- Gantz, Benjamin, 109, 296–97, 303
- Gavison, Ruth, 199
- Gaza Strip, 222–23
 - economic blockade on, 231, 232
 - Hamas rocket fire from, 223–24
 - IDF operation in, 2–3 (*See also* Operation Cast Lead)
 - target bank in, 232
 - withdrawal of IDF and Israeli civilians from, 231
- GBU-28 hard-structure munitions, 88
- GCI (ground-controlled intercept)
 - radar facility, 19
- Geneva Convention, 271
- Gillerman, Dan, 163, 164, 172, 177–78
- Givolit data-link system, 115–16
- “glass ceiling” problem (in IAF), 187
- Golani infantry brigade, 54
- Goldstone, Richard, 271
- Goldstone report, 270–74
- Goldwasser, Ehud, 47n65
- Gordon, Shmuel, 137
- Grad rockets, 249–50, 333
- Gray, Colin, 9–10
- ground-controlled intercept (GCI)
 - radar facility, 19
- ground forces (IDF)

- cause of problems encountered by, 310–11
- in combat doctrine, 284
- combat readiness of, 73, 296
- lack of joint training with IAF, 195–97
- operational tradecraft of, 67
- separation of IAF and, 226
- ground forces (in Operation Cast Lead), 240, 257
- ground forces (in Operation Change of Direction)
 - close air support for, 51, 187–88, 193–96
 - IAF assistance to, 128–30
 - Winograd Commission on, 75, 202–3
- ground operations (Operation Cast Lead), 240–42
- ground operations (Operation Change of Direction), 43–56
 - at Bint J'beil, 51, 54–56
 - calls for massive invasion, 51–52
 - debate over, 50, 304
 - at end of campaign, 66–67
 - expansion of, 59
 - and Hezbollah's operational tradecraft, 52–54
 - initial public impressions of, 49
 - Maroun Al Ras cross-border probe, 43–45
 - Nehushtan on, 45–46
 - objectives of, 49
 - OCD 11, 63–64, 66
 - Olmert government's initial avoidance of, 32
 - reluctance to engage in, 47–48, 58–59, 292–98, 304–5, 311
 - resistance encountered in, 50–51
 - to stem Katyusha fire, 60–62, 148
- Gulfstream G550 surveillance aircraft
 - in Operation Cast Lead, 236–37
 - in Operation Change of Direction, 86
- Ha'aretz*, 65
- Haifa, rocket attack against, 33–34
- Halutz, Dan, 3
 - on air power in joint warfare, 282–83, 287
 - on assessing achievements, 320
 - on availability of information, 150n21
 - on Ben-Eliezar, 292n46
 - Ben-Reuven on, 304–5
 - on campaign goals, 22–23, 25, 298–300
 - as Chief of Staff, 340–41
 - on creating deterrence, 322n128
 - credentials of, 287–89
 - criticisms of strategy chosen by, 6, 279–81, 289–90
 - on deconfliction of aircraft and artillery fire, 193
 - as de facto joint-force commander, 183
 - on destruction of Zelzals, 106
 - and destruction within Lebanon, 176–77
 - early resignation of, 70n120
 - on ground invasion plan, 63
 - on ground operations, 49
 - on Hezbollah's initial rocket attacks, 19
 - and initial operations against Hezbollah, 27, 293–97, 301, 305
 - on initial phase of IDF response, 303
 - initial planning meeting with Peretz, 22
 - on integrated battle, 283n19
 - Kaplinsky's meeting with, 42
 - Lipkin-Shahak's assessment of, 295
 - major errors made by, 7
 - and major ground escalation, 55
 - on missed opportunities, 318–19
 - new command arrangements
 - introduced by, 212–13
 - opening strategy of, 7
 - performance assessment overseen by, 225

- and preplanned contingency
 - options, 29
- public perception of, 3
- reluctance to engage in ground
 - operations, 292–93
- on response options for IDF, 307
- on results of campaign, 334
- on role of Chief of Staff, 301
- and Sharon's reform initiatives, 339–40
- on shortcomings of war, 68–69
- on strike against Hezbollah leaders, 154
- Supernal Waters plan approved
 - by, 152
- and Syria, 68n113
- target approval by, 160
- Winograd Commission on, 200–202, 206, 217–19
- Hamad, Fathi, 274
- Hamas, 222–24
 - alleged human-rights violations
 - by, 272–74
 - ceasefire broken by, 247–48
 - diplomatic efforts with, 246
 - as Hezbollah-like opponent, 254–56
 - IDF counteroffensive against, 233–34 (*See also* Operation Cast Lead)
 - intelligence on, 238
 - number of operatives in, 255
 - planning for contingency involving, 230–31
 - post-operation inquiry of, 258
 - pre-operation truce broken by, 231–32
 - response options developed against, 260
 - rocket attacks by, 223–24, 231–33
 - as ruling authority in Gaza, 231
 - troop casualties revealed by, 274–75
 - underground tunnels of, 232, 239–40, 246
- Hamas leaders
 - communications cut off for, 242
 - destruction of homes of, 236
 - effects achieved against, 248–49
 - prepositioning of IEDs by, 241
 - target folders on, 230
- Hamdan, Hussam, 248
- Hanit*, INS, 36–38, 132
- Haniyah, Ismail, 249
- Hareb, Haj Halil, 154
- Har'el, Dan, 64
- Harpy UAV, 123
- Hatzerim Air Base, 84
- Hatzor Air Base, 84
- heavy transports (IAF), 74
- helicopters, 192. *See also specific types, e.g.: attack helicopters (IAF)*
- helicopter troop insertion operations, 128–30
- Heller, Mark, 325n132
- Hermes 450 UAVs, 99, 117–18, 122, 123n101, 265
- Heron 1 UAVs, 112, 113, 117–19
- Heron 2 UAVs, 119
- Heron UAVs, 114, 265
- Herzog, Isaac, 159
- Hezbollah, 1n1, 13–18
 - Ababil UAVs of, 131
 - abducted Israeli soldiers' remains
 - traded by, 47n65
 - abduction of Israeli soldiers by, 19–20, 112
 - active force of, 59
 - Al Manar used by, 31–32
 - on breaking the will of, 50
 - casualties for, 71
 - ceasefire called for by, 56
 - civilian areas and disguises used by, 139–41, 158–59, 161–62, 164–65, 169, 170
 - command structure and distribution
 - for, 15
 - as essentially winning the war, 69
 - as “guardian” of Lebanese interests, 328
 - headquarters of, 15–17, 96–97, 321
 - IAF tasking to neutralize, 75
 - impact of Operation Cast Lead on, 258–59

- improved monitoring of, 332
- Iran's support of, 14, 92–93, 132, 326–27
- Israeli civilians targeted by, 164
- Katyusha rockets stockpiled by, 2n3
- military capability of, 14–15, 52
- operational tradecraft of, 52–54
- political component of, 15
- political force of, 14
- propaganda war of, 167, 179–80
- provocations by, 18–19
- as proxy for Iran, 14, 327
- and Qana attack, 57
- recent setbacks for, 331–32
- resistance to ground operations, 52
- rocket attacks by (*see* rocket attacks [by Hezbollah])
- “strategic” rocket capability of, 17–18 (*See also* strategic rocket threat [Hezbollah]) strategy developed by, 314
- Syria's rearmament of, 68, 330–31
- target array presented by, 60–61
- true nature of, 312–15, 322
- underground bunkers of, 44–45, 138–39
- use of “disproportionate” force against, 164
- victory claimed for, 67, 299, 300, 313, 321
- Hezbollah leaders
 - and attacks on Beirut headquarters, 35–36, 88, 89
 - failed attempts to eliminate, 154–57
 - intelligence on, 96
- “Hezbollah's rocket war,” 33
- Hilou, Muhammad, 248
- Hirsch, Gal, 50
 - on air support at Maroun Al Ras, 80
 - early resignation of, 70n120
 - on EBO content of military doctrine, 281n12
 - and intelligence on Katyushas, 150
- humanitarian law, 272
- Human Rights Council (UN), 270–74
- human-rights violations
 - by Hamas, 272–73
 - by Israel, allegations of, 271–72, 274
- Human Rights Watch investigations, 168, 270–72
- Hunter 2 UAV, 123
- hybrid-war capability, 329
- IAF. *See* Israel Air Force
- IAI, 117–19, 123
- “Icebreaker” (*Shoveret Ha'kerach*), 28, 29, 79
- IDF. *See* Israel Defense Forces
- improvised explosive devices (IEDs), 241
- individual initiative, in UAV operations, 112–13
- infrastructure
 - of Gaza Strip, 239
 - of Hezbollah, 46, 158–59, 321
 - of Lebanon (*see* Lebanese infrastructure)
- INS *Hanit* (“Spear”), 36–38
- Institute for Campaign Doctrine Studies, 283–84
- intelligence
 - cooperation among agencies, 268–69
 - electronic, 74
 - on Hamas, 238, 242
 - on Katyusha rockets, 110, 149–50
 - on medium-range rockets, 96
 - and shortfalls in combat effectiveness, 73
 - SIGINT, 52–53, 54n84
 - from SOF operations, 43
 - Yuval Steinitz on, 56n90
- intelligence, surveillance, and reconnaissance (ISR) operations
 - number of sorties, 80
 - supplemental aircraft and space platforms for, 121
 - UAVs for, 111–14 (*See also* unmanned aerial vehicles...)
- Intelligence Directorate (IDF), 47, 205
- International Humanitarian Law, 272

- International Institute of Strategic Studies, 6
- international law, 171, 172
- intifada*, 111, 194, 284, 310
- Iran
 - and Ababil operations, 132
 - and abduction of Israeli soldiers, 20
 - arms shipments from, 39, 40
 - and attack on *Hanit*, 37, 38
 - as Hezbollah advisor, 132
 - Hezbollah as proxy for, 14, 327
 - Hezbollah rockets provided by, 92–93, 326–27
 - Hezbollah subsidized by, 14
 - Hezbollah training in, 14
 - nuclear capability of, 327
 - rearmament of Hezbollah by, 68
- Iranian National Security Council, 327
- Iron Dome system, 333
- Islamic Resistance (Hezbollah), 15, 21
- Islamic Revolutionary Guards Corps (Iran), 1n1, 14, 16, 40
- Israel
 - Barak government, 293, 298
 - Hamas rocket attacks on, 3
 - high-tech research and development in, 333
 - military space operations of, 2n2
 - Olmert government (*see* Olmert government)
 - post-war strategic situation in Lebanon, 324–25
 - U.S. arms sales to, 40–41
- Israel Air and Space Arm, 2n2
- Israel Air Force (IAF)
 - accomplishments of (*see* accomplishments of IAF)
 - aircraft inventory of, 73, 74
 - aircraft types and operational squadrons, 83, 84
 - in combat doctrine, 284
 - combat readiness of, 73
 - and countering of rocket fire, 5
 - designated AOR for, 182
 - lack of joint training with ground troops, 195–97
 - leadership disagreements within, 190
 - main operating bases, 83, 85
 - and military space operations, 2n2
 - Operation Cast Lead mission taskings for, 252–53
 - Operation Change of Direction mission taskings for, 73, 75, 79, 109–10, 185
 - organizational structure of, 98
 - problems encountered by (*see* problems in air employment)
 - relations with Northern Command, 186–87, 189–90
 - separate air arms within, 226
 - separation of ground forces and, 226
 - Winograd Commission on, 73–75, 202–9
 - and “yellow line,” 188–90
 - See also* air operations...
- Israel defense establishment
 - criticisms of Halutz from, 5–6
 - debate over ground operations, 50
 - disclosure of military information by, 6–7
 - and initial standoff-only actions, 294–97, 301
 - and need to supplement standoff war, 43
- Israel Defense Forces (IDF)
 - abduction of soldiers from, 19–20
 - Barak’s and Meridor’s assessment of, 42
 - contingency response options developed by, 28
 - counteroffensive in Operation Change of Direction, 3–4
 - disclosure of information about, 6–7
 - ineffectiveness against Katyusha rockets, 2
 - mission assignments for Operation Change of Direction, 25–26
 - public perception of performance of, 3–5
 - “regional logistics” concept of, 126n110

- response options for Operation Change of Direction, 306–7
- and success of Operation Cast Lead, 2–3
- unpreparedness of, 110
- withdrawal from Gaza Strip, 231
- See also* ground forces...; Israel Air Force (IAF)
- Israel Navy, 183
- Israel Navy Ship (INS) *Hanit* (“Spear”), 36–38, 132
- Ivry, David, 285
- Ja’abri, Ahmad, 249
- Jabber, Tawfiq, 236, 248
- JDAMs. *See* joint direct attack munitions
- Jiyye electrical power plant, 175, 176
- Johnson, David, 277
- joint direct attack munitions (JDAMs), 40–41
 - in attack on Hezbollah command complex, 88, 89
 - in Beirut attack, 35–36
 - in *Mishkal Sguli*, 99
 - satellite-aided, 83
- joint-force readiness, 135, 224–30
 - assessment of, 226–27
 - and IAF habit patterns, 227–29
 - for Operation Cast Lead, 230, 265
 - for Operation Change of Direction, 224–26
 - Teffen 2012 plan for, 229–30
- joint operations (Operation Change of Direction), 67n109, 224–26. *See also* air-ground coordination (Operation Change of Direction)
- joint planning, need for, 195–96
- joint training
 - after Operation Change of Direction, 227, 263
 - need for, 195–97
- Jounieh attack, 38
- Jumper, John, 339
- Kalb, Marvin, 172
- Kaplinsky, Moshe, 42
 - on direction of campaign, 302–3
 - early retirement of, 70n120
 - on ground offensive, 55
 - on large-scale ground invasion, 48
 - as representative of Halutz, 219
- Katyusha rockets, 2n3, 136–54
 - air attacks on launching sites, 39
 - capabilities of, 136–37
 - casualties caused by, 145
 - as core strategic threat, 5
 - cost of damage from, 146
 - as counterstrategy for standoff attacks, 136
 - daily rate of fire for, 145
 - deployment pattern of, 96
 - Eshel on, 302
 - expected success in hitting, 286
 - failure of strategies for neutralizing, 151
 - Halutz on, 291
 - Hamas’ use of, 223, 224
 - and IAF’s strategic mission, 5
 - IDF ineffectiveness against, 2, 307
 - inadequate defense against, 143–46
 - lack of actionable intelligence on, 149–50
 - locations of, 138
 - miss distance of, 143, 146
 - and mission taskings, 109–10, 144, 185
 - misunderstood significance of, 313–14
 - Nehushtan on, 55
 - Northern Command CONOPS against, 151–54
 - as no-signature weapons, 147–48
 - Olmert on, 60
 - perceived “failure” to negate threat of, 151
 - as Qana target, 173–74
 - range of, 18, 224
 - recent improvements in defense against, 333

- in response to initial Israeli attacks, 33
 - “shoot-and-scoot” tactics with, 141
 - target identification for, 139–43
 - Winograd Commission on, 207
 - and “yellow line” responsibilities, 188–90
- KC-707 tankers, 83
- kill boxes, 188–90
- Kingfisher SOF unit, 144
- Komati, Mahmoud, 326
- Krepinevich, Andrew, 328–29

- Lapidot, Amos, 128n113
- Laskov, Chaim, 3n4
- law of war, 171
- leadership failings, Winograd Commission findings on, 215–20. *See also* failure of strategies (Operation Change of Direction)
- Lebanese armed forces, 13
- Lebanese Army, 1n1, 26, 331
- Lebanese government
 - and ceasefire, 67–68
 - civilian casualties reported by, 157–58
 - Halutz’s threat against, 27
 - Hezbollah component in Parliament, 15
 - and Hezbollah cross-border raids, 27
 - uninvolvement of, 45
- Lebanese infrastructure
 - civilian casualties in destruction of, 172–73
 - as dual-use assets, 166
 - Halutz’s call for strikes against, 22, 23n13
 - and Israeli target vetting, 173
 - planning of attacks on, 23–24
 - U.S. caution about destruction of, 170
 - widespread damage done to, 174–81
 - world opinion on damage to, 178
- Lebanon
 - 1982–2000 occupation of, 292–93
 - damage to economy of, 71
 - evacuation of American citizens from, 158
 - Hezbollah in, 1n1, 14
 - Islamic Revolutionary Guards Corps in, 14
 - Israeli withdrawal from in 2000, 13
 - Israel’s strategic situation in, 324–25
 - second war in (*see* Operation Change of Direction)
 - structural damage throughout, 172–73
 - U.S. caution against undermining government of, 170
- Lipkin-Shahak, Amnon, 47, 69, 108, 295
- Livni, Tzipi, 45, 68
 - on ceasefire, 247, 258
 - on civilian casualties, 163–64
 - on ending Operation Cast Lead, 246
- Locker, Johanan, 186n117
 - on asymmetric warfare, 315–16
 - on civilian casualties, 173
 - and Hamas contingency plan, 230
 - joint dialogue initiated by, 226
 - on joint planning and training, 196
- long-range rockets (of Hezbollah), 17–18
 - intelligence on storage sites, 96
 - monitoring transporters for, 115
 - See also* Zelzal rockets
- Luft, Tzvi, 77

- Mahmoud, Houhad, 176
- Majdov, Mahmoud, 18, 19
- Maroun Al Ras cross-border probe, 43–45, 80
- Mastiff UAVs, 111
- Mazuz, Meni, 97
- medevac missions
 - in Operation Cast Lead, 241–42
 - in Operation Change of Direction, 80, 86, 127, 130, 193–94

- ul style="list-style-type: none; padding-left: 0;">
- medium-range rockets, 17–18, 20n10, 92
 - attack on Haifa, 33–34
 - destroyed in *Mishkal Sguli*, 104, 106
 - with high-explosive front ends, 34
 - intelligence on storage sites, 96
 - location information on, 96
 - monitoring transporters for, 115
 - TST attacks against, 106
 - undetected, 102–3
 - See also* Fajr rockets
- Meridor, Dan, 41–42, 311
- military capability
 - of Hezbollah, 14–15, 52, 59, 213, 322
 - of IAF, 82–84
 - with Katyusha rockets, 136–37
- military information, disclosure of, 6–7
- military organization, Winograd Commission on, 212–13
- military space operations, 2n2
- mission taskings (Operation Cast Lead), 252–53
- mission taskings (Operation Change of Direction), 189
 - for IAF, 73, 75, 79, 109–10, 185
 - for IDF, 25–26
 - for Katyusha destruction, 109, 110, 144, 185
 - for Northern Command, 109, 110, 144, 185
 - for UAVs, 114–15, 120
- Mk 82 bombs, 83, 239
- Mk 84 bombs, 83, 239
- MLRS battlefield rockets, 41
- Mofaz, Shaul, 62, 63, 152, 294–96
- Mossad, 154
- MQ-5 Hunter UAV, 123
- MQ-9 Reaper UAVs, 124
- Mughniyeh, Imad, 154, 331
- munitions expended
 - in Operation Cast Lead, 242
 - in Operation Change of Direction, 81–82, 86–89, 161
- Musawi, Abbas Al, 13
- Nadel, Chaim, 199
- Nahal Brigade, 128
- Nasrallah, Hassan
 - on abduction of Israeli soldiers, 19
 - and aftermath of war, 323–24, 328, 330, 332–33
 - Al Manar appearance of, 37
 - and growth of Hezbollah, 13–14
 - and headquarters destruction, 156–57
 - as IDF target, 35–36, 154
 - miscalculations by, 326
 - and Mughniyeh's death
 - and Olmert's campaign goals, 318
 - Uri Saguy on, 42
 - on strikes on Beirut, 105
 - threats of longer-range attacks, 34
 - and timing of Qana attack, 172
 - victory claimed by, 67, 299, 300, 313, 321
- Nasser Brigade (Hezbollah), 15
- National Security Council (Israel), 41
- “nature reserves,” 60, 138–39, 150, 267
- naval blockade, along Lebanon coast, 38
- naval radar station attacks, 38
- Naveh, Shimon, 124, 203n12, 288
- Nehushtan, Ido, 38
 - on asymmetric warfare, 315
 - on Cast lead, 261
 - on civilian casualties, 163
 - on counter-Katyusha missions, 153
 - on destruction of rockets, 103–4
 - on escalation to ground combat, 304
 - on ground offensive, 55, 60–61
 - on Hezbollah, 45–46
 - as IAF commander, 227
 - on partnership of forces, 268, 269
 - on planning for operations, 240
 - review of Cast Lead plans with Galant, 245n26
 - on targets for Cast Lead, 242–43, 245
 - on use of air assets, 264n103
- Netanyahu, Benjamin, 68, 164
- network-centric warfare, 90–92

- Nevatim Air Base, 84
New York Times, 4
 91st Division (IDF), 21
 noncombatant casualties. *See* civilian casualties
 Northern Command (IDF)
 CONOPS against Katyushas, 151–54
 and contradictory combat objectives, 309
 designated AOR for, 182–83
 difficulties experienced by, 185
 forward AOC at, 184
 joint dialogue with IAF, 226
 Katyusha rockets mission tasking for, 109, 110, 144, 185
 lift operations in support of, 126, 127
 relations with IAF headquarters, 186–87, 189–90
 Winograd Commission on, 205, 219
 and “yellow line,” 188–90
- OCD. *See* Operation Change of Direction
 OCD 11, 63–64, 66
 Ofeq 5 satellite, 121
 Ofeq 7 satellite, 121
 Olmert, Ehud, 1
 on achieving Cast Lead goals, 246
 on air vs. ground actions, 295
 on assessing achievements, 320–21
 campaign goals of, 2, 24–25, 308
 on ceasefire in Operation Change of Direction, 59
 on deficiencies in conduct of war, 68
 early campaign pronouncements of, 298–300
 and escalation of ground offensive, 64–66
 and ground offensive, 62–63
 on Halutz, 29, 289
 initial press conference of, 24
 military experience of, 62n100
 on *Mishkal Sguli*, 107
 on new security reality, 260–61
 on Operation Cast Lead, 260
 and Operation Cast Lead plan, 233
 Peretz appointed by, 62n100
 public satisfaction with leadership of, 50
 on Qana attack, 169
 resignation of, 70n120
 on stopping Katyusha launches, 60
 strategy errors of, 337
 Winograd Commission on, 201, 215, 216
- Olmert government
 on all-out war against Hamas, 237
 and ceasefire in Operation Cast Lead, 245–47
 and ceasefire in Operation Change of Direction, 46
 changing goals of, 58
 and civilian casualties in *Mishkal Sguli*, 100
 commission of inquiry established by, 199
 communication with Israeli population, 65n108
 decisionmaking process of, 304n75, 305–9
 and destruction within Lebanon, 176–77
 doubts about direction chosen by, 41–43, 46, 47
 and early ceasefire with Hamas, 232
 The Economist on, 6
 goals of Operation Change of Direction, 24–25
 and Hamas’ bombing from Gaza, 224
 handling of Cast Lead civilian casualties, 269–70
 initial errors of, 24
 initial reluctance for ground operations, 28
 and level of ground operations, 52
 major errors made by, 7
 opening strategy of, 7, 301

- and Operation Cast Lead plan, 232, 233
- and outcome of Change of Direction, 319–20
- and pause in attacks after Qana attacks, 169
- perceptions management by, 261–63
- and public anger over Katyusha fire, 61–62
- strategic misjudgment of, 5, 6, 291–98, 337–38
- on strike against Hezbollah leaders, 154
- Winograd Commission on, 200–202, 209–17
- Operation Accountability, 81
- operational control of forces (Operation Change of Direction), 183–84
- operational squadrons (IAF), 83, 84
- operational tradecraft
 - of Hezbollah, 52–54
 - of IDF ground forces, 67
- Operation Anaconda, 86n20
- Operation Cast Lead, 234–76
 - air-land assault in, 240–42
 - ceasefire efforts in, 245–47
 - civilian fatalities in, 269–75
 - collateral-damage mitigation in, 242–45
 - complete withdrawal of forces, 247–48
 - cyberspace operations following, 261
 - force-employment efficiency in, 251–52
 - Hamas leaders killed during, 248–49
 - Hamas rocket attacks during, 249
 - highlights of, 252–59
 - initial air-only attacks in, 234–40
 - joint-force readiness for, 224–30
 - origin of name, 234n25
 - phases of, 253–54
 - planning of, 342–43
 - reasons for improved performance in, 329
 - restored public perception of IDF from, 3
 - successful aspects of, 259–69
- Operation Change of Direction (OCD), 1–2, 11, 63–64, 66
 - and abduction of Israeli soldiers, 19–26
 - air power in doctrine and practice, 282–91
 - campaign goals, 2, 22–26, 58, 298–300
 - as campaign vs. war, 73, 306
 - causes of failure of, 7
 - ceasefire process, 56–68
 - choice of strategy in, 291–98
 - compared to Operation Iraqi Freedom, 81
 - emerging doubt about, 41–43, 46, 47
 - “failed air power” in, 4–6
 - failure of strategies in, 305–20
 - first ground actions in, 43–48
 - genesis and execution of strategy in, 298–305
 - and Hezbollah capabilities, 13–18
 - IDF's counteroffensive, 3–4
 - inconclusive ending of, 63–71
 - initial errors in situation assessment, 24, 26–27
 - initial standoff attacks, 3, 20–22, 28–32
 - lessons learned from, 221–22
 - misperceptions of, 2–6, 277–82
 - move to major ground operations in, 49–56
 - opening move in, 7
 - origins of, 13, 294
 - perceived “failure” of IDF in, 300
 - positive outcomes of, 320–34
 - public impressions of, 2–6
 - range of target types in, 33–41
 - strategic misjudgment in, 5, 6
 - as wake-up call, 328–30
 - See also specific topics*
- Operation Desert Storm, 167, 287
- Operation Grapes of Wrath, 81

- Operation Iraqi Freedom, 81, 287
- Operation Just Reward, 1, 32. *See also*
 - Operation Change of Direction
- Operation *Mishkal Sguli* ("Specific Weight"), 29–30, 97–102, 104–7, 204–5
- Operation *Moged* ("Focus"), 107
- Operation Sharp and Smooth, 128
- Operation Southern Focus, 133
- Ovda Air Base, 84

- Palestinian Authority, 242
- Palestinian Center for Human Rights (PCHR), 244
- Palestinian Islamic Jihad, 18, 19
- Palmachim Air Base, 84, 111, 113, 226
- Patriot anti-ballistic missile system, 143n8
- PB500A1 LBG, 239
- PCHR (Palestinian Center for Human Rights), 244
- peacekeeping forces, 46, 63
- perceptions management, 261–63
- Peres, Shimon, 143, 309, 330
- Peretz, Amir, 1
 - and abduction of soldiers, 21
 - on breaking Hezbollah, 27, 46
 - on campaign goals, 22–24
 - on ceasefire efforts, 62–63
 - and civilian casualties, 168–69
 - on civilians storing rockets in their homes, 97n43
 - criticisms of, 62
 - and escalation of ground offensive, 64–66, 304
 - on expanding offensive, 59, 60
 - on ground invasion plan, 63
 - on Halutz's initial strategy choices, 29
 - initial error in situation assessment, 26
 - initial planning meeting with Halutz, 22
 - on investigating conduct of the war, 69, 70
 - military experience of, 62n100
 - Mishkal Sguli* approved by, 97
 - Winograd Commission on, 216
- pilots, IAF, 82
- planning
 - deficiencies of, 311–12
 - failure of, 341–42
 - joint, 195–96, 227
 - of Operation Cast Lead, 342–43
- political component of Hezbollah, 15
- political force, of Hezbollah, 14
- political objectives of Operation Change of Direction, 306
- precision-guided munitions (PGMs)
 - in Operation Cast Lead, 242–43, 251
 - in Operation Change of Direction, 87–88
- problems in air employment, 135–98
 - air-ground coordination, 181–98
 - destruction of infrastructure and economy, 174–81
 - failed attempts against Hezbollah leaders, 154–57
 - Katyusha challenge, 136–54
 - noncombatant fatalities, 157–74
- propaganda
 - Al Manar as tool for, 31, 31–32n32
 - on destruction of infrastructure, 179–80
 - Hezbollah's success in, 167
- public opinion
 - on abduction of Israeli soldiers, 19–20
 - after Operation Cast Lead, 261
 - on damage to Lebanese infrastructure, 178–81
 - at end of Operation Change of Direction, 70
 - on failure to stem Katyusha fire, 61–62
 - on Dan Halutz, 3
 - and Hezbollah rocket attacks, 147
 - on initial ground operations, 49
 - on Israel's lack of success, 65
 - in Lebanon, of Hezbollah, 331–32

- on Olmert's leadership, 50
- on Operation Cast Lead, 3, 270
- on Operation Change of Direction, 2–6, 26, 41–43, 46, 47
- postwar recriminations, 68–69
- on targets in civilian areas, 172, 174
- Qana attack, 56–57, 167–74
- Qassam rockets, 249–50
 - capabilities of, 231
 - Hamas' use of, 223, 224
 - range of, 224
 - recent improvements in defense against, 333
- radar station attacks, 38
- radical Islamist movement, 328
- Rafael Armament Development Authority, 119, 122n100, 123
- Rafiq Hariri International Airport, 30–31, 39
- Ramat David Air Base, 83, 84
- RAMM (rocket, artillery, mortar, and missile) capabilities, 329
- Ramon Air Base, 84
- Rayyan, Nizar, 248
- Regev, Eldad, 47n65
- "regional logistics" concept (IDF), 126n110
- RF-4 Phantoms, 121
- Rice, Condoleezza, 56, 60
 - on bombing suspension after Qana, 169
 - and harm from IDF attacks, 172
 - and infrastructure destruction within Lebanon, 177
- road bombings (in Lebanon), 39, 176
- rocket, artillery, mortar, and missile (RAMM) capabilities, 329
- rocket attacks (by Hamas), 231–33
 - extent of coverage from Gaza Strip, 223–24
 - number and types of, 249
- rocket attacks (by Hezbollah) after end of war, 323
 - against Haifa, 33–34
 - near Afula, 34
 - in response to initial Israeli attacks, 33
 - in retaliation for Majdov's death, 19
 - Winograd Commission on, 218
- rocket capability (Hezbollah), 17–18
 - extent of, 52
 - IAF tasking to neutralize, 75
 - Operation *Mishkal Sguli* attack on, 29–30
 - "strategic" (*see* strategic rocket threat [Hezbollah])
 - See also specific types of rockets, e.g.:*
 - Katyusha rockets
- rocket launchers (Operation Cast Lead), 236
- rocket launchers (Operation Change of Direction)
 - attacks on, 39, 107–8
 - camouflage of, 139–41
 - in civilian residences, 164, 165
 - destruction of, 321–22
 - for Fajrs, 101–2
 - for Katyushas, 144
 - "shoot-and-scoot" tactics with, 141
 - TST operations against, 102–3, 107–9, 115–16
 - for Zelzal, 93, 94
- ROE (rules of engagement), 57–58, 115
- Rom, Giora, 148, 308
- ROVER laptop computer, 120
- RQ-4 Hunter UAV, 123
- rules of engagement (ROE), 57–58, 115
- Sagem, 123
- Saguy, Uri, 42
- SAMs (surface-to-air missiles), 75, 111
- satellites, ISR, 121
- Sayeret Matkal* team, 128
- Scales, Robert, 278n4
- Schiff, Ze'ev, 51
- Scout UAVs, 111

- Searcher 1 UAVs, 113
- Searcher 2 UAVs, 112, 113
- Searcher UAVs, 114, 117, 118, 122, 265
- second Lebanon war. *See* Operation Change of Direction
- Shachar, Shuki, 59, 165
- Shachor, Gabi, 190–91, 226–27
- Shaharabani, Ya'akov, 184, 190–91, 195, 275
- Shaldag* SOF unit, 43, 120, 128, 129
- Shalhoub, Nur, 55
- Shalit, Gilad, 20, 112
- Shalpokh, Mohammed, 248
- Sharah, Salah Abu, 248–49
- Sharon, Ariel, 23n13, 217n50
 - Halutz selected by, 288, 289
 - reform initiatives of, 339–40
- Sharon government, 231
- Shin Bet, 232, 244, 267
- Shkedy, Elyezer, 54
 - as air component commander, 183
 - on air-ground coordination, 198
 - on air power, 285–86
 - and Arm in Arm exercise, 152
 - C-130 operations conducted by, 127
 - on CAS by fighters, 225
 - on civilian casualties, 161n49
 - on close air support, 193
 - as “deep” theater commander, 182
 - on design of IAF, 284
 - on destruction of rockets, 103
 - on downed helicopter, 129
 - on foreign commentary, 125n107
 - and Hamas contingency plan, 230–31
 - and joint dialogue IDF-IAF dialogue, 226
 - on loss of aircraft, 75, 76
 - personal control retained by, 186n117, 228, 266
 - post-kidnapping actions of, 197
 - and tactical control of air support, 190–91
 - on UAV operations, 114
- Shmueli, Ram, 100
- “shoot-and-scoot” tactics, 141
- Shtrauber, Zvi, 47, 302
- signals intelligence (SIGINT), 52–53, 54n84
 - Gulfstream G550 aircraft, 86
 - installed within Hezbollah bunkers, 96–97
 - in Operation Cast Lead, 236–37
- Singh, Jasjit, 314–15
- Siniora, Fouad, 15, 46, 56, 176
- situation assessment errors (Operation Change of Direction)
 - initial errors, 24, 26–27
 - major errors, 7
 - by Olmert, 24
 - by Perez, 26
- 669 CSAR unit, 129
- Six Day War (1967), 107
- Siyam, Said, 248
- Skylark UAVs, 117, 119
- Skylite B UAV, 119–20
- Sneh, Ephraim, 48
- Snow, Tony, 170
- social media, post-Operation Cast Lead use of, 261
- SOF. *See* special operations forces
- sortie counts
 - for Operation Cast Lead, 251
 - for Operation Change of Direction, 79–83, 113–14
 - for UAVs, 113–14
- Southern Command, 230, 241, 249, 265
- space platforms (Operation Change of Direction), 121
- special operations forces (SOF)
 - capture of Hezbollah guerrillas, 128–29
 - infiltration into Lebanon, 43
 - launch sites intelligence from, 124
 - vehicles carrying Katyushas tracked by, 144
- Sperwer-B UAV, 123
- SPICE 2000, 88–89n24
- SPICE electro-optically guided air-to-surface weapons, 88
- Spike-ER missile, 122–23

- “stand-alone air campaign,” 32
- standoff attacks (Operation Change of Direction), 1–3, 20–22, 28–32, 311, 337, 342
- assessments of, 47, 48
 - doctrinal elevation of, 283
 - Hezbollah’s asymmetric counterstrategy for, 136
 - Katyushas as counterstrategy for, 136
 - leverage offered by, 316–17
 - as opening strategy, 7, 294–98, 301
 - Winograd Commission on, 210
- Steinitz, Yuval, 56n90
- storage sites of rockets/launchers, 93–96, 138
- strategic judgment (Operation Change of Direction), 5, 6, 291–98
- errors/failures in, 2, 7, 24
 - failure of strategies, 305–20, 335–39
 - genesis and execution of strategy, 298–305
 - of Halutz, 3–4, 6, 279–81, 286–91
 - of Olmert, 24
 - of Olmert government, 5, 6, 209–15, 291–98
 - Winograd Commission findings on, 209–15
- strategic rocket threat (Hezbollah), 17–18
- attacks on rocket launchers, 107–8
 - concept of operations against, 108
 - defusing of, 92–110
 - deployment pattern of rockets, 95–96
 - Fajr rockets, 92
 - flow and storage sites of rockets, 93–95
 - IDF targeting information on, 96–97
 - Mishkal Sguli* operation, 97–102, 104–7
 - planning of attacks on, 23, 103–4
 - time-sensitive targeting operations, 102–4, 106–7
 - undetected medium-range rockets, 102–3
 - Zelzal rockets, 92, 93
- successes of IDF. *See* accomplishments of IAF (Operation Change of Direction); accomplishments of IDF (Operation Cast Lead)
- Supernal Waters (*Mei Marom*), 28, 29, 152
- supplemental aircraft (Operation Change of Direction), 121
- “supported” and “supporting” roles, 185–87
- surface-to-air missiles (SAMs), 75, 111
- sustained aerial offensive. *See* battle rhythm (Operation Change of Direction)
- Syria, 20n10, 26
- and Beka’a Valley air war (1982), 111
 - cutting resupply lines from, 144
 - lack of action against, 68n113
 - military state of alert in, 40
 - packing station bombed in, 163
 - rearmament of Hezbollah by, 68, 330–31
 - weapons shipments through, 39, 40
- tactical air control parties (TACPs), 228, 229n14, 265–66
- tactical control of forces (Operation Change of Direction), 183–84
- Tadiran Spectralink, 115
- tankers (IAF), 74
- targeted assassination, 324
- target identification (Operation Cast Lead), 232, 238
- target identification (Operation Change of Direction)
- IAF care taken with, 159–62, 173, 175–76
 - information on Hezbollah rockets, 96–99
 - for Katyusha rockets, 139–43
- target types (Operation Cast Lead), 240–41

- target types (Operation Change of Direction), 33–41, 60–61
 - munitions expended on, 81–82
 - strike operations on, 89–91
 - U.S. questioning of, 177
- TecSAR satellite, 121
- Teffen 2012 plan, 229–30
- TEL (transporter-erector-launcher), 93
- Tel Nof Air Base, 84, 227
- Tendler, Keren, 129
- time-sensitive targeting (TST), 34
 - of Katyushas, 144
 - against rocket launchers, 102–3, 107–9, 115–16
 - against strategic rocket threat, 102–4, 106–9, 117–18
 - UAV support of, 115–17, 124
- training, joint, 195–97, 227, 263
- transport/CSAR helicopters (IAF), 74
- transporter-erector-launcher (TEL), 93
- Tripoli attack, 38
- troop casualties (1982–2000
 - occupation of Lebanon), 292–93
- troop casualties (Operation Cast Lead)
 - for Hamas, 236, 249, 274–75
 - for IDF, 249
- troop casualties (Operation Change of Direction), 56–57, 66, 70, 71, 335n2
 - for Hezbollah, 71, 321
 - in IAF, 77
 - for IDF, 70
- troop insertion operations, 128–30
- TST. *See* time-sensitive targeting
- “tzimmers,” 96
- UAVs. *See* unmanned aerial vehicles...
- UH-60 aircraft, 76, 130
- underground bunkers (Hezbollah), 44–45, 138–39, 155, 321
- underground tunnels (of Hamas), 232, 239–40, 246
- unguided munitions, 88, 239
- United Nations Commission of Inquiry, 178–79
- United Nations Human Rights Council, 270–74
- United Nations observer outpost killings, 162–63
- United Nations peacekeeping forces, 46
- United Nations Security Council, 246n60
- United Nations Security Council Resolution 1701, 64–65, 331
- United States
 - arms sales to Israel, 40–41
 - ceasefire effort of, 56
 - evacuation of American citizens from Lebanon, 158
 - government support for Israelis, 169–70
 - joint-warfare practice of, 193
 - Operation Anaconda, 86n20
 - support of IDF actions by, 50
 - and UN peacekeeping forces, 46
 - See also* Bush administration
- United States Air Force, 124
- United States Army, 123
- unmanned aerial vehicles (of Hezbollah), 130–33
- unmanned aerial vehicles (of IAF), 110–26
 - and abductions of IDF personnel, 112
 - in operations prior to Operation Change of Direction, 102, 110–12
 - operators of, 115
 - types of, 117–20
- unmanned aerial vehicles (Operation Cast Lead), 236, 256, 270
- unmanned aerial vehicles (Operation Change of Direction)
 - armed, 121–25
 - availability of, 114
 - control of, 110
 - and deconfliction of aircraft, 191–92
 - individual initiative in use of, 112–13
 - in *Mishkal Sguli*, 99
 - mission taskings for, 114–15, 120
 - number of sorties flown, 80

- over southern Lebanon war zone, 86
- for real-time TST support, 115–18, 124
- supplemental aircraft and space platforms for, 121
- for sustained ISR, 113–14
- utility helicopters (IAF), 74
 - Blackhawk, 127
 - and deconfliction of aircraft, 192
 - sorties flown, 80
- Van Creveld, Martin, 322–23
- war crimes
 - and dual use of infrastructure, 166
 - Hezbollah targeting of civilians as, 171
 - in Operation Cast Lead, allegations of, 271
 - scale of destruction in Lebanon as, 175
- warnings to civilians (by IDF)
 - in Operation Cast Lead, 243–44, 273–74
 - in Operation Change of Direction, 35, 38, 39, 49, 140, 160, 164, 169–71
- weather conditions (Operation Cast Lead), 256
- Winograd, Eliahu, 199
- Winograd Commission, 199–220
 - on air-ground coordination, 181–82
 - on CAS delivery to ground troops, 187
 - on casualties of war, 70
 - final report of, 200–201
 - on government's errors in strategy, 209–15
 - on *Hanit* attack, 37n43
 - on IAF capabilities and achievements, 73–75
 - on IAF supply and evacuation operations, 130
 - on IDF's combat performance, 187, 202–9
 - interim report of, 200
 - internalization of findings from, 233
 - on leadership failings, 215–20
- Ya'alon, Moshe, 20n10, 152, 317–18
- Yadlin, Amos, 14n3, 40
 - on capture of one kidnapper of Israeli soldiers, 43n57
 - on counter-Katyusha missions, 153
 - on "The Empire Strikes Back," 278
 - on escalation to ground combat, 304
 - on Hamas, 246
 - on loss of war, 69n118
 - "yellow line," 188–90
- Yom Kippur War (1973), 69, 80–82
- Zahar, Mahmud, 249
- Zelzal rockets, 17, 92, 93
 - AMAN tracking of, 95
 - deployment patterns of, 95–96
 - destructive threat of, 151
 - monitoring transporters for, 115
 - number of, 92
 - and Operation *Mishkal Sguli*, 100–101, 104–6
 - rocket launchers for, 93, 94
 - specifications of, 93
 - versions of, 92–93