Building Air Bases in the Negev

Frank N. Schubert

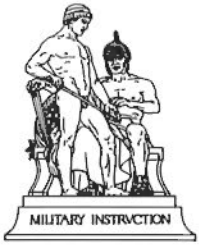
THE U.S. ARMY CORPS OF ENGINEERS
IN ISRAEL, 1979-1982

BUILDING AIR BASES IN THE NEGEV

THE U.S. ARMY CORPS OF ENGINEERS IN ISRAEL, 1979–1982

by

Frank N. Schubert



OFFICE OF HISTORY, CORPS OF ENGINEERS
and
CENTER OF MILITARY HISTORY

UNITED STATES ARMY
WASHINGTON, D.C., 1992

Library of Congress Cataloging-in-Publication Data

Schubert, Frank N.

Building air bases in the Negev : the U.S. Army Corps of Engineers in Israel, 1979–1982 / by Frank N. Schubert.

p. cm. — (CMH pub ; 70–45)

Includes bibliographical reference and index.

1. Besis Hel avir ' Ovdah (Israel)—History. 2. Besis Hel avir Ramon (Israel)—History. 3. Air bases—Israel—Negev—Design and construction—History—20th century. 4. United States. Army. Corps of Engineers—History—20th century. 5. Negev (Israel)—History. I. United States. Army. Corps of Engineers. Office of History. II. Center of Military History. III. Title. IV. Series.

UG635.I752B477 1992

358.4'17—dc20 91–45499

CIP

CMH Pub 70–45

First Printing

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402

Foreword

The U.S. Army's role as an instrument of foreign policy is usually viewed in a strictly military sense. This book tells the story of an Army agency supporting national objectives in a different way. It traces the development of a major construction project, managed by the Army Corps of Engineers, that helped bring peace between two long-time antagonists in the Middle East, Israel and Egypt. The Corps has managed construction in support of American policy overseas many times, but this role is not widely known outside of the Corps.

While telling the story of one of the more substantial, recent Corps of Engineers accomplishments, this book also speaks to the present and future. Large programs such as the air base construction mission in Israel demand broad vision from those who plan and execute them. Their management must be set up with a view to the evolution of the program through its entire life cycle and not extemporized as the program moves through predictable phases of start-up, expansion, maturity, completion, and closure. There are lessons here for thoughtful managers, in the Corps of Engineers and elsewhere in the Army, and we commend this book to them and to others interested in the diverse ways in which the Army serves as an agent of national policy.

HENRY J. HATCH
Lieutenant General, USA
Chief of Engineers

HAROLD W. NELSON
Brigadier General, USA
Chief of Military History

1 November 1991
Washington, D.C.

The Author

Frank N. Schubert is chief of the Military Studies Branch in the Research and Analysis Division of the U.S. Army Center of Military History. He holds a Ph.D. from the University of Toledo. During thirteen years as a historian for the U.S. Army Corps of Engineers, he produced a variety of publications on engineer exploration of the West as well as the manuscript for this book. He also has written extensively on black soldiers in the trans-Mississippi West.

Preface

Between the spring of 1979 and the summer of 1982, the U.S. Army Corps of Engineers managed a remarkable construction project in Israel's Negev Desert. This effort, carried out in a highly inflationary period and with a supply line thousands of miles long, produced two ultramodern Israeli air bases in a remarkably short time and at a cost that only exceeded original estimates by less than 3 percent. It also contributed directly to peace between Israel and Egypt.

The political stakes were high. At Camp David in 1978, Israel had agreed to relinquish the Sinai peninsula to Egypt, provided that the bases in the Negev were ready to accept the aircraft of the Israeli Air Force before the withdrawal took place. When the time came for the Israelis to leave the Sinai, the bases were in fact operational. The Israelis did withdraw, Egyptian sovereignty was restored to the peninsula, and for the first time in nearly half a century Israel was at peace with its largest and most formidable neighbor. In terms of its objectives, the air base program was a great success.

Demanding conditions, among which the political ramifications were foremost, surrounded the project. The unprecedented withdrawal to which Israel had committed itself awaited completion of the bases. Moreover, at the time, the Camp David accords held some promise as the basis for an enduring settlement of the hostility between Israel and its neighbors—the even thornier problem of a Palestinian homeland and nationality.

Aside from diplomatic considerations, there were other complicating factors. The demands of a tight schedule were magnified by the need to work at remote desert sites. Moreover, the organizational structure divided management between the Corps, the U.S. Air Force, and the Israeli Air Force; and the program had a complex budgetary arrangement in which the United States paid the bulk of the costs but Israel also contributed. The organization—with the Corps working under two program managers, one Israeli and one American—created an interesting and challenging situa-

tion that was unique in the annals of Corps military construction and offered ample opportunity for tension, misunderstanding, and hostility. Of interest for its impact on this program, this arrangement does not provide many lessons that might be useful in subsequent programs, except perhaps that it should not be emulated.

The construction itself did not make this project unique. To be sure, some unusual methods were employed, notably in the aircraft shelter complexes, and Israeli construction practices differed from those normally used by the Americans. However, with few exceptions, construction was largely routine. "It is not a complicated job," Otis Grafa, a civilian manager for the Corps, observed while the work progressed, "it's just a hell of a lot of it."[1] Or, as Lt. Gen. Max Noah rhetorically asked, "How the hell couldn't you make an airfield out there?"[2]

In any case, from a construction standpoint the project has already received considerable study within the Corps of Engineers. Early in the 1980s, when the work in Israel was still in progress and the Corps was active in Saudi Arabia, four documents purporting to convey the lessons of construction in the Middle East appeared. Using different techniques and a wide range of data, they looked at a number of projects with an eye toward what they could teach about military construction in the region. Unfortunately, these by now obscure compilations took a more or less cookbook approach to the projects and put little emphasis on the human dimension of construction management.[3]

In Israel it became clear that the program's most challenging problems involved that very aspect. In any project, whether public or private, foreign or domestic, management theory, constructor organization, computerized information systems, and building technology create the reality of structures only through application by human beings. Their actions, judgments, and choices represent the critical variables. This was certainly true on the air base program: personality conflicts, institutional loyalties, and the tense relations between managers representing different organizations and levels of management within organizations greatly affected the work. Their influence went far beyond what might have been expected for a construction project that seemed so suited to a logical, straightforward approach. Much time and energy were consumed in defending and expanding agency turf and in resolving clashes among competing interests. Overall, the program suffered due to the lack of clear-cut organizational arrangements and also because of the personalities of the individuals involved.

These problems were widely regarded as substantial. Lt. Gen. Bennett L. Lewis, reflecting on an effort that based on the usual

criteria—the job was well done, completed within the tight schedule, and very nearly finished within the budget—was a major success, concluded that "It was a great success, at terrible human cost."[4] Maj. Gen. William Wray made the same point, albeit less dramatically. Commenting on a draft of this history, he observed that "although management problems, failures and successes make up a large part of the story [as written], the area of interpersonal relationships played a critical part in the difficulties of getting the job done."[5] In fact, he concluded in retrospect, "I think there is no question but what the relationships among individuals and management personnel was the major problem. That was, without question, the key factor that influenced the execution of the program."[6]

The problems in the program illustrate the need to consider carefully institutional and individual roles, relationships, and responsibilities. They also show the importance of selecting leaders based on the ability to interact effectively with others as well as for technical qualifications. Choosing the wrong people hinders execution of a mission; selecting the right people helps. As the program raced toward completion and grappled with diverse stresses and strains, it showed substantial doses of both.

While the program faced both help and hindrance, I was luckier. My good fortune started at the top in the Corps of Engineers. Government agencies do not habitually display the foresight to assign a historian to a major project while the work is under way. That the Corps of Engineers took this unusual step in this case was due to the vision of one man. Lt. Gen. John W. Morris, who was the Chief of Engineers when the work in Israel started, insisted that a historian from his Office of History document this important and unusual construction project. With his support, I was able to watch the evolution of the project from the early planning stages until the end of construction in Israel and finally through closeout at Fort Belvoir, Virginia. This proximity to the project gave me the opportunity to meet and talk with many participants, watch the bases themselves actually develop, and make sure that the written record survived.

This narrative and the extensive research collections on which it is based, including the nearly one hundred oral history interviews conducted as part of the research, all result directly from the decision of General Morris. So do the personal and professional gratifications that I derived from the opportunity to do this study. So to him I am particularly grateful.

Once I got started, many people in the Corps of Engineers provided important assistance, whether with making contacts with oth-

ers, locating documents, or just keeping up with what was happening on the project in Israel. At the headquarters, in what was then called the Directorate of Military Programs, these included Bill Augustine, Carl Damico, Tom Koonce, Fred McNeely, Barbara Myerchin, John Reimer, Paul Theuer, and Jim Wharry. Bob Blakeley, then chief of the Office of Administrative Services, to whom my own office reported, was supportive and encouraging. In the New York offices of North Atlantic Division and New York District, I also found help whenever I asked for it from Paul Bazilwich, Paul Cheverie, Lou Fioto, George Grimes, Ozzie Hewitt, Mike Jezior, David Lipsky, and Al Vinitsky.

On my four research visits to Israel, I also received ample aid. In Tel Aviv, those who helped included Bob Amick, Moshe Bar-Tov, John Brown, Joe Chapla, Lee Graw, Gene Gamble, Jack Gilkey, Paul Hartung, Ailene Jacques, Shirley Jacobson, Tom Kahlert, Karni Kav, Ken Keener, Carol Koplik, Karson Kosowski, Mike Maloney, Harry McGinness, Ed Moore, Jackie Partridge, Janet Sales, Ray Shaw, Alan Shepherd, George Snoddy, Charlie Thomas, Steve West, and Donald Wong. At Ramon, Ann Avenell, Fred Butler, Bud Griffis, Jon Jacobsen, Glenn Lloyd, Bill Parkes, and Paul Taylor were especially helpful; at Ovda, John Blake, Irving Davis, Otis Grafa, Bob Horton, Dick Huggins, Patrick Kelly, John Morris, Nick Moon, Pete Peterson, and Ed Wainwright assisted me.

Most notably, John F. Wall, then a brigadier general and project manager and since retired from the Army as a lieutenant general, made sure that I got what I needed. He assured the cooperation of his staff, tolerated my intrusions into the busy life of the Near East Project Office, and gave me the time I needed for interviews. Without the cooperation of General Wall, along with Brig. Gen. Paul T. Hartung of the United States Air Force and Brig. Gen. Moshe Bar-Tov of the Israeli Air Force, my research in Israel would never have been successful.

While I was with the Corps' history office, I got more than a little help from my friends. John Greenwood, who was the chief through almost the entire development of this history, chose me for the project and was supportive throughout. Marty Reuss, with whom I shared an office through most of the period, was an insightful and intelligent critic. Paul Walker oversaw the processing of my many oral history tapes quickly and efficiently; later, when he became chief of the office he continued to be helpful, as a critic and a friend. Margaret Wales provided any administrative support I needed; and Lisa Wagner organized the project records into a usable collection. Diane Arms managed the editorial work and Kathleen Richardson edited the manuscript. Jim Dayton of the

Humphreys Engineer Center Support Activity, a perfectionist as well as a photographer, reproduced the pictures.

Outside the Corps of Engineers I also found people willing to provide assistance. Thanks go to Haywood Hansell and Wayne Upshur of the Middle East Task Group in the Office of the Secretary of Defense; Fred Pernell of the Washington Regional Archives in Suitland, Maryland; Bill Heimdahl in the Office of Air Force History; Daisy Walker of Defense Security Assistance Agency; and Verina Jordan and Joyce Rhode, first at the Federal Emergency Management Agency and later in the Office of the Secretary of Defense. Naomi Kogon Steinberg also helped me understand some of the nuances of the Israeli press.

At the U.S. Army Center of Military History, I have been fortunate to work with Morris MacGregor, John Elsberg, Catherine Heerin, Arthur S. Hardyman, Diane Arms, and Sherry Dowdy. Without them there would be no book. I would also like to thank contractor Susan Carroll for the index.

Many of the people mentioned above and some others also read and commented on various drafts of the manuscript. For this particularly important service—and especially onerous task—they deserve special recognition. Thanks go to Bill Baldwin, Roger Beaumont, Frank Billiams, Joseph Bratton, Bates Burnell, David Chambers, John Chambers, Paul Cheverie, Carl Damico, Charles Dunnam, Barry Fowle, Gene Gamble, John Gates, Ernest Graves, John Greenwood, Bud Griffis, James Johnson, Bennett Lewis, Glenn Lloyd, Morris MacGregor, Fred McNeely, John W. Morris, Max Noah, Richard Perry, Marty Reuss, Bory Steinberg, Paul Walker, John Wall, and William Wray. All of them helped improve the manuscript; none of them should be blamed for any errors of fact or interpretation in the final product. The views expressed in this book are mine and do not reflect the official policy or position of the Department of Defense or the U.S. government.

Through it all my wife Irene and my son Max remained my best friends. I thank them for that friendship, which still helps me keep my work in proper perspective.

1 November 1991
Washington, D.C.

FRANK N. SCHUBERT

Notes

1. Interv, author with Otis W. Grafa, May 81, Ovda, Israel. All interviews by author are filed at the Office of History, Headquarters, U.S. Army Corps of Engineers.

2. Lt Gen Max W. Noah, comments on draft MS, 4 May 88, Israeli Air Base Program Collection, Box 93, folder 8, Office of History, Headquarters, U.S. Army Corps of Engineers (hereafter cited as IABPC, 93/8).

3. USACE, *The Israeli Airbase Program: Lessons Learned*, Engineer Pamphlet 5–1–5 (Washington, D.C.: Office, Chief of Engineers, Sep 82); USACE CERL, J. G. Kirby, *Project Manager's Handbook for Special Projects*, Technical Rpt P–85/01 (Champaign, Ill.: CERL, Oct 84); USACE SCMO, After-Action Report: Construction of Facilities in Sinai Desert [1983], copy in Office of History, HQ USACE, files; USACE ESC, Jill M. Davis, G. Leslie Geiger, and Robert B. Grundberg, *The USACE in the Middle East—Benefits and Experiences for Future Construction Challenges*, Rpt 84–11 (Fort Belvoir, Va.: ESC, Dec 84). Note: for the meaning of short titles and other abbreviations see the Glossary.

4. Lt Gen Bennett L. Lewis (Ret.), comments on draft MS, 5 Feb 88, IABPC, 93/5.

5. Ltr, Maj Gen William R. Wray (Ret.) to the author, 24 Feb 88, IABPC, 93/10.

6. Interv, author with Wray, May 88, Fort Belvoir, Va.

Contents

Tables

Map

Illustrations

All illustrations are from Office of History, Headquarters, U.S. Army Corps of Engineers, files.

BUILDING AIR BASES IN THE NEGEV

THE U.S. ARMY CORPS OF ENGINEERS IN ISRAEL 1979–1982


ISRAEL
1982
Air Base
Armistice Line
1967 Cease Fire Line
0
20
MILES
SYRIA
Haifa
GALILEE
Armistice Line
1949
SAMARIA
West
Bank
1967 Cease Fire Line
Tel Aviv
MEDITERRANEAN
SEA
Ashdod
Jerusalem
JUDAEA
DEAD
SEA
Gaza
Strip
1950
Armistice
Line
Beersheba
Eitam
ISRAEL
JORDAN
Ramon
NEGEV
Armistice Line
1949
EGYPT
SINAI
Ovda
Eilat
GULF OF
AQABA
Etzion

MAP 1

CHAPTER 1

Prologue: Palestine, 1942–1944

I understand that it is now a suburb of Tel Aviv, but when I first went to Lydda it was out in the country where we built the first air base in Palestine, now called Israel.

Maj. Gen. Alden K. Sibley[1]

During the early days of World War II, Palestine was a backwater. Worldwide headlines came later, in the wake of Israel's independence, the tank battles and aerial shootouts of the Arab-Israeli wars, and the oil embargo that caused long lines at American service stations. Still, the lack of publicity did not alter the fact that the region was important to the United States and its Allies. The fighting in nearby North Africa led to establishment of a network of Allied logistical facilities throughout the Middle East. Midway through 1941, the influx of airplanes and supplies overburdened Great Britain's bases in Egypt, the Sudan, and Palestine. Britain and the United States, which had not yet entered the war but which had provided material aid against the Axis powers, decided to expand the regional transportation system and build new depots for storage and repair.[2]

Expansion of the logistical base at the far eastern end of the Mediterranean called for rapid construction and brought the Corps of Engineers to the region. The North Atlantic Division of the Corps, with its headquarters in New York City, established the North African District to manage the program. Because of the urgent construction needs, the district negotiated a cost-plus-fixed-fee contract with the Minneapolis firm of Johnson, Drake & Piper, Inc.[3] Such a contract differed from the normal one in which the cost of a project was settled in advance. Cost-plus arrangements assured the contractor reimbursement for legitimate expenses incurred during construction, guaranteed a fee above those costs, and allowed the work to start without time-consuming and complex negotiations.

Early in 1942 management of the program moved to Middle East District's headquarters in Asmara, Eritrea. In February Maj. Louis Claterbos, the district engineer, set up three subordinate of-

fices. With the permission of the British government in Jerusalem, which governed Palestine under a mandate from the League of Nations, the three included the Palestine Area Office in Tel Aviv. Lt. Frank A. Ferguson, the area engineer, had his office in the Barclay's Bank Building on Rothschild Boulevard, located in the old commercial center in the southern part of the city.[4]

The Tel Aviv office did a modest amount of work in the city and nearby. Those who worked there saw their operation, renamed the Levant Area Office in a summer 1942 reorganization that moved the district office to Cairo, as isolated and neglected. "There is a general disgust," a lieutenant observed, "among . . . personnel in the Levant concerning what they report as lack of attention by headquarters personnel in Cairo to their needs. Several expressed the opinion that Cairo seemed to forget all about them except when missions were desired to be carried out."[5]

The Levant office's most significant project was construction of a depot at Tel Litvinsky, a few miles east of Jaffa and just south of Ramat Gan. Initial plans envisioned a major repair base for equipment that had been manufactured in the United States for the British Army. It would resemble the larger one at Heliopolis outside of Cairo except that it would lack a diesel locomotive maintenance shop. As the battle lines in North Africa receded westward, plans for Tel Litvinsky were scaled down. In February 1943 it became a rest camp and jerrican plant. Then, later in the spring, the Army canceled plans for the manufacture of the fuel containers. The most consequential entries in the headquarters journal announced the arrival of Coca-Cola syrup for the bottling plant in Haifa and the visit of comedian Jack Benny.[6]

The office had two other small projects. In Tel Aviv, at the intersection of Dizengoff and Arlosoroff streets in the northern and more modern part of the city, the Corps built an optical repair shop and laboratory. The shop repaired lenses for the British Army in North Africa. The third project, also small, involved improving an airstrip near Lydda. A few miles southeast of Tel Litvinsky, the strip consisted of only one little-used runway amid the orange groves. The Levant office restored the runway and constructed a building for pilots and repair crews. Small liaison planes used the field, but it could handle larger DC–3s as well.[7]

With only these three projects, the Tel Aviv office represented little more than a footnote to operations in the Middle East and North Africa. The depot at Tel Litvinsky faded into near oblivion before closing in November 1943, and the airstrip never grew beyond its one runway. The office itself went through a number of name changes worthy of a much larger organization, from Pales-

tine Area Office to Levant Service Command to Levant Area Office. The Army terminated the contract of Johnson, Drake & Piper on 31 March 1943. Later in the year North Atlantic Division was removed from the chain of command. The Tel Aviv office finally closed in January 1944.[8]

Thirty-five years later the Corps of Engineers returned to Tel Aviv. The new office also reported to North Atlantic Division in New York. Once again the work involved managing cost-plus airfield construction, albeit on a vastly larger scale. The mission required rapid completion of two desert air bases for the State of Israel. Israeli withdrawal from the Sinai peninsula, as promised in the historic 1979 peace treaty with Egypt, depended on timely and skillful execution of the job. This is the story of that important mission.

Notes

1. Interv, Paul K. Walker with Alden K. Sibley, Jul 82, Brownfield, Me., copy in Office of History, HQ USACE.

2. Edith C. Rogers, The Army Air Force in the Middle East: A Study of the Origins of the Ninth Air Force, AAF Reference History 8, Manuscript 101–108 [Washington, D.C.: Office of Air Force History, n.d.], p. 20.

3. Historical Section, Office of the Assistant Chief of Staff G–2, HQ, AMET, History of Africa–Middle East Theater, sec. II, Principal Special Staff Reports, vol. 3, n.d., p. 2, copy in Historical Records Branch, CMH, Washington, D.C.; *Middle East War Projects of Johnson, Drake & Piper, Inc., for the Corps of Engineers, U.S. Army 1942–1943* (New York: William E. Rudge's Sons, 1943), p. 13.

4. History of Africa–Middle East Theater, sec. II, vol. 3, p. 3; Ltr, Lt Col Alden K. Sibley, Operations Planning Section, through CG, SOS, USAFIME, to CG, USAFIME, 18 Aug 43, Alden K. Sibley Papers, Office of History, HQ USACE.

5. Ltr, Lt Hal F. Winter to CG, USAFIME, 7 Sep 42, AMET G–2 files, Box 724, AMET Records, Record Group (RG) 332, National Archives (NA), Suitland, Md.

6. Ltr, Sibley to CG, USAFIME, 18 Aug 43, Sibley Papers; History of Africa–Middle East Theater, sec. II, vol. 3, p. 52; HQ, Levant Service Command, Headquarters Journal, entries for 19 Aug and 4 Sep 43, Records of Levant Service Command, Box 566916, RG 338, NA; Interv (telephone), author with Sibley, Mar 83. For the location of Tel Litvinsky on a map, see Chaim Herzog, *The Arab-Israeli Wars: War and Peace in the Middle East* (New York: Random House, 1982), p. 37.

7. Ltr, Frank A. Ferguson to Economics Division, USAFIME, 12 Feb 44, Records of the Engineer Officer, AMET, File 322, Box 746, RG 332, NA; USAFIME, Agenda for Fourth Meeting, Middle East Council, American Aid Subcommittee, 3 Nov 42, Sibley Papers; Interv, Walker with Sibley, Jul 82. The building at 200 Dizengoff Street later became known as Engineers House and served as the headquarters for a national engineering association.

8. GO 7, HQ, USAFIME, Cairo, 16 Jan 44, Records of the Engineer Officer, AMET, File 322, Box 746, RG 332, NA; Ltr, Lt Col N. H. Wild to Commanders, Eritrea, Delta, Levant, and Libyan Service Commands, 14 Mar 43, Records of the Engineer Officer, AMET, File 321.7, Box 745, RG 332, NA; Work Order 65, Operations Section, Construction Division, USAFIME, 12 Nov 43, Records of the Engineer Officer, AMET, File 322, Box 746, RG 332, NA; History of Africa–Middle East Theater, sec. II, vol. 3, p. 11.

CHAPTER 2

Prelude to a Mission: War and Diplomacy, 1973–1979

In the context of the peace treaty between Egypt and Israel, the United States is prepared to provide extraordinary assistance in order to help Israel in relocation of Sinai military facilities to the Negev.

Secretary of Defense Harold Brown, 19 March 1979[1]

On 6 October 1973, the armed forces of Egypt and Syria launched surprise attacks against Israel. Carefully timed and coordinated, the blows took place on Yom Kippur, the holiest day of the Jewish year. Initially, both offensives succeeded. In the north the Syrians sent the Israelis reeling from the Golan Heights. In the south the Egyptians crossed the Suez Canal and penetrated deep into the Sinai peninsula. Within two weeks the Israelis, aided by massive infusions of American supplies and equipment, turned the tide on both fronts. The cease-fire agreements of 22 October in the north and 24 October in the south found the Israel Defense Force shaken but in control and the borders of 5 October virtually intact.[2]

The 1973 war broke the political and military deadlock in the Middle East. Arab forces fought far better than they had in any earlier conflict and showed a mastery of electronic warfare that portended heavy Israeli casualties in any future conflict. The war forced Israel to reassess Arab military capabilities and to calculate anew the costs of continuing the occupation of the Sinai peninsula.[3] By the same token, the Arab successes did a great deal to improve self-esteem among Israel's enemies, particularly Egypt, whose army had done extremely well in the first days of the war.[4] "There is no doubt," Israeli President and historian Chaim Herzog concluded, "that the initial Arab success in the Yom Kippur War satisfied their feelings of national honour."[5] In addition to altering the military balance, the war led to a vastly increased commitment by the United States to peace and stability in the Middle East. The new American involvement began with the wartime airlift of materiel to Israel. The American presence grew after the war, and the

ensuing oil embargo imposed by Arab members of the Organization of Petroleum Exporting Nations (OPEC) showed the new military and economic power of the Arab nations. After 1973 "triangular diplomacy," with the United States as intermediary between Israel and the Arab nations—particularly Egypt—became a fact of regional negotiations.[6]

In the years that followed the war, the United States pursued several objectives in the Middle East. Foremost was avoidance of war, which had the potential to grow into a major regional conflict and lead to Soviet involvement or even a confrontation between the superpowers. Other U.S. goals included containment of Soviet influence, protection of access to oil, and assurance of Israel's survival. To these concerns, all of which existed in one form or another prior to 1973, was added an important new purpose: the improvement of relations and economic ties with Arab states, most notably Saudi Arabia and Egypt.[7]

Egypt's interests coincided with this American goal. President Anwar Sadat was dissatisfied with Soviet support during the October war. Moreover, Egypt viewed improved relations with the United States as a way to pressure Israel while achieving a more balanced relationship with the superpowers. In 1974 Sadat restored diplomatic relations with the United States, ending a seven-year break. Egypt also accepted American involvement in disengagement talks with Israel. Although frustrated in its efforts to obtain American arms, Egypt maintained good relations with the United States throughout the presidencies of Richard Nixon and Gerald Ford.[8]

American diplomacy in the Middle East during those administrations was marked by the "shuttle diplomacy" of Secretary of State Henry Kissinger. Flying from one Arab capital to another as well as to Israel and home for consultations, Kissinger sought a way to convene a general peace conference while curbing Soviet influence. His efforts to create a basis for agreement between the Arab states, Israel, and the Palestinians as well as the superpowers never reached fruition.[9] Still, his diplomacy had two major long-lasting results. His overtures marked the beginning of a persistent American quest for an Arab-Israeli settlement. In time, even many Israelis came to appreciate this commitment by the United States, especially the economic and military help that came with it. In addition, Kissinger convinced two Arab nations—Egypt and Jordan—to sit at the table with Israel. Their unprecedented December 1973 meeting in Geneva, Switzerland, began the long process leading to a peace treaty between Egypt and Israel.[10]

So, when Democratic President Jimmy Carter took office in January 1977, certain breakthroughs had already been made. Some direct talks had taken place, and disengagement agreements had been reached on both fronts. The Carter administration, with a substantial interest in the Middle East rooted partly in the president's personal commitment, had a springboard for further efforts toward peace. Carter's approach to the Arab-Israeli conflict, based largely on a Brookings Institution report of 1975, differed from that of Nixon and Ford. The new president abandoned step-by-step solutions through shuttle diplomacy. Instead, he sought a way to negotiate a comprehensive peace agreement. The Carter administration felt that a bilateral accord between Egypt and Israel that ignored Palestinian aspirations would not be in the best interest of the United States. Such a deal would anger Saudi Arabia and could even provoke another Arab oil embargo. Moreover, the Americans still considered a regional peace to be attainable through a general conference in Geneva. Carter said publicly that such an agreement should include a Palestinian "entity" on the West Bank of the Jordan River, in the area Israel called Judea and Samaria, seriously dampening any Israeli enthusiasm for such a conference.[11]

In any case, the United States was under considerable pressure to reduce tensions and stabilize conditions in the Middle East. When the Shah's regime in Iran fell apart early in 1979 and gave way to a fundamentalist Muslim government, the United States lost a major ally. Moreover, the Soviet Union and Cuba were making inroads in Africa, notably in Ethiopia and the former Portuguese colonies of Mozambique and Angola. This situation demanded action that would end Egypt's confrontation with Israel and enable Egypt to deal with the threat of Soviet expansion from the south.[12]

From almost the outset, the Carter administration's interest in the Middle East was marked by a deep mutual affection and respect between Carter and Sadat. They first met in Washington in April 1977. According to Sadat, Carter was "a man who understands what I want, a man impelled by the power of religious faith and lofty values—a farmer like me."[13] Carter too wrote warmly of their understanding: "There was an easy and natural friendship between us from the first moment I knew Anwar Sadat. We trusted each other."[14]

This harmony did not keep Sadat from surprising Carter along with the rest of the world when he offered to go to Jerusalem. The Egyptian president's announcement astonished the People's Assembly in Cairo on 9 November 1977. Eleven days later he stood before Prime Minister Menachem Begin and the Israeli parliament, called the Knesset, telling Israel and the world he wanted

peace. Sadat's astounding gesture, which shifted the focus of negotiations from an overall settlement to bilateral talks between Egypt and Israel, drew mixed responses. Egyptians and Israelis alike welcomed his daring act. The Western democracies expressed pleasure and optimism regarding a settlement. Sadat's Arab allies, on the other hand, were appalled. Syria severed relations with Egypt, and leaders in many countries of the Middle East called for Sadat's assassination.[15]

Sadat said the trip, which Carter called "among the most dramatic events of modern history," emanated from the need for a new approach. Impatient with protocol and diplomacy, he sought a way around the formalities and procedural preoccupations that fettered diplomacy. When he first considered Jerusalem, he saw it as a location for a meeting of potential participants in a Geneva conference. A meeting there, he initially believed, could prepare for the more formal conference. Such a gathering could also make clear to Israel the prerequisites for any serious negotiations: withdrawal from occupied territories and acceptance of a Palestinian state. Then Sadat rejected this approach in favor of the visit that startled the world and redirected the focus of discussions from a broad framework to bilateral talks.[16] Begin's biographer called Sadat's grand gesture "a typical broad dramatic stroke."[17]

Several other factors underlay Sadat's decision. Troubles at home during 1977, notably the January riots after reduction of food price subsidies and the restiveness of fundamentalist Muslim groups, may have convinced him that the survival of his regime was at stake. A peace agreement that returned the Sinai to Egypt and brought new Western investment might save the situation. A Geneva conference promised to drag on for months without substantive results. Sadat's primary concerns included maintaining his presidency and preserving Egypt's sovereignty and national honor. The country had already spilled much blood and spent heavily on the Palestinian cause and was at best ambivalent toward continuing such outlays. In this framework the return of the Sinai took primacy. Sadat was willing to risk ostracism within the Arab community to attain it.[18]

Kissinger claimed that it was Arab nature "to believe that some epic event or personality will miraculously transcend the humdrum mess that is the usual human condition."[19] If such a tendency existed, Sadat's boldness and impatience surely reflected it. However, he thought carefully about the risks before taking action.[20] According to Kissinger, Sadat "understood that a heroic gesture can create a new reality."[21] He had acted in a grand and unpredictable manner in the past, expelling thousands of Soviet advisers

and technicians from Egypt in 1972 and reopening the Suez Canal three years later.[22] As ABC reporter Doreen Kays observed, Sadat "was an Arab leader with a history for surprises."[23] He also knew from experience the possibilities of such acts. In 1956, although a member of the Egyptian Revolutionary Command Council, he was surprised by President Gamal Abdel Nasser's nationalization of the Suez Canal. Done in retaliation for the denial of financial aid for the great dam at Aswan by the United States and the International Bank, the seizure electrified Egypt and stunned the world. Sadat noted admiringly in his autobiography that this grand and stirring act made Nasser "an Egyptian mythical hero."[24]

But there was more behind the Jerusalem trip. Of all the Arab nations, Egypt had by far the most in common with Israel. The two countries shared a British colonial background—Sadat and Begin both had been involved in armed plots against British rule—and had made halting and unsuccessful efforts at accommodation.[25] So strong was this commonality that Israeli Lt. Gen. David Elazar reflected in 1972 that it was unfortunate that Israel and Egypt did not exist in isolation. "Left to our own devices," Elazar said, "we would have solved the points of contention between us easily and long ago."[26] Just two months before Sadat went to Jerusalem, both nations had secretly probed the extent of this shared interest. Foreign Minister Moshe Dayan had met with an Egyptian representative, Dr. Hassan Tuhami, in Rabat, Morocco, and explored the possibilities for a peace based on the return of the Sinai to Egypt. Other issues raised at their meeting included Palestinian rights and the status of territories occupied by Israel after the Six-Day War in 1967.[27]

Not only for its grandeur did Sadat's gesture please the Israelis. Israel lacked enthusiasm for multinational peace talks, preferring separate discussions with each of its neighbors. Egyptian Foreign Minister Ismail Fahmy, who resigned in protest when Sadat announced his willingness to visit Jerusalem, thought Begin saw Sadat's overture as a chance to move away from a general conference and into talks with Egypt alone. Later, Carter came to a similar conclusion. He thought Israel sought a separate peace with Egypt that assured retention of the West Bank and Gaza while avoiding talks with Jordan and the Palestinians. Sadat's gesture also satisfied Begin for reasons quite unrelated to Israeli foreign policy. After almost thirty years in opposition, Begin's Herut party controlled a governing coalition. He had been in office barely a year when Sadat arrived in Jerusalem. The visit greatly enhanced the Begin government's public acceptance and support.[28]

The only immediately apparent concrete result of Sadat's conciliatory journey was a series of military negotiations that began in Cairo in January 1978. The talks between the Israeli team led by Minister of Defense Ezer Weizmann and Egyptian General Muhammad Abd al-Ghani al-Gamassi clarified Israeli concerns regarding the Sinai. Israel had never given up an established settlement and insisted on keeping the towns in the northeastern corner of the Sinai. Israel also had a network of military bases on the peninsula. These provided a strong defense and allowed dispersal of combat aircraft over an area far larger than what historian Howard Sachar called "the narrow, and vulnerable, wedge of integral Israel."[29] Egypt was just as adamant: the settlements and bases had to go. For Sadat the issue was sovereignty, and he would accept no Israeli presence in the Sinai. The positions of both governments made a deadlock seem inevitable.

Negotiations foundered through the first half of 1978. Then Carter asked Begin and Sadat to meet him at Camp David. This invitation reflected the strong American commitment to a Middle East solution but was not born of any optimism on Carter's part. He thought success unlikely, but he knew no better way to restore momentum to the peace talks. Much to the surprise of nearly all observers, Begin and Sadat accepted the invitation for a meeting in early September.[30]

At the presidential retreat in Maryland's Catoctin Mountains, the issues split into those pertaining to a general regional peace and others relating to a treaty between Egypt and Israel. Strenuous and frustrating negotiations resolved only the latter questions. After a week of talks, the Israeli refusal to remove the Sinai settlements seemed to create a deadlock. Begin finally yielded. In the final analysis, he lacked the emotional tie to the Sinai that would make him resist even consideration of giving up the territories that he called Judea and Samaria. The Sinai was not part of *Eretz Yisrael*, the traditional land of Israel. So he agreed to leave the peninsula, convinced partly by Carter's warning that he would end the talks and publicly blame Begin for their failure. On the other hand, Secretary of Defense Harold Brown offered an incentive: help in building large Negev air bases as replacements for the Sinai fields. He also promised to have the new facilities completed before Israel finished its evacuation of the Sinai.[31]

The offer to help with base construction was a strong inducement to make an otherwise unpalatable concession. Israel considered the Sinai bases, which were built after the capture of the peninsula during the 1967 war, very important. The Israelis relied heavily on air power, and the Sinai gave Israel strategic depth. The

Egyptian Air Force, whose planes had once been at El Arish only seven minutes from Tel Aviv, was now more than twenty minutes away on the west bank of the Suez Canal. The Israeli Air Force, on the other hand, dispersed its facilities throughout the region, which was nearly three times as large as Israel proper. The Sinai gave Israel great freedom of action and vast tracts for training and maneuver. Already considered by many the best air force in the world, the Israeli Air Force prized the wide open spaces of the Sinai.[32]

Weizmann, who was a former air force pilot, repeatedly stressed the importance of the bases to Israeli security. General Mordechai Gur, chief of staff of the Israel Defense Force at the time of Camp David, agreed with Weizmann, who saw great risks in concentrating the air force's planes in fewer bases. Weizmann was willing to give up Sharm el Sheikh, which controlled waterborne access to the Israeli port of Eilat. He also was willing to give up large chunks of territory, but not the airfields.[33] "If we give them up," he commented half in jest, "we shall have to buy an aircraft carrier."[34]

The Israelis were especially concerned about the two largest bases. Eitam in the northern Sinai provided in-depth defense against an attack from Egypt. Etzion to the south protected navigation through the Straits of Tiran to Eilat and covered Israel's southern flank against attack from both Egypt and Saudi Arabia. The base may have had other uses as well: one newspaper claimed that the Israeli planes that destroyed the Iraqi nuclear plant at Osirak in June 1981 came from Etzion.[35] Neither base was ever completed, but some experts considered Etzion to be "the finest tactical fighter base in the world."[36] Weizmann decided that Israel would have to give up the bases to get a peace agreement. At Camp David he asked Brown about American aid in building replacements, hoping to commit the United States to construction prior to withdrawal and thereby to shift the cost of relocation from the overburdened Israeli economy. Brown readily agreed to the possibility, prompting Weizmann to conclude that the American had anticipated the request. Thereafter, Begin saw the choice as either the airfields or peace. He opted for the latter.[37]

Before leaving the presidential retreat, Begin and Sadat signed two documents. The "Framework for the Conclusion of a Peace Treaty between Egypt and Israel" of 17 September 1978 followed the concept examined by Tuhami and Dayan in Rabat. It provided for return of the Sinai to Egypt and withdrawal of all Israeli forces and settlements. It limited Egyptian use of abandoned Israeli airfields to civilian purposes and guaranteed passage to Eilat and

Camp David accords. President Sadat, President Carter, and Prime Minister Begin signing the agreement.

through the Suez Canal for Israeli ships. This document became the basis for the treaty signed in Washington on 26 March 1979. The other agreement concerned a general regional peace. The "Framework for Peace in the Middle East" expressed the interests of both nations in "a just, comprehensive, and durable settlement of the Middle East conflict." It also left the issues of Palestinian rights and the Israeli occupation of the West Bank, Gaza, and the Golan Heights open for negotiations.[38] With none of the key issues regarding the Palestinians and the territories decided, the overall agreement was extremely ambiguous. So the Camp David outcome amounted to a separate peace between Israel and Egypt, a result that did not get to the crux of the regional problem and that had not been sought by the United States or Egypt.[39]

The frameworks made no reference to American pledges of aid to either party. In fact, as Carter pointed out, few promises of any kind were made. Carter agreed only "to visit Egypt and to consult with Israel on how we might help with moving the Sinai airfields."[40] Even this cautious step showed Carter's awareness of the

importance of the bases. Brown knew that the Israelis relied heavily on their air force for defense. In a letter to Weizmann later in September, he spelled out the American understanding of the crucial importance of Israeli air power and the promise to discuss help with relocation. Brown understood "the special urgency and priority" Israel attached to preparing new bases "in light of its conviction that it cannot safely leave the Sinai air bases until the new ones are operational." He suggested talks on their scope and cost and on American aid that might facilitate construction. The president, Brown noted, stood ready to seek congressional authority for whatever aid the United States might offer.[41]

Camp David evoked a variety of responses. In the United States and Western Europe, public opinion generally supported the accords. Begin and Sadat shared the Nobel Peace Prize. Howard Sachar called the agreement "a good arrangement for both sides." Egypt obtained the territory it had lost in 1967; Israel won a reassuring transition period during which it could test Egyptian intentions prior to withdrawal as well as peace with its most formidable military foe. The Arab response differed dramatically from the Western reaction. The anger triggered by Sadat's trip to Jerusalem continued unabated. Egypt under Nasser had been leader of the Arab world; now the country was being vilified. At a hastily called conference in Baghdad, Iraq, leaders of most Arab states voiced their outrage, while the oil exporters of the Persian Gulf decided to cut off their once substantial financial aid to Egypt. Arab rejection shocked and wounded Sadat.[42]

The separation of Egypt from the Arab mainstream became an enduring feature of regional life. In 1983, four years after the treaty was concluded, Israel's neighbors remained adamant. Arab delegates at a conference of nonaligned nations in India won approval from representatives of 101 nations for a resolution condemning the Camp David agreement. Nowhere in the Arab world was the sense of betrayal and outrage greater than in Syria. The Syrians needed unremitting Egyptian pressure on Israel, which had occupied the Golan Heights after the 1967 war, ending 450 years of Damascus-based control. They feared that the end of Egyptian hostility might tempt Israel to solidify its hold on the Golan Heights. Events ultimately justified this concern: Israel annexed the heights in December 1981. Thereafter, Syrian opposition to any accommodation with the Israelis and to the Camp David accords only grew more intransigent.[43]

In Egypt the agreement won wide acclaim, albeit with significant exceptions. Some key officials resigned in protest, among them Fahmy's successor in the foreign ministry, Ibrahim Kamil. The ac-

cord with Israel also contributed to the alienation of fundamentalist Muslims, some of whom assassinated Sadat in October 1981.[44]

The agreement even received mixed reviews in Israel, which seemed to some the most obvious beneficiary. After all, the accords brought the promise of peace with its most powerful neighbor. However, Israel's argumentative and contentious political culture made unanimity unlikely in any case. Opponents included the religious right—just as it did in Egypt—and even members of Prime Minister Begin's governing coalition. Public relations adviser Shmuel Katz opposed even the implicit recognition of Palestinian political rights in the "Framework for Peace in the Middle East" and the unprecedented abandonment of the settlements on the Sinai coast. Foreign Minister Yitzhak Shamir, Defense Minister Ariel Sharon, and Chairman Moshe Arens of the Knesset Committee on Security and Foreign Relations all opposed the agreement, particularly if it meant giving up settlements.[45] Only in the democratic West did the accords win nearly universal approval.

The agreement set the stage for new developments in relations between the United States and Israel. After the signing, high-level American officials for the first time referred to Israel as an ally. This new closeness, which ultimately led to the 1981 memorandum on strategic cooperation, was underscored in 1979 by the Sixth Fleet's call at the port of Haifa. Also in the same year came a new kind of American aid, the construction of two new air bases for the Israeli Air Force.[46]

Notes

1. Ltr, Brown to Minister of Defense Ezer Weizmann, 19 Mar 79, METG files, OASD (ISA).

2. For a concise narrative of the October war, see Herzog, *The Arab-Israeli Wars*, pp. 227–323. Some excellent and more detailed accounts of the war include the following: Avraham Adan, *On the Banks of the Suez: An Israeli General's Personal Account of the Yom Kippur War* (San Rafael, Calif.: Presidio Press, 1980); Hanoch Bartov, *Dado: 48 Years and 20 Days*, trans. Ina Friedman (Tel Aviv: *Ma'ariv* Book Guild, 1981); Chaim Herzog, *The War of Atonement, October 1973* (Boston, Mass.: Little, Brown & Co., 1975); Edgar O'Ballance, *No Victor, No Vanquished: The Yom Kippur War* (San Rafael, Calif.: Presidio Press, 1978); Saad el Shazly, *The Crossing of the Suez* (San Francisco, Calif.: American Mideast Research, 1980).

3. Howard M. Sachar, *A History of Israel: From the Rise of Zionism to Our Time* (New York: Alfred A. Knopf, 1976), p. 826; Herzog, *The Arab-Israeli Wars*, p. 321; Ismail Fahmy, *Negotiating for Peace in the Middle East* (Baltimore, Md.: Johns Hopkins University Press, 1983), p. 34; Henry Kissinger, *Years of Upheaval* (Boston: Little, Brown & Co., 1982), pp. 460–61, 476.

4. Anwar el Sadat, *In Search of Identity: An Autobiography* (New York: Harper and Row, 1977), pp. 249, 270. It is difficult to overemphasize the importance of the initial triumphs to Egyptian national pride and self-esteem. For some idea of the influence of these victories, see *The Book of the International Symposium on the 1973 October War, Cairo 28–31 October 1975* [Cairo: Ministry of War, 1976], pp. 5, 10, 31, 41, 43, and passim.

5. Herzog, *The Arab-Israeli Wars*, p. 323.

6. Fahmy, *Negotiating for Peace in the Middle East*, p. 34; Sachar, *A History of Israel*, p. 818; Kissinger, *Years of Upheaval*, pp. 612–13.

7. Patrick Seale, "The Egypt-Israel Treaty and Its Implications," *World Today* 35 (May 1979): 189; Paul Jabber, "U.S. Interests and Regional Security in the Middle East," *Daedalus* 109 (Fall 1980): 69; Kissinger, *Years of Upheaval*, pp. 615–16, 644.

8. Fahmy, *Negotiating for Peace in the Middle East*, pp. 152, 155–57; Herzog, *The Arab-Israeli Wars*, p. 321; Sadat, *In Search of Identity*, pp. 291–94; Kissinger, *Years of Upheaval*, pp. 649, 747–48.

9. Kissinger, *Years of Upheaval*, pp. 645–46; Sadat, *In Search of Identity*, pp. 294–96; Fahmy, *Negotiating for Peace in the Middle East*, pp. 3, 214.

10. David Pollock, *The Politics of Pressure: American Arms and Israeli Policy Since the Six-Day War*, Contributions in Political Science, no. 79 (Westport, Conn.: Greenwood Press, 1982), pp. 166–67; Kissinger, *Years of Upheaval*, pp. 797–98.

11. *Toward Peace in the Middle East: Report of a Study Group* (Washington, D.C.: The Brookings Institution, 1975), passim; Jimmy Carter, *Keeping Faith: Memoirs of a President* (New York: Bantam Books, 1982), pp. 292–95; Fahmy, *Negotiating for Peace in the Middle East*, pp. 189–90, 199; Howard M. Sachar, *Egypt and Israel* (New York: Richard Marek Publishers, 1981), p. 262; Melvin A. Friedlander, *Sadat and Begin: The Domestic Politics of Peacemaking* (Boulder, Colo.: Westview Press, 1983), pp. 51, 111; Robert O. Freedman, "Moscow, Jerusalem, and Washington in the Begin Era," in Robert O. Freedman, ed., *Israel in the Begin Era* (New York: Praeger Publishers, 1982), p. 161.

12. Seale, "The Egypt-Israel Treaty," pp. 190–91.

13. Sadat, *In Search of Identity*, p. 302.

14. Carter, *Keeping Faith*, p. 284.

15. Fahmy, *Negotiating for Peace in the Middle East*, pp. 243, 297; Sachar, *Egypt and Israel*, pp. 266–67; Carter, *Keeping Faith*, p. 309.

16. Carter, *Keeping Faith*, p. 297; Sadat, *In Search of Identity*, pp. 303–04, 306–07.

17. Eric Silver, *Begin: The Haunted Prophet* (New York: Random House, 1984), p. 174.

18. Friedlander, *Sadat and Begin*, pp. 31, 43–44, 70, 306; Doreen Kays, *Frogs and Scorpions: Egypt, Sadat and the Media* (London: Frederick Muller Limited, 1984), p. 83.

19. Kissinger, *Years of Upheaval*, p. 617.

20. Carter, *Keeping Faith*, p. 282; Fahmy, *Negotiating for Peace in the Middle East*, p. 280; Mohamed Heikal, *Autumn of Fury: The Assassination of Sadat* (New York: Random House, 1983), p. 64.

21. Kissinger, *Years of Upheaval*, p. 647.

22. Sachar, *Israel and Egypt*, p. 263.

23. Kays, *Frogs and Scorpions*, p. 10.

24. Sadat, *In Search of Identity*, pp. 142–43.

25. Sachar, *Egypt and Israel*, pp. 3, 35–36, 40–41, 78–79; Felipe Fernandez-Armesto, *Sadat and His Statecraft* (London: The Kensal Press, 1982), p. 150; Donald Neff, *Warriors for Jerusalem: The Six Days That Changed the Middle East* (New York: Linden Press/Simon and Schuster, 1984), pp. 338–39.

26. Bartov, *Dado*, p. 155.

27. Moshe Dayan, *Breakthrough: A Personal Account of the Egypt-Israel Peace Negotiations* (New York: Alfred A. Knopf, 1981), pp. 42–54.

28. Fahmy, *Negotiating for Peace in the Middle East*, p. 251; Carter, *Keeping Faith*, p. 409; Efram Torgovnik, "Likud 1977–1981: The Consolidation of Power," in Freedman, *Israel in the Begin Era*, pp. 20–21.

29. Sachar, *Egypt and Israel*, pp. 272–73.

30. Ibid., pp. 276–77; Carter, *Keeping Faith*, p. 316; Seale, "The Egypt-Israel Treaty," pp. 189–90.

31. Carter, *Keeping Faith*, pp. 394–96; Sachar, *Egypt and Israel*, p. 281. For insightful comments on the Israeli negotiating style, see Kissinger, *Years of Upheaval*, p. 539; Silver, *Begin*, p. 161.

32. Sachar, *A History of Israel*, p. 639; T. R. Milton, "Mideast Survey: Problems and Prospects," *Air Force Magazine* 63 (August 1980): 71; Randolph S. Churchill and Winston S. Churchill, *The Six-Day War* (Boston: Houghton Mifflin, 1967), pp. 89, 194; Edward N. Luttwak and Daniel Horowitz, *The Israeli Army 1948–1973* (Cambridge, Mass.: Abt Books, 1983), p. 221; Interv (telephone), author with Col Haywood S. Hansell III, Jun 79, Washington, D.C.

33. Ezer Weizmann, *The Battle for Peace* (New York: Bantam Books, 1981), pp. 90, 96, 101, 104, 107, 139, 144, 170, 175, 181,183, 322.

34. Ibid., p. 175.

35. *Washington Post*, 10 Jun 81.

36. *Time*, 30 Mar 81.

37. Weizmann, *Battle for Peace*, pp. 371–72.

38. Friedlander, *Sadat and Begin*, p. 311; Sachar, *Egypt and Israel*, p. 282. For copies of the frameworks, see Dayan, *Breakthrough*, pp. 321–26.

39. Pollock, *Politics of Pressure*, p. 226.

40. Carter, *Keeping Faith*, p. 402.

41. Ltr, Brown to Weizmann, 28 Sep 78, METG files, OASD (ISA); Hansell interview.

42. Sachar, *Egypt and Israel*, pp. 282, 291; Friedlander, *Sadat and Begin*, p. 231; Freedman, "Moscow, Jerusalem, and Washington," pp. 173–76; Fernandez-

Armesto, *Sadat and His Statecraft*, pp. 134–35, 158–59; Heikal, *Autumn of Fury*, p. 174.

43. The *Middle East*, no. 102 (April 1983): 14; Seale, "The Egypt-Israel Treaty," p. 194; Fahmy, *Negotiating for Peace in the Middle East*, p. 111; *Washington Post*, 14 Dec 81 and 11 Dec 83; Stanley Reed, "Syria's Assad: His Power and His Plan," *New York Times Magazine*, 19 Feb 84, pp. 59, 64; *Newsview* 4 (8 November 1983): 16.

44. Sachar, *Egypt and Israel*, p. 290; Heikal, *Autumn of Fury*, pp. 169, 210; Fahmy, *Negotiating for Peace in the Middle East*, p. 291.

45. Freedman, "Moscow, Jerusalem, and Washington," p. 175; Shmuel Katz, *The Hollow Peace* (Jerusalem: Dvir and the *Jerusalem Post*, 1981), pp. 270, 280, 284; Bernard Avishai, "The Victory of the New Israel," *New York Review of Books* 28 (13 August 1981): 49; *International Herald Tribune*, 3 Sep 80; *Newsweek*, 16 Nov 81; Roger Rosenblatt, "From the Battlefield of Beliefs," *New York Times Book Review* 88 (6 November 1983): 1.

46. Pollock, *Politics of Pressure*, pp. 284-85.

CHAPTER 3

Planning for the Mission Autumn 1978

By the time April came around, when they finally signed the thing, . . . we had brainstormed that thing so much that I knew exactly what I wanted done.

Maj. Gen. James A. Johnson [1]

I think the Corps is probably the only organization in the whole damn world that could even do this.

Oswald I. Hewitt [2]

To the Corps of Engineers Camp David meant the possibility of a new mission. Soon after the two frameworks were signed, the Corps began planning for a part in building replacements for Israel's major Sinai airfields. On 22 September 1978, six days before Brown formally told Weizmann of American willingness to discuss aid, Assistant Secretary of Defense for International Security Affairs David E. McGiffert called Deputy Chief of Engineers Maj. Gen. Bates C. Burnell to the Pentagon. McGiffert wanted the Corps and the Air Force to provide lists of people and skills for a jointly staffed survey team. This group would visit Israel, examine potential sites, and explore the characteristics of and problems related to a construction mission.[3]

Burnell set up an informal planning group. His meeting with McGiffert had been on a Friday evening. On Saturday morning he met with two men who would be instrumental in developing any military construction project. Lee S. Garrett, the chief of the engineering division in the Military Programs Directorate, had been with the Corps for twenty-eight years and was a veteran of earlier missile construction programs. Frederick B. McNeely, chief of the construction division, had a background that included work on military projects from Greenland to Okinawa. The three knew only that whatever they might do in Israel would have to be completed

quickly. Burnell expected the work to involve two replacement bases. He thought they should consider contracting approaches and selection of a design firm. They discussed the possibilities but, with more meetings soon to take place in the Pentagon, could do little except note likely prospects and collect information. The office had almost no data on Israel, so McNeely sent an engineer to the Pentagon for maps. Garrett started thinking about a preliminary cost estimate. Within a week the Office of the Chief of Engineers also took the first steps toward contracting parts of the job by setting up selection boards to consider firms for site investigations and design work.[4]

A few days later the Corps took more formal action toward creation of a planning group. Lt. Gen. John W. Morris, the chief of engineers, looking for an experienced and capable colonel who might stay with the project and become its manager, brought in Col. James E. Hays to lead the planning effort. Thinking that he was going to the chief's office for a quick consultation, Hays left Champaign, Illinois, where he commanded the Corps' Construction Engineering Research Laboratory, with only "a change of socks . . . and a toilet kit." The other members of the task force—Cleon Moore, a construction expert from Mobile District, and T. R. Wathen, an engineer from San Francisco District—had arrived already. Capt. Robin R. Cababa, who served as executive officer and administrator, completed the group. Morris told Hays to assume that the Corps would build two airfields in the Negev Desert. The bases would have to be operational in three years. Morris wanted alternative concepts for government management and contractor execution of the mission, keeping in mind that only a minimum number of Corps of Engineers people could be involved. He placed the resources of his headquarters at Hays' disposal.[5]

The staff welcomed Hays, whose experience told him that on crash programs "people break down the bureaucratic walls, and the red tape gets rolled up and snipped off in a lot of areas." This project proved no exception: "Any time I called on people, they stopped what they were doing practically, and gave me what I needed. And as a result, it went a lot better than I think I had a right to expect."[6] Members of the military programs staff told Hays of the work already in progress. Donald W. Butler, deputy chief of Garrett's engineering division and the division's coordinator for this effort, reported that his office already had devised a preliminary schedule and estimated costs. McNeely, whose construction division had set up the selection boards, was represented on the project by Carl A. Damico. The Office of Counsel had also been ac-

tive; attorney M. Randall Head had been working with McGiffert's office in the Pentagon on enabling legislation.[7]

After a quick trip to Illinois for sartorial reinforcements, Hays spent his first week arranging for his group's operation. He reported directly to Maj. Gen. William R. Wray, who headed the Military Programs Directorate. All correspondence relating to the planning effort passed through Hays' office, which became known as the Corps of Engineers Near East Group or CENEG. The name screened from public view the specific mission being considered. Circumstances demanded such obscurity because the program was a long way from realization. Still to come were the actual peace treaty, the U.S. commitment to build the bases, and congressional approval of funds.[8]

During his short stay in Washington, Hays worked on two phases of the project plans. With the Air Force and McGiffert's office, he prepared for the survey team's trip to Israel. The team members had already been chosen, with Hays the senior man for the Corps of Engineers. Within the Office of the Chief of Engineers, he and the task force looked at a variety of contractual approaches to construction.[9]

One plan for the operation preceded the deliberations of the Hays task force. Garrett's office produced a framework known as TABII, or Two Air Bases in Israel. This proposal called for a main office staffed jointly by Corps personnel and a management contractor. Two subordinate offices, one at each site, would direct two construction consortia, each of which would include subcontractors for support, site investigation, design, procurement, and construction.[10]

Hays' group drew heavily on the knowledge of the headquarters staff in their investigation of contracting options. They looked at the experience of the Corps, notably the North African air base construction program of the 1950s, the ballistic missile facilities in the 1950s and 1960s, and more recent work for the National Aeronautics and Space Administration. They also considered possibilities based on the current organization. This structure consisted of fourteen divisions, each managing work in a large region. Twelve of these divisions were divided into two to four districts. Within the districts, area offices and project offices directly supervised specific projects. Heading this organization was the Office of the Chief of Engineers, which occasionally managed a program directly but usually contented itself with policy guidance. In 1978 this structure included three overseas divisions. Pacific Ocean Division, with responsibilities ranging from Hawaii to Japan and Korea, was remote from any projected mission in Israel. Middle East Division, which managed the construction program in Saudi Arabia from Riyadh

with a support staff called Middle East Division–Rear at Berryville, Virginia, could not participate because of the potential political effect of such a connection on relations with the Saudi government. Europe Division represented another possibility, as did creation of a new division. The group also considered setting up an office under an existing division.[11]

In addition to looking into organizational options, Hays and his group made assumptions that informed the development of specific proposals. First was the need to minimize the number of U.S. government people in Israel. They also postulated completion of work within three years and execution of design and construction by the United States. In addition, they shared McGiffert's understanding that design would involve replication of existing airfields based on current Israeli standards.[12]

With these guidelines, the task force drew up four concepts for the organization. All of the proposals called for a headquarters in Israel, with an executive office and a construction division. The office also would contain small cadres in other areas, including legal support, finance and accounting, administration, procurement, and personnel. Additional help in these fields would come from the permanent Corps organization. None of the four contained a separate engineering or design staff. Each followed the example of Middle East Division and relegated the design element to a stateside support activity, in this case a subordinate office that was usually called CENEG-Rear.[13]

The proposals that emerged in the middle of October reflected a fundamental uncertainty regarding the nature of the mission. The United States had made no formal commitment to any specific task, so planning remained hypothetical. Technical clarification regarding the job ahead awaited the removal of political ambiguities. Even that the mission would involve building two bases remained an assumption. The Israelis planned to remove a network of training facilities, fortifications, and depots, and the Israeli government wanted as much American help as it could get. With the precise extent of American aid undetermined, the preliminary schemes had to anticipate major U.S. involvement. Hence, one of the concepts included construction managers for two airfields and for "Army projects." Another provided for the even more amorphous category of "other projects."

The main differences in the proposals involved the number and type of contracts to be managed. The plan known as "concept A" called for executing all work through a single consortium of construction management contractors. This conglomerate would perform site investigations and surveys and prepare preliminary

design concepts. It also would direct three groups of contractors. One would provide support services, another would do the horizontal construction—roads, runways, utility lines, and the like—at both sites, and the third would erect all buildings. This scheme presupposed a strong similarity in the work at both sites. Moreover, of the four concepts, it alone did not specify a cost-type contract in which the contractor received reimbursement for all legitimate expenses and a preestablished fee, either fixed or based on specific standards and incentives.

The task force cited a number of advantages in concept A. Perhaps the most obvious was the small span of control required of Corps management with the work handled through a single contractor group. Other positive features involved rapid start of preliminary design and actual construction. The Hays group also saw disadvantages. This approach placed many layers of contractor management between the Corps and actual designers and constructors. So it reduced chances to discover and fix problems that might cause delays. Finally, it would cost more to manage a program through a management consortium than to do so directly.

The other three proposals called for cost-type arrangements with contractor joint ventures. They had in common the basic premise of any cost-plus contract: too little knowledge of what lay ahead to establish a clear scope of work on which a contractor could bid and make a commitment. The proposals also shared other assumptions, notably the need to provide operational bases before relocating Israeli Air Force units from their Sinai bases. All of them made possible a "fast-track" operation, with concurrent design, procurement, and construction. Consequently, all anticipated increased costs: fast-track work required intensive management and increased the chance of error. On the positive side, all three offered good opportunities for comparing plans, procedures, and costs for the two bases.

The first of these three proposals, dubbed concept B by the task force, called for a cost-plus-fixed-fee contract with a consortium for construction management. This group would handle the complex activities involved in base construction—design, procurement, mobilization, and support, as well as construction itself. Site investigation would begin immediately under a separate contract and revert to the consortium after it was established. Control by a single construction manager streamlined management. This plan also presented the greatest problem: dependence on a single manager increased the chance of failure. If the contractor backed out for some reason, the Corps would be left without an on-site organization to carry out the work.

Concept C, involving three prime contractors, resembled the plan that had been developed in Garrett's office. Two joint ventures with cost-plus contracts would design and build one base each. The third consortium would support the Corps in managing the construction organizations. Like concept B, this scheme provided initially for separate site investigation contracts. These could be reassigned later to a prime construction contractor. The task force thought this plan offered the best possibility for correcting design errors during construction. On the debit side, it consigned direct management of the work to the contractors and offered only minimum opportunities for the exchange of experience between the sites.

The fourth proposal, labeled concept D, started with one cost-type contract for managing design and construction at both sites. The plan included at least four additional prime contracts for design, construction, and support at each base. More cumbersome and costly than the others, this scheme also required more than twice as many government employees in Israel.

Project Staffing

Concept	*Israel Office (construction division)*	*Support Office*
A	83 (46)	13
B	65 (24)	13
C	78 (33)	13
D	176 (76)	54

However, it maximized control, assured higher quality work, and enhanced chances of meeting a very tight schedule.

While Hays evaluated these options, Weizmann and Dayan came to Washington for talks on moving from the Camp David framework to an actual treaty. Weizmann also discussed American aid for withdrawal from the Sinai with a Department of Defense delegation led by Robert J. Murray, McGiffert's deputy for Near Eastern, African, and South Asian affairs. Col. Haywood S. Hansell III, whose Middle East Task Group within Murray's office coordinated Department of Defense activities regarding the bases, accompanied Murray. Hays also went, as did U.S. Air Force Brig. Gen. Paul T. Hartung, who had been chosen to lead the survey team to Israel.[14] Hartung had entered the service in World War II by enlisting as a sailor. His Air Force engineering experience came after a direct commission during the Korean War and included familiarity with the Corps of Engineers and its construction methods. He had worked with the Corps on the Atlas intercontinental ballistic missile program and on construction of the North Ameri-

can Air Defense Command's underground complex at Cheyenne Mountain, near Colorado Springs, Colorado. When he joined the survey team, he was deputy chief of staff for engineering and services at the Military Airlift Command. Hays found him personable and skilled at solving problems and was particularly impressed with his organizational approaches to problems.[15]

At the meeting Weizmann discussed possible sites for air bases and mentioned that some of them overlapped firing ranges and maneuver areas. He explained the need for multiple runways to lessen the likelihood that a single attack could close a base. Brig. Gen. Amos Lapidot, the vice commander of the Israeli Air Force, added that his air force considered protection of aircraft as the first priority in base design. He also told the Americans that the Israelis intended to design the bases themselves, although possibly with American help. Before the session ended, Weizmann expressed interest in securing more aid for relocation of army facilities. Murray turned that inquiry aside. The question would have to be raised with the president.[16]

Within a few days the task force reduced the number of proposals to two. Essentially, these resembled concept B, which called for management through a cost-plus-fixed-fee contract with one construction management consortium, and concept C, which specified three cost-type contracts—two with construction joint ventures and another with a construction manager. As Hays noted, neither allowed for a high degree of government control. Both involved high management costs, although the single-contractor "B" plan would be more expensive and harder to manage.[17]

The task force also suggested two possible organizations for the Corps' project office. One put the office directly under the Office of the Chief of Engineers and attached a stateside support group to the project headquarters. This arrangement offered a flexible organization dedicated entirely to the project, although it required assembly and lacked interim capability. The other proposal, for an office that also reported directly to Washington but was linked with an engineer division or one of its districts for support, provided a framework on which to build. Consequently, it could start operations more quickly. The main drawback came from the inability of any division to focus on this project to the exclusion of its other work. Either of these organizations could be tied to one of the suggested contracting concepts.[18]

Meanwhile, McNeely's construction division examined the need for support from the United States. A staff study concluded that help was needed in a variety of administrative and technical areas and identified North Atlantic Division and Missouri River Di-

vision as those best able to aid in the project. North Atlantic was one time zone closer, had better access by air, and had more overseas experience, so it seemed the better choice. After Wray approved this recommendation, a different issue related to a support organization arose. On 30 October Deputy Chief Burnell, acting as chief of engineers in the absence of Morris, approved involvement of North Atlantic Division in the work. He also ordered North Atlantic to devise a plan for managing the entire mission from its New York office. Burnell stopped short of assigning the job to New York but obviously inclined in that direction. McNeely said, "They already had the mission anyway, as far as we were concerned." Only Hays still saw the project as tied directly to Washington.[19]

Meanwhile, the Hays group began to expand. Aided by McNeely and Garrett, with their widespread contacts within the Corps, Hays brought more engineers into the office to develop lists of tasks for possible contracts and to prepare mission statements for the components of an expanded task force office. At the same time, personnel specialists arrived to prepare job descriptions and recruit employees. The task force appeared to be evolving into a project management office. Moreover, by using the acronym CENEG for itself and for the project office that would run the program in Israel, the group's reports tended to reinforce that impression.[20]

Burnell's order did not surprise North Atlantic Division. Maj. Gen. James A. Johnson, the division commander, had been thinking about the project since September. "I started planning for it," Johnson later said, "actually before they signed the Camp David accord." He did so because the proceedings there convinced him there was "a strong possibility that the Corps of Engineers would get involved, particularly in some of those things that require construction support." He also considered options for managing such a construction mission. Middle East Division was in Saudi Arabia, whose government would probably resent sharing an engineering organization with Israel, and Europe Division had too much work already. Therefore, he concluded, any project resulting from the Camp David accords would be managed either by the Office of the Chief of Engineers or through it by a stateside division.[21]

Johnson shared Morris' view of the Washington office as a policy headquarters rather than an operational one. He also agreed with Morris' opposition to special offices for specific projects. Morris thought this approach created problems. "There was," he explained, "a standard organization with fixed responsibilities." It was better "to do things within the framework than to set up special cells which had to be defined." Special offices required new statements of responsibilities and were likely to overlap with exist-

ing components of the organization. Both Johnson and Morris thought the Corps program should be executed through the divisions by districts or similar organizations.[22]

Johnson actively pursued the airfield mission, just as he had always eagerly sought new jobs. When the chief's office had sought a district to do a small dredging job in Gabon, he took the work for Philadelphia District. Success there, he later recalled, "helped [Philadelphia's] morale and gave them a little extra work to do." So weeks before Burnell told him to plan for the job, he went to Washington and told Morris and Burnell of his interest. He thought his division "the logical command to do it" because of North Atlantic's experience with cost-plus base construction in North Africa, Greenland, and elsewhere. Besides, he later said, "it was a great project." So without an order to proceed or assurance that the Corps would have work in Israel, he informally assigned consideration of the job to a small group of senior staff members.[23]

At this juncture the chief's office prepared to participate in the survey team. That group would bring back useful answers only if it posed the right questions. General Wray asked his engineering division for a study of the requirements for operational air bases and of the logistical support needed for construction. Garrett selected a task force led by Donald Butler. John F. Reimer, the chief estimator in the division and a member of the group, said they set out "to ask the proper questions and to ascertain the construction requirements as well as the functional requirements of such a base." In a week the group listed the data needed for analyzing the job, including runway lengths, pavement thickness, the number of and types of aircraft, types of soil, and the number of people who would reside at the bases. They also raised questions about labor, materials, and equipment, whether Israeli, American, or other sources would be used.[24]

The survey team set out for Israel with the engineering division's shopping list in hand. After briefings on 2 and 3 November by Hartung, the Defense Intelligence Agency, and the State Department, the team flew to Tel Aviv. Composed of Air Force officers and Corps civilian employees, with Hays the only engineer officer from the Corps, the group represented a substantial pool of knowledge on base development, ranging from site investigations and cost estimating to base activation. The Israelis were gracious hosts, treating the team well and surprising its members with their openness. Weizmann even insisted that Israeli officers speak English among themselves at meetings with the Americans. Lt. Col. Richard G. Rhyne, an Air Force team member who had been in Is-

rael regarding the transfer of American equipment to the Israelis, said they had never before been as helpful.[25]

It was indeed unusual for the Israel Defense Force to show potential base sites or classified documents to foreigners. In the previous twenty-four years, the Israelis had absorbed massive amounts of American military aid.[26] In all that time they had never accepted the American advisers who customarily went with the hardware. Back in 1954, the United States had agreed for the first time to an Israeli request for arms and wanted to send fifty to one hundred advisers with the weapons. Moshe Dayan rejected the offer: Israel was a sovereign nation, and its defense plans and preparations were state secrets. No foreign advisers, Dayan said, would ever set foot on an Israeli military installation. Yet in November 1978, a government that included Dayan as foreign minister was uncharacteristically open.[27]

The team learned a great deal about the Israeli Air Force. In Tel Aviv members were briefed on Israeli air strategy and base configuration and toured potential base sites with their hosts. The Israelis also took the Americans to an active base and showed them what happened when the alarm sounded. Hays remembered "standing there watching in amazement" as an air base came alive. Sirens blared and pilots dashed to their aircraft, which were fueled and armed in the shelters—like "an Indianapolis 500 pit stop," according to one American—while the fliers in their cockpits got instructions by radio. When all was completed, the planes taxied onto the runways and took off. The first plane was airborne in three minutes. As an Israeli with the team said, "That's not bad."[28]

After initial discussions, the team broke up into small specialized groups. Each operated separately with its own transportation and escorts from the Israeli Air Force. The American embassy in Tel Aviv provided office space and information as well as a central location where team members could discuss their findings privately. Hosts and visitors reached a basic understanding of their respective needs and abilities. The Israeli Air Force needed bases for five squadrons—150 aircraft—in the Negev when Israel vacated the Sinai. They saw these units spread over three bases with ultimate expansion to eight squadrons. Meanwhile, the Americans formed ideas about the cost of such a project. Estimators Ronald J. Hatwell of the Office of the Chief of Engineers and Air Force Lt. Col. David Bull decided that two bases accommodating five squadrons would cost just over $1 billion. As Hays noted, their work was critical: "They were a real keystone in the whole organization of the report because of the importance of the cost data."[29]

Hartung emphasized that the United States could build operational albeit incomplete airfields for Israel in three years. Facilities

and buildings unrelated to the ability to fly and fight might take longer to finish. He considered this distinction important. A misunderstanding might create false expectations and damage relations between the two nations.[30]

When the survey team returned home, its members briefed policy makers in the Department of Defense. These sessions stressed that timely completion of a construction job in Israel required quick decisions and early funding. Delays at the start would be costly at the end. Hartung explained the team's most important conclusions. The Israeli Air Force, he wrote, would have preferred to build the bases under their own control. However, they lacked experience with fast-track construction and decided that they could not do the work in less than five or six years. Moreover, with the Israeli construction industry "virtually saturated," a job this big would adversely affect the small country's economy; the sudden increase in demand for building materials and labor would boost an already very high rate of inflation. So, to meet a tight schedule and avoid economic damage, the Israelis decided to import all materials and labor for the job and agreed to American involvement in a fast-track operation with simultaneous design, procurement, and construction.[31]

With the answers brought back by the survey team, Reimer and his colleagues developed the initial figure. In addition to knowledge of the cost of previous efforts, the estimate required that they envision the details of work not yet started and anticipate conditions that might confront the builders.[32] The estimators used data brought back by Hartung and aerial photographs of the Sinai bases as the basis for calculating the approximate number and type of buildings. McNeely's office provided information on the effect of tight construction schedules and procurement of materials that had to be ordered well in advance. The Army's experience in military construction, which was quantified in regulations, yielded unit cost data for standard facility designs and cost factors for construction in isolated and remote locations.[33] The estimators divided the project into its vertical and horizontal parts, the latter including runways and roads as well as utilities and other underground systems. Ordinarily vertical construction was more labor intensive, and the estimators calculated the ratios of labor and machinery for the expected amounts of these different types of work. To this they added the cost of logistical and administrative support. In December they came up with a tentative figure: $1.06 billion.[34] Their total, perhaps more art than science, turned out to be remarkably accurate. This figure was revised several times early in the following winter. Finally the estimators settled on $1.04 billion.[35]

Still, the nature of American participation was unclear. Hartung thought the possibilities ranged from an advisory role to total project control. In any case, he believed that the Corps of Engineers should represent the United States in construction matters. The Corps, he noted, had "the people with fast track construction experience and the organization to accomplish the task." The survey team concluded that normal military construction procedures should be used if the Defense Department became involved in construction. The Corps would be design and construction agent. The Air Force would provide a small regional civil engineer team that would be the Corps customer and would represent the U.S. government with the Israeli Air Force, which was the user.[36] Such a relationship resembled the normal arrangement for air force construction, except that the U.S. Air Force was usually the user as well as the customer.

Even with American construction management, the Israeli government had major responsibilities. These included deciding early on design criteria, compiling rainfall and runoff data for the sites, and gathering information on the nature and availability of local foods and fuels. The Israelis also faced the expense and effort of dismantling bases and moving forces out of the Sinai. In addition, they had to provide utilities—water, electricity, and telephones—to the sites. The government of Israel could support the program in other ways, ranging from providing translators and repair of haul roads to housing and on-site transportation and security. Hartung advised against involving the host country. He argued that these activities involved "resources required to accomplish the project, and if assigned to [the government of Israel], they are not under the contractor's control." Reliance on any outside party would restrict the contractor's ability to meet the rigid schedule by intensively managing all resources.[37]

The survey team was still in Israel when General Johnson formally set up his task group to plan execution. On 13 November 1978, he told three senior staff members with experience in accelerated overseas construction to devise a management plan. This team consisted of Frank Pagano, chief of the engineering division; Alvin Vinitsky, chief of construction operations division; and Oswald Hewitt, comptroller. The only person missing, Vinitsky later said, was the man who would actually manage the project. "The guy that's got to live with it" was not there. Johnson assigned them an office that came to be called the Israeli war room. He directed his deputy for military construction, Col. Paul Bazilwich, to assist the group. They had one week to produce a plan.[38]

For the next five days the task force set aside all other work and concentrated on this assignment. They started with little information. Colonel Hays, whose report was still incomplete, told them what he had seen. They also had U.S. Air Force manuals on air base facilities and layout drawings of Eitam and Etzion. "All we knew," Vinitsky recalled, "was that we were going to build airbases. We had very little data."[39]

General Johnson did give the group some planning guidelines. He wanted a four-part organization: a headquarters in Israel, a stateside support group, and two area offices, one at each base. He also wanted the staff limited to 180 to 200 people, one-third of them military. This unusually heavy use of soldiers would assure that the project did not draw too heavily from the largely civilian management and in turn disrupt the stateside construction program. It also would give the engineer officers some important experience. Johnson also thought an organization with a large number of military people would be easy to dismantle later. "I want the organization developed quickly, and I want it buried quickly," he said. He estimated the life of the office as four years, with three to do the job and another to close out the operation. Because soldiers more readily accepted rapid reassignments, they were best suited for this project.[40]

Johnson wanted an engineer brigadier general in charge of the work in Israel. The political environment and the rigorous schedule demanded high-level leadership. He also wanted someone with the experience and strength to stand up to pressures from the U.S. Air Force and the Israelis. "He's got to be tough," Johnson concluded.[41] Morris turned down the request. He saw two organizational choices: an independent office in Tel Aviv under a general or a smaller office with a streamlined staff under a colonel and attached for support to a stateside division. The former would require staff to handle accounting, personnel support, logistics, and administrative matters. The latter could draw much of this help from the division to which it was assigned. In any case no brigadier generals were available. Besides, colonels in the Corps of Engineers had managed more complicated construction jobs than this. At Cape Canaveral, for example, a colonel had overseen erection of a complex network of facilities for the space program. Morris was sure "we could run the job site with a colonel. Colonels usually build air fields."[42]

With so little to go on, numerous assumptions entered the task force's plans. Primary among them was the expectation that the work would be done through an engineer division—preferably their own—by an organization that resembled an engineer district.

The task force also assumed that the tight schedule and the lack of firm construction criteria would require the use of letter contracts to start work and cost-plus-fixed-fee contracts to carry it out. Because the group thought complete design of the air bases would be required, they sought prime construction contractors with full design capabilities.[43] Hewitt favored combining these contractual and organizational arrangements. "It enabled us to get a faster start by getting hard-to-acquire expertise aboard in a hurry and moving," he said. "If we'd had only Corps people, we'd have to make a lot of contacts with people we know and then get the approval of their chiefs to use them."[44]

In theory the Corps had a framework for rapid mobilization of engineer districts staffed by a variety of experts. Each of three "redi districts" was to have a nucleus of civilians designated in advance. In an emergency the Corps could assemble these organizations—one each from the South Atlantic, North Atlantic, and South Pacific Divisions—and send them overseas on short notice. The reality of the situation in 1978 did not match the concept. The task force considered the possibility of mobilizing a ready district. Vinitsky said it would take too long, and Hewitt doubted the availability of people with needed skills, especially with a number of districts occupied with floods in the United States.[45] Hays had seen the rosters and found that "most of them were several years out of date."[46] Bazilwich summed up the ready district as "a paper thing meeting a paper requirement."[47] Because of the problems involved in quickly assembling enough Corps employees to manage the job, the group sought a contractor that could support and augment project management.[48]

Relying on these premises, the task force went to work. Daily the group briefed Johnson, analyzed their plan, picked it apart, and rebuilt it. With Pagano nominally in charge, they kept the project informal, avoided assigning portions to individuals, and worked together. When necessary, they spent long hours on the job and consulted other members of the staff. Johnson was almost a fourth member of the team. Vinitsky thought he "enjoyed it the same way we enjoyed it with regard to getting your feet wet, a hands-on operation." The others also enjoyed working with Johnson. When they thought he was wrong, they told him. Even more important, he listened, suggested, and made decisions only after considering the views of the others.[49]

The group finished the report on Friday evening and produced it the next day. Pagano and draftsmen from New York District prepared slides for a presentation to Burnell in Washington. Vinitsky spent Saturday at a photocopying machine. The product

of their week-long effort was a 22-page proposal. Not to be outdone by the Hays task force, they stenciled diagonally across the title page their own acronym, CENADNEG, for Corps of Engineers North Atlantic Division Near East Group.[50]

On Monday, 20 November, Johnson and his task force took the CENADNEG proposal to Washington. They presented a straightforward plan, known as the blue book because of its binding. It tersely covered the major points, ranging from the supposition that the project would involve two sites to their understanding that the design of the new bases would replicate the old. The document contained several important lists. One included the names of North Atlantic personnel in construction, engineering, and support areas with experience in cost-type or overseas work. Another identified laws and regulations for which waivers should be sought. For example, the 1969 National Environmental Policy Act required a government construction agency to file an environmental impact statement before starting work. This requirement was irrelevant to work in a foreign country. Still other lists bore the names of firms that might be able to handle portions of the work.[51]

The proposal, which resembled concept C of Hays' group, included an organizational concept and charts for elements of the project office. It called for either three or five cost-plus-fixed-fee contracts. A management contractor would assist with supervision, conduct analyses, and prepare reports. The work would be done either by two joint ventures, one at each site for design and construction; or by four, with separate firms for design and construction. This latter possibility, which allowed for the merger of the designers with the respective builders later in the project, was rejected. The scope of design work seemed too vague for separate contracts. Moreover, the fast-track concept, with procurement and construction starting while design continued, required close coordination. Consolidation of design and construction in a single joint venture seemed the best way to pull together the designer and the builder.[52]

While the framework borrowed from work that had been done in Washington, the project office as seen by the North Atlantic Division had one original feature. In addition to the executive office, for which Johnson still wanted a brigadier general, the structure contained four divisions, three of which appeared routinely designed. Engineering consisted of 17 people, construction had 33, and program management consisted of 10. The fourth, the resource management office, was the largest at 38. It subsumed a number of usually separate functions, including the personnel office, procurement and supply, administrative services, and office of

counsel. "Resource management," Hewitt envisioned, "would handle everything except engineering and construction."[53]

Johnson shared Hewitt's enthusiasm for this arrangement. Engineer regulations give the resource management office responsibility for a wide range of financial functions, notably the standard comptroller duties of "receiving, controlling, accounting for and issuing" appropriations made by Congress for the Corps of Engineers. Other areas of responsibility involved long-range planning, manpower management, contracting and procurement, and employee training. Johnson adopted a more literal and broader view, asserting that the resource manager's job was managing resources. Consolidation of staff offices that managed resources of one kind or another, he believed, increased overall efficiency.[54]

Others shared their belief in a strong resource manager. McNeely's experience with overseas programs convinced him that the Corps frequently paid insufficient early attention to property accountability and documentation of financial transactions. He agreed that the resource manager should have ample staff for control of equipment and materials. The project always got built, Vinitsky added, noting that potential trouble lay in failure to document expenditures and directions to contractors. McNeely, Hewitt, and Vinitsky all remembered cost-plus overseas missions where indifference to these details had brought trouble, particularly the administrative and financial nightmare that developed in the wake of construction of the North African airfields in the 1950s. Nevertheless, even McNeely saw the proposal as an effort to create a large enough organization to justify a very high grade for whomever might take charge.[55]

The proposal received a hostile reception from most of the Washington staff. Johnson recalled that Col. Donald H. Morelli, chief of the resource management office in the headquarters, supported the idea. However, Morelli's own suggestions for staffing the office, made the preceding week, were relatively modest. He called for eleven people concentrating on financial management in three areas: budget and programs, audit, and finance and accounting. Others in the chief's office insisted on a more conventional arrangement, with resource management performing comptroller functions such as those in Morelli's proposal. Morris' aversion to experimental organizations may have applied here too. Separate staff offices would handle personnel matters, provide legal advice, and manage other support services.[56]

Despite rejection of this part of their plan, the briefing went well. North Atlantic got the job. Vinitsky thought that Burnell had made up his mind even before the briefing. McNeely, who worked closely

with Burnell during this period, thought so too. Hays may have been disappointed, but he and the staff raised no major objections.[57]

About the time that North Atlantic received the assignment, Johnson decided that he needed an expert in management and administration as well as a military commander for the project office. He chose an old friend and classmate at the Military Academy, Hugh J. Bartley, who had retired from the Army as a brigadier general in 1976 after serving on the Army staff as director of plans, programs, and budget in the Office of the Deputy Chief of Staff for Operations. Johnson invited Bartley to his Governor's Island home for Thanksgiving dinner and made his offer. He wanted Bartley to leave a consulting job with the University of Pittsburgh Medical School, taking a pay cut of over $100 per day. As one of the first project people in Israel, he would set up the organization. After a walk around the island, Bartley agreed, although he was not convinced that a peace treaty would materialize. He would leave Pittsburgh as soon as Johnson called.[58]

Johnson also knew who he wanted to command the office in Israel. Knowing that he would be unable to get a brigadier general or Colonel Hays, who did not want to go to Israel, Johnson proposed Col. Clarence D. Gilkey for the job. Gilkey's experience included duty with a military training mission in Saudi Arabia in 1966–1967. He also had spent three years as Portland District engineer before going to West Point as the facilities engineer in 1976. He was still there when Johnson decided he wanted him. Gilkey's nearby location made it possible to include him in planning from a very early date. Still in November, Johnson asked the deputy superintendent at West Point to release Gilkey from duty at the academy. Here again Johnson used his personal friendships. Brig. Gen. Charles W. Bagnal had been a West Point cadet when Johnson was his tactical officer. Bagnal shared Bartley's skepticism about the likelihood of the mission but agreed to release Gilkey after Johnson promised to find a replacement. So Gilkey was available for briefings and planning sessions in New York.[59]

Before Johnson could do much more, important developments had to take place. A treaty ratifying the Camp David commitments remained to be signed. Next, Congress would have to appropriate money for the job. Only then could the Corps select contractors and hire people for work in Israel. The Corps had prepared for these actions by choosing an organization to carry out the job, settling on a tentative structure for it, and preparing lists of likely participants. As 1978 ended, the Corps was well along in its preparations to make good the American promise to provide operational airfields to replace the Sinai bases.

Notes

1. Interv, author with Maj Gen James A. Johnson, Sep 83, Fort Belvoir, Va.

2. Interv, author with Oswald I. Hewitt, Jan 80, New York City.

3. Memo, Maj Gen Bates C. Burnell, Acting COE, for ASD (ISA), 25 Sep 78, sub: Construction Support to Near East Activities, METG files; Frederick B. McNeely, Early Days of Israeli Airbase Program, Encl to Ltr, McNeely to Maj Gen Bennett L. Lewis, NAD, 10 Apr 80, sub: Early Days of Israeli Airbase Program, IABPC, 11/6.

4. McNeely, Early Days of Israeli Airbase Program, Encl to Ltr, McNeely to Lewis, 10 Apr 80; Interv, author with Frederick B. McNeely, Sep 83, Washington, D.C.; DF, William R. Darnell, Engineering Division, to Lee S. Garrett, Chief, Engineering Division, MC, OCE, 27 Sep 78, sub: AE Selection Boards for Two Site Investigation Firms and Two Design Firms for Middle East Projects, IABPC, 1/4.

5. Interv, author with Col James E. Hays, Dec 79, Alexandria, Va.; Chronology of Decisions/Guidance, n.d., IABPC, 89/3; Maj Gen William R. Wray, comments on draft MS, IABPC, 93/10.

6. Hays interview.

7. Ibid.; Col James E. Hays, Minutes of CENEG Meeting, 4 Oct 78, IABPC, 1/5.

8. Hays, Minutes of CENEG Meeting, 4 Oct 78.

9. Hays interview.

10. Ibid.; TABII Contracting Plan, IABPC, 1/5.

11. Hays interview.

12. DF, Hays to OCE Staff, 23 Oct 78, sub: Request for Comments/Concurrence: Organizational Concepts for Accomplishment of CENEG Mission, IABPC, 1/5.

13. Concepts A (13 Oct 78), B (13 Oct 78, revised 16 Oct 78), C (13 Oct 78, revised 16 Oct 78), and D (18 Oct 78), all in IABPC, 1/5. This narrative is based on these documents.

14. MFR, Hays, 18 Oct 78, IABPC, 1/5; Dayan, *Breakthrough*, p. 199.

15. Hays interview; USAF Office of Public Affairs Biography, Brigadier General Paul T. Hartung, in Office of Air Force History, Bolling Air Force Base, Washington, D.C.

16. Hays interview; MFR, Hays, 18 Oct 78.

17. DF, Hays to OCE Staff, 23 Oct 78.

18. Ibid.

19. David A. Spivey, Staff Study: CENEG Support, 25 Oct 78, IABPC, 1/5; DF, Maj Gen William R. Wray to COE, 26 Oct 78, sub: Recommendation of Support Division for CENEG Operations, with comment by Burnell, 30 Oct 78, IABPC, 1/1; McNeely interview, Sep 83.

20. Capt Robin R. Cababa, CENEG Status Report, 31 Oct 78, IABPC, 1/5; Hays interview.

21. Johnson interview.

22. Ibid.; Interv, author with Lt Gen John W. Morris (Ret.), Mar 83, Arlington, Va.

23. Johnson interview; John W. Chambers, *The North Atlantic Engineers: A History of the North Atlantic Division and Its Predecessors in the U.S. Army Corps of Engineers* (New York: NAD, 1980), p. 91.

24. In addition to Butler, the task force included estimators John Reimer and Ronald Hatwell from the engineering support branch, and architect Thomas

Payne, chief of the architectural and building systems branch. There were also four members from the advanced technology branch: chief Harold McCauley, an expert on hardened structures; D. S. Reynolds, also a specialist in hardened structures; August Muller, an environmental engineer specializing in water and sewer systems; and paving expert Samuel Gillespie. Interv, author with John F. Reimer, Feb 82, Washington, D.C.

25. Cababa, CENEG Status Reports, 31 Oct and 1 Nov 78, IABPC, 1/5; Hays interview.

26. For a summary of U.S. aid to Israel, see U.S. Congress, General Accounting Office, *U.S. Assistance to the State of Israel,* Report 83–51 (Washington, D.C.: GPO, 1983).

27. Wilbur C. Eveland, *Ropes of Sand: America's Failure in the Middle East* (New York: W. W. Norton, 1980), p. 86; Yoram Peri, *Between Battles and Ballots: Israeli Military in Politics* (Cambridge, England: Cambridge University Press, 1983), p. 6.

28. Hays interview; Milton, "Mideast Survey: Problems and Prospects," p. 71; Ze'ev Schiff, *A History of the Israeli Army, 1874 to the Present* (hereafter cited as *The Israeli Army*) (New York: Macmillan, 1985), p. 137.

29. Hays interview; Memo, Brig Gen Paul T. Hartung for Maj Gen William D. Gilbert, 30 Nov 78, sub: Methods of Accomplishing/Managing Israeli Air Base Construction, IABPC, 89/3.

30. Memo, Hartung for Gilbert, 30 Nov 78.

31. Hays interview; Memo, Hartung for Gilbert, 30 Nov 78.

32. *ENR* 210 (28 April 1983): 182.

33. Reimer interview, Feb 82.

34. AR 415–17, *Construction: Cost Estimating for Military Programming,* Change 1 (Washington, D.C.: HQDA, 1 Aug 78). This version of the regulation did not include a location adjustment factor for construction in Israel. The next revision, issued in February 1980, did.

35. Reimer interview, Feb 82.

36. Memo, Hartung for Gilbert, 30 Nov 78.

37. Memo, Brig Gen Hartung for DASD (ISA) Robert J. Murray, Dec 78, sub: GOI Participation in Relocation from the Sinai to the Negev, IABPC, 89/3.

38. MFR, Oswald I. Hewitt, 13 Nov 78, sub: NAD Task Force CENEG Established, IABPC, 10/8.

39. Interv, author with Alvin Vinitsky, Jan 80, New York City.

40. Johnson interview.

41. Ibid.

42. Morris interview; Ltr, Morris to Ambassador Samuel Lewis, 14 Aug 80, IABPC, 7/5; Johnson interview.

43. Hewitt and Vinitsky interviews.

44. Hewitt interview.

45. ER 1–1–190, *Administration: Establishment of REDI DIST* (Washington, D.C.: OCE, 12 Apr 68); Hewitt and Vinitsky interviews.

46. Hays interview.

47. Interv, author with Col Paul Bazilwich, Jan 80, New York City. Toward the end of 1982, the Corps brought the concept and the reality of the ready district into line by abolishing the concept. EC 310–1–438, *Military Publications: Rescission* (Washington, D.C.: OCE, 10 Dec 82), rescinded the regulation that had set up the ready district concept as "no longer required."

48. Hewitt and Vinitsky interviews.

49. MFR, Hewitt, 13–20 Nov 78, sub: Task Force Progress, IABPC, 10/8; Hewitt and Vinitsky interviews.

50. MFR, Hewitt, 13–20 Nov 78, sub: Task Force Progress; Vinitsky interview; CENADNEG proposal, IABPC, 10/6.

51. CENADNEG proposal.

52. Ibid.; McNeely interview, Sep 83.

53. CENADNEG proposal; Hewitt interview.

54. ER 37–3–7, *Financial Administration: Budgeting and Funding for Military Functions Appropriations* (Washington, D.C.: OCE, 30 Nov 79); OM 10–1–1, *Organization and Functions: Office of the Chief of Engineers* (Washington, D.C.: OCE, 3 Nov 80), p. H–1; Johnson interview.

55. McNeely interview, Sep 83; Vinitsky interview. On the North African program, see MS, Karl C. Dod, Overseas Military Operations of the Corps of Engineers, 1945–1970, ch. 15, Airfield Construction in North Africa, Office of History, HQ USACE, files. Also see U.S. Congress, House of Representatives, Committee on Appropriations, Subcommittee on Military Public Works, *Hearings. Investigations of Military Public Works, Part 4, Moroccan Air Base Construction,* 82d Cong., 2d sess., 1952; U.S. Congress, House of Representatives, Committee on Appropriations, Subcommittee on Military Public Works, *Report. Moroccan Air Base Construction,* 82d Cong., 2d sess., 1952.

56. Hewitt and Johnson interviews; DF, Col Donald H. Morelli to DAEN-MPT [Col Hays], 25 Oct 78, sub: Comments and CENEG Structure, IABPC, 1/5.

57. Hewitt, Johnson, and Vinitsky interviews; McNeely interview, Sep 83.

58. Johnson interview.

59. Ibid.

CHAPTER 4

Necessary Steps: Diplomatic, Political, and Contractual Preparations

February–December 1979

Ordinarily we would do the design and go and get somebody to build them—hopefully under a fixed-price contract.

Lt. Gen. John W. Morris [1]

If I were the contractor, I would hate like hell to be in Israel three years from now if it isn't done on time.

Maj. Gen. James A. Johnson [2]

Most of December 1978 and January 1979 passed with no new developments for the program, but the pace picked up before the end of winter. Late in February, with talks between the United States and Israel expected to start soon, Deputy Assistant Secretary of Defense for Installations and Housing Perry J. Fliakis said the Defense Department would assign the construction mission to the Corps of Engineers. Normally, the Department of the Navy served as the Department of Defense construction agent in the Middle East, but the Corps had participated in the site surveys and had more people with the skills required for this kind of program.[3]

Before official word of the mission came, the Corps assumed that it would get the job and planned accordingly. Carl Damico estimated that $5 million would start the job and sustain it until Congress appropriated funds. General Burnell in Washington told General Johnson in New York to continue planning and authorized him to make a list of potential prime contractors. On 16 March Deputy Secretary of Defense Charles W. Duncan formally designated the Corps as the Department of Defense's construction agent for the Israeli air bases. He explained the choice on the basis of the involvement of the Corps in site surveys, its personnel resources, and its development of an approach to construction. In

other words, aggressive planning efforts helped assure that the Corps got the work. He also directed the Department of the Air Force to act as program manager and liaison with the Israeli Air Force.[4]

Even with that settled, many issues required resolution before work could start. Foremost among them was peace between Israel and Egypt. At Camp David they had only agreed to agree. A formal treaty was yet to be signed. Israel and the United States would also have to make a formal agreement that spelled out mutual obligations and responsibilities within a construction program. Matters within the United States required settlement as well. Congress would have to provide money, the Corps and the Air Force would have to devise a working arrangement, and contractors would have to be chosen. Then there could be construction.

In the early spring of 1979 final negotiations over the contents of a peace treaty started in Washington. Officials from Egypt and Israel worked out details with the Americans. On 15 March Weizmann, Brown, and Secretary of State Cyrus Vance started a series of talks. Between these meetings, Deputy Assistant Secretary of Defense for International Security Affairs Robert J. Murray chaired a discussion on the findings of the survey team that had visited Israel the previous autumn. The conference also considered the possible terms of an agreement between the United States and Israel concerning construction.[5]

A week later detailed talks on the bases started in Tel Aviv. The American delegation consisted of a team from the embassy and a Department of Defense group led by Lt. Gen. Ernest Graves and General Hartung. Graves was a logical choice for the mission. As director of the Defense Security Assistance Agency, he worked directly for McGiffert, managing a military aid program that included sales, training, and financial support. His duties included liaison with American weapons manufacturers and the governments that bought their wares. He also had a long-standing familiarity with military construction and the Corps of Engineers and had spent three years in the Office of the Chief of Engineers, first as director of civil works and then as deputy chief of engineers under Morris. Five of the Americans with Graves represented the Corps. Fred McNeely and Carl Damico from the construction division, attorney Randy Head, and General Wray's secretary, Nancy Saunders, came from Washington. North Atlantic Division sent Ozzie Hewitt, the resource manager. On their first day in Israel, Graves and his team described their funding concept and proposal for project management at the embassy. Ambassador Samuel Lewis' staff promised full support and assistance.[6]

After the initial discussions at the embassy, the Americans and a Ministry of Defense team met several times over the next week. The Israeli government apparently attached considerable importance to the talks. Deputy Minister of Defense Mordechai Zippori led a delegation that included Director-General Yosef Ma'ayan of the ministry and the commander of the Israeli Air Force, Maj. Gen. David Ivry. The construction department of the ministry and the air force's construction division also participated. Representatives of the Ministries of Finance, Interior, and Foreign Affairs also attended, as did the Water Commission.[7]

Zippori welcomed the Americans warmly. He emphasized Israel's commitment to peace and the risks involved in the withdrawal from the Sinai and expressed confidence in the outcome of the air base project. He saw the bases as important to the defense of Israel but thought they would also "contribute in many ways towards the well-being and the defense of the Western world." He noted that Israel had always "succeeded with our airfields quite nicely," but he expected the new ones to be "much better than those we have done by ourselves." When he finished, Ma'ayan wanted to hear the American presentations. First, Richard Viets, charge d'affaires in the absence of Ambassador Lewis, emphasized the strength of the American commitment to the program. The participation of an officer of Graves' rank and the high caliber of his team confirmed this dedication. "I can assure you," Viets said, "that everyone in the U.S. government who has anything to do with this project fully understands its importance to all of you." He was certain that American efforts would meet Israeli expectations.[8]

With the pleasantries over, Graves turned to his agenda. "We have come here," he began, "to give you the results of the study effort that we have made to date on these airfields, and second, to sit down with you and work out the agreement between us as to how we will carry out this work." All told, his team would make four presentations, starting with Hartung's discussion of the survey team report. Hartung reviewed the assumptions on which both countries agreed. Normal construction procedures would not produce an initial operating capability, defined as the ability to fly and fight from the new Negev bases, within three years. The fast-track approach provided the only hope. Hartung explained that this method required concurrent design and construction. It involved an unusually large amount of heavy construction equipment on the work site, especially with two bases under simultaneous construction. He estimated the premium cost of fast-track construction at 25 percent.[9]

The Israelis wanted three bases from which a total of five squadrons, each with thirty aircraft, could operate. They had already chosen three Negev sites. One of these, Tel Malhata between Beersheva and Arad, presented serious problems. The Bedouin residents of the area claimed that the government intended to take their lands without fair compensation, and Hartung correctly sensed that the Israelis should focus their efforts on the other two sites. He also urged limiting the scope of the program to facilities for four squadrons. An attempt to provide more would involve a high risk of failure.[10]

Hartung and the survey team had considered a number of combinations for American and Israeli participation in the program. They rejected an arrangement by which the Israelis would design and construct the bases with American advice on fast-track procedures. Experience had shown them that those who actually managed the work should have experience with fast-track construction. The team concluded that the normal American approach, with Air Force program management and Corps of Engineers construction, would serve best. As Hartung saw it, success depended on limiting design work as much as possible to replication of facilities at the Sinai bases and their adaptation to the new sites.[11]

The Israelis listened patiently to the presentations. Damico gave a preliminary version of the schedule and work sequence, trying to estimate the effort and resources needed. He urged rapid development of engineering criteria and a master plan that laid out the project. Like Hartung, Damico considered "the biggest thing in fast track" to be control. "You can spend a lot of money in fast tracking," he cautioned, "and get absolutely no work done if you don't monitor this carefully." After Graves explained the U.S. intention to provide $800 million for the job, Hartung again took the floor. Although his topic was the management concept—"an agreed pattern of relations between the U.S. people and the Israeli authorities," as Graves put it—he reemphasized the need for close supervision. "Mistakes will be made on this program," he said, "and the most important thing is that we discover them early."[12]

Only one consequential issue emerged from this session. Even before the speakers finished, Ma'ayan saw the major source of potential disputes. "The way you have presented your thoughts," he told Graves, "is that you will have almost complete authority." Ma'ayan wanted the division of management between the two countries clarified but was willing to leave the matter unsettled pending talks on the details of an agreement.[13]

After a recess for the Israeli sabbath, the delegations met again. This time senior Ministry of Defense officials and embassy represen-

tatives did not attend but left the detailed discussions of budgetary management and program authority to the ministry's commanders, engineers, economists, and lawyers. The Israelis acknowledged the American "authority and responsibility to construct the air bases in the framework of an agreed budget, agreed timetable and adequate quality," but insisted on a clear role in management. "MOD being the user of the air bases," they asserted, "reserved the right to exert during the process of construction control of the budget, timetable, and quality at milestones that will be agreed upon." Another issue also began to emerge. General Lapidot's service was studying a new design for the aircraft shelters. He hoped for timely conclusion of the plans but acknowledged that delays were possible. Col. Menachem Friedman of the Israeli Air Force's construction division expected the new drawings in six months.[14]

When the group reconvened on the twenty-sixth, the discussion returned to the question of project control. The Israelis reiterated their interest but softened their position. Instead of seeking participation, they wanted to influence management. "It is clear to us," N. Gurel of the Ministry of Defense construction department said, "that you are giving all the instructions to the contractors and you are doing all the supervision." Still, he said, "We have to find a way through your people to give some remarks and influence the work."[15]

Gurel also turned to the question of procurement within Israel. He acknowledged the scarcity of construction labor and equipment, which underlay the decision to bring both into the country, but distinguished between the saturated construction sector of the economy and other areas. Some production items, such as air conditioners and plumbing fixtures, would be available as would engineering and architectural consultants. They could do the design locally, Colonel Friedman suggested, to the benefit of all concerned. Hartung reminded them that "the ideal situation would be if you could give us as-builts for everything there."[16]

So the talks clarified some significant points. In program management the Israelis appeared inclined to accept an arrangement that permitted influence on construction decisions rather than participation in them. In the area of design they were moving away from the idea of widespread replication of facilities, which Hartung preferred, to new design by Israeli architect-engineers. This was most evident regarding aircraft shelters. All outstanding disputes were minor enough that both sides were willing to start preparing a formal agreement.[17]

With the issues close to being resolved, Graves explained the financial situation. The program needed $5 million immediately so the Department of Defense could send a team to Israel to work on

the plan and pay contractors to begin assembling their organizations. He suggested that Israel provide this sum through a foreign military sales case processed by his agency. In other words, Israel would borrow the money from the United States to pay for the start of the work. The money would carry the program about sixty days, from mid-April to mid-June. By then Congress would have approved the grant, giving the program its own financial base.[18]

On the same day, 26 March, Israel and Egypt signed their treaty. It was a day, Ezer Weizmann said, when "the chill of winter . . . receded before the pale sun."[19] At a brief ceremony in Washington the two governments reaffirmed their adherence to the Camp David framework and ended a long-standing state of war. In annex I to the treaty, the "Protocol Concerning Israeli Withdrawal and Security Agreements," Israel agreed to a complete withdrawal from the Sinai within three years of the exchange of ratifications. A memorandum of agreement appended to the treaty expressed American willingness to consider Israeli needs for military and economic help, "subject to congressional authorization and appropriation."[20]

Meanwhile, McNeely told Morris' office of the situation in Tel Aviv. He expected that the $5 million would be available in ten days and urged award of letter contracts at that time for site investigations. Hartung, he said, would lead a team to Israel in April to work with the host government on design needs, program development, and a cost estimate. Hartung already had chosen ten Air Force officers. The team needed two members from the management support contractor and several more from the Corps of Engineers. The most important would be the colonel who would be Hartung's deputy on the team and who would stay in Israel. McNeely wanted thirteen others, in a variety of specialties, and stressed that only those who were likely to stay with the program should be chosen. Continuity was important.[21]

With the work finished, McNeely had time for shopping and sightseeing. Palestinian terrorists were active that spring—a grenade had exploded in a Jerusalem restaurant during the delegation's first days in the country. But such incidents did not keep the Americans from touring when work allowed. McNeely, Damico, and Saunders window shopped on Tel Aviv's busy Dizengoff Street. When Saunders went into a shop, the others waited outside. While they chatted, a black van pulled up and four denim-clad men jumped out. Swiftly but with care, they swarmed over a parked truck loaded with cardboard boxes. The Americans watched as one man lifted the hood and peered inside, another unlocked the door, the third slipped under the vehicle, and the fourth examined the cargo. "All of a sudden," McNeely recalled, "Carl looked

at me, and I looked at him. It dawned on us: this was the bomb squad." They ran into the shop, found Saunders, "and took her to the back of the store in case it blew up." After the crew left, the three returned to the street.[22]

While Saunders had her brush with the effects of the Arab-Israeli conflict on the streets of Tel Aviv, General Wray had his in Syrian air space. On the day of the signing of the treaty between Israel and Egypt, he was flying to Riyadh to inform the Saudi Arabian government of possible U.S. involvement in Israel. The multibillion-dollar Corps construction program in that country came under Wray's directorate, so he personally intended to inform the Saudi minister of defense and aviation of the situation. After straying over the Syrian missile belt, the American commercial aircraft was forced to land in Damascus, where it sat for nearly eight hours before being released. Wray made the rest of his journey without incident and returned home with assurance that the Saudi government was not unduly concerned about the involvement of the Corps with construction in Israel.[23]

Within a week of the Americans' return from Israel, the major issues were settled and a formal agreement was complete. On 6 April McGiffert and Weizmann signed the "Agreement between the Government of Israel and the Government of the United States concerning Construction of Airbase Facilities." Primary responsibility rested with the U.S. Department of Defense. The agreement authorized the Americans "to perform in Israel all acts necessary to carry out and manage the work, including funds management and administration, engineering, construction, and program management." It spelled out only a few specific Israeli responsibilities, among them protecting the sites and providing utilities for the construction camps. Most tasks were left for inclusion in the "plan of work," which would also specify actual work requirements. However, the government of Israel did commit itself to "exert its best efforts to assist the government of the United States in the fulfillment of its responsibilities under this agreement." Both parties agreed to "share responsibility to assure the completion of all IOC [initial operating capability] construction" prior to the date set for the final withdrawal from the Sinai.[24]

The document addressed but did not resolve the questions raised in negotiations. It specified that criteria and designs from the Sinai bases would be used or other mutually agreeable ones would be chosen. A cautionary note said that "any deviation from the Eitam and Etzion criteria and designs must not delay the accomplishment of IOC." The signers also took a flexible approach to procurement from Israeli sources. The overall premise re-

mained the one reported by Hartung the previous autumn. The Israeli construction industry was "virtually saturated" and could not do the work without severe adverse economic effects. So labor, equipment, and materials would be imported. Within this context, each request for purchases within Israel, brought up by either party, would be examined on its merits. The criteria were availability, quality, cost, and timeliness.[25]

Funding was covered in a separate agreement. If Congress approved, the United States would grant $800 million in the form of "defense articles and defense services." Israel would provide the remainder from any source available to it, including credits and loans from the United States. The program would spend the American grant first.[26]

Graves and his team were still in Tel Aviv negotiating these issues when the contractor selection process started in North Atlantic's office. The procedure represented a modification of the normal process for cost reimbursable contracts specified by regulations. Morris allowed the change because of the time constraints related to the program.[27] As McNeely put it, "It appeared like we had to run like hell with this Israeli thing."[28]

Even the normal method for handling such a contract reduced the steps for contractor selection. In an environment so uncertain as to warrant a cost-plus contract, competition regarding fees and estimated costs did not apply. The only relevant competition involved the qualifications, capability, and experience of potential contractors. Such a competition assured the government of a contractor that could do the job and held out some promise of completion at a fair price. Regulations required the Corps to invite all reasonably available and basically qualified contractors to submit detailed capability proposals. The Corps provided a general scope of work, timetable, and list of special requirements. Based on this information, interested firms were expected to explain their respective mobilization plans, tentative construction schedules, and anticipated extent of subcontracting. Each also had to describe its management staff, equipment, financial capacity, current commitments, and home office support. For the government, a selection board assessed the proposals and interviewed potential contractors. The board listed three or more of the best prospects in order, with detailed justifications for their choices. After the convening authority—the commander of either an engineer district or division—and the chief's office approved the choices, negotiations with the highest ranking firm could begin.[29]

Reminiscent of the methods used to select contractors for airfields and radar installations during the early days of the cold war,

the process authorized by Morris included more shortcuts.[30] A committee of North Atlantic Division specialists in engineering, architecture, construction, and management prepared criteria later used by a preselection board to decide which design and construction contractors were "reasonably available and [had] the basic capability to perform the work."[31] Within a day of receipt of the directive from Morris, the committee finished primary and secondary criteria. The most important requirement was experience in some aspect of similar work—cost-plus contracts, airfields, overseas construction, or combination design and construction projects.[32] "After that," Wray summarized, "we looked at the ventures' current capabilities, the size of the firms in the ventures, and their present workloads."[33] Secondary factors ranged from availability and interest to the size of home office support forces.[34]

A separate committee set up criteria for a management support contractor. The primary standard was financial capacity, as determined by information from Dun and Bradstreet and *Engineering News-Record.* The others dealt with experience in aspects of the huge job, which included design review, quality assurance, and life support, and previous work for the Department of Defense and on cost-reimbursable contracts.[35]

With criteria in hand, a preselection board under Lt. Col. Michael A. Jezior, deputy New York District engineer, compiled lists of potential contractors. The board made minor changes in the criteria, deciding to consider heavy or highway construction as equivalent to air base work and reducing the standard for financial responsibility from $200 million in annual overseas sales to $100 million. It also increased emphasis on heavy equipment, moving it from the secondary category to the primary. The initial list was based on a review of the top 400 construction firms listed in *Engineering News-Record* during 1975–1977. The board added companies that had expressed interest in the project, then cut the list to twenty, using data from Dun and Bradstreet as well as the selection standards.[36]

Then the evaluation passed to separate boards, one for design-construction firms and another for the support contract. The boards ranked the firms on their respective lists before asking the top companies to submit proposals. A third selection board listed acceptable architect-engineer firms for use by whichever prime contractors might be selected.[37] This activity took place without the knowledge of potential bidders. The shortcut essentially reversed the standard approach, which required companies to take the first step, indicating their interest in the work by submitting a proposal. This method forced North Atlantic to take the initiative in deter-

mining which firms might be suitable and then asking them if they were interested.[38]

The change did not please everyone. The decision not to advertise the contracts troubled Colonel Bazilwich. Although prompt action was critical, he thought potential bidders should have the chance to submit proposals. Even without an announcement, firms that had heard of possible work in Israel called North Atlantic. He believed that his office would have to deal with many protests if it made the selection without advertising.[39] Jezior also thought it a poor way to make the choice. Without prior expressions of interest, he could not be sure that his board was identifying firms that wanted the work. As it turned out, his board's first list did in fact name businesses that later failed to express interest. Moreover, compiling the list without public notice precluded forming new combinations of construction companies in response to this particular job.[40] Despite the misgivings, the process continued until halted in Washington. As Col. John E. Schweizer, Johnson's other deputy, explained, "I think everybody had sort of a natural reluctance but we all stood up and saluted and marched ahead."[41]

Despite the concerns, this procedure was well under way. Other actions proceeded more slowly. The most significant delays involved securing congressional approval of funds, which Graves had told the Israelis he hoped for by mid-June. Seed money was transferred to the Corps so that initial contracts could be written and site surveys could start. Congressional action was needed before the United States could provide the $800 million grant. After that ran out, the Americans and Israelis agreed, Israeli contributions would be made as needed, normally quarterly and in advance of the quarter in which payments of obligations were due.[42]

Three days after conclusion of this agreement, President Carter sent his proposal for aid in support of the peace treaty to Congress. The total package for Egypt and Israel, economic aid as well as military loans and grants, would cost $4.8 billion, including 1979 appropriations of almost $1.5 billion. Weizmann once had told the Egyptians that the United States "will foot the bill for the peace agreement."[43] Here was the tab. The 1979 appropriation included the $800 million for the bases, which Carter singled out as particularly important. Israeli withdrawal from the Sinai and the peace itself depended on the availability of the bases. Carter hoped for "swift congressional action to enact the bill," to "demonstrate U.S. capacity to move quickly and decisively to support our friends in the Middle East."[44]

At the same time that Carter sent his request to Capitol Hill, the chief's office reversed itself on the procedure for choosing

contractors. North Atlantic Division convinced headquarters that there would be time for a more customary method, with the program advertised in the *Commerce Business Daily*, the normal government vehicle for informing industry of available contracts. When the Corps made this decision, the selection process reverted to dependence on prospective bidders for initial expressions of interest. The change also laid to rest the concerns that had been expressed by Bazilwich and Jezior.[45]

Two notices, one announcing the management support contract and the other listing the design-construction contracts, appeared on 13 April, only three days after the decision to alter the selection process. The management support notice specified that an advance party should be in Israel some time around 7 May. The other announcement expressed the intent to have construction under way in the summer, while acknowledging that "the actual date will depend upon congressional authorization and appropriation of funds for these facilities."[46]

The Corps still contemplated a compressed procedure. A week after the notices appeared, North Atlantic hosted a briefing for prospective bidders at a New York ballroom. Over 350 representatives of 125 firms as well as journalists heard Johnson describe the job and the government-to-government agreement. He also explained the selection criteria. These standards, set up after talks with veterans of the construction program managed by the Corps in Saudi Arabia, were simpler than those on the original lists. Three years remained the period allotted for construction, although Johnson estimated that normal completion would require twice as long. He wanted management support proposals by 24 April, so the selection board could choose the top three for interviews and make a final choice by 4 May. He also asked for design-construction submissions by 1 May, for selection of the five best prospects by 7 May.[47]

The Israeli government watched the unfolding of the process carefully. On the day of the New York briefing, Colonel Gilkey in Tel Aviv told General Johnson that the Israelis wished to participate in the selections. They did not want an Israeli firm under a false name in one of the joint ventures but were even more concerned that a company from an unfriendly nation, also under a pseudonym, might become involved. Johnson refused to allow Israeli participation, which he said would violate U.S. law. But he did inform the potential bidders at the meeting that the United States and Israel had agreed that all contractors had to be nationals of countries that had diplomatic relations with Israel. "We will not," Johnson told them, "pick somebody who is anathema to Israel."

Moreover, he reminded his audience, shortages and inflation in Israel were such that Israeli labor and materials would be used only when both governments agreed on the necessity. He also told Gilkey to assure the Ministry of Defense that the prime contractors would be American owned. Any possible Israeli subcontractors would be cleared through the ministry.[48]

After the 20 April meeting, the selection process split into two separate evaluations, with the management support contractor chosen first. Jezior chaired the board that evaluated the twelve proposals submitted by the 24 April deadline.[49] His group chose the five best. A second board under Schweizer narrowed the choices to three. Schweizer's board picked a joint venture called Management Support Associates. The firm combined three companies: Lester B. Knight Associates, Inc., of Chicago; A. Epstein and Sons, International, Inc., also of Chicago; and New York–based Pope, Evans and Robbins, Inc. Johnson seconded the choice, explaining to the chief's office that Management Support Associates had "a well-balanced team of designers and construction managers." Johnson said the firm's practical knowledge of construction management, extensive use of its own personnel rather than people hired for this job, and its overseas experience in Israel and elsewhere all influenced the decision. Morris approved, and North Atlantic announced the selection on 7 May.[50]

The competition for the management support contract provided a rare opportunity for firms partly or completely owned and managed by American Jews. At the time, the government of Saudi Arabia excluded such firms from the Corps' massive construction program in that country. A partner in one of the companies that bid unsuccessfully for the Israeli contract called this situation to the attention of New York Senator Jacob R. Javits. "Over the past several years," Jordan L. Gruzen of a joint venture known as GSCA wrote, "the Corps has been awarding vast amounts of contracts in Arab countries and firms such as ours have been denied the opportunity to participate in these programs." He thought the air base program gave the Corps "the opportunity to balance the scales." Javits forwarded the letter to the Department of Defense, commenting favorably on the firm's experience and ability but making no mention of the issue raised by Gruzen.[51]

The choice of Management Support Associates seemed to satisfy everyone. Johnson had noted the firm's ability to start quickly, and the joint venture did not disappoint him. In a matter of days, the contractor set up a liaison office in the Church Street building occupied by North Atlantic, advertised for engineers in the *Wall Street Journal,* and sent its first employees to Tel Aviv. Gilkey ap-

plauded the selection and had plenty of work ready. He passed the news to Ma'ayan, who also expressed his satisfaction.[52]

Choosing the design-construction ventures followed the same lines. Twelve combinations of more than forty companies expressed interest. Some firms held back, fearing loss of possible work in Arab countries. Others seemed concerned about involvement in cost-reimbursement contracts, which limited profits as well as risks.[53] By 17 May the process was complete. After reducing the list to five, interviewing those, and getting approval from Washington, Schweizer's board picked two consortia.[54] Negev Airbase Constructors consisted of its sponsor, the Perini Corporation of Framingham, Massachusetts; the Harbert International, Inc., of Birmingham, Alabama; the Paul N. Howard Company of Greensboro, North Carolina; and designer Louis Berger International, Inc., of East Orange, New Jersey. The other venture, Air Base Constructors, was sponsored by the Guy F. Atkinson Company of San Francisco. Also participating were the Dillingham Corporation of Honolulu; Nello L. Teer Company of Durham, North Carolina; and designer Tippetts-Abbett-McCarthy-Stratton of New York. Both Perini and Atkinson had vast experience with large overseas projects and fast-track construction.[55]

Completion of the selections did not end Israeli interest in them. An article in the English-language *Jerusalem Post* later claimed that the Perini Corporation actively participated in the Arab boycott of Israel and had opposed antiboycott legislation in the United States. Louis Berger International, part of the same consortium, came under fire from a Tel Aviv paper, which listed Berger's activities in Arab nations and questioned the wisdom of allowing a company with such contacts to participate in the design of an Israeli air base.[56] Perini successfully denied the claims; Berger ignored them.[57] The criticism did serve notice that the newspapers were paying attention.

The contractors and the government reached their agreement in letter contracts. These "written preliminary contractual instruments" authorized an immediate start.[58] The government used this type of agreement only when time was extremely limited. Regulations required replacing letter contracts with "definitive contracts at the earliest possible date."[59] Despite this initial agreement, much still had to be done: both parties had to prepare detailed estimates of job costs and negotiate the final contracts. But at least mobilization could start.

Financial issues remained open. The Corps waited impatiently for Congress to act while the seed money began to dwindle. McGiffert's office started work on an amendment to the foreign military

sales case for an additional $10 million, which appeared adequate for operations until 15 July. By then Congress was expected to complete work on the appropriation. The Carter administration's Special International Security Assistance Act, which included the $800 million for the bases, began making its way through Congress in mid-April. The Senate Foreign Relations Committee spent two days on the bill. Hearings before a subcommittee of the House Foreign Affairs Committee were also brief. Secretaries Vance and Brown and General Graves testified for the bill. Brown emphasized Israel's security needs during and after departure from the Sinai. The United States shared Israel's concern for its defenses. According to Brown, passage of the bill was necessary to assure a timely Israeli withdrawal while preserving its military capability.[60]

Graves testified before the House Subcommittee on Europe and the Middle East with one eye on his watch. Appearing the day after the treaty went into effect, he told the members that "the clock is starting to tick and we have but three years to carry out a massive effort in assisting Israel in its relocation." The Corps, he said, "was very aware of this fact" and "most anxious to receive the authority from Congress to proceed." He also explained why normal contracting procedures could not be used: time was so short that concurrent design and construction were required. In addition, little was known about the actual facilities that would be built. He estimated that a competitive procurement would add a year to the program, because a detailed scope of work and design would have to precede bidding. "You cannot," he told the subcommittee, "have a competitive bid unless the man knows what he is bidding on, because he could not come up with a price."[61]

Both houses approved the bill without serious opposition. They sent the measure authorizing the expenditure and appropriating the entire amount to the president in July. President Carter signed it on the twentieth, ending the program's dependence on foreign military sales funds.[62] Another law, signed five days later, authorized the Corps to enter into the contracts needed to carry out the mission.[63]

As the bill became law, the Corps and the Air Force were reaching a definitive understanding about their respective program roles. Such an agreement required a formal memorandum of understanding. The Department of the Army, as represented by the Corps of Engineers, and the Department of the Air Force held divergent views about management responsibilities, especially regarding control of program funds. These opposing ideas crystallized during negotiations that started in May 1979 and continued until the end of July. The Air Force started the discussion over the

roles it and the Corps would play. Antonia Handler Chayes, the assistant secretary of the Air Force for manpower, reserve affairs, and logistics when the negotiations got under way, claimed that the Duncan memorandum of 16 March had not clarified sufficiently each agency's responsibilities. A Boston attorney who became the first woman to serve as under secretary of any of the armed forces when she moved up to be under secretary of the Air Force in July, Chayes wanted a clear statement of Air Force authority and responsibility for managing the air base program. She sought this through designation of the Air Force as the Department of Defense executive agent.[64]

Others agreed with Chayes on the need for clarification of responsibilities. McGiffert thought either the secretary of the Army or the secretary of the Air Force should have charge of the program. Graves also saw the need for a single command but thought it should rest with the secretary of the Army. Timely completion, he argued, depended mainly on effective management by the Corps of Engineers.[65] Graves outlined all three perspectives for Morris by sending his former boss three versions of a draft memorandum clarifying program relationships. One, reflecting the Chayes position, gave overall direction to the Air Force and gave Hartung control of all construction funds for provision to the Corps as needed. The other two did not mention control of the money. One placed the program manager under Graves' office; the other assigned the program to the Department of the Army.[66]

Graves shared the general view that Hartung made an ideal program manager, but he thought it unnecessary and undesirable to put the secretary of the Air Force in charge. The Air Force's major responsibility, Graves thought, was to act as liaison between the Corps and the user, working with the Israelis to adjust the plan of work as warranted by changing needs, schedule slippage, cost growth, or problems with quality.[67] In any case, Hartung had direct access to the Air Force Directorate of Engineering and Services for help with technical and administrative matters. Major issues and disputes with the Israelis would go to McGiffert or Graves. So perhaps the Defense Security Assistance Agency was the right place for the program. On the other hand, while Hartung might need occasional help from Graves or McGiffert, the Corps required broad support from the Department of the Army. Graves thought success could depend on prompt and effective responses in a number of areas, including contracting, transportation, personnel, labor relations, and financial management. With the predominant support effort within the Army, perhaps that service should run the job. Graves thought the issue important enough to tell Morris

that "the Secretary of the Army may have to weigh in at some point."[68] Morris responded quickly. He sent the draft memorandums and related papers to Secretary of the Army Clifford Alexander. Morris was satisfied with Duncan's assignment of responsibilities. But if clarification was needed, he would support Graves' position and recommend a program management office under the Defense Security Assistance Agency.[69]

While Morris staked out his position with the help of Graves, Fliakis asked the Army to draft a memorandum of understanding. He chose the Army, he said, because he wanted the document to focus on execution of construction. Other Department of Defense agencies also had interests, so he asked that the draft include formats and schedules for progress reports. His own office would monitor development of the agreement to ensure consistency with the original assignment. With these instructions in hand, Morris reconsidered his stand on the relationship of the Corps and the Air Force. He changed his mind about placing program management under Graves and decided that the secretary of the Air Force was a more logical choice. Such an arrangement would permit use of procedures familiar to all with experience in Corps military construction for the Air Force.[70]

Morris sought two critical changes to the conventional relationship. First, he wanted the program manager excluded from control of contract administration or construction supervision. In other words, the chain of command for construction would flow from the sites through Corps channels to Morris, Alexander, and Brown. Essentially, Morris envisioned an arrangement that would put the Air Force in apparent control with largely liaison duties while vesting real power in the Corps of Engineers. He also wanted the secretary of defense to give program funds directly to the Army. Morris knew that money was the key to control of the program. Also, Burnell and Johnson had urged him to assure that the Corps controlled construction funds. Morris "thought it was critical" and intended to do just that. "If I was going to be responsible for building the airfields," he said, "then I would need the money." Time was short, and recurrent requests for more funds could slow work. If such delays sent the program past the deadline of 25 April 1982, the Corps would get the blame. "In the final analysis the only agency . . . that was going to get held up by the thumbs if the job didn't get done on time was the construction agency." Morris told Wray to use this framework as guidance for future talks with the Air Force.[71]

Within the Corps, aversion to Air Force involvement in financial management was widespread. Theodore Henningsen of Morris' procurement office asked whether such participation would

hamper the program. Money provided leverage for arbitrary control. Moreover, funding through another party could become an administrative burden and delay payments to contractors. Resultant cash-flow difficulties might harm contractor performance. If the Corps had to live with such an arrangement, the office had to devise detailed procedures. These would provide the only defense against the stifling effects of a bureaucratic review and approval process. North Atlantic Division heartily endorsed these views. Its own draft of the agreement strictly limited the Air Force role. Johnson's office wanted deletion of all references to Air Force involvement in organizing, directing, and controlling the program. The New York office wanted the Air Force limited to coordination and liaison with the Israelis. Graves' office should provide the Corps with instructions and all of the program funds at once. That was sufficient; the Corps would do the rest.[72]

The Corps version of the agreement reflected this insistence. Wray sent a draft memorandum through Army channels to McGiffert. This rendition gave the Corps control of construction, with Defense Security Assistance Agency providing all of the money directly to the Corps at the outset. Adopting the Air Force position, Wray argued, would provide "another layer of management that could adversely affect an already critically condensed program."[73]

The Air Force's position still contrasted sharply with that of the Corps. Chayes remained convinced that the Air Force's designation as executive agent with control of the money enhanced prospects of timely completion. Her department envisioned a management office staffed jointly by Air Force and Corps people under Air Force direction. This office would set and carry out policies and procedures and manage the work itself. The funding arrangement would resemble the normal military construction relationship, with the Air Force releasing money as the Corps needed it. By July Chayes was showing her frustration. She urged McGiffert to "get on with this." She expected that "the project itself will produce plenty of problems," and saw "no need to compound [them] by permitting bureaucratic arguments."[74]

Graves sent the latest expression of the Air Force position to Morris. Brig. Gen. John F. Wall, Wray's deputy in military programs, reviewed the package. Wall opposed designation of the Air Force as executive agent and indicated that a compromise paragraph on funding, already agreed upon by Graves and Maj. Gen. William D. Gilbert, the Air Force's director of engineering and services, was acceptable. The compromise stipulated that the Corps would get its construction money from the Air Force, but that the Air Force would "promptly provide all . . . program funds directly

to the construction agency together with such instructions as may be appropriate." [75]

On 11 July Morris took this solution to his meeting with Fliakis. After discussions with Fliakis, the Corps, and Defense Security Assistance Agency, the Air Force accepted this face-saving compromise. The memorandum deleted the word "promptly" but otherwise adopted the same wording. Ostensibly neither service got its way. They agreed that the Air Force was "responsible for overall program management." Beyond that, the agreement listed numerous specific duties. Most of these were coordination and review functions. They did include two very important missions, liaison with the Israelis and site activation. The Corps, on the other hand, was "responsible for execution of the design and construction of the air bases and their facilities." Moreover, "direction and control of the contractors [would] be by the CE contracting officer." The Air Force would manage the air base program, but within that program the Corps would run a construction project.[76]

One aspect of the ground rules remained unclear. Normal construction programs operated in a restrictive context. Various laws set cost accounting standards, limited procurement authority for data processing equipment, and stipulated complex procedures for soliciting bids on contracts for architect-engineer services.[77] All parties felt that some relief was necessary.[78] Waivers awaited issue of an executive order by the president. Congress already had expressed its support of such an order in the Special International Security Assistance Act.[79] Some months passed while the draft order moved through various agencies, among them the Department of the Army, the Office of Management and Budget, and the Department of Justice. All the while there seemed no doubt that the order would be issued. Certainly the program was off and running in Israel. Design firms had been hired without concern for some of the restrictions or notification requirements still to be waived. In December President Carter granted the exemptions and completed the authorization package.[80]

Notes

1. *Army Times*, 20 Aug 79.

2. *ENR* 202 (26 April 1979): 10.

3. Memo, DASD (I&H) Perry J. Fliakis for DASD (ISA) Robert J. Murray, 22 Feb 79, sub: Israeli Airfield Construction, METG files.

4. Ltr, Fliakis to Murray, 14 May 79, sub: Seed Money for the Israeli Airbase Program, METG files; Ltr, Maj Gen Bates C. Burnell, Acting Chief of Engineers, to NAD, 15 Mar 79, sub: Design and Construction Mission, Israel, IABPC, 10/9; Ltr, DSD Charles W. Duncan to the Secretaries of the Army, Navy, and Air Force, 16 Mar 79, sub: Construction Agent Assignment, METG files.

5. Program for the Visit of the Honorable Ezer Weizmann, Minister of Defense, Israel, 15–17 Mar 79, METG files.

6. Telex, USDAO Tel Aviv to OSD for ASD (ISA), 23 Mar 79, sub: Israeli Airbase Negotiation Team, METG files; Transcript, Meeting of U.S. Delegation on Air Fields, Headed by General Graves, with Israeli Delegation, Headed by Deputy Defense Minister Zippori (hereafter cited as Transcript, Meeting with Graves Delegation), 23 Mar 79, Tel Aviv, IABPC, 40/5; DOD Directive 5105.38, *Defense Security Assistance Agency (DSAA)* (Washington, D.C.: OSD, 10 Aug 78); *Who's Who in America, 1982–1983*, 2 vols. (Chicago, Ill.: Marquis Who's Who, 1982), 1: 1285.

7. Transcript, Meeting with Graves Delegation, 23 Mar 79.

8. Ibid.

9. Ibid.

10. Ibid.; Lesley Hazelton, "Forgotten Israelis," *New York Review of Books* 27 (29 May 1980): 44; (Tel Aviv) *Ma'ariv*, 17 Feb 80; (Tel Aviv) *Ha'aretz*, 23 Dec 80; Ian Lustick, "Israel's Arab Minority in the Begin Era," in Freedman, ed., *Israel in the Begin Era*, p. 131.

11. Transcript, Meeting with Graves Delegation, 23 Mar 79.

12. Ibid.

13. Ibid.

14. Transcript, Meeting with U.S. Team on New Airfield Construction, 25 Mar 79, IABPC, 40/5.

15. Transcript, Meeting with U.S. Team on Air Field Construction, 26 Mar 79, IABPC, 40/5 (hereafter cited as Transcript, Meeting with U.S. Team, 26 Mar 79).

16. Ibid.

17. Ibid.

18. Ibid.

19. Weizmann, *Battle for Peace*, p. 382.

20. The treaty and clarifying documents are included after page 330 in Sachar, *Egypt and Israel*.

21. Telex, USDAO Tel Aviv (Frederick B. McNeely) to DAEN-MPC, 26 Mar 79, sub: Israeli Airbase Program Development, IABPC, 5/8. McNeely asked for 14 people, 4 by name: 1 construction manager (Carl Damico), 2 estimators (Ronald J. Hatwell and 1 other), 1 design specialist (T. R. Wathen), 1 scheduling specialist (Donald P. Samanie), 1 project manager for engineering, 2 mechanical engineers, 2 electrical engineers, 2 civil engineers, and 2 paving and soils engineers.

22. McNeely interview, Sep 83.

23. Maj Gen William R. Wray comments on draft MS.

24. David E. McGiffert and Ezer Weizmann, Agreement between the Government of Israel and the Government of the United States concerning Construction of Airbase Facilities, 6 Apr 79, IABPC, 8/4 (hereafter cited as Government-to-Government Agreement).

25. Ibid.; Memo, Brig Gen Paul T. Hartung for Maj Gen William D. Gilbert, 30 Nov 78, sub: Methods of Accomplishing/Managing Israeli Air Base Construction, IABPC, 89/3.

26. McGiffert and Weizmann, Agreement between the Government of Israel and the Government of the United States concerning Funding of Airbase Construction, 6 Apr 79, IABPC, 8/4.

27. Ltr, Lt Gen John W. Morris to Maj Gen James A. Johnson, 20 Mar 79, sub: Negotiation of Cost-Type Contracts for Construction in Israel, IABPC, 1/1.

28. McNeely interview, Sep 83.

29. ER 415–345–230, *Construction: Negotiation Regulation for Cost-Plus-A-Fixed-Fee Construction Contracts* (Washington, D.C.: OCE, 1 Oct 67), pp. 3–4.

30. McNeely interview, Sep 83.

31. ER 415–345–230. The committee consisted of Charles Schroer and Alfred Lellis of NAD's construction division, attorney F. H. Cawood, and three people from the engineering division: Joseph Sullivan, W. D. Stockman, and Robert E. Levy.

32. After experience, the five primary criteria were financial capacity, based on Dun and Bradstreet and *ENR* data; capability to manage a $200-million-per-year project at a remote site; proven ability to meet completion dates; home office support; and being an American firm. Criteria for Contractor Selection: Primary Selection Considerations, 21 Mar 79, IABPC, 1/1.

33. *ENR* 202 (24 May 1979): 40.

34. The ten secondary criteria were availability and interest in the work area; experience in quality control, safety, procurement of labor and materials for overseas work, and meeting budget targets; ability to obtain bond for 50 percent of the project amount or 50 percent of the prime contractor's direct involvement; current future contract commitments; life support, an operational management system, and participation by senior members of the firm with ten or more years at management level; ready availability of a relatively new crushing plant, concrete plant, and heavy equipment for moving earth and paving and ability to perform repairs on site; ability to start design within twenty days and start work on site within sixty days; prior association with reliable and financially stable subcontractors; availability of a computer system, a record of meeting completion dates, critical path management; and home office support. Criteria for Contractor Selection: Secondary Considerations if Available, 21 Mar 79, IABPC, 1/1.

35. Selection Criteria for Management Assistance Contractor, n.d., IABPC, 1/1. The committee consisted of Louis Pinata, chief of construction division, New York District; Angelo Tomasetti, Jr., chief of the military projects management branch, New York District; and C. J. Dow, chief of the procurement and supply division, Baltimore District.

36. Memo, Lt Col Michael A. Jezior, Chairman, Pre-Selection Board, for Division Engineer, 31 Mar 79, sub: Pre-Selection of Firms for the Construction of Airfields in Israel, IABPC, 6/1.

37. Ibid.

38. Ltr, Morris to Johnson, 20 Mar 79.

39. Bazilwich interview.

40. Interv, author with Lt Col Michael A. Jezior, Jan 80, New York City; McNeely interview, Sep 83.

41. Interv, author with Col John E. Schweizer, Jun 80, Falls Church, Va.

42. U.S. DOD Offer and Acceptance FMS Case IS–B–HAA, 20 Mar 79, METG files; Transcript, Meeting with U.S. Team, 26 Mar 79; McGiffert and Weizmann, Agreement . . . concerning Funding of Airbase Construction, 6 Apr 79.

43. Ltr, President Carter to Honorable Thomas P. O'Neill, Jr., Speaker of the House of Representatives, 9 Apr 79, in U.S. Congress, House of Representatives, *Special International Security Assistance Act of 1979. Communication from the President of the United States Transmitting a Draft of Proposed Legislation to Authorize Supplemental International Security Assistance for the Fiscal Year 1979 in Support of the Peace Treaty Between Egypt and Israel and Related Agreements, and for Other Purposes,* 96th Cong., 1st sess., 1979, H. Doc. 96–91, pp. 1–2; Weizmann, *Battle for Peace,* p. 323.

44. Ltr, Carter to O'Neill, 9 Apr 79.

45. *Commerce Business Daily,* 13 Apr 79; Bazilwich interview.

46. Information Paper, DAEN-MPC, 11 Apr 79, sub: Air Base Construction for the Government of Israel, IABPC, 6/1; Ltr, Burnell to Johnson, 13 Apr 79, sub: Selection Procedures for Management Support Contractor and Design and Construction Contractors for Air Base Construction in Israel, IABPC, 6/1; *Commerce Business Daily,* 13 Apr 79.

47. *ENR* 202 (26 April 1979): 10; *New York Post,* 20 Apr 79; The *Jewish Week-American Examiner,* 29 Apr 79; *International Construction Week* 8 (30 April 1979); Schweizer interview. The *Commerce Business Daily* notices listed the same four criteria for both types of contracts: specialized experience; capacity to accomplish the work; quality of past performance, particularly on relevant Department of Defense contracts; and proposed organizational structure and management approach.

48. Telecon transcript 2, 20 Apr 79, IABPC, 10/3; *Washington Post,* 21 Apr 79; Orientation for Israeli Airbase Construction, 20 Apr 79, IABPC, 11/2.

49. In addition to Jezior, the board included Stanley Fafinski, assistant chief of the engineering division, New York District; Patrick R. Fiscina, chief of the military section in the engineering division, NAD; James V. Gruttadauria, chief of the quality assurance branch, engineering division, NAD; and J. G. Starr from Norfolk District.

50. DF, Selection Board to Johnson, 3 May 79, sub: Selection of a Contractor for Management Support Activities in Connection with the Design and Construction of Two Airbases in the Negev Region of Israel, IABPC, 6/1; Ltr, Johnson to Morris, 4 May 79, sub: Request for Approval of Management Support Contractor Selection, IABPC, 6/1; NAD News Release 79–1, 7 May 79, NAD PAO files; *International Construction Newsletter* 4 (May 1979): 1, 7.

51. Ltr, Jordan L. Gruzen, GSCA, to Honorable Jacob R. Javits, 26 Apr 79, METG files; Ltr, Javits to Jack L. Stempler, Assistant to the Secretary of Defense (Legislative Affairs), 4 May 79, METG files.

52. Ltr, Johnson to Morris, 4 May 79; Telecon transcript 7, 7 May 79, IABPC, 10/3; Telecon transcript 8, 8 May 79, IABPC, 10/3; *Wall Street Journal,* 22 May 79.

53. Jezior interview; Schweizer interview; *ENR* 202 (24 May 79): 40–41; *Washington Post,* 21 Apr 79.

54. Schweizer's board included Stockman, Lellis, Schroer, and G. A. Dohmeier.

55. *ENR* 202 (24 May 79): 40–41; *Wall Street Journal,* 18 May 79; NAD News Release 79–2, 17 May 79; Walter McQuade, "A Construction Job That Will Help Buy Peace," *Fortune* 100 (16 June 1979): 65.

56. *Jerusalem Post,* 10 Jul 79; (Tel Aviv) *Ma'ariv,* 13 Jun 80.

57. Ltr, David B. Perini to Maj Gen Johnson, 10 Jul 79; Ltr, Perini to Col Clarence D. Gilkey, 11 Jul 79; Ltr, Nathan Perlmutter, Director, Anti-Defamation League of B'nai Brith, to Perini, 17 Jul 79; Ltr, Charles J. Patterson, Vice President for Corporate Relations, Perini Corporation, to George Grimes, NAD Public Affairs Officer, 24 Jul 79; Ltr, Maj Gen Bennett L. Lewis to Perini, 25 Jul 79. All in IABPC, 10/3.

58. AR 310–25, *Military Publications: Dictionary of United States Army Terms,* Change 1 (Washington, D.C.: HQDA, 12 Apr 77), p. 152.

59. ER 1180–1–1, *Contracts: Engineer Contract Instructions* (Washington, D.C.: OCE, 1 Dec 69), pp. 3–7.

60. Information Paper, DAEN-MPC-F, 24 Apr 79, sub: Israeli Air Fields, IABPC, 90/6; U.S. Congress, Senate, Committee on Foreign Relations, Hearings Before the Committee on Foreign Relations, United States Senate, to Hear Administration Officials on the Middle East Peace Package, 11 Apr11 1979, pp. 26–27, DSAA files.

61. U.S. Congress, House of Representatives, Committee on Foreign Affairs, Hearings Before the Subcommittee on International Security and Scientific Affairs and the Subcommittee on Europe and the Middle East of the Committee on Foreign Affairs, House of Representatives. Special International Security Assistance Act of 1979, the Egyptian-Israeli Treaty and the Upcoming Peace Negotiations. 26 April 1979, pp. 10–11, 47, DSAA files.

62. 93 *Stat.* 89.

63. 93 *Stat.* 97.

64. USAF Office of Information Biography, Antonia Handler Chayes, Under Secretary, U.S. Air Force [1979], in Office of Air Force History, Bolling Air Force Base; Memo (unsigned), Lt Gen Ernest Graves, Jr., n.d., sub: Management of Israeli Air Base Construction, Encl to Memo, Graves for COE (Lt Gen John W. Morris), 14 May 79, File 1501–07, IABP files, DAEN-MPC-G.

65. Memo (unsigned), Graves, sub: Management of Israeli Air Base Construction.

66. Draft memo, DSD to SA and SAF, sub: Israeli Air Base Construction—Action Memorandum, Tab B to Memo (unsigned), Graves, sub: Management of Israeli Air Base Construction; Draft memo, DSD to SA and SAF, sub: Israeli Air Base Construction—Action Memorandum, Tab C to Memo (unsigned), Graves, sub: Management of Israeli Air Base Construction.

67. Draft memo, DSD to SA and SAF, sub: Israeli Air Base Construction—Action Memorandum, Tab D to Memo (unsigned), Graves, sub: Management of Israeli Air Base Construction.

68. Memo (unsigned), Graves, sub: Management of Israeli Air Base Construction.

69. Ibid.; Memo, Graves for COE, 14 May 79; Memo, Morris for SA, 15 May 79, sub: Management of Israeli Air Base Construction—Information Memorandum, File 1501–07, IABP files, DAEN-MPC-G.

70. Memo, Fliakis for ASA (IL&FM) and ASAF (MRA&L), 17 May 79, sub: Israeli Air Base Construction; MFR, Morris, 7 Jun 79, sub: Management of Israeli Air Base Construction Program, File 1501–07, IABP files, DAEN-MPC-G.

71. MFR, Morris, 7 Jun 79, sub: Management of Israeli Air Base Construction Program; Interv (telephone), author with Bates C. Burnell, Nov 83; Johnson interview; Morris interview.

72. MOU, DAEN-PRZ (Theodore Henningsen) to DAEN-MPC, 22 Jun 79, sub: Memorandum of Understanding Between the DOD Agencies in the Israeli Air Base Construction Program, Tab B, Executive, DAEN-MP, routing slip to EDES, 22 Jun 79, File 1501–07, IABP files, DAEN-MPC-G; NAD, Draft Memorandum of Understanding, Tab E to Executive, DAEN-MP, routing slip to EDES, 22 Jun 79.

73. Memo, Maj Gen William R. Wray, through CS, U.S. Army, and ASA (IL&FM), for ASD (MRA&L), 27 Jun 79, sub: Memorandum of Understanding Between DOD Agencies in Israeli Air Base Construction Program—Decision Memorandum, File 1501–07, IABP files, DAEN-MPC-G.

74. Ltr, Chayes to McGiffert, 6 Jul 79, sub: Israeli Air Base Construction, Encl to Memo, Graves for Morris, 9 Jul 79, File 1501–07, IABP files, DAEN-MPC-G;

Chayes note to McGiffert, n.d. [c. 6–9 Jul 79], cover for Memo, Chayes for ASD (ISA), 6 Jul 79, sub: Israeli Air Base Construction.

75. Brig Gen John F. Wall comments on Memo, Chayes for ASD (ISA), 6 Jul 79, sub: Israeli Air Base Construction; alternative paragraph on funding attached to Memo, Chayes for ASD (ISA), 6 Jul 79, sub: Israeli Air Base Construction.

76. Memo, Joe F. Meis, Acting ASAF (MRA&I), for DASD (I&H), OASD (MRA&L), 16 Jul 79, sub: Memorandum of Understanding Between DOD Agencies in the Israeli Air Base Construction Program—Decision Memorandum, File 1501–07, IABP files, DAEN-MPC-G; Wray and Gilbert, Memorandum of Understanding Between the DOD Agencies in the Israeli Air Base Construction Program, 25 Jul 79, IABPC, 11/2.

77. The specific laws included Title IX of the Federal Property and Administrative Services Act of 1949, as amended, 86 *Stat.* 1278; Section 612 of the Military Construction Authorization Act of 1949, as amended, 80 *Stat.* 756; Section 719 of the Defense Production Act of 1950, as amended, 84 *Stat.* 796; and Section 111 of the Federal Property and Administrative Services Act of 1949, as amended, 79 *Stat.* 1127.

78. Ltr, Deanne C. Siemer, General Counsel, DOD, to William M. Nichols, General Counsel, OMB, 8 Aug 79, sub: Department of Defense Executive Order Document 240, DAEN-MPC-G files.

79. 93 *Stat.* 90.

80. EO 12178, 10 Dec 79, in *Public Papers of the Presidents of the United States: Jimmy Carter, 1979* (Washington, D.C.: GPO, 1980), p. 2220.

CHAPTER 5

Setting Up Shop
April–October 1979

It's not exactly an invasion, but the Americans have landed, formed a beachhead in Tel Aviv and are fanning out in the Negev.

Jerusalem Post[1]

Only a child of the twentieth century could like Tel Aviv. Unlike so much of Israel, where the biblical past was ubiquitous, Tel Aviv was thoroughly modern. In 1909 a group of Jewish pioneers had started the settlement on the seaside dunes north of ancient Jaffa with its overwhelmingly Arab population. They chose the unintentionally ironic name of Tel Aviv or hill of spring for their community atop the mounds of sand. Seventy years later, nearly one-half million people lived there in a metropolis that sprawled in every direction except westward into the Mediterranean. Buses and trucks and the automobiles that darted between them turned a downtown stroll into a noisy and perilous adventure. Exhaust fumes spread a blue film overhead, sometimes to be swept away by the sea breeze, sometimes to cling through the steamy night. With none of the charm of older cities and most of the problems of bigger ones, Israel's largest city was a good advertisement for air conditioning.

Colonel Gilkey arrived in April. He had little in hand except orders that had established the Near East Project Office as "a major subordinate organization of the North Atlantic Division," as of 26 March 1979.[2] The American embassy could be expected to provide some assistance with communications and temporary work space. Otherwise there was little to go on. Gilkey needed money and people, as well as places where they could work and live. Like Tel Aviv's founders, he would build from scratch.

Much uncertainty remained regarding the nature of the design program. During the previous autumn, agreement had been reached in General Johnson's office at North Atlantic Division on at least one basic concept. Ozzie Hewitt had sketched on a legal

Colonel Gilkey, the first project manager

pad his proposal for design by the construction contractor, which he thought offered the only way to meet the project deadline. Johnson, Frank Pagano, and Al Vinitsky had agreed, and Fred McNeely had endorsed the idea, which became the basis for the "Blue Book" design proposal. But agreement on this concept was only the beginning. Establishment of a viable Tel Aviv design organization, which had not been contemplated in the earliest plans, awaited answers to many other questions.[3]

The Americans did understand the Israeli force structure and design philosophy. From the early 1950s, Israel had built its air force around multiple-purpose fighter-bombers. Its missions, which changed little over the years, gave first priority to air superiority and then to tactical and reconnaissance support of ground forces. Israel's bases had to be ready for combat. The air force refueled and rearmed its aircraft with lightning speed and put them back in the air, compensating for the relatively small number of planes and pilots. Air base criteria were more exacting than were American standards, especially in the areas of pavement, power generation, and fuel supply. The Sinai bases, which were models for the new ones, contained dispersed, decentralized facilities. They also included redundant pavement and utility systems and made possible the rapid dispatch of aircraft into action. As General Hartung noted, "You can almost say that these are land-based aircraft carriers."[4]

As soon as the Americans arrived in Tel Aviv, they set out to answer numerous questions about the design program and the Israeli way of doing business. Of primary importance was a clear delineation of responsibility for design and for the construction that would follow. The American position remained the one stated by General Graves in March: "Once the design is agreed upon, then our view is that the U.S. must have the primary voice in executing that design." Also the amount of replication of Sinai facilities that the program would entail needed to be determined. Because repli-

cation involved adapting extant designs to the sites rather than design itself, clarification of the extent to which structures would be copied was a prerequisite for defining the scope of the entire project. Design standards were also important. In many cases, the Israelis used American design standards; others were either British or Israeli. Gilkey needed a full list. He also needed more data about the climate, geology, and topography of the sites; the proximity of potential quarries and wells; and the layouts of the national utility and transportation systems. For the bases themselves, he wanted master plans and facility lists, guide specifications for design, and drawings of structures that would be replicated. Even more important was a list of facilities needed for initial operating capability and a schedule for completion of design by the Israeli Air Force.[5]

Much of the early concern centered on timely design of the aircraft shelters. These structures, important to the dispersal and protection of aircraft at the bases, represented a large part of construction. Each base included ten complexes of six shelters each. In addition to the protective shells themselves, the complexes contained ancillary facilities and structures, among them electrical systems and storage for explosives. Their mechanical systems included compressed air, fuel distribution, fire protection, potable water, and sewage. When the project started, the Israeli Air Force was evaluating choices for these structures. Manuel M. Schechet, a consultant to the project who had just retired from the North Atlantic Division as chief of the engineering division, saw the potential for delay in July 1979. He warned that the schedule called for prompt decisions from the Israelis on the types of structural frame, doors, and exhaust systems. To minimize delays, he urged the Corps to be ready to augment design staffs with consultants well versed in shelter design.[6]

Gilkey and Hartung began work to determine what the Israelis had done, where they were going, and what they wanted of the Americans. The Israeli Air Force had done a great deal since the March negotiations. Gilkey reported that thirty to forty Israeli firms already were designing facilities, and drawings were well under way. The contracts and the construction organizations had been developed under the assumption that elements of the consortia would do much of the design, although there had been some early signs that the Israelis wanted a major part. General Lapidot had said in October that they intended to design the bases themselves. By the end of April it was clear that the Israelis preferred to use their own architect-engineer firms for the actual drawings. They wanted the American contractors to coordinate the effort.[7]

Although this was a far cry from the American expectation that the contractors would do most of the design, coordinating the

work of the Israeli firms was no small task. Standard Israeli practice called for numerous small firms doing specialized portions of designs. One architect did a building's outer shell while a consultant designed the electrical system and another developed mechanical systems. Charles R. Thomas, chief of Gilkey's engineering division after his arrival in July, was surprised by this approach and likened the coordination effort to "trying to throw a lasso on a school of minnows." The Israelis also wanted to do most of the site investigations and laboratory analysis, but accepted organization of these activities under the prime contractors.[8]

Overall, the project seemed to be off to a good start. Hartung and Gilkey met Moshe Bar-Tov, the newly promoted brigadier general who was Hartung's counterpart as the Ministry of Defense's program manager. The agreement between the United States and Israel made no provision for such a participant, but there he was, and no one seemed to mind. At forty, Bar-Tov was younger than Hartung and Gilkey. A career navigator who had been wounded in action in 1973 and held a master's degree in business administration from the Massachusetts Institute of Technology, Bar-Tov was only slightly taller than the Americans. However, with his erect bearing and booming voice, he seemed to tower over both of them. All three smoked innumerable cigarettes, and their meetings generated clouds of smoke. Hartung took an immediate liking to Bar-Tov and characterized him as "a winner."[9]

Bar-Tov's priorities did not correspond with those of the Americans. Throughout the life of the job, he appeared preoccupied, sometimes even obsessed, with economy. He railed at the profligacy of the Corps of Engineers and its indifference to the public trust. He believed much of what the Corps did represented waste and featherbedding and insisted on the importance of watching costs from the outset. Referring to the surfeit of clerical workers in the Near East Project Office during its first days, he complained about people who had been paid to read Sears catalogs. Early errors created unrecoverable waste.[10] They also made lasting impressions.

There were other indications of potential conflict. The Israelis wanted to alter some design concepts. After members of the Knesset questioned the importation of all project materials, the Ministry of Defense also broached the possibility of buying more Israeli goods and services. In addition, the Israelis had concerns about potential prime contractors that did business with countries that did not recognize Israel and wanted to screen the selection lists. Nevertheless, management seemed harmonious and development of a plan of work was under way. Hartung summed it up: "All team members are first rate. Lots of work being accomplished."[11]

Formation of contractor organizations began while much remained unclear. The structures of the construction consortia reflected the basic decision to place the design function under prime contractors, but diverged from there. Negev Airbase Constructors handled design through a component of the joint venture, Louis Berger International. Air Base Constructors let a subcontract with Tippetts-Abbett-McCarthy-Stratton, which became known on the project as Air Base Consultants. The third contractor, Management Support Associates, anticipated a major role in design and built its organization with that in mind. The Corps of Engineers intended to maintain only a small work force in Israel and needed help in reviewing and controlling production of drawings. Management Support Associates expected to do much of this. One of its six major divisions in Tel Aviv, the Technical and Construction Management Support Directorate, reflected that expectation.[12]

The contractor selection process was still incomplete when Gilkey realized how much uncertainty remained about design. On 30 April he told Johnson that the Israelis proposed numerous changes to the Sinai base designs. Relying on a decade of experience, they altered the configuration of the airfields, adding high-speed turnouts and taxiways to the plans. Five days later, Gilkey reported a changed situation. The Israelis renewed interest in replication, and a basis for agreement on the scope of work seemed assured. Gilkey knew that such concurrence was essential and hoped to have it in a week. "The big effort," he said, "is to try and get the scope nailed down."[13]

By mid-May identification of the specific scope of work was virtually complete. Of 105 construction items at each base, about 70 involved replication. For these, constructors needed as-built designs and adaptations for the sites. Fifteen facilities required minor changes, for which criteria were available. The rest, which needed new designs, included a number that were peculiar to each site, among them drainage structures, utilities, and pavements. No final decision had been made on aircraft shelters, but Hartung expected that this question would not delay work. Overall, the design effort for the American joint ventures appeared smaller than originally expected.[14]

The Corps and its contractors divided the design tasks among themselves, essentially assigning operational aspects to the construction contractors and centralized review to Gilkey's office with the help of Management Support Associates. For example, the constructors established specifications for each building and prepared cost estimates and shop drawings. The Corps and the sup-

port contractor reviewed and approved these. The agreement did not provide for Ministry of Defense involvement in the process.[15]

As uncertainty about the nature of the work began to fade, Gilkey faced two essential tasks. The Near East Project Office needed an element that managed design. It also required procedures and guidelines for its work. Both began to emerge from the analysis Schechet provided during the summer. From the outset, he urged Gilkey to fix clear areas of responsibility for each contractor and to simplify procedures and functions. As to the project itself, he divided it into three phases—predesign, design, and construction. Each presented different problems and opportunities for design management. In the predesign phase, Schechet emphasized three areas. The first was early development of firm criteria and scope to prevent expensive changes and delays later. Next he expressed concern about the translations of Israeli drawings from Hebrew to English, the quality of which varied. He also feared that differences between Israeli and American methods of presentation might cause misinterpretations in the field. Finally, he urged preparation of project specifications based on Corps of Engineers guide specifications, modified as needed by Israeli standards.[16]

Engineers on programs of this size routinely created guide specifications that blended program needs with Corps guidelines. The Safeguard antiballistic missile program and the work in Saudi Arabia both had begun with program-oriented guide specifications. The development of a set of Negev Outline Specifications, combining Israeli and American standards, began in mid-June, anticipating Schechet's first report. An early start was essential because this important predesign task might take considerable time. Schechet, who envisioned a substantial design role for Management Support Associates, wanted the management support contractor to do the work. However, Pagano in New York thought the construction contractors, who already complained that Management Support Associates was taking over their responsibilities, would object. Air Base Constructors wound up with the bulk of the job, but General Manager Fred Butler was not pleased. "People have come to regard this item as our contract responsibility," he wrote, "when in reality, it is not." According to Butler, "The only reason the job ended up with us is that we demonstrated a certain ability to perform it when others did not."[17]

Schechet expected plans to evolve from these outline specifications and Israeli drawings. So he recognized that the actual design segment of the project would require close coordination with the Israeli firms that produced the drawings. Cooperation was essential for avoidance of expensive changes in plans, for compliance

with the tight schedule, and for integration of plans with the contractors' equipment and methods. During construction, he foresaw a declining engineering effort with reviews and changes based on field needs. The important actions came early, and he chafed at the slow development of an organization and procedures. Some of the delays were beyond project control. Congress was slow voting the money, suitable work space in Tel Aviv proved hard to find, and people on temporary duty left for home after only a few weeks on the job, taking their knowledge and experience with them.[18]

Then things began looking up. Confusion about the nature of the design function faded as Israeli firms prepared the basic drawings and the Americans adapted them to the sites. Moreover, the project was about to get its full-time manager back. Gilkey, who had gone home for his wife, had been delayed for a month recuperating from injuries received in an automobile accident. Carl Damico had served in his stead but lacked the staff and authority to negotiate arrangements with Bar-Tov while directing the activities of the contractors.[19]

An engineering organization was taking shape in the Near East Project Office. To a large degree the structure followed Schechet's plan calling for a division chief, a project engineer for each site, and a technical branch consisting of two engineers in each discipline. The technical engineering branch under Thomas' deputy, Edgar N. Moon, included two teams, one for each base. Both had engineers in seven specialties—civil, soils, estimating, structural, mechanical, electrical, and environmental—and an architect. Schechet advised against permanent teams at the sites because the contractors intended to carry out their design work in Tel Aviv. Thomas, whose experience included the National Aeronautical and Space Administration's vertical assembly building at Cape Canaveral, radar sites for the antiballistic missile program, and King Khalid Military City in Saudi Arabia, ignored this recommendation. He had used liaison offices at job sites in Saudi Arabia while assistant chief of engineering for Mediterranean Division in 1975. The liaison teams lacked environmental engineers and architects, but otherwise matched the Tel Aviv organization. Thomas recruited Gene Mahoney and Richard Huggins, both of whom he knew from previous assignments, to lead the teams at Ramon and Ovda, respectively. He also added an estimating branch under Billy Kellum, an architect he knew from the Canaveral project. This branch made projections of costs under different circumstances and validated anticipated costs of final designs.[20]

In August, while Butler's people still worked on the draft outline specifications, the Corps set up review and approval proce-

dures. After examining each draft section, Corps and Management Support Associates engineers would discuss their comments with representatives of the construction contractors who worked in the same disciplines, among them civil, electrical, and mechanical. Formal transmission of comments back to the drafters would follow. Next would come revisions, another check, and final approval. While establishing these procedures, the Corps' engineering division split the specifications into eight categories. Each became a project specification package for a group of related facilities. One grouping included all horizontal civil features—runways, taxiways, aprons, roads, and drainage systems.[21] Another included the shelter complexes. Ultimately, this organization formed the basis for dividing the work at each base into eight construction packages, which in turn were subdivided into work packages. For example, one construction package included all horizontal construction—site preparation, roads, runways, and taxiways—broken into twenty-four component work packages.[22]

The decision regarding aircraft shelters was the Ministry of Defense's last major design choice. During August, the ministry cut the alternatives to two and sent them to the contractors for cost estimates. A month later, the Israelis settled on a concrete shell, backfilled with earth and buried underground. The shell consisted of precast wall panels that were reinforced with steel and topped by a massive reinforced arched roof that was poured in place over a large portable steel frame. Each hangar had blast doors in front and an exhaust flume in the rear. After selection of this basic design and translation of the documents, the contractors began to receive the drawings for site adaptation.[23]

The Americans were unfamiliar with this approach to shelter construction. American bases usually had free-standing shelters with concrete walls formed and poured in place and topped by concrete over corrugated steel. The Israeli method caused some unease and resistance, partly due to its very novelty and partly because of uncertainty about the strength of shelters constructed in such a way. Gradually, the Corps and its contractors came to accept the Israeli approach.[24]

With the first drafts of the nearly 150 sections of design drawings completed in August, reviews and revisions continued well into the autumn. A mid-September completion date went by, while all five typists working for Butler's design subcontractor and as many engineers and specification writers revised drafts. Finally, in early November the packages were finished.[25]

Just as important to the future of the design effort was development of a standard operating procedure. Thomas and Moon spent three weeks during September and October on this framework.

Their product, based on experience and their understanding of the program and its approval cycles, established procedures in four areas of the design program. They specified procedures for developing the Negev Outline Specifications, which were already well along in the review process. Beyond that, they delineated the routines for as-builts, which replicated facilities at Eitam or Etzion; for new designs that were not peculiar to a particular site; and for new plans that were. Their procedure for handling drawings of as-builts seemed to amplify on suggestions Schechet had made in June. His notion of the process had been direct and straightforward. Israeli architect-engineer firms passed their drawings to Management Support Associates, which translated and sent them to the constructors for adaptation to the sites. Meanwhile, the Corps of Engineers and the Israeli Air Force conducted simultaneous reviews for technical sufficiency.[26]

The standard operating procedure added an initial review for deviations from the program scope. Instead of sending drawings directly to the sites, Management Support Associates distributed copies to the Corps' engineering division, both program management offices, and its own reviewers for examination against the scope. After this analysis the diagrams went to the constructors. Except for its role in the initial review, Management Support Associates did administrative tasks and translations, kept track of the process through a documents log, and provided copies of drawings. New designs also were reviewed for conformity with the scope of the program and for technical adequacy. The design-construction contractors monitored progress at the offices of the Israeli firms that made the drawings and adapted the plans to their bases. In all cases, the standard operating procedure warned, "Priority actions by the Corps, MSA, and IAF will frequently be required in order not to delay construction."[27]

While the government built up its engineering staff in Tel Aviv, the design-construction contractors did likewise. Long-term personnel gradually replaced temporaries. For example, the Air Base Consultants staff grew from eleven at the beginning of September to over twice as many at the end of October. Both contractors had teams in the desert studying the sites, the Negev Outline Specifications neared completion, and the design effort was indeed under way.[28]

Gilkey was acutely aware that time was limited. Through the spring, he waited anxiously for Congress to provide funds and urged Johnson to speed up hiring. He also had other things to worry about, with elements of all three contractors arriving and the Israeli architect-engineer firms working on parts of the design. Procurement, the bridge between design and construction, was

also troublesome from the beginning. The purchase of materials and equipment required innovative and flexible approaches attuned to changes in the Israeli economy and the transitions of fast-track construction. For many months procurement was a source of frustration and annoyance for the Near East Project Office, the constructors, and the Israelis. Some claimed to have seen the problem coming. Thomas later observed, "Before I decided to take the job, I could have walked in and said, 'long-lead items and procurement are going to be a real problem. Now what are the other problems?'"[29] That this was no surprise provided little comfort.

Initially both construction consortia seemed eager to buy their materials and equipment as soon as possible. In June 1979 Negev Airbase Constructors proposed an early start on a deferred-payment basis. The contractor hoped to have its equipment bought and on board ships for delivery in Israel in late July or early August. Air Base Constructors also started to order machinery and vehicles in midsummer. The Corps of Engineers shared their desire for a quick start but had trouble finding enough capable people to manage procurement. The lack of talent was immediately apparent. North Atlantic had no one experienced with buying heavy construction equipment, so Johnson went outside for help. Management Support Associates hired broker Michael A. Zinman as a consultant on a part-time hourly basis.[30]

Zinman oversaw the acquisition of heavy equipment by the construction consortia. General Johnson insisted that both contractors get three bids and accept the cheapest one. Both wanted Caterpillar, and neither was pleased when Fiat-Allis came in lowest. One corporate executive said that Fiat was an acronym for "fix it again, Tony." The same opinion prevailed in the Corps of Engineers. McNeely said, "We all thought JJ was crazier than hell when he went with Fiat-Allis." However, inquiries to users showed that Fiat equipment had good "RAM characteristics," that is, it was reliable, remained available, and was maintainable. Johnson held firm, and Fiat-Allis won the contract.[31]

Well into the fall this shortage of procurement experts persisted. Zinman stayed on into 1980, when he became involved in litigation with Air Base Constructors over a finder's fee he claimed for locating some 63-ton dump trucks for Ramon.[32] Even before he left, the support office in New York complained to North Atlantic Division that it lacked purchasing specialists. They had one qualified person, but under pressure from Gilkey sent him to Tel Aviv. For his part, Gilkey pleaded to North Atlantic that he was in "dire need" of temporary help.[33]

In a September 1979 introduction to the intricacies of fast-track procurement, Hartung explained to Bar-Tov how the system should work. The principal objective was to get supplies and services of acceptable quality within the delivery schedule at the lowest price. The process had to be carried out in a fair and competitive atmosphere. Before completion and approval of contractor procurement system plans, the consent of the respective contracting officers was required for several kinds of transactions, notably subcontracts over $25,000 and acquisition of industrial facilities. The government controlled the process and treated it as sequential tasks rather than as receiving completed facilities or usable construction items. Materials and equipment had to be ordered ahead of time, so procurement tasks tended to occur early and needed prompt commitments of funds. While buying early might seem expensive, Hartung explained, the early purchases would reduce the number of hasty purchases later.[34]

The first chief of Gilkey's procurement and supply division, Ronald G. Hallmark from the Corps' Walla Walla District had prepared Hartung's little essay on procurement for Bar-Tov. Although Hallmark understood the way the system should operate, he had his hands full. Extremely cautious, he seemed uncomfortable with the job's fast pace. This project was not amenable to a routine approach. The area office at Ovda worried about lack of timely purchase of materials that had to be ordered well in advance, and the contractor at Ramon complained that "our procurement and approval systems are too time consuming."[35] Instead of offering help, Hallmark's office lectured them on the "fundamental responsibility to plan actions well enough to assure that 'short fuse' are the exceptions rather than the rule."[36]

In October 1979 Management Support Associates proposed centralizing procurement for both sites and the headquarters. A coordination group that included all three contractors would manage the program from Tel Aviv. This system would replace the original one, in which each construction contractor bought its own materials under supervision of the procurement and supply branch of the appropriate area office.[37] This proposal died quickly in the hands of the Near East Project Office staff. Donald Baer, chief of the construction division, said the coordination group represented "excess control, [would be] cumbersome, and time consuming."[38] Hallmark asserted that this drastic change would cause delays and add problems rather than solve them. He "strongly urge[d] that we clearly reject such a major change in the existing system, thus avoiding undue criticism," and suggested "that we pursue our present course, utilizing the value of the learning curve

experience obtained which is resulting in an evolution of improvements."[39] The office, he seems to have meant, was learning slowly and would improve at the same rate. Eighteen months later, looking back on a lost opportunity, Alan Shepherd of Management Support Associates assessed the rejection differently. "Conceptually," he said, "everyone agrees centralized . . . procurement was the way to go. But," he asked, "do you give it to a person who is not in the fraternity?"[40] According to this view, the bureaucracy had closed ranks in defense of its prerogatives.

There were also some unexpected twists in procurement arrangements. The intergovernment agreement had emphasized buying outside of Israel to minimize the project's effect on the Israeli economy. Construction resources were occupied fully, notably in Iran, where Israeli firms had many projects under way. Then the revolution in Iran caused a dramatic change in Israel's construction industry. Firms with idle workers and machines asked the government for help in finding markets. Very soon after Gilkey arrived in Tel Aviv, the Israelis began to press for increased procurement activities in Israel. Some Israelis had objected to the agreement from the start.[41] Auditor Naomi Kogon of Bar-Tov's office, who later married Bory Steinberg, the head of the project office's planning and coordination office from October 1979 to August 1980, labeled it a "a disaster."[42] But the agreement had taken into account the Israeli situation, which was changing all the while. Bar-Tov noted the magnitude of some of the changes: "In all my studies, when I learned about double-digit inflation, I don't think that all these experts in economy thought that this term would be used for monthly inflation."[43] So, still concerned with accommodating Israel's economic situation, the program looked for ways to increase local purchases.

Israeli pressure for an expanded role started a month after conclusion of the government-to-government agreement. Gilkey expected that he would have to buy some supplies and materials locally. While at first it had seemed that local purchases might not go far beyond office supplies and some administrative support, in June the Israelis clarified their interest in selling building materials and equipment to the program. Given this area of concern, it was appropriate that the only standard procedure completed during Hallmark's tenure specified the items that had to be bought in Israel, those that had to be imported, and those that could come from either local or foreign sources.[44]

Along with the expressions of interest in more procurement came the first published claims that Israeli constructors should have been allowed to do the work. In the summer of 1979 the

newspapers began to raise the issue. The papers usually focused on the money wasted in allowing the Americans to do the work. The program tried to adapt to the new situation. The Ministry of Defense still wished to minimize the "negative impact on the Israeli market which is already overheated by excess demand-inflation." So now the goals were twofold, expanded involvement as well as minimal harm to the economy. Before the year ended, the program managers approved a standard procedure that tried to accommodate these apparently conflicting interests. The agreement made purchasing within Israel a joint effort. The procurement office prepared monthly lists of expected solicitations, on which the Israelis based their determinations of acceptable prices. The Israelis decided whether bidders were on the ministry's list of approved vendors as well as whether prices were reasonable.[45]

Gilkey also had to find space for his staff to live and work. Joseph Robbins, a principal in Management Support Associates, arrived in early May with his firm's first contingent. In addition to beginning evaluation of the Israeli design effort and gauging the amount of work involved in translating drawings from Hebrew, Robbins' people started the search for offices and housing. They found temporary space at the LaRomme Hotel, an incomplete luxury hotel along the beach. Meanwhile, they continued to look for permanent quarters, based on Johnson's earlier decision to seek offices and residences in the same place. In Tel Aviv, terrorist acts were unlikely but possible, so such an arrangement would protect his staff, even though the Israelis vetoed his idea of an eight-foot chain-link fence around the facility. Moreover, employees would avoid commuting time. Such a building would cost less than rent for hundreds of apartments and prove easier to administer. Johnson sometimes referred to the home he sought as a "cruise ship," and he would have considered a vessel anchored off shore. However, he mainly had in mind a hotel large enough to provide offices and to house all employees who did not bring their families. Hartung and Bar-Tov were not enthusiastic about the idea, particularly if the hotel remained open to the public. So the solution was to find one that could be taken over completely. The Diplomat on the tourist strip was willing to close but asked about $4 million per year.[46]

Bar-Tov had an interest in the choice because of an agreement to place his office alongside those of Hartung and Gilkey. Bar-Tov considered the Diplomat too pretentious and the potential source of press criticism. He also wanted project management located near the Israeli Air Force headquarters in a newer section of the city away from the beach. So, while the Americans studied hotel costs and discussed the problem with New York, Bar-Tov arranged

IBM Building in Tel Aviv

the lease of four floors of the IBM Building, a three-sided tower whose upper floors provided spectacular views of the city and the sea. More important, IBM was across the street from the offices of the Israeli Air Force. Desperately in need of permanent office space, the Americans acceded to Bar-Tov's action. Gilkey was not pleased and understood the precedent that was involved: "We cannot let him [Bar-Tov] get into the position where he's approving anything that we do either on a temporary or permanent beddown." Still, IBM did provide a place to work. "We're in business," Damico told New York. "We now own the IBM Building. For the price we're paying for it, I thought we bought it," he added ruefully, with an eye on the $609,000 first-year price tag.[47]

The IBM Building represented only a partial solution to the need for office space. Four floors of the tower were crammed full with program management offices, Gilkey's staff, and the design-construction contractors. Damico expected that this contingent would soon overflow these offices. The gradual movement of the offices from the LaRomme during July validated his judgment. The project still needed a hotel, but the emphasis was changing. With management at the IBM Building, it became clear that engineering activities should be centered there also. The hotel was for living space and administrative staff functions, including personnel, security, communications, and transportation. Along with Gilkey's office, engineering, construction, and resource management would remain. The project's focal point would still be the IBM Building.[48]

Meanwhile, Management Support Associates continued negotiations for the Diplomat. As talks proceeded, other hotels offered better prices. The best came from David Taic, owner of the 327-room Forum Palace. A little north of the tourist center but on the beach, the hotel had once been the Tel Aviv Sheraton. Older than the others, in need of cosmetic repair, and beset with poorly func-

tioning mechanical systems, the Palace belied its name. Still, it had advantages, among them twenty more rooms than the Diplomat and large first-floor public areas that could be converted to offices. It also was more desirable from a security standpoint. A road ran under the Diplomat, making it something of a risk, while the Palace sat farther from the street and had a large enclosed parking lot. Moreover, the same problems that gave the Palace a run-down air made it more attractive from a public relations standpoint: everyone wanted to avoid unnecessarily lavish quarters. With a three-year $3 million lease and an annual operating cost of about $2 million, the choice seemed sound. After a cursory evaluation of the building's condition, Management Support Associates signed a lease on 1 August 1979. The project was in the hotel business.[49]

The transition to government offices and billeting was not easy. Occupants were forced to move, and travel agents were told to cancel bookings. Then former employees of the hotel, angered by their abrupt dismissal, occupied the building. They refused to allow Israeli Hospitality Services, the subsidiary of the Dan Hotel Corporation that won the subcontract for operations and management, to take possession. In need of a quick resolution, Management Support Associates encouraged Dan to negotiate with the strikers. The agreement saved ninety-five jobs and raised the cost of the subcontract by about 10 percent. The Near East Project Office moved into the hotel at the beginning of September. General Johnson had his cruise ship.[50]

Notes

1. "The Americans Dig In," *Jerusalem Post*, 18 Dec 79.

2. DA, OCE, Permanent Orders 6–1, 29 Mar 79, IABPC, 87/9.

3. Hewitt interview; McNeely interview, Sep 83.

4. Milton, "Mideast Survey," p. 71; Luttwak and Horowitz, *The Israeli Army 1948–1973*, pp. 121–22, 228; Transcript, Meeting with Graves Delegation, 23 Mar 79; Interv, author with Brig Gen Paul T. Hartung, Aug 80, Tel Aviv, Israel.

5. Transcript, Meeting with Graves Delegation, 23 Mar 79; "Corps Mobilizes Quickly on Israeli Airbase Jobs," *ENR* 202 (26 April 1979): 10; Telex, USDAO Tel Aviv (Col Clarence D. Gilkey) to DAEN-MPC, 20 Apr 79, sub: Israeli Air Base Program Development, IABPC, 12/1; Memo, Hewitt, Required Information for Design, NAD PAO files.

6. Construction Package, vol. III, Aircraft Shelter Complex, Encl to Ltr, Col Richard L. Curl to NAC, 15 Oct 79, sub: Project Specifications and Construction Packages, IABPC, 22/1; Ltr, Manuel M. Schechet to NEPO Project Manager, 30 Jun 79, sub: Interim Report No. 1, and 30 Jul 79, No. 2, IABPC, 80/6.

7. Telex, USDAO Tel Aviv (Hartung) to HQ USAF, 23 Apr 79, sub: Israeli Air Base Program Development, Sitrep No. 1, IABPC, 12/1; Telex, USDAO Tel Aviv (Gilkey) to DAEN-MPC, 20 Apr 79; MFR, Hays, 18 Oct 78, IABPC, 1/5; Vinitsky interview.

8. Interv, author with Charles R. Thomas, Aug 80, Tel Aviv, Israel.

9. Telex, NEPO PAO (Eugene Gamble) to U.S. Army Engineer District, Chicago, 22 Apr 80, sub: BG Moshe Bar-Tov Biography, IABPC, 33/1; Interv, author with Paul Cheverie, Aug 86, New York City; Telex, USDAO Tel Aviv (Hartung) to HQ USAF, 23 Apr 79, sub: Israeli Air Base Program Development, Sitrep No. 2; Telex, USDAO Tel Aviv (Gilkey) to DAEN-MPC, 20 Apr 79.

10. Interv, author with Moshe Bar-Tov, May 82, Tel Aviv, Israel; Interv, author with McNeely, Mar 84, Washington, D.C.

11. Telecon transcript 3, 24 Apr 79, IABPC, 10/3.

12. "Israeli Air Bases: Peace Treaty Puts U.S. Constructors on a Desert Fast Track," *ENR* 205 (30 October 1979): 26–27; A. J. Vercruyssen, MSA Situation Rpt, 27 Jul 79, IABPC, 12/4.

13. Telecon transcript 5, 30 Apr 79; Telecon transcript 16, 4 May 79. Both in IABPC, 10/3.

14. Telex, USDAO Tel Aviv (Hartung) to HQ USAF, 14 May 79, sub: Israeli Air Base Program Development, Sitrep No. 4, IABPC, 12/1.

15. Telex, NEPO to NAD, 4 Jun 79, IABPC, 65/1.

16. Ltr, Schechet to NEPO Project Manager, 30 Jun 79, sub: Interim Report No. 1.

17. Telecon transcript 18, 11 Jun 79, IABPC, 10/3; Ltr, Schechet to NEPO Project Manager, 30 Jun 79, sub: Interim Report No. 1, and 30 Jul 79, No. 2; Thomas interview; Fred Butler, ABC Weekly Progress Report, 26 Sep 79, IABPC, 12/13.

18. Ltr, Schechet to NEPO Project Manager, 30 Jun 79, sub: Interim Report No. 1; and 30 Jul 79, No. 2.

19. Ltr, Schechet to NEPO Project Manager, 30 Jul 79, sub: Interim Report No. 2.

20. Ibid., 30 Jun 79, sub: Interim Report No. 1; Thomas interview; MFR, Bar-Tov and Hartung, 26 Dec 79, sub: 20 December 1979 DOD/MOD PMs Meeting, IABPC, 45/4; NEPO, Organization Manual, 15 Sep 79, IABPC, 88/5.

21. MFR, Edgar N. Moon, Acting Chief, Engineering Division, 20 Aug 79, sub: Procedures for Review of Negev Outline Specifications, IABPC, 21/14; Thomas interview.

22. The other seven groups were exterior utility systems; aircraft shelters; housing, dormitories, and community facilities; operations and administration facilities; industrial and maintenance facilities; preengineered structures; and Ovda flood control. Ltr, Curl to Project Manager, NAC, 15 Oct 79, sub: Project Specifications and Construction Packages; Ltr, Col Donald M. O'Shei, COR, to GM, ABC, 15 Oct 79, sub: Project Specifications and Construction Packages, IABPC, 22/1; Ltr, Lt Col Joseph A. Beben, COR, to GM, MSA, 15 Oct 79, sub: Project Specification Packages. All in IABPC, 22/1.

23. NEPO Sitrep 3, 13 Aug 79, IABPC, 12/6; MSA input, NEPO Sitrep 6, 3 Sep 79, IABPC, 12/9.

24. Interv, author with Carl Damico, Nov 88, Baltimore, Md.

25. ABC Weekly Progress Reports, 26 Sep, 12 and 31 Oct, and 12 Nov 79, IABPC, 12/12, 15, 18, and 13/2; Ltr, Curl, COR, to Project Manager, NAC, 24 Sep 79, sub: Progress of Negev Outline Specifications, IABPC, 29/4; Ltr, O'Shei, COR, to GM, ABC, 24 Sep 79, sub: Progress of Negev Outline Specifications, IABPC, 29/4.

26. Thomas interview; SOP 9, Design Development, Review, and Approval, IABPC, 15/9; Ltr, Schechet to NEPO Project Manager, 30 Jun 79, sub: Interim Report No. 1.

27. SOP 9.

28. Ltr, Schechet to NEPO Project Manager, 30 Jul 79, sub: Interim Report No. 2; NEPO Sitrep 6; ABC Weekly Progress Reports, 12, 19, and 26 Sep and 3 and 24 Oct 79, IABPC, 12/11–14, and 17.

29. Telex, USDAO Tel Aviv (Hartung) to HQ USAF, 23 Apr 79, sub: Israeli Air Base Development, Sitrep No. 1; Telex, USDAO Tel Aviv (Gilkey) to DAEN-MPC, 20 Apr 79; Telecon transcript 2, 20 Apr 79; John F. Wall, "Israeli Air Base Project: Construction Miracles in the Desert," The *Military Engineer* 73 (September-October 1981): 329; Thomas interview.

30. Telecon transcript 22, 21 Jun 79, IABPC, 10/3; ABC Weekly Progress Reports, 8, 15, 22, and 29 Aug 79, IABPC, 12/6–9; Memo, Richard A. Wilson, MSA, 21 Jun 79, IABPC, 77/4.

31. Johnson interview; McNeely interview, Sep 83.

32. The matter was settled out of court. IABPC, 77/3–6.

33. Telex, NEPO-Rear to NEPO, 7 Nov 79, sub: Procurement Actions at NEPO-Rear, IABPC, 66/1; Telex, NEPO to NAD, 12 Oct 79, sub: Request for TDY Assistance, IABPC, 65/8.

34. Ltr, Hartung to Bar-Tov, 7 Sep 79, sub: Procurement Policy and Procedures, IABPC, 29/4.

35. Procurement & Supply Division, Sitreps, 26 Aug, 2 and 9 Sep 79, IABPC, 12/8–10; OAO, Master Diary, entry for 18 Oct 79, IABPC, 84/1; Butler, ABC Weekly Progress Report, 26 Sep 79, IABPC, 12/13.

36. Three different versions of this letter, drafted by Hallmark's office, went to the three contractors from the respective contracting officers' representatives. Ltrs, Curl to GM, NAC; O'Shei to GM, ABC; and Beben to GM, MSA. All 5 Oct 79, sub: Time Allowed for Submission of Bids, IABPC, 30/1.

37. Interv, author with Alan J. Shepherd, May 82, Tel Aviv, Israel; DF, Donald C. Baer, Chief, Construction Division, to Project Manager, 15 Oct 79, sub: MSA Recommendations on DCC Design and Procurement Process, IABPC, 30/1; DF, Ronald G. Hallmark, Chief, Procurement and Supply Division, to Project Manager, 16 Oct 79, sub: MSA Recommendations on Major Change to Existing Procurement Process, IABPC, 30/1.

38. DF, Baer to Project Manager, 15 Oct 79.

39. DF, Hallmark to Project Manager, 16 Oct 79.

40. Shepherd interview, May 82.

41. Telecon transcript 2, 20 Apr 79; *Jerusalem Post*, 17 Jul 79; Memo, Hartung for Gilbert, 30 Nov 78, sub: Methods of Accomplishing/Managing Israeli Air Base Construction, IABPC, 89/3.

42. Interv, author with Naomi Kogon Steinberg, Dec 81, McLean, Va.

43. Proceedings of Program Press Conference, Tel Aviv, 12 Jun 80 (audiotape), IABPC, 92/2.

44. Telecon transcript 2, 20 Apr 79; Telex, USDAO, Tel Aviv (Hartung), to HQ USAF, 23 Apr 79, sub: Israeli Air Base Program Development, Sitrep No. 1; Ltr, Yossi Kedem, Economic Adviser, to MOD PM, to Damico, 13 Jun 80, sub: Use of Israeli Sources for Materials, Services, and Equipment, IABPC, 8/7; SOP 10, Procurement Procedures for Purchase of Materials, Equipment, and Services, 9 Nov 79, IABPC, 15/10.

45. *Jerusalem Post*, 17 Jul 79 and 27 May 80; (Tel Aviv) *Ha'aretz*, 25 Sep 81; (Tel Aviv) *Al Hamishmar*, 11 Nov 81; Ltr, Kedem to Damico, 13 Jun 80; SOP 10.

46. Telex, USDAO Tel Aviv (Hartung) to HQ USAF, 14 May 79, sub: Air Base Program Development, Sitrep No. 4; Telecon transcripts 12, 17 May 79, and 15, 31 May 79, IABPC, 10/3; Johnson interview; McNeely interview, Sep 83.

47. Telecon transcripts 14, 29 May 79; 15, 31 May 79; 23, 25 Jun 79; and 24, 28 Jun 79, IABPC, 10/3; Cost Effectiveness of a 350-Room Cruise Ship (with Office Colocated), MSA, Israeli AF Base Management Support Contractor Project Planning Documents and Briefing Book, May 79, IABPC, 89/2; Telex, NEPO to NAD, 25 Jun 79, IABPC, 65/1.

48. Telecon transcripts 19, 14 Jun 79, and 23, 25 Jun 79; NEPO Sitrep No. 1, 30 Jul 79, IABPC, 12/4; NEPO Project Manager, Information Paper: Palace Billeting and Office Facility [Aug 79], Tel Aviv, IABPC, 17/2.

49. Telecon transcripts 23, 25 Jun 79, and 25, 2 Jul 79, IABPC, 10/3; Telex, NEPO (Hugh J. Bartley) to NEPO-Rear (Oswald I. Hewitt), 1 Aug 79, sub: RMO Activities, NEPO, IABPC, 65/4; NAD PAO, Statement on Forum Palace Hotel Lease, 13 Aug 79, IABPC, 12/5; Cheverie interview.

50. Ltr, GM, MSA (Robert I. Barry) to CO (Gilkey), 21 Aug 79, sub: Management and Operation of the Forum Palace Hotel, Request for Approval to Subcontract, IABPC, 21/14; Information Paper: Palace Billeting and Office Facility [Aug 79], Tel Aviv; Lt Col Joseph A. Beben, Sitrep submission, 9 Aug 79, IABPC, 12/6; *Jerusalem Post*, 9 Aug 79.

CHAPTER 6

In Pursuit of Stability: Organizational and Contractual Problems

September–December 1979

I have to tell you that the start-up of the Israel project is a good example of how not to do it.

Maj. Gen. Bennett L. Lewis[1]

From my vantage point, the one Corps individual with the strength and capacity to deal with all facets of the program was General Bennett L. Lewis. More than any other person, I credit him with putting in motion the necessary events and actions which have brought the construction management to its present good posture.

Lt. Gen. John W. Morris[2]

When the Near East Project Office was established, everyone involved with project management understood the need to convert the letter contracts into definitive documents. However, the contracts were not alone in their need for clarification. Before the office functioned smoothly, it too required further definition. Despite the planning that preceded occupation of the Palace Hotel, the initial organization was a preliminary and tentative arrangement that was useful only for starting the job. Time and firm leadership were needed to work out internal relationships, define staff functions, and establish an efficient organization. Relationships with the program managers and the area offices also needed to be worked out. Months passed and major personnel changes took place before the project organization was defined conclusively.

When the headquarters moved into the Palace, one major change already had taken place. Johnson was no longer in command of North Atlantic Division. He had moved to Washington, where he replaced Burnell as deputy chief of engineers. A new di-

vision engineer, Maj. Gen. Bennett L. Lewis, arrived in New York in August. In some ways, Lewis contrasted markedly with his predecessor. Quick with a smile or a wisecrack and with a twinkle in his eye, the well-liked Johnson had given his subordinates in Tel Aviv almost a free hand. Lewis was more intense in appearance and manner. "He learns the business by getting deeply involved in details," his deputy Paul Bazilwich commented, "and he learns it very quickly at great frustration to you as an individual because he asks some very embarrassing questions."[3] Morris considered him "very smart and very tenacious, tireless, and perceptive."[4] Lewis did not tolerate foolishness. He was sometimes impatient and could seem obsessed with his work.

Their approaches to the transition reflected the differences between the two men. At Lewis' request Johnson identified the most important concern facing Lewis as division engineer. Although Johnson considered the project in Israel very important, he believed that "the commander has got to think of the future," which he thought lay in North Atlantic Division's continued involvement in the development of water resources. Therefore he advised Lewis, whose major assignments had been in armaments development and procurement rather than water resources development and military construction, that preparation for congressional hearings on the civil works budget should receive the highest priority.[5]

Lewis did as Johnson suggested but soon decided that he had chosen the wrong course. Lewis was not sure that civil works represented the wave of the future for the Corps. In fact, he foresaw a continued decline in the budget and in congressional authorization for new water projects. Moreover, Lewis thought the work in Israel was extremely important, "not an Army project, and not a Defense project," but "a national project with very serious international implications."[6] When he focused his attention on the air base project, he did not like what he saw. He went to Israel for ten days in early September, visited the sites, and talked with the managers. He came away with a poor impression of operations and arrangements. He saw difficulties with the contractual framework, the organizational structure, the lack of consensus on goals, and operations themselves.

Even before his first visit to Tel Aviv, Lewis turned his critical eye to the contracts for the project. He understood that the government had resorted to cost-type contracts because of the uncertainties in the work. However, he did not consider the fixed-fee contract the best choice because it contained no monetary inducements for meeting the all-important 25 April 1982 deadline. He wanted a contract that

guaranteed the contractor a basic fee and included financial incentives for timely completion and for staying within the budget.[7]

For help in determining the suitability of an incentive clause, Lewis turned to the Corps' Construction Engineering Research Laboratory. In Champaign, Illinois, the facility had branched out beyond its initial mission of long-term research in construction and now included a team that specialized in management issues. Two members of this unit, team chief Michael J. O'Connor and Glenn E. Colwell, analyzed the situation for Lewis. They concluded that introducing incentives for early completion as well as for cost control was indeed possible because the contractors still operated under letter contracts pending agreement on the definitive instruments. They also told Lewis that a cost-plus-fixed-fee contract represented the worst possible arrangement, whether from the standpoint of the lack of incentives for saving money, the anticipated price, or the administrative effort involved. This type of contract contained no incentives for economical management, so the government would have to monitor the contractor's activities closely and help manage the project.[8]

While O'Connor and Colwell examined the contracts, Lewis looked at the government organization. The Near East Project Office was still in its organizational infancy. It lacked management systems and had few established procedures. Many positions had not been filled. Others had, but in the wrong sequence, with clerks being sent over before professionals and supervisors were even hired. Relations among members of the staff were also unclear. Worst of all from Lewis' point of view, individuals from many organizations made up the office instead of a cadre from one source. This staffing method was inevitable: the Corps did not have a ready-made project office that it could have sent to Israel. Because of how the office had been pieced together, its staff did not function as a team. Lewis thought the headquarters did not have control of the project. He also thought the Corps could and should have done better.[9]

Lewis also saw the need for clear goals acceptable to all managers, whether they worked for the government or the contractors. From the start, Lewis viewed delivery of operational airfields by the April 1982 program deadline as his primary goal. He recognized the importance of quality and understood the Israeli concern for economy. If "a decision require[d] a trade-off between cost and time," he said, "time had precedence." He considered it crucial to "insure that the United States . . . did nothing that could be held up as a reason for the Israelis not leaving the Sinai on 25 April 1982." Nevertheless, he did not consider this date a useful target for the

construction agent. Only completion of facilities needed for initial operating capability well before the spring of 1982 would enable the United States to meet the April goal. The Israeli Air Force would need time to install its equipment, move people onto the bases, check out systems, and evaluate construction. Operations associated with site activation would take months. So he wanted completion by October 1981 of all construction needed for the start of base operations. He complained that Corps people "reacted very slowly, too slowly" to this need, but he insisted that they focus on that goal and plan accordingly. Eventually, they did so.[10]

Lewis was also dissatisfied with the Near East Project Office's actual operations. The mission demanded creative approaches. Nevertheless, he found key civilian managers approaching their work routinely, "not in an innovative and practical mode with the urgency needed to match the requirements and sensitivities of the project." One senior employee in Tel Aviv told Lewis that his major problem involved the curtains in his hotel room. Lewis thought this complaint typified an excessive concern with creature comforts throughout the project.[11]

By the time that Lewis decided that he should concentrate on the air base program, Gilkey knew some of these problems. In August he reported that his office's structure was unclear. He did have the help of Hugh Bartley, who he described as his "de facto deputy." Operating under the title of assistant for administration, Bartley supervised all nonengineering functions, fulfilling the role Johnson had envisioned for the resource manager. He was responsible for contract administration, personnel, public affairs, security, procurement, administrative services, and communications. But Gilkey knew that Bartley would be available for only a short time, and many of the staff sections had managers who were on the job only until permanent employees could be found. For example, even with an impending authorization for an $800 million budget, the resource management office had only three permanent employees at the beginning of August: the deputy chief, one auditor, and a secretary. Those who remembered the North African airfields would have agreed: a three-person resource management office would not do.[12]

Gilkey had other help as well. In June 1979 Col. Irving Kett had been called to active duty for the project at his own request. Kett's credentials seemed perfect. A professor of engineering at California State University, Los Angeles, he had worked in Israel for five years as chief design engineer for the Division of Highways in the Ministry of Public Works. He spoke Hebrew and understood Israeli construction practices. Although Bartley left before the end of the summer, Kett remained in the office with three other senior assistants whose

jobs at the time were ill defined. Still on board was Carl Damico, who had been interim project manager during Gilkey's absence earlier in the summer. Damico's title was assistant to the project manager, although it soon became deputy project manager. Kett was assistant project manager, Lt. Col. Joseph A. Beben was assistant deputy project manager, and Lt. Col. George R. Snoddy's title was assistant to the project manager for logistics and special projects.[13]

These senior men were not equally successful in finding suitable work, and it took time to establish their roles. Beben, who was among the early arrivals in May 1979, started out as a liaison between Tel Aviv and the construction contractors but, after a stint in the New York support office, assisted Damico in administering the Management Support Associates contract. Damico also took over the construction division after Donald Baer returned to South Pacific Division's San Francisco office in May 1980. Snoddy replaced Damico as contracting officer in the fall of 1980 and represented the project with the Air Force commissary system, which supplied much of the food for the dining rooms. Of the four, Kett had the most difficulty finding useful work.[14]

The only substantive job Gilkey could find for Kett involved preparing the weekly situation report to North Atlantic Division, which Kett compiled from material provided by Tel Aviv staff sections, the area offices, and the contractors. This task represented a misuse of Kett's talents, and Gilkey was no more comfortable with it than Kett. Leaving the door open for consideration of more suitable work, Gilkey encouraged "suggestions . . . with regards to better utilizing your unique qualifications within the NEPO organization." Meanwhile Kett diligently garnered, sorted, and sent information to New York.[15]

If there were too many assistants at the level just below Gilkey, the problem with the next tier down was different. As the glut of deputies showed, no coherent management team had been hired, allowed to select supervisors and technicians, and sent to Israel. So engineering and construction divisions rounded out their staffs unsystematically. Neither Baer nor Thomas had the chance to select their staffs before going to Israel. When Damico first arrived, he found one professional engineer and nearly a dozen secretaries and typists. Because of the numerous volunteers in New York for clerical jobs, they were filled as quickly as they opened. Only later did the supervisors and professionals come. The recruiting was carried out in New York and Washington, sometimes influenced positively from Tel Aviv as when Thomas managed to get Gene Mahoney and Richard Huggins for the liaison offices at the sites. The rush to establish the organization, well intentioned though it was,

may have obscured the need for a systematic approach. As McNeely said, looking back on the process, "It was a lousy way to do it."[16]

The staff's problems underscored the need to develop an efficient project team. Conflict between bureaucrats over perquisites or the avoidance of onerous jobs hit the office early. Two high-ranking civilians with adjacent offices fought it out on paper over the responsibility for ordering bulletin boards.[17] One of the participants in this feud also became involved in a dispute over the assignment of hotel rooms. He felt his room was not commensurate with his rank, rejected all explanations, and carried his complaint to the president of the United States.[18] These disputes were still unresolved when unsanitary conditions forced the closing of the hotel dining room. Although the shutdown lasted only twenty-four hours, from dinner on 17 September through lunch on the following day, it forced 200 employees and dependents to look elsewhere for their meals and seek reimbursement afterward. Problems with food service continued for at least a month and constituted a major distraction for everyone, management included.[19]

Back in the States Lewis was trying to get control of the situation. He had left Israel with a low opinion of the Near East Project Office. He thought the staff did not understand the project's complexity or the needs of the customer. He also thought management gave too little attention to conclusion of the definitive contracts. After returning to New York, he waited in vain for word that Gilkey's staff was reacting to his guidance and direction. Bartley, who in Vietnam had commanded a cavalry squadron alongside Lewis' combat engineer battalion, served as Lewis' link with Gilkey's office. Lewis considered Bartley "a genuine hero" for his battlefield leadership and an astute observer of human behavior. Bartley's reports on Tel Aviv's responses to Lewis' direction reinforced the latter's feeling that he was being tolerated and patronized. Lewis also concluded that little was being done. With Bartley's help, Lewis spelled out his goals. He set deadlines for completion for Gilkey, who still had to deal with the dining room problem and the question of Colonel Kett's role.[20]

Lewis knew that protracted negotiations preoccupied government and contractor management. Within the Corps, the long process meant that the Near East Project Office's chief counsel, John R. Brown, had to get temporary help for his routine business while he concentrated on the contracts. The contractors also put their best people to work on these discussions. As Brown said, "Their top people who are vitally into this job, who ought to be down at that site doing the work and overseeing it, are spending half their time negotiating to definitize the letter contract."[21] Manuel Schechet

had warned Gilkey that the concern for concluding the contracts was beginning to affect the project. The emphasis on negotiations, he said, delayed contractor recruitment for design personnel. It also led them to resort to short-term employees as a stopgap measure.[22]

One of the contractors concluded a definitive agreement fairly quickly. Management Support Associates and the government settled on a total cost of $48 million during the first week of September. This contract was organized on the basis of task directives, issued by the government when it needed support in a particular area and covering a wide range of activities at the construction sites, in Tel Aviv, and in the United States. At Ramon and Ovda these included construction support services ranging from quality assurance to cost review. In Tel Aviv the jobs ranged from life-support functions to operation of project communications and control of design documents. The New York office managed the operation in Israel and assisted with stateside procurement. Each task carried a separate budget.[23]

By mid-September only the two design and construction consortia still worked on the basis of letter contracts. The Corps group under Thayne Coffin, known as the D-team, was charged with concluding the definitive instruments. The group contended that letter contracts put the government at a disadvantage. Especially in a cost-plus-fixed-fee situation, with the profit based on an estimated cost, contractors had little interest in quickly concluding the negotiations. The longer they took, the more accurate their cost data became.[24] All the while, as Thomas and Brown agreed, they would be secure in the knowledge that the government would take no action that endangered completion of the air bases. To some it may have seemed in September 1979 that the negotiations would drag on forever. Early in July, Wray had appointed negotiators and later in the month sent them to Israel. He estimated then that the job would take from thirty to forty-five days.[25]

A team of three auditors supported the Corps negotiators. The Definitization Internal Review Team—known as DIRT—was Hewitt's brainchild. It operated in direct communication with Hewitt and reported its progress to him. With a room, a conference table, and a calculator at the LaRomme, Frank Billiams, Norman Jensen, and Carmy Zweig analyzed the contractors' plans. They reviewed the constructors' definitization plans for compliance with the contracts, evaluated their cost estimates, and looked for glaring dissimilarities in costs for similar work items. Much of their work focused on personnel costs, the number of people, and their benefits and holidays. They also evaluated work plans and standard procedures. Sometimes they found arithmetic errors of as much as 400 per-

cent. Although independent of the D-team, DIRT supported Coffin with analyses and recommendations.[26]

The negotiators also set up shop in the LaRomme. Before long the tremendous differences in the positions of the contractors and the government became clear. Air Base Constructors first submitted an estimate of $650.7 million, $583.0 million of which was the direct cost of construction. The remainder represented their fee, general and administrative costs, and contingencies. The government thought the Ramon project should cost $370.8 million. The divergence came at least partly from differing concepts of what the jobs entailed. The contractor's initial amount was based in part on Israeli drawings that delineated excavation and construction that were not in the plan of work. Lewis thought other factors included "the many uncertainties associated with the job" and the knowledge that ultimately the fee would be calculated as a percentage of the estimated cost. The government's figure came from the scope of work written in the contract as modified by the plan. By late September negotiations narrowed the gap between estimates considerably. The contractor had reduced proposed direct costs to $483.8 million, almost $100 million below the original estimate. The Corps had increased its figure by nearly $40 million to $407 million. The difference was about $75 million.[27]

The general managers for both contractors never held out much hope for early agreement. Fred Butler spotted trouble at the beginning of August. He and the Corps differed over their understanding of the contractor's responsibility for a proposal. Butler thought that a schedule of services was required; the Corps seemed to want a detailed estimate with a management plan for the duration of the project. "It would appear to us," he wrote then, "that progress is not adequate to have a contract by 15 September."[28] Unlike Butler, Warren Pettingell did not make public the reasons for his pessimism. Still, he too clearly had his doubts about early completion. In four consecutive reports he called the negotiation process "painfully slow."[29]

At first the office in Tel Aviv had been sanguine about completing the contracts by September. Later Gilkey foresaw problems. He became concerned that the contractors might delay the proceedings and cause negotiations to drag on. Lewis stepped in at this point, with two objectives in mind. Angry because his directions were not being followed in Tel Aviv and unsure of the ability of the office to do the job, he decided that he needed a Corps of Engineers general as project manager. This matter he would take up later with Morris. His other goal was to complete the definitive contracts.[30] He told Gilkey that preparation of a detailed govern-

ment cost estimate "so sound as to enable you, your top people, and me to stake our professional reputations upon it" was the key to concluding the contracts. A mutually satisfactory work plan would serve as the basis for this estimate. The estimate would provide a means for analyzing contractor figures and resolving differences between the constructors and the government while showing the contractor that the government was serious about completing the process.[31]

Lewis placed a high priority on concluding the definitive contracts and considered the negotiators "very capable individuals." However, in keeping with his own inclination to participate actively in important tasks, he wanted the three colonels—Gilkey, who was then contracting officer for both construction contracts; and Cols. Donald M. O'Shei and Richard L. Curl, who eventually would command the Ramon and Ovda Area Offices, respectively, and assume management of the contracts pertaining to their respective sites—to become personally involved in the effort. "The responsibility for completing the process was theirs," Lewis said, "not that of the specialists who were sent . . . to assist Corps management." He wanted Gilkey to spend less time responding to queries from the program managers and to concentrate on the government cost estimate from which he would negotiate definitization with the contractors.[32]

Estimators Ron Hatwell and John Reimer spent part of the summer and fall of 1979 in Israel with the D-team. The emphasis in the estimate shifted to determining the number of buildings, their size, and specifications. The estimators already had refined their original estimate and come up with an amount of $1.04 billion. But with design far from complete and no firm construction schedule, the process still involved conjecture.[33]

Lewis understood "the chaotic situation" regarding the drawings. The project was trying to replicate Etzion and Eitam from the drawings for those airfields. At least fifty different architect-engineers had been involved in the design of those bases, which the Israelis had built over several years as funds had become available. By American standards the drawings were incomplete and inconsistent. Moreover, the accompanying specifications were in Hebrew.[34]

With characteristic impatience, Lewis gave Gilkey a month to prepare a government estimate "in which you place a high level of confidence" and to compare it with contractor estimates. He wanted Curl and O'Shei to assemble estimates for their sites that were so good that they could "stake their professional reputations on these estimates." Gilkey would use these for his overall figure. Failure to begin actual negotiations by 15 October, he said, would require escalation of the process to higher headquarters. "If you

see our schedule slipping for any reason," he admonished Gilkey, "please let me know immediately. It is necessary that we do not lose sight of what we expect to get done in the next six weeks."[35]

Negotiations with both contractors resumed in mid-October. Lewis actively participated, as did Gilkey, O'Shei, and Curl. Also involved for the Corps was Coffin's D-team. Depending on the needs of the moment, this group varied from as few as eight to as many as thirty people. It included estimators, attorneys, auditors, and negotiators. Joe B. McNabb, chairman of the Guy F. Atkinson Company, and David Perini of Perini Corporation also went to Israel with other partners in the consortia to join their general managers on the sites in concluding the discussions.[36]

Although numerous specific issues were involved, both negotiations included some similar disputes, notably those involving the cost of architect-engineer design services. The problem resulted in part from circumstances beyond the control of the program planners. The Shiite fundamentalists in Iran who deposed the shah and guided the Islamic revolution canceled large Israeli construction contracts and expelled the Israelis from Iran. Many Israeli design firms found themselves out of work.[37]

Several times during the life of the project, the Ministry of Defense took or urged actions to mitigate the resultant shock to the Israeli construction industry. In this instance, the ministry hired numerous architect-engineers to work on plans for the air bases. The designers affiliated with the American contractors had expected to do this work themselves and had organized their operations accordingly. Other areas of dispute included the cost of materials and the dollar value of construction.[38] In fact, even after agreeing on the cost of equipment, life support, design, and supervision, the government and contractors "were far apart," as Gilkey noted, "on the direct cost of the construction itself."[39]

During the negotiations, Lewis raised the possibility of financial incentives for timely completion. The contractors declined to incorporate such changes into their contracts. Doing so would make their profit dependent on the later findings of a government board. Moreover, they were wary of an arrangement with which they lacked experience, particularly in the context of a project that already promised surprises aplenty.[40]

Arrival at a mutually acceptable figure for the direct cost of actual construction was a major effort. Without specifications and complete plans, no one could be sure of the quantities of materials to be ordered or the schedule that would determine the sequence of construction. So price tags were put on buildings and other fea-

TABLE 1—COSTS OF DEFINITIVE CONTRACTS
(in millions)

Category	Negev Airbase Constructors (Ovda)	Airbase Constructors (Ramon)
Direct Costs	$402.6	$400.7
Contingencies	17.4	27.8
General & Administrative	6.3	6.4
Fees	27.7	27.6
Totals	$454.0	$462.5

Source: MFR, Lewis, n.d. [c. 10 Nov 79], sub: Definitization of Letter Contracts, IABPC, 5/9.

tures, as John Reimer remembered, based on "sketches and very broad preliminary drawings."[41]

The issues between the government and the contractors came down to money. The contractors' estimates, which still seemed "extremely conservative" to Gilkey, were much higher than those done by the Corps. At the outset, Air Base Constructors asked for over $650 million, compared to the government estimate of just over $370 million. Gradually, the contractor cut its estimate and put a $470 million price tag on the Ramon work. This sum included $40 million for general and administrative overhead and fee. Negev Airbase Constructors, which initially asked for more than twice the government estimate, came in about $30 million lower, with a $440 million figure.[42]

Acceptance of these figures would still have put costs over the program amount, forcing the Israelis to reduce the scope of the project or to add money. In the course of negotiations, Ramon came down to $400.7 million, even accepting a $6 million reduction in fee and overhead; Ovda lowered to $402.6 million, including a $34 million reduction in fee and overhead (*Table 1*). In both cases, Lewis personally negotiated the reductions with the contractors. The resultant totals, with the fees and other additional costs, closely matched the previous estimates for construction alone.[43]

In spite of reaching substantial agreement on the price tags in November, the process dragged out into the spring of 1980. The actual contracts were signed in early March but were backdated to the May 1979 dates of the letter contracts.[44] At last a clear picture of expected overall costs was available. At the same time, Gilkey transferred contracting officer authority and responsibility for overall management of the contracts to O'Shei at Ramon and Curl at Ovda.[45] The construction contracts absorbed the bulk of the money allotted to the program. The budget for operating all Department of Defense management elements, which included mili-

Joe McNabb of Air Base Constructors and Colonel Gilkey sign the Ramon contract.

tary and civilian labor and travel costs for Hartung's office, the Near East Project Office, the area offices, and the Department of Defense auditors, equaled that for the management support contract. An additional $20 million went for operating General Bar-Tov's office, and a small amount remained in reserve. The total came extremely close to the original figure Reimer's estimators had developed in Washington.

Program Budget[46]

Management Support Associates	$ 48,000,000
Air Base Constructors	462,500,000
Negev Airbase Constructors	454,000,000
Israeli Ministry of Defense	20,000,000
U.S. Department of Defense	48,000,000
Reserve	7,400,000
Total	$ 1,039,900,000

Although most of the issues surrounding the definitive contracts were resolved in November, the Near East Project Office

remained in its formative stage. Not only did the formalities take several months to complete, but matters regarding the capability and status of the office remained unresolved. Toward the end of 1979 Gilkey himself expressed concern regarding the effectiveness of his staff: managers seemed unable to direct their people, the office missed deadlines for reports, and communication with the sites was in disarray.[47] Lewis understood these problems and hoped to resolve them by putting a general in command. At that point, however, he was more concerned about the relationship between Gilkey's office and the program managers. He thought "the understanding of the relationship is not adequate and needs better definition and clearer understanding."[48] Clarification of this situation and the related questions of command were high on his agenda as he sought a stable basis for the project's operation. Much of the winter and spring of 1980 were devoted to attaining management equilibrium among Gilkey, Hartung, and Bar-Tov.

Notes

1. Interv, author with Maj Gen Bennett L. Lewis, Jan–Feb 82, part 1, Washington, D.C.

2. Ltr, Lt Gen John W. Morris to Honorable Samuel Lewis, American Ambassador, U.S. Embassy, Tel Aviv, Israel, 14 Aug 80, IABPC, 7/5.

3. Bazilwich interview.

4. Morris interview.

5. Johnson interview; Lewis interview, Jan–Feb 82, part 1.

6. Lewis interview, Jan–Feb 82, part 1.

7. Ibid.

8. Interv (telephone), author with Michael J. O'Connor, Nov 84; O'Connor and Glenn E. Colwell, *Cost-Plus Incentive Fee for Construction Contracts,* Technical Report P–118 (Champaign, Ill.: CERL, Dec 80), p. 9.

9. Lewis interview, Jan–Feb 82, part 1; Morris interview.

10. Lewis interview, Jan–Feb 82, part 1.

11. Ibid.

12. Memo, Col Clarence D. Gilkey, 27 Jul 79, sub: Assignment of Responsibilities, IABPC, 21/13; NEPO Sitrep No. 3, 13 Aug 79; NEPO RMO Weekly Sitreps, 3 and 12 Aug 79, IABPC, 12/6–7.

13. Telex, NEPO to NAD, 10 Aug 79, sub: American Jewish War Vets Inquiry, IABPC, 65/4; NEPO Organization Chart, 15 Sep 79, IABPC, 88/5; Maj Gen William R. Wray comments on draft MS.

14. Lt Col Joseph A. Beben, Journal, May–Jun 79 and Jan–Jul 80, IABPC, 47/2; Telex, NEPO to NAD, 3 May 80, sub: NEPO Sitrep No. 38, IABPC, 14/3; Interv, author with Lt Col George Snoddy, Apr 81, Tel Aviv, Israel; Memo, Kett for Gilkey, 24 Aug 79, sub: Utilization of the Assistant Project Manager, IABPC, 17/2.

15. Beginning on 30 July 1979, NEPO reported weekly to NAD by telex. The office used a nine-section format, which covered general subjects, engineering, construction, administrative activities, logistics, personnel, special staff actions, interim project milestones, and commander's comments; Memo, Gilkey for Kett, 20 Sep 79, sub: Utilization of the Assistant Project Manager, IABPC, 29/4; DF, Kett to Snoddy, 26 Sep 79, sub: Sitrep Submissions, IABPC, 12/3; Memo, Kett for Gilkey, 24 Aug 79.

16. McNeely interview, Sep 83; Lewis interview, Jan–Feb 82, part 1; Bar-Tov interview, May 82.

17. DF, CPO (Dieter Loose) to Chief, OAS (Billy C. Hyter), 28 Sep 79, sub: Official Bulletin Boards, with CMT 2, Hyter to Loose, 30 Sep 79, and CMT 3, Loose to Hyter, 8 Oct 79, IABPC, 29/4 and 30/1, respectively.

18. DF, Deputy Project Manager (Damico) to Chief, OAS (Hyter), 19 Nov 79, sub: Palace Billeting Facility, with CMT 2, Hyter to Damico, 20 Nov 79; CMT 3, Damico to Hyter, 22 Nov 79; CMT 4, Hyter to Damico, 27 Nov 79; and CMT 5, Damico to Hyter, 4 Dec 79. All in IABPC, 30/2–3. Ltr, Percy A. Pierre, Assistant Secretary of the Army, RD&A, to Billy C. Hyter, 26 Oct 79, IABPC, 8/2.

19. Ltr, Gilkey to GM, MSA (Robert I. Barry), 17 Sep 79, sub: DACA52–79–C–0002, IABPC, 29/4; Ltr, Gilkey to Barry, 8 Oct 79, sub: Palace Kitchen Operation, IABPC, 30/1; MSA Weekly Sitrep, 24 Sep 79, IABPC, 12/13.

20. Ltr, Lewis to Morris, 26 Dec 79, IABPC, 1/7; Lewis, Memorandum of Meeting with Lt Gen John W. Morris, Maj Gen Joseph K. Bratton, and Maj Gen William R. Wray, 12 Aug 80, IABPC, 5/9; Interv, author with Lewis, Jan–Feb 82, part 4, and Nov 83.

21. Interv, author with John R. Brown, Aug 80, Tel Aviv, Israel.

22. Ltr, Schechet to NEPO Project Manager, 30 Aug 79, sub: Interim Report No. 3, IABPC, 80/6; Telex, Lewis to Gilkey, 25 Sep 79, sub: Planning Schedule, IABPC, 65/6; Lewis, Memorandum of Meeting, 12 Aug 80.

23. William Augustine, Information Paper, 10 Sep 79, sub: Israeli Air Base Program, IABPC, 5/9; Ltr, Dorman R. Mabrey, Assistant for Contract Administration, MSA, to NEPO Contracting Officer (Damico), 10 Jan 80, sub: MSA Task Directives 1–000 through 14–000, IABPC, 31/3. For a copy of the contract, see IABPC, 53/3.

24. DF, NEPO Office of Counsel (John R. Brown) to NEPO Resource Manager (Joseph R. Chapla), 2 Sep 80, sub: Correct Action/Input on Survey/Audit by OCE Auditors, IABPC, 33/3; DF, NEPO Resource Manager to Assistant Deputy Project Manager, 15 May 80, sub: Input for Project Manager's Letter to the Chief of Engineers, IABPC, 33/1.

25. Thomas interview, Aug 80; Brown interview, Aug 80; Telex, Wray to Division Engineers, 5 Jul 79, sub: Formation of Two Contract Negotiating Teams for Israeli Airfields, DAEN-MPC-G files.

26. Interv, author with Frank Billiams, Nov 86, Washington, D.C.

27. Jack G. Starr and Jack Shields, Record of Negotiations to Definitize Letter Contract DACA52–79–C–0003 for Air Base Ramon, Israel (hereafter cited as Starr and Shields, Record of Negotiations for Ramon), 27 Sep 79, IABPC, 9/5; Lewis interview, Jan–Feb 82, part 4; Interv, author with Michael Maloney, Aug 80, Tel Aviv, Israel.

28. ABC Weekly Progress Reports, 1 and 8 Aug 79, IABPC, 12/5–6.

29. NAC Weekly Progress Reports, 17, 24, and 31 Aug and 9 Sep 79, IABPC, 12/7–10.

30. NEPO Sitreps No. 1, 30 Jul 79; No. 2, 6 Aug 79, IABPC, 12/5; No. 4, 20 Aug 79, IABPC, 12/7; No. 5, 27 Aug 79, IABPC, 12/8; Lewis, Memorandum of Meeting, 12 Aug 80.

31. Telex, Lewis to Gilkey, 25 Sep 79; Lewis interview, Jan–Feb 82, part 4. ER 415–345–230, *Construction: Negotiation Regulation for Cost-Plus-A-Fixed-Fee Construction Contracts*, p. 16, contains the requirement for a government estimate and specifies its use.

32. Lewis, Memorandum of Meeting, 12 Aug 80; Hewitt interview.

33. Reimer interview, Feb 82.

34. Lewis interview, Jan–Feb 82, part 1.

35. Telex, Lewis to Gilkey, 25 Sep 79; Lewis interview, Jan–Feb 82, part 1.

36. Telex, Lewis to Gilkey, 25 Sep 79; Brown interview, Aug 80; Ltr, Lewis to Morris, 26 Dec 79.

37. Interv, author with Col Clarence D. Gilkey, Aug 80, Tel Aviv, Israel; Hewitt interview.

38. NEPO Sitrep No. 5, 27 Aug 79, IABPC, 12/8, and NEPO Sitrep No. 14, 29 Oct 79, IABPC, 12/17; Gilkey interview; Hewitt interview; Starr and Shields, Record of Negotiations for Ramon, 27 Sep 79.

39. Gilkey interview.

40. Lewis interview, Jan–Feb 82, parts 1 and 4; O'Connor interview.

41. Reimer interview, Feb 82.

42. Starr and Shields, Record of Negotiations for Ramon, 27 Sep 79; Starr and Shields, Record of Negotiations to Definitize Letter Contract DACA52–79–0004 for Air Base Ovda, 27 Sep 79, IABPC, 9/7; MFR, Lewis, n.d. [c. 10 Nov 79], sub: Definitization of Letter Contracts, IABPC, 5/9.

43. MFR, Lewis, sub: Definitization of Letter Contracts.

44. Contract for Design and Construction of Air Base, Ramon, Israel, No. DACA52–79–C–0003, Department of the Army, Corps of Engineers, Near East

Project Office, North Atlantic Division, 18 May 1979, was signed on 6 March 1980. A copy is in IABPC, 7/1–2. Contract for Design and Construction of Air Base, Ovda, Israel, No. DACA52–79–C–0004, Department of the Army, Corps of Engineers, Near East Project Office, North Atlantic Division, 18 May 1979, was signed on 28 February 1980. A copy is in IABPC, 38/2.

45. *ENR* 204 (6 March 1980): 5; *ENR* 204 (13 March 1980): 5; NEPO Sitrep No. 33, 11 Mar 80, IABPC, 13/18.

46. DF, NEPO Resource Manager to Assistant Deputy Project Manager, 15 May 80.

47. Memo, Gilkey, 8 Nov 79, sub: COE Weekly Staff Meeting of 21 Oct. 1979, IABPC, 30/3; MFR, Gilkey, 10 Dec 79, sub: COE Staff Meeting of 9 Dec. 1979, IABPC, 31/1; DF, Gilkey to all NEPO Staff Sections, 28 Dec 79, sub: Communications, IABPC, 31/1.

48. Ltr, Lewis to Morris, 26 Dec 79.

CHAPTER 7

Tripartite Management: The Apportionment of Power and Influence

December 1979–March 1980

. . . to try to build airfields here is like trying to wrestle a tiger while you are wearing a strait jacket.

Brig. Gen. Max W. Noah [1]

When all the money is in the project manager's hands, it just cuts the program manager right out of any decision-making process at all.

Brig. Gen. Paul T. Hartung [2]

Quality also means doing as we request. We know the area, we know the threat, we know best what we need to the smallest seemingly insignificant detail.

Brig. Gen. Moshe Bar-Tov [3]

In the winter of 1979–1980 the program was close to settling into the form it would take for the duration. Construction at the sites was barely under way, and the three components of Tel Aviv management—the Israeli Air Force's program management office under Bar-Tov, Hartung's American program management office staffed by U.S. Air Force personnel, and Gilkey's Near East Project Office—were all ensconced in the IBM Building. The apportionment of power and influence among the three was still unclear. When the test of their relationship came, the generals joined forces against Gilkey. From the outset Hartung and Bar-Tov had developed a strong friendship. Aside from Hartung's initial impression of Bar-Tov as a "winner," the two shared backgrounds as air force brigadier generals. As program managers they also had a common interest in influencing or even controlling operations. Their daily meetings reinforced this bond. So close were they that some employees called them "Har-Tov and Bartung." [4] As a colonel

in charge of a construction project that two generals sought to dominate, Gilkey was the odd man out.

Disagreements over program issues sometimes strained the relationship between Bar-Tov and Hartung. Lewis thought their spats benefited the Corps of Engineers because their preoccupation with each other diverted their attention from the Near East Project Office. However, such diversions seldom occurred.[5] As Hartung put it, "We've become close friends and we understand each other."[6] While it was Gilkey's misfortune to face two generals united by friendship, the reasons for disagreements among the three transcended personal relationships. The needs of their respective agencies and governments ultimately determined individual positions. As the two air forces and the Corps of Engineers pursued different interests, albeit in the context of their shared goal of successful completion of the bases, their representatives were frequently at odds.

Hartung's long association with military construction for the U.S. Air Force did not prepare him for the program's unusual financial arrangement. As program manager he expected to control and dispense the money when he was satisfied that the construction agent needed it. He never recognized the legitimacy of Corps control of the budget, believing that the arrangement nullified program manager control, cut flexibility, and increased costs. "If you give the man that has to do the work," he said, "too large a budget for a piece of work, if he can accomplish something for three-quarters of a million dollars and he has a million and he does it for $900,000, he's still a hero."[7] Although about 20 percent of the money would be provided by the Israeli government, control of the entire amount by the construction agent also meant that the Israelis had no real voice in how that money would be spent. According to Hartung this lack of control caused difficulties. Some were substantive; some were matters of perception, "but the real portion created the perceptions."[8] He opposed use of this financial arrangement for subsequent projects. "I don't think the Air Force would ever participate like this again," he said. "I wouldn't." Unable to control work through the purse strings as he was accustomed, he was not content to manage site activation and act as go-between for the Corps and the Israelis.[9]

Bar-Tov too sought a dominant role. His position as program manager was not specified in any of the intercountry agreements, and, according to Graves, no Israeli program management organization was envisioned by the negotiators. In fact, the Ministry of Defense's establishment of his office—with its $20 million budget paid from program funds—constituted an explicit rejection of the portions of the 1979 agreements that stipulated that the United

States would build and turn over to Israel two air bases.[10] Nevertheless, Israel's stake was legitimate. After all, its air force would use the bases. Moreover, after the American grant was spent, Israel would either realize any savings on the job or pay for overruns. As its representative, Bar-Tov used his forceful personality to exert maximum influence. That he would play a major part was evident soon after the Corps office in Tel Aviv was established. The program, Colonel O'Shei complained, was "saddled with a Troika-configured leadership, marred by the inevitable deficiencies that such command structures always involve."[11]

Control of the program budget certainly put the Near East Project Office in a powerful position vis-a-vis the program managers. In light of the frustration that Hartung and Bar-Tov experienced in trying to assert their influence over construction, it might even appear that the Corps of Engineers dominated the situation. This was not the case. Personality, rank, and numbers also entered into the equation. Gilkey could not deal with the barrage of questions and criticisms from the program managers and devote the proper attention to managing the project.[12]

To a significant extent, this situation originated in Morris' decision to assign a colonel as manager of the project. His choice still troubled some participants, who wanted a more senior officer. While never questioning the decision to place the project under North Atlantic, these people continued to urge the chief's office to send a brigadier general to Tel Aviv. They envisioned a management framework somewhere between the alternatives considered by Morris, one that had a general at the top but remained attached to North Atlantic.

In July 1979 Hewitt had evaluated the situation in Israel and concluded that a general was necessary. Supporting the argument Johnson had made earlier, Hewitt said that Bar-Tov's office pressured Damico for larger roles in management and execution. Only another general officer, Hewitt contended, could "go nose to nose with Bar-Tov."[13] Damico and the Near East Project Office staff seemed to agree. The organizational structure they recommended for their own office would be led by a brigadier general.[14] Johnson thought the best he might be able to do was obtain a second colonel to serve as deputy, but knew that a general would not be assigned "in the foreseeable future." Gilkey would remain in charge.[15] This prospect seemed to satisfy Gilkey, who had tried earlier to convince Johnson and the staff in New York that a general was unnecessary.[16]

After Johnson left for Washington, the issue remained unresolved. Lewis renewed efforts to get a general for the project. He

thought that "the Corps should have assigned a general officer as program manager [*sic*] and put him on the scene from the start of the project." He repeatedly urged Morris to rectify the situation. Lewis' analysis of the relationship between Colonel Gilkey and the program managers only confirmed his view. "Too often," Lewis wrote, "the NEPO PM finds himself in a defensive position opposing two BGs." Lewis and Hewitt believed Hartung and Bar-Tov took up much of Gilkey's time with their complaints. As Lewis put it, "Hartung, instead of spending his time helping the Corps and the contractors in the interactions with agencies of the Israeli government, kept trying to manage the Corps." Consequently, Gilkey lacked the time and energy that should have been devoted to the project.[17]

From Lewis' viewpoint, Gilkey was being pressured from below as well as from above. Lewis described Curl and O'Shei, the area engineers who reported to Gilkey but were of equal rank, as "two very capable, strong-willed officers." At the time Lewis believed "there was a high probability both would be promoted." He also thought further advancement for Gilkey was unlikely. Curl and O'Shei "believed they were operating the air base projects as independent districts," and that Gilkey "had only general oversight and support responsibilities." Lewis thought that having a general in Tel Aviv would end the ambiguity in the relationship of Gilkey's headquarters with the area offices and the program managers.[18] Lewis saw the mission as too important to manage in any other way. The complex and sensitive situation required the skill, experience, and prestige of a general. With his usual bluntness, Lewis told Morris he was convinced "that if the Corps of Engineers is to meet its responsibility as DOD's 'construction agent,' you should assign a general officer (GO) to devote 100 percent of his time to the project."[19]

Lewis knew who he wanted for the job. He nominated Brig. Gen. Max W. Noah, a self-assured and very tall officer known as "the gentle giant." Lewis thought Noah, who later became comptroller of the Army as a lieutenant general, had "both the personal and professional qualifications," among them "considerable experience with resource management, his personality and his physical presence."[20] Morris wanted to keep Noah as commander of the Huntsville Division, an anomalous element of the Corps whose organization-wide responsibilities included training and various special projects, but he finally agreed that "there was no question [that] we had to get Gilkey some help."[21] At the same time, he emphasized the need for increased cooperation with Hartung: he wanted to know Hartung's needs as well as a plan to meet them. "We are," he wrote, "far from where we must be vis-a-vis the GOI and the two PMs if we are ever to have a smooth operation." So

Morris agreed to send Noah to Tel Aviv for three months.[22] Lewis "accepted him on a temporary basis if that was the only way to secure his services."[23]

Once Morris decided to send Noah to Tel Aviv, he began to shift his overall view of the role of project management. By compromising with Lewis and temporarily assigning a general, he created a managerial situation that was midway between his original alternatives. His basic view remained unchanged: the two organizational possibilities were either an independent headquarters under a general officer or an office managed by a colonel and attached to a division. He now had an engineer general on the scene, and he began to see Noah as the prime manager. He thought the project's center of gravity should shift toward Tel Aviv, with more control of the work exercised there instead of from New York. By the same token, he wanted Lewis to cut his involvement with daily operations.[24] "If I had intended to put a brigadier out there in the first place," he told Lewis, "I probably wouldn't have had the North Atlantic Division Engineer involved."[25]

Noah went to Israel on temporary duty early in January 1980. He had followed development of the program and at one time thought he might be assigned as project manager. He knew Lewis had wanted to send him there and that Morris had overruled the choice.[26] Morris considered Noah "an outstanding organizer and manager," and wanted him to "review and strengthen the field management procedures." Specifically, Morris sought a system to control and report on progress, after which Noah was to devise ways to control the budget and the quality of construction. All three areas were important—delivering a quality product on time and under budget were standard project goals—but Morris stressed management of the schedule. His primary concern was completion of operational bases as promised by 25 April 1982.[27]

Through the winter the fact that an engineer general would be assigned permanently became evident. Lewis kept up the pressure. At the same time, Morris told Gilkey that he was considering replacing him by the summer.[28] Noah reported to Lewis on this conversation, concluding that the "Chief is convinced Jack [Gilkey] cannot handle it from here on in although [Morris] recognizes as should you that he has done [a] commendable job."[29] Morris went to Tel Aviv in January 1980 and asked Noah for his views on the future of project management. Noah considered three possibilities. The first involved replacing Gilkey with a "strong competitive 0–6 [colonel]." The other two centered on putting a general in Tel Aviv, either Noah or someone else. The longer Noah remained in Israel, the more he inclined to recommending a general. "As I

shoulder more of the burden," he told Lewis, "Jack [Gilkey] is getting happier again—he needed it. I'm about to the stage that I would recommend a BG here no matter what."[30]

The situation Noah found in Tel Aviv seemed to call for the best available leadership. There was a set of common assumptions with which to work. While others wondered how firm was the Israeli commitment to withdraw from the Sinai and to finish the job on time, Noah found no reason to doubt their intentions.[31] "There was," he said, "never a feeling . . . that they . . . wanted anything more than to have two very complete combat airfields built in the time allowed, and they wanted them to be the best."[32] Nevertheless, he remained troubled by the possibility that the Corps might miss the deadline, which could result in Israeli refusal to finish the withdrawal: "That's the first thing I think about when I wake up."[33] Despite the common goals of all three managers, he believed the two generals tended "to be rather impatient," and that "the interface was sometimes very abrasive." Noah thought that Hartung sometimes seemed "so interested in pleasing the Israelis that he joins them in jumping on the Corps." He saw that the Corps operation was far from perfect, but thought Hartung and Bar-Tov complained too much. Lewis agreed.[34]

Neither of the program managers appreciated the logistical and managerial complexities of the job. Moreover, they complained "ad nauseum, night and day continually." Too incessant and too significant to ignore, the dissatisfaction had to be faced.[35] Because, as O'Shei said, Hartung and Bar-Tov were "able men with the time to tinker," they "tended to get, quite frankly, in the way of operations."[36] Noah had to negotiate with them and found that he spent most of the time doing just that. Noah's objective in serving as a buffer between Gilkey and the program managers was to protect those who actually did the work. He wanted to "separate the contractors in their effort to get things moving . . . from the political [and] financial inter-office concerns that went on in Tel Aviv." He understood that failure to do so would unnecessarily burden the people at the sites. As it was, the program managers "were down there enough, right in the middle of the contractor's business."[37]

Hartung and Bar-Tov saw the situation very differently. In the first place, they considered their own involvement in construction at the sites to be necessary and legitimate. In addition, Hartung thought the area engineers, both of whom had commanded civil works districts in the United States, lacked experience with military construction and fast-track operations. So he was particularly watchful of their operations.[38]

Given the divergent views and purposes of the three management offices, it is hardly surprising that even the routine aspects of Noah's relations with Hartung and Bar-Tov took much of his time. Each weekly meeting actually consumed three days. On Tuesdays, Noah accompanied Hartung and Bar-Tov to the bases and answered their questions, an experience he likened to escorting congressional survey and investigation committees. Wednesdays were spent organizing for the meetings on the next day. Then came Thursday and the discussions themselves. The sessions reminded him "a little bit" of "the Panmunjom table," without the flags but nevertheless not without conflict, with the Corps facing the program managers across the table. The meetings considered every problem, "from the most miniscule to the biggest." Noah recognized that both program managers had legitimate concerns. Hartung was bent on ensuring the quality of the product through control of construction, and the Israelis were protecting their interest in the bases.[39] However, the confrontational style of the program managers set the tone for Noah's weekly meetings with his chain-smoking colleagues.

Not all of Noah's efforts created distance between Gilkey and the generals. By approving the creation of a configuration control board to be administered by the project office's construction division, he also took a major step toward creating permanent roles in decision-making for program management. The program managers chaired the board, which included the project manager as a member. The group evaluated the operational need for changes in design, master plans, and schedules. The board also considered the technical requirements for implementation of proposals and their effect on completion dates and construction costs. Changes required unanimous acceptance by the board. In the event of dissenting votes, the program managers resolved the impasse. Cochairmanship of the board firmly placed Bar-Tov in the management process.[40]

Noah also became involved in attempts to improve the troublesome procurement process. By the winter it had become clear that the system so ardently defended by Gilkey's staff a few months earlier was not working. Lewis, who had seen the problem during his visit in December, decried the lack of teamwork. He complained that the contractors' design and construction elements did not cooperate in putting together procurement packages and that the Near East Project Office offered little help because its procurement staff lacked the experience to do so. Noah, who had been instructed by Lewis to concentrate on the procurement system, was proud of the Huntsville Division procurement organization and considered purchasing to be one of his division's special

strengths. He took reinforcement with him in the person of Raymond Aldridge, his chief of procurement and supply at Huntsville Division. Within a week Aldridge was at Ovda, offering help with the contractor's procurement plan.[41]

Joseph Perini of Negev Airbase Constructors' parent company also visited Ovda in January. He told Noah he was shocked at the amount of time involved in the procurement process. Noah promised to focus on what he acknowledged as a problem area.[42]

Procurement help came from the Defense Contract Audit Agency, which sent a team to Ovda to evaluate the procurement system used by Negev Airbase Constructors. Members of the audit team underscored the need for training contractor procurement personnel. Their formal report listed a host of problems with documentation of purchases. The team also cited the failure to consider properly the time required to fill orders and the need to place more orders to ensure adequate competition. The team that examined the situation at Ramon also urged establishment of a program to indoctrinate purchasing employees in the requirements imposed by government regulations.[43]

To Aldridge the message was obvious: "The one thing that came out loud and clear is the need for training in the [design and construction contractors'] purchasing departments." With the audit report as a guide, he wanted procurement analyst Roy E. Edwards from Huntsville Division to teach procedures to the contractors, both of whom welcomed the help. Noah approved the proposal, and a third Huntsvillian came to Tel Aviv.[44] As had Noah when he first arrived, Aldridge and Edwards stepped into a situation that lacked structure and form. Only one standard procedure, designating which classes of materials could be purchased in Israel, had been written.[45] While Edwards worked with the contractors developing check sheets, forms, and procedures, Aldridge began the effort to systematize the process at the other end, in Gilkey's headquarters. The results began to appear in April in a procurement guidance series issued by the procurement and supply division. Each issue spelled out procedures and consolidated information on one subject. The documents went to the Tel Aviv staff, the program managers, the area offices, and the New York office. The first explained the series itself.[46] The next twelve covered subjects ranging from procurement staff visits at the area offices to assistance by the Ministry of Defense in local purchases.[47]

Theoretically, Noah did not replace Gilkey as manager. Instead, they discussed issues, and Noah recommended courses of action. According to Noah, Gilkey still had final authority and was free to decide whether to follow his advice. However, in addition to outrank-

ing Gilkey, Noah had agreed to follow courses of action determined by Lewis, with whom he talked frequently by telephone. So the lack of any notable independent action by Gilkey is far from surprising.[48]

Lewis did not content himself with interposing Noah between Gilkey and the generals. His assessment of the relationship between the three offices convinced him of the need for other measures. Lewis thought that the program managers unnecessarily complicated the project by attempts to control construction. He understood Gilkey's mission as construction of the two air bases, while program management's primary responsibility was making the bases operational. He also believed that the American program manager did not provide Gilkey with proper support. For example, after the program manager's office failed to respond to the request for help in establishing a communications network, the project's signal officer had to establish his own direct contacts with the Ministry of Communications.[49]

To rectify this situation, Lewis told Gilkey to take the offensive. Lewis wanted "to start the flow of requests moving in the other direction, that is, from him to Hartung." He had come to Gilkey with a problem regarding a subpoena issued by the Israelis to an American contractor, and Lewis thought Hartung should have handled the matter with the Israelis. But these specific complaints were secondary and merely symptoms of his primary concern: alleviation of the pressure on Gilkey.[50]

Lewis also saw the proximity of Gilkey's office to those of Hartung and Bar-Tov as part of the problem. O'Shei had told him that the close location of the three offices exacerbated the tendency of the program managers to intervene in construction decisions: "Program personnel attend our staff and technical meetings, are on distribution for our reading files, and even receive copies of the correspondence and reports between the Area Engineer and his staff." Given this arrangement, O'Shei continued, "intervention in our process is as casual and easy as this proximity would indicate."[51] Lewis finally concluded that, with the two generals demanding so much of Gilkey's time, the IBM Building was not big enough for all three of them. If Gilkey moved across town into the Palace Hotel, the situation might improve. So, after clearing his decision with Johnson in Washington, Lewis told Gilkey to move his office.[52]

Bar-Tov saw the relocation coming months before it took place. He alerted Hartung to a rumor of a move in October 1979. He acknowledged the dubious utility of such stories but cautioned his American counterpart that "our mutual short experience in this project has indicated that many rumors in the past turned into reality and accomplished facts." He thought such a move would signifi-

cantly shift the program's center of gravity. "I would appreciate your advising the COE," he wrote Hartung, "to bring any such plans to us for our mutual approval before reaching a point of no return."[53]

Hartung assured Bar-Tov that the story lacked validity. He too had heard the rumors, which he thought originated with uninformed employees. Hartung believed that expansion of the program would eventually necessitate placing more support offices in the Palace but did not "envision Project Management or design interface activities being a part of this thinking." These were the "'Center of Gravity' functions," and they would remain where they were. He expected that "any planning to shift activities closely aligned to Program management will be discussed with us before any action." Neither he nor Bar-Tov asked why the Near East Project Office might be considering such a move.[54]

In December Gilkey told Hartung that he had been directed to take his office to the Palace. When office space became available there after the first of the year, he transferred the executive office and the construction division from the IBM Building to the hotel. The moves continued over the winter as more staff sections and some contractor offices also left the IBM Building.[55]

Bar-Tov complained that the moves complicated liaison activities and delayed work. The hiring freeze in his ministry made it impossible to compensate for the separation with additional Israeli employees. He asked Hartung to "direct NEPO not to make any independent decisions that according to good management practices should be discussed and approved on the PM's level."[56]

Hartung appeared to have been particularly stung by the move, carried out so soon after he had denied the rumors. He complained to Noah that the transfer was not in the best interest of the program. He also contended that the refurbishment of the offices in the Palace prior to the move constituted an extravagance that "was perceived as an example of total disregard for Program cost control, right at the project manager level." An inclination to profligacy, he concluded, "permeates throughout the organization." Hartung also took the opportunity to lecture Noah on cost control. "[I] would appreciate it," he wrote, "if all NEPO folks better understood that in addition to this program having CPFF contracts, the Construction Agency is not on the normal fixed fee basis for its operation, but is financed directly from program funds on an actual cost basis." He told Noah that "a dollar saved by NEPO is a dollar saved for the program," rather than for the Corps through a nonexistent account he dubbed "the COE industrial fund."[57]

Noah listened but changed nothing. He explained only that the shortage of space in the IBM Building had made the action

Palace Hotel

necessary. Thereafter, the Near East Project Office kept its distance from the program managers. After Brig. Gen. John Wall took over as project manager in the spring, he returned the construction division to its former location, but he kept his headquarters and his own office in the Palace.[58]

The move provided some breathing room but did not alleviate tension between the Corps and the program managers. Morris visited Israel in late January 1980 and recognized that this was the key problem. He called the establishment of proper working relationships among the three managers "by far my biggest concern."[59] The feelings of mutual frustration that had brought about the transfer of the office persisted, perhaps even grew, and spilled over into other areas of their relationship.

Extensive negotiations over the proper method for construction of family housing at the bases reflected this hostility. All of the participants worked in Tel Aviv, yet they conducted their discussions through formal memorandums. The question involved responsibility for that part of the job. Either it would be removed from the contractors' scope of work and assigned to Israeli pro-

gram management or built for the Americans by Israeli subcontractors. Both of these options reflected a willingness to accommodate the changing economic situation in Israel. All told, the housing matter involved a relatively small $20 million slice of a billion-dollar pie.

The notes went back and forth through the late winter and early spring. Hartung wanted the Corps to stop its procurement and design activities and consider alternatives for management of housing construction that would take into account the Israeli interest in carrying it out. The Corps was responsible for completing usable bases on time, so Gilkey, backed by Noah and Lewis, refused to yield control over construction of any of the facilities required for initial operating capability. Finally, Bar-Tov withdrew his ministry's request for consideration of Israeli management of the housing project.[60]

Participants understood the issue to involve much more than a small piece of a big job. Lewis and Bar-Tov rarely agreed on questions of substance, but they did concur on the significance of the dispute over housing. Lewis recalled that "the most basic issue was who was in charge of managing the construction project itself: the Israelis, BG Hartung, or the Corps."[61] Bar-Tov, on the other hand, concluded that "without the ability to direct NEPO directly from the PM's office, the PMs will be left with the responsibility without any authority—a situation that is unacceptable to me." He too saw the fundamental question as one of control. He also saw that he was losing it.[62]

Notes

1. Memo, Brig Gen Max W. Noah for Lewis, 1 Feb 80, IABPC, 1/2.
2. Hartung interview, Aug 80.
3. Bar-Tov, Open Letter "To My American Friends in the Negev Air Base Program," Jul 81, IABPC, 75/4.
4. Cheverie interview.
5. Lewis interview, Jan–Feb 82.
6. Hartung interview, Aug 80.
7. Ibid., Aug 80 and Apr 81.
8. Hartung interview, Aug 80.
9. Ibid.
10. Interv, author with Lt Gen Ernest Graves, Jr., Ret., Apr 85, part 8, Arlington, Va.; MFR, Gilkey, 21 May 81, sub: Secretary West and LTG Graves Visit, 18–19 May 1981, IABPC, 63/5.
11. Memo, O'Shei for Lewis, n.d. [Nov 79], sub: Project Manager Grade Level, Lewis Papers, Office of History, HQ USACE.
12. Lewis interview, Jan–Feb 82, part 3; Interv, author with Max W. Noah, Apr 83, Washington, D.C.
13. DF, Hewitt to Johnson, 5 Jul 79, sub: Briefing for General Johnson on 5 Jul 79, IABPC, 8/2.
14. Memo, Damico for Johnson, 4 Jun 79, File 228–01, IABPC, 8/4.
15. Telex, Johnson to NEPO [c. 3] Jul 79, IABPC, 65/2.
16. Telecon transcript 9, 11 May 79, IABPC, 10/3.
17. Ltr, Lewis to Morris, 21 Nov 79, IABPC, 8/2; Lewis interview, Jan–Feb 82, part 3; Hewitt, Marginal Comments on Ltr, Morris to Lewis, 31 Jan 80, IABPC, 9/7.
18. Lewis interview, Jan–Feb 82, part 3.
19. Ltr, Lewis to Morris, 21 Nov 79.
20. Ibid.; Noah interview.
21. MFR, Lewis, Telecon with Chief of Engineers, 13 Dec 79, IABPC, 9/7; Morris interview. For information on the evolution of the Huntsville Engineer Division, see James H. Kitchens III, *A History of the Huntsville Division, U.S. Army Corps of Engineers, 1967–1976* (Huntsville, Ala.: U.S. Army Engineer Division, Huntsville, 1978).
22. Ltr, Morris to Lewis, 31 Jan 80, IABPC, 9/7.
23. Lewis interview, Jan–Feb 82, part 1.
24. MFR, Lewis, Telecon with Chief of Engineers, 13 Dec 79; Morris interview.
25. Morris interview.
26. Noah interview.
27. Morris interview; NEPO Sitrep No. 25, 13 Jan 80, IABPC, 13/10.
28. Ltr, Lewis to Morris, 22 Feb 80, Lewis Papers; Memo, Noah for Lewis, 28 Jan 80, IABPC, 1/2.
29. Memo, Noah for Lewis, 28 Jan 80.
30. Memo, Noah for Lewis, 1 Feb 80, IABPC, 1/2.
31. Ze'ev Schiff and Ehud Ya'ari, *Israel's Lebanon War*, trans. Ina Friedman (New York: Simon and Schuster, 1984), p. 68; Interv, author with Fred Butler, Aug 80, Ramon, Israel.
32. Noah interview.
33. *U.S. News and World Report*, 26 May 80, p. 49.
34. Noah interview; Memo, Noah for Morris, 26 Jan 80, sub: Relationship with PM/DOD and NEPO-Corps, IABPC, 9/7.

35. Noah interview.

36. Memo, O'Shei for Lewis, sub: Project Manager Grade Level.

37. Noah interview.

38. Hartung interview, Apr 81.

39. Noah interview.

40. SOP 14, Configuration Management, 15 Feb 80, IABPC, 15/14.

41. Ltr, Lewis to Morris, 26 Dec 79, IABPC, 1/7; OAO, Master Diary, 13 Jan 80, IABPC, 84/4; Noah interview.

42. MFR, Noah, 14 Jan 80, sub: Meeting with NAC Executive, IABPC, 31/2.

43. DCASR New York, CPSR: Initial Review, NAC, 26 Mar 80, pp. I–4—I–5, II–1, IABPC, 8/3; Ltr, Gilkey to GM, ABC, 12 Feb 80, sub: CPSR, IABPC, 32/2.

44. Memo, Raymond Aldridge for Noah and Gilkey, 15 Feb 80, sub: Use of Roy Edwards, IABPC, 32/2; Memo, Noah for Area Engineers, 19 Feb 80, sub: Purpose and Scope of TDY Effort of Roy Edwards, IABPC, 32/2.

45. SOP 10, Procurement Procedures for Purchase of Materials, Equipment, and Services, 9 Nov 79, IABPC, 15/10.

46. Procurement Guidance 1, 18 Apr 80, sub: Procurement Guidance, IABPC, 8/7.

47. The rest of the series are in IABPC, 8/7. They are the following: (2) MOD Assistance to Prime Contractors; (3) Policy on Contracting for Transportation Services; (4) Subcontract Consent Reviews for Actions of $100,000 or More; (5) Monitoring of Contractor Procurement Activities; (6) Procurement Staff Visits to Area Offices; (7) Evaluation Factors; (8) Emergency Procurements; (9) Not Used; (10) Flow Down of Prime Contract General and Special Provisions into Subcontracts; (11) Small Purchases (Purchases Not in Excess of $10,000); (12) Technical Compliance with Purchase Order Requirements; (13) Not Used; (14) Procurement from Bonded Warehouse; and (15) Shipment of Food from Foreign Sources.

48. NEPO Sitrep 29, 11 Feb 80, IABPC, 13/14; Noah interview; Lewis interview, Jan–Feb 82, part 1.

49. Lewis interview, Jan–Feb 82, part 3.

50. Ibid.

51. Memo, O'Shei for Lewis, sub: Project Manager Grade Level.

52. Lewis interview, Jan–Feb 82, part 1.

53. Ltr, Bar-Tov to Hartung, 11 Oct 79, sub: Shifting Center of Gravity from IBM Building to Forum Palace, Encl to Ltr, Hartung to Noah, 2 Mar 80, sub: Shifting Center of Gravity-IBM Building to the Palace, IABPC, 9/7.

54. Ltr, Hartung to Bar-Tov, 23 Oct 79, sub: Shifting Center of Gravity from IBM Building to Forum Palace, Encl to Ltr, Hartung to Noah, 2 Mar 80; NEPO Sitreps No. 24, 6 Jan 80, and No. 25, 13 Jan 80, both in IABPC, 13/9.

55. Ltr, Hartung to Noah, 2 Mar 80; DF, Chief, Construction Division to Chief, Engineering Division, 8 Jan 80, sub: SOP #9—Design, Development, Review, and Approval, IABPC, 23/4.

56. Ltr, Bar-Tov to Hartung, 24 Feb 80, sub: Shifting Center of Gravity from IBM Building to the Palace, Encl to Ltr, Hartung to Noah, 2 Mar 80.

57. Ltr, Hartung to Noah, 2 Mar 80.

58. MFR, Bar-Tov and Hartung, 28 Feb 80, sub: DOD/MOD Program Managers Meeting of 21 Feb. 1980, IABPC, 45/4; Ltr, Wall, through Lewis, to Morris, 25 Jun 80, sub: Management Issues, Israeli Air Base Program, IABPC, 9/7; Noah interview.

59. Ltr, Morris to Lewis, 31 Jan 80.

60. Ltr, Hartung to Damico, 11 Feb 80, sub: Family Housing and Dormitories; Ltr, Noah to Hartung, 12 Feb 80, sub: Family Housing and Dormitories; Ltr, Har-

tung to Noah, 14 Feb 80, sub: Family Housing and Dormitories; Ltr, Gilkey to Hartung, 13 Mar 80, sub: Family Housing and Dormitories; MFR, Noah, 14 Mar 80, sub: Family Housing & Dormitories, Ovda and Ramon Air Bases; Ltr, Bar-Tov to Hartung, 10 Apr 80, sub: Family Housing and Dormitories; Ltr, Hartung to Noah, 11 Apr 80, sub: Family Housing and Dormitories. All in IABPC, 1/2.

61. Lewis interview, Jan–Feb 82, part 3.

62. Ltr, Bar-Tov to Hartung, 10 Apr 80.

CHAPTER 8

Starting in the Desert
April 1979–June 1980

We have a big army and a little country.
Adir Schapiro, Nature Reserves Authority director[1]

We have viewed with interest the unearthing of certain artifacts, including two human skeletons alleged to be 4,000 years old.
C. Van Landingham, Acting General Manager, Air Base Constructors[2]

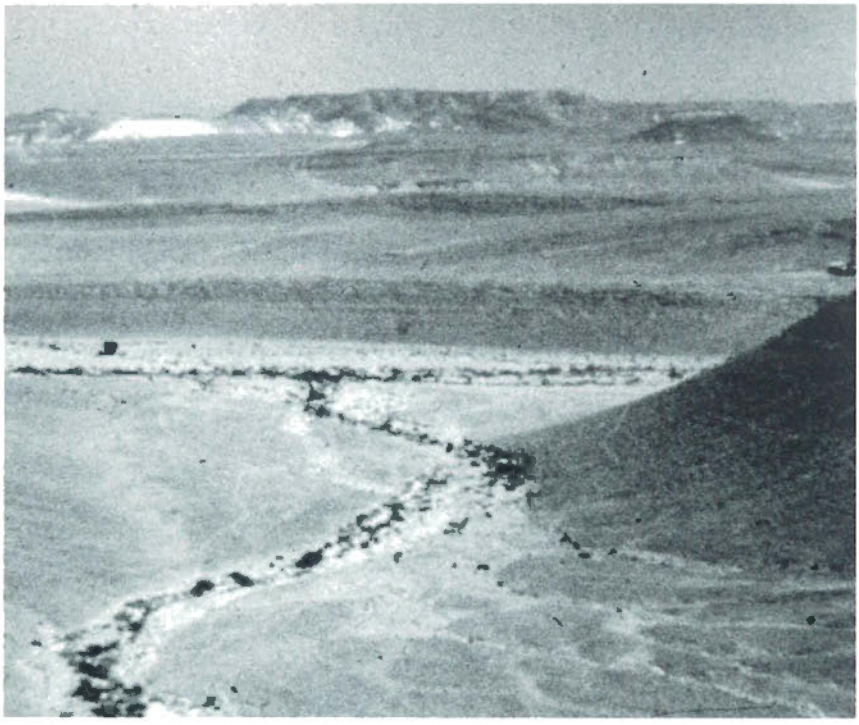
Israel encompasses only about 11,000 square miles, counting the occupied territories.[3] The country is barely larger than the state of Maryland. The Negev represents a little less than half of the nation, "5,000 square miles," David Ben-Gurion once wrote, "of sand, eroded soil and mountain."[4] This desert resembles a wedge pointing south to the port of Eilat and the Gulf of Aqaba. To the west lies the Egyptian Sinai. Across the low parched wadi of the Arava, also known as the Jordan rift valley and extending from the Dead Sea to the Red Sea, is Jordan. Moshe Dayan first saw the Negev in 1948, during the war of independence. He called this region of mountains and craters "a wide-open expanse, bare, parched, cragged, primeval." The only plants he saw in this "hot, wild world, void of rain and apparently of dew" were acacia, tamarisk, and "a bush with long hard thorns, sharp as spears."[5] Although it is hottest and driest nearest to the tip, blazing daytime temperatures, clear skies, and dry winds make the region a land to be approached with caution. Rain, when it comes, turns the wadis into churning rivers and makes the clay desert floor a sea of mud.

Not always hostile to human habitation, for centuries the region had supported substantial communities. As long as 5,000 years ago, the northern Negev was the site of "a highly organized and diverse civilization." This "Beersheva culture" included farming, animal husbandry, and copper smelting. The patriarch Abraham came to the Beersheva plain about 1,500 years later. In the days of the Judean kingdom, between 850 and 600 B.C., agricultural

Ramon plateau

settlements based on the careful collection of winter runoff extended as far south as Mitzpe Ramon. Human society in the Negev continued to thrive for several hundred years, with settlements throughout most of the region, even in the extremely hot and dry south. The Nabateans, traders with their capital across the Arava at Petra, built cities astride the route between the Red Sea at Eilat and the Mediterranean at Gaza. They prospered until the Byzantine period, during which Rome's Middle Eastern commerce declined along with the empire's military strength. Only later did the Negev become an arid wasteland. The seminomadic Bedouins and their flocks of sheep remained, indifferent to the potential of irrigation and even dismantling systems for their stone. To a large extent the Negev encountered by the Israelis in the early days of their independence was a man-made desert, developed over centuries of neglect.[6]

The establishment of the State of Israel in 1948 opened a new era in the history of the Negev. The Zionist ideology of the early days of the nation included a commitment to the conquest of the desert. David Ben-Gurion, prime minister during 1949–1953 and again in 1955–1963, personified this dedication. Ben-Gurion be-



Ovda valley

lieved the Negev was the economic heart of the infant nation as well as a source of spiritual refreshment. He made his home at the kibbutz Sde Boker, a struggling agricultural collective in the desert south of Beersheva. For him, transforming the Negev into a center of economic and intellectual activity was an obligation for a generation of Israelis and for Jews around the world.[7]

Settlement burgeoned during the first thirty years of Israeli nationhood. Beersheva became a booming city of 100,000. With its fast food, traffic, and prostitutes, it reminded one American observer of "a frontier town gone mad."[8] By the late 1970s Beersheva marked the edge of the desert with cotton fields and citrus groves as well as sheep ranges to the north. Settlement also spread to the south. Farming communities sprung up, and the government tried to encourage urban settlement by building a handful of small cities: Mitzpe Ramon, Dimona, Yeruham, and one or two others. These so-called development towns, with their apartment blocks stark and forbidding against the desert sky, seemed outposts against the desert itself.[9]

The growth of the Israel Defense Force and the loss of the vast maneuver space of the Sinai had important consequences for the Negev and other parts of Israel. The desert held the largest amount of usable space for the relocation of military training areas and bases. The choice of the Negev for the Israeli Air Force's three new bases—two built by the United States and the other by the Israelis—was inevitable. The redeployment also affected the Israeli occupation of the West Bank. The same process that made the Negev the logical choice for the air bases put pressure on the land resources of the Jordan River valley. The use of large tracts for the airfields greatly reduced the training area available for land forces in the desert. In turn, the lack of usable space led the army to transfer some of its units from the Sinai to the West Bank. Along with this movement came establishment of a network of bases and depots in the occupied territory. So the chain of events that started with the departure from the Sinai solidified the Israeli presence on the West Bank and produced an argument against withdrawing the Israel Defense Force from the territory.[10]

For the two airfields that would be built by the Americans, the Israelis chose locations near the northern and southern limits of the Negev. Ramon, the northern site, was about thirty miles south of Beersheva. Ovda, farther down in the desert, was about the same distance from Eilat.[11] Only about fifty miles separated them, but they differed substantially.

The Ramon tract stood on a plateau called Ramat Matred in the Ramon Mountains, the highest range in the Negev. The mountains marked a transitional zone between the northern highlands, which received about four inches of rain a year, and the more arid southern highlands. Judean residents between 1,000 and 600 B.C. had used the runoff from the annual flood to farm the area.[12] The Nabateans had built the city of Avdat nearby. The ruins, from which an observer with binoculars could clearly see the air base site, overlooked what had been a major trade route and was now the main highway to Eilat. Now the wind swept undeflected over the Ramon tableland, which lay close to the main road but had no connection with it.

The Ovda site was in a valley almost eight miles from the nearest paved road. It had been the staging area for a military operation named Ovda—fact, or fait accompli, in Hebrew—that had outflanked the Jordanian army and assured the fledgling nation of access to the Red Sea during the war of independence.[13] Two ranges of purple hills rose to the east of Ovda. The first separated the valley from the Arava. The higher second range was on the other side, in Jordan.

Site investigations began in the spring of 1979, soon after the first Americans arrived in Tel Aviv. However, the Near East Project Office did not carry out the analysis. The Ministry of Defense hired Israeli firms for the soil studies and laboratory work. These companies had the capability and the equipment and could start sooner. Their contracts were assigned to the American prime contractors. Investigators dug test pits at 400-meter intervals along the lines of future runways and taxiways. They took samples from the two-meter-deep holes and examined them for compaction, density, and moisture. Seismic surveys and laboratory testing of the soil came later. The preliminary visual assessment of the test pits revealed a great deal about the sites. The soils at both places contained similar materials, including limestone, dolomite, chert, flint, and wadi gravel. Within reasonable distances were adequate quantities of rocks suitable for aggregates to be used in concrete or as subbase and base underpaving for runways and roads.[14]

The similarities between Ovda and Ramon were only superficial. The composition and depth of the soils differed significantly. These dissimilarities, recognized from the outset, considerably influenced the construction process. At Ovda the dominant material was a mixture of silts, sands, and gravels. Every year the floodwaters from the surrounding hills washed more of this fine loose substance into the valley. Bedrock was as far as 120 feet beneath the surface, so compaction for construction represented a major problem. Hartung expected that aircraft shelters, other hardened structures, and multiple-story buildings might need pile foundations. Moreover, protection of the air base required the diversion and containment of floodwaters. Ramon was a different story. The dominant surface material was a medium dense loess. When vehicles broke up this surface, it turned into a fine flour-like dust that clung to everything. More important for construction was the proximity of bedrock to the surface. In some places the rock was only six feet below ground, and outcroppings protruded here and there. Early site surveys disclosed huge quantities of rock along the runway axes initially plotted by the Israelis. Rather than dig this material, the Israeli Air Force decided to realign the runways.[15]

Investigations at both sites progressed satisfactorily through the summer. The Israelis completed their test pits and borings for runways and taxiways and turned to the shelter sites. The Americans searched for quarry sites and experimented with compaction techniques to determine the equipment and procedures needed.[16]

At the end of the summer the Corps established the administrative units, known as area offices, that would manage the operations at the sites. For projects costing nearly $500 million each, the offices

were small. Each had an authorized personnel strength of fifty-six in addition to the design liaison branch from Tel Aviv. The executive office consisted of seven people—the area engineer and deputy, two project engineers, an attorney, a secretary, and a clerk-typist. The rest of the area office was divided into five parts, each of which reported to the executive office. Contract management, under a supervisory civil engineer, had ten employees in two sections—a supervision section and a reports section. The construction office, also under a supervisory civil engineer, had seventeen divided among the horizontal and vertical teams. Administrative services, with eleven people under a supervisory management specialist, handled communications, traffic, security, and public affairs, as well as administration and mail. Procurement and supply was carried out by three people—a contract specialist, a procurement agent, and a procurement assistant. Resource management had eight employees, with a supervisory operating accountant in charge.[17]

Like Gilkey, the commanders at the sites were colonels and former district engineers. O'Shei, who headed the Ramon Area Office, was well acquainted with his contractor. The Guy F. Atkinson Company had built New Melones Dam on California's Stanislaus River during his tenure in Sacramento District. Curl, his counterpart at Ovda, had been Kansas City District engineer but went to Israel from the office of President Carter's science adviser. Morris chose both of them and, as Johnson said, "They were picked because they were good. [Either] one of them could have been promoted to general, and one of them [O'Shei] was."[18]

Theirs may have been the most critical jobs of all. Much more than engineers, they were management and government as well. As contracting officers for their respective construction contracts after 6 March 1980, the area engineers made critical decisions regarding the legitimacy of contractor expenditures and actions. As the senior officials at the sites, they also provided the equivalent of community government for the thousands who lived there. Their highly visible jobs involved substantial risks of failure and promised significant rewards for success. Such an assignment could make or break a colonel's career.[19] Both relished the work. Curl had told Johnson that he wanted the most difficult of the two sites. Johnson thought Ovda might prove to be the most troublesome so he sent Curl there. O'Shei was also an aggressive manager and responded to concern about problems that might delay completion with Henry V's "he which hath no stomach to this fight, let him depart."[20] The selection of these energetic, assertive former district engineers reflected the criticality of their jobs and the mission.

Two substantial requirements stood in the way of an immediate construction start. Israeli scholars had anticipated the need to expose the sites of earlier civilizations and preserve the important objects that might be found. Yigael Yadin, who was the nation's leading archaeologist as well as deputy prime minister, sounded the alarm months before the actual site surveys began. The withdrawal of the Israel Defense Force from the Sinai endangered more than the sites that might lay beneath the surface at Ramon and Ovda. Other construction would occur, for the armored forces and artillery as well as for air bases, and most of it would be in the Negev.[21]

The archaeological digs would come, but the more compelling initial obstacle to construction involved unexploded ordnance—duds—on the sites. A large portion of Israel had been battleground in one war or another, but earlier conflicts did not directly create the problem. The Israeli armed forces had for some years used both places for firing practice. The air force had bombed mock runways at Ovda, while a nearby artillery school and the fliers had used target areas at Ramon. No one knew the number or kinds of duds scattered over the sites, but estimates included bombs as large as 299 kilograms. The Ministry of Defense assumed responsibility for removing the duds, and by July 1979 an Israeli Air Force team was in the desert. Soon it became apparent that visual sweeps with hand-held magnetic mine detectors were inadequate. Particularly at Ovda, the drifting soil filled bomb craters and covered duds. The presence of shrapnel and other metal debris also complicated detection.[22]

The magnitude of the job caught everyone by surprise. Certainly, the government-to-government agreement had not designated a responsible party. Bar-Tov and the Ministry of Defense had responded to the problem without such a mandate. However, the seriousness of the matter was soon clear. Schechet warned Gilkey that clearance of explosives represented "potentially the most serious issue that has arisen to date." Thorough and prompt action was needed to avoid construction delays and increased costs and to protect workers.[23]

While the Israelis probed the sites, the Americans wrote home for help. They needed detecting equipment that could find ordnance under twelve feet of gravelly silt. With the help of the support office in New York, the project settled on the Ferex 4.021 sweeper, a West German product that was available in the United States. The project needed sixteen of the detectors, but the factory in Germany turned down the request for the equipment, explaining that "due to delivery liabilities assumed by us for various Arabic states, in the past months, we have bound ourselves in writing not

to supply these instruments to Israel." Only one could be found at a dealer in the United States. That one was shipped to Israel.[24]

Removal continued through the summer and fall. Sometimes the rate of progress caused anxiety for Gilkey and the managers at the sites. At Ramon Butler noted with an eye to the possible response of his Portuguese work force that "discovery of duds during excavation could cause a severe unplanned stoppage of work."[25] The Ovda team had problems reaching an agreement with the Israelis on the sequence of areas to be cleared, but completed most of its sweeps in October and went to augment operations at Ramon. The Israeli Army reserve units that did most of the work at Ramon did not always share the same sense of urgency as the Americans who looked on and waited. Nevertheless, work proceeded. The numerous duds found included as many as 100 objects unearthed in a 200-square-yard area. Each evening, after the workers returned to camp, these bombs were detonated where found. Most of the site was cleared by late November. A small ordnance disposal team stayed to detonate munitions uncovered during construction.[26]

The inevitable accident came in mid-December. Six workers involved in cutting an access road to a gravel site were taking their lunch break when a small bomb exploded less than ten meters away. The dud scattered metal fragments and injured three of the men. Because there were no hand injuries, investigators concluded that none of the workers had disturbed the ordnance; it may have been activated by construction equipment. Thereafter, workers were permitted to take their meals or park equipment only in areas that had been cleared by heavy equipment, such as bulldozers with sheepsfoot rollers.[27]

Underground explosives were not the only peril. Several times, Israeli pilots brought their jets in low over the sites, sometimes below crane boom level, for practice strafing passes over vehicles. "You do not hear the aircraft coming," wrote Lt. Col. Jack Clifton at Ramon. "When they pull out and hit their afterburners," he complained, "there is a tremendous roar and noise, which is very painful to the ears of the workers that are directly underneath."[28] On 24 October Clifton counted twenty-seven such runs within two hours. He was angry and willing to fight back. He did "not see why they have to continue to insist upon diving after the vehicles driving down the road, flying directly over the work site, and proving a general nuisance to all workers on the site." Clifton, whose grin hid a feisty spirit, did not find the runs amusing: "We will begin detonating very shortly, and it might be fun to see if they can time

Nose of a 750-pound bomb exposed at one of the sites during the clearance of unexploded ordnance.

an explosion at the same time that an aircraft comes over. We may get their attention."[29]

The aviators might have considered the overflights harmless pranks, but at other times and places, they had more than fun in mind. For example, in April 1977 five Israeli Kfirs had swooped down on the Saudi air base at Tabuk, about 120 miles southeast of Eilat, made a practice bombing run over the strip, and roared off. Repeat performances underscored Tabuk's vulnerability and Israeli dominance of the skies.[30] The message left at Ramon and Ovda was not as clear. Still, the overflights may have represented opposition to the unprecedented American involvement in Israeli defense matters or to the withdrawal from the Sinai. Such resistance surely existed within the Ministry of Defense and remained a concern for the U.S. Department of State until the departure from the peninsula actually took place.[31] In any case, the Americans on the sites were not amused by such playfulness.

The contractors complained to Tel Aviv. The Ministry of Defense first responded by limiting overflights to 300 feet, hardly

restrictive enough according to some of the Americans. Hartung pointed out that the planes represented the purpose for the bases and that a higher limit would inhibit the Israeli training program. The complaints persisted, and the Israelis finally agreed to the same 400-meter restriction imposed over Israeli civilian communities.[32]

The planes were still overhead and the duds were still under foot when the archaeologists came. They started at Ramon in October, where they provoked considerable interest but did not appear to get in the way of construction. At Ovda they began later, in January 1980. There the area office provided the diggers with water, portable toilets, and medical support.[33] Although Air Base Constructors' weekly reports from Ramon never indicated that the archaeologists disrupted operations, the *New York Times* painted a different picture. In two November articles, one of which was picked up by the *International Herald Tribune*, David Shipler wrote of scholars racing bulldozers in an attempt to complete excavations.[34] Although assured by Rudolph Cohen of the Israeli government's Department of Antiquities that the constructors did "their best not to destroy sites . . . ," Shipler left an impression of frantic graduate students chased by crazed engineers atop earthmovers and power shovels.[35]

These newspaper accounts had no bearing on the actual conduct of the archaeological digs. By March 1980 the work was finished at both sites. The vigilant and pugnacious Israeli press followed the operations but did not complain about Corps of Engineers' handling of the excavators.[36] When construction workers at Ramon exposed a small cave while digging for a taxiway, O'Shei halted construction and notified Cohen so that he could evaluate the find.[37] At Ovda Corps cooperation brought a note of thanks from the Department of Antiquities to Curl and his deputy, Lt. Col. Bruce F. Miller.[38]

While the unfavorable attention of the *Times* did not affect the conduct of operations, it did have an impact on the Corps of Engineers, from Tel Aviv all the way to Washington. Secretary of the Army Clifford Alexander's office asked the Corps to explain the situation characterized in Shipler's articles. Gilkey answered with his assessment of area office relations with the archaeologists, passed it to New York, and thence to the chief's office in Washington and finally the Pentagon.[39] The response from the Corps satisfied Alexander, but did not end the matter. Before the issue faded, the Washington office had to answer a letter from an irate scholar who had read the *Times* articles. Philip King, president of the American Schools for Oriental Research, complained about the callous indifference of the Corps to the cultural heritage of the Is-

raelis and about the Corps' failure to finance archaeological work at the air base sites. For good measure, he sent copies of his letter to President Carter, two senators, one representative, and the heads of some executive agencies.[40]

General Wray in Military Programs Directorate and Maj. Gen. E. R. Heiberg III, director of Civil Works, replied separately to the letter. Director of Antiquities Eitam also assured King of the good relations his archaeologists had with the Corps.[41] But, as Heiberg noted in his reply, "Your letter to me went to many who watch and judge our work: the President, two Senators, and others. . . . I ask you if you can suggest to me a way to put this matter into perspective in the minds of those who judge the Corps?"[42] As in the case of the original article, the damage was already done.

Preserving the evidence of the remote past and clearing unexploded ordnance were not the only prerequisites to construction. Establishing a reliable communications network was vital. The project needed a system connecting the sites to the Near East Project Office and Tel Aviv to the United States, for transmission of computer data as well as for message and telephone traffic. The program made some provision for such a system from the start. Col. Newton B. Morgan, the Signal Corps officer who was chief of the communications division at the Corps' Washington office, arrived in Israel shortly after Gilkey did. During his two-month stay, he began work on connections with the sites. More important, he urged the addition of a communications expert to the permanent project office staff to manage development in this important field.[43]

Col. Donald Wong, who followed Morgan at the end of June and remained as communications manager, faced three major challenges. The desert environment represented the least of them. Radio connections with Ramon, which sat atop a plateau, were established easily. The mountains that surrounded Ovda made contact more difficult, but it was still possible.[44] The two major problems were the Israeli communications system and the project's own procurement rules.

As a military communicator, Wong was accustomed to assessing his needs and bringing to bear the necessary Army resources. So he probably would have found making arrangements with any public utility system something of a challenge. The Israeli Postal, Telephone, and Telegraph system in the Ministry of Communications, known as the PTT, was something special. It was notorious for its backlog of telephone installations, estimated by some to number in the hundreds of thousands and to extend back several years. PTT horror stories, featuring repairmen who refused to work until they caught enough fish for lunch or installers who

demanded meals before doing their jobs, abounded. Wong had to break into this intimidating bureaucracy and make it work. In Israel there were no alternatives. The public system monopolized installation and maintenance of all telephones.[45]

He found dealing with PTT less daunting than it first appeared. As communications specialist Kenneth Keener noted, "We never found any unwillingness to support us." Wong still had concerns. Israel was a small and densely populated state with few available radio frequencies. As a result Wong found himself competing with residential users and businesses for circuits. In addition, equipment had to be compatible with the government of Israel's standards for two reasons: PTT would do all repairs during the life of the program, and equipment purchased for the program would remain in the country as the property of the Israeli government once the job was done.[46]

Wong's third area of concern involved changes in the rules governing procurement. Early in the spring the program had agreed to the Israeli request for increased purchases from local sources. For Wong the growing emphasis on buying and hiring within Israel signaled a need to expand the communications network. He and his staff of three civilian communications management specialists—Keener in Tel Aviv and one at each construction site—had their work cut out for them.[47]

Unlike Wong in Tel Aviv, with his multiple problems, the people at the sites had a straightforward concern for more and better communications. Through the summer and into the fall of 1979, managers for the contractors and the government complained of inadequate radios and telephones. Curl considered unsatisfactory links his greatest problem. Butler, with his managers living and working in Beersheva and his workers on site at Ramon, feared major delays were in store. Solutions were a long time coming. The contractors bought mobile radios for on-site communications and borrowed single side-band sets from the Israelis for contact with Tel Aviv. Meanwhile, the Israeli Air Force installed tactical microwave systems while working on the communications buildings at both sites. All the while PTT, which refused to carry out any installation before completion of the buildings, waited. Apparently, the postal and telegraph system was not interested in carrying out some fast-track construction.[48]

The difficulties persisted until permanent base communications were established in the autumn of 1981. Interim measures never provided reliable and clear connections, and efforts to rectify the situation sometimes created friction between the Americans and Israelis. Some Americans, Wong included, became skepti-

cal of Israeli commitments and complained that the Israelis were slow to respond to problems. As Wong said when informing Ovda that PTT planned to complete circuits to Tel Aviv, "Don't hold [your] breath."[49]

Problems involving communications, unexploded bombs, and archaeological sites were superimposed on the main job of setting up camps from which to carry out construction. The work itself was a major undertaking. With nothing but empty desert where the bases would go, both operations started from interim facilities elsewhere. The Corps and Negev Airbase Constructors set up shop on 2 September 1979 near the port of Eilat. Work at Ramon started earlier in the summer from rented quarters at the Desert Inn in Beersheva, first in a small ballroom and then spreading into office trailers in the hotel parking lot. The contractor's management personnel lived in the hotel and commuted to the site in pickup trucks and vans rented in town from Avis. The drive from each town to its site took at least an hour.[50]

These offices in town directed the first construction efforts while the Israeli Air Force assembled premobilization camps for the first 80 to 100 people at the sites. The contractors objected to the austere Israeli trailer camp, but Carl Damico told them "they are going to use it unless they show me how they can get it cheaper, quicker and I don't think they can do that."[51] The contractors used the Israeli facilities but were never happy about it. Complaints ranged from lack of furniture and electric outlets to dirty rooms. Moreover, the Israelis did not finish assembling the buildings on schedule and did not try to compensate with overtime work. All told, Butler concluded "for the record that relying on the IAF for the premobe camp was a mistake."[52]

The disagreement over the camp lasted into the winter. New preengineered buildings for use as residences and offices began to arrive in large numbers during the fall. As they went up at Ramon, management and administrative staff moved onto the site. "You can imagine the boost in morale," Butler reported, "when you have your own bed without a two-hour bus ride every day." By mid-December Ramon also had rooms for 240 Portuguese workers. However, at the end of the year 85 Portuguese still lived in the premobilization camp, and Butler faced "the albatross of the IDF premobe camp" until almost the end of January 1980.[53]

Completion of the permanent camp buildings removed one source of contention but spawned another. At Ovda the Israelis wanted to locate the construction camp and industrial facilities so that they could be incorporated into the permanent base. The Israelis, who would own the mobilization structures after construc-

tion of the bases anyway, hoped in this way to delete some facilities from the plan of work and reduce the cost of the project. The Americans made some effort to accommodate the Israelis by reviewing construction plans with this interest in mind. Nevertheless some facilities were installed so that their continued use was impossible. Overall, General Bar-Tov wanted the mobilization camp on the east side of the runways where the hills protected buildings from direct Jordanian observation, but the contractor installed it on the west. Other problems also occurred, such as the truck scales that were put so close to the runway that they would have to be relocated after the base became operational. So the attempt to plan for long-term use never succeeded.[54]

The deeper issues that divided the Israelis and Americans in these matters recurred from time to time. The Americans, many of whom considered timely completion their primary goal, lacked patience with the more measured pace at which the Israelis did business. The Israelis, on the other hand, placed a greater emphasis on economy.

The premobilization camps were still in use when the workers started to come into Israel. The arrival of large numbers of foreign construction workers in Middle Eastern countries was not unusual. Oil-rich Arab nations with elaborate development plans compensated for their lack of skilled labor forces by importation. In 1980 the government of Saudi Arabia acknowledged the presence of one million such workers in that country, although one estimate put the number at more than twice as many. At the same time, some countries with chronic unemployment regularly exported labor to the Middle East. This practice reduced the likelihood of unrest at home and brought in badly needed foreign exchange. Foremost among this group of nations was the Republic of the Philippines. Thailand and Portugal, which were eighth and ninth on this list in 1979, furnished the workers for the air base program.[55]

The first Thai laborers came to Ovda in mid-September. Curl explained that they had been chosen because "they are industrious, hard-working and have experience in this sort of thing," having worked on American air bases in Thailand before and during the war in neighboring Vietnam. The Thais did not bring much with them. Many lacked adequate work clothes, some had no shoes, and most had practically no money. A supervisor lent some of the early arrivals money for tennis shoes. At the same time, very little awaited the first workers. No recreation facilities had been established. Only the mail that started trickling in during October offered any reading material, and spices and condiments for their dining hall were a long time coming. In spite of the lack of diversion, the Thais rarely

ventured out to Eilat after their ten-hour workdays. Early in 1980 their pay averaged around $400 per month.[56]

Portuguese workers began to arrive at Ramon around the same time. Here too delivery of the special foods needed for the labor force—tripe, pigs' heads and feet, pork kidneys, cod, and sardines—was slow. The Portuguese were more experienced in the construction trades than were the Thais and were recruited in smaller numbers. Their wages ran about 2.5 times higher than Thai pay, averaging over $10,000 a year. Supervisors were "generally pleased with the performance of the Portuguese workers."[57]

Although importing labor was a fairly standard practice in the Middle East, it was unusual for Israel. The nation lacked the capital resources of its more prosperous neighbors. On the other hand, it did have a skilled and versatile labor force, much of which was organized in Histadrut, the articulate and powerful labor federation. Histadrut was unlike any labor organization in North America. A major industrial employer, it owned a number of large firms, including Solel Boneh, which was by far Israel's largest construction company and one of the largest in the world. In 1981 Solel Boneh's worldwide design and construction contracts exceeded $450 million. Histadrut had strong ties to the Labor Party, which dominated Israeli politics until the 1977 election of Prime Minister Begin, and it is unlikely that a Labor government would have risked the federation's ire by insisting on a foreign work force. In its political and entrepreneurial as well as its unionist activities, Histadrut combined the Zionist ideal of rebuilding the land of Israel and the socialist goal of a Jewish workers' state. It was a formidable organization, and its voice would be heard frequently.[58]

Workers and their living quarters represented only part of the mobilization requirement. Along with billets and offices came kitchens, utilities, and support services such as infirmaries, banks, post offices, and laundries. Recreation facilities included theaters, soccer and softball fields, handball courts, and swimming pools. In October 1979 Ovda also put in a desalinization plant to purify water piped onto the site from wells in the Arava. Construction demanded huge quantities of water for grading, compaction, and excavation, all of which could use saline water, as well as for mixing concrete, which required sweet water. Early estimates put peak daily needs for compaction alone at about 5,000 cubic meters or roughly 1.3 million gallons. Experience later validated these predictions.[59]

The Israelis initially trucked water to both sites. Meanwhile, the national water company, Mekeroth, built pipelines from Ramon to the Sea of Galilee far to the north and from Ovda to the Arava

Ramon access road

wells. The constructors also installed 25,000-cubic-meter storage ponds that were lined and covered with plastic. At Ovda, providing a consistent supply for the work force proved early to be a significant problem. Before the purification plant began operation at the end of October, shortages were "severe and inexcusable," according to Curl. In later months occasional breakdowns at the plant required management to issue bottled water for drinking and to pipe brackish water to the billets for sanitary use.[60]

Sometimes the construction emphasis during these early months seemed to go too far toward providing amenities. Curl rejected the contractor's plan for two olympic-size swimming pools for the work camp as "clearly in excess of the requirement and with no apparent consideration for cost control." He insisted on reviewing all subsequent plans for recreation facilities.[61] The impression of an undue emphasis on creature comforts persisted among some Americans as well as Israelis. General Lewis said after a December visit that the Ovda contractor's "concern for the welfare of his people is obvious in the facilities built and planned." He thought "the energy flowing from this concern should be engaged

in productive work rather than on recreational facilities." "The camp," Lewis concluded, "is not austere."[62]

Food was a necessity but also an important pleasure to workers on a remote construction site. A subsidiary of RCA provided satisfactory service at Ramon. Ovda started with a temporary contract with a joint venture called MEML-Tamam. MEML, or Middle East Manpower and Logistics, was based in Hong Kong. The other part of the firm, Tamam Aircraft Food Industries of Tel Aviv, provided catering service to Israel's El Al Airline, whose food had a poor reputation among international travelers. Ovda too had many unhappy customers. "U.S. personnel," Pettingell reported in November, "are upset, dissatisfied and on the verge of riot activity." Award of the permanent contract to American-owned Dynateria stabilized matters, but only after MEML-Tamam failed to overturn the award in the Israeli courts.[63]

Comforts were not shared equally. Each site had two separate camps, one for Corps and contractor management and another for the workers. Initial plans at Ramon called for single eight-by-ten rooms for the Americans. Unhappiness over this policy led to an increased allocation.[64] Americans moved into two-room suites similar to those at Ovda. Portuguese and Thai workers lived four and eight to a room, depending on their job levels. One Israeli newspaper referred to the arrangement as "upstairs-downstairs."[65]

In addition to accommodations for workers and managers, mobilization required a wide range of structures and plants for base construction. While some of the workers assembled the billets, others graded shop areas and poured concrete pads for preengineered maintenance shops and warehouses and for open storage yards. They also installed fuel storage tanks and a filling station. Industrial facilities included processing plants for construction materials, including a shop for storing, sorting, and bending reinforcing steel. Roads were opened to quarry sites, where rock crushers were assembled. Then came asphalt and concrete batch plants.

Although not as significant as construction for mobilization, work on air base facilities also started in 1979. Earliest among these at both sites were the access roads that would connect the bases to the main north-south highway through the Negev and the perimeter security system of fences and roads. Work on both sites started in October. At Ovda the contractor experimented with several methods of excavating and placing fence posts in the loose granular soil before deciding to cut a continuous trench. Within a short time seven-man crews daily set 250 tapered forms, emplaced as many posts, and poured concrete. At Ramon the ground proved too rocky for earth augurs, and the workers used air track drills with six-inch

rock bits to dig post holes along the nineteen-mile network of fences. Work at both places continued through the winter.[66] Completion of the access roads took considerably longer. The fifteen-kilometer road to Ovda and the ten-kilometer connection to Ramon began as crude trails. In the course of construction they were widened to accommodate large pieces of equipment, compacted, and graveled. Only toward the end of the project were they paved.[67]

Early construction at both bases was defined in large measure by the special characteristics of the sites. Not only did the terrain determine the respective approaches to perimeter security and much later construction, but each site had unique construction requirements. At Ramon, 300,000-cubic-meter Glide Path Hill, an obstruction to planes approaching the main runway, had to be leveled. Workers gradually reduced the hill with explosives. They trucked the rubble to haul roads and the mobilization camp as fill while gaining experience with the heavy equipment that they used on other work at the site.[68]

Ovda's location in a flood-prone wadi required developing a protective network to carry off the waters that rushed through the valley. The 31-mile system of diversionary channels and dams was designed to protect the base from a deluge so severe that it was likely to occur only once every 100 years. Even Israeli engineers thought the danger remote. Nevertheless, those who worked there came to appreciate the protection offered by the system. In December 1980 a storm and flood of almost biblical proportions inundated the site. Two days of rain washed out all the roads and filled excavations, stopping most work for six days and setting back digging of the communications ducts by nearly one month. A day after the rain stopped, the excavations still held water but the site showed only minimal ponding because the diversion ditches carried away most of the water. "Flood control devices," Deputy Area Engineer John J. Blake said, "worked as they were intended to. If anybody had any doubts that they were necessary, they should have been here last night."[69]

The development of the shelters in the last few months of 1979 showed fast-track procedures in operation. The work proceeded on several parallel lines, as foundation design, excavation, and purchasing of materials started. While the Israelis selected their design, the Americans evaluated footings for the shelters. The depth of bedrock at the locations varied by as much as eight meters. The use of driven piles for foundations, previously considered a possibility by Hartung, was once again mentioned. However, neither contractor possessed equipment for this costly alternative.

Bulk cement storage facility under construction at Ovda in the spring of 1980.

The engineering division decided to use spread footings, set into bedrock where possible, and elsewhere on structural fill.[70]

In October the contractors received the general plans for adaptation to the sites and for procurement action. Meanwhile Israeli architects continued to work on foundation plans. The foundations at Ovda still troubled Curl. He remained unconvinced of the adequacy of footings for some of the shelters. To stay on the excavation schedule while tests continued, he convinced the contractor to concentrate on the complexes with sound footings. Pilings finally proved unnecessary, and by late November all excavation drawings were done.[71]

While these questions of foundations and the sequence of excavation were resolved, the major issue remained progress on design. Numerous Israeli firms, their work coordinated by the Israeli Air Force, worked on parts of the plans. Warren Pettingell complained that these architects took too long and kept him from meeting his schedule.[72] Fred Butler found the situation confusing and frustrat-

ing. The shelters, Butler wrote, "are on the critical path and have been, thus far, locked into forces and agencies beyond our effective control."[73] Drawings trickled in throughout late autumn until finally all were available before the end of December.[74] Butler's relationship with Israeli architect-engineers reflected his frequent complaints about the multiplicity of firms doing the work, the problems associated with piecing together numerous small pieces of design, the complex approval process, and translations. For example, one group of six hangars and ancillary facilities at Ramon involved 175 separate sheets, all of which needed translation, piecing together, adapting to the site, and procurement action.[75]

Even with the contractors completing the drawings and releasing them for construction through the winter of 1980, work on foundations was already well under way. The Ovda contractor completed excavation for nine of the ten complexes in February. Within a few days the precast plant at the site began production of panels for the walls. At Ramon earthwork for the shelters started in December, even before anyone was sure that the scrapers would not encounter rock that required blasting. Digging for the first group of six hangars required removing 163,000 cubic meters of earth. By March the work of digging and pouring footings proceeded routinely.[76]

The earthmovers still uncovered unexploded ordnance at Ramon. At one complex deep detection equipment turned up twenty-three duds, but work crews found still more. Their excavators cut into two white phosphorous projectiles, which ignited and flared but caused no damage. At other times demolition experts exploded 500-pound bombs, sending shock waves through the housing areas.[77]

In spite of the many construction activities that were under way, mobilization dominated on-site operations until well into the spring of 1980. The little construction of permanent facilities that took place was based on available plans and materials rather than on logical construction sequences. Both sites built what they could as fast as they could and hoped that plans and materials would catch up. This situation soon changed. In March the project was entering one of the many transitions that came in rapid succession throughout the life of the job. The contractor at Ovda reported that construction was beginning to take priority over support activities. A month later Butler at Ramon wrote that "the mobilization phase of the project is drawing to an end." In June the headquarters in Tel Aviv confirmed these views and directed that both area offices shift their emphasis to permanent facilities. Permanent construction was in full swing.[78]

Notes

1. *New York Times*, 2 Feb 81.

2. ABC Weekly Progress Report, 31 Oct 79, IABPC, 12/18.

3. The territories include the Gaza strip, East Jerusalem, the West Bank of the Jordan—called Judea and Samaria by the Israelis—and the Golan Heights.

4. David Ben-Gurion, "Introduction," in Yaacov Morris, *Masters of the Desert* (New York: G. P. Putnam's Sons, 1961), p. 11.

5. Moshe Dayan, *Moshe Dayan: Story of My Life* (New York: Warner Books, 1977), p. 187.

6. Morris, *Masters of the Desert*, pp. 22, 29–46, 48, 100–101, 104–05; Zev Vilnay, *The Guide to Israel* (Jerusalem: Daf-Chen Press, Ltd., 1980), p. 339.

7. Ben-Gurion, "Introduction," in Morris, *Masters of the Desert*, p. 11; Dan Kurzman, *Ben-Gurion: Prophet of Fire* (New York: Simon and Schuster, 1983), pp. 274, 354–55, 367–69.

8. Burton Bernstein, *Sinai: The Great and Terrible Wilderness* (New York: The Viking Press, 1979), p. 35.

9. Lesley Hazelton, *Where Mountains Roar, A Personal Report from the Sinai and Negev Desert* (New York: Holt, Rinehart and Winston, 1980), pp. 150–51.

10. Meron Benvenisti, *The West Bank Data Project: A Survey of Israel's Policies* (Washington, D.C.: American Enterprise Institute for Public Policy Research, 1984), p. 25.

11. DF, Bazilwich, Deputy NAD Engineer for Military Construction, to Chiefs of Divisions, NAD, 15 May 79, sub: Site Designation of Israeli Airbases, NAD PAO files.

12. Daniel Hillel, *Negev: Land, Water, and Life in a Desert Environment* (New York: Praeger Publishers, 1982), pp. 79, 118.

13. Herzog, *The Arab-Israeli Wars*, p. 104; Kurzman, *Ben-Gurion*, pp. 309–10.

14. Telex, USDAO Tel Aviv (Gilkey) to DAEN-MPC, 20 Apr 79, sub: Israeli Airbase Program Development; Telex, USDAO Tel Aviv (Hartung) to HQ USAF, 23 Apr 79, sub: Israeli Air Base Program Development, Sitrep No. 1; Telex, USDAO Tel Aviv (Hartung) to HQ USAF, 14 May 79, sub: Israeli Air Base Program Development, Sitrep No. 4; Telex, NEPO to NAD, n.d. [c. 1 Oct 79], sub: Information for MG Lewis Address to Professional Engineers, NAD PAO files.

15. Telex, USDAO Tel Aviv (Hartung) to HQ USAF, 14 May 79, sub: Israeli Air Base Program Development, Sitrep No. 4; Telex, NEPO to NAD [c. 1 Oct 79]; Lt Col Robert Hughes, Briefing for Secretary of the Army Clifford Alexander and General Edward Meyer, 30 Jul 79, DAEN-MPC-G files.

16. Ltr, Schechet to NEPO Project Manager, 30 Jul 79, sub: Interim Report No. 2; Butler, ABC Weekly Progress Report, 25 Jul 79, IABPC, 12/4.

17. Organization Chart, Area Offices, 20 Sep 79, IABPC, 88/5.

18. Johnson interview.

19. Bar-Tov interview, May 82; Interv, author with John F. Wall, Aug 80, Tel Aviv; Ltr, Col Donald M. O'Shei to NEPO Project Manager, 15 Mar 80, sub: Ramon Air Base Progress Report for the Week Ending 13 Mar. 1980, IABPC, 13/19; Ltr, Gilkey to O'Shei, 7 Mar 80, sub: Designation of Successor Contracting Officer, IABPC, 32/3.

20. Telecon transcript 10, 14 May 79, IABPC, 10/3; Wall, Project Notebooks, vol. I, 22 Jun 80, IABPC, 90.

21. *New York Daily News*, 6 Dec 78; *New York Times*, 2 Feb 81.

22. Telex, NEPO (Col Richard L. Curl) to NAD (Bazilwich), 13 Jul 79, IABPC, 65/1.

23. Ltr, Schechet to NEPO Project Manager, 30 Aug 79, sub: Interim Report No. 3.

24. Telex, NEPO (Curl) to NAD (Bazilwich), 13 Jul 79; Telex, NEPO (Maj Stephen T. Sharr) to Herr Lange, Institute Dr. Foerster GMBH & Co., Reutlingen, FRG, 16 Aug 79, IABPC, 65/4; Telex, Foerster Institute to NEPO, 22 Aug 79, IABPC, 65/3; Telex, NEPO (Curl) to NEPO-Rear (Pagano), 9 Sep 79, sub: Purchase of Additional Ferex Detector, IABPC, 65/6; Telex, NEPO (Curl) to NEPO-Rear (Pagano), 17 Aug 79, sub: Dud Removal, IABPC, 65/4.

25. Butler, ABC Weekly Progress Report, 25 Jul 79.

26. NEPO Sitrep No. 13, 21 Oct 79, IABPC, 12/16; Memo, Lt Col Jack H. Clifton, Deputy Area Engineer, for Col O'Shei, 28 Sep, 7 Oct, and 22 Nov 79, sub: Weekly Progress Report Ramon, IABPC, 30/3.

27. Memo, Mishap Board of Investigation (Lt Col Joseph A. Beben, USA; Lt Col Thomas J. Stepetic, USAF; Capt Benny Har-Gev, IAF) for Project Manager, 28 Dec 79, sub: Mishap at Ramon Air Base 12 Dec. 1979, IABPC, 31/1.

28. Memo, Clifton for Area Engineer, Ramon, 26 Oct 79, sub: Weekly Progress Report, Ramon, IABPC, 30/3. Also see MFR, Curl, 31 Oct 79, sub: Narrative Report, Week of 21–26 Oct. 1979, Ovda site; Weekly Sitrep, Construction Division (Baer), 28 Oct 79. All in IABPC, 22/3.

29. Memo, Clifton for Area Engineer, Ramon, 26 Oct 79.

30. David Holden and Richard Johns, *The House of Saud: The Rise and Rule of the Most Powerful Dynasty in the Arab World* (New York: Holt, Rinehart and Winston, 1981), pp. 479, 486.

31. Schiff and Ya'ari, *Israel's Lebanon War*, p. 68.

32. Memo, Bar-Tov and Hartung, 14 and 25 Nov 79, sub: Joint Meeting—DOD/MOD Program Managers, COE, and NAC, IABPC, 30/3; Ltr, Gilkey to GM, NAC, and GM, ABC, 11 Dec 79, sub: Low Flying Aircraft at the Air Bases, IABPC, 31/1.

33. ABC Weekly Sitreps, 31 Oct, 7, 12, 19, and 26 Nov 79, IABPC, 12/18, and 13/1–3; OAO, Master Diary, 9 Jan 80, IABPC, 84/4.

34. *New York Times*, 4 and 18 Nov 79; *International Herald Tribune*, 20 Nov 79.

35. *New York Times*, 4 Nov 79.

36. See, for example, (Tel Aviv) *Al Hamishmar*, 3 Feb 80; (Tel Aviv) *Ha'aretz*, 11 Feb 80; *Jerusalem Post*, 28 Feb 80 and 17 Mar 80.

37. Memo, O'Shei for Project Manager, 22 Mar 80, sub: Ramon Air Base Progress Report for the Week Ending 20 Mar. 1980, IABPC, 14/1.

38. Ltr, Avi Eitan, Director of Antiquities, Department of Antiquities and Museums, to Curl and Miller, 11 Mar 80, IABPC, 87/11.

39. Telex, Gilkey to NAD, 13 Nov 79, sub: Response to SecArmy Inquiry Ref Preserve of Archeological Resources, NAD PAO files; Col Robert Hughes, Information Paper, 14 Nov 79, sub: Secretary of the Army's Inquiry Concerning the Preservation of Archeological Resources at the Israeli Airbase Construction Sites, IABPC, 87/11.

40. Ltr, Philip J. King to Maj Gen E. R. Heiberg III, 21 Jan 80, IABPC, 87/11.

41. Ltrs, Wray to King, 5 Feb 80; Heiberg to King, 27 May 80; Eitam to King, 31 Mar 80; all in IABPC, 87/11.

42. Ltr, Heiberg to King, 27 May 80.

43. Interv, author with Col Donald Wong, Aug 80, Tel Aviv, Israel; Interv, author with Kenneth Keener, Aug 80, Tel Aviv, Israel.

44. Wong interview.

45. Wong and Keener interviews.

46. Ibid.

47. Wong interview.

48. OAO, Master Diary, vol. I, 18 Oct 79, IABPC, 84/1; Butler, ABC Weekly Sitrep, 24 Oct 79, IABPC, 84/1; Ltr, Hartung to Bar-Tov, 4 Sep 79, sub: Long-Distance Radio Requirements, IABPC, 29/4; Communications Sitreps, 24 and 30 Sep, 7, 14, 21, and 26 Oct, and 11 Nov 79, and 20 Jan 80, IABPC, 12/12–17, and 13/1 and 11; Memo, Wong for Damico, 25 Oct 79, sub: Communications Items for DOD and MOD PM, IABPC, 19/18.

49. Communications Sitrep, 24 Sep 79; Telex, Wong to OAO, 21 Jan 80, sub: Telephone Lines, and Telex, Wong to OAO, 23 Apr 80, sub: Ovda Communications Support, both in IABPC, 33/1; (Tel Aviv) *Ha'aretz*, 27 Oct 81.

50. NEPO Sitrep No. 7, 10 Sep 79, IABPC, 12/10; Ltr, Butler to Curl, 24 Jul 79, sub: Interim Jobsite Office, IABPC, 21/8; ABC Weekly Progress Report, 12 Sep 79, IABPC, 12/11.

51. MSA, Israeli Air Force Base Management Support Contractor Project Planning Documents & Briefing Book (hereafter cited as MSA, Project Planning Documents & Briefing Book), May 79, IABPC, 89/2; Telecon transcript 15, 31 May 79, IABPC, 10/3.

52. MFR, Capt Walter J. Cunningham, Project Engineer, Ramon, 19 Sep 79, sub: Weekly Progress Report, Ramon Air Base, 31 Aug.–6 Sept. 1979, IABPC, 29/4; ABC Weekly Progress Reports, 29 Aug and 12 Sep 79, IABPC, 12/9, 11, and 12.

53. NEPO Sitrep No. 16, 11 Nov 79, IABPC, 13/1; ABC Weekly Progress Reports, 12 Oct, 11 and 28 Dec 79, and 22 Jan 80, IABPC, 12/15, and 13/6, 8, and 12.

54. MFR, Bar-Tov and Col John R. Harty, 2 Aug 79, sub: DOD/MOD PMs Meeting, 26 Jul. 1979, IABPC, 45/4; MFR, Lt Col James R. Cranston, USAF, DOD PMO, 18 Sep 79, sub: Mobilization Work Camp Facilities at Ramon and Ovda, IABPC, 29/4; Memo, Wall for Area Engineers, 27 Aug 80, sub: Temporary Construction, IABPC, 33/2; Bar-Tov interview, Aug 80.

55. Holden and Johns, *The House of Saud*, p. 534; *ENR* 203 (20 December 1979): 107.

56. OAO, Master Diary, 16, 20, 24, and 26 Sep and 1 Nov 79, IABPC, 84/1; *Washington Post*, 9 Feb 80; *Jerusalem Post*, 5 Feb 80.

57. ABC Weekly Progress Report, 12 Sep and 17 Oct 79, IABPC, 12/11 and 16; Ltr, Clifton, CO, to Butler, 12 Jun 80, sub: Special Ethnic Food for TCN, IABPC, 33/1; *Jerusalem Post*, 5 Feb 80.

58. Sachar, *A History of Israel*, pp. 157–59; *ENR* 209 (15 July 1982): 57.

59. MSA, Project Planning Documents & Briefing Book, May 79; NEPO Sitrep No. 41, 23 Jun 80, IABPC, 14/6; NEPO Sitrep No. 42, 7 Jul 80, IABPC, 14/7.

60. MFR, Curl, 31 Oct 79, sub: Narrative Report, Week of 21–26 Oct. 1979, Ovda site, IABPC, 12/18; OAO, Master Diary, 6 Nov 79 and 31 Jul 80, IABPC, 84/1 and 84/2; NEPO Sitrep No. 42, 7 Jul 80.

61. Ltr, Curl, COR, to GM, NAC, 8 Oct 79, sub: NAC Procurement Action-Swimming Pool, IABPC, 30/1.

62. Ltr, Lewis to Morris, 26 Dec 79, IABPC, 1/7.

63. Weekly Report 18, Pettingell to Curl, 23 Nov 79, IABPC, 13/4; Weekly Report 19, Pettingell to Curl, 30 Nov 79, IABPC, 13/4; NEPO Sitrep No. 20, 10 Dec 79, IABPC, 13/5; (Tel Aviv) *Mabat*, 28 Nov 79.

64. Memo, Clifton for Area Engineer, Ramon, 29 Oct and 9 Nov 79, sub: Weekly Progress Report, Ramon, IABPC, 22/3–4.

65. (Tel Aviv) *Ha'aretz*, 21 Dec 79.

66. NEPO Sitrep No. 11, IABPC, 12/12; NEPO Sitrep No. 19, IABPC, 13/15; MFR, Curl, 31 Oct 79, sub: Narrative Report, Week of 21–26 Oct. 1979, Ovda site,

IABPC, 30/1; Memo, Clifton for Area Engineer, 16 Nov 79, sub: Weekly Progress Report, Ramon, IABPC, 22/4.

67. Clarence D. Gilkey, "Fast-Tracking the Israeli Air Bases," The *Military Engineer* 72 (September–October 1980): 317.

68. "Israeli Air Bases," *ENR* 205 (30 October 1980): 29.

69. Wall, Briefing for Incoming Officers, Tel Aviv, 14 Jun 81, IABPC, 92; *Jerusalem Post*, 5 Feb 80; *U.S. News and World Report*, 26 May 80; OAO, Master Diary, 26, 27, and 29 Dec 80, IABPC, 84/2.

70. MFR, Leo H. Price, Engineering Division, 6 Sep 79, sub: Geotechnical Meeting [30 Aug 79], IABPC, 22/2; MFR, Price, 18 Sep 79, sub: Geotechnical Meeting [13 Sep 79], IABPC, 22/2; MFR, Price, n.d., sub: Geotechnical Meeting—Ramon, 4 Oct 79, File 103–03, Oct. 1979, IABPC, 22/3.

71. NEPO Engineering Division Sitrep, 7 Oct 79, IABPC, 12/15; NAC Weekly Reports, 12, 19, and 26 Oct 79, IABPC, 12/15–17; Ltr, Curl to Project Manager, NAC, 3 Oct 79, sub: Shelter Foundations for Ovda, IABPC, 22/2; Ltr, Curl to Project Manager, NAC, 8 Oct 79, sub: Corps of Engineers Memorandum dated 24 Sep. 1979, Shelter Meeting—Foundation Designs, IABPC, 22/2.

72. MFR, Thomas, 30 Oct 79, sub: Design and Engineering Meeting 24 Oct. 1979, IABPC, 22/3; NAC Weekly Reports, 19 and 26 Oct 79.

73. ABC Weekly Sitreps, 12 and 26 Nov 79, IABPC, 13/1 and 3.

74. NEPO Engineering Division Sitrep, 21 Dec 79, IABPC, 13/7.

75. ABC Weekly Sitreps, 5 and 26 Sep, 7 Nov, and 11 Dec 79, and 26 Feb 80, IABPC 12/10 and 13 and 13/1, 6, and 17; Ltr, Gilkey to Hartung, 15 Oct 79, sub: Drawings of New Facilities, IABPC, 22/1.

76. NAC Weekly Sitreps, 29 Feb and 8 Mar 80; ABC Weekly Sitrep, 25 Dec 79; Memo, Clifton for NEPO Project Manager, 29 Jan 80, sub: Weekly Progress Report, Ramon; ABC Weekly Sitrep, 18 Mar 80. All in IABPC, 13/7, 13, 15, 17, and 18, respectively.

77. ABC Weekly Sitrep, 1 May 80, IABPC, 14/4; Interv, author with Maj Glenn D. Lloyd, Feb 87, Fort Belvoir, Va.

78. OAO, Master Diary, 27 Mar 80, IABPC, 84/4; ABC Weekly Progress Report, 8 Apr 80, IABPC, 14/3; Memo, Wall for Area Engineers, 11 Jun 80, sub: Base Camp Construction, IABPC, 33/1; Lloyd interview.

CHAPTER 9

Time of Trials
March–June 1980

Our quality assurance was not that good. Not that good? It was almost non-existent.

Maj. Gen. Max Noah [1]

We just do not have control of this job to the extent that we should have.

John J. Blake, Deputy Area Engineer, Ovda [2]

General Noah was still in Israel when the first of the problems that hit the program in the spring of 1980 began to unfold. The season proved difficult at the sites and in Tel Aviv. Labor relations, contractor and government management, and procurement of materials all proved troublesome. Overall, these problems shook Israeli confidence in the ability of the Near East Project Office to do the job, sidetracked construction at both sites, and kept management from concentrating on development of an efficient construction routine.

By the time that the winter rains ended and the desert flowers bloomed, some Americans as well as Israelis expected that securing the supply of reinforcing steel bars would be difficult. The Israeli Air Force's specifications called for ten different sizes of bars, with diameters from 6 to 25 millimeters. These rods strengthened the concrete in the many hardened buildings on both bases. In addition to the aircraft shelters, these structures included the control towers and terminals, assorted communications and utilities buildings, operations headquarters, some maintenance facilities, and personnel shelters.[3]

Steel supply grew more important in the early spring with shelter construction about to move into a major new phase. Some footings were still being poured and wall panels were still being placed on the vertical steel dowels but preparation for arch construction also began. These arches consisted of concrete poured over com-

Secretary of the Army Clifford Alexander confers with Colonel Curl and Colonel Gilkey at Ovda.

plex networks of reinforcing steel. In the shelters and other hardened buildings, Israeli design tended to call for smaller bars than those the Americans normally used. The Israelis bent a great number of the small bars by hand into a tight mesh over which they placed concrete. The completed wall resembled glass-encased chicken wire. Like other aspects of Israeli design that tended to be labor intensive, this method reflected the relatively low wages of workers compared to the cost of machines in Israel. Americans, on the other hand, usually faced higher wage and benefit costs. So they used fewer and larger rods, which they bent by machine.[4]

The specifications for this steel called for 15 percent elongation—elasticity under impact—to assure that the structures could withstand an air attack. This standard applied to bars used in the shelters as dowels for vertical columns and in wall panels and arches. Steel for footings and foundations did not have to meet this standard, which apparently originated in South Africa. Although unfamiliar to the Americans, this requirement represented standard Israeli practice for hardened structures. In October 1979

the Israeli architect who worked on the shelters notified the project of this specification. It also appeared on the site-adaptation drawings that had begun to trickle in, and the requirement was well known within the Tel Aviv office by then.[5]

Although the Near East Project Office understood from the outset that problems in procuring this special steel could seriously affect the schedule and cost, the awareness came slowly at Ovda. The first indication that something was awry came from General Bar-Tov's office. In January 1980 his economic adviser, Eli Noy, claimed that the bidding process for awarding contracts for the steel contained substantial irregularities. He believed that Hamegader-Barzelit, the Israeli firm that won the contract, became the lowest bidder only after submitting a revised bid that did not include taxes within its price. Some of the other bids, all of which contained the duties, otherwise would have been lower. The Ministry of Defense also wanted assurance that the steel, which had been manufactured in South Africa by an affiliate of Hamegader, met specifications.[6]

The steel was already in Israel when Negev Airbase Constructors awarded the contract to Hamegader. It had been delivered between June and October 1979. Negev Airbase Constructors bought the steel later, with purchase orders dated in December 1979 and January 1980. In the interim the bars had sat in the bonded warehouse at the port of Eilat awaiting a buyer and payment of import duties. Colonel Curl, the area engineer at Ovda, later recalled that "a lot of the bundles were loose [and] a lot of the identifying tags were missing." His office had neither the staff nor the procedures to control quality; his contractor had "sort of a start of a quality control program." But he needed the steel, the vendor assured him that it met specifications, and the tests he was able to run indicated that the bars met the requirements.[7]

The expressions of concern within the Ministry of Defense brought reassurance but no significant action. In early February Colonel Gilkey in Tel Aviv replied by reviewing the procedure for quality control, concluding that "it is considered that all concerned are aware of potential problems and have taken measures to insure compliance."[8] Colonel Curl confirmed Noy's claims that procedures had been irregular and bids had been evaluated improperly but remained confident of the quality of the materials.[9]

Curl had reasons for considering the matter unimportant. His experience indicated that many construction materials—notably concrete, aggregates, and cement—could cause problems but reinforcing steel never did. Moreover, in spite of the disarray of the bundles at the port, logic led him to infer that the steel was as

promised: "It used to be bundled together, it came on the same ship, it came from the same steel mill, and there's no way on God's green earth that another piece of steel could have got into that shipment, so you assume that although the bundle was broken it was the same as that bundle was originally packed."[10] His response to queries from Gilkey's office reflected his view. Although Gilkey asked him to wire his assessment of the situation within five days, Curl took an extra week and replied by mail. Moreover, he brushed aside the problem, attributing it to contradictory guidance from Tel Aviv. He said the contractor would employ sound procurement principles in the future.[11]

Both Gilkey and Curl had reacted defensively to outside criticism. Neither took the concerns of the Ministry of Defense at face value. Gilkey had fended off Noy's comments with a restatement of his operating procedures. Curl in his turn had tried to blame Gilkey's office for whatever problem existed. The Israelis brought the matter up again on 21 February in a meeting of the program managers attended by both Noah and Gilkey. This time the questions concerned the quality of the steel and the possibility that substandard bars had been used in vertical columns of the aircraft shelters. Bar-Tov said some of the steel had been delivered without proper identification tags. Hartung had Curl's assurance that the steel was properly segregated by type, but Willy Rostocker, a retired Canadian steel expert who worked as a dollar-a-year consultant to Bar-Tov, insisted that Curl's claim was inaccurate.[12]

On the same day Colonel Kett from Gilkey's office visited Ovda and raised similar questions. He verified Bar-Tov's contention that the steel was not identified clearly. In fact, Kett reported, the bars were so poorly labeled and sorted that he could not tell whether they met standards. "If this were not a fast-track project, CPFF project," Kett wrote, "there is no doubt in my mind that a critical material of construction such as reinforcing steel would not be acceptable in its present condition." He urged "that the steel in question not be utilized while reasonable ambiguity as to its properties exists."[13]

Three days later Gilkey took action. He now feared that the bars already used in precast shelter panels might not meet specifications and that the seller might have misrepresented the steel to the contractor. He told Curl to formally notify Negev Airbase Constructors that they used improperly identified steel at their own risk. If random sampling detected the use of improper bars, Curl was to reject the panels at the expense of the contractor. Moreover, the cost of the testing itself was to be borne by the contractor.[14]

Despite these measures, the complaints continued. The loudest and most persistent protests came from Willy Rostocker. The

second volunteer adviser brought to the Israeli program manager by Deputy Defense Minister Zippori, Rostocker had come after the death of Morris Hornstein, the 72-year-old former president of the New York–based Horn Construction Company. Hornstein, whose firm had worked on the Verrazano Narrows Bridge connecting Staten Island and Long Island, had served Bar-Tov as a troubleshooter and as sort of a cultural bridge, explaining American construction methods and practices to the Israelis.[15] After he died in the fall of 1979, Bar-Tov said the American had "invested his soul into the building of the air bases in the Negev."[16] While the respect for Hornstein appeared to be universal, Rostocker inspired a different reaction. Impatient, disorganized, and indifferent to his severely high blood pressure, Rostocker was known to barge into offices, Israeli or American, open drawers, copy documents, and leave. Then, with sheaves of papers in hand and blood streaming from his nose, he would demand a hearing from Bar-Tov or his civilian deputy Avi Sharon. Some of the Americans, Curl among them, disliked Rostocker and considered him a nuisance. Some of the Israelis seemed to agree.[17]

Even at the Ministry of Defense, Rostocker had trouble getting an audience. To all who would listen, he insisted that the problems remained unsolved. He had said so at meetings with the Americans and within his own office. Finally, Sharon had asked auditor Naomi Kogon to hear him out: "Do me a favor. Find yourself a few hours. Sit down with Willy and see what he wants."[18]

In early March Rostocker also aroused some interest among the Americans. He collared General Lewis, who was in Israel to review progress. "In an excited state," as Lewis recalled, Rostocker asked for a meeting. Lewis agreed to an evening discussion at his room in the Palace Hotel. There, Rostocker spread his documentation, including photostats of canceled checks and purchase orders, on the rug in front of Lewis and Noah.[19] The story unfolded over a bottle of scotch. While Lewis took notes and marveled at the accumulation of papers, Rostocker argued that the project had received at least one shipment of steel that did not meet specifications. He insisted that the purchase of steel had been mismanaged and perhaps even marked by fraud.[20] Noah was surprised. "It had not come to my attention or Lewis' attention or any of the management's attention," he recalled, "that there was a problem as severe as was purported to be."[21] When the session was over and the scotch was gone, Lewis decided "to move and move quickly."[22]

The next morning Lewis brought the Defense Contract Audit Agency into the picture. The agency had a branch in Tel Aviv that had opened in the summer of 1979 in conjunction with the air

base project. The audit team led by Michael Maloney had representatives at both sites as well as in its main office at the Palace. Maloney reported to his agency's regional headquarters in Boston and worked independently of Gilkey's office. His primary task involved evaluating contractor claims for reimbursement of costs.[23] Lewis "told the auditor to get on this right away . . . and . . . to get a hold of Willy and start exploring."[24]

Simultaneous pressure for remedial action also came from the American program management office. Lt. Col. James R. Cranston from General Hartung's program management staff went to Ovda and spoke with Curl. He learned that the area engineer had not notified the contractor that he used questionable steel at his own risk. According to Cranston, Curl thought to do so would be tantamount to stopping the job, and he felt he lacked sufficient grounds for such action. Cranston reported that Curl had discussed his position with Gilkey and that Noah also knew that the contractor had not been warned.[25] Hartung was appalled. He also felt betrayed. Only one day before Cranston's visit to Ovda, Hartung had assured Bar-Tov that Curl had taken adequate steps to prevent use of questionable materials and that Negev Airbase Constructors was absorbing the financial risk. "We cannot," he wrote Noah, "continue to operate with agreements being made with MOD that are subsequently reversed, with no discussion prior to such action being taken." Perhaps recalling Gilkey's move from the IBM Building, he complained that this was not the first time that the Corps of Engineers had put him in an untenable position. In any case, "whether . . . caused by arrogance or just not paying attention to business, it is not the professional performance expected of the United States Department of Defense."[26]

Noah immediately apologized for the embarrassment the situation had caused Hartung. He regretted the breakdown in communications and agreed that "DOD elements must do better." Noah denied knowing that the "letter had not been sent to the contractor for whatever reason," but agreed that "this type of thing should not happen again."[27]

On the next day Curl learned that some of the steel had failed tests. Elongation was apparently not the problem; all samples met that particular standard. Instead, the failures involved yield tests. The strength of the steel in some of the samples did not meet project specifications.[28] Curl was not by nature an equivocator. When he recognized the problem, he acted immediately. He suspended construction of all structures that included reinforcing steel and ordered the contractor to take corrective measures. These included inventory and removal of any substandard steel on hand, identifica-

tion of structures in which any of the steel might have been used, and an engineering evaluation of the soundness of such structures. Curl attributed the situation to a failure of the contractor's quality control program and stressed "adequate controls must be initiated immediately to prevent similar unsatisfactory performance in the future." He gave Warren Pettingell three days to submit a quality control plan and a report on the situation.[29]

While Pettingell prepared his response, rumors flew. Maloney's office had just started its investigation, and the auditor would say only that he thought the entire purchase had been badly managed. This report did not satisfy the program managers, who claimed that the steel transactions reflected fraud on the part of the supplier and the construction contractor. Even before the issue emerged, Bar-Tov's office had been certain that operations at the sites were shot through with criminality. Auditor Kogon said, "We knew there was . . . some corruption there. We couldn't put our finger on it."[30]

In this climate gossip and hearsay, including claims of collusion between the contractor and the Corps and other wrongdoing, was hardly surprising. Nevertheless, it was disruptive. At Ovda Curl's deputy cautioned the area office staff not to become preoccupied with the allegations: "Unless there is substantive evidence, our people should not presuppose the outcome and the findings."[31]

Pettingell delivered a draft of his plan to Curl in a day. He outlined a procedure that would free the steel on hand for use. Essentially his proposal required withdrawing from the site all steel that was known to have failed tests as well as steel that was unidentified and untested. Pending their removal, these rods were segregated, banded in red, and marked clearly in Thai and English to preclude inadvertent use. Then he wanted to refill his racks with satisfactory steel, which would be tested against accompanying mill certificates. In the future he intended to accept only clearly marked and certified bundles. The area office's instructions on the control of steel quality incorporated all of these proposals. Noah added the requirement that all steel should be tested for quality at the port rather than after delivery to Ovda.[32] The assumptions under which Ovda worked clearly had changed. No longer would steel be presumed adequate based on circumstantial information.

Pettingell and Curl still faced another important matter. They had to determine how much substandard steel had been used and where. Initially, they knew only that they had fabricated but not emplaced forty-seven wall panels that might contain some of the inferior materials. They soon learned how fortunate they were: the problem did not extend much further. In shelter complex five, the footings and nine wall panels contained suspect steel; the Israelis

decided to accept the footings even with the mild steel. Tests of the steel inside the wall panels, on the other hand, disclosed that proper materials had been used. Otherwise, everything that had been built was up to standard.[33]

An arrangement with the area office and contractor at Ramon assured that, if needed, Ovda could borrow enough steel to continue construction. Overall, Ramon was about one month behind Ovda in its procurement program and was receiving a valuable lesson from the trouble at the southern site. In any event a loan proved unnecessary, and Ovda was back on schedule fairly quickly. In less than a week, enough suitable steel had been identified for the fabrication of wall panels to begin anew.[34]

By this stage the issue transcended engineering and procurement remedies. The problem had become political and was beyond the control of the area office and the contractor. Maloney's inquiry did not stop claims that the steel transactions might have involved fraud. He found that some of the purchasing documents had been deficient, that the supplier had not been the low bidder, and that Negev Airbase Constructors had paid for some steel before receiving it. Something had to be done to lay the allegations to rest and restore confidence in the integrity of the program.[35]

At Noah's suggestion, Gilkey appointed a board of officers to conduct an informal investigation. During the last week of March, the board examined procurement of the steel and the procedures used to control the materials after purchase. Colonel Wong, the communications officer, served as chairman, and the membership included Cranston and a nonvoting consultant from Bar-Tov's office as well as Lt. Col. George Snoddy and Maj. Stephen Sharr from the Corps.[36] Bar-Tov still wanted a criminal investigation. Instead, it seemed to him that the Americans planned to cover up their wrongdoing. Because he suspected they were engaged in dubious and possibly criminal practices, Bar-Tov was frustrated by his inability to control the situation. "He was very vitriolic," John Blake noted at Ovda, "and accused the Corps of stalling, allowing documents to be lost, appointing people to the board with no investigative experience, et cetera, ad nauseum."[37] Still, Noah convinced him to let Kogon work with the board after she assured him that she would not participate in a whitewash.[38]

The board studied the issue for nearly a month. Meanwhile, Negev Airbase Constructors dismissed its procurement manager without waiting for the board's report to Gilkey. In Bar-Tov's office, the sudden change seemed to confirm the suspicions of criminality. Although the findings mentioned no names, no one escaped unscathed. The board concluded that almost every level of pro-

curement operations lacked controls. In addition, the program's procedures and quality assurance system and the contractor's purchasing, receiving, and payment methods all needed sharper definition. Because the published guidelines were vague, the contractor's purchasing documents had not been reviewed in Tel Aviv by the engineering division or the procurement office.[39]

As to the steel itself, it had been manufactured to a British Commonwealth standard with which Americans were unfamiliar. It also had been poorly marked and improperly segregated in storage. Over 58 metric tons of a total of 8,218 had been found to be inadequate and had been returned to the vendor by the contractor. In the few weeks after completion of the board's report, an additional 1,600 tons of badly labeled steel were set aside and removed from Ovda. The effect on operations turned out to be minor; estimated loss of production was between two and four weeks.[40] The precast concrete plant was idle for eight days. The contractor also fell behind two weeks in placement of wall panels "while tests were run, stocks were segregated and the problem scoped."[41]

Problems lingered into the late spring. Slowly, morale and momentum at Ovda recovered from the distractions. In Tel Aviv Bar-Tov still had his misgivings about the integrity of the procurement system. Rostocker continued his crusade in the steel yard, interviewing contractor personnel and examining documents. Several times, Curl, Blake, and contractor management complained of Rostocker's activities. Blake considered him "a general nuisance," and Curl once ordered him to have no contact with Negev Airbase Constructors employees, but to no avail. The year ended as it started, with Ovda complaining about Rostocker's meddling. By the same token, the adversarial relationship between Bar-Tov and Hartung on one hand and the Corps of Engineers on the other continued unabated. Moreover, the Israelis were slow to release additional steel from the port at Eilat, so Gilkey's office again alerted Ramon that loans of steel might be needed. As it turned out, borrowing once more proved unnecessary.[42]

Meanwhile, Ovda made some gains in efficiency by streamlining steel purchases. The contractor reduced the ten originally specified sizes to five by eliminating the smallest sizes and substituting larger ones. By doing so, Negev Airbase Constructors cut costs and simplified their buying system without reducing the soundness of any buildings. In addition, the contractor decided to limit future reinforcing steel purchases to the special steel, thereby further simplifying its inventory and enhancing the integrity of reinforced structures on the base.[43]

Despite the problems, the episode may have had some positive effects. As a result of the focus on the need for a more careful accounting of bulk materials, the contractor finally installed truck scales. In January Colonel Miller, Curl's deputy, had asked Negev Airbase Constructors to buy scales. That same month, O'Shei had approved a request from his contractor for the purchase of scales at Ramon as well. However, neither consortium was in a hurry to spend the money, and the headquarters in Tel Aviv only began to apply pressure in the wake of the steel issue. Negev Airbase Constructors put in their scale in May; the Atkinson organization followed suit in August.[44]

Steel started to arrive at Ovda again in late April. Under Blake's direction, production gradually returned to normal, within a more deliberate and cautious managerial framework. For Lewis and Noah, the problem called into question Pettingell's ability to carry out the job. At least the episode came early enough to teach useful lessons without irrevocably harming the job.[45] As Noah said, looking back at the problem three years later, "It just wasn't that big a deal. We made a mistake, and there she was."[46]

Soon both contractors completed their first arch roofs over aircraft shelters. On 31 May 1980, Ovda installed the first one. Fifty-nine more waited, but the area office reported that "morale of the entire work force soared due to placement of the first shelter arch." In the next two months Ovda finished seven, averaging 16 days on each.[47] Ramon poured its first arches in June. In the first shelter, steel placement took 20 days, and the pour lasted just under eight hours. On the second, the iron workers needed only 10 days to bend and tie the reinforcing steel and just over five hours to place the concrete. Colonel O'Shei hoped to reduce the time even further. His successor as area engineer at Ramon, Col. Paul W. Taylor, echoed O'Shei's optimism and reported in July that major vertical construction remained on schedule. By the end of the month eleven arches had been completed.[48]

Mere statistics do not reveal the difficulties involved in completing a shelter arch. After the walls of a shelter were erected, a jumbo arch form was set up between them. The prime contractors fabricated six of these forms at each site. Workers rolled sections of the forms into the shelter, bolted them together, jacked the form into place, and secured it. They then covered the huge steel frame with steel sheets, which were tack-welded into place to form a dome. Workers climbed onto the plates, where they bent and tied the reinforcing steel into a very dense network of mesh over three feet thick from top to bottom, with individual steel bars only a few inches apart. Temperatures soared to more than 140 degrees Fahrenheit,

and the glistening steel dome of the jumbo arch form only intensified and reflected upward the vicious heat. Then came the concrete placement, a monolithic pour of approximately 450 cubic yards of concrete, that lasted almost all day. This phase always started early in the morning, while the weather was relatively cool. To assure that the concrete did not set too rapidly, ice was added to the water for the mix, which was controlled very carefully to assure the proper strength. About a week after the placement, when the concrete had set, the arch form was removed and moved to the next shelter, leaving the steel plates that had formed the roof of the form as a lining for the newly completed reinforced concrete arch.[49]

The trouble at Ovda over the reinforcing steel was still unfolding when Brig. Gen. John F. Wall became involved in the project. When he first arrived in mid-March for an orientation visit, he had not yet been named project manager. A month later General Morris' office announced that Wall would take charge in Tel Aviv. Morris, who said he needed Noah back at Huntsville, thought Wall had an excellent background for the job. He had been district engineer at Fort Worth, "one of our busiest Districts," and Wray's deputy director of military construction in Washington. As soon as Wall completed work toward his law degree in May, Morris intended to send him over. Hartung and Bar-Tov would find Wall "a very conscientious, hard-working, and smart associate." Morris predicted that "the three will make a good team," and he expected "to keep [Wall] there until the air bases become operational." Although Morris did not consult Lewis before making the assignment, Lewis could take some satisfaction from the decision. His persistent campaign for a general officer in the Near East Project Office had at last borne fruit. Wall took over on 13 May.[50]

Wall, who held a doctorate in civil engineering in addition to his new law degree, knew he was walking into a difficult situation. He expected that he would face problems as long as he stayed in Israel, but he was well suited for this kind of environment: "I'm not the type of individual who is going to have a blank sheet there that says there ain't no problems today." As far as his own career was concerned, he considered the assignment "a high-risk job for me." As far as the project was concerned, he shared Lewis' view: timely completion was critical to execution of the peace treaty and was his first priority. Overall, he saw "one alternative to finishing on time and that's finishing early." Plainly a man in a hurry, Wall came to the project at a difficult time. The steel issue was headed toward resolution but was uncovering problems with the overall procurement system and quality control procedures as it evolved. The issue also raised questions about management. Wall watched his staff at

General Wall, project manager from June 1980 to August 1982

work and attended briefings, which became the basis for hurried decisions regarding personnel changes.[51]

He found his new headquarters significantly different from Fort Worth District. "When you've got a going District," he explained, "a District Engineer has to work hard to make a mistake. Because when he makes a dumb decision, the staff makes it come out correctly because they were experienced, had done it before, and were damn good." In Tel Aviv the Corps had started from scratch, and, despite the acknowledged importance of the mission, had not always found well-qualified people for the job. Although he considered some civilian and military members of his staff to be well suited for the project, he was disappointed overall. "It's easy to make a dumb mistake," he said, when "you don't have the back-up."[52]

There was no time for gradually learning about the project. At Ramon relations between labor and management were uneasy. Since shortly after the first Portuguese workers had arrived in September 1979, their relationship with Air Base Constructors had become stormy. Strongly unionist and quick to complain, several had lost their jobs for insubordination during their first months in Israel. Others resigned for a variety of reasons. Some found the unexpectedly cold and wet winter weather intolerable. Others complained about living conditions or the difficulty in getting along with American management. One worker complained that the Americans "don't understand us. Most of them prefer to bridge the noncommunication gap by shouting and not explanation and conversation." Others left because of the problems with explosives, both the duds buried on the site and the firing from the nearby artillery school.[53] The demands of the job also provided a major source of stress. The sixty-hour workweek was extremely taxing. "Very seldom in my experience," Fred Butler commented, "have any jobs been worked ten hours a day, six days a week, that were

honest hours . . . for long periods of time." At Ramon "they really work that time."[54]

While the unionist Israeli press sympathized with the Portuguese about conditions at the site, the Israelis still found the Portuguese a troublesome presence. Affluent by Israeli standards, courtly, and well mannered, they charmed the women of Beersheva and the development towns. They also were aggressive. "The Portuguese offer marriage to every girl," said a woman from Beersheva. "One of the Portuguese offered to take me on a trip around the world and then marry me." A Dimona woman, who had been divorced by her Israeli husband and was preparing to leave the country with her new Portuguese spouse, said she was glad to be free of Israeli men, who she saw as "chauvinists, unmannered and spoiled." On the other hand, most Israeli women considered the Portuguese "polite, generous, and interesting." In addition to posing a threat to Israeli men, their presence challenged a social structure that opposed emigration and marriage outside of the Jewish faith. Fights broke out between workers and local youths in some towns. Under pressure from right-wing religious groups, Dimona declared itself off limits to foreign workers, and Yeruham banned nightclubs. The press featured stories of wealthy foreigners stealing local women, a theme familiar elsewhere but new to Israel. Newspapers that represented orthodox Jewry decried the "aspiritual havoc" and "grave . . . breaks in the tumbling wall of the Jewish family" caused by the Portuguese. Only their departure from Israel ended complaints about their negative influence.[55]

By the end of 1979 the areas of tension between the Portuguese workers and contractor management were well known. Supervisors considered the Portuguese good workers, but it was plain that morale was low. In December, when improved living conditions convinced some workers to change their minds about leaving Ramon, O'Shei hoped that the worst was over. Problems persisted into 1980. Ultimately they caused enough concern in Tel Aviv for Gilkey to order Management Support Associates to analyze the situation. The conclusions verified what most observers already knew, citing Israeli artillery school shelling incidents as the largest single cause of departures. Gilkey asked O'Shei for solutions to the large turnover.[56]

Events overtook the study of working conditions. On 24 May Ramon had a work stoppage that almost amounted to a general strike. Angered by the public search three days earlier of several workers who had been accused of theft, most of the Portuguese failed to report for work. They gathered around Butler's office and demanded higher pay, more vacations, and better food. The protest lasted one day. Claiming that the "cause of the disturbance

was a professional group of organizers," Air Base Constructors fired 319 Portuguese. The dismissals included many key workers and reduced the available work force by about 25 percent. The next day, two El Al planes returned the dissidents to Portugal. According to Butler, the site was back to "business as usual." Nevertheless, to make sure that a labor force would be available if the situation disintegrated, his parent firm made quiet contingency arrangements for workers from the Philippines.[57]

Butler thought that the strike was politically motivated, and some observers agreed. Several Israeli papers and one Lisbon daily claimed that the organizers had previously worked on an air base construction project in Algeria, that they had connections with the Portuguese Communist party, and that they had been sent to Israel to disrupt the project. Wall's office also thought the leaders had been politically motivated and that they might have coerced their fellow workers into participation.[58]

In less than a month the situation was almost back to normal. Israeli media interest, which lasted only a few days, reflected a revival of Histadrut's efforts to represent the foreign workers.[59] *Davar*, the Tel Aviv daily that had been the organ of the labor federation for forty-five years, commented somewhat wistfully that "if the Portuguese only had a labor union much of the friction would be resolved to the satisfaction of both parties."[60] In Portugal several papers covered the affair but only for a short time. The American embassy in Lisbon noted these articles and passed translations to program management through the embassy in Tel Aviv.[61] The contractor was also busy in Lisbon recruiting new workers, who began to arrive in early June. By the middle of the month only 100 strikers were unreplaced. Wall's office estimated that adding one hour of overtime each day per worker had kept productivity within 10 percent of the prestrike level. Nevertheless, the loss of so many experienced workers set the project back substantially. New men filled the vacancies, but the stoppage delayed by about two months the expansion of the work force that had been planned for the summer.[62]

At the other site, discontent among the Thai workers also caused concern. The area office noted that the most important complaint involved impoundment by Israeli customs authorities of shipments of Thai spices and fish sauce. The workers had been without these condiments for sixty days, and their frustration over the food was "catalyzing other gripes and complaints."[63] Unlike the situation at Ramon, contractor and Corps managers met with the Thais and discussed their grievances. The workers expressed their dissatisfaction with the eight-man rooms rather than with the food, and Negev Airbase Constructors took steps to reduce the

number in a room to six. The contractor also paid an American to act as ombudsman for the Thais and created a Thai council. Later in the summer the general manager agreed to hold monthly meetings with this group at his home.[64]

The general manager who arranged regular meetings with the Thais was not the man who presided over the project during the steel troubles. On 5 June the Perini Corporation replaced Pettingell and two other senior people at the site. Wall, who had been disappointed at the lack of a sense of urgency within Negev Airbase Constructors management, was pleased.[65] The changes attracted newspaper attention, primarily in Israel but in the United States as well. Two of the three largest Tel Aviv dailies and the English-language *Jerusalem Post* prominently displayed stories on the removals. Along with the news came headline claims of mismanagement and even corruption in the program. The newspapers also complained that the program was not buying enough materials in Israel.[66]

By this time a large portion of the Israeli press had made clear its opposition to the American presence. This hostility had several roots. Unionist dailies opposed the use of foreign labor of any sort in Israel. Papers representing orthodox religious groups reacted against the destabilizing effect of the suave Portuguese. Other papers took offense on nationalistic grounds, contending that foreigners should not have been brought into the country to do a job that Israelis could do as well. In the spring of 1980 the big issue in the newspapers was program management, particularly American management. Overall the Israeli press lacked confidence in the ability of the Corps of Engineers to do the job. *Ma'ariv* questioned the depth of the American commitment to the program. The paper said the management change served to prove that the Americans had not chosen the best people and cared little about saving money.[67] *Ha'aretz* cited cases of American inefficiency, among them extravagant use of air freight, importation of materials that were cheaper in Israel, and the quality control problems related to the reinforcing steel. According to the *Ha'aretz* story, senior officials in the Ministry of Defense, who were disappointed with the Corps of Engineers, claimed "that the Israelis are just as capable of planning and building the airports as are the Americans."[68]

The charges of mismanagement and fraud convinced the three generals to call a press conference for 12 June. Nearly thirty representatives of various media attended, including correspondents for the American wire services and television networks. For the only time in the life of the program, Bar-Tov, Hartung, and Wall faced the press together. Displaying a united front, they defended the program and denied reports of waste and incompetence. Hartung

served as primary spokesman. He said the bases were on schedule and would be completed under budget. He also asserted that "in gross terms . . . we are right where we planned to be when we made the plan a year ago." The others also defended their work. Bar-Tov assured the reporters that the program "will cost less than the original" estimate, although the economic situation was uncertain. "In all my studies," he observed, "when I learned about double-digit inflation, I don't think that all these experts in economy thought that this term would be used for monthly inflation." Some of the claims in the newspapers echoed those that had come from his own office a few weeks earlier. However, before the reporters he defended the program's procurement practices, reminding the press that the original agreement between the two nations had required that purchases within Israel be held to a minimum.[69]

Wall, who had been in Israel only a month, emphasized the commitment of the Corps of Engineers to the effort and extolled the integrity and responsibility of the contractors. He also acknowledged the ability of Israelis to build perfectly good air bases, but reminded his audience that the tight schedule had brought the Corps of Engineers into the country. He assured reporters that his relationship with Hartung and Bar-Tov was harmonious. "The cooperation among General Bar-Tov, General Hartung, and myself," he said, "has been outstanding and will improve even more. It's synergistic and its mutually supportive. I believe we can handle any problem that lies ahead together."[70]

The journalists saw Wall's arrival as an attempt to deal with the management problems they associated with the program. One reporter, referring to "the interesting coincidence that shortly after your arrival three senior officials of the civilian contractor apparently lost their jobs," asked Wall about his involvement in the turnover at Ovda. He denied that the changes amounted to firings and said Morris had long tried to place a general officer in charge of the Near East Project Office. As to the contractor's personnel manager, Wall claimed that a change was made because the incumbent lacked adequate qualifications, "not that he wasn't doing a good job."[71]

Such statements did not reassure the journalists or their papers. A reporter who listened to the generals defend the program got "the feeling . . . that what we're missing here is the lead to my story."[72] He did not understand why the meeting had been called. Three days later the *Jerusalem Post* editorialized that "the cover-up appears to be continuing."[73] A left-wing daily called the session "an orgy of mutual congratulations, pats on the back and embarrassing compliments."[74] To these newspapers and to *Ma'ariv*, which in the week

that followed ran a sharply critical three-day series on program management, the meeting must have seemed a waste of time.[75]

Nevertheless, the press conference was noteworthy for at least one reason. It marked an instance of cooperation between the three agencies involved in the program. Despite the tensions of the previous months, the generals were united in defending their work and in assuring the public and the press of their commitment to the program goals. For the time being, what Wall termed "the three-legged stool" seemed on firm ground.

Notes

1. Noah interview.
2. OAO, Master Diary, 29 Mar 80, IABPC, 84/4.
3. Memo, Wong, 4 Apr 80, sub: Recapitulation of Approved Site Adaptation Drawings, IABPC, 86/4; MFR, Stanley N. Block, Project Manager, Engineering Division, Ovda Site, 13 Jun 80, sub: Reinforcing Steel Standardization, Ovda Airbase, IABPC, 86/4.
4. Interv, author with Bill Parkes, May 81, Ramon, Israel; Interv, author with Delbert D. Peterson, May 81, Ovda, Israel.
5. MSA Memo, David Soleimani for J. H. Leonard, 2 Nov 79, sub: 15 Percent Minimum Elongation for Rebars in Aircraft Shelters, IABPC, 86/4; Ltr, A. Milstein to Edgar Moon, NEPO Engineering Division, 25 Oct 79, sub: High Bond Steel Bars for Concrete Reinforcement in ACS, IABPC, 43/5; MFR, Bar-Tov and Hartung, n.d., sub: DOD/MOD PMs Meeting, 25 Oct. 1979, IABPC, 45/4; MFR, Thomas, 5 Nov 79, sub: Design and Engineering Meeting, 31 Oct. 1979, IABPC, 22/1; MFR, Thomas, 9 Nov 79, sub: Design and Engineering Meeting, 7 Nov. 1979, IABPC, 22/4; Interv, author with Col Richard L. Curl (Ret.), Oct 84, Washington, D.C.
6. Ltr, Eli Noy to Carl Damico, 21 Jan 80, IABPC, 43/5; MFR, Bar-Tov and Hartung, sub: DOD/MOD PMs Meeting, 25 Oct. 1979; MFRs, Thomas, 5 and 9 Nov 79; Ltr, Hartung to Deputy Project Manager, 23 Jan 80, sub: MOD Request for Information Concerning Purchase of 15 Percent Elongation Reinforcing Bars, IABPC, 31/3.
7. Curl interview; Fact Sheet, Attachment to Ltr, Hartung to Noah, 9 Mar 80, sub: Reinforcing Steel—Ovda, IABPC, 86/4.
8. Memo, Gilkey for Program Manager, 3 Feb 80, sub: MOD Request for Information Concerning Purchasing 15 Percent Elongation Reinforcing Bars, IABPC, 32/1.
9. DF, Richard Curl to Ronald Hallmark, 4 Feb 80, sub: Contract for NAC, IABPC, 86/4.
10. Curl interview.
11. DF, Hallmark to OAO, 23 Jan 80, sub: NAC Steel Procurement, IABPC, 86/4; DF, Curl to Hallmark, 4 Feb 80, sub: Contract for NAC.
12. MFR, Bar-Tov and Hartung, 28 Feb 80, sub: DOD/MOD PMs Meeting of 21 Feb. 1980, IABPC, 45/4; Noah interview.
13. DF, Kett to Gilkey, 27 Feb 80, sub: Visit to the Ovda Site 21 and 22 Feb. 1980, IABPC, 32/2.
14. Telex, Gilkey to Curl, 24 Feb 80, sub: Construction Quality Control, Quality Assurance on Rebars—Possible Use of Inferior Materials, IABPC, 32/2.
15. Bar-Tov interview, Apr 81; (Tel Aviv) *Ma'ariv*, 23 Nov 79.
16. Noah interview; Proceedings of Program Press Conference, Tel Aviv, 12 Jun 80 (audio tape) (hereafter cited as Proceedings of Press Conference, 12 Jun 80), IABPC, 92/2; (Tel Aviv) *Ma'ariv*, 23 Nov 79.
17. N. Steinberg interview; Noah interview; Lewis interview, Nov 83.
18. N. Steinberg interview.
19. Lewis interview, Nov 83.
20. Ibid.; Noah interview.
21. Noah interview.
22. Lewis interview, Nov 83.
23. Ibid.; Maloney interview, Aug 80.

24. Lewis interview, Nov 83.

25. MFR, Lt Col James R. Cranston, 7 Mar 80, sub: Reinforcing Steel, IABPC, 86/4.

26. Ltr, Hartung to Noah, 9 Mar 80, sub: Reinforcing Steel—Ovda, IABPC, 86/4.

27. Memo, Noah for Hartung, 10 Mar 80, sub: Reinforcing Steel—Ovda, IABPC, 86/4.

28. Memo, Block for Thomas, 12 Mar 80, sub: Reinforcing Steel, Ovda, IABPC, 86/4.

29. OAO, Master Diary, 11 Mar 80, IABPC, 84/4; Ltr, Curl to Pettingell, 11 Mar 80, sub: Quality Control—Rebar Steel, IABPC, 42/8.

30. N. Steinberg interview; OAO, Master Diary, 7 and 8 Mar 80, IABPC, 84/4; Noah interview.

31. OAO, Master Diary, 7 and 8 Mar 80; Noah interview.

32. Ltr, Pettingell to Curl, 12 Mar 80, sub: Quality Control—Rebar Steel, IABPC, 86/4; Trip Report, Roy Edwards, 12–13 Mar 80, Ovda (hereafter cited as Edwards Trip Report), IABPC, 86/4; MFR, Earl E. Wheatley, Construction Branch, OAO, 24 Mar 80, sub: Quality Control Testing Requirements for Aggregate, Cement, Concrete, Curing Compounds, and Admixtures, IABPC, 32/3; Telex, Noah to Curl, 2 Apr 80, sub: Reinforcing Steel, IABPC, 38/4.

33. Ltr, Pettingell to Curl, 12 Mar 80; Notes of Telephone Conversation, Ted Flecker, OAO, and Jim Perry, NEPO Engineering Division, 12 Mar 80, File 1515–13, Ovda Reinforcing Steel; Edwards Trip Report; Ltr, Col I. Gross, MOD PMO, to Cranston, 16 Mar 80, sub: Use of Elements in Which Reinforcement Does Not Meet Requirements, Ovda Aircraft Shelter Complexes, File 1515–13, Ovda Reinforcing Steel. All in IABPC, 86/4.

34. Telex, NEPO Construction Division to OAO and RAO, 12 Mar 80, sub: Transfer of Rebar from Ramon to Ovda, IABPC, 32/3; OAO, Master Diary, 15 Mar 80, IABPC, 84/4; Curl interview; Maloney interview, Aug 80.

35. OAO, Master Diary, 19 Mar 80, IABPC, 84/4; Noah interview.

36. Noah interview; Ltr, Gilkey to Hartung, 20 Mar 80, sub: Proposed Investigation Under Army Regulation 15–6, IABPC, 32/3; Ltr, Gilkey to Wong, 24 Mar 80, sub: Appointment of Board of Officers, IABPC, 42/8.

37. OAO, Master Diary, 26 Mar 80, IABPC, 84/4.

38. Ibid.; Ltr, Gilkey to Wong, 24 Mar 80; MFR, Wong, 28 Mar 80, sub: Board of Officers, IABPC, 42/8; N. Steinberg interview.

39. Board of Officers, Report of Findings and Recommendations, IABPC, 42/8; N. Steinberg interview.

40. Report of Findings and Recommendations; Memo, Brig Gen John F. Wall for Hartung, 22 May 80, sub: Removal of Unidentifiable Reinforcing Steel, Ovda, IABPC, 33/1; Curl interview; Interv, author with Otis W. Grafa, Jr., May 81, Ovda, Israel; Gilkey interview.

41. Telex, OAO to NEPO, 1 Apr 80, sub: NEPO Sitrep, IABPC, 14/2.

42. Telex, OAO to NEPO, 17 Apr 80, sub: NEPO Sitrep, IABPC, 14/3; NEPO Sitrep No. 38, 20 Apr 80, IABPC, 14/3; Telex, NEPO to RAO, 18 Apr 80, sub: Availability of 16 mm Rebar, IABPC, 33/1; OAO, Master Diary, 29 Apr, 5 May, 20 and 25 Aug, and 29 and 30 Oct 80, IABPC, 84/4 and 84/2.

43. MFRs, Block, 13 and 16 Jun 80, sub: Reinforcing Steel Standardization, Ovda Airbase, IABPC, 86/4.

44. Maloney interview, May 82; OAO, Master Diary, 17 Jan 80, IABPC, 84/4; Ltr, O'Shei to GM, ABC, 31 Jan 80, sub: Truck Scales, IABPC, 31/3; Telex, NEPO (P&S) to Area Engineers, 16 Apr 80, sub: Truck Scales, IABPC, 33/1; NEPO Sitrep No. 45, 25 Aug 80, IABPC, 14/10.

45. MFR, Wray, 7 Jun 80, sub: Report on Visit to Israeli Air Base Project, IABPC, 11/5; Interv, author with Joseph R. Chapla, Aug 80, Tel Aviv, Israel; Maloney interview, Aug 80; MFR, Noah, n.d., sub: 30 April Discussion with David Perini on NAC Operation, IABPC, 1/6.

46. Noah interview.

47. NEPO Sitrep No. 40, 5 Jun 80, IABPC, 14/5; OAO, Biweekly Sitrep, 1–15 Jun 80, IABP files, WNRC, Accession 77–83–1016, Box 10; DF, Damico, Acting Chief, Construction Division, 1 Aug 80, sub: Input for Letter to the Chief, IABPC, 33/2.

48. Ltr, O'Shei to Project Manager, 16 Jun 80, sub: Ramon Air Base Progress Report for the Period 1–15 June 1980; and Ltr, Col Paul W. Taylor to Project Manager, 15 Jul 80, sub: Ramon Air Base Progress Report 1–15 July 1980. Both in IABP files, WNRC, Accession 77–83–1025, Box 4. DF, Damico, 1 Aug 80, sub: Input for Letter to the Chief.

49. Wray comments on draft MS; Damico interview, Nov 88.

50. NEPO Sitrep No. 35, 26 Mar 80; NEPO Sitrep No. 38, 20 Apr 80; NEPO Sitrep No. 39, 22 May 80. All in IABPC, 14/1, 3–4. Lewis interview, Jan–Feb 82, parts 1–3; Ltr, Morris to Gilbert, 14 Apr 80.

51. Interv, author with Brig Gen John F. Wall, Aug 80, Tel Aviv, Israel, and Sep 82, Washington, D.C.; *ENR* 205 (30 October 1980): 29.

52. Wall interview, Aug 80.

53. ABC Weekly Progress Report, 12 Sep 79, IABPC, 12/11; *Jerusalem Post*, 5 Nov 79; (Tel Aviv) *Ha'aretz*, 28 Nov and 21 Dec 79; (Tel Aviv) *Ma'ariv*, 17 and 20 Dec 79; (Beersheva) *Sheva News*, 8 Feb 80.

54. Interv, author with Fred Butler, Aug 80, Ramon, Israel.

55. (Tel Aviv) *Hamodia*, 12 Feb, 10 and 27 Nov 81; (Tel Aviv) *Yediot Aharonot*, 18 Jun and 27 Aug 80; (Beersheva) *Sheva News*, 13 and 27 Jun and 19 Dec 80; (Tel Aviv) *Hazofe*, 9 Jan 81; (Tel Aviv) *Shearim*, 8 Nov 81 and 2 Mar 82; Brown interview, Apr 81.

56. ABC Weekly Sitrep, 17 Oct 79, IABPC, 12/16; O'Shei, Weekly Progress Report, 28 Dec 79, IABPC, 13/23; Memo, Gilkey for O'Shei, 4 May 80, sub: Portuguese Termination Listing, IABPC, 33/1.

57. ABC Weekly Sitrep, 27 May 80, IABPC, 14/5; *ENR* 205 (30 October 1980): 28; (Lisbon) *Diario de Lisboa*, 2 Jun 80; (Tel Aviv) *Yediot Aharonot*, 25 May 80; MFR, Wray, 7 Jun 80, sub: Report on Visit to Israeli Air Base Project.

58. (Tel Aviv) *Al Hamishmar*, 26 May 80; (Beersheva) *Sheva News*, 13 Jun 80; (Tel Aviv) *Ma'ariv*, 30 May 80; (Lisbon) *A Tarde*, 26 May 80; NEPO Sitrep No. 40, 5 Jun 80; Gilkey interview.

59. NEPO Public Affairs Office, Sitrep for the Period Ending 30 May 1980, IABPC, 14/5; (Tel Aviv) *Ma'ariv*, 6 Jun 80; (Tel Aviv) *Al Hamishmar*, 6 Jun 80.

60. (Tel Aviv) *Davar*, 30 May 80.

61. (Lisbon) *Diario de Lisboa*, 2 and 26 May 80; (Lisbon) *Primero de Janeiro*, 26 May 80; (Lisbon) *Diario de Noticias*, 27 May 80; (Lisbon) *Correio da Manha*, 29 May 80, IABPC, 71/11.

62. NEPO Sitrep No. 40, 5 Jun 80; *Jerusalem Post*, 8 and 13 Jun 80; Gilkey interview.

63. Telex, OAO to NEPO, 16 May 80, sub: NEPO Sitrep, IABPC, 14/4.

64. OAO, Master Diary, 18 and 27 May, 4 Jul, and 21, 23, and 25 Sep 80, IABPC, 84/4 and 84/2.

65. Wall, Project Notebooks, vol. I, 24 May, 3 and 4 Jun 80, IABPC, 90. Warren Pettingell's article on the program makes no reference to the circumstances under which he departed. See Pettingell, "Managing Construction of a Macro-Airbase-Project in the Negev: A Contractor's Perspective," *Technology in Society: An International Journal* 10 (1988): 113–30.

66. *Newsview*, 8 Jun 82; (Tel Aviv) *Ma'ariv*, 10–12 Jun 80; (Tel Aviv) *Ha'aretz*, 11 Jun 80; *Jerusalem Post*, 13 Jun 80; *New York Times*, 12 Jun 80.
67. (Tel Aviv) *Ma'ariv*, 10–11 Jun 80.
68. (Tel Aviv) *Ha'aretz*, 11 Jun 80.
69. Proceedings of Press Conference, 12 Jun 80; *Jerusalem Post*, 13 Jun 80.
70. Proceedings of Press Conference, 12 Jun 80.
71. Ibid.
72. Ibid.
73. *Jerusalem Post*, 15 Jun 80.
74. (Tel Aviv) *Al Hamishmar*, 13 Jun 80.
75. (Tel Aviv) *Ma'ariv*, 17–19 Jun 80.

CHAPTER 10

Management in Transition June–October 1980

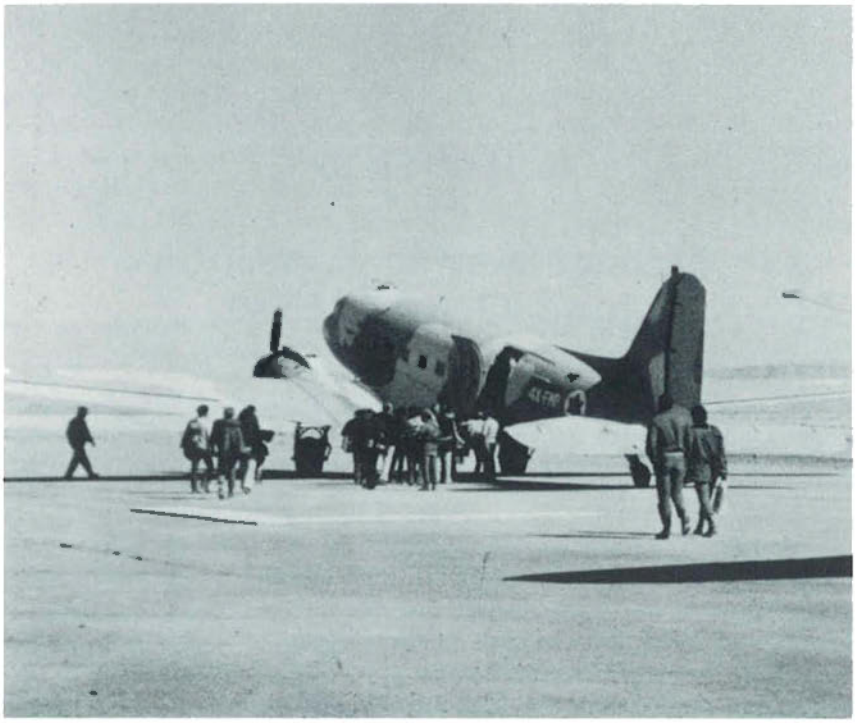
It's very hard to relinquish a pet project, particularly without a clear understanding of what went wrong.

David Lipsky, Deputy Public Affairs Officer, North Atlantic Division [1]

In many ways change represented the normal condition for a fast-track program. While many understood this, some of the program adjustments transcended the normal and expected. By the summer of 1980 two changes in the original management of the Near East Project Office had taken place. Gilkey's command of the office had ended with the four-month period during which Noah was detailed as the senior engineer officer. In this ambiguous situation Gilkey retained nominal control, and the office's reports referred to the pair as "General Noah and the Project Manager."[2] In May General Wall was placed in charge, with Gilkey staying on as his deputy. That change clarified one aspect of the management situation for the duration of the project.

The changes that brought Wall into the project manager's job gave rise to another one, this time in the chain of command. Lewis, who had been a forceful and eloquent spokesman for installation of a general officer in Tel Aviv, had himself alluded to the implications of this change for the organizational structure. The reasons he had given Morris for making the assignment included his perception of the Near East Project Office as the equivalent of an operating division. He saw the two area offices under Tel Aviv's jurisdiction as "mini districts." They differed from conventional districts because they each had only one project, but they were commanded by colonels with contracting officer authority.[3] The fact that both Curl and O'Shei had already been district engineers underscored the parallel.

Sooner or later the logic inherent in Lewis' analysis should have led to an awareness that in at least some respects there now



Reporters boarding an Israeli Air Force C–47 for the daily shuttle between the sites and Tel Aviv.

existed a division in Tel Aviv commanded by a division in New York. When Morris had agreed to send Noah to Israel, he told Lewis that he saw his general in Israel as the primary manager and that he wanted management to come primarily from Tel Aviv. Noah would set up procedures that eventually would relieve Lewis of involvement in daily operations.[4] Noah himself came to view the office in Tel Aviv as the functional equivalent of a division headquarters, lecturing the staff after one maladroit administrative action "that it was time that we started acting like a division staff in these matters."[5]

As the months passed, Morris sharpened this perspective. He had originally relied on North Atlantic Division's commander for senior control, but Lewis had convinced him that additional seniority and experience were needed in Tel Aviv. Had he placed a general there at the outset, Morris reflected in April 1980, he probably would not have involved North Atlantic. Still, for the sake of stability, he intended to maintain the link between Tel Aviv and New York for the time being. With major personnel changes

in Israel expected during the months to come, including replacement of both area engineers, he wanted to avoid adding "to the personnel turbulence and loss of continuity." For the long run, Morris kept his options open. He would wait until Wall settled into his "very difficult job." Afterward, Morris told Lewis, "organizational adjustments may be appropriate."[6]

The issues surrounding the chain of command involved more than whether Wall would report to Lewis in New York or to Morris in Washington. Other questions related to the level and nature of North Atlantic Division's support to the project. During the planning stage, before and shortly after Corps people started to arrive in Tel Aviv, the division's senior staff had been active in project development. Vinitsky, Hewitt, and Pagano, with the regular participation of Johnson and Bazilwich, had shaped the project office and nursed it through its infancy. Others on the staff, including James Canfield, chief counsel, and Herbert Howard, engineering division chief, had become involved as needed. Consultant Schechet, who helped get the project's engineering organization under way, had recently retired from North Atlantic. Johnson himself left his mark in the form of the Palace Hotel arrangements and had personally chosen Hugh Bartley as Gilkey's primary assistant and as his own eyes and ears. For his part, Gilkey maintained regular telephone contact with New York and drew heavily on the staff for advice and aid.

North Atlantic's office at 90 Church Street was not the only New York location important to the newly formed Near East Project Office. Less than a block away was the project's stateside support group. Usually called NEPO-Rear, this element remained vital to the project. With as many as 150 people there working for the government and all three prime contractors, in some respects the office contrasted markedly from the division. From comfortable and well-appointed quarters that differed sharply from the division's offices, the support group helped Tel Aviv in logistical and financial areas, working alongside contractor representatives in procurement, running the accounting system, and reimbursing the contractors for costs incurred. Alfred Lellis, the manager of the group, balanced the needs of Tel Aviv with external pressures from the Maritime Administration for use of American vessels and from congressional delegations on behalf of constituents. He and several others on the staff came from North Atlantic. So the division's involvement extended beyond the main office.[7]

Support from the division office itself changed during the early months. The character of the relationship between New York and Tel Aviv began to shift when Lewis took over. While he delved

deeply into the operation of the Israeli project, his staff became less involved. Lewis wasted no time in putting his mark on the job. He forced the office in Tel Aviv to define its objectives clearly. He also identified major structural and managerial problems that eventually convinced Morris to send in a general. Lewis' perception of Gilkey's situation also led to physical separation of the project office from program management. Surprised by his own staff's lack of knowledge of contracting options, he also started a Construction Engineering Research Laboratory study of the contractual relationships and propelled contract negotiations forward.[8] His influence was clear and pervasive.

Lewis was concerned although not surprised that his staff did little to advance the effort. He believed few top managers in the Corps understood the nature and needs of such a project. His own people could have contributed more but gave only occasional temporary assistance. Sometimes this help proved very useful. However, the division did not provide a cadre for the management team that Lewis thought was so badly needed in Tel Aviv.[9] Why his subordinates lost interest is unclear. Perhaps the intensity of Lewis' own personal involvement discouraged them.[10] Certainly the senior members felt able to deal with the project. Hewitt had at one time considered the resource management job in Tel Aviv, and as Vinitsky said, "We had the expertise." But, he added, "I kind of backed out of the total program, I guess, just about when General Lewis came on board, and people started going over there."[11] In response to Lewis' request in April for reports on their involvement in the project, none of his staff sections could cite any contributions that were critical to the project's well-being.[12]

Lewis may have found that the division staff was not as conversant with operating an overseas project as he had presumed originally. He could not get the information he wanted from New York on the various types of cost-plus contracts. In addition, he had to turn elsewhere for insights into the problems common to projects in foreign countries. Col. Maurice H. Leiser, who had commanded Al Batin District in Saudi Arabia before he became executive director in Wray's directorate in 1979, stepped in to provide Lewis with information on his experience.[13] The execution of overseas construction projects may have been part of North Atlantic's tradition, but it did not appear to be part of its usable memory.

Headquarters noticed the shift in the nature of New York's role. McNeely said that Lewis appeared to be running the project by himself. The construction division head rarely could convince anyone else from North Atlantic to visit Israel for a look at the job. Overall, McNeely said, the staff "just wasn't on top of it."[14] General Wray in

the Military Programs Directorate agreed. "Only MG Lewis," he wrote Morris in March 1980, "seems to be actively involved at the Division level." He urged Morris to make a change. With the contracts definitized, most positions filled, and some permanent work under way, Wray believed it was time for Tel Aviv to report directly to Washington. Even then, "The present daily operating practices [did] in fact have OCE dealing directly with NEPO . . . instead of through NAD." So such a change would only reflect reality.[15]

Wray understood that the chain of command should evolve with the program. North Atlantic had contributed significantly to mobilization of the project, but, he noted, "The initial build-up phase is over and we must now closely monitor construction placement." The project was very important, and he wanted to be able to provide policy guidance "more effectively and expeditiously." Mindful of the precedent set in the early 1960s when the Corps of Engineers Ballistic Missile Construction Office had been started within Los Angeles District and then placed directly under the chief's office after it was organized, Wray recommended "that NEPO be placed under the direct command and control of OCE."[16] However, with Morris still maintaining the standard organization, Wray's idea stood little chance on its operational merits.

By the summer of 1980 North Atlantic clearly was not much of a factor in management. Some in Israel may have forgotten the important part the division played early in the program; others had not been on the job long enough to know. But by mid-1980 it was plain that the Near East Project Office disregarded its ties to New York. Wall considered support from the division to be minimal. He recognized the importance of "the dynamic leadership" provided by Lewis, but both Wall and McNeely were aware that Lewis alone handled the program in New York. Wall thought few people in the New York office had had any military construction experience.[17] His staff agreed. In a rare example of consensus between the headquarters and the area offices, people at the sites concurred with this assessment. There too managers noted the contrast between the personal involvement and contributions of Lewis and the diffidence of the staff.[18] John Brown, the project office attorney, reflected the general view regarding North Atlantic's role: "Somebody had to kick it off."[19]

While the inactivity of the North Atlantic staff made it less relevant to the project, the intensity of Lewis' involvement became the source of stress and conflict. Lewis inclined toward constant contact with the engineer manager in Tel Aviv. When Noah was there, he and Lewis talked by telephone several times a week. Noah was comfortable with this arrangement. Wall, on the other hand, was not. Wall "was upset," Lewis recalled, "and told me he didn't want

me to call him at night; he said he needed the sleep."[20] The calls, Wall said, tended to be "long and inquisitional at times."[21] With so many compelling problems before him during his first few weeks in Israel—relating to procurement, staff relations, and pressure from the Israeli press—Wall grew exasperated. He had been in Israel barely a month when he pondered three choices, at least one of which did not appear promising: "Wall out—NAD out—work w/NAD but don't believe will work."[22]

Lewis' regular contact with Israel reflected his deep interest in the project that he considered his most critical mission, the one job at which the Corps of Engineers could not fail. It also mirrored a management style that seemed to Wall to zero in on virtually every issue and that was diametrically opposed to his own approach. Wall did not consider all problems equally important. He always had a list of the most compelling issues, and the list changed as the job did. He also thought some problems were "best left unsolved and left to fester and some of them will just cure by, heal by, themselves."[23] Lewis' way left no room for the natural evolution of solutions. "General Lewis," Wall observed, "can be intense and very probing, almost to distrust." Wall thought Lewis took the same approach with people outside the Corps who were involved in the program. He "played very hard," Wall thought, with the ambassador, Hartung, and the Israelis and helped create a situation in which "relations with these players are very intense and appear acrimonious."[24]

Lewis went to Israel often. Preparing for his visits became a preoccupation; his departure left the staff trying to catch its breath. In September 1980 Wall went so far as to ask for estimates of the hours of preparation involved.[25] Once on the scene, Lewis demanded quick answers to complex questions. On the September trip, an architect who worked for one of the contractors told him that the Israelis had rejected some design modifications. As a result, he contended, some structures "would 'fall apart' within one year." Lewis then asked for a report of all changes suggested by the contractors, those that were rejected, and the consequences, all in four days. For the record, the engineering division's Edgar Moon noted that, "idle statements such as the one made by this architect always lead to extra efforts that could be better spent toward productive work."[26] In Israel as well as back at headquarters, a consensus was building. North Atlantic had to go, not because of any operational logic or the evolving needs of the program, although such justification existed, but because so many people involved with the job found working with Lewis extremely difficult.[27]

Only one of the three generals in Tel Aviv saw positive aspects in Lewis' style of management. Bar-Tov, who was himself persistent and intense in his approach to the project, saw the similarities between himself and Lewis. He defended Lewis' need, by virtue of his position, to be familiar with every aspect of the effort. In fact, Bar-Tov himself tried to do exactly that. However, he asserted by way of contrast, "I don't do it by remote control."[28]

Wall considered such close supervision by Lewis from New York intolerable. Responding to the telephone calls with their "'what if' questions took too much time," and he wanted to break free of them. From Wall's point of view, the project was not big enough for both of them.[29] He raised the issue of removing North Atlantic and Lewis from the chain of command with the headquarters in Washington. Wall wanted to report directly to the Military Programs Directorate, where Maj. Gen. Drake Wilson was about to take charge. Wray, who favored a direct link between Washington and Tel Aviv, was soon to replace the retiring James Johnson as deputy chief of engineers.[30]

Wall was not alone in seeking a change in the chain of command. The embassy also lobbied Morris, directly and through Wray, for a new arrangement. Ambassador Lewis had argued with General Lewis, and the latter thought that their disagreement in part accounted for the embassy's support for Wall. General Lewis also thought the Air Force, particularly Under Secretary Chayes and General Hartung, had encouraged the embassy to discuss changes with Morris.[31]

Chayes visited the project in late May. Wall jotted down that she had come "to get rocks to throw."[32] She certainly contributed to the complex and somewhat Byzantine set of indirect discussions. To Secretary of Defense Harold Brown, she questioned the adequacy of Corps of Engineers management in general and General Lewis in particular. Her complaint, "full of gloom with dire predictions," found its way back to Lewis. So at least in this one instance he had the opportunity for a face-to-face meeting at which he tried unsuccessfully to convince her that she was wrong. According to Lewis, Chayes still held firmly to the original Air Force position: "She had as a principal objective getting the Corps out of the management chain or, failing this, placing the Corps firmly under the DOD Program Manager." Lewis believed that "she wanted the DOD PM to control project funds directly."[33]

General Lewis also believed that the opposition to his continued participation represented two converging conspiracies. On the one hand, he thought that Wall had agreed to go to Israel only on condition that he ultimately would be able to report directly to

Washington. "I was told," he said about eighteen months afterward, "that the Chief agreed to this with John Wall before the assignment was made." He also thought Chayes influenced the ambassador, who along with Chayes, Hartung, and Bar-Tov formed "a very tight community." Ambassador Lewis in turn convinced Morris to break the connection with New York.[34] Wall's notebooks and recollections indicate that his efforts to change the command arrangement started weeks after he arrived in Tel Aviv, but certainly energies that should have gone into facilitating base construction were diverted to secondary and even counterproductive purposes.

In any case, soon after Wall's arrival in Israel, the embassy's deputy chief of mission, William Brown, spoke to Morris and "extolled General Wall's virtues and capabilities and suggested that Wall be allowed to report directly to OCE." At that time, Morris was already considering a change. He was "reevaluating the organizational structure at this time with the hope that a date for extracting NAD could be identified and passed to Ambassador Lewis."[35] Despite the outside pressures, the decision on North Atlantic's role belonged to him. Although he apparently inclined toward ending New York's involvement in June, Morris did not make his final decision until August. In doing so, he defended his original decision to send a colonel. He reiterated to Ambassador Lewis, who contended that a general officer should have been sent to Tel Aviv at the outset, that there was "absolutely no reason why the airfields could not have been constructed satisfactorily under the management of a Corps of Engineers colonel with over 25 years' experience." What set the Israeli job apart, Morris told the ambassador, was "the role and interest of your office, the Israeli Government, and the USAF, in this work and their close proximity to it." Morris added that "numerous officials who quite properly have a deep interest in *what* we are doing also became involved in *how* we get it done."[36]

With the job so thoroughly politicized, Morris saw little hope for a return to a more normal construction environment. "The externalities over which I have no control and which created the need to put a general officer in Tel Aviv some months ago," he noted, "probably have not changed." As far as Morris was concerned, Wall or any other general would "have little more likelihood of success than did Colonel Gilkey if outside pressures keep Wall and his staff from giving adequate attention to their primary role of building the airfields." While Morris wanted to be responsive, the demands for information and the constant unsolicited advice threatened to affect construction adversely.[37] At the same time that he sought to enlighten the ambassador about his plight, he defended General Lewis' contributions to the program. After all,

Lewis had been first to see the need for a general officer in Tel Aviv. Moreover, he had done a great deal to bring construction management to what Morris considered "its present good posture." He was "the one Corps individual," Morris contended, "with the strength and capacity to deal with all facets of the program."[38]

Morris decided to go ahead with the change during his visit to Tel Aviv in August. He arrived expecting that the ambassador would again raise the issue. During their meeting on 6 August, Morris apparently approved the change in the chain of command. Then he told Wall, "You call Ben Lewis."[39] On 7 August, just after Morris left, Wall informed Lewis that Morris had told a Near East Project Office staff meeting that he would make the change, although it was contrary to his desire to keep the Washington office out of operations.[40] Four days later, Wall wrote Lewis that he "found relaying this decision to you a very difficult thing to do."[41] Morris, on the other hand, took his time informing Lewis of his intentions. He spoke with Lewis on 11 August but did not broach the subject. Only on the next day, when Lewis met him in Washington, did he break the news.[42]

With a general in Tel Aviv, Morris told Lewis, the project had evolved to a point where there was no need for North Atlantic in the chain of command. Morris praised Lewis' contributions and noted the progress since he became involved. He suggested several dates in the late summer and early fall for the changeover. They all seemed too early to Lewis, who wanted a chance to observe Wall's performance first. He also tried to convince Morris that changing the structure of the project would handicap the next chief of engineers.[43]

Changing the command relationships involved two separate decisions. First was the timing, and Morris decided to complete the transition by 15 October. The second involved alternative solutions to the organizational structure. Morris had insisted that his office should not become an operational headquarters, so he did consider placing the Near East Project Office under another division or even a district.[44] Finally, however, he chose the arrangement favored by Wall and created a project management office in the Military Programs Directorate to oversee the work in Israel.[45]

For the eighteen months prior to establishment of this small office, the directorate had monitored the air base project through the international programs branch of the construction division. Col. Gene A. Schneebeck, an assistant director of military programs with staff responsibility for Air Force construction programs in general and head of the new Israel project office, reported directly to Wilson. Schneebeck oversaw the staff of three, which included an engineer as his deputy, a personnel specialist, and an administrative as-

sistant. Wilson designated the office as point of contact for all staff actions regarding the job in Israel. Schneebeck replied to congressional inquiries, located technical experts needed for temporary duty in Israel, provided procurement and audit assistance, and coordinated the participation in the project of other staff elements at the headquarters. For his part, Wall required that his staff's communication with Washington go through Schneebeck. Later, when the program neared completion, the office was moved back to McNeely's construction division and managed by a civilian engineer.[46]

Implementation of the decision involved more than issuing new organizational charts and changing office symbols. Communications facilities had to be set up so that documents and information could be passed directly to Washington. The office in Tel Aviv also sent a complete reference collection of directives and procedures issued by the program and project managers to Schneebeck's office. Continued support from New York in the areas of finance and accounting were arranged, albeit with some inconvenience because the transition did not coincide with the end of a fiscal year or even a reporting month. Morris' office also considered relocating the support group but decided to leave the operation in New York.[47]

Not everyone thought the move was a great idea. Those in New York who had been associated with the project's management were particularly upset. Johnson, who had a prominent role in bringing the job to New York in the first place, called the change "categorically wrong." He attributed the change to the conflicts between Wall and Lewis, precipitated by their different approaches to management. The project itself, Johnson contended, was moving well toward completion. David Lipsky, the deputy public affairs officer at the division, agreed that the conflicts had not jeopardized the project. The work was still on schedule and appeared within budget. He thought the incessant disagreements between the Corps and the Air Force rather than any personal animosities had forced the change. In any event, he wondered whether it was possible to come out of such a high-pressure task without some bumps and bruises.[48]

Johnson and Lipsky both believed removing the division from the chain of command severely damaged morale in New York. Jewish members of the staff seemed to take the situation especially hard. Probably none were as upset as Lewis, who acknowledged that he "was very disappointed to leave the project at the time I did." He began a vacation in Australia just before the actual change in the chain of command took place. Lipsky also noted that the change created an air of uncertainty at the support group. Most of the people in that office had come from the division and

now feared for their jobs. New Yorkers to the core, they worried for a time that their operation might be moved to Washington.[49]

Removing North Atlantic Division from the chain of command solved two intertwined issues relating to Lewis and the division itself. In the case of the division office, there had been too little participation in the project. By nearly all accounts, the division offered hardly any help to Wall and his staff. On the other hand, Lewis was too heavily involved. He never could follow McNeely's advice and "turn the damn job loose" so that he could spend more time on other North Atlantic responsibilities, such as Philadelphia District's dredging mission.[50] McNeely put his finger on both aspects of the situation. On one hand, McNeely and several others "in OCE felt the NAD staff was completely out of the picture." On the other, Lewis "micromanaged the job from New York by a lot of phone calls and frequent trips which always took NEPO two weeks to recover from."[51]

When the senior officers were angry at each other, they all called each other micromanagers. Lewis applied the label to Bar-Tov, Wall pinned it on Lewis, and area engineers hurled it at Tel Aviv.[52] In Lewis' case, the appellation may have had some validity, given his deep personal involvement in the project.

Questions about management style should not obscure Lewis' lasting contribution. He saw the management tangle in which Gilkey was the odd man out, broke the impasse by separating him from the program managers, and convinced Morris to put a general officer on the job. He thereby set in motion events that provided an operational justification for his removal from the chain of command. Even Wall freely acknowledged that Lewis played a critical part. Wall credited him above all with energizing the project, bringing to it "a sense of urgency . . . that we didn't have before he came."[53] Now the project moved vigorously, Lewis and North Atlantic were out of the picture, and the three-legged stool was on its own.

Notes

1. Interv (telephone), author with David Lipsky, Nov 80.
2. NEPO Sitrep No. 25, 13 Jan 80.
3. Ltr, Lewis to Morris, 21 Nov 79, IABPC, 8/2.
4. MFR, Lewis, telecon with Chief of Engineers, 13 Dec 79.
5. MFR, Damico, sub: COE Staff Meeting 13 and 19 Jan. 1980, IABPC, 31/3.
6. Ltr, Morris to Lewis, 4 Apr 80, IABPC, 8/2.
7. Wharry, Information Paper, 29 Dec 80, sub: Israel Air Bases Construction Project, IABPC, 8/2; Organization Chart, CONUS Support Group, 20 Sep 79, IABPC, 88/5; Lipsky interview; Billiams interview; Cheverie interview. The support group consisted of a small management group (Lellis, his deputy, and a secretary), a personnel specialist, and a large resource management group under Joseph R. Shaw. In addition to Shaw, this section was authorized a staff of eleven: an accountant, a procurement officer, a procurement agent, a budget analyst, an accounting technician, a procurement assistant, a voucher examiner, a travel clerk, two accounting technicians, and a clerk-typist.
8. Lewis interview, Jan–Feb 82, part 1.
9. Ibid.
10. Ltr, McNeely to author, 17 Dec 87, IABPC, 93/6; Johnson comments on draft MS, IABPC, 92/2.
11. Vinitsky interview.
12. Eight DFs, 3–9 Apr 80, sub: Support to NEPO, IABPC, 9/7.
13. Ltrs, Col Maurice H. Leiser to Lewis, 20 Nov and 10 Dec 79, IABPC, 11/5.
14. McNeely interview, Mar 84.
15. Memo, Wray for the Chief of Engineers, 25 Mar 80, sub: Israeli Air Base Program, IABPC, 87/4; Wray interview.
16. Memo, Wray for the Chief of Engineers, 25 Mar 80, sub: Israeli Air Base Program. For a discussion of the possibility and utility of incorporating such a management transition in initial project planning, see Interv, author with Brig Gen George R. Robertson, May 85, Washington, D.C.
17. Wall interview, Aug 80.
18. Thomas interview, Aug 80; Interv, author with Janet Sales, Apr 81, Tel Aviv, Israel; Interv, author with John Blake, Aug 80, Ovda, Israel; Parkes interview, May 81.
19. Brown interview, Apr 81.
20. Lewis interview, Jan–Feb 82, part 1.
21. Wall interview, Aug 80.
22. Wall, Project Notebooks, vol. I, 20 Jun 80, IABPC, 90.
23. Wall interview, May 82.
24. Wall interview, Aug 80.
25. OAO, Master Diary, 27 Sep 80, IABPC, 84/2; McNeely interview, Mar 84.
26. MFR, Moon, 26 Sep 80, sub: MG Lewis's Visit to NEPO, 22–30 Sept. 1980, IABPC, 23/3.
27. Ltr, Wray to the author, 24 Feb 88; Wray comments on draft MS; Johnson comments on draft MS, IABPC, 92/2.
28. Bar-Tov interviews, Apr 81 and May 82.
29. Wall, Project Notebooks, vol. III, 21 and 24 Sep 80, IABPC, 90; Wall interview, Aug 80 and May 81.
30. Lewis interview, Jan–Feb 82, part 1.
31. MFR, Morris, 10 Jun 80, IABPC, 90/6; Ltr, Wray to the author, 24 Feb 88; Lewis interview, Jan–Feb 82, parts 1 and 3.

32. Wall, Project Notebooks, vol. I, 27 May 80, IABPC, 90.
33. Lewis interview, Jan–Feb 82, parts 2 and 3.
34. Ibid., parts 1–4.
35. MFR, Morris, 10 Jun 80.
36. Ltr, Morris to Ambassador Lewis, 14 Aug 80, IABPC, 7/5.
37. Ibid.
38. Ibid.
39. Ltr, Wall to Morris, 6 Aug 80, IABPC, 38/1; Wall, Notes from Chief's Visit, n.d., IABPC, 38/1; Wall, Project Notebooks, vol. II, 7 Aug 80, IABPC, 90.
40. Maj Gen Lewis, Notes on Telephone Conversation of 11 Aug. 1980 with Morris, IABPC, 7/5.
41. Ltr, Wall to Maj Gen Lewis, 11 Aug 80, IABPC, 38/1.
42. Maj Gen Lewis, Notes on Telephone Conversation of 11 Aug. 1980 with Morris; Maj Gen Lewis, Memorandum of Meeting, 12 Aug 80.
43. Morris interview; Ltr, Morris to Ambassador Lewis, 14 Aug 80; Maj Gen Lewis, Memorandum of Meeting, 12 Aug 80; Lewis interview, Jan–Feb 82, part 4.
44. The decision to transfer responsibility to Washington went against this conventional wisdom. A new perspective more tolerant of having headquarters supervise special projects may have emerged from the project, perhaps to become the cliche of the future. The new view is embodied in the analyses that advocate assigning special projects directly to the chief's office. See USACE, *The Israeli Airbase Program: Lessons Learned*, Engineer Pamphlet 5–1–5, p. 3; USACE CERL, *Project Manager's Handbook for Special Projects*, Technical Report P–85/01, p. 30.
45. DA, OCE, Permanent Orders 24–1, 23 Sep 80, IABPC, 87/9.
46. DF, DAEN-ZB (Wray), 1 Oct 80, sub: Designation—Israel Project Office (DAEN-MPI), IABPC, 87/4; DF, McNeely, DAEN-MPC, to DAEN-MPC-G, 24 Apr 79, sub: Israeli Program, IABPC, 87/4; Charles N. Dunnam, DAEN-MPC, Information Paper, 8 Aug 80, sub: Israel Air Bases Construction Program, IABPC, 87/4; DF, Wall, 28 Oct 80, sub: Communicating with COL Schneebeck, DAEN-MPI, IABPC, 18/7; McNeely interview, Mar 84.
47. Telex, Shaw, NEPO-Rear, to Chapla, NEPO Resource Manager, n.d. [but after 2 Sep 80], sub: Transfer of NEPO to OCE; Telex, Wong, NEPO, to Col Newton B. Morgan, OCE, 12 Oct 80, sub: Requirement for NEPO-OCE Fax Line; DF, NEPO Office of Administrative Services, 12 Oct 80, sub: Israel Air Bases Construction Project-Identification Symbol; Ltr, Wall to Maj Gen Drake Wilson, 26 Oct 80, sub: NEPO Organizational Change. All in IABPC, 33/4.
48. Johnson interview.
49. Ibid.; Lipsky interview; Lewis interview, Jan–Feb 82, part 4.
50. McNeely interview, Mar 84.
51. Ibid.
52. Lewis interview, Jan–Feb 82, part 1; Wall interview, May 82; Interv, author with Col Paul W. Taylor, Jun 81, Washington, D.C.
53. Wall interview, May 82.

CHAPTER 11

Construction Management June–December 1980

We have situations where construction is constructing, design is still designing, and procurement is caught in the middle, lots of them.
Brig. Gen. Paul T. Hartung [1]

It is not a complicated job. It's just a hell of a lot of it.
Otis Grafa, Chief, Construction Branch, Ovda Area Office [2]

During the last half of 1980 the project showed signs of its evolutionary character at Ramon and Ovda as well as in Tel Aviv. Wall arrived at a time of transition at both sites. Morris had set the tour of duty for the area engineers at twelve months, much to the chagrin of General Lewis. He thought Morris played down the role of the area engineers and wanted the commanders at the sites to remain for the duration.[3] With Curl and O'Shei finishing their stints and returning home in the spring, both sites experienced some instability during the summer. At Ramon the change of command was straightforward, with Col. Paul W. Taylor arriving in June to take over from O'Shei. Taylor stayed one year before a new area engineer replaced him. At Ovda the transfer turned out to be more complicated.

After Curl's departure, Col. Robert K. Tener took over the area office. Tener had been thinking about coming to Israel since the beginning of the year. With his tour as district engineer in Nashville ending, he considered the prospects for his next assignment. "What the hell," he wondered, "can a District Engineer do that's onward and upward?" When he saw the choices, he knew that none better fit his qualifications and ambitions than did the air base project. So he felt drawn to the work in Israel, both because of a strong sense of duty and for the chance to see the Negev and the Middle East. As he put it, "I was eager to do a good job where I knew I fit." Still, the decision was not an easy one. Like other officers his age, Tener had children in school. More impor-

tant, his wife was disabled with multiple sclerosis. He faced a difficult struggle between duty and his family.[4]

Tener's situation contrasted markedly with that of fellow officers who avoided assignment to Israel. At least one threatened to retire rather than join the project.[5] The lack of interest surprised Wall. He thought that "for a hot-shot colonel," the project represented "the best chance to make general officer."[6] Wall believed many excellent colonels in the Corps were capable of taking major roles in the project. According to him, the situation required the chief of engineers to say, "'You are going, Colonel X, you are going. If you don't like that, retire.'" But, Wall concluded, "He hasn't said that."[7] Morris would have agreed with Wall that the project represented an opportunity for energetic officers interested in advancement. His own criteria for measuring the suitability of officers for promotion emphasized their responses to the opportunity for failure. However, while he admired those who successfully handled high-risk missions, he felt that because officer assignments were made at the Pentagon and not in the Corps of Engineers he lacked sufficient control to insist that specific colonels go.[8]

The unwillingness of some officers to take on the challenges in Israel and the inability of Morris to insist that they do so shocked other participants, including Lewis and McNeely. "It was," McNeely said, "the first time I ever heard that you couldn't direct an O–6 [colonel] into an assignment."[9] In fact, if anyone had solid reasons to avoid the project, it was Tener. Nevertheless, he and his family decided that they could do it, particularly if they went to Ramon. His family could live in Beersheva, which had excellent medical facilities. In the middle of May Tener received a letter from Jack Clifton welcoming him to Ramon.[10]

A few days later Tener learned he was going to Ovda. This news revived the just-resolved dilemma. He even drafted a letter to Lewis, asking for relief from the assignment, but did not send it.[11] Wall pleaded with Tener "for the good of the project" to "handle that damned alligator at Ovda." He needed "a tough son of a bitch with tough contracting officer experience" and urged him to "please get your ass over here soon."[12] It was the kind of appeal Tener could not resist. He would house his wife and tenth-grader in Tel Aviv and commute between the city and the job site on weekends.[13]

Tener came to Israel during the first week of July. Impatient to start, he stayed in Tel Aviv only a few days before going to the desert. Curl was already gone when Tener arrived, and Deputy Area Engineer Blake was in charge. Tener found that a lack of cooperation prevailed in both Tel Aviv and Ovda. "The signs of poor teamwork were clear and unmistakable," particularly the "distrust

and backbiting" between the Tel Aviv staff and the area office. Much fence-mending needed to be done. A sense of teamwork was also missing from relations between the area office and the contractor. Tener considered this less serious, because some distance had to be preserved in this relationship. Still, the distrust and lack of credibility were evident. Part of this problem may have stemmed from lack of a well-defined Corps position on dealing with the Perini organization. Tener saw that Wall and Lewis disagreed in their assessment of the contractor. Lewis considered the consortium motivated and manageable; Wall pushed for close and constant scrutiny of the contractor. So the first order of business was creating an environment in which Negev Airbase Constructors, the area office, and Tel Aviv worked as a team.[14]

Tener never got the opportunity to take on the challenge. He had been in Israel less than two weeks when his teenage son back home became seriously ill. The crisis forced him to leave, and Blake again took over. Tener at least felt confident that he was leaving the job in good hands.[15]

Blake's presence gave stability to the situation. With the departures of Curl and then Tener and the recent turnover in management of the contractor organization, some continuity was important. Civilian deputies had arrived at both sites earlier in the spring, much to Hartung's delight. Pete Peterson went to Ramon as deputy for administration; Clifton stayed on as deputy for operations. Blake was the only deputy at Ovda, although Peterson joined him briefly to provide help pending the arrival of a new area engineer. Like Col. Patrick J. Kelly, who replaced Tener in September and agreed to stay for the duration of the program, both Blake and Peterson came to Israel from Huntsville Division. They had experience on many major construction jobs and had worked together on the Department of Energy's strategic petroleum reserve program.[16]

Blake, who came to Ovda shortly after the departure of Colonel Miller, differed from the easy-going Peterson. Stern and acerbic, Blake had no patience with the Near East Project Office staff or the niceties of the chain of command. He had little tolerance for foolishness and complained that the better pay and benefits in Saudi Arabia kept many of the best Corps employees from coming to Israel. Wall credited Blake with "a purely fantastic job, a fabulous job." He had Wall's ear as well as his respect and sometimes went straight to the top, avoiding his own boss and the Tel Aviv staff to do so.[17]

O'Shei and Curl had resisted establishment of civilian deputy positions. Curl criticized his civilian staff as "a bunch of really less than competent people." He attributed the situation in part to a

Management camp at Ovda

lack of incentives for overseas work; often the best people did not want to leave the United States. In addition, he found that excellent credentials did not always reflect reality. "Some of the documents that I reviewed," he said, "indicated the person was quite stable and sane and competent, and how those supervisors ever could have rated that person that way was a mystery." On the other hand, he insisted that his "green suiters," Colonel Miller and Capts. Louis Wenick and Robert T. Roberts, played critical roles in getting the project under way. Miller in particular was "a doer," although his lack of tact alienated the Israelis and eventually prompted Lewis to send him back to the States. "If my whole staff had been the quality of those guys," Curl claimed, "I'd have had no problems at all."[18]

Colonel Taylor, who came to Ramon in June 1980, was concerned more with continuity and stability than starting the job. He thought each area engineer should have had a civilian deputy from the outset. However, he understood the importance of the officers who had worked for Curl. Mobilizing a flexible and responsive civilian work force on short notice was harder than starting a project with soldiers.[19] Up to certain levels at least, soldiers went where they were needed and did as they were told.

By the end of the summer of 1980 the major changes at the area offices seemed over. Taylor and Peterson were on board at Ramon, where Butler remained in charge for the contractor. Kelly and Blake headed the Ovda Area Office, and the contractor had made numerous changes at the top. New general manager Irving Davis, a veteran of cost-plus projects in Saudi Arabia, quickly won the respect of Hartung and Wall.[20] All in all, the prospects for stability in both government and contractor management seemed very good.

Given the size and political implications of the job at each site, continuity was important. The area engineer and his deputy directed the construction project, approved expenditures, and stood between the contractor and higher headquarters, from whence came constant demands for reports and information. All of them used frequent meetings and regular site tours to keep up with their swiftly evolving projects. Blake started his day in a four-wheel-drive vehicle, touring the work site alone before he talked with his immediate staff. Both area offices also used project engineers who managed specific aspects of the job. Some of these were civilian engineers; others were Corps of Engineers captains. In the spring of 1980 only eight project engineers worked at the two sites. They monitored selected facilities, keeping track of progress and potential problem areas.[21]

The methods used by the area offices to manage the contractors sparked considerable discussion. Task directives, which formed the basis for operation of the Management Support Associates contract, were used only to a limited extent for the other contracts. Hartung thought the key was control of resources, which evolved in the spring and summer of 1980 with the establishment of construction and activation schedules and the application of resources to the schedule, particularly by coordinating procurement with the timetables. Later, Hartung claimed that the Corps lost much of its control because it too readily approved contractor expenditures.[22]

The main focus of disagreement involved neither task directives nor allocation of resources. Instead, the use of disallowance of contractor expenditures—refusal by the government to reimburse the contractors for outlays that were deemed irresponsible or unnecessary—sparked the most controversy. Discussion of disallowances began early and increased in frequency as audits appeared. Wall's chief counsel noted several obstacles to extensive use of nonreimbursement. Documentation of such action, for which the burden of proof was on the government, was costly in terms of time and money. Moreover, contractors knew from experience of their favorable odds in a courtroom. Although they acted concerned, attorney Brown believed they were not intimidated by the threat. Occasional use of disallowance showed that the govern-

ment paid attention but provided little benefit beyond that. Although Hartung was less than satisfied with the way the Corps managed the contractors, he agreed that extensive use of this tool was unproductive. Hartung understood that the contractor could respond by becoming extremely cautious and slowing down the project, endangering the schedule and bringing even higher costs. So he advocated conservative and selective use of this measure. Wall agreed with his attorney and preferred to resort to disallowance in cases of repetitive incompetence and then only as a preliminary measure prior to dismissing the responsible employees. The Israelis, in line with their concern about the cost of the project, disagreed. They considered the American attitude too permissive and wanted more disallowances.[23]

With the need to protect the government's interest on one hand and the requirement to keep the work moving on the other, the contracting officers walked a tightrope. Rigid management could reduce contractor initiative and create incentives for excessive caution. At the same time, inadequate control might result in unnecessary expense. For Hartung, resolving this dilemma required transfer of contracting officer authority from the sites to Tel Aviv. "The delegation," he said, "of contracting officer responsibility to the area engineers living with the contractor was a gross error in my mind." Proximity made it hard to maintain a clear perspective on the constructors' actions and expenditures.[24]

The views of some of the area engineers seemed to add credence to Hartung's concern. Kelly became a strong partisan of Negev Airbase Constructors. He lauded their cost accounting and procurement systems and was generally satisfied with how they did business. Taylor also expressed his approval of Air Base Constructors and applauded their commitment to the schedule.[25] Perhaps they understood better than anyone else that "fast track construction, by its very nature, is a cooperative process." He felt that contractors who were forced to go to extraordinary lengths to defend and justify their costs might not get the job done.[26]

Wall did not consider the rapport between the area engineers and the contractors a problem. He was more concerned with protecting Kelly and Taylor from frequent inquiries and close oversight by the program managers. "If the contracting officers were up here," he asserted, ". . . they would be constantly barraged with 'what if' questions." Wall considered that one of his major responsibilities was "to insulate the contracting officers away from all this cheap stuff so they can manage their jobs."[27] As far as keeping them honest was concerned, procurement regulations, auditors, and attorneys provided sufficient safeguards.[28]

The disagreement about where to place contracting officer authority reflected larger questions concerning relations between the area offices and Tel Aviv. The issue involved the nature and level of headquarters involvement in construction as carried out in the field. When Wall arrived he thought the area offices appeared unduly defensive but saw the need to act as a buffer between them and the program managers so that the area engineers could solve their own problems. He also saw antagonisms between staff sections in Tel Aviv and in the field, notably in the procurement area but elsewhere too. Wall thought he succeeded in providing the space in which the area offices could operate. Blake at Ovda agreed; others did not. Taylor complained that he spent more than half his time dealing with questions from Tel Aviv. The net effect of these inquiries, according to Taylor, was to keep him and his staff from concentrating on their work. Kelly felt less put upon but objected to the Tel Aviv staff's direct approaches to the contractor. He insisted that Wall's people deal with Negev Airbase Constructors through his office.[29]

The managers for the construction contractors had different views of the headquarters in Tel Aviv. Butler at Ramon said that while the job was easy, the network of relationships was difficult to sort out. Wall's office consumed a great deal of his time. So did Hartung's, Bar-Tov's, and the large number of Israeli Air Force consultants and designers. Davis agreed, noting that "everybody up there has something to say." At least, he said, the removal of North Atlantic Division from the Corps' chain of command cut the number of parties to which he had to report.[30] Much of this sentiment among the contractor managers at the sites may have been based on experience with fixed-price contracts. They were unaccustomed to such intensive Corps involvement in their work, resented it, and wanted to make their own decisions. However, some of the Corps construction personnel also saw too much involvement by headquarters.[31] As Bill Parkes, chief of vertical construction for the area office at Ramon, said, "We have more layers of management on this job than I have ever seen anywhere in my life, anywhere at any time. It's ridiculous."[32]

One of the major criticisms leveled against Wall's office from the field involved the time it took to convince Tel Aviv to authorize more workers. During the spring and summer of 1980 the area offices, particularly Ovda, hounded the Near East Project Office for permission to hire more people. The Ovda master diary was full of pleas for authority to bring in 500 additional Thais and to raise the number of "direct workers," those directly involved in construction, up to nearly 1,500. Blake and almost the entire staff agreed

Utility ducts (left)*; a backfilled and compacted utility trench.*

that "this job is in jeopardy if we cannot decide by 1 September 1980 to go to an increased level of manpower."[33] While trying to prove its case with Tel Aviv, the area office at Ovda also did what it could to correct things. Where possible, support workers—"indirects" in the jargon of the project—were reassigned to construction. Toward the end of June, Blake halved janitorial services in the management billets and the offices so he could put more men on the job.[34]

Wall sent Lt. Col. Fletcher H. "Bud" Griffis to Ovda early in July. He wanted Griffis, who was new to the project, to see to the firing of 300 workers. Griffis assessed the situation and concluded that the area office needed 600 more workers. He convinced Wall to change his mind. At the end of the month Wall approved large increases for both sites: 300 Portuguese for Ramon and 500 Thais for Ovda, where Captain Roberts wrote, "The manpower struggle was finally concluded." Within a month the contractor's agents in Bangkok sent the first new workers into Israel, causing hasty expansion of the work camp.[35]

Although he had made the basic decision on an increase in manpower, Wall wanted a team from the United States to review direct labor needs. McNeely chaired the group. Wall asked Lewis to send a senior member of his staff, preferably Vinitsky or Herbert Howard, but instead got Charles Schroer, assistant chief of con-

Thai kitchen workers at Ovda

struction in Baltimore District. The other three members were senior executives in the firms that made up Management Support Associates. The group visited the sites, evaluated progress, and studied use of the work forces. Based on interviews and brief visits, the team verified the need for more workers and even recommended increases beyond those approved by Wall. Members noted that excavations for utilities at Ramon consumed many more manhours than had been expected. At Ovda the 400 men working within the shelter complexes could have been doubled easily if the manpower were available. In general, many activities on the sites were starved for labor. The compelling fact was that the current production rate of 2 percent each month would be insufficient to finish on schedule.[36]

Inquiries into the size of the work force never related to the quality of the labor. The Portuguese and Thais both contributed to the cultural and linguistic diversity that sometimes caused problems at their work sites, but they were respected for their industry and skill. Blake, who was not easily pleased, called the Thais "exceptional little guys." He and most observers considered them

adept craftsmen and fast learners, although their lack of upper body strength was sometimes a problem. They also were well-mannered and disciplined workers, who caused few problems. Management also highly regarded the Portuguese, who were a somewhat troublesome presence in the towns near Ramon but excellent workers nonetheless.[37]

While the labor force was good, there were still problems with the placement of work. Nowhere was this more evident than in the shelter complexes. After moving so well in the early summer of 1980, work on these facilities ran into a major difficulty in August. A consultant to the Ministry of Defense concluded that some of the walls of the ammunition storage facilities within the complexes would be unable to support the earthen cover. If this proved true, a fatal design error existed. Work on affected buildings at Ramon stopped immediately, and a search for a remedy began. In September work at Ovda stopped on almost all shelter features except arches and exhaust flumes.[38]

From that summer to the following winter, other potentially serious design flaws were discovered. During that period construction of unaffected portions continued, rumors of numerous defects spread, and inquiries regarding solutions proceeded. Most of the questions involved the structural integrity of walls after they were covered with earth. Other problems concerned subsurface drainage of the shelter complexes during heavy rain, the ability of the buildings to withstand seismic disturbances, and fireproofing. The need to deal with these questions and problems delayed construction of these critical base features and added a feeling of uncertainty to the job. From June through September, 97 of the 202 engineering change proposals pertaining to the shelter complexes were issued. At the end of July Butler reported the need to revise over one hundred drawings to reflect the changes. He thought the expenditure of so much time and money would eventually affect production of other vital facilities. At Ovda Davis also feared that the changes would derail his construction schedule.[39]

The protracted examination of design flaws and discussions of solutions probably frustrated and annoyed the Israelis as well. Although Hartung had advised against departing from their initial plan of replicating the Sinai bases, they chose an experimental design. The Americans, who were accustomed to far more detailed plans than the Israelis produced, complained that they had to augment the drawings before turning them over to construction crews. Now errors were turning up in the shelter plans, and some of the Americans claimed that these were the major cause of unexpected expenses and delays. The Israelis took strong exception.

Excavation of Glide Path Hill at Ramon

Bar-Tov said the whole business was blown out of proportion. He believed that the Americans were wrong in attributing increased costs to the changes. In fact, he thought the changes saved money by improving design. Moreover, the Israelis disagreed with the contractors' claims that late design drawings delayed construction. When the contractors did receive the plans, the Israelis said with some justification, they did not always start work quickly.[40]

Hartung thought the Israelis were unnecessarily defensive about the mistakes. "I don't think," he said, "any designer would have designed something from scratch, brand new, and not make mistakes in that short time-frame. It doesn't matter who he is. He might have made different ones, but he would have made them."[41]

While the problems were debated for several months, work on the shelter walls and arches continued. These portions of the structures were the largest and most costly parts of construction, so it was fortunate that the work could go on. At Ramon the last arch was poured in January 1981, even before agreement on design alterations.[42]

In early 1981 solutions that satisfied all participants finally emerged. In part the delay until winter was intentional. Hartung

convinced Bar-Tov to wait until January so deliberations regarding changes would not distract the contractors during peak design activity. Then "a joint structural engineer task group" could review the entire shelter system, evaluate all deficiencies, and determine the best solution. "Treating the shelter complex as a system," Hartung contended, "rather than a series of parts, should result in least cost and time construction effort retrofits."[43] The task group of about thirty-five engineers, representing the three prime contractors, all three managers, and the Israeli designers, met in late January. They looked at five solutions for dealing with the structural deficiencies of buildings in the shelter complexes. The remedies included building two types of retaining walls, one of reinforced concrete and another of gabions (rock-filled galvanized wire cages). Others included gravity walls of mass lean concrete and two approaches to reinforcing the earthen backfill. One of these required the use of *terre arme* panels, interlocking blocks of precast reinforced concrete anchored in the ground with steel straps. The fifth option, concrete modified backfill, was adopted as the quickest and least costly way to reinforce the walls. The committee added a drainage system that carried water away from the structures to prevent the buildup of hydrostatic pressure.[44]

In spite of the problems with the shelter complexes during the summer and fall of 1980, progress on permanent facilities was beginning to be noticeable. Carl Damico of the construction division felt he was in a transitional period during August with buildings rising as design started to wind down. Gilkey thought both sites were "just about to explode" and expected that the recently authorized increases in manpower would bring the rapid increases in production that Morris and Wall agreed were so necessary. Hartung said that construction "really started to bloom" in September.[45]

And it did. Much of the preliminary horizontal and underground work, some of which was difficult to see, was out of the way. Both sites had perimeter fences and patrol roads. At Ovda a fifteen-kilometer canal, big enough to carry off the waters of the biggest flood expected in a 100-year period, was in place. At Ramon Glide Path Hill, the small mountain at the end of the runway, was no more. The 300,000-cubic-meter hazard had been leveled to clear the flight path, with the rock hauled off and used as fill for roads and camp facilities.[46]

Work on the runways gathered momentum toward the end of the year. Stripping and excavating for the 10,000-foot runways actually began at Ramon in late 1979 and at Ovda in January 1980. In September Ramon was placing subbase and planning to add a second shift of workers to accelerate progress. The Ovda landing strip

was further along, with the first application of base course material under way. The work there moved along so quickly that the commanding general of the Israeli Air Force, Maj. Gen. David Ivry, made a ceremonial landing of a jet fighter at the end of November.[47]

Both sites had problems with horizontal construction. The difficulty with the runway at Ramon came about because the embankment was allowed to dry out and crack. The contractor nevertheless started to spread the subbase over the inadequate surface. The initial solution, removing a seven-centimeter layer and recompacting the material below, was rejected. Tel Aviv and the area office agreed to scarify, disk, moisten, and recompact the subbase rather than remove it. Wall did not "consider this significant, especially when compared to the original fix intended." The next layer, or base course, required rock that was considerably harder than that produced by the quarry. A separate crushing operation was set up at the nearest source of adequate wadi gravel, about five miles away. Because of these complications, Taylor required the contractor to double the quality control staff and increased his own emphasis on that area. At Ovda quality control on horizontal work also became a major concern as the year wore on. Kelly complained that the contractor had too few people watching construction on the roads as well as the runways to ensure proper grades and thicknesses of layers of base course.[48]

Ultimately, the problems with horizontal work called into question the adequacy of the process by which the quality of construction was ascertained. Responsibility for quality control and inspection on Corps projects usually rested with the contractor, while quality assurance, consisting essentially of sampling, surveillance, and verification, was the government's job. In Israel, because of the need to minimize the number of permanent government employees, the Corps assigned quality assurance to Management Support Associates. This arrangement, in which construction management services were contracted, was not unknown in private construction but was unusual for the Corps of Engineers. During the mobilization phase of the project, the spectrum of activities involved in ascertaining the quality of construction appeared to cause more problems at Ramon than at Ovda. In any case, only the Ramon Area Office raised questions for the record. Nevertheless, by the beginning of 1980 General Morris became concerned about implementation at both sites and ordered Gilkey to hold O'Shei and Curl personally responsible for implementation of procedures. Morris' expression of concern brought immediate albeit partial results. Both sites hastened to establish laboratories where they could test materials and production. With command atten-

tion focused on the situation, Colonel Kett, who was still looking for meaningful work, finally found an opportunity to put to good use his experience with pavements.[49]

Command interest was helpful, but progress remained slow. In February Curl assured Morris that his laboratory was functioning, but two months later he still complained that the contractor did not provide enough people or equipment. At Ramon not until September did the area engineer insist that the constructor establish a procedure for notifying and briefing quality assurance people and site activators before starting work on a new building. He wanted the discussion to cover general methods, specific requirements, and specifications.[50]

A variety of problems beset efforts to make sure the job was done right. Defective precast shelter panels sometimes left the plant for delivery to the work site, only to be rejected there. In other instances, crews were turned loose to work on a building without access to adequate drawings. At Ramon O'Shei complained that Butler had too few qualified field construction people as well as inadequate procedures. Butler agreed that his operation was "poorly manned," but blamed "absurd local testing requirements imposed by local standards" for his troubles.[51] It was plain by mid-1980 that quality control would be a major issue between the Corps and its contractors, on one hand, as well as between the Americans and the Israelis on the other.

Concrete production, which proved to be an almost intractable problem at Ramon, was the major issue there from a quality control standpoint. In April an inspector's slump test showed that concrete containing too much water was being placed in the footing for an aircraft shelter. In July the foundation for the control tower had to be ripped out because the material was structurally inadequate.[52]

At first, O'Shei suggested solutions to the contractor. These included plant controls, such as improved procedures for batch tickets and closer surveillance of scales and water meters during batching, and more stringent field controls, particularly regarding addition of water to the mixture. Later, he took a tougher position and required submission of written procedures before placement of concrete on shelter roofs. O'Shei's requirements seemed to have little effect. Taylor faced the same problem and had to order the removal of the control tower's foundation, "a major setback" that retarded completion of the structure for three weeks. Then in August he complained about carelessness in curing procedures for the floor of the facility for storing liquid oxygen.[53]

Finally, Taylor issued detailed instructions for quality control, warning that he would halt concrete operations if the situation did

not improve. He wanted more stringent inspections before placement and also verification by quality control personnel of the accuracy of the quantity, type of mix, and location for each delivery. He also insisted that weigh tickets indicate the amount of water permitted in the mix and that field personnel be kept from adding excessive water. He determined that workers at the plant and those overseeing quality needed more training. Finally and perhaps most important, Taylor wanted the person responsible for the design and testing of the mix identified by name. His efforts to document activities involved in production proved very effective. One quality control supervisor had been extemporaneously adjusting the mixture of cement and water "like a cook stirring a big pot somewhere, and testing it every now and then," rather than adhering to specifications. With problems identified and controls established, Taylor allowed production to continue, but only conditionally, on the basis of biweekly evaluations. Until well into the autumn, he carefully monitored production of concrete.[54]

The cement from which the concrete was made turned out to be part of the problem, and stringent quality control became necessary here as well. Much of the cement supplied by the Israeli firm Nesher proved to be of a much coarser grind than the Americans normally used. Also, it sometimes came in quite hot, not having been allowed sufficient time to cool in a silo. Changes in the contract with the supplier corrected some of these deficiencies. Filtering the material for foreign particles as it was taken from the trucks also helped, although this practice made no friends among the truck drivers who delivered it and sat waiting for the process to be finished.[55]

By the end of 1980 the area offices sorted out arrangements for verifying quality. The program involved more than 100 people at each site. Ovda had a total of 115 authorized, with 96 contractor employees working in the area of quality control and 19 from Management Support Associates dealing with quality assurance; Ramon had 82 and 23, respectively. Although the support contractor's people did the work, Corps managers understood that the program remained their responsibility.[56] With nearly one-fourth of construction finished at the end of the year, stabilization of the surveillance program could not have waited much longer.

As work progressed and activities associated with verifying the adequacy of the work became more important, the small teams representing the program managers became more involved at the sites. These teams, known collectively as the Air Force regional civil engineer, reflected a standard United States Air Force approach to construction management. Initially Hartung had wanted a group of

three or four at each site acting as the customer to the Corps and as liaison with the Israeli Air Force. As in all major construction for the U.S. Air Force, he noted, the teams would provide the focal point for coordination between the user's needs and those of design and construction management. This concept of the regional civil engineer as an American organization that handled coordination between the Corps and the Israelis at the sites was embodied in the memorandum of understanding between the Corps and the Air Force. The agreement specified that the Air Force would set up such a group, which would report to the program manager. Although the document listed fifteen separate functions, most of them were different ways of saying that the unit would review progress and coordinate American work with Israeli needs, particularly when it came time for final acceptance of facilities.[57]

The organization that was established in April 1980 emerged in a very different form than originally anticipated. Hartung's office drafted a standard operating procedure that from the outset assumed that the team would include representatives of the Israeli program management office as well as his own. "We created something different here," Hartung said, "the only AFRCE in the whole U.S. Air Force that is international." Working from the premise that the Israelis were in fact participants in decision-making, Hartung said he "brought the staff of General Bar-Tov and my own staff . . . under the umbrella of the AFRCE." The organization consisted of an ad hoc headquarters, drawn from the two program management offices, that functioned as the regional civil engineer only when needed. At the sites the teams had formal structures with permanently assigned members from the program management offices and the Israeli Air Force. As Hartung saw it, the combined unit, headed by his deputy, Col. John R. Harty, became "in effect the user." Control of construction still rested "on the U.S. side," Hartung insisted, ". . . but you don't try to make a big issue of it." Gilkey's office accepted the proposal.[58]

For Hartung this "kind of unique organization" represented a compromise. He tried "to stick to standard practice between the Corps of Engineers and the Air Force . . . so everybody doesn't have to learn new ways of doing things." He also knew that in this situation he could not entirely do so. The joint regional civil engineer constituted a creative response to an unusual situation: the Americans rarely built for a foreign client that was technically competent to build its own bases.[59] The arrangement also testified to the force of Bar-Tov's personality. Like the procedure that had been set up for the configuration control board, the joint team

showed the degree to which Bar-Tov had solidified his position as Hartung's partner in management.

Although the organization differed significantly from the typical structure, the mission remained the same as originally intended. The site teams did become involved in unconventional areas, such as assistance with local procurement. Each team included an economist from the Ministry of Defense for this purpose, although the purchasing help did not always come as quickly as the area engineers might have liked. This liaison group inevitably became the focus of some of the tension that developed in the haste to get the job done. At Ramon junior officers did a little editing and "AFRCE" became "FARCE." At Ovda both the American and Israeli members of the team questioned the accuracy of the area office's situation reports. Blake, preoccupied with problems in shelter design, lack of transportation for equipment, and the shortage of quality control and quality assurance people, responded with customary bluntness. "I advised them," he wrote, "that if they start picking at it, they may not continue to get it." In spite of such troubles, overall relations seemed "cooperative and supportive" at the end of the year, according to James Wharry of the chief's office, who singled out the Israeli component for particular credit as "a perceptive advocate for the Israeli MOD."[60]

While Israeli positions were well articulated within the framework of the liaison organization, Hartung's claim that the Americans retained control of construction was still valid. When the time came to turn over facilities, the area engineers dealt only with the U.S. Air Force. That, according to Kelly, was "the way it should be." He said that despite the appearance of participatory management, Hartung was "a very strong personality and he exercises very central management."[61]

Notes

1. Hartung interview, Apr 81.
2. Grafa interview.
3. Lewis interview, Jan–Feb 82, part 2.
4. Interv (telephone), author with Col Robert K. Tener (Ret.), Jan 85.
5. McNeely interview, Mar 84; Lewis interview, Jan–Feb 82, part 2.
6. Wall interview, Aug 80.
7. Ibid., May 81.
8. Morris interview.
9. McNeely interview, Mar 84; Lewis interview, Jan–Feb 82, part 2.
10. Tener interview.
11. Ibid.
12. Ltr, Wall to Tener, 26 May 80, Tener Papers, IABPC, 89/5.
13. Tener interview; Ltr, Tener to Wall, 10 Jun 80, IABPC, 89/5.
14. Tener interview.
15. Ibid.
16. Peterson interview, May 81; Hartung interview, Apr 81; NEPO Sitrep No. 47, 23 Sep 80, IABPC, 14/12.
17. Telex, Blake to NEPO, "Attention: COL Gilkey," 12 May 80, sub: NEPO Procurement Guidance No. 2, IABPC, 33/1; Wall interview, Aug 80; Wall, Project Notebooks, vol. V, 12 Jun 81, IABPC, 90; Blake interview.
18. Peterson interview, Oct 81; Curl interview; MFR, Noah, 14 Feb 80, sub: Poor Behavior of LTC B. F. Miller, IABPC, 1/2; Bar-Tov interview, Apr 81.
19. Taylor interview.
20. Interv, author with Irving Davis, Aug 80, Ovda, Israel; Wall interview, Aug 80; Hartung interview, Apr 81.
21. DF, Moon, Engineering Division, to Project Engineers, 4 Apr 80, sub: Monthly Progress Report, IABPC, 33/1.
22. Wall interview, Oct 81; Hartung interview, Apr 81 and May 82.
23. Brown interview, Apr 81 and Apr 82; Hartung interview, Apr 81 and Oct 81; Wall interview, May 81; Interv, author with Leroy H. Graw, Apr 81, Tel Aviv, Israel.
24. Hartung interview, Oct 81 and May 82.
25. Interv, author with Col Patrick J. Kelly, May 81, Ovda, Israel; Taylor interview, Jun 81.
26. William R. Squires III and Michael J. Murphy, "The Impact of Fast Track Construction and Construction Management on Subcontractors," *Law and Contemporary Problems* 46 (January 1983): 64.
27. Wall interview, May 81.
28. Peterson interview, May 81; Maloney interview, May 81.
29. Wall interview, Aug 80 and May 81; Blake interview; Taylor interview; Kelly interview, Oct 81.
30. Butler interview; Davis interview.
31. Parkes interview, May 81; Grafa interview.
32. Parkes interview, May 81.
33. Blake interview; OAO, Master Diary, 1 Jul 80, IABPC, 84/2.
34. OAO, Biweekly Sitrep, 16–30 Jun 80, IABP files, WNRC, Accession 77–83–1016, Box 10.
35. Interv, author with Col Fletcher H. Griffis, Aug 86, New York, N.Y.; NEPO Sitrep No. 44, 5 Aug 80, IABPC, 14/9; Ltr, Special CE/MSA Team to Wall, 13 Aug 80, sub: Summary Report of Analysis of DCCs Direct Manpower Utilization and

Requirements, IABPC, 4/4; OAO, Master Diary, 28 Jul and 22, 25, and 29 Sep 80, IABPC, 84/2; Blake interview.

36. Telex, Wall to Lewis, 3 Aug 80, sub: Review and Analysis of Manpower Requirements at Ramon and Ovda, IABPC, 4/4; Ltr, Special CE/MSA Team to Wall, 13 Aug 80. MSA members were Joseph E. Robbins, president of Pope, Evans and Robbins; George E. Heunsch, vice president of A. Epstein and Sons International; and John P. Sylva, vice president of Lester B. Knight and Associates.

37. Blake interview; Davis interview; Wall interview, May 82; Gilkey interview; Grafa interview; Butler interview; Parkes interview, May 81.

38. DF, Damico to NAIPM-AD, 29 Aug 80, sub: Input for Chief's Report; and Ltr, Taylor to Butler, 27 Aug 80, sub: Shelter Complex 13.2, Facilities 8, 10, 11, 13, and 16. Both in IABPC, 33/2. OAO, Master Diary, 23 Sep 80, IABPC, 84/2.

39. MFR, David Levi, NEPO Engineering Division, n.d. [meetings, 19–20, 22 Jan 81], sub: Aircraft Shelters' Fatal Errors, IABPC, 86/10; MFR, Levi, n.d. [meeting, 27 Jan 81], sub: Aircraft Shelters' Fatal Errors' Fixes and Subsurface Drainage In-house Design Review, IABPC, 86/10; MFR, Blake, 6 Nov 80, sub: Fatal Errors in Shelter Complexes, in OAO, Master Diary, IABPC, 84/2; Griffis, Daily Journal, P&C Office, 27 Oct 80, IABPC, 41/1; NEPO Engineering Division, ECP Log, IABP files, WNRC, Accession 77–83–1025, Box 46; ABC Design/Engineering Narrative Report—Problem Areas, 31 Jul 80, IABP files, WNRC, Accession 77–83–1025, Box 4.

40. Hartung interview, Apr 81; Hays interview; *ENR* 205 (30 October 1980): 27; Thomas interview, Oct 81; Bar-Tov interview, Oct 81.

41. Hartung interview, Apr 81.

42. (Tel Aviv) *Ha'aretz*, 14 Jan 81.

43. Ltr, Hartung to Bar-Tov, 25 Nov 80, sub: Aircraft Shelter Complex—Fatal Errors, IABPC, 86/10; MFR, Harty and Bar-Tov, 29 Dec 80, sub: DOD/MOD Program Managers Meeting of 24 Dec. 1980, IABPC, 45/4.

44. MFR, Levi, NEPO Engineering Division, n.d., sub: Aircraft Shelters' Fatal Errors, IABPC, 86/10; MFR, Levi, n.d., sub: Aircraft Shelters' Fatal Errors' Fixes and Subsurface Drainage In-house Design Review, IABPC, 86/10; Amendment to Specifications, vol. III, 17 Feb 81, IABPC, 86/10.

45. Damico interview, Aug 80; Gilkey interview; Wall interview, Aug 80; Hartung interview, Apr 81.

46. *ENR* 205 (30 October 1981): 29.

47. Memo, Clifton for Area Engineer, Ramon, 2 Nov 79, sub: Weekly Progress Report, Ramon, IABPC, 22/4; Deputy Area Engineer, Ovda, Weekly Sitrep, 13–18 Jan 80, IABPC, 13/11; Butler, ABC Weekly Sitrep, 10 Sep 80, IABP files, WNRC, Accession 77–83–1025, Box 4; OAO, Biweekly Sitrep, 16–30 Sep 80, IABP files, WNRC, Accession 77–83–1016, Box 10; (Tel Aviv) *Ha'aretz*, 30 Nov 80.

48. Hartung interview, Apr 81; Telex, Hartung to HQ USAF, 2 Sep 80, sub: Israeli Air Base Program, DOD/PMO Sitrep Aug. 1980, IABPC, 3/6; Ltr, Taylor to Wall, 31 Aug 80, IABPC, 38/1; Telex, Wall to Lewis, 10 Sep 80, sub: Your Msg, 9 Sept. 1980, IABPC, 2/5; Parkes interview, May 81; OAO, Master Diary, 4 Nov and 11 Dec 80, IABPC, 84/2.

49. Ltr, Dorman R. Mabrey, Assistant for Contract Administration, MSA, to NEPO Contracting Officer (Damico), 10 Jan 80, sub: MSA Task Directives 1–000 through 14–000, IABPC, 31/3; Richard D. Connor, "Contracting for Construction Management Services," *Law and Contemporary Problems* 46 (January 1983): 20–21; Ltr, Clifton to GM, ABC, 28 Oct 79, sub: Contractor Quality Control, IABPC, 22/3; Ltr, Clifton to NEPO Project Manager, 7 Dec 79, sub: Weekly Progress Report, Ramon, IABPC, 31/1; Ltr, Gilkey to O'Shei and Curl, 31 Jan 80, IABPC,

31/3; NEPO Sitrep No. 29, 11 Feb 80, IABPC, 13/14; DF, Kett to Gilkey, 27 Feb 80, sub: Visit to the Ovda Site 21 and 22 Feb. 1980, IABPC, 32/2.

50. Ltr, Curl to Pettingell, 14 Apr 80, sub: Quality Control Laboratory at Quarry, IABPC, 33/1; Ltr, Taylor to Butler, 2 Sep 80, sub: Preparatory Inspections, IABPC, 33/3.

51. Telex, NEPO to Area Engineer, Ramon, 18 Apr 80, sub: QC and QA on Precast Shelter Panels, IABPC, 33/1; Ltr, O'Shei to Butler, 16 May 80, sub: Work Item 52—Automated Warehouse, IABPC, 33/1; Ltr, O'Shei to Butler, 17 May 80, sub: Vertical and Horizontal Quality Control, IABPC, 33/1; ABC Weekly Sitrep, 25 May 80, IABPC, 14/5.

52. Ltr, O'Shei to Butler, 16 Apr 80, sub: Concrete Testing at Placement, IABPC, 33/1; Ltr, Taylor to Butler, 8 Jul 80, sub: Work Item 010, Control Tower, Foundations, IABPC, 33/2; Parkes interview, May 81.

53. Ltr, O'Shei to Butler, 29 May 80, sub: Quality Control of Concrete Operations, IABPC, 33/1; Ltr, O'Shei to Butler, 27 May 80, sub: Quality Control Procedures for Domes in Shelters, IABPC, 33/1; Ltr, Taylor to Project Manager, 15 Jul 80, sub: Ramon Air Base Progress Report 1–15 July 1980, IABP files, WNRC, Accession 77–83–1025, Box 4; Ltr, Taylor to Butler, 26 Aug 80, sub: Concrete Curing and Protection, IABPC, 33/2.

54. Ltrs, Taylor to Butler, 23 and 29 Aug, 15 Sep, and 15 Oct 80, sub: Control of Concrete Quality, IABPC, 33/2–4; Parkes interview, May 81.

55. Parkes interview, May 81.

56. DF, Acting Chief, Construction Division, to Project Manager, NEPO, 23 Oct 80, sub: Project Management and QC/QA for Construction Sites, IABPC, 23/4.

57. Ltr, Hartung to Gilbert, 30 Nov 78, sub: Methods of Accomplishing/Managing Israeli Air Base Construction, IABPC, 89/3. For a summary of the U.S. Air Force's system of construction management, see Maj. Gen. Clifton D. Wright, Jr., "Air Force Engineering and Services—Investing Today for a Better Tomorrow," *Constructor* 67 (May 1985): 47–52.

58. Wray and Gilbert, Memorandum of Understanding Between the DOD Agencies in the Israeli Air Base Construction Program, 25 Jul 79, IABPC, 11/2; MFR, Bar-Tov and Hartung, 3 Mar 80, sub: DOD/MOD PMs Meeting 28 Feb. 1980, IABPC, 45/4; Hartung interview, Aug 80; SOP 18, Air Force Regional Civil Engineer (AFRCE) Organization, 11 Apr 80, IABPC, 15/18; MFR, Bar-Tov and Hartung, 2 Apr 80, sub: DOD/MOD PMs Meeting 27 Mar. 1980, IABPC, 45/4.

59. Hartung interview, Aug 80.

60. DF, Graw to Gilkey, 3 Jul 80, sub: Input for Letter to the Chief of Engineers, IABPC, 33/2; Ltr, Taylor to Lt Col Reeves Smith, DOD PMO, AFRCE-Ramon, 5 Nov 80, sub: Lack of Response to Request for Information, IABPC, 33/4; OAO, Master Diary, 30 Jul and 5 Nov 80, IABPC, 84/2; Lloyd interview; MFR, Wharry, 17 Dec 80, sub: Trip Report—Israel Air Bases Construction Project, IABPC, 8/2.

61. Grafa interview; Kelly interview, May and Oct 81.

CHAPTER 12

The Three-Legged Stool June 1980–January 1981

That's a term that I coined. . . . I likened it to a stool, three legs of a stool, because . . . no leg can do it alone, nor can two legs do it by themselves.

Brig. Gen. John F. Wall [1]

All things considered, after just over a year in Israel, the project was on firm ground. The major organizational elements were in place, and the Near East Project Office had a commander who could deal as an equal with the program managers. The setbacks of the spring had been overcome, and optimism seemed to be justified. Hartung reflected this view at the June press conference. He told the reporters that much progress had been made. Little of it was visible because permanent construction had just begun, but major parts of the job were complete, among them large portions of facility planning and initial design as well as some procurement. Final designs were still in progress, and the lion's share of construction to date involved camps, offices, and facilities—such as quarries, rock crushers, and concrete batch plants—with which to do the job. But the mobilization phase was over. For the next twelve to eighteen months the emphasis would be on building permanent structures. Then the project would close down. With the phases of construction overlapping, Hartung stressed the evolutionary nature of the process. "A program like this," he said, "trying to accomplish everything on a tight time constraint, goes through several transition periods." Overall, progress was good: "In gross terms of a program like this, where you have all of these overlaps and interfaces and concurrencies, we are right where we planned to be when we made the plan a year ago." [2]

One problem was strained relations between the three principal managers. Some disagreement was inevitable because none of these assertive and articulate men willingly conceded primacy to the others. Of course, tension and conflict between the managers

was not new to the program, but the arrival of Wall, whose role in the Corps of Engineers chain of command was much clearer than Noah's had been, altered the equation. And while Wall, Hartung, and Bar-Tov talked about the three-legged stool and a common purpose, there was ample contention among them. The issues involved their different views of program goals—whether the priority should be timely completion, quality work, or economy.

The number one priority for the Corps of Engineers remained attainment of initial operating capability by 25 April 1982. On this point, if not on everything else, the engineer generals—Wall, Lewis, and Morris—agreed. In the spring of 1980 Morris had made clear to the Israelis that he saw his primary responsibility as meeting that deadline. Quality and cost were important, but the schedule was the foremost consideration. Lewis likewise asserted that "time was at the top of the priority list."[3]

As Wall saw the situation, his primary goal coincided somewhat with that of the construction contractors. Their interests were best served by rapid completion so that they could collect their fees and move on to work elsewhere. He thought that the cost-plus-fixed-fee contract provided insufficient control over their expenditures beyond the personal assurances of the principal partners. Their reputations, like that of the Corps', would be enhanced by attaining all of the project goals, to be sure, but a quick finish represented the main payoff. Although Wall knew that the contractors' self-interest aligned them with his most important goal, he alerted his new staff officers to the need to monitor their actions closely.[4]

Wall understood that the other major participants did not agree with his emphasis on the schedule. Hartung's major mission involved activating two bases, rather than building them on time, so he concentrated more on turning over two high-quality airfields. Wall thought his own concern with the deadline gave Hartung this opportunity: "I worry so damn much about time . . . he can worry about quality a little bit more." Bar-Tov's mission involved activating three bases, the two built by the Americans and a third slated for construction by the Israelis, so he stressed economy; he needed to have money available to finish his third installation. Wall understood the divergence of goals, as did Bar-Tov and his staff. Naomi Kogon described what she saw as American profligacy and its relationship to the Corps' goals: "If someone gave me the money and told me to build something as quickly as possible and gave me a limit of time, I'd say the hell with the money."[5]

Although the Americans knew that their priorities differed from Bar-Tov's, they never understood or accepted the depth of the Israeli concern for frugality. They did know that every dollar

saved would correspondingly reduce Israel's contribution. But there remained a gap in comprehension of this issue, perhaps for two reasons. In the first place, the Corps lacked perspective on the Ministry of Defense's overall budget. From the time of the Six-Day War in 1967, Israeli defense outlays consumed ever-larger portions of government expenditures. In the mid-1980s the ministry's operating budget came to about $6 billion a year. The 1984 sum of $6.24 billion represented more than 31 percent of the government's budget. The amount was dwarfed by the American Department of Defense's $300 billion annual outlay but represented a far greater portion of public resources. Given this difference in resources, the Israelis placed much more importance on marginal project dollars. The American difficulty in coming to terms with Israeli design standards may also have added to the lack of understanding. Noah thought this problem stemmed partly from resentment of the need to work to foreign standards. Whether true or not, everyone in the Corps contingent—from Wall at the top to construction managers in the field—had problems with Israeli specifications. Some, Wall among them, saw many Israeli requirements as excessive, citing the extravagance of finishing details such as plaster walls and terrazzo floors. Others agreed but thought that the Israelis deliberately over-designed structures, hoping that their own construction contractors might come close to meeting them.[6]

Wall thought Ovda and Ramon amounted to communications zone air bases in a combat zone environment. He compared them to more austere American bases and to the Sinai bases that were being replaced. As an example, he contrasted the control tower meant for one of the new bases to an Israeli-built tower in the Sinai: "There's a damn tower. . . . They ain't built one of these sonsabitches there [Eitam and Etzion] yet." After eight years in the Sinai, the Israelis still had "one of these old temporary things. . . . I submit that any air force base in the world would be happy to have one of these."[7]

The Israeli concern for frugality often translated into efforts to release contingency funds committed to the program. With the widespread optimism about completing the job for less than the program estimate, they thought they could convince the Americans to reduce the allocation for contingencies, thereby freeing the funds for use elsewhere. Soon after Wall arrived, Bar-Tov raised the issue. During Morris' visit in August, the matter also came up. He turned it aside pending better data on final cost but expressed willingness to consider the possibility in 1981. At the end of the summer Ma'ayan brought it up again. Hartung sometimes seemed will-

ing to discuss these overtures. However, with so many issues still unclear and with actual construction just under way, Wall declined.[8]

Otherwise, the differing opinions over the relative importance of project goals meant that all three had their spokesmen, although the representation was far from equal. For most of the Near East Project Office's short life, the Corps' emphasis on timely completion dominated the project. As Wall put it, restating the golden rule to reflect the reality of the project, "He who has the gold rules." This dominant position sometimes manifested itself in "an independent air," as McNeely put it. Wall conceded only a limited responsibility to the program managers in the area of "criteria and program requirements." His "command lines" went through New York City to Washington, and some thought he and his staff saw Hartung and Bar-Tov as adversaries. Whether or not this was so, the Tel Aviv staff did see itself as independent of the IBM Building. When forty-five former Near East Project Office employees later completed surveys, none of them identified the program manager as the man to whom the project reported.[9]

In assessing his own staff, Wall saw areas that needed attention. He was concerned about morale, especially in Tel Aviv where the connection between the daily routine and progress at the sites was not always clear. He also sought a more efficient working relationship between the area offices and the headquarters. Basically, he picked up the theme of teamwork, that Lewis so often stressed. He and the area engineers, Wall knew, were still "feeling our way with each other," but he expected that to work out. He wanted his staff actively assisting the area offices rather than imposing requirements and creating work. In this regard procurement was his main concern, but procurement in general was becoming his greatest interest.[10]

Initially, Wall expressed some disappointment in the overall quality of personnel. Here, as with his emphasis on teamwork, he shared some of Lewis' concerns. Wall sought "a sense of urgency," particularly at Ovda where contractor management seemed sluggish in the wake of the rebar episode, but he did not find it there or in most other places. Some headquarters changes, including the arrival of a new procurement officer in June, promised improvement. In the construction division the situation remained unstable for much of the summer. Carl Damico replaced Donald Baer as head in May, but Wall and the assistant chief of construction, Rudolph E. Etheridge, got involved in a dispute that lasted through the season. Etheridge thought the project's long workweek unjustified by meaningful work. Because he considered the overtime superfluous, he refused to work beyond forty hours. Wall offered him a new job as chief of construction at Ramon.

General Bratton, Chief of Engineers

Etheridge refused because that was not the position for which he came. There the situation stood until the summer, when his tour ended and he went home.[11]

Wall also alerted the staff to the need for phasedown planning, giving notice to all of the transitional and indeed transitory nature of the project. He assigned a senior officer to coordinate the work. Colonel Wong did this initially. After he left, Wall brought Colonel Clifton from Ramon to concentrate on this area. The impetus for early attention came from Lt. Gen. Joseph K. Bratton, who replaced Morris as chief of engineers in October 1980. Bratton wanted Wall out of Israel before the end of 1982. The Corps had no models for guidance in this difficult area, so Wall set up a temporary committee to assess the problem. Only with difficulty did the project staff make the mental shift needed to plan for phasedown while at the peak of construction. Colonel Griffis captured the irony of the situation: "I guess it is about time that a person start looking at that undertaking as both sites are about 10% completed." Given the problems involved in this change of emphasis, starting early was a good idea.[12]

Wall set the committee's agenda. He wanted the group to think about moving some functions to the sites but emphasized issues relating to the office in Tel Aviv. These included the number of people required, housing, office space, the post office, and the commissary. The group also examined the optional fourth year of the Management Support Associates contract, which would begin in May 1982. The committee brought together a large number of Wall's civilian and military staff officers, first chaired by Griffis and later by Wong. Members came from the personnel office, counsel, resource management, and administrative services. Thomas of the engineering division, who later became special adviser to Wall on phasedown, also participated, as did Hartung's office. Wong and George Snoddy also served on the committee.[13]

The main operational effort in the headquarters still focused on tying together design, procurement, and construction. In accordance with Wall's insistence that construction should dominate the operational aspects of the project, the construction division became the center of activity just as permanent construction became the major effort in the field. Although the project represented a "design, procure[ment], and construction arena," as Thomas put it, Leroy H. Graw, who replaced Hallmark in procurement, put the relationships in perspective: "Construction has to come first." Wall wanted to secure the ties between the three components while ensuring the growing primacy of construction, so he transferred the scheduling function from the planning and coordination office to the construction division. Hartung considered this change long overdue. A sensible approach to the sequence of work required close coordination of the schedule with the need for resources. Management of this coordination went to Damico's office, "where it belongs," according to Hartung, "and where it should have been . . . when construction started." John Blake agreed; this small and ostensibly minor adjustment ended an illogical connection. Constructors, Blake thought, should determine construction schedules. In any event, he cared little for the analysis that came from planning and coordination. As far as he was concerned, "There never was any connection between reality and what was coming out of P&C."[14]

The real turning point came soon afterward. In August all participants agreed on what Hartung called "the construction site-activation interface schedule" for all work items at both bases. This meant reaching agreement on the timing and sequence for delivery of facilities so the Israelis could test them and install their equipment before moving in and making the bases operational. No less important than consensus on the schedule was an agreement on commitments. This did not come easily. Soon after Wall arrived, he recognized the gap between his understanding of his job and the perceptions of the program managers. In particular, he thought that Bar-Tov saw completion objective dates for individual facilities differently than he did. Wall considered them goals toward which he and the Corps would expend "their best efforts." Bar-Tov seemed to see them as deadlines to which the Americans were committed. To clarify the situation, Wall explained these views to both program managers.[15]

When Wall made his point to the program managers, he first showed a draft of his letter to Hartung. Wall sometimes used this technique to make a point or get action without having to sign and send a formal letter. This time, because of the importance of the

Briefing at Ramon: Col. Paul Taylor describes construction to (left to right) *Brig. Gen. John Wall, Brig. Gen. Paul Hartung, Mordechai Zippori, and Brig. Gen. Moshe Bar-Tov.*

matter, the draft was not a ploy. He meant to put the issue on the table but gave Hartung the chance to consider the matter first. "Look," Wall said to Hartung early in July, "I'm going to send you this letter. Have you got any suggested changes?" Two weeks later, after Hartung indicated that he could reply, Wall sent it to the IBM Building, and the issue was on the record to be resolved.[16]

All three generals saw the main question as involving the nature of the responsibilities of the Near East Project Office, but their views diverged from there. Wall wanted to be held accountable only for doing the best he could. Hartung thought Wall's point moot. As he saw it, except for the crucial April 1982 deadline, the Corps could not be expected to meet rigid schedules. He also thought Wall's emphasis on his own commitments missed the key point: Bar-Tov, Hartung, and Wall shared responsibility for timely completion. Hartung agreed that the three-legged stool worked but reminded Wall that "the three legs are only needed to keep the stool on an even keel." Atop the stool sat the objective:

"The joint commitment of both DOD and MOD to share the responsibility to assure successful IOC." Bar-Tov appeared skeptical about Wall's insistence that his role was limited to "best efforts." Like Hartung, he stressed joint responsibility for the mission.[17]

Wall claimed that the exchange of correspondence cleared the air as well as highlighted differences. He proved to be right. By early October Wall and Hartung settled on a joint declaration of responsibilities. This was no mean feat. Between 28 September and 2 October, the statement went through eight drafts, with Wall, Hartung, and Lewis all making changes before a satisfactory version appeared. The negotiations between the Corps and the Air Force resembled discussions between sovereign governments in complexity and concern with nuance.[18]

As finally prepared, the statement entitled "Construction-Site Activation Interface Date" had two noteworthy features. In line with Hartung's emphasis on the collective nature of program responsibility, it acknowledged the commitment of "all members of the Program" to completing the mission. The agreement also deleted all use of the phrase "best efforts," although Wall continued to use it in other references to his role. Instead, the statement spoke of the dedication of all "to meet or better the construction-site activation interface dates to provide the IAF initial operational capability." The Corps and its contractors would "manage construction to target dates which are essentially interface dates less two months or more of contingency time." Where a target date appeared unattainable, "the Program Managers and the Project Manager jointly" would decide on changing the date, arrange a workable joint occupancy, or seek other solutions. All in all, the statement reaffirmed the mutual commitment to the recently established schedule.[19]

Agreement on the schedule made it possible to deal with the long-standing need for a management information system. Both construction contracts required information systems that tracked progress and expenditures. Bory Steinberg of the planning and coordination office had wanted a system that would provide data "upon which to make a decision and to find out whether there are any problems and where to focus their attention." Very early, the Corps had decided to use extant contractor systems rather than require a single new one. This decision saved some time and money, but problems appeared when it became clear that the contractor systems were inappropriate. Also, there were just too many things to do at the beginning—ordering equipment, producing drawings, providing life support, and setting up a working relationship with the Israelis. "You can't do everything at once," Gilkey said, although fast-track construction demanded virtually

that. "We were so busy trying to get things organized, get things moving, get other major problems solved," he noted, "that I think we went for a period of two or three months at the very beginning of the project without paying enough attention to the early development of these programs."[20]

The magnitude of the problem became clear to Gilkey in September 1979. Soon afterward, Hartung began complaining about the lack of realistic and usable management data. There were grounds for concern, especially in the mobilization phase of the program. "A hell of a lot of bucks were being spent up front without any work going into the ground," Steinberg recalled, "and people were nervous." This was Hartung's point. In November 1979 he noted that outlays exceeded $57 million and obligations totaled over $190 million. "Your three contractors," he told Gilkey, "could provide a more reasonable and accurate assessment of where they've been, where they are, and where they are planning to be in the near future." But the basis for measuring the resources and time needed to complete structures was lacking for many months. The project had no way to predict productivity for its Thai and Portuguese workers. Moreover, until almost the end of 1979, when the construction contractors agreed to accept the government estimate for the cost of the work, final estimates of costs, labor, and schedule were not really possible. Despite the impediments to full and useful program reporting, Hartung and Bar-Tov pressured Gilkey for better reports. Meanwhile, the area offices pushed him the other way. "The time has come," O'Shei told Gilkey in May 1980, "to take a hard look at the whole MIS with a view toward reducing, not expanding, the flow of detailed information that, in my opinion, serves more to occupy the staff than provide operators with appropriate project and program level management data."[21]

At the same time, Wall arrived and started an all-out effort to rectify the situation. He called the management information system "my number one problem." Avoiding arguments about whether O'Shei or Hartung might be right, he had more basic concerns. "That's a problem," he said of the system, "because Mrs. Chayes, Under Secretary of the Air Force, thought it was a problem." As Steinberg put it, a main job of the system was to assure those interested in the program that progress was satisfactory: "to give them a warm-fuzzy that we were on schedule and within budget." And there was no question about Chayes' concern about the quality of the reporting system and the questions raised by the project office's ability to develop effective and timely schedules and cost estimates.[22]

This drive itself may not have been possible without other critical and closely related actions during the summer of 1980, no-

tably the establishment of meaningful schedules for turnover of facilities and the decision to increase the number of workers. Without timetables and the data on worker productivity that had been accumulated, as Steinberg said, "You couldn't pin down the exact size and skills of the work force needed."[23] Even with this information in hand, his office had to track between the bases to make sure they reported the same categories. With a number of major issues to be covered in the reports—bed down schedule, best efforts versus commitments, cost tracking and control, ties between design and procurement, and credible upward reporting—the project either had to develop its own system or accept the contractors' figures.

The program adopted the latter choice and worked from there. Both Hartung and Wall expected in August 1980 that a usable system would be available the following month. Usable did not mean perfect. Data from the two systems had to be correlated manually, "with green eye shades and stubby pencils." In effect, the manual compilation of data from the two automated but different contractor systems became a third system. The report that emerged in September appeared coincidentally with the transition from mobilization to permanent construction. All of the necessary experience factors and schedules were in hand. Moreover, with permanent construction becoming the dominant part of the job, there was something more substantial than spending to report. Hartung appeared satisfied that the reports generated by this process met his needs. One report per base gave information on scheduling and progress that was no more than ten days old. Information on expenditures was reported one month behind the data on progress and schedule.[24]

Hartung still thought the system was poorly conceived. He felt that the reporting should have been a program responsibility or at least a construction agent responsibility, perhaps carried out by Management Support Associates. The effort to combine two different accounting systems, which were both geared to managing construction rather than a program, yielded a product that was not useful for making comparisons between the bases, for analyzing program costs involving the Department of Defense and Management Support Associates in Tel Aviv, or for tracking site activation.[25]

Meanwhile, efforts to tie construction more closely to design and procurement went on. Their relationship was clear to all as the emphasis continued to shift toward construction. During the summer of 1980 Thomas recognized that design was still incomplete and that partial design allowed for only partial procurement. He hoped to finish design by February 1981, while Wall goaded

the procurement office into action. The problems inherent in concurrent design and procurement, combined with the knowledge that delays in procurement would slow construction, meant that all three would have ample chance to work together.[26]

Some aspects of this coordination went more easily than others. Damico in construction and Thomas of engineering had worked together at Cape Canaveral, on the antiballistic missile program, and in Saudi Arabia. Graw in procurement was a stranger to the Corps of Engineers but had impressive credentials. A 1964 graduate of the U.S. Military Academy and a veteran of six years on active duty, he had remained in the Army Reserves after his resignation in 1970. So he was well acquainted with the Army. He also had a doctorate in education from the University of Southern California and ample experience in government procurement, most recently with the Defense Logistics Agency. He should have fit well but did not. Like Management Support Associates, which had tried to reorganize procurement in the previous year, Graw was an outsider. Damico and Thomas, veterans of the Corps old-boy network, ran the divisions between which he was supposed to provide the bridge. Graw himself sometimes appeared to alienate his coworkers—Wall considered him "a little overbearing at times"—and was never fully accepted. Nevertheless, no one questioned his ability. Bar-Tov, who generally thought poorly of American management, called Graw "one of the pros in this program."[27]

When Graw arrived in June, the last issues of the procurement guidance series started by Raymond Aldridge were coming out, and there was a procurement logjam. "There were," Graw said, "still things that were being done [just] before I arrived that should have been done . . . nine or twelve months before." The systems created by Aldridge and Roy Edwards represented a positive but relatively untested step. Basically, the project was propelled along on the basis of procedures with which Graw took issue. He found the situation "very difficult professionally, coming in at that point in time after the program had operated under those procedures and attempting to change them." As Graw saw the situation, the emphasis on the schedule took its toll in terms of quality and cost. He saw unnecessary haste and indifference to cost analyses prior to purchases. Virtually everyone involved with the program would have agreed to a degree with Graw's impression. In the summer of 1980 problems with the procurement operation generally were considered those most in need of resolution.[28] However, consensus on the exact nature of the difficulty or its cause was lacking.

From the construction division's point of view, the problem was twofold. On one hand, compiling information on needed materials

was a time-consuming process that depended on timely completion of facility design. Enough materials for construction never seemed to be on hand. The sites also complained of equipment shortages. Butler at Ramon said that nothing came on site quickly enough. The chief auditor, Michael Maloney, had a somewhat different view. He thought too much of the purchasing was carried out on an emergency basis because of inadequate planning. He attributed the problem to the lack of familiarity among government and contractor personnel with the acquisition processes for a project on such a tight schedule. Graw felt that he absorbed the blame for someone else's problem; bills of materials were the engineering division's business. If design was not completed promptly, neither was purchasing, so the engineering division made its presence felt in the establishment of priorities. Moreover, all other things being equal, the contractor, particularly at Ramon, tended to choose the fastest delivery over the lowest price.[29]

At the area offices some agreed at least partly with this assessment. Assistant Area Engineer Peterson at Ramon thought that the emphasis on procurement during the spring of 1980 had been misplaced. He felt that procurement was the next step after design, where more attention should have been invested. Colonel Kelly at Ovda also cited delays in completing design packages. Griffis, who ran the planning and coordination office on Wall's staff until replacing Colonel Taylor as head of the Ramon Area Office in the summer of 1981, agreed that "the procurement problems are engineering problems and not procurement expert problems." So, Graw was not alone in arguing that the slow procurement stemmed from difficulties in the design process. He also believed that the excessive cost of some purchases derived from the lack of cost analysis.[30]

There was no disagreement about the inextricable relationship among design, procurement, and construction. The three were indeed interrelated, and the evolution of design determined the pace at which materials could be bought. In fact, the approval system in the Near East Project Office included simultaneous authorizations for site adaptation and procurement. Bulk materials were purchased when the layout and general design were approved, and increased releases for purchase were based on more detailed drawings. Graw saw the issue as the amount of influence that the other two activities exerted over purchasing. So while views of the specific nature of the relationship varied, everyone understood the close tie.[31]

Graw's solution had a familiar ring. He thought procurement should not have been split and located in the desert. The design organization, on which so much of the procurement work depended, was centralized in Tel Aviv. Moreover, such procurement

talent as existed within the project was spread thinly through the government and contractor organizations and could have been better used in a single office. With the program so far along that consolidation was not realistically possible, Graw called for better communication between the sites so the separate procurement operations could share their experiences. Another incentive to centralization was the fact that the construction contractors followed divergent approaches to purchasing. Negev Airbase Constructors developed a consolidated procurement plan. With a larger professional staff on board earlier than that at Ramon and a fresh infusion of management after the reinforcing steel issue was resolved, the Ovda contractor got off to a faster start with its office engineering and procurement. Kelly thought developing a consolidated procurement plan was "the most fantastic thing they could have done." Air Base Constructors on the other hand bought materials by individual facility, so they took longer and did not catch up with Ovda until the middle of 1981. In addition to producing results at different paces, the two approaches produced different reports and tended to confuse vendors.[32]

With the project so far along, Wall did not try to reorganize the system. Instead he gave procurement command attention, designating as his most urgent priority the completion of 90 percent of purchases by January 1981. Later, when he was able to reflect on the matter, he did recommend centralized procurement on subsequent projects. He and Graw both knew that the completion of exactly nine-tenths of all purchases by the first of the year—Wall's "management challenge number one"—was unimportant. In the summer of 1980 Wall did not expect that the goal would be met and was even unsure that it was important to do so. Considering the construction schedule, he would have settled for 90 percent by February or March. Basically, he wanted to goad the procurement organization into action. As Hartung said, Wall's "ninety percent was an arbitrary thing, but it created a catalyst to put people to work."[33]

And it did work. Neither area office hit exactly 90 percent, but both came close. They completed the lion's share of their purchasing, albeit with some panic buying in December, as Wall knew. He expected to "have problems with procurement until we get all procured items on board and we get them imbedded in the buildings." Still the major surge in activity was over at the start of 1981. Kelly thought Wall's emphasis on this area helped immensely: "It did more for this program than anything else."[34]

There was more to the procurement problem in the summer of 1980 than the need to accelerate the pace. Relations between the office in Tel Aviv and the procurement branches in the area of-

fices were abysmal. August and September 1980 were especially bad. Ovda accused Graw of "extra-legal suggestions." Ramon hinted that it would send Graw the data he wanted only if its use was apparent to the area office and claimed that his instructions confused the vendors. Graw contributed a lecture on "the Federal norm" in procurement. Clearly relations between Graw's office and the sites transcended the usual vertical tension between superior and subordinate headquarters. As Wall said in August, "If I had to pick the worst area of cooperation it would probably be procurement right now." Graw thought part of the problem was organizational: procurement people on the sites worked for their respective area engineers and did not take well to directions from Tel Aviv. Among the consequences of this arrangement that he found frustrating was lack of control over hiring for purchasing jobs at the sites. Coupled with the different contractor approaches to procurement, the independence of the area offices made implementing uniform policy and procedures difficult. Even coordinating the two sites to obtain discounts through larger purchases sometimes proved impossible.[35]

The area offices did not hesitate to tell the Near East Project Office that it was a large part of the procurement problem. In April Curl had "repeatedly asked" Noah to cancel the weekly procurement meetings that Curl considered a waste of his time. Graw's arrival did nothing to lessen the hostility. Six weeks after he arrived, he asked Ramon and Ovda for lists of their top five problems. Each put Graw's office on its list. Ovda's complaints included complicated program procedures that confused and lengthened the procurement cycle. Ramon cited Tel Aviv in two of its five trouble areas: for confusing guidance and excessive requests for information.[36]

Even in the summer of 1980, when Wall could not be sure that the procurement system would respond as well as it did to his challenge, he looked at another major area of concern. Changes in the Israeli economy, particularly in the construction sector where unemployment was high and equipment stood idle, had brought requests for more opportunities for Israeli workers and vendors. At the June press conference Hartung described efforts to expand Israeli involvement. The program was doing its best to buy materials in the country and had made commitments to spend more than $50 million. Expenditures would go even higher, Hartung told reporters. The program also absorbed some unemployed construction workers. During the previous winter Ramon had been authorized to hire 200 Israelis from nearby towns, but so far only 90 had taken jobs. The considerations that

determined the level of involvement of Israeli vendors or workers had little to do with the needs of the program. Decisions, as general manager Davis at Ovda noted, were based on politics rather than engineering, and some Americans were more sensitive to the situation than others. Hartung usually seemed more willing to accommodate the Israelis than did the Near East Project Office, although the Corps also took steps to integrate Israeli goods and services. In December 1979 Gilkey had made a presentation to the Israeli Association of Manufacturers on project procurement. More than two hundred business representatives attended. In July 1980, as cooperation grew, Graw assigned Leonard Beder of his staff to work more closely with Bar-Tov's office in improving relations with Israeli firms.[37]

The expanded effort in 1980 involved numerous meetings at which Graw or others from the project explained the U.S. government's way of doing business and the needs of the program. As attorney John Brown noted, "The moment we realized they didn't understand us, we set out to teach them." Although Wall recognized the necessity of the discussions, he was not pleased. "Meetings are bad," he contended, "because they take people away from the job of building air bases." Nevertheless, a dramatic increase in the amount of money spent in Israel ensued. The total value rose from about $8.5 million through December 1979 to over $36 million by the end of June 1980.[38]

As the Americans adjusted to more Israeli participation, the problem became that of keeping the Israelis from disrupting the procurement system. Part of the difficulty came from their different approach to business. Israeli standards for materials were no lower than American specifications, but their procedures tended to be less formal than the more explicit and rigid procedures in federal regulations. Wall saw an inclination among the Israelis to bargain after a contract was signed. This tendency, he said, caused "a lot of consternation." He responded by trying to withhold price information from Bar-Tov's office. He was willing to discuss technical and contractual aspects of bids but insisted that the award go to the lowest bidder who met those requirements. "This caused the Israelis a hell of a lot of problems," he said; they wanted to "see what the technical package looked like in relation to its price" so they could negotiate prices on that basis. Their approach, unconventional and at times even incomprehensible by American standards, led to some peculiar situations. In September 1980 Ramon let a contract for electrical supplies with an Israeli vendor, who later withdrew his bid. This change came at the request of the Ministry of Defense, which wanted the next lowest bidder to get the award.

"This is a case," the area office complained, "of MOD and the vendors working it all out and presenting ABC with either a *fait accompli* or collusion or both." Innovators with little patience for routine, the Israelis showed no more respect for a chain of command than for procedures. Bar-Tov's office went directly to the constructors with procurement directions, bypassing Wall's staff and the area office. The area office at Ramon objected strenuously. Taylor told Butler that only the area office was authorized to issue guidance to the contractor organization.[39]

The Israelis never left any doubt that they were paying close attention to procurement transactions. Bar-Tov wanted both program managers to give full attention to the procurement activities of the contractors. He and his advisers protested the number of emergency procurement actions, which they claimed gave Israeli firms insufficient time to respond. Bar-Tov also complained that the same companies repeatedly won contracts by small margins. Although he had no proof of foul play, he stayed concerned about fraud. As Kogon recalled, he wanted "to see the first guy in jail."[40]

The Israeli concern may have been legitimate, but it was distracting. Hartung tried to minimize Bar-Tov's involvement, reminding him that it was unwise to tie up the contractors and area offices with questions. Bar-Tov persisted, insisting that management in Tel Aviv should help the contractors spot possible errors. Keeping Bar-Tov's office out of the process was difficult if not impossible. Moreover, doing so would have been counterproductive. The staff helped with the maze that was Israeli customs. In addition, the contractors used the help of the Ministry of Defense in conducting preaward surveys and price analyses and later in expediting deliveries from Israeli suppliers. In fact, the help from Bar-Tov's office in these areas was sufficiently important that it was the subject of the first substantive procurement guidance document. Bar-Tov himself almost became the point of contact between the project office and Israeli businesses, adding significantly to his already heavy work load and to the crowded agendas of the program management meetings.[41]

Although creation of expanded opportunities for Israeli businesses and workers did not derive from the needs of the program itself, it still worked to the program's advantage. Israeli workers never made a significant impact because of the small number employed. On the other hand, purchases of Israeli goods proved beneficial. Whether made in the United States, as they frequently were, or in Israel, their quality was high, and transportation costs were low.[42]

By the end of the summer of 1980 the procurement structure and the needs that it filled had evolved considerably. Still, Wall had

no illusions about the future. He expected that problems would not disappear but only change. He was concerned about excessive purchases and control of the inventory that he would have to turn over to the Israelis at project's end. Maloney was even less sanguine, claiming that from a systems point of view, little had changed. In fact, as time grew shorter, individual purchases became even more rushed and disorganized.[43] Yet, dramatic improvements had taken place. The procurement specialists from Huntsville had given structure to the program; Wall and Graw had given it effective management. At the same time, the project had reached an equilibrium with the Israelis that balanced their desire for greater participation against the American need to work within their system.

Despite the attention paid to procurement during the second half of 1980, design also received command interest. After all, design set the pace for work. Completion of purchases and development of definitive construction schedules awaited the end of this phase. Thomas considered the job big, rather than difficult, except for the hardened facilities, which required substantial attention. All in all, during the summer of 1980, he saw the task in terms of "this school of minnows swimming around." There were indeed a great number of minnows. Each base required about 5,500 drawings, which were issued an average of three times. The pace of design quickened during the spring and summer, and Air Base Constructors' design organization went on an eighty-hour workweek in May. Israeli firms still produced incomplete or partial plans, which the contractors coordinated and consolidated for procurement and construction.[44]

As production increased, the need to limit and control changes of completed drawings became clear. Virtually all major construction jobs, whether fast track or fixed price, faced this problem. Evolving project needs, new technology, and design flaws caused by errors or omissions necessitated reevaluation and alteration of drawings. Corps projects were no exception. However, in less developed but richer nations than Israel, the issue was not as troublesome. In Saudi Arabia, where for many years competence was limited while funds were not, changes were easily accepted and incorporated in plans.[45]

Hartung, who raised the issue with Bar-Tov in March, was concerned about changes finding their way into designs and master plans without going through the approval process for engineering change proposals. Each adjustment might be warranted, but impromptu changes in the field left management out of the decision-making process. Besides, a large number of changes, however small each one might be, threatened to affect the schedule and

cost of the project. Discussions of control of these changes revealed differing viewpoints between the program managers. In principle, the configuration control board set up during Noah's tenure managed the processing and implementation of design changes. The existence of a procedure, however, brought no assurance that it would be followed, and Hartung complained that changes slipped into designs and master plans unbeknownst to management. He feared that an accumulation of changes, however justified and minor they might be individually, would collectively harm the project. Bar-Tov's view differed somewhat. He encouraged adherence to the rules, but only to a degree. Procedures, he insisted, were meant to help do the job and should be followed only to the extent that they did so. The Israeli armed forces had earned a reputation for improvisation, and he sought to keep his freedom of action. "As professional managers," he said, "we are responsible for using judgment in applying rules; don't be dead right in applying the ECP process."[46]

The Israeli penchant for improvisation became clearer as the number of change proposals mounted. All told, the alterations came from a variety of sources, the program management offices, the Corps of Engineers, the three contractors, and the Air Force regional civil engineer. Bar-Tov's office consistently produced more than any of the other six sources. Four hundred of the 907 that were processed and approved came from the Ministry of Defense. During June through October 1980 the number of changes, particularly those from Bar-Tov's office, peaked. They became the focus of attention by Wall's office and the sites and caused tension among the three principal managers. Wall, who disliked the procedure for managing the changes because it "gave ultimate ECP approval authority to DOD PM," found the long meetings over the issue frustrating. During one discussion, he wrote "Build it!!!" in his notebook while listening to the arguments. Damico, perhaps echoing the feelings of construction people everywhere, also considered the changes very disruptive (*Tables 2 and 3*).[47]

In August the program managers acted to limit the number of proposals. Thomas, who complained about trivial changes by the Ministry of Defense, urged that changes be limited to those that fixed so-called fatal errors—design flaws that had to be corrected before construction began. Changes in shelter design already had caused alteration of more than one hundred drawings. Bar-Tov and Hartung agreed to this standard for plans already in the approval process. Thomas was to provide all agencies with a design schedule so they could consider the status of specific plans before suggesting changes.[48]

TABLE 2—ENGINEERING CHANGE PROPOSALS (ECPs) BY MONTH AND ORIGINATOR
(Aircraft Shelter ECPs in Parentheses)

Month	ECPs	DOD	MOD	COE	AFRCE	ABC	NAC	MSA	UNK
Dec 79 ...	2			2					
Jan 80	5			3		2			
Feb 80 ...	34(4)	6	22(4)	4		1		1	
Mar 80 ...	40(16)	4	12(1)	19(10)		2(1)	3(4)		
Apr 80 ...	44(18)	1	21(7)	5(2)		5(4)	11(5)	1	
May 80 ...	48(11)	1(1)	22(4)	12(3)		4	7(3)	1	1
Jun 80....	61(25)		30(11)	10(6)		7(3)	14(5)		
Jul 80	80(22)	3(1)	37(10)	16(4)		6(2)	12(5)	6	
Aug 80 ...	86(29)	2(2)	41(12)	14(4)		18(7)	9(4)	2	
Sep 80 ...	80(21)	2(2)	20(8)	14(4)	1(1)	23(3)	19(3)	1	
Oct 80 ...	66(12)	1	17(5)	22(1)	4(1)	9(4)	13(1)		
Nov 80 ...	38(6)	2	21(6)	8	1	1	5		
Dec 80 ...	33(6)	1	22(5)	8(1)		1	1		
Jan 81....	30(1)	1(1)	13	7	1	4	2	2	
Feb 81 ...	33(6)	1	17(3)	10(2)		3		2(1)	
Mar 81 ...	48(5)		25(3)	13	1(1)	4(1)	5		
Apr 81 ...	37(5)	4(1)	17(3)	9(1)		6	1		
May 81 ...	32(8)	6	16(6)	8(2)		2			
Jun 81 ...	18	1	9	8					
Jul 81	22(2)	3	10(1)	8(1)			1		
Aug 81 ...	9		5	4					
Sep 81 ...	10(3)	3(1)	4(1)	2(1)		1			
Oct 81 ...	11		8	2				1	
Nov 81 ..	10	1	4	5					
Dec 81 ...	7(1)		4(1)	2		1			
Jan 82....	16(1)	5	3(1)	3		2	3		
Feb 82 ...	2			2					
Mar 82 ...	5	1		2		2			

Source: NEPO Engineering Division, ECP Log, IABP files, WNRC, Accession 77–83–1025, Box 4.

TABLE 3—TOTAL ENGINEERING CHANGE PROPOSALS
(Aircraft Shelter ECPs in Parentheses)

Agency	December 1979–March 1982	June–October 1980
DOD	49 (9)	8 (5)
MOD	400 (92)	145 (46)
COE	222 (42)	76 (19)
AFRCE.	8 (3)	5 (2)
ABC.	104 (25)	63 (19)
NAC	106 (30)	67 (18)
MSA.	17 (1)	9
Total	906 (202)	373 (109)

Source: NEPO Engineering Division, ECP Log, IABP files, WNRC, Accession 77–83–1025, Box 4.

Wall took over from there. He told the area offices to "take a very hard line on ECPs." Then he spelled out this position. The problem had reached a point where "even minor changes may have a serious impact on the program." Like Hartung, he was concerned that "a proliferation of seemingly insignificant and unimportant changes will build up to have a significant impact." He wanted the area offices to assess each proposal they received, inform Wall's representative on the configuration control board of the cost of each, and state their positions regarding acceptance.[49]

While Wall tried to control the growing number of change proposals, the issues they generated remained only partly resolved. Bar-Tov complained that the contractors made unauthorized changes while adapting building designs to the sites, introducing alterations that might themselves contain fatal errors or create delays. Thomas thought that the Israelis rather than the contractors were inclined to make impromptu changes in plans. Wall agreed, although he cared little about where the tinkering came from: "We do not intend to accept changes from any source except approved ECPs while designs are in progress."[50]

Well into the fall, the matter of change proposals created tension between the program managers. Over the summer positions had remained unchanged. For the Israelis, Ma'ayan contended that management of changes was the program's main problem. He understood the reluctance of the Americans to consider desirable but unnecessary changes. However, he thought that Bar-Tov should decide which ones were in fact needed. Hartung disagreed. He claimed that discriminating between changes that were required and those that were not was a subjective exercise. Bar-Tov later agreed with this point but otherwise held to his former position. Hartung also remained adamant: he wanted the changes stopped because they cost money and slowed progress. If the job could be done first and the change made later, Hartung wanted it that way.[51]

At stake was more than competing viewpoints on change proposals. The issues were program control and the philosophy governing construction. If the Israelis prevailed, they would improvise and experiment all the way to April 1982. If the Americans kept control, they would adhere to the design plans and their system of project management. While the program managers argued, the Corps of Engineers grew more concerned. In Washington Deputy Chief of Engineers Wray knew that Hartung was doing his best to control changes but was troubled by the lack of progress. Wall's boss in the Directorate of Military Programs, Drake Wilson, added that the large volume of changes was causing a decline of confi-

dence in the Corps' ability to meet the schedule. Like Hartung, he believed it would cost less to correct mistakes later.[52]

Meanwhile, Wall became even more frustrated. Because of a dispute over a detail in a shop drawing, the Israelis at Ramon halted a concrete pour at the radio transmitter building. The delay kept the contractor from meeting his scheduled completion date. Wall thought this was no way to build an air base. The facility should have been built as designed or taken off the list of facilities needed for initial operating capability. If the design error was indeed fatal, all concerned should have walked away from it, analyzed the problem, and rescheduled construction.[53]

Although the discussions persisted until late autumn and flared anew in later months, by December the program reached an equilibrium if not a consensus. The number of change proposals declined from an average of 70 per month from June to October to 33 in December and 30 in January. In part, the issue was taking care of itself: as design became more complete, fewer changes were proposed. At the same time, the area offices helped reduce the number of changes and the amount of effort expended in Tel Aviv by approving and issuing minor changes (those not affecting design or the scope of work) as "Information Reports" in the field. Changes with broad effects still went to the program managers, but Hartung remained determined to limit changes and the ensuing disruptions.[54]

As the issue declined in importance, the pendulum continued to swing toward the construction division. In February 1981 Damico took over approval of change proposals. At the same time, much but not all project design was completed. Problems inherent in the Israeli approach to this phase persisted, and incomplete drawings complicated procurement for some time. Graw noted that a great deal remained to be done, that even in the fall of 1981, many months after design was nominally finished, drawings for electrical panel boards for Ramon were yet to be done. "This stuff," he said, "about 100 percent of the design being completed in January of 1981 is all bull shit." Still, 1981 started with procurement nearly 90 percent complete and design also close to being done. The prime activity for the new year would be construction.[55]

Notes

1. Wall interview, Aug 80.

2. Proceedings of Press Conference, 12 Jun 80.

3. MFR, Wray, 30 Apr 80, sub: Meeting with Israeli Officials on Air Base Construction, IABPC, 1/2; Lewis interview, Jan–Feb 82, part 1; Morris interview.

4. Wall, Briefing for Incoming Officers, 14 Jun 81.

5. Ibid.; N. Steinberg interview.

6. Lucinda Franks, "Israel After Lebanon," *New York Times Magazine* (25 March 1984): 66; Drew Middleton, "Israel's Defense: As Good As Ever?" *New York Times Magazine* (19 May 1985): 63; Schiff, *The Israeli Army*, p. 189; Wall interview, Aug 80.

7. Noah interview; Wall interview, Aug 80, May 81, Oct 81, and May 82; Grafa interview; Parkes interview, May 81; Interv, author with Edgar N. Moon, Oct 81, Ovda, Israel.

8. Lewis, Notes on Telephone Conversation of 11 Aug. 1980 with Morris; Wall, Project Notebooks, vol. I, 22 Jun 80, and vol. III, 24 Sep 80, IABPC, 90.

9. Wall, Briefing for Incoming Officers, 14 Jun 81; McNeely interview, Mar 84; Proceedings of Press Conference, 12 Jun 80; USACE CERL, *Project Manager's Handbook for Special Projects*, Technical Rpt P–85/01, p. 58.

10. Wall interview, Aug 80; Wall, Project Notebooks, vol. I, 21 Jun 80, and vol. II, 18 Jul 80, IABPC, 90.

11. Wall interview, Aug 80; Wall, Project Notebooks, vol. I, 24 May 80, IABPC, 90; DF, R. E. Etheridge, Assistant Chief, Construction Division, to Project Manager, 17 Aug 80, sub: Work Schedule of the Undersigned, with comments 2, 3, and 4, IABPC, 3/6.

12. Wall interview, May 81; Chapla interview, Apr 81; Griffis, Daily Journal, P&C Office, Jul 80–Apr 81, 14 Aug 80, IABPC, 41/1.

13. DF, Gilkey to DOD PM and Committee Members, 14 Aug 80, sub: Project Phasedown, IABPC, 33/2; Sales interview, Apr 81.

14. Graw interview, Oct 81; Thomas interview, Aug 80; Blake interview; Hartung interview, Apr 81.

15. Hartung interview, Apr 81; Ltr, Wall to Hartung, 1 Sep 80, sub: Construction Site Activation Interface—Ramon, IABPC, 86/1; Wall, Project Notebooks, vol. V, 31 Mar and 8 May 81, IABPC, 90; Wall interview, Aug 80.

16. Wall interview, Aug 80; Wall, Briefing for Incoming Officers, 14 Jun 81.

17. Ltr, Wall to Hartung, 20 Jul 80, sub: Commitment Versus "Best Effort" in Meeting IAF Bed Down Dates, IABPC, 33/2; Ltr, Hartung to Wall, 29 Jul 80, sub: Construction-Site Activation Interface Scheduling, IABPC, 86/2; Bar-Tov interview, Oct 81. The Balfour Declaration of 1916, Great Britain's pledge to work toward creation of a Jewish homeland in Palestine, centered on a phrase similar to Wall's "best efforts." The declaration said in part: "His Majesty's Government view with favour the establishment in Palestine of a national home for the Jewish people, and will use their *best endeavors* [emphasis added] to facilitate the achievement of this objective." Quote from Kurzman, *Ben-Gurion*, p. 121.

18. Ltr, Wall to Hartung, 1 Sep 80, sub: Construction Site Activation Interface; MFR, Alan Shepherd, 2 Oct 80, sub: Construction Site Activation Interface Date Position Statement Audit Trail. Both in IABPC, 86/2.

19. Construction-Site Activation Interface Date, Encl to Ltr, Wall to Wray, 2 Oct 80, sub: Construction Site Interface Schedule, IABPC, 86/2; Wall, Briefing for Incoming Officers, 14 Jun 81.

20. Interv, author with Bory Steinberg, Feb 85, Washington, D.C.; Lewis interview, Jan–Feb 82, part 3; Gilkey interview; *ENR* (22 April 1982): 75.

21. B. Steinberg interview; Ltr, Hartung to Gilkey, 18 Nov 79, sub: Program Report-October 1979, IABPC, 9/7; Gilkey interview; Hartung interview, Apr 81; Lewis interview, Jan–Feb 82, part 3. Ltrs, Bar-Tov to Hartung, 28 Feb 80, sub: The Program Reports; Hartung to Noah, 7 Mar 80, sub: Program Reports; Gilkey to Hartung, 13 Mar 80, sub: Program Reports; Hartung to Gilkey, 17 Mar 80, sub: Program Reports; in IABPC, 9/7. Ltr, O'Shei to Gilkey, 21 May 80, sub: Request for Scheduling Data, IABPC, 33/1.

22. Wall interview, Aug 80; B. Steinberg interview; NEPO Sitrep No. 40, 5 Jun 80, IABPC, 14/5.

23. B. Steinberg interview.

24. Wall interview, Aug 80; Hartung interview, Aug 80 and Apr 81; Interv, author with Robert I. Barry, Aug 80, Tel Aviv, Israel; B. Steinberg interview.

25. Hartung interview, May 82.

26. Taylor interview; Thomas interview, Aug 80.

27. Damico interview, Aug 80; Graw interview, Oct 81; Association of Graduates, United States Military Academy, *Register of Graduates and Former Cadets, 1802–1984* (Association of Graduates, 1984), p. 684; Wall interview, May 81; OAO, Master Diary, vol. IV, 20 Feb 81, IABPC, 85/1; Bar-Tov interview, May 82.

28. DF, Leonard Beder, Acting Chief, P&S, to Deputy Project Manager, 3 Jun 80, sub: Input for Project Manager's Letter to the Chief of Engineers, IABPC, 33/1; Chapla interview, Aug 80; Graw interview, Apr and Oct 81.

29. Wall interview, Aug 80; Blake interview; Butler interview; Maloney interview, Aug 80; Graw interview, Apr and Oct 81.

30. Graw interview, Apr and Oct 81; Peterson interview, May 81; Kelly interview, May 81; Griffis, P&C Journal, 3 Sep 80, IABPC, 41/1.

31. Hartung interview, May 81; Thomas interview, Aug 80; Maloney interview, May 81.

32. Hartung interview, Apr 81; Graw interview, Apr and Oct 81; Peterson interview, Oct 81; Kelly interview, May 81.

33. USACE, *The Israeli Airbase Program: Lessons Learned*, Engineer Pamphlet 5–1–5 (Washington, D.C.: OCE, Sep 82), p. 20; Wall interview, Aug 80; Graw interview, Oct 81; Hartung interview, Apr 81.

34. Wall interview, May 81; Wall, Project Notebooks, vol. IV, 10 Dec 80, IABPC, 90; Kelly interview, May 81.

35. Telexes, Ovda P&S to NEPO P&S, 5 Aug 80, sub: Procurement Data Requirements and Procedures; Ramon P&S to NEPO P&S, 18 Aug 80, sub: Procurement Data Requirement; Ramon P&S to NEPO P&S, 29 Aug 80, sub: Data Requests; Ramon P&S to NEPO P&S, 21 and 29 Aug 80, sub: Aircraft Towing Winches; NEPO P&S to Ramon P&S, 21 Aug 80, sub: Aircraft Towing Winches. All in IABPC, 33/2. Ltr, Wall to Area Engineers, 7 Sep 80, sub: Adherence to the Defense Acquisition Regulation (DAR), IABPC, 33/3; Wall interview, Aug 80; Graw interview, Apr and Oct 81; MFR, Wharry, 17 Dec 80, sub: Trip Report—Israel Air Bases Construction Project.

36. OAO, Master Diary, vol. II, 29 Apr 80, IABPC, 84/4. Telex, OAO P&S to NEPO P&S, 1 Aug 80, sub: Procurement Data Requirements; Telex, RAO P&S to NEPO P&S, 2 Aug 80, sub: Procurement Data Requirements. Both in IABPC, 33/2.

37. Proceedings of Press Conference, 12 Jun 80; Davis interview; Lewis interview, Jan–Feb 82, part 1; NEPO Sitrep No. 24, 6 Jan 80, IABPC, 13/9; DF, Graw to Gilkey, 3 Jul 80, sub: Input for Letter to the Chief of Engineers, IABPC, 33/2.

38. Brown interview, Aug 80; Wall interview, Aug 80; Memo, Wall through DOD PM for MOD PM, 27 Jul 80, sub: Quarterly Report for Central Bureau of Statistics, IABPC, 18/6.

39. Chapla interview, Aug 80; Wall interview, Aug 80; Telex, Ramon P&S to NEPO P&S, 25 Sep 80, sub: MOD Interference in ABC Procurement, IABPC, 33/3; Ltr, Taylor to Butler, 29 Sep 80, sub: Authorized Direction from the Contracting Officer, IABPC, 33/3.

40. Telex, Kedem, MOD PMO Economic Unit, to NEPO P&S and AFRCE-Ramon [c. 15 May 80], sub: RFQ No. 54030E09; Telex, Moshe Goldsmidt, MOD PMO Economic Unit, to NEPO P&S and AFRCE-Ramon, 9 Jun 80, sub: Water Storage Tank, IABPC, 33/1; MFR, Hartung and Bar-Tov, 2 Apr 80, sub: DOD/MOD PMs Meeting, 27 Mar. 1980, IABPC, 45/4; N. Steinberg interview.

41. MFR, Bar-Tov and Hartung, 30 Jun 80, sub: DOD/MOD PMs Meeting of 26 June 1980, IABPC, 45/4; Wall, Briefing for Incoming Officers, 14 Jun 81; Procurement Guidance 2, 10 Jun 80, sub: MOD Assistance to Prime Contractors, IABPC, 8/7; Noah interview.

42. Hartung interview, Apr 81; Chapla interview, Aug 80; Damico interview, Aug 80.

43. Wall interview, May 81; Maloney interview, May 81.

44. Thomas interview, Aug 80; Wall, "Israeli Air Base Project," p. 329; ABC Weekly Sitreps, 26 Feb, 18 Mar, and 27 May 80, IABPC, 13/17, 14/1, and 14/5.

45. John B. Tieder, Jr., and Robert K. Cox, "Construction Management and the Specialty Trade (Prime) Contractors," *Law and Contemporary Problems* 46 (Winter 1983): 45; Interv, author with Richard Huggins, May 81, Ovda, Israel.

46. MFR, Hartung and Bar-Tov, 2 Apr 80, sub: DOD/MOD PMs Meeting of 27 Mar. 1980; SOP 14, Configuration Management.

47. [Wall], General Lewis Fallout Requirements, 28 Sep 80, IABPC, 40/9; Wall, Project Notebooks, vol. III, 24 Sep 80, IABPC, 90; Damico interview, May 81.

48. MFR, Bar-Tov and Hartung, 24 Aug 80, sub: PMs Meeting of 21 Aug. 1980, IABPC, 45/4; Thomas interview, Aug 80.

49. Memo, Blake, 22 Aug 80, sub: Meeting with BG Wall and Carl Damico—20 and 21 Aug, in OAO, Master Diary, vol. III, IABPC, 84/2; Ltr, Wall to Area Engineers, 2 Sep 80, sub: Impact of ECPs, IABPC, 23/3.

50. Ltr, Bar-Tov to Hartung, 25 Aug 80, sub: Design Changes; Memo, Thomas for DOD PM, 8 Sep 80, sub: Design Changes; Memo, Wall for DOD PM, 24 Sep 80, sub: ECPs. All in IABPC, 23/3.

51. Wall, Project Notebooks, vol. III, 12 Oct 80, and vol. IV, 22 Nov 80, IABPC, 90.

52. Wall, Project Notebooks, vol. III, 27 Oct 80, and vol. IV, 22 Nov 80, IABPC, 90.

53. Wall, Project Notebooks, vol. III, 31 Oct 80, IABPC, 90.

54. MFR, Wharry, 17 Dec 80, sub: Trip Report—Israel Air Bases Construction Project.

55. Hartung interview, Apr 81; Damico interview, Oct 81; Graw interview, Oct 81; Parkes interview, May 81; Thomas interview, Aug 80.

CHAPTER 13

From Construction Camps to Air Bases January–October 1981

> Our Israeli friends have criticized us for paying too much attention to time and not enough to quality and not enough to cost control. There is no question in our minds that all three of them are important, but if we had to give emphasis to one at the expense of the others, it would be to time. That is the most important.
>
> Brig. Gen. John F. Wall [1]

In the spring of 1981 the project showed many signs of the changing rhythm of a fast-track job well on the way to completion. Design and procurement were nearly done. Both construction contractors had the bulk of their purchasing under control, and the emphasis there shifted from completion on schedule to containment of costs. The few problems involving the confusion regarding American, European, and Israeli specifications for materials served as reminders that the completion of purchases still held the key to the efficient and timely end of the project. Construction itself was in high gear, and, although it was massive, it was generally not complex. On the management side, emphasis was shifting from the schedule to the budget. Along with the new focus came more audits and the possibility of legal disputes with the contractors, as well as an even greater stress on planning for phasing out the project, now at the peak of construction.[2]

Procurement underwent a transition parallel to that of overall project management. During 1981 the focus moved from meeting the schedule to containing costs. Lee Graw thought the shift came too late to be very helpful. Still finding surpluses and redistributing them between the sites remained possible. The adjustment of priorities brought more intensive reviews from the headquarters and heightened area office resistance. At the sites, changes in procurement activities came quickly after meeting the 90 percent goal. In the spring of 1981 the construction contractors began expediting the remaining procurement actions. They sent representatives to vendors

in North America and Europe as well as to Israeli suppliers to assure timely deliveries. In the United States the New York support office assisted with this effort; in Israel the Ministry of Defense helped.[3]

Despite the emphasis on expediting the remaining purchases, lack of such common objects as doors and windows delayed completion of buildings. In part the situation resulted from the increased procurement in Israel in 1980. Israeli vendors did not understand the American purchasing process, so the project staff lost time explaining specifications and negotiating prices. With Ministry of Defense help, problems were resolved and production picked up. Before deliveries caught up with construction, however, some structures were finished without doors. In another instance involving a mundane necessity, the supply of cement had been endangered by an autumn 1980 strike at Nesher, an Israeli firm. The bases needed about 275,000 metric tons of cement, and any interruption of supply would have threatened the schedule. Management Support Associates' general manager Alan Shepherd found a source of offshore cement in Turkey, and its availability helped stabilize supply for the project.[4]

Another difficulty related to procurement involved overbuys. With purchasing sometimes moving ahead of design, excess stockpiles of supplies were inevitable. "I suspect," Hartung said in April, "we're going to have a few million dollars worth of residual materials. That's part of the premium of fast-track." The overbuy came to between $10 million and $15 million, which was not excessive considering the size and haste of the job. Insufficient purchases would have been worse. The project dealt with excess materials in a variety of ways. In some cases, one construction contractor bought too much of something that the other needed and sold the article to the other site. Such transactions, which provided convenient solutions at no extra cost to the program, were handled through discussions and the exchange of lists of excess inventory. Cooperation between the contractors, which were accustomed to competing rather than sharing information, did not come naturally. However, with some encouragement from the Near East Project Office and the area offices, they overcame habit and shared data on drawings and materials on hand as well as equipment and supplies. Bar-Tov believed such cooperation came too late and was never enough, but business practices developed over many years did not change easily.[5]

There were other ways to cut inventories. The U.S. Army Sinai Construction Management Office proved helpful. This office was established in Tel Aviv in August 1981 to manage "the accelerated design and construction of two military life support facilities in the Sinai Desert." These camps, constructed by a consortium of con-

tractors known as the Facilities and Support Team (FAST), built and maintained bases for Norwegian Lt. Gen. Fredrik Bull-Hansen and his Multinational Force and Observers.[6] This international force, which included American soldiers from the 82d Infantry Division (Airborne), patrolled the Sinai during the period of the Israeli withdrawal and the Egyptian reoccupation. The American construction organization, commanded by Col. William E. Lee, Jr., remained in Israel until it completed its mission in the fall of 1982 and was disbanded the following year.[7]

At first it appeared that the new office would create an unwanted distraction. Wall and his superiors disagreed on control of Lee's operation. Because he was the senior engineer officer in Tel Aviv, Wall thought that Lee should report to him. The chief's office disagreed and assigned the new project directly to Washington. Wall already had a large enough job to manage and was charged with providing administrative, logistical, and technical support for the new operation. Lee, who needed office space and quarters for his people precisely at the time that Wall's requirements declined, paid the project for the use of the Palace Hotel. He also bought some surplus rations and construction materials. All told, the new office saved the project about $1 million.[8]

In dealing with excessive spare parts for construction machinery, the project employed a third and less satisfactory approach to reducing the stock. According to Hartung, the unanticipated excellent performance of the Fiat-Allis equipment combined with a lack of control over contractor purchases early in the project produced a surfeit of parts. In any case, large quantities had to be sent back to the manufacturer. After lengthy negotiations, the project paid $211,000 for restocking, shipping, and interest on the returned components.[9]

In the ten months between Wall's 90 percent target date and the 25 October 1981 joint occupancy date, virtually all problems with shortages and overbuys came under control. Overall, Ovda was in better shape than Ramon. The southern site still had problems with purchases of unique items and with windows and doors, but productivity was improving and substantial amounts of materials were being transferred to Ramon. Graw considered Ovda "out of the woods," and worried more about Ramon. The tension and distrust between the area office there and Tel Aviv persisted, making it difficult to solve the material deficiencies that remained.[10]

More and more, as the year passed, relations between the Near East Project Office and the program managers became bound up in the financial questions. The three generals seldom agreed com-

pletely on the issues of how much the job would cost, how the money would be provided, and who would pay.

Although Bar-Tov and his staff may have been under pressure from their government to finish the job as far under the program estimate as possible, they also were driven by their own concerns for economy. Bar-Tov's public affairs officer, Lt. Col. Karni Kav, who had gained a measure of fame in the 1967 war when as a lieutenant she had been among the first combat troops to enter Jerusalem, echoed this concern for frugality. Nevertheless, the Israelis understood the urgent need to comply with the deadline. Like Deputy Minister of Defense Zippori, who had warned that his forces would not move from the Sinai if the bases were not ready on time, Bar-Tov knew that the deadline was central. He was no more interested than the Americans in asking the Egyptian government for a delay.[11]

Wall's priorities, as he explained them to a small group of new staff officers who arrived in Tel Aviv in June, reflected the progress of the job and the evolution of the program's concerns. In December 1980 his primary consideration had been placement of construction, followed by procurement and adherence to a schedule that provided fifty days of flexibility. Six months later he called cost control "definitely number one" among his priorities. Site activation came next, followed by elimination of changes in construction. Such changes had not been on the previous list but had become a matter of great concern for much of 1980. In the spring of 1981 the changes once again caused friction among the managers. All of the old arguments and issues related to construction philosophy and project control were restated, and only firm management held down changes. Further down the list stood procurement and placement of work. Ranked first and second in December, they were now fourth and fifth, respectively. Inventory control, phasedown, and safety—in the rush to build the bases three workers had died in accidents during a two-week period—completed the eight-item list.[12]

Although it was becoming plain that the critical objective of initial operating capability would be reached, budget problems began in the spring of 1981. In mid-March Wall learned that Ovda might cost more than expected. The area office informed him that permanent materials were costing more than had been projected. Blake cited the seriousness of the problem, fearing that the Near East Project Office staff would hide the situation from Wall. He was concerned particularly with the engineering division's estimators, who he thought had an interest in defending the more optimistic figures they had developed earlier. Blake thought Wall was "sur-

rounded by staff who do not want to tell him any bad news," and that if any arose, they would "try to mitigate and confuse it." So he made sure that his assessment got to Wall, telephoning him first and later meeting with him personally. "If we have a disaster in the wings," Blake said, "we need to face up to it."[13]

Wall referred to the news as the "bombshell on NAC costs." Alan Shepherd, who was with Wall when he heard the Ovda briefing, said the report "just about devastated the Project Manager, BG Wall." Shepherd understood that the news had far-reaching implications for project management. He estimated that the increase in costs at Ovda could result in an overrun of as much as $20 million—about 2 percent of the total cost—for the program. Such a development would shift management's focus from completion of facilities to budgetary matters. "It is important that we understand," he told his staff, "that even though cost is not the number one priority to the U.S. government's interests, it is the number one priority to the Israeli government and, as such, the political pressures between the two governments will cause cost problems . . . to become a major issue."[14] Essentially, he feared that construction issues were becoming political ones.

From that point on, although Wall pushed both area offices to complete facilities, he always kept an eye on the budget. He saw several reasons for the higher estimate for Ovda. Foremost was the increased cost of permanent materials, due in part to panic buying at the end of 1980 in a desperate effort to reach his 90 percent goal. The site also had bought too much reinforcing steel, and the kindergarten in the residential area was headed for higher construction costs.[15]

The spring of 1981 signaled a transition in Wall's evaluation of the financial situation. Hartung remained sanguine about delivering the bases within the budget. However, he turned aside Israeli requests for a reduction in their commitment, and told Director General Ma'ayan that the large number of engineering change proposals and the constant direct contact between Israelis and construction forces clouded the financial picture. Perhaps influenced by Blake, Wall became concerned that the estimators painted too optimistic a picture, giving Hartung and himself data that might prove wrong. Still, Wall remained unconvinced that an overage at Ovda would cause an overrun for the whole project. At the end of June he thought he was still—barely—within the budget.[16]

Late in the same month Bar-Tov and Ma'ayan started to insist that an overrun was certain and seemed to step up their scrutiny of outlays. Some Americans complained about the Ministry of Defense's close surveillance, but none should have been surprised

when it increased. That the Israelis were the first to see that the cost of the job would go over the budget was appropriate. They had watched the outlays more closely than had the Americans and would pay the bill in the event of an overrun. On the other hand, reaching that conclusion must have been difficult for them. After all, they had only recently urged Hartung to reduce the program amount so they could cut their commitment. As for Wall, his notes of the meeting show his reaction. He recorded it with one dramatically punctuated word: "!Tilt!" [17]

Before the summer ended the chief's office sent Fred McNeely and a team under chief estimator John Reimer to assess the situation. The headquarters anticipated a high-level Israeli effort to convince the United States to pay any additional bills. Some people in Wall's office resented the lack of confidence that such an independent analysis implied, but Washington needed precise financial information. Reimer's team spent six weeks of August and September in Israel. They arrived at an overall current working estimate of $1.077 billion, including $13 million for contingencies. Their total came fairly close to that of Wall's staff. The most significant disagreement with Tel Aviv involved the anticipated cost of the base at Ramon, particularly the final price tag for permanent materials there.[18]

From that point the only question in Wall's mind involved the magnitude of the overrun. Yet, even after the scuttling of the budget became a certainty, Wall kept his perspective on the overall effort. He continued to insist that the area engineers had done excellent jobs and that the base construction was superb. Reviewing the estimators' report, General Wilson agreed: "We of course recognize that the replacement product (Ramon and Ovda) is far superior in quality and quantity to the original model (Etzion and Eitam)." [19]

By the autumn of 1981 only Hartung still insisted that the job would be completed within the original $1.04 billion budget. He rejected the Reimer team's analysis and Wall's current working estimate of $1.042 billion as too high and considered the additional sum set aside for contingencies as excessive. He viewed estimating as an inherently pessimistic art, in this case reinforced by the negativism of other participants in the program. "The biggest thing I have heartburn with in this whole program," he said, "is that there are so darn few people that have any vision." Passive management that was indifferent to waste could still cause additional and unnecessary costs, but he did not consider an overrun inevitable.[20]

The disagreement between Wall and Hartung on the final cost stemmed from profoundly divergent understandings and differing analyses of the situation. By the fall of 1981 Wall and his staff in-

sisted on charting obligations—commitments for future payments—rather than actual expenditures. In fact, Wall attributed his earlier surprise at predictions of higher costs to his concentration on current spending rather than longer term obligations. His office now understood that it had to plan for funding well ahead of actual outlays. These commitments provided the best yardstick of total requirements. Moreover, because Wall could not obligate money he did not have, they also determined his financial needs at any given time. This concentration on obligations reflected standard Corps practice on cost-plus contracts for at least thirty years. The 1951 manual emphasized that it was "extremely important that the contractor's accounting system adequately provide for the current recording of all obligations and commitments in connection with the contract in order that overruns of available funds may be avoided."[21]

Hartung disagreed with the Corps view. He contended that the emphasis on planning for obligations was misplaced and represented "fixed-price thinking." He resisted management of obligations and stressed the need to validate requirements as raised by the contractor. As far as he was concerned, management of obligations merely assured the availability of money that the contractors wanted instead of verifying the actual need.[22] The issue of the actual cost of the program remained unresolved until all of the bills were counted many months later; the dispute regarding the proper approach to financial management was never settled.

Even those who agreed that the total cost was likely to be more than originally expected differed regarding the causes. The numerous contributing factors were materials, unexpectedly low productivity, engineering change proposals, and the use of local workers.[23] However, at that point in the fall of 1981 the major question still dividing Hartung and Wall was the amount of the final bill.

By the time the estimating team left Israel, the initial optimism about completing the job within the program amount—Morris' goal had been 10 percent less than that sum—was forgotten. Wall's current working estimate of $1.042 billion hovered just above the project figure. At that point control of contractor expenditures with an eye toward future obligations tightened considerably. Wall explained his intent with characteristic bluntness: "Effective immediately, I am directing a series of management actions to prevent more effectively contractors from incurring any additional unnecessary obligations and to manage better our meager resources."[24]

The project's financial options were very limited by that time. Manpower was becoming the key variable. Beyond that, with procurement largely completed, only life support provided major possibili-

ties for cost reductions. Overall, adherence to the schedule remained a top priority for a cost-conscious management. The American presence became more expensive in relation to the work done as the job approached the end. As Hartung observed, "The quicker we can convince our Israeli friends that we ought to get out of their hair and then they finish it up, the better, from a cost standpoint."[25]

Nevertheless, Wall did not content himself with demands for reducing the costs of labor and life support. He insisted that the area offices slash expenditures everywhere and imposed unusual requirements to make sure that they did so. Withdrawing the blanket authorization for purchases under $25,000, he required Kelly and Griffis or their deputies to scrutinize every purchase order for over $1,000. He also called for redistributing excess supplies between the sites where possible and turned to Maloney's office for audits of all unfilled purchase orders. Wall stopped short of consolidating contracting officer operations in Tel Aviv because he feared that such a change might cause unnecessary problems, especially with the critical joint occupancy date approaching in October. He never forgot that adhering to the schedule still held the key to cost containment as well as to accomplishing the mission: "We will build airbases to meet activation schedules and, in so doing, will insure that final costs are reduced to absolute minimum."[26]

Whatever these final costs, Wall still had to ensure sufficient funds to pay them. Because of the 1980 procurement rush and an accelerated construction schedule, the project was rapidly running out of money. Based on the survey team's analysis, Wall calculated that he had enough to fund work into January. To ensure that operations continued smoothly thereafter, he needed authority before the end of November to incur additional obligations. If the money was not forthcoming, he feared that the contractors could start to close down operations. With Wilson's approval, Wall formally notified Hartung that he expected the total cost to reach $1.077 billion and asked that he get the additional money from the Israelis.[27]

Ironically, Wall's increasing control of construction in the autumn of 1981 was matched by declining control over project funds. Up to the point at which he needed to ask for additional money from the Ministry of Defense, his office had managed the balance of program money. The first financial transition, from American to Israeli funds after the initial $800 million ran out early in 1981, had already passed smoothly. It had been well planned and controlled. The chain of communications from Wall's office to Hartung; then to Headquarters, United States Air Force; and then to the Israeli Procurement Mission in New York, which provided the money to the Defense Security Assistance Agency in Washington;

had worked well. The money was there when needed, and the program conducted its business as usual. Harmonious relations between the Americans and the Israelis in general and Hartung and Bar-Tov in particular remained unchanged.[28]

By August 1981 nerves were fraying. Work at the sites was building up to the joint-occupancy climax. In Tel Aviv the managers argued about the potential for overruns and the control of change proposals. Wall saw a split develop between the program managers, with Bar-Tov "driving Hartung nuts." Hartung, who still lacked the level of control that he desired and who disagreed completely with Wall on financial management, called his assignment the "most frustrating job I ever had." Wall himself, who usually smiled long after the others gnashed their teeth, was troubled by high blood pressure and also feeling the strain. "I'd rather fail graciously," he wrote, "than be captive to cantankerous non-professionals."[29]

As management wrestled with the issue of providing funds to complete the job, the question of who would pay the bill for the overrun also arose. There was no question about where the formal liability rested; the agreement between the two governments clearly set forth the Israeli responsibility for any additional funding. However, no one was surprised when the Israelis asked the United States to pick up the tab. At an October meeting Ma'ayan reiterated complaints about the American preoccupation with the schedule at the expense of quality and cost. He told Bratton that he expected an overrun of between $50 million and $100 million and complained that Bar-Tov lacked sufficient control. The United States, he contended, should pay the Israeli share of the original amount and any overruns. Bratton, who thought Ma'ayan's estimate excessive, refused to commit the Corps to the additional payments. The question was political.[30]

While the financial questions were debated, workers at both sites rushed toward the joint-occupancy deadline. In terms of the completion of facilities, joint occupancy almost equaled initial operating capability, which was the goal for the following April. Attaining the latter and more critical objective, on which the completion of the Israeli withdrawal from the Sinai and the peace with Egypt depended, primarily awaited the activation of the structures already completed. As Bill Parkes noted at Ramon in October, "We have almost fulfilled our obligation." Except for utilities, which proved extremely difficult to finish because of the blasting involved, "the base is operational."[31]

The agreement between Israel and the United States specified only attainment of initial operating capability by 25 April 1982. However, General Lewis had insisted on working toward earlier comple-

tion of the facilities so there would be enough time for site activation. Lewis chose 25 October 1981, six months in advance of the key date. At first he complained that Corps people responded slowly to this need, but by early fall of 1981, the late October "joint-occupancy date" was widely accepted as the crucial construction goal.

Awareness that the project would have to pass through a joint-occupancy stage came long before Lewis established this important formal goal. Joint occupancy represented the crucial transition during which construction sites actually became air bases. When the contractors arrived, they knew that the months before achieving initial operating capability would require them to work alongside the Israeli Air Force, installers from the telephone company, and others. Corps employees also recognized the need for what Thomas called "a three-dimensional interface." He had learned at Cape Canaveral that fast-track site activation required designers, builders, and activators to work alongside, over, and around each other. Planning for this phase started early in 1980. The area offices did construction-site activation interface studies, which they submitted to Tel Aviv before discussing them with their respective constructors. Months of negotiations and refinements took place before all agreed in August on a schedule, but the matter did not end there. The contractors, who until then had arranged their work for maximum construction efficiency, had to reorder tasks to coincide with the schedule.[32]

During the first half of 1981 the concentration on activation increased. Hartung reminded Corps managers that the emphasis would soon swing from construction to installation and checkout, including the actual emplacement and testing of equipment, relocation of people from the Sinai, training of pilots and ground crews, and certification of the operational capability of both bases. He warned that coordinating the activities of contractors, subcontractors, installers, and Air Force personnel would create heavy demands on the Corps. He wanted to be sure that the Americans remained evenhanded and cooperative and did not favor other Americans unfairly. In April Wall named the construction division as his representative in the process. Along with the area offices and program managers, Carl Damico, the construction division chief, was to prevent unnecessary disruption of construction and to anticipate any potential problems. Wall wanted Damico and the area offices to conduct regular evaluations of the status of all facilities within ninety days of activation.[33]

Before spring became summer the first turnovers for activation were under way. Not all were as fraught with problems as the first one at Ramon, which Area Engineer Griffis said was "sort of like a

Family housing, complete with camouflage netting, at Ovda.

Mongolian goat grab." The transfer of the ammunition storage area simply "bombed out," according to Griffis. The Americans in the regional civil engineer organization wanted to turn over the entire area at once; the Israelis objected because of pavement flaws in one portion. Problems also appeared at Ovda during turnover of parts of the radio transmitter and receiver work package because of a seven-page list of deficiencies, many of them trivial or irrelevant. Worse yet, Wall found out about the embarrassing situation from Hartung rather than from the area office.[34]

Soon both area engineers saw the need for meticulous planning for the process. Ovda developed a list of prerequisites for orderly and complete turnovers. These needs included early identification of purchasing problems; coordination of procurement and building schedules; identification and correction of deficiencies with available materials; and development of a simple management structure to oversee the process. Ideally, beginning four months before the scheduled transfer, a project engineer with a bill of materials in hand for each facility would keep track of procurement for the structure and of any potential problems. Ovda's

Airmen's dormitories, with solar panels on rooftops, at Ovda.

system put the lion's share of the management burden on Negev Airbase Constructors; the contractor's field facility coordinator became responsible for meeting turnover dates. In doing so, he integrated the procurement and construction schedules and each week updated the exception report on the facility. The contractor also appointed an activation interface coordinator who kept a ninety-day activation schedule and prepared weekly reports on activation and deficiencies for a Corps employee with a similar title. The system was completed with a wrap-up crew. This group of workers from several disciplines eliminated all known deficiencies that they could correct with equipment and materials on hand.[35]

For his part, Wall wanted a list of projected deficiencies thirty days prior to the completion objective date. The area offices provided this list to Damico at the weekly site activation meeting. Thereafter, the area offices updated their deficiency list at the two weekly meetings and presented a final list one week before the expected turnover. At the same time, the area office formally notified the construction contractor of the impending transfer of a facility.[36] A letter from the contract management branch included a reminder

of the upcoming date and specified requirements still unmet. The letter also named the responsible individual in the area office.[37]

In the week that followed, the regional civil engineer and the area office divided the remaining problems into minor "punch list" deficiencies and major shortcomings, such as the lack of doors and air conditioners. The resultant compilation showed the post-beneficial occupancy work requirement. Griffis added other prerequisites for turnover. Before the area office offered a structure to the Ministry of Defense, reasonable access had to be assured. In addition, all utilities, including water, sewer, and electricity, had to be provided unless materials were not available. He also required plans for assuring continued access during the period of paving.[38]

The increase in facility transfers in the autumn signaled the peak of activity for transition from construction camps to air bases. These turnovers showed great improvement over the first ones. The number of work-arounds declined but still made the Israelis unhappy. Typical of the overlaps and complexities of fast-track construction, the deficiencies that caused work-arounds and turnover of incomplete facilities represented many process components—delayed delivery of materials and equipment, late changes to structures, and even incomplete drawings. At Ramon utility problems due mainly to the difficulties involved in digging the trenches for the conduits worsened the situation. Griffis did what he could to fulfill his commitment to provide utilities. "We have," Bill Parkes noted, "just an unbelievable number of portable generators." The main challenge at Ramon became actual completion of facilities so that the construction crews could walk away confident that they would not have to return.[39]

The American site activators prodded the Israelis to accept and move into facilities when they became ready, but the Israelis did not share their urgency. In part their caution reflected uncertainty about what they were getting, and both area offices understood the need for credibility with their customer. The job of overcoming that concern fell to the American members of the Air Force regional civil engineers. The area offices worked only with Hartung's staff, avoiding the distractions of dealing directly with the Israelis. They also cooperated with the activators of both countries in solving problems at the sites to prevent them from becoming political issues in Tel Aviv. All in all, the turnovers caused less difficulty and stress than some expected. Hartung turned out to be a strong central manager of the process, which nevertheless expanded the role of Bar-Tov's program management organization while focusing the attention of all on the facilities that the Israelis needed. Generally, constructors and activators moved cautiously and developed

procedures for dealing with each other that would minimize the number of inefficiencies.[40]

Just as the requisites for joint occupancy came together, the Israeli concern for timely completion became public. Most of the complaints from the Ministry of Defense concerned quality or wasted money. Ma'ayan once told Wall, "You are too concerned with schedules." Nevertheless, in August 1981 the commanding officer at Eitam in the Sinai said that the Negev bases would not be completed in the agreed-on time. American papers picked up the claim, which first appeared in the *Los Angeles Times,* even though Minister of Defense Sharon promptly denied the existence of a lag.[41]

By the joint-occupancy date in October a tremendous volume of construction had been accomplished along with the months of planning for the turnovers. Half of the 120 aircraft shelters stood ready for planes. With only minor corrections still needed, the control towers, maintenance facilities, and many of the community structures for soldiers and their families were finished. Israeli Air Force families started to move onto Ramon at the end of July, adding their safety and comfort to the imperatives facing the area office. Runways were finished also. At Ramon a June ceremony had marked completion of runway "A" four months before joint occupancy. The observance featured the landing of a Mirage fighter by General Ivry and a short address by Griffis, complete with a trilingual greeting—"good morning, bon dia, shalom."[42]

Throughout the months leading to joint occupancy the character of the job at both sites changed visibly. As major facilities were completed, the outdoor work was compressed into more compact areas. Then, as the deadline grew near, much of the effort moved indoors as crews concentrated on finishing touches. Most observers thought the quality of work improved as the year progressed. Some of the private Israeli consultants hired by Bar-Tov's office claimed that this was not so. Bar-Tov sometimes echoed this view, although he finally conceded that in general the bases were well built. Ivry, who more closely reflected the Israeli Air Force attitude, seemed satisfied. He called the Ovda base "operationally . . . the best we knew how to make." Hartung defended Wall against charges of inferior work. He and others thought the consultants' criticisms might have been self-serving, motivated more by their interest in perpetuating their positions than by a concern for quality. Griffis even characterized one group of consultants as "an unethical, sensationalist firm."[43]

Problems with quality control and with creation of an oversight organization had been at their worst in the spring of 1981. Ramon's quality control group had started with too many labora-

tory people and too few field inspectors. This imbalance may have contributed to the difficulties with the cement mix in the previous year. After adjusting the ratio between laboratory and field personnel and firing negligent inspectors, the situation improved. At the same time, Ovda also faced a rash of quality control problems, none more frustrating than the survey busts. Sixteen crews working long hours under pressure inevitably would make mistakes, but Thomas had never seen a job with so many failures. An April reorganization broke up the sixteen crews, which had until then come under one supervisor, into four. However, this action was not enough. Blake and Robert Horton of the area office construction branch urged replacement of incompetent and inefficient workers. The new organization would be fine if it had the right people.[44]

Ramon also had survey problems. In April the contractor annoyed both program managers by situating a transformer building on the site intended for another small structure. All was not lost, as Hartung noted, because "the other building can be moved; there's a place ninety feet down the road that's empty." Nevertheless, Bar-Tov wanted the contractor to pay for the mistake. Hartung put the issue in perspective, asking who was at fault: "Let me put on my contractor hat and ask you, government, where the hell were you while I was making this great mistake? You watched me build it." Wall agreed. Unless he could prove "gross mismanagement," the program would pay, in terms of lost time as well as money. The dispute brought to the fore the conflicting needs for speed and accuracy. If the contractor had to pay for every error, he would work more deliberately, putting the schedule at risk. With this in mind, Wall refused to penalize Air Base Constructors.[45]

Neither quality control by the constructors nor assurance by Management Support Associates inspired complete confidence. The Israelis questioned the construction contractor role. The Americans were generally satisfied with the quality of the bases, but efforts to convince the Israelis of the propriety of constructor involvement did not erase all of their doubts. Others also had reservations. The area offices shared the general Corps reluctance to entrust meaningful technical jobs to a support contractor. Tel Aviv earlier had rejected the Management Support Associates proposal for centralized procurement; the sites never adjusted to the idea of quality assurance by a contractor. In the final analysis L. M. Harris, Wall's assistant for manpower, argued that "the Corps will never accept a contractor management team as equals. There is simply too much tradition and plain old bureaucratic obstinacy at work."[46]

Although Wall's main objective from the start was meeting the deadline for initial operating capability, he believed that the users

One of the first Israeli Air Force fighters to land at Ovda.

would remember the quality of the work long after adherence to the schedule was forgotten. With this in mind, he insisted that the system for quality verification had to work well. To make sure that it did, he relied heavily on the project engineers. The area office construction branches were the focal points for this effort. The managers of the support contractor's quality assurance teams at the sites reported to the respective chiefs of the construction branches, rather than to their own parent organization. Also within the construction branch, project engineers oversaw specific work items or facilities, ascertaining the adequacy of procurement and making sure that schedules were met as well as ensuring quality. Completely responsible for coordination of design, purchasing, and construction for their facilities, they monitored and reviewed progress daily until final acceptance by the user.[47]

Neither area office had an excess of project engineers. Ramon managed the job with two officers and seven civilians divided into seven assignment areas. Three of the nine doubled as a technical support group.[48] Nevertheless, in the summer of 1981 Griffis expressed his pleasure at how well the system worked: "I feel for the

Prime Minister Begin at the formal opening of Ovda Air Base in October 1981, flanked by the Israeli Defense Force's Chief of Staff, General Rafael Eitam (on Begin's right), *and the commander of the Israeli Air Force, Maj. Gen. David Ivry.*

first time in the project that we have a good tool by which to manage the cost-plus contract."[49]

In October the elements of the process came together. However, joint occupancy was not achieved without tension and anger. Hartung once complained that Ramon did not seem intent on completing the shelters, and Wall recommended that a site visit would allay Hartung's fears. The proof was indeed evident at the bases. At Ovda the first Kfir fighter-bomber arrived on 18 October. Six more followed on 8 November. At Ramon four American-built A–4s landed on 25 October, joining another that had come earlier to test the systems in the shelters. The landings did not severely impair construction, but everyone found it hard not to watch. "Most everyone," Griffis wrote, "including me and my staff, generally drop what we are doing and watch the planes take off and land." Perhaps, Griffis hoped, everyone soon would become accustomed to the sights and sounds of the jets.[50]

The construction crews quickly had ample opportunity to become familiar with the noise of streaking jets. Within two weeks full squadrons began operations at both bases. Wall maintained that the project had done more than meet the joint-occupancy goal set by Lewis. "I consider Ramon and Ovda air bases operational on 25 October 1981," he crowed. Since then, he added, "daily aircraft operations . . . have been part of the normal routine." As far as he was concerned, "All in the Corps can take justifiable pride in the Corps/contractor team here in Israel who at the JOD date [*sic*] are providing bases which are operational for at least a squadron at each six months earlier than the IOC date of 25 April 1982."[51]

A small ceremony at Ramon and a large public celebration at Ovda marked the achievement. Prime Minister Begin was among those at Ovda on 8 November. He unfurled the flag of the squadron that would be based there and thanked the United States government for help with the base, which he called "a great asset to Israel [and] an asset to the free world." Recalling that Israel had paid for peace with Egypt by giving up the Sinai with its two fine air bases, he called Ovda "a symbol of our striving for peace." Ambassador Samuel Lewis, the senior American official, echoed the prime minister, calling the American effort part of its partnership with Israel in the struggle for peace. Not everyone agreed that the opening of the new base was a positive step. Some veterans who had come as part of the squadron from Etzion could not hold back their tears. A female soldier shouted at the prime minister, accusing him of abandoning the Sinai and giving the airfields there to the Egyptians.[52]

For journalists too the event brought into focus the still incomplete withdrawal. Few editors resisted puns, mostly ironic, on the name Ovda, which is "fact" or "fait accompli" in Hebrew. Beyond that, some pointed to the project as showing Israel's diminishing autonomy and power. The United States, one writer contended, slapped Israel twice: while turning over the bases to the Israeli Air Force, they provided airborne warning and command aircraft to Saudi Arabia and F–15 fighters to Egypt. He concluded: "The Arabs will defend and secure, the Portuguese will work and build, the Americans will supply and pay, the Europeans will supervise and control. For Israel only one role is left: to retreat. A fact—Ovda."[53]

The expedited completion of the bases carried a high cost. The construction surge in 1981 started as an attempt to assure that the site activation schedule would be met. Management resorted to overtime as well as expansion of the labor force early in the year, which Wall called a "plus-up." Hartung put an $8 million price tag on this growth, which also involved increased housing, equipment, and other support for the extra crews. The additional resources of-

fered the chance to get ahead of the schedule. As Hartung said, "You continue to use that resource as long as you can keep it productive." The results were the dramatic achievement of October and, in Wall's words, "a frightful, frightful cost growth." There were other costs too. The drive toward joint occupancy caused physical exhaustion along the way and an emotional letdown later. As Shepherd said, "After you achieve a milestone such as the JOD, there's going to be a downer."[54]

The 60-hour workweek was common on overseas construction. On some jobs, employees even worked thirteen 10-hour days before getting one day off. Such a schedule carried its own built-in inefficiencies. Long days of honest work, intensified by technology that made for greater productivity, had limited value. Two such weeks produced more results than two but less than three 40-hour weeks. Overtime exacerbated the situation. Ovda pushed its work force into 12-hour days for six weeks, even with the knowledge that beyond 10 hours the returns diminished rapidly. The effects of such long hours could be mitigated by extending the noon hour, but this step never seemed necessary. Shortly before the joint-occupancy date, General Wilson reminded Wall that "overtime beyond the 60-hour workweek should be avoided." He pointed out that "studies show that increased overtime results only in worker fatigue and production is actually reduced."[55]

Despite the effort and the success that it brought, much work remained. A reporter who visited Ramon for the Israeli Air Force's monthly magazine noticed "a new [dormitory] building, shining, beautifully built" that had no paved approach. In the family housing area, the homes were "lovely, air conditioned," but again without pavement. Overall it was "still a long way to the completion of the whole project."[56] Management too had plenty to do before the project could be considered finished. The huge labor force would have to be reduced while the bases were being completed. The financial issues, which seemed always to straddle the line between internal questions and broader political issues, still needed solving. And, finally, the whole organization needed to finish the job and leave Israel. The job ahead amounted to activation of the bases and deactivation of the project.

Notes

1. Wall interview, May 81.

2. Kelly interview, May 81; Graw interview, Apr 81; Brown interview, Apr 81.

3. Davis interview; Graw interview, Apr and Oct 81; Kelly interview, May 81.

4. Peterson interview, Oct 81; Kelly interview, Oct 81; Wall interview, Oct 81; *ENR* 208 (22 April 1982): 75; Telex, NEPO to OAO, 30 Sep 80, sub: Nesher Cement Production Slowdown, IABPC, 33/3; OAO, Master Diary, 23 Oct 80, IABPC, 84/2; Griffis, P&C Journal, 22 Oct 80, IABPC, 41/1; Memo, Wall for PM, 30 Mar 81, sub: Deferment of MSA Cement Procurement, IABPC, 25/1.

5. Interv, author with Joseph R. Shaw, Oct 81 and Apr 82, Tel Aviv, Israel; Hartung interview, Apr 81; Shepherd, Daily Journal, 26 Feb 81, IABPC, 89/1; OAO, Master Diary, 27 Mar 80 and 14 and 15 May 81, IABPC, 84/4, 85/1; Memo, Gilkey for Area Engineers, 19 May 81, sub: Cross Leveling Conference, IABPC, 18/9; Ltr, Baer, Chief of Construction Division, NEPO, to Area Engineer, Ramon, 15 Apr 80, sub: Capital Equipment, IABPC, 33/1; *ENR* 208 (22 April 1982): 75.

6. The FAST contractor was made up of three constituent companies: Harbert International, Inc.; Paul N. Howard; and Louis Berger International; all of which were associated with the Perini Company as part of the Negev Airbase Constructors consortium at Ovda.

7. USACE, Permanent Orders 17–1, 10 Aug 81, IABPC, 87/9; *ENR* 207 (20 August 1981): 21; *ENR* 207 (10 September 1981): 13; Graw interview, Oct 81; Shaw interview, Apr 82; *Wall Street Journal*, 11 Mar 82; *Washington Post*, 18 Mar 82; USACE, Permanent Orders No. 33–2, 13 Oct 82, IABPC, 87/9; USACE, Permanent Orders 2–1, 16 Jan 84, IABPC, 87/9. The history of SCMO can be traced through the compilation of documents in U.S. Army Engineer Sinai Construction Management Office, After-Action Report: Construction of Facilities in Sinai Desert [1983], Office of History, HQ USACE files.

8. McNeely interview, Mar 84; Intervs, author with John E. Moore, Oct 81 and Apr 82, Tel Aviv, Israel; with Lt Col Steven G. West, Apr 82, Tel Aviv, Israel; with Alfred Lellis, Apr 82, Tel Aviv, Israel; with Leonard H. Gregor, Oct 81, Tel Aviv, Israel; USACE, Permanent Orders 17–1, 10 Aug 81.

9. Hartung interview, Apr 81; Memo, Wall for DOD PM, 2 Feb 81, sub: Restocking Charges for Fiat-Allis Spare Parts, IABPC, 25/3.

10. Wall interview, Oct 81; Graw interview, Oct 81; Kelly interview, Oct 81.

11. McNeely interview, Mar 84; N. Steinberg interview; J. Robert Moskin, *Among Lions: The Battle for Jerusalem, June 5–7, 1967* (New York: Arbor House, 1982), pp. 206, 218, 240–41; Bar-Tov interview, Aug 80, Apr 81, Oct 81, and May 82; Wall interview, May 81; MFR, Wall, 25 Jan 81, sub: LTG Joseph K. Bratton's Visit, 9 Through 14 Jan. 1981, IABPC, 75/1; Wall, Project Notebooks, vol. I, 22 Jun 80, IABPC, 90.

12. Wall, Project Notebooks, vol. IV, 18 Dec 80, IABPC, 90; Wall, Briefing for Incoming Officers, 14 Jun 81; USACE CERL, *Project Manager's Handbook for Special Projects*, Technical Rpt P–85/01, p. 48; Memo, Wall for DOD PM, 10 May 81, sub: ECPs, IABPC, 34/1; Memo, Gilkey for Area Engineers, 19 May 81, sub: Policy on Initiation of ECPs, IABPC, 34/1; Ltr, Hartung to Bar-Tov, 25 May 81, sub: ECP Summary, Hartung file, June–July 1981, IABPC, 49/13.

13. Shepherd, Daily Journal, 12–23 Mar 81, IABPC, 89/1; OAO, Master Diary, 16 and 18 Mar 81, IABPC, 85/1; MFR, Blake, 26 Mar 81, sub: Minutes of a Meeting with BG Wall and His Principal Staff, the Area Engineer and His Staff and the

Principals of the NAC Organization to Discuss Cost Growth and Materials Estimates, in OAO, Master Diary.

14. Wall interview, Oct 81; Wall, Project Notebooks, vol. V, 13 Mar 81, IABPC, 90; Shepherd, Daily Journal, 12 Mar–3 Apr 81, IABPC, 89/1.

15. Wall, Project Notebooks, vol. V, 31 Mar 81, IABPC, 90.

16. Wall, Project Notebooks, vol. V, 24 Apr, 8 May, and 14 Jun 81, and vol. VI, 24 Jun 81, IABPC, 90.

17. Wall, Project Notebooks, vol. V, 8 May 81, and vol. VI, 25 Jun 81; Peterson interview, Oct 81; Shaw interview, Oct 81.

18. Reimer interview, Feb 82; Moore interview, Oct 81; Shaw interview, Oct 81; Wall interview, Oct 81; West interview, Oct 81.

19. Wall interview, Oct 81; Ltr, Maj Gen Wilson to Wall, 30 Sep 81, sub: OCE Special Task Force Findings, IABPC, 58/1.

20. Hartung interview, Oct 81; Bar-Tov interview, May 82; Wall interview, Oct 81.

21. Wall interview, Oct 81; Shaw interview, Apr 82; Brown interview, Apr 82; U.S. Army Corps of Engineers, *Manual for Administration of Cost-Plus-A-Fixed-Fee Construction Contracts* (Washington, D.C.: OCE, 1 Jan 51), p. 9.

22. Hartung interview, Oct 81.

23. Graw interview, Apr 81; Wall interview, Oct 81; Peterson interview, Oct 81; Shaw interview, Oct 81.

24. Wall interview, Oct 81; Chapla interview, Aug 80; Memo, Wall for Contracting Officers, 17 Sep 81, sub: Control of Contractor Obligations, IABPC, 18/9; West interview, Oct 81.

25. West interview, Oct 81 and Apr 82; Hartung interview, May 82.

26. West interview, Oct 81; Memo, Wall for Contracting Officers, 17 Sep 81, sub: Control of Contractor Obligations; Memo, Moore for Manager, Israel Branch, DCAA, 20 Sep 81, sub: Request for Materials Cost Audit, file 301–07, Financial Management Reference Papers (1981), IABPC, 18/8; Ltr, Wall to Wilson, 17 Sep 81, sub: OCE Audit Team Results, IABPC, 58/1.

27. Ltr, Wall to Wilson, 17 Sep 81, sub: OCE Audit Team Results; Chapla interview, Apr 81; Ltr, Wilson to Wall, 30 Sep 81, sub: OCE Special Task Force Findings; Ltr, Wall to Hartung, 9 Oct 81, sub: Funding Increase to the Plan of Work (POW) for the Israeli Airbase Program, IABPC, 49/15; Ltr, Wall to Wilson, 13 Oct 81, sub: Program Cost Underestimate Management, IABPC, 58/1. For General Provision 3(d), Limitation of Funds, see, for example, Contract for Design and Construction of Airbase, Ovda, Israel, 18 May 79, IABPC, 38/2.

28. Shaw interview, Oct 81; Chapla interview, Apr 81; Hartung interview, Apr 81.

29. Wall, Project Notebooks, vol. VI, 2 and 11 Aug 81, IABPC, 90.

30. Wall, Project Notebooks, vol. VI, 14 Oct 81, IABPC, 90.

31. Wall interview, Oct 81; Parkes interview, Oct 81.

32. Telex, USDAO Tel Aviv (Gilkey) to DAEN-MPC, 20 Apr 79; Thomas interview, Apr 80; Ltr, Gilkey to Hartung, 18 Mar 80, sub: Construction/Site Activation Schedule Interface—Ovda Air Base, IABPC, 32/3; Ltr, Wall to Wray, 2 Oct 80, sub: Construction Site Interface Schedule, IABPC, 33/4; Butler, ABC Weekly Sitrep, 28 Oct 80, ABC Weekly Sitreps, July–Dec. 1980, RAO file 201–02, NEPO files, Box R–1.

33. Proceedings of Press Conference, 12 Jun 80; OAO, Master Diary, 6 Jan and 3 Feb 81, IABPC, 85/1. This evaluation focused on four areas: the degree of completion required for the Israelis to begin installation and check out; special Israeli requirements, including priority work space, room for support equipment, open storage at the facility, temporary utility supply, and specific security arrangements; the nature of the work to be done by Ministry of Defense crews, the projected number of activators in a facility, and the duration of their work; and problems that might affect the schedule. Memo, Wall for Area Engineers, 22 Apr 81, sub:

NEPO/IABAO/IABAR Procedures as Concerns Construction Site Activation Interface Planning, IABPC, 25/3.

34. RAO, Daily Journal, 1 and 10 Jul 81, file 1515–13, NEPO files, Box R–1, IABPC, 48/8; OAO, Master Diary, 4 and 5 May 81, IABPC, 85/1.

35. OAO, Master Diary, 6 May 81, IABPC, 85/1.

36. There are numerous late-1981 examples of this type of letter in the Ramon central reference files. For example, see Ltr, Griffis to Butler, 20 Aug 81, sub: Construction Interface—Site Activation: Final Turnover of Permanent Facility No. 37, Facility Item No. 275, Site Work for Temporary Synagogue, IABPC, 23/5.

37. Procedures for Turn-over of Facilities, Attachment to Memo, Wall for Area Engineers, 7 Jul 81, sub: Upward Reporting—Facility Transfer, IABPC, 49/13.

38. Ltr, Griffis to Wall, 21 Aug 81, sub: Site Activation Interface Meeting of 9 Aug. 1981, IABPC, 24/1; Kelly interview, Oct 81; Moore interview, Oct 81; Peterson interview, Oct 81; Parkes interview, May and Oct 81.

39. Parkes interview, May and Oct 81; Kelly interview, May and Oct 81; MFR, Grafa, 6 May 81, sub: Minutes of General Staff Meeting for 6 May 1981, in OAO, Master Diary, IABPC, 85/1; RAO, Daily Journal, 14–16 Jul 81, IABPC, 48/8.

40. Moore interview, Oct 81 and Apr 82; Kelly interview, Oct 81.

41. MFR, Wall, 25 Jan 81, sub: LTG Joseph Bratton's Visit, 9 Through 14 Jan. 1981; *Los Angeles Times*, 15 Apr 81; (Long Island) *Newsday*, 17 Aug 81; *Jerusalem Post*, 17 Aug 81.

42. RAO, Daily Journal, 1, 9, 12–16, 25, and 27 Jul 81, IABPC, 48/8; Brochure, Ramon Airbase Sunday 28 June 1981, First Aircraft Landing, IABP files, WNRC, Accession 77–83–1005, Box 2; *Jerusalem Post*, 3 Jul 81.

43. Wall interview, Oct 81; Peterson interview, Oct 81; Hartung interview, Oct 81; Parkes interview, Oct 81; Bar-Tov interview, Oct 81; *Jerusalem Post*, 9 Nov 81; RAO, Daily Journal, 29 and 30 Sep 81, IABPC, 48/8.

44. Parkes interview, May 81; Thomas interview, Apr 81; Kelly interview, May 81; OAO, Master Diary, 23 Apr 81, IABPC, 85/1.

45. Griffis, P&C Journal, 23 Apr 81, IABPC, 41/1; Hartung interview, Apr 81; Wall interview, May 81.

46. Wall interview, Oct 81; Grafa interview; Bar-Tov interview, May 82; Shepherd interview, Oct 81 and May 82; DF, Harris to the Project Manager, 5 Sep 80, sub: MSA Lessons Learned, IABPC, 86/1.

47. Wall interview, Apr 80 and Oct 81; RAO, Office Memorandum 10–1–2, Realignment of Function of Construction Branch—Ramon Area Office, 17 Feb 81, IABPC, 23/5; Memo, Carl R. Smith, Chief, Construction Branch, RAO, for Construction Branch Personnel, 9 May 81, sub: Letter of Instruction—Project Engineer, IABP files, WNRC, Accession 77–83–1001, Box 1.

48. The seven assignment areas were shelters, including mechanical systems; concrete facilities; preengineered buildings; mechanical and miscellaneous systems; roads and runways; utilities distribution; and utilities structures. DF, Taylor to Project Engineers, 1 Jun 81, sub: Assignment of Project Engineers, IABP files, WNRC, Accession 77–83–1001, Box 1.

49. RAO, Daily Journal, 15 Aug 81, IABPC, 48/8.

50. Ltr, Hartung to Moore, 18 Sep 81, sub: Construction Completion Scheduling, IABPC, 49/14; Ltr, Wall to Hartung, 1 Oct 81, sub: Construction Completion Scheduling, IABPC, 49/15; OAO, Master Diary, 18 Oct 81, IABPC, 84/3; *Philadelphia Inquirer*, 9 Nov 81; RAO, Daily Journal, 23–27 Oct 81, IABPC, 48/8.

51. Ltr, Wall to Bratton, 5 Nov 81, sub: Monthly Progress Report, Israeli Airbase Program, IABPC, 88/6.

52. Remarks of Prime Minister Menachem Begin, 8 Nov 81, IABPC, 74/3; Ltr, Wall to Wilson, 8 Nov 81, IABPC, 74/3; (Tel Aviv) *Ma'ariv*, 13 and 20 Nov 81.

53. (Tel Aviv) *Ma'ariv*, 10 Nov 81.

54. Kelly interview, Oct 81; Hartung interview, May 82; Wall interview, May 82; Shepherd interview, May 82.

55. Wall interview, May 82; Blake interview; Peterson interview, May 81; Butler interview; Davis interview; Grafa interview; Ltr, Wilson to Wall, 30 Sep 81, sub: OCE Special Task Force Findings, IABPC, 58/1.

56. Merav Halperin, "The Inauguration of Ramon and Ovda," *Biton Heil Ha'avir*, Oct 81.

CHAPTER 14

Activating the Bases Deactivating the Project

November 1981–August 1982

I guess I have spent more time, got more white hairs, lost my temper more times on this damn money issue than any other issue.

Brig. Gen. John F. Wall, May 1982[1]

There is no question that we have had quite a disagreement on the cost management . . . between the Corps of Engineers and this office.

Brig. Gen. Paul T. Hartung, May 1982[2]

Whenever you get into a close down operation and people are changing jobs, the anxiety level goes up.

Col. John E. Moore, Deputy Project Manager[3]

The autumn of 1981 was marked by an uneasy combination of achievement and disappointment. The schedule would be met. Of that, there was little question. However, money issues loomed ever larger, became more time consuming and sensitive, and left little time to savor accomplishments. The likelihood of an overrun was becoming more apparent to Wall. In addition, tensions among the managers increased as the project neared the financial brink several times, and Hartung and Wall confronted one another over the final cost and how it would be paid. Even before 25 October and joint occupancy, Hartung and Wall skirmished over a budget increase. Early in the month Wall told Hartung that planning would be based on an estimated completion cost of $1.077 billion, which was in line with the August estimating team's figure. He also alerted the program manager that the project would run out of money and exhaust its authority to obligate funds in January. Without an infusion of funds by 30 November, the contractors would have to begin demobilization.[4]

Otherwise, Wall considered several possibilities. These included deobligating money from the Management Support Associates contract and diverting it or portions of the program management budgets to the construction contracts. He also considered using unpaid contractor fees to keep the work going. "These are all," Lt. Col. Steven West of Wall's staff conceded, "extremely drastic actions." They were also unacceptable, so 30 November loomed as "a critical milestone." The real choices, which rested with the Ministry of Defense, came down to providing the money or reducing project scope.[5]

Hartung disagreed with the assessment on which these choices hinged. He still believed that "the funding deficit of $40 million . . . may be exaggerated, at least at this time," but recognized that some extra money might be needed. Until he was satisfied with Wall's figures and could use them as a basis for convincing the Israelis to put more money in the job, he held fast to a final cost estimate of $1.008 billion. "John," he told Wall, "I'm convinced you can manage this thing within the money as long as you stay hard nosed." For Hartung, the question centered on the validity of the obligations anticipated by Wall. For example, all of Wall's estimates for the three prime contracts contained some costs that were likely to be disallowed or suspended. Hartung estimated the amount likely to be withheld at $4.1 million. He also cited what he viewed as an overestimate of $2.8 million in the support contract: fifty-nine jobs for which return air fare and shipment of household goods to the United States had been budgeted had been filled with people hired in Israel. Overall, he thought Wall's figures had too many estimates of what might happen—contingencies—rather than obligations for which funding had to be provided.[6]

If more money did prove necessary, Hartung did not want to give it to Wall in one sum. He and Bar-Tov thought that any additional need would be for less than $40 million. Ma'ayan was also reluctant to accept Wall's figures without concurrence by the program managers and agreed to provide more money only on an incremental basis. Hartung, who had long been frustrated by his lack of control over funds, was comfortable with this position. With an air of finality, he reported that "additional 'dependable undertaking' as determined to be required will be provided on an incremental basis as MOD does not want excessive obligation authority to pass directly to the construction agent as has been done in the past."[7]

There was another reason for the Israeli desire to fund the rest of the project incrementally. Although the initial government-to-government agreement obligated Israel to pay all of the bills beyond the American grant of $800 million, the Israeli portion ulti-

mately came from money borrowed from the United States. Incremental allocations to the air base project stretched out the loans and minimized their interest payments.[8]

As of early November Wall remained adamant about the need for more money. If he did not get it by the end of the month, he would be unable to prevent the diversion of contractor resources to demobilization planning. The disagreements with Hartung over what constituted an obligation could be worked out, but right now he needed money. He opposed incremental funding as an impediment to planning. However, he was willing to take $30 million rather than the $40 million he thought he needed to finish. With careful management and detailed monthly reviews, he would try to reduce costs wherever possible.[9]

A few days later Wall again reduced the amount. In response to Hartung, he cut his immediate request to $23.5 million. Later, he would in all likelihood need more. According to Wall, Hartung had to decide "whether or not it is politic to go only once to the well—to GOI and DSAA—or to do so a number of times." The program managers had held back from officially notifying the Defense Security Assistance Agency of an impending overrun. The agency would likely take a month to provide the money Wall needed in three weeks. "It appears to me," Wall wrote, "that time is of the essence." As far as incremental funding was concerned, he remained firmly opposed. Bratton supported Wall, reminding General Gilbert of the Air Force that the agreement between the governments did not mention such an arrangement and specified only that funds would be made available as needed. The original $800 million had been given to the Corps in one sum; the remaining need should be filled the same way—and soon, Bratton added, stressing "the critical requirement for additional authority well before 30 November 1981."[10]

Hartung misunderstood Wall's position. He interpreted Wall's willingness to reduce the sum he wanted as acceptance of increments. Working from this assumption, Hartung proposed a few small adjustments in the program budget and a total additional sum of $26 million, issued to the project in four installments, at the end of November, then again in December, January, and March. Such an arrangement, he claimed, would provide the chance to determine adjustments monthly.[11] It also would give him the control that he had sought from the beginning.

Wall's clarification of his position crossed Hartung's proposal in the office mail. Wall insisted that "the money should be given the project in accordance with what I understand the MOU between the USAF and USACE states." He had cut his request as Har-

tung and Air Force Lt. Gen. James H. Ahmann, the new head of Defense Security Assistance Agency, had asked. Still, he reminded Hartung, "I am not in favor of any plan to incrementally distribute the additional funds required." Wall saw that a confrontation over this issue was likely and sought a way to resolve the dispute. Hartung told him that the money was going to be provided in increments "or I won't be here." Wall insisted that he had to be told in writing that the money was on hand. He suggested a series of letters of credit from the Ministry of Defense—six at $5 million each and five more of $2 million each—which could be used as scheduled or necessary. This solution would guarantee availability of the money he needed and provide a dependable reservoir for obligation authority through closeout while honoring the Israeli desire to hold down interest payments.[12]

Hartung finally notified Bar-Tov's office of Wall's stated need for $40 million. He still thought Wall's estimate contained "unquantifiable hidden contingencies" and that the plan for phasedown was "not as aggressive as it should be." Because of overstated needs due to these factors, Hartung thought Wall's estimate remained too high and that monthly adjustments of the funding plan would reduce the total. Meanwhile, incremental funding remained the answer. Wall's marginal notes on his copy of this letter to Bar-Tov—the sad face on the top, "B.S." several times and "not true" alongside the text—reflected his unhappiness and frustration. He knew he was far from a resolution to the impasse.[13]

On 19 November the three generals had a day-long session on the issue. Wall accepted $19 million, which was more than the first increment of $8 million that Hartung had offered and less than Wall's $23.5 million compromise figure. The amount also matched West's expectations: in October he had anticipated that Wall would get his $40 million less $16 million contingencies and $7 million for contract closeout. Hartung's claims that the phasedown plan was inadequate and that the estimate had "unquantifiable hidden contingencies" still bothered Wall, but he wanted to get past the squabbling. "I hope," he wrote after the meeting, "that the initial increment of our required funding is provided quickly and that our detailed re-evaluation of total requirements in December leads to reestablishment of synergistic relations between the DOD elements of the program."[14]

At the end of December the next round of financial talks started. Wall gave Hartung a schedule of his needs for the remainder of the project. By this time Wall tacitly had come to terms with incremental allocation and couched his needs accordingly. He wanted $10 million by 1 February, $6 million by 1 April, and an-

other $6 million a month later. By then it was becoming clear that Wilson and Gilbert planned to send representatives to Israel for an independent analysis of the cost of the remaining work. For the moment Wall stood by his own staff's assessment.[15]

With the focus on finances, it was only a matter of time before another estimating team assessed the situation. Wilson planned to visit the program during the winter and wanted Wall's judgment of the final cost. Wall recommended that Wilson's own estimator, John Reimer, make the determination. "You should not," Wall recalled arguing, "believe me since Hartung feels so vehement about this. You send your guy over and put me to the test. Make me prove that I am right." Wilson wanted to know where the project stood, including the total cost of construction to date. He also asked the team to estimate the time, manpower, and money needed to finish the job, based on the Near East Project Office's phasedown plan.[16]

The team grew more complex, with representatives from the U.S. Air Force and Bar-Tov's office. Wilson told his engineering division to include both program management organizations. Bar-Tov, apparently ignorant of Wilson's desire for Israeli membership and unwilling to wait for an invitation, asked to participate. Neither Wall nor Hartung objected, and the composition of the team was set. At the outset, a truly joint effort appeared to be taking shape, with Reimer as chairman and team leader. If all went well, the team would resolve what Wall knew to be "deep-seated feelings and real disagreements on the cost issue." The Air Force contributed two members. The senior person was Charles K. Hudson, who was special assistant to Brig. Gen. Clifton D. Wright, the deputy director of engineering and services at Air Force headquarters. Hudson oversaw critical Air Force programs in Saudi Arabia, facilities for the MX missile, and the Israeli job. The other Air Force member, Maj. Edward L. Parkinson, ran the construction cost-management group in the Air Force Engineering and Services Center at Tyndall Air Force Base, Florida. Set up in the spring of 1981 along lines recommended by a committee under Hudson, Parkinson's office gave the Air Force an "in-house cost management/analysis capability to evaluate construction programs for new weapons and research facilities." This mission entailed provision of independent estimates and cost analyses of major long-term construction.[17] As long as the Corps of Engineers acted as construction agent for the Air Force, this job essentially came down to second-guessing the Corps.

With the team assembling in Tel Aviv, Wall delayed asking for more authority to spend money. He gave Hartung a draft of a letter he intended to send him, pending Wilson's approval. Wall was will-

ing to accede to Hartung's "urgent request" and "take a risk and attempt to continue funding current construction up to 1 March within the present obligation authority." He had "a dangerously bare-boned plan," to get the project through until the estimators reported at the end of the month. Thereafter, if more money was not at hand, he faced having to start demobilization activities, a possibility which came up several times during that winter and spring.[18]

Unlike earlier estimates, this one left little room for imagination. Too much had already been done at the sites for that. Reimer's method of operation reflected the current situation. He worked independently of Wall's office, except when he had questions for the staff. His team looked at every building in every facility, noted remaining work, determined previous productivity on that kind of work, and made projections. As he put it, "We spent many hours walking through the buildings and making engineering analysis on work remaining to come up with the remaining man hours and equipment and the estimate that was prepared."[19]

Soon, the team began to unravel. Reimer and Hudson strongly disagreed about methodology. Reimer wanted to do the analysis as of 31 December 1981, while Hudson insisted that all disbursements be taken into account as made and the estimate be adjusted for each. Hudson also wanted to go beyond an estimate of resources needed to complete the job. He wished to assess the validity of earlier outlays and even determine which contractor costs might be disallowed. Perhaps seeking to show the lowest possible final cost, he wanted the estimate to reflect credits that would accrue at the end of the program. These awaited final adjustment of the costs of subcontracts and various refunds to the program, among them value-added taxes that had been paid on purchases in Israel, commissary profits, and workmen's compensation insurance rebates. The exact amount, Reimer insisted, could not be determined yet. Moreover, the money from these sources would not be available until after the job was done. So these sums could not be counted against the amount needed to finish.[20]

The inability to reach a basic agreement frustrated Hudson as well as Reimer. Hudson and Parkinson finally abandoned the effort and went sightseeing in Jerusalem, while Reimer told Wall that "an impasse existed" and that the briefing scheduled for 1 February should be "either delayed or canceled." Wall asked Hartung to cancel the meeting. He shared Reimer's pessimism and his feeling that the Air Force had sent people who acted more like "management head hunters" than estimators. Without a consensus on method, mutually acceptable conclusions appeared unlikely. Wall

still hoped for an accommodation but was becoming convinced that "the joint team bit is impossible."[21]

The events of the next day confirmed Wall's view. Early on 2 February, while Reimer ate breakfast, Parkinson took some working papers out of Reimer's desk and file cabinet, and photocopied them. He packed much of what he took with other papers in a carton, addressed it to himself at Tyndall, and left it next-door at the Air Force post office for mailing to the United States. Meanwhile Reimer searched frantically for his notes, some of which Parkinson returned later in the morning without explanation. Lt. Col. Robert Amick, Wall's security officer, found the box at the post office. He called Hartung, who drove to the Palace from his office at the IBM Building, picked up the carton, and drove off. Later he returned some documents to Reimer. Wall and his staff never learned the exact contents of the box and did not know what—if anything—Parkinson sent to Tyndall. In any case, it was obvious that an estimate on which all parties could agree was no longer possible.[22]

The episode raised two questions. One involved a possible breach of security. Wall believed that some of the papers that were taken, notably the Ovda contractor's monthly cost and man-hour printout, contained "somewhat sensitive information that required special handling." Bar-Tov expressed his "deep disappointment" with "the method and the quality of the work." However, the Israelis, who had an officer on the team, never voiced a concern regarding the pilfered documents. In fact, Wall's deputy, Col. John E. Moore, thought they viewed the matter mainly as "squabbling among the gringoes."[23]

The affair also highlighted the deterioration of relations between Hartung and Wall and their offices. Some of Wall's staff reacted angrily to the episode, which became known around the Palace as "Parkinson's disease." Moore considered Parkinson's approach "outside the team" but thought he acted more from excessive zeal than lack of principle. Others showed less understanding. Amick called the removal of the papers "a breach of ethics." Wall, who understood that Parkinson "had a lot of pressure from his mission and [Hartung] and others," still saw his actions as "gross and base." He asked Hartung, "If the situation had been reversed and an Army officer had acted as apparently did Parkinson, I wonder how seriously you would have viewed the situation?"[24]

The Air Force did not view the matter as seriously as did Wall. After the incident, neither Parkinson nor Hudson took part in the analysis, although they stayed in Israel. On 6 February, when Reimer presented his estimate of $1.086 billion, including $10 million for contingencies, they were present, seated with Hartung's

staff. Wall decided against a formal protest and confined his expressions of outrage to his notes to Hartung. With a new sum corresponding closely to Reimer's August 1981 estimate and no progress toward a consensus on the numbers, the effort yielded only more mutual annoyance and suspicion. Only the Air Force Directorate of Engineering and Services' official history hinted, however obliquely, of the embarrassment that the episode represented for the Air Force. The semiannual volume produced while the team was in Israel mentioned the mission and their objective, "an agreed-upon program amount."[25] Later issues did not mention the group's existence, let alone its failure.

Soon after the team left, Wall's office again neared the financial brink. His financial staff maintained only fifteen days of reserve, which meant about $10 million. On 10 February the money dwindled to only $2 million—"on the thin edge," according to Wall—before urgent phone calls to Washington made an additional $13 million available.[26]

By this time, the problem was exacerbated by demands from the American embassy in the name of amicable American-Israeli relations. Tensions between the long-time friends were on the rise, as the prospect of a large Israeli military operation in Lebanon jeopardized the Camp David accords and the treaty with Egypt. Ambassador Lewis sought to keep the program from creating another—albeit minor—source of friction. With the financially strapped Ministry of Defense's fiscal year ending in March, he tried to defer the program's financial demands on Israel. He claimed it was not in the interest of the United States to ask for more money before the new accounting year. At a January meeting with Wall, Lewis was "extremely adamant," according to Griffis, about restraint. John Brown also recalled that Lewis exerted "tremendous pressure . . . to get past April 1."[27]

Wall did his best to reach April without further payments, sometimes with substantial consequences for construction. At Ramon Griffis noted the threat to some completion schedules. "I hate that that's happening," he told his staff, "but the override decision-making criteria is the fact that we do not go to the Government of Israel before the 1st of March [*sic*] for any additional obligation authority. This requirement," he added, "overrides any other construction requirement."[28]

During the austere time before the project obtained more money in April, help came from an unexpected source. Management Support Associates made available $2 million that had been committed to its operation. Wall used some of the money to pay the construction contractors and later returned the entire amount

to the original account. Wall was unstinting in his praise: "The only reason I got to the first of April was because I deobligated funds from MSA, because they knew it was important to the program and to the government of Israel and to our nation and the ambassador." General Manager Shepherd was fiercely loyal to the project. "Under no circumstances," he declared, "would I ever put the project at jeopardy for selfish gain."[29]

This extraordinary transaction owed a lot to Wall's support of Shepherd's beleaguered organization. Bar-Tov considered the firm "a big waste of money, period." Hartung agreed and in the fall of 1981 had recommended terminating the support contract. Wall took "strong exception" to Hartung's claim that a combination of temporary government employees from the United States and increased Ministry of Defense help would provide technical assistance and life support for less money. "I could not," he wrote Bratton, "disagree more with this scheme." Wall appreciated the contractor's flexibility and dedication and viewed any change at that time as distracting and time consuming. Moreover, the decision on the organization's future belonged to him, not to Hartung. Wall intended to win this battle and did. To make sure, he sent copies of his response to Hartung to Wilson, Bratton, Ahmann, and Deputy Chief of Mission William Brown at the embassy, all covered with personal notes. In March 1982, with the project on the financial brink, his loyalty to Management Support Associates paid great dividends.[30]

Before the end of March Wall got an infusion of money for use during the following month. Hartung had recommended that no more than $10 million be authorized. However, this increase in the dependable undertaking came to $14 million, the sum Bar-Tov considered sufficient to carry the project into June. By that time, it was becoming clear that only one more payment would be necessary to finish.[31]

Hartung still maintained that the program could be finished for the original program amount. No argument by Wall or Bar-Tov could ever convince him that more money was really needed. Defense Contract Audit Agency's Maloney, whose formal audits persuaded him that even Wall and the contractors underestimated the cost of the job, never understood how the program manager's staff got its figures: "They just seemed to me . . . to have really no understanding of an accounting system." Nevertheless, Hartung persisted in the belief that tighter management was all that was necessary.[32]

The financial situation greatly affected the whole operation. In the field, as Colonel Griffis had complained in February, cuts in manpower pushed back scheduled completion of some facilities.

But the most serious effect was felt in Tel Aviv, where management focused on "constantly fending off this financial disaster." This preoccupation came at the expense of cost reviews, such as analysis of the effectiveness of overtime. It also created the need for stringent control of current spending. For example, in early March Wall curbed the authority of the contracting officers still further. During the previous autumn, he had reduced their authority to approve purchases from a $25,000 limit to $1,000. Now he required his resource manager to certify the availability of funds before the contracting officers incurred even the smallest obligations. This bureaucratic control cost the program money, but just as important was the anxiety it produced. "When . . . you end up," Moore observed, "at the end of the month with $158,000 in the till, when . . . every voucher that comes in is . . . in excess of several million, it tends to make a few of the folks a little uneasy."[33]

At the end of April the project needed one more infusion of money. The job had started with the Near East Project Office in control of a vast sum and was ending with short-term drawdowns. While there was a general understanding that fast-track construction represented a state of flux, this change was unexpected. Nevertheless, by the spring the painful transition to incremental funding had been made.

Any time not spent walking the financial tightrope was devoted to phasedown, with reorganizations, changes, and reductions in personnel. In 1980 Bratton had instructed Wall to turn his attention to this matter. In addition, Wilson kept pressing for early completion of planning. "Austerity, control, and allocation," he told Wall at the end of September 1981, "must be the guiding principles." He wanted Wall's overall plan by the first of December but underscored the need to get the project out of the Palace as quickly as possible.[34]

Earlier in 1981 Wall had brought Jack Clifton up from Ramon to develop a phasedown plan. Clifton tried to set up a flexible and orderly framework that tied phasedown to construction progress. His concept divided the effort into four periods. Phase I, involving peak construction, concurrent site activation, and gradual reduction in the work force, went from August 1981 through March 1982. In the next period, construction was finished; the project turned over property and facilities to the Israelis, consolidated functions, and significantly reduced personnel. At the end of phase II, in September 1982, the project personnel would leave Israel. The third period—audits, claims, reconciliations, and closeout in the United States—would last until June 1983. The final administrative closeout of the contracts in phase IV would be

decentralized to the offices of the contractors for conclusion by the end of 1983.[35]

Clifton's replacement, Lt. Col. Leonard C. Gregor, made no major changes to the plan. With construction still not done, he found "too much uncertainty out there in the future as far as the . . . construction job progress to really nail down where you're going in phasedown." Direct labor at the sites was still the key variable to which logistical and administrative support was tied. "So much of the support here in Tel Aviv," Gregor observed, "is contingent on exactly when we're going to turn over these facilities and phase the direct labor out of here." Moreover, the lack of a firm decision on a location for closeout made it hard to determine who in the Corps would stay with the project until the end.[36]

In October 1981, while the project raced toward joint occupancy, Wall set up a task force to plan for manpower reductions. The group included Moore, deputy commander; Louis R. Unzelman of Management Support Associates; and Thomas, former chief of engineering and now Wall's assistant for technical affairs. With Gregor about to go home, Thomas managed reductions of government personnel and relations with the Sinai Construction Management Office. Wall wanted the task force to review the phasedown plans of the area engineers and suggest changes. Overall, they were to ensure the best use of available people. "I expect you to meet with resistance" from the area offices, staff sections, and the general managers of the contractors, Wall told them. "Do not let this resistance deter you from completing your mission in an objective and clinical manner."[37]

In the fall, while Wall's office faced the technical difficulties in reconciling phasedown with an unclear construction future, there was significant disagreement on the proper pace for the effort. The questions centered on priorities and perspectives. Hartung, who was concerned mainly with keeping costs down, insisted that the Corps paid too little attention to reducing the direct labor at the sites and had no real plan for cutting back, "just a series of ideas." Wall, meanwhile, cut overtime to 5 percent. He also issued three schedules for reducing contractor forces. These plans showed the number of workers at joint occupancy and the relationship between direct and indirect labor, both at that time and projected into the future. Wall required the area offices and Management Support Associates to make the monthly cuts in these manpower plans by the fifteenth of each month (*Tables 4 and 5*).[38]

Griffis at Ramon protested the severity of the cuts. He claimed Wall's office cared only about placating Hartung. Any reductions before the end of January would threaten his schedule, which re-

TABLE 4—APPROVED MANPOWER PLANS FOR AREA OFFICES, OCTOBER 1981

Date	Ovda			Ramon		
	Direct Labor*	Indirect Labor	Total	Direct Labor	Indirect Labor	Total
Oct 81	2,592	1,040	3,632	2,515	1,443	3,958
Nov 81	2,346	963	3,309	2,400	1,135	3,535
Dec 81	2,000	932	2,932	1,850	1,110	2,960
Jan 82	1,800	826	2,626	1,800	933	2,733
Feb 82	1,480	737	2,217	1,600	717	2,317
Mar 82	1,160	661	1,821	1,000	517	1,517
Apr 82	650	599	1,249	450	376	826
May 82	350	414	764	250	211	461
Jun 82	80	282	362	100	100	200
Jul 82	0	95	95	0	21	21

*This column of figures includes workers in plants and shops.

Source: Ramon Approved Manpower Plan, 28 Oct 81; Approved Manpower Plan, 28 Oct 81. Both in IABPC, 48/6.

TABLE 5—MSA MANPOWER PHASEDOWN SCHEDULE, NOVEMBER 1981

Date	Americans/ Third-Country Nationals	Israelis	Total
Oct 81	116	31	147
Nov 81	109	28	137
Dec 81	76	32	108
Jan 82	65	30	95
Feb 82	53	29	82
Mar 82	53	28	81
Apr 82	53	28	81
May 82	36	21	57
Jun 82	35	20	55
Jul 82	26	11	37
Aug 82	22	9	31

Source: MSA Accelerated Manpower Phasedown Schedule, 17 Nov 81, IABPC, 48/6.

mained his primary concern. Hartung was not impressed. He wrote Gilbert that the plan that Griffis found so drastic "is not considered as aggressive as it should be." With the contractors more distressed than Griffis and with Bar-Tov agreeing with Hartung, the range of opinions was wide. At joint occupancy a consensus seemed unlikely. Wall was caught in the middle. He told Bratton that "the PMs (especially Hartung) believe I did not slash enough," but he thought his cuts were "realistic and as deep as we should go now into the contractors' forces without adversely impacting con-

struction progress." Because of the gathering momentum, he did not want "to take chances in slowing or stopping the charging rhinoceros in the field right now."[39]

At least there was harmony regarding where management should focus its efforts. All agreed that controlling the size and composition of the work force held the key to the remaining cost of the program. At the headquarters, such control involved management of the ratio of direct to indirect labor in addition to the spread of labor over the remaining months. These two factors directly affected outlays for labor, which West estimated in the autumn of 1981 constituted 40 percent of the remaining cost. Six months later, it was 60 percent.[40]

Careful management to reduce the work force faced several obstacles. At Ovda Kelly had to break up what he considered to be a good team of government and contractor management. Naturally, he was reluctant to do so. To some others in the government, the contractors seemed slow to cut management, so the ratio of indirect to direct labor tended to stay high. At the same time, the support contractor thought it bore an unfair portion of staff reductions. Shepherd pointed to the 70 people he had lost between February and October 1981 and the 50 more who would go by year's end, while the Corps cut its staff by 25. The apparent disparity impeded cooperation and hurt morale. While Tel Aviv concentrated on the size of the force and the balance between direct and indirect labor, at the sites concerns focused on keeping the right people in the right specialties. Orderly completion depended on the availability of the proper mix of skills. A balance had to be struck between curbing costs and the imperatives of the schedule.[41]

Wall relied on Moore's task force to balance cuts against job needs. His phasedown plan divided the program's "manpower universe" into four parts: the Department of Defense, including civilians and the Army and Air Force at Tel Aviv, the sites, New York, and Washington; Management Support Associates, also at Tel Aviv, the sites, and New York; and the design and construction consortia, in Israel and New York as well as Bangkok for Negev Airbase Constructors and Lisbon in the case of Air Base Constructors. For each, he directed the task force "to assure that by the 15th of each month manpower objectives are reached and positively accomplished." The task force assessed progress every two weeks and recommended adjustments monthly. Their determinations were based on progress on the job matched against available manpower and skills. West's management analysis and control division, formed of the old resource management and planning and coordination offices in June 1981, monitored progress and collated data from three phase-

down managers. Gregor watched the Department of Defense and Management Support Associates segments; the deputy area engineers oversaw their respective construction contractors. Wall intended that "this manpower plan will be the basis for manpower reductions throughout the remainder of the project."[42]

Before the year ended Wall eliminated the quality assurance organization and returned the function to the area offices. From remnants of the disbanded teams, he assembled a small supervision and inspection group for the construction division in Tel Aviv, in effect giving Damico oversight of quality assurance. This reorganization paved the way for consolidating the duties of the contracting officers in Tel Aviv. The change also showed anew how readily the support contractor responded to the project's changing needs.[43]

Government employees represented a special concern. Wall thought well of the people who remained and wanted to minimize instability due to the distractions of job seeking during the last months of the project. His personnel officer, Janet Sales, was responsible for reducing the anxieties caused by phasedown. For the various job classifications in the office, she had to decide when to end recruiting and to stop renewing travel agreements while providing counseling and publicizing placement programs. Bratton's office helped with assurances of job placement, but the decline in staff size inevitably created morale problems. People worried about their future prospects, and rumors began to fly, especially in the confined working and living space of the Palace. Anxiety could be reduced by careful sequencing of phasedown events and by assuring that everyone knew this sequence as early as possible. Yet, even with precise planning, eliminating the stress was impossible. As Sales noted, employees had to take care of themselves as well as the project.[44]

While Wall set in motion these activities relating to the number and kind of specialties needed for the remainder of the project, he also started what became an ongoing reorganization of the headquarters. The changes in office structure aimed mainly at consolidating similar functions while reducing the staff. The organization that evolved during the early months of 1982 made greater use of majors and lieutenant colonels, who were less expensive and more flexible for short term use than were civilians.[45]

These changes started in the summer of 1981, when Wall merged resource management with planning and coordination to form the management analysis and control division. The new element also included the remnants of the engineering division's estimating branch. West thought the combination was a logical fit of functions. It eliminated internal discrepancies in estimates and fa-

cilitated staff reductions. Although resource management complained that the project needed the independent financial analysis that the office had once provided, the loss itself could also have advantages. General Bar-Tov frequently commented on the "Egyptian culture" of reporting represented in the inconsistent and confusing figures he received from the Americans. This complaint once caused Griffis, when he was in the planning and coordination office, to ponder whether Bar-Tov got too much information. "We will have to do a better job digesting it for him," Griffis told his staff, particularly to maintain consistency with the figures from resource management. "There is," Griffis claimed, "an awful waste of management talent to have to explain answers every time someone in the Israeli PM shop finds an inconsistent number; one he doesn't understand."[46]

In another consolidation in the fall of 1981, Wall created the administration and logistics division. This element consisted of the transportation office, procurement and supply, and administrative services, all under Maj. Harry J. McGinness, formerly the transportation officer. Although the branches continued to report directly to the executive office, Graw objected and soon left. This division changed again in March as procurement activities ended. Administration and logistics was left with its two remaining branches, and procurement went into a division that combined the function with property accountability. The new office came under Alfred Lellis, once head of the support group in New York and the only civilian to head a division created during Wall's reorganizations. Property accountability had started as a one-person operation in resource management. Then it became a branch in West's division before emerging to prominence under Lellis. Now, with very few purchases to be made, Lellis concentrated on transferring program property to the Israelis. He analyzed consumption of supplies and equipment, set about accounting for losses, and prepared for an inventory.[47]

Along with the new organizational arrangements came a larger role for the security officer, Robert Amick. He became deputy project manager for support in February. The new divisions came under him, along with public affairs, security, and communications. Like McGinness, he preferred that those responsible for these functions "be action officers, deal direct [*sic*] with the commander and deputy commander on actions." He wanted them to keep him informed; he in turn tried to help them where he could.[48]

Wall was pleased with the changes. Officers "march to a different drum," he said, forgetting or ignoring the difficulty he once had trying to find colonels to accept the challenges of the pro-

gram. Wall held that officers did additional work and accepted schedule changes without complaint, understanding "by Gestalt reasoning" what was expected. Civil servants, on the other hand, needed explanations for new and different demands on them. "I don't have the time on a job like this," Wall said, "to explain all these things." The new arrangement was not trouble free. Some officers would not stay beyond their one-year tours of duty, so short-term replacements were needed to fill gaps. Also, the reorganization created civilian-military relationships with stresses of their own. For example, Joseph R. Chapla, the GS–15 resource manager, found himself in the unusual situation of working for a lieutenant colonel; similarly, Graw, a GS–14, reported to a major. Graw was so disturbed about the situation that he left. Chapla stayed but resented any levels of authority between him and the commander.[49]

While these changes took place, Wall still tried to figure out where he would close out the contracts. By the end of 1981 he was reconsidering locations for the later phases of closeout. His revised plan of November 1981 made a case for conducting the operation through phase III in Tel Aviv rather than in the United States. His staff was experienced and worked a longer week than stateside offices. He expected that closeout would take five months in Tel Aviv and nine back home. If he had to go to the United States, he preferred New York. The veterans of the support group were there, as well as offices, furniture, and computers. Besides, Management Support Associates was based in the city, and Perini was in nearby Boston. An alternative choice involved leaving Tel Aviv by September as originally proposed and moving to Fort Belvoir, Virginia, about fifteen miles south of Washington. This plan, which would allow release of contractor employees to their respective home offices, envisioned closing the New York office in July and maintaining a small staff at Belvoir until all issues were decided. The plan put the closeout near the Corps headquarters and had the lowest real estate cost. Wall still thought completion in the United States would take longer, but McNeely and Wilson favored Fort Belvoir. So Wall and his staff had to take this option seriously.[50]

The decision on a location came during Wilson's January visit. He and McNeely considered the original proposal the cheapest. So Wall decided to set up a small resource management unit at Fort Belvoir as early as July to maintain continuity in financial matters and to serve as an advance party. He still hoped to have many issues settled by then. He thought his office and the contractors could resolve or at least identify outstanding issues before returning to the States. The decision disappointed Wall. He thought proximity to the chief's office at best irrelevant and at worst undesirable. How-

ever, the choice logically followed Bratton's emphasis on an early departure from Israel. Hartung, who cited the cost to the Israelis of a continued American presence, also wanted to leave quickly. And Wall knew that he needed "to find a way to get gracefully out of here so that the Israelis can be as happy as we can make them and that the Air Force can be as proud as we can make them too."[51]

Meanwhile, in early February he consolidated contract management in Tel Aviv and named Moore contracting officer for both sites. The area engineers became Moore's authorized representatives at that time. Wall also brought all contract administrators and attorneys together in Tel Aviv. Graw thought the persistent procurement problems at Ramon and area office resistance to cost reduction hastened the decision, but consolidation of the project was also becoming inevitable as it neared completion.[52]

Manifestations of constriction were also seen in Tel Aviv. Reducing the small stock of houses leased for senior officials, which had begun in the spring of 1981, continued. The project staff also started to consider the problem represented by the Palace. Rehabilitating the hotel after three years of project use promised to be a complicated job. Wall preferred to seek a cash settlement with the proprietor. However it was not clear at that time that anything the project did would satisfy the owner.[53]

In the field less uncertainty existed regarding the pitfalls of the late stages of the job. Project personnel had been warned early of problems during the transition from construction sites to bases. The team that assessed direct manpower needs in August 1980 had cautioned that productivity would suffer during joint occupancy. All steps, the members urged, should be taken to turn over facilities that were as complete as possible in order to minimize the period of shared occupation. And indeed inefficiencies did occur during turnover and activation. Sometimes the problems stemmed from a lack of coordination. At Ramon a guard at the ammunition storage area refused entry to two crews seeking to install doors. Verification of their security clearances took two hours. In other cases, workers inadvertently picked Israeli holidays to seek entry into areas for which they needed escorts.[54]

Operations on the new bases also restricted the movement of workers. Although the job did compress as it neared completion, the need to cross the runways presented a safety and security problem until the end. The movement of construction crews and equipment had to be coordinated with the arrival and departure of planes, reducing the flexibility needed for an efficient construction sequence and often requiring that truck traffic be regulated. Moreover, the flights of high-performance aircraft dis-

Col. Fletcher H. "Bud" Griffis and ABC General Manager Fred Butler at the opening of Ramon Air Base in November 1981.

tracted workers, as did arrival of some Israeli Air Force women assigned to the garrisons.[55]

Through the activation process, participants cooperated well. The Israeli base and wing commanders were accommodating, and Colonel Moore attributed much of the success of the transition to the Israeli officers involved. The project also benefited from cooperation between the constructors. Bar-Tov and Hartung thought there was never enough joint planning and purchasing, but the sharing of materials and experience did increase toward the end. In February 1981 Butler suggested that the consortia trade lists of excess inventory to hold down overages. Such exchanges occurred frequently in the final year.[56]

By early April 1982 meeting the all-important deadline for initial operating capability, less than four weeks hence, was no longer an issue. Even the usually cautious Corps headquarters was convinced that success was at hand. Wilson told a reporter that work was so far along that everything would be done six months ahead of schedule, and *Engineering News-Record* proclaimed that the con-

tractors had "won their battle against a fast-approaching completion date." Deputy Area Engineer Moon at Ovda listed requirements in the area office journal, not for the April milestone, which was now taken for granted, but for completion of the entire base. Some construction remained, deficiencies in what had already been done needed correction, and documentation in the form of operations and maintenance data and as-built drawings still required completion.[57]

One other area of substance required attention. The equipment and property bought for the job belonged to the Israeli government. These materials had been a source of contention all along. The Israeli construction industry had strenuously opposed importing new machinery when local resources sat unused. Construction interests revived the issue from time to time, although even the Israelis could not sustain a dispute indefinitely. The Ministry of Defense countered some of the objections by promising to store the equipment for emergencies while continuing to use machinery owned by civilians for routine construction. Perhaps the desert compounds that held rows of captured Soviet-made vehicles and equipment would become home for the earth movers and dump trucks left behind by the project. In any event, the government never put to rest the anxieties of the construction industry. Even at the very end of the project, General Ivry incurred the contractors' wrath. On television, he noted that Israeli firms could not have met the schedule. His statement merely reaffirmed the project's original premise, but building trades groups responded angrily, demanding apologies and investigations of the program and the policies that spawned it.[58]

Compared to what Ivry confronted, the Americans faced only the relatively benign matter of accounting for the equipment and turning it over to the Ministry of Defense. Little early planning had been done for this task. McNeely, who remembered the difficulties resulting from poor accounting procedures in Morocco during the 1950s, worried about this oversight. "On any future cost-type job," he said, "the property man should be on the first airplane to the work site." Nevertheless, for some months the Israelis were themselves unready to accept the property. So until 1982 very few actual turnovers took place.[59]

The delay was fortunate. Israeli law required that the Ministry of Defense pay import duties on the equipment. This stipulation meant that a complete inventory would be necessary. Moreover, matters of taxation involved the Ministry of Finance, which Wall called "the bureaucracy to answer the bureaucrat's prayer." So Wall expected to face a large administrative burden. He tried to force

the issue, hoping perhaps to at least come to a definitive understanding. By the spring of 1982 there was very little progress. A standard procedure had been published the preceding year, and a few vehicles had been transferred. Still, most of the big items sat locked in yards at both sites, pending an agreement, and the issue was degenerating into disputes about who should guard and maintain the equipment.[60]

Hartung expected the transfer of property to be an even worse problem for the Israelis. After all, their program management would have to conduct inventories and decide on redistribution of the assets while activating the bases. Hartung saw the turnover as two separate matters. First were the large items, about $150 million worth of equipment and buildings. Then came the small things—spare parts, materials, and tools—valued at about $30 million, which according to Hartung were "the real problem" because of the quantities. With more important things to do, the Ministry of Defense fell behind in its efforts to deal with the property. Finally, Bar-Tov took an easy way out. He decided to save time and money by foregoing a detailed American inventory, which he would have to verify. Instead, he accepted Hartung's view that a thorough American accounting would be wasteful because he would have to do one as well. Bar-Tov settled for an estimate of quantities. This decision was a stroke of good fortune for the Americans and left McNeely wondering "how in hell we came out as clean as we did."[61]

Some of the elements of completion were under better control. In the summer of 1980 the Near East Project Office and Management Support Associates had started planning for the manuals and other documentation on the operations and maintenance of the facilities at the new bases.[62] David Levy from the engineering division, who coordinated the effort, visited the Sinai bases and talked with Israeli Air Force base engineers about their approach to installation maintenance. This important but tedious compilation—Thomas called it "dog work"—was done as construction progressed, so it presented no problem during the late stages. According to McNeely, Hartung reported in April 1982 that "O&M documentation is progressing well, will be completed shortly and is by far better than any he has ever seen and received on U.S. projects."[63]

Even with the quality of the documentation, some Americans were concerned about the ability of the Israelis to maintain the bases. To Griffis it was "evident that the IAF does not have the resources assigned to Ramon sufficient to maintain this sophisticated air base." Two days before the 23 June closing of his area office, he noted poor maintenance practices, including the dismantling of some systems to provide parts for others. He expected that the fifty-

person base civil engineer organization that the Israeli Air Force had assigned to Ramon would prove woefully inadequate. Wall agreed: "My judgment is that the IAF cannot keep up with ordinary maintenance and cannot even fully man the sophisticated facilities that have been designed, constructed, and turned over to it."[64]

As the deadline for initial operating capability neared, the political imperatives that drove the program came into focus. Some Israelis hoped that departure from the Sinai would bring lasting peace, but others were pessimistic. Reluctance, anguish, and even a little resistance marked completion of the withdrawal. At the coastal town of Yamit, soldiers of the Israel Defense Force found themselves in a dramatic confrontation with Israeli civilians. The troops forcibly removed some settlers and bulldozed buildings. The Israelis had invested about $12 billion and a little of themselves in the region. For the first time, they were about to withdraw from territory they had won in war, and they had put down some roots there. The armed forces' magazine articulated a sense of loss: "Sinai is dying. This is seen everywhere. It may possibly bloom again soon—but for others. We, its residents during recent years, will then be strangers. Our home will no longer be here, and we shall come as guests to the houses we built. The feeling, even now, is strange."[65]

The absence of unanimity within the fractious polity of Israel—or among its supporters in the United States—on such a vital issue was not surprising. Many American Jews urged Israel to stay in the Sinai. Only a month before the scheduled departure, fifty-one of these, who called themselves "American Jews deeply concerned about the security and survival of Israel and the United States," signed a *Jerusalem Post* advertisement urging the government to reconsider. "Stand firm," the public letter exhorted, "and the Jews of the world will stand firm with you!" The names included Irving Kett, who identified himself as "Colonel, . . . U.S. Army Corps of Engineers." Wall and his staff were furious, but they confined their anger to intraoffice memorandums and passed the matter to Washington. The issue of whether Kett's use of his rank and affiliation in the *Post* letter violated Army regulations went unresolved there. Wall had enough problems: "The task of building the air bases at Ovda and Ramon involves political as well as construction problems. Letters such as [this] one . . . do not make this task any easier."[66]

Others were unhappy for different reasons. By the spring of 1982 Hartung hated his association with the project. Bitterly frustrated by the constraints under which he worked, he wanted to leave his job and Tel Aviv as soon as possible. On a trip to the United States in mid-April, he and Gilbert raised the issue with Ah-

mann. Hartung said that he no longer served a useful purpose, and neither did the Air Force's engineering and services directorate. McNeely reported that Hartung "adamantly averred that he required authority if he was to function as the DOD Program Manager or his presence in Israel was a complete waste of time." Ahmann disagreed. He saw the program as a well-done team effort of which everyone should be proud. The memorandum between the Air Force and the Corps of Engineers provided basis enough for Hartung's continued presence. Ahmann wanted to keep the team together until the end. Thwarted again, Hartung went to San Antonio, Texas, where he accepted an award from the Society of American Military Engineers for his accomplishments in the program before returning to Israel at the end of the month.[67]

Hartung probably did not appreciate the ironic juxtaposition of his failed effort to break free and the award in San Antonio. Just after returning to Tel Aviv, he said, "This has been the most miserable, unfulfilling assignment I have ever had in my career, and if I had had any idea it was like this, I would never have come over here." Part of his misery stemmed from his constrained role and the agreement that defined it. Wall's office, on the other hand, just did not take him or his position seriously. "Hartung," McNeely said, "even though he was Air Force, was the DOD PM and the American top dog on the scene. . . . We didn't want to work for the Air Force and forgot or never put in perspective that Hartung was DOD." In the end, McNeely concluded, "The infighting, end-runs, and day-to-day hassles took their toll on him."[68]

While Bar-Tov found much to dislike in the American way of construction, he did not leave the program with anything approaching Hartung's bitterness. Certainly his inclination to improvise and deal directly with the contractors was frustrated many times. Hartung fended off Bar-Tov, souring what had been a warm relationship. At the end, Bar-Tov complained long and loud about the withholding of information and his inability to influence decisions. But he gave as good as he got. He did not shy away from confrontation, public or otherwise, and used all means, ranging from a 4 July message "to my American friends in the Negev air base program" to an impromptu harangue at a program social gathering, to make sure the Americans got the message about Israeli standards and needs.[69] After all, it had been the sheer force of his personality that had propelled him so close to the center of the decision-making process, despite the lack of formal provision for his participation. The same strength sustained him through the program and kept it from defeating him.

Wall had the upper hand and knew it. Bar-Tov thought Wall never paid attention to Hartung and that the notion of an American team was little more than a convenient fiction. Wall did frequently refer to the program team—the three-legged stool was his phrase for joint program and project management—but he also expressed his attitude toward his relationship with Hartung's office in a restatement of the golden rule: "He who has the gold rules."[70] So, it was hardly surprising that in the end only Wall was smiling.

On the job, 25 April passed almost unnoticed. Three weeks later a ceremony at Ramon formally inaugurated the two new bases. The Israeli government seemed to play down the occasion, waiting until 17 May to mark the transfer with Defense Minister Sharon in attendance rather than Prime Minister Begin.[71] Perhaps the delay served to obscure the association of the opening with the withdrawal that had so recently sparked considerable passion.

In early June plans were made for closing the area offices and camps. Kelly listed five prerequisites, which he intended to carry out by 15 July. All horizontal work was to be done by 30 June, with construction deficiencies corrected by the same date. A week later the cinema was to be finished, and the last concrete was to be poured in the helicopter complex on 10 July. That left four days for cleaning up. Ramon planned to close a little earlier.[72]

At the same time, Hartung and Bar-Tov drafted procedures for concluding the program. The document dealt with several pending matters, including completion of construction, the need for an American program management agency, operations and maintenance documentation, the disposal of remaining property, reports, fiscal matters, and other activities associated with closing out the contracts. A few provisions in the document caused argument. Defense Security Assistance Agency's acting director, Walter B. Ligon, expressed concern that Hartung's departure might be premature. His desire to leave was no secret, and Ligon accepted an arrangement that permitted Hartung to go at the beginning of July. Ligon also objected to a suggestion that his agency had accepted Ministry of Defense participation in the closeout. Resolution of this matter awaited discussions between the Corps and the Israelis. Despite these objections, Hartung and Bar-Tov signed the essentially unchanged memorandum on 22 June.[73]

Wall also objected to some parts of the document, particularly Hartung's attempt to extricate himself. Again, he wrote "Tilt" in the margin of the draft next to the most offensive paragraph. Even now, in the waning days, Wall did not want to deal directly with Bar-Tov's office and did not want the area offices in direct contact with the Israelis in the field. To Hartung he stated clearly, "I am

not a party to your procedure and am reviewing the impact." Moreover, he said, the memorandum did "not appear to conform to Mr. Ligon's DSAA guidance." At the end of June Wall's office still held back from acknowledging the validity of the procedures. Moore said he awaited formal approval from U.S. Air Force headquarters. Hartung told Damico that he had approval by telephone and wanted the Corps to follow the procedures. "The procedures are in effect," Damico reported back, "and we should follow them unless we intend to ignore it [*sic*]."[74] Hartung departed within a week, leaving Lt. Col. Francis A. DeMartino as his representative.

It was not long until this last dispute between the Corps and the Air Force in Tel Aviv became moot. The area office at Ramon already closed a week earlier; Ovda shut down on 9 July, leaving the movie house to be finished by the Israelis. The telex connection with the Pentagon was discontinued after work on 15 July, and Wall left two weeks later to command the Corps' South Atlantic Division in Atlanta, Georgia. His 1 April goal of turning everything over to the Israelis by the end of July and leaving before September was in hand.[75]

Moore took over as commander of the project. In his first act as the new boss, he moved the small remaining staff out of the Palace and down the beach to the Plaza Hotel. Restoration of the Palace, which had been home for the project for nearly three years, and final turnover of property to the Ministry of Defense began in earnest. In another month he too would depart, leaving David Levy as a one-man liaison office working with the defense attache at the embassy.[76]

Notes

1. Wall interview, May 82.
2. Hartung interview, May 82.
3. Moore interview, Apr 82.
4. Ltr, Wall to Hartung, 9 Oct 81, sub: Funding Increase to the Plan of Work (POW) for the Israeli Airbase Program, IABPC, 49/15; Shaw interview, Apr 82.
5. West interview, Oct 81.
6. Ltr, Hartung to Bar-Tov, 19 Oct 81, sub: Request for Additional GOI Dependable Undertaking, IABPC, 50/2; Ltr, Hartung to Wall, comments on Wall's draft letter, 22 Oct 81, sub: Requirement for Obligation Authority and Program Funding, IABPC, 49/15; Telex, Hartung to Gilbert, 29 Oct 81, IABPC, 50/2.
7. Telex, Hartung to Gilbert, 29 Oct 81.
8. Brown interview, Apr 81; Chapla interview, Apr 81.
9. MFR, Wall to Hartung, 4 Nov 81, sub: Phasedown and Costs, IABPC, 48/6; Ltr, Wall to Hartung, 5 Nov 81, sub: Requirements for Obligation Authority, IABPC, 88/6.
10. Ltr, Wall to Hartung, 10 Nov 81, sub: Additional Cost Figures, IABPC, 48/6; Ltr, Bratton to Chief of Staff, USAF, Attn: AF/LEE, 10 Nov 81, sub: Requirement for Obligation Authority—Israeli Air Bases, IABPC, 50/2.
11. Ltr, Hartung to Wall, 11 Nov 81, sub: Requirements for Obligation Authority, IABPC, 50/2.
12. Ltr, Wall to Hartung, 11 Nov 81, sub: Requirements for Obligation Authority, IABPC, 50/2; MFR, Wall, n.d., IABPC, 48/6; Ltr, Wall to Hartung, 13 Nov 81, sub: Continuation of Letters of Requirements for Obligation Authority, IABPC, 50/2.
13. Ltr, Hartung to Bar-Tov, 15 Nov 81, sub: Request for Additional GOI Dependable Undertaking, IABPC, 50/2.
14. Ltr, Wall to Wilson [draft], 19 Nov 81, IABPC, 50/1; Ltr, Hartung to Wall, 11 Nov 81, sub: Requirements for Obligation Authority; West interview, Oct 81.
15. Ltr, Wall to Hartung, 31 Dec 81, sub: Estimate to Complete Israeli Airbase Program, IABPC, 50/1.
16. Wall interview, May 82; Memo, Wilson for DAEN-MPE, 4 Jan 82, sub: Tasking Memorandum—Israeli Air Base Program, IABPC, 50/4.
17. Memo, Wilson for DAEN-MPE, 4 Jan 82; Ltr, Wall to Hartung, 8 Jan 82, IABPC, 50/4; Ltr, Bar-Tov to Hartung, 8 Jan 82, sub: Program Cost Review, IABPC, 50/4; MFR, Wall, 21 Jan 82, sub: General Wilson's Visit, IABPC, 41/13; MS, Directorate of Engineering and Services, HQ, USAF, Millie Glasebrook, compiler, History of the Directorate of Engineering and Services, DCS/L&E, 1 July–31 December 1980, vol. I [Office of Air Force History], p. 84; MS, Directorate of Engineering and Services (Glasebrook), History of the Directorate of Engineering and Services, 1 January–30 June 1981, vol. I, pp. 91–95; MS, Directorate of Engineering and Services (Glasebrook), History of the Directorate of Engineering and Services, 1 July–31 December 1981, vol. I, p. 104; Edward L. Parkinson, "Getting a Handle on Co$t," *Engineering and Services Quarterly* 23 (Summer 1982): 20–24.
18. Ltr, Wall to Hartung, 12 Jan 82, sub: Requirements for Obligation Authority [draft], IABPC, 50/4; Shaw interview, Apr 82.
19. Reimer interview, Feb and Apr 82.
20. MFR, Reimer, 1 Feb 82, sub: Special Task Team Methodology Disagreement, IABPC, 41/13; Reimer interview, Dec 85.

21. MFR, Reimer, 1 Feb 82, sub: Special Task Team Methodology Disagreement; Reimer interview, Feb 82; Wall interview, Apr 82; Ltr, Wall to Hartung, 1 Feb 82, IABPC, 50/3.

22. Ltr, Wall to Hartung, 4 and 5 Feb 82, IABPC, 50/3; Interv, author with Lt Col Robert L. Amick, Apr 82, Tel Aviv, Israel.

23. Ltr, Bar-Tov to Hartung, 9 Feb 82, sub: COE & USAF Program Cost Evaluation Team, IABPC, 50/3; Moore interview, Apr 82 and Dec 85; Wall interview, May 82; Amick interview.

24. Ltr, Wall to Hartung, 4 Feb 82, IABPC, 50/3; Moore interview, Apr 82 and Dec 85; Amick interview.

25. Reimer interview, Feb 82 and Dec 85; Moore interview, Dec 85; MS, Directorate of Engineering and Services (Glasebrook), History of the Directorate of Engineering and Services, 1 July–31 December 1981, vol. I, p. 95.

26. Ltr, Wall to Hartung [two separate notes], 10 Feb 82, IABPC, 50/3.

27. Wall, Project Notebooks, vol. VII, 19 Jan 82, IABPC, 90; RAO, Daily Journal, 15–16 and 18–21 Jan 82, IABPC, 48/8; Brown interview, Apr 82.

28. Ltr, Wall to Hartung, 14 Feb 82, IABPC, 50/3; RAO, Daily Journal, 19 Feb 82, IABPC, 48/8.

29. Brown interview, Apr 82; Shepherd interview, May 82; Wall interview, May 82.

30. Bar-Tov interview, May 82. Ltrs, Wall to Hartung, 9 Nov 81; Wall to Wilson, 10 Nov 81; Wall to Bratton, 10 Nov 81; Wall to Ahmann, 10 Nov 81; Wall to Brown, 10 Nov 81; in IABPC, 50/2. Ltr, Wall to Bratton, 5 Nov 81, sub: Monthly Progress Report, Israeli Airbase Program, IABPC, 88/6.

31. Shaw interview, Apr 82.

32. Maloney interview, May 82; Hartung interview, May 82.

33. Shaw interview, Apr 82; Memo, Chapla for Contracting Officers; CORs; Chief, CONUS Support Group; Commander, NEPO; DOD PM; and Chief, RMO, OCE; 8 Mar 82, sub: Program Obligation Authority—Interim Operating Policy, IABPC, 41/12; Moore interview, Apr 82.

34. Ltr, Wilson to Wall, 30 Sep 81, sub: OCE Special Task Force Findings, IABPC, 58/1.

35. Definition of Phases, n.d., file 201–07, NEPO files, Box T–228; Interv, author with Lt Col Jack H. Clifton, May 81, Tel Aviv, Israel. This interview is essentially a transcript of Clifton's briefing on the phasedown plan.

36. Gregor interview.

37. Memo, Wall for Task Force Members, 5 Oct 81, sub: Manpower Phase Down, IABPC, 48/6; Thomas interview, Oct 81.

38. Hartung interview, Oct 81; Ltr, Wall to Area Engineers, 29 Oct 81, sub: Action Plan for Manpower Phase Down, IABPC, 48/6; Memo, Wall for Contracting Officer, MSA, 9 Nov 81, sub: Action Plan for Manpower Phase Down, IABPC, 48/6.

39. RAO, Daily Journal, 23–27 Oct 81, IABPC, 48/8; Telex, Hartung to Gilbert, 29 Oct 81, IABPC, 50/2; Ltr, Hartung to Wall (on legal pad), 2 Nov 81, IABPC, 50/2; MFR, Wall to Hartung, 4 Nov 81, sub: Phasedown and Costs, IABPC, 48/6; Ltr, Wall to Bratton, 5 Nov 81, sub: Monthly Report, Israeli Airbase Program.

40. Hartung interview, May 82; Moore interview, Oct 81; West interview, Apr 82.

41. Maloney interview, May 81; Kelly interview, Oct 81; Shepherd interview, Oct 81; Hartung interview, May 82; Moon interview.

42. NEPO Organization Chart, Jun 81, IABPC, 88/5; Memo, Wall for Contracting Officers, 9 Nov 81, sub: Management Plan for Manpower Phasedown, IABPC, 48/6.

43. Ltr, Wall to Hartung, 9 Nov 81.

44. Wall interview, May 82; Sales interview; Gregor interview; Kelly interview, Oct 81; Moore interview, Oct 81.

45. Moore interview, Oct 81 and Apr 82; Wall interview, May 82.

46. West interview, Oct 81; Shaw interview, Oct 81 and Apr 82; Bar-Tov interview, Apr 81; Griffis, P&C Journal, 14 Aug 80, IABPC, 41/1.

47. Interv, author with Maj Harry J. McGinness, Apr 82, Tel Aviv, Israel; Graw interview, Oct 81; West interview, Oct 81; Lellis interview.

48. Amick interview.

49. Wall interview, May 82; Wall, Project Notebooks, vol. VII, 7 Dec 81, IABPC, 90; Kelly interview, May 81; Graw interview, Oct 81; McGinness interview; Moore interview, Oct 81 and Apr 82.

50. Phase Down Plan (revised 22 Nov 81), IABPC, 58/4; Annex B, Phase III Location, Encl to Memo, Wall for Contracting Officers, 17 Dec 81, sub: Phase III Closeout Location, IABPC, 58/5.

51. Ltr, Wall to Maj Gen Wilson, 4 Feb 82, sub: NEPO Close Out Plan, IABPC, 58/5; Wall interview, May 82; Hartung interview, May 82.

52. Ltr, Wall to Maj Gen Wilson, 4 Feb 82, sub: NEPO Close Out Plan; Moore interview, Apr 82; Graw interview, Oct 81.

53. Wall interview, May 81; Clifton interview; Moore interview, Apr 82.

54. Special CE/MSA Team, CE/MSA DCC Direct Manpower Plus-Up Study, 10–12 Aug 80, IABPC, 4/4; Moon interview; Parkes interview, Oct 81; Peterson interview, Oct 81.

55. Moon interview; Parkes interview, Oct 81; Peterson interview, Oct 81; Moore interview, Oct 81.

56. Wall interview, Oct 81 and May 82; Hartung interview, Oct 81 and May 82; Moore interview, Apr 82; *ENR* 209 (22 April 1982): 75; OAO, Master Diary, 27 May 80, IABPC, 84/4; DF, Baer, Chief, Construction Division, to Area Engineer, Ramon, 15 Apr 80, sub: Capital Equipment, IABPC, 33/1; Ltr, Griffis to Butler, 28 Oct 81, sub: Inventory of Reinforcing Steel, IABPC, 24/4; Shepherd, Daily Journal, 26 Feb 81, IABPC, 89/1.

57. *ENR* 208 (11 March 1982): 23; OAO, Master Diary, 1 Apr 82.

58. *Jerusalem Post*, 19 and 27 Sep, and 5 and 8 Oct 79; (Tel Aviv) *Journal of Commerce*, 14 May 80; (Tel Aviv) *Davar*, 1 and 3 Jun 80; (Tel Aviv) *Sha'ar*, 18 Nov 80; (Tel Aviv) *Ma'ariv*, 5 May 82; (Tel Aviv) *Ha'aretz*, 19 and 24 May 82.

59. Chapla interview, Aug 80; McNeely interview, Sep 83; MFR, Wharry, 17 Dec 80, sub: Trip Report—Israel Air Bases Construction Project.

60. Wall, Briefing for Incoming Officers, 14 Jun 81; Memo, Wall for Hartung, 28 Dec 81, IABPC, 50/1; Memo, Wall for Hartung, 10 Feb 82, IABPC, 50/3; SOP 31, Transfer of Defense Articles and Services (Equipment and Material), 20 Apr 81, revised 12 Jun 81, IABPC, 15/31; McGinness interview; OAO, Master Diary, 4 Mar 81, IABPC, 85/1.

61. Hartung interview, May 82; MFR, McNeely, 22 Apr 82, sub: Meeting with DSAA on Israeli Air Base Program, IABPC, 41/13; Lellis interview; Moore interview, Apr 82; McNeely interview, Sep 83.

62. Six types of documents ultimately were transferred for each base: as-built drawings; contractor's shop drawings; vendor's data; operations and maintenance manuals, including an index; a master equipment list; and contractor's design calculations and analysis. Ltr, Kelly to David Holmes, 10 Nov 81, sub: Operation and Maintenance Documentation Instruction, IABPC, 35/2.

63. Ltr, Thomas to GM, MSA, 2 Jul 80, sub: Completion of O&M Documentation Instruction, IABPC, 33/2; MFR, David Levy, 8 Aug 80, sub: Transmission by the DCCs of Project Documents Related to Operations and Maintenance, IABPC, 23/1; MFR, McNeely, 22 Apr 82, sub: Meeting with DSAA on Israeli Air Base Program.

64. Ltr, Griffis to Wall, 21 Jun 82, sub: Ramon Airbase Completion; Memo, Wall for Maj Gen Ames Albro, 7 Jul 82, IABPC, 83/1.

65. "Mideast Beat," *World Press Review* 29 (June 1982): 15; *Newsview*, 9 Mar 82, p. 6; Sachar, *Egypt and Israel*, p. 305; *Ba'mahane*, 10 Mar 82.

66. *Jerusalem Post*, 19 Mar 82; Memo, Amick (Routing and Transmittal slip) for Wall, 21 Mar 82, sub: *Jerusalem Post* ad—19 Mar. 1982, IABPC, 41/5; Ltr, Wall to Maj Gen Wilson, 24 Mar 82, sub: Advertisement Published in the *Jerusalem Post* Newspaper, IABPC, 41/5.

67. MFR, McNeely, 22 Apr 82, sub: Meeting with DSAA on Israeli Air Base Program; "Worth Noting" [United States Air Force] *Engineering and Services Quarterly* 23 (Summer 1982): 18.

68. Hartung interview, May 82; McNeely interview, Mar 84.

69. Bar-Tov interview, May 82; Bar-Tov, Open Letter "To My American Friends in the Negev Air Base Program," Jul 81, IABPC, 75/4. The author was at the party in the Palace Hotel on 30 April 1981.

70. Bar-Tov interview, May 81; Wall interview, Aug 80.

71. MFR, Moore, 22 Apr 82, sub: FONECON with Chief of Engineers, LTG Bratton, IABPC, 41/13; Memo, Wall for the Ambassador, 14 May 82, sub: Israeli Air Base Program Site Visits and IOC Ceremony—17 May 1982, IABPC, 41/13.

72. OAO, Master Diary, 1 Apr 82; Ltr, Griffis to Wall, 21 Jun 82, sub: Ramon Airbase Completion, IABPC, 83/1.

73. Procedures for Program Conclusion, draft, n.d., attached to Memo, Walter B. Ligon, Acting Director, DSAA, for the Deputy Assistant Secretary of the Air Force (Installations), sub: Israeli Air Base Program, 15 Jun 82, IABPC, 82/5; Hartung and Bar-Tov, Procedures for Program Conclusion, 22 Jun 82, IABPC, 82/5.

74. Procedures for Program Conclusion, draft, n.d., attached to Memo, Ligon for DASAF(I), 15 Jun 82; Ltr, Wall to Hartung, 23 Jun 82, IABPC, 82/5; Ltr, Moore to Hartung, 30 Jun 82, sub: Open Issues Discussed 28–30 June 1982, IABPC, 82/5; MFR, Damico, sub: Information Provided by General Hartung and General Bar-Tov to the Undersigned on 30 June 1982, IABPC, 82/5.

75. Ltr, Griffis to Wall, 21 Jun 82, sub: Ramon Airbase Completion; OAO, Master Diary, 8 Jul 82, IABPC, 85/2; Memo, Wall, through DOD Program Manager Representative, for MOD Program Manager, 9 Jul 82, sub: Discontinuance of Pentagon Circuit, IABPC, 83/1.

76. Information Paper, Moore, 4 Aug 82, attached to MFR, Moore, sub: Support for NEPO Liaison Office—Tel Aviv, IABPC, 41/13; Ltr, Moore to Bratton, 3 Aug 82, sub: Monthly Report, Near East Project Office, IABPC, 91/2.

CHAPTER 15

Closeout

All effort as outlined in the plan of work is complete. . . . Successful construction completion of the two air bases some nine months ahead of the 25 April 1983 mandate stands as a notable cooperative achievement.
Col. John E. Moore, November 1982[1]

Preparations for closeout dated back to the earliest phasedown planning in Tel Aviv. In the winter and spring of 1982 these plans grew more specific. Based on experience and the reports that had been done by Maloney's auditors, the resource manager identified the issues that might result in suspensions, disallowances, or claims. When the construction crews attained initial operating capability, just over sixty potential contractual disputes were already identified and under review. As of 31 May, a total of $7.9 million had been withheld from the three contractors, and the issues were fairly well understood.[2]

There was more to closeout than identifying the likely controversies. The operation had to have a home. The chief's office in Washington overrode Wall and told him to finish the project at Fort Belvoir. McNeely in particular argued for the southern site, claiming that it was less costly than New York, and Wall thought McNeely was largely responsible for the choice of Belvoir. As far as McNeely was concerned, the resistance to bringing the office to the Washington area originated with the support group in New York.[3]

Colonel Moore, who expected to take charge of the closeout, saw the opposition of the New York employees as the significant drawback to the decision. He anticipated difficulties in convincing them to make the move, and he needed the continued participation of the accountants and clerks who had tracked the financial transactions for the duration of the job. Moore credited Frank Billiams of the New York office with convincing the staff to move to Fort Belvoir. Billiams, Moore said, "had sort of gathered those folks as a family-type thing and worked with them over a three-year period. He brought with him virtually intact his money account-

ability folks down to the GS–6 and GS–7 level, and having them come removed what I saw as one of the last disadvantages of coming to the Fort Belvoir area."[4]

Deciding whether Belvoir was a logical and effective location did not end the matter. Twenty-year-old policy encouraged decentralization of government operations away from the National Capital Region. So the move from Tel Aviv to northern Virginia required the permission of the assistant secretary of defense for manpower, reserve affairs, and logistics.[5]

Such approval came easily but did not clear the way for the closeout team to get down to business. First, the Israeli desire for a role in the process required resolution. Bar-Tov expressed this interest during an April meeting in Washington. He claimed that closeout would be "a battle and war" with the contractors and that his ministry would help resolve issues involving Israeli subcontractors and suppliers, reducing the final cost of the program as a result. Wilson was amenable to such participation provided "it was clearly understood that decision authority rested with the contracting officer and his decision was final." His position reflected Wall's view that "the Israelis would not be allowed to participate in decisions nor the negotiations, but that they would be allowed to provide input for our effort." In any event, Wall believed, "The Israelis were already involved in providing input and therefore, there would be no change to our present procedures."[6]

Such assurances did not satisfy Bar-Tov, who pushed for a more formal arrangement. At a June meeting in his office at the IBM Building, he offered Hartung and Moore help in preparing for all negotiations involving the three prime contractors as well as Israeli subcontractors and vendors. He also wanted an observer from his office present at negotiations. Bar-Tov envisioned an arrangement in which his representative would not speak but would pass notes to the chief negotiator. He conceded that there might be cases in which he would have nothing to contribute, and Hartung, apparently tired of diplomacy, "indicated that this might be true in perhaps nine cases out of ten."[7]

Wall still tried to accommodate the Israeli interest in a limited involvement. He and Bar-Tov signed an agreement specifying the conditions under which the Israelis could participate in negotiations between the Corps and the contractors. The memorandum limited Ministry of Defense participants to observation, prohibited them from joining discussions ("normal pleasantries excepted"), and made it clear that the contracting officer could "terminate negotiation conferences or ask any participant, including observers, to leave, and continue to conduct the negotiation conference alone."[8]

Wall did his best to get contractor acceptance of this provision. He emphasized that any Israeli participant would be "a *silent* observer and in no case . . . an active participant." He asked the prime contractors to cooperate, claiming that the Israeli presence would be in the best interests of the United States, the companies, and Israel. The contractors objected. "We are," Wall wrote Hartung, "running into a buzz saw of resistance to *any* involvement outside Corps with ABC and NAC."[9]

McNeely already had alerted Wall to the adamant opposition of Air Base Constructors' attorney Manning Seltzer, a former chief counsel in the Office of the Chief of Engineers. So the contractors' official reply came as no surprise. By telex and by letter, Fred Butler sent the same message: the presence of any outsiders at negotiations was totally unacceptable. Third parties would inhibit the free exchange of views and obstruct progress. Butler took Wall's assertion of a substantial Israeli interest in the proceedings and reduced it to its absurd conclusion: "If 'vital interest' is a criterion, we may as well include the stockholders of our various companies, not to mention U.S. taxpayers. We are irrevocably convinced that contract costs will increase and issues will be prolonged if any outside parties are allowed to participate."[10] The contract specified that the contractor and the Corps would conduct negotiations, and Butler insisted on adherence. Unlike the government at the start of the program, the contractors at the end would not be swayed by Bar-Tov's forceful personality.

In the face of this opposition, Bar-Tov withdrew his request to participate at the negotiating table. Discussions with the contractors, which had stopped pending resolution of this matter, resumed. Bar-Tov retired from the air force in November, and the issue of Israeli participation did not come up again.[11]

Meanwhile, the removal of the Near East Project Office from Tel Aviv to Fort Belvoir was carried out over the summer of 1982. In late June five finance and accounting employees arrived at the new headquarters as the nucleus of the resource management office. In the office of counsel, two of the three lawyers who were still in Israel in July left on 1 August, one for a new assignment and the other for Fort Belvoir. One left in the middle of the month and went to Belvoir in early September. By the middle of September, the transition was completed, and the new office was in place in a one-story preengineered building, similar to the structures that had been used as offices at the Negev sites.[12] Alongside stood an unheated warehouse in which were deposited the 1,000 or so boxes of Near East Project Office records, ranging from commander's logs to daily concrete batch plant reports.

The organizational structure that Colonel Moore established at Fort Belvoir differed somewhat from the one he had envisioned while still in Tel Aviv. He originally planned an organization with five branches—counsel, procurement and supply, contract administration, property, and resource management—and the liaison office in Tel Aviv manned by David Levy. The Fort Belvoir office combined the property and procurement branches and left the two procurement positions vacant. Moore's staff did not expect to face any issues involving supply matters.[13]

Two basic types of disputes needed to be resolved. One involved the validity of contractor expenditures and pitted the government against the contractors. Issues of this type were well anticipated and documented and were settled fairly quickly. For example, by 1 February 1983, the Corps and Air Base Constructors resolved all outstanding issues except a $900,000 dispute regarding the office overhead charged by the firm's design subcontractor. Three weeks later that matter too was settled, with the designer accepting a $500,000 settlement. Virtually all such disputes were laid to rest by the spring of 1983.[14]

The other type of disagreement involved third-party suits: actions brought against the prime contractors by former employees, vendors, or subcontractors. These were more difficult to predict. They continued to trickle in, sometimes surprising Moore and his small staff, even as late as 1985. They also amounted to a much higher dollar value. The suits that were active at the beginning of 1983 totaled more than $110 million. They involved a host of issues from sexual harassment and wrongful termination of employment to claims for customs duties and taxes.[15]

The largest of these legal actions came as no surprise. Moore and his closeout team expected during the fall of 1982 that the Palace Hotel lease would cause them significant problems in the coming months. Management Support Associates, which was the prime contractor responsible for the hotel, offered owner David Taic a lump-sum settlement instead of restoration. After Taic rejected the offer, the contractor refurbished the building. According to Moore, the consortium's efforts "proved very successful, were completed on time, and initial reports by objective consultants indicate[d] the hotel is in as good, or better, condition than when accepted by MSA three years ago." Nevertheless, Moore still expected extensive litigation.[16]

Formal return of the Palace to Taic took place in August. Taic had ninety days to take whatever legal action he chose, and he waited until almost the last minute to bring a suit of $3.89 million against Management Support Associates for damage to his build-

ing. It soon became clear that settling this case was going to take several years. As Moore noted, "In litigation you talk in years, and the major litigation of the hotel, we knew right away was going to be a four- or five-year [effort], because even after three years if you got to some kind of decision you would be in an appeal process." Moore hoped to have the matter settled by mid-1986, but in 1988 the case was still undecided.[17]

Ironically, while Taic's case against the relatively small Management Support Associates organization loomed larger, all of the outstanding issues relating to the two huge construction contracts were settled quickly. By January 1983 most disputes between the government and the contractors were resolved. Based on various audits, the government had withheld nearly $6 million from the two joint ventures. Settlement resulted in payment of about $3.8 million of the disputed amount and concession of the remainder by the companies. Within the next two months the government and both consortia reached out-of-court agreements concerning disputed overhead costs for the design elements and on the few other remaining issues. By spring these contractors shut down their suburban Virginia offices entirely.[18]

In the spring of 1983 the structure and size of the closeout organization changed significantly. Colonel Moore became commander of the Facilities Engineering Support Agency of the Corps on 29 April, while remaining in charge of the closeout on a part-time basis. The size of the group had been reduced to eleven over the past months, and by June the team was down to four. In addition to Colonel Moore, only Frank Billiams, attorney Paul Cheverie, and secretary Sallie Thornburg remained. Most of the office furniture had been sold or turned over to the Israeli mission, and the number of unresolved claims declined. Little remained to be resolved except the Palace Hotel suit.[19]

From that time forward, the trend in staffing and outstanding issues continued to be downward. Only Thornburg still worked full-time on the project. The others participated when needed from new jobs that they held elsewhere. Moore retired in 1986, and Damico, now head of the construction division in the Baltimore District of the Corps and associated with the program longer than anyone, became contracting officer responsible for resolution of the outstanding issues.[20]

New disputes still emerged from time to time. In the fall of 1983 Fiat-Allis filed a claim for reimbursement for spare parts that the company asserted were damaged before being returned to their warehouses. Such surprises occurred until the very end. Even as late as 1985 the Portuguese government sued the program for taxes

allegedly owed by a subsidiary of Air Base Constructors. As Moore later recalled, "what is the surprising thing, you end up with spikes [of activity] and there is surprise litigation that comes out of the woodwork."[21]

So the closeout dragged on into the late 1980s, in sharp contrast to the program itself, which was carried out with remarkable speed. For that matter, the major issues between the government and the contractors were also resolved quickly and without resort to the courts. The government had good records and able negotiators, and the contractors shared the Corps' interest in completing negotiations quickly.[22]

The program did cost more than originally allotted, but very little more. The original budget estimate of $1.038 billion was exceeded by about $20 million, although the ongoing litigation made it impossible to determine a precise figure in 1988. Any number of factors could have caused the small overrun. Perhaps it was the need in 1979 and 1980, as Joseph R. "Ray" Shaw said, to "buy like hell to get the project moving." Maybe what Wall described as early "lapses in financial discipline" among American managers interested in their own comfort or the drastic increase in indirect costs that accompanied the surge in manpower during the late months of 1980 pushed the project over budget.[23] But whatever the reasons, the amount was small, and Alan Shepherd was probably right when he concluded that, given the variables, the uncertainties, and the haste, "Any board of directors would kiss your feet."[24]

Notes

1. Ltr, Moore to HQ, USAF, Office of Director of Engineering and Services, 19 Nov 82, sub: Final Monthly Summary Progress Report, IABPC, 91/2.

2. Shaw interview, Apr 82; Ltr, Wall to Bratton, 4 Jun 82, sub: Monthly Report, Israeli Airbase Program, IABPC, 91/2.

3. Wall interview, May 82; McNeely interview, Mar 84.

4. Moore interview, Dec 85.

5. Memo, Brig Gen Jerome B. Hilmes, Deputy Director for Facilities Engineering and Housing, Directorate of Military Programs, through CS and ASA (IL&FM), for ASD (MRA&L), 5 Apr 82, sub: Proposed Relocation of Near East Project Office to Fort Belvoir—Decision Memorandum, IABPC, 62/4; DOD Directive 5305.2, *Decentralization of Department of Defense Activities from the National Capital Region* (Washington, D.C.: OSD, 24 Sep 63).

6. MFR, McNeely, 22 Apr 82, Meeting with DSAA on Israeli Air Base Program, IABPC, 41/13; MFR, Wall, 25 Apr 82, sub: Telephone Conversation with General Wilson, IABPC, 41/13.

7. MFR, Maj Harold E. Fievet, Jr., 8 Jun 82, sub: MOD Concept of Closeout, File 201–07, IABPC, 41/13.

8. MOU, Wall and Bar-Tov, 23 Jun 82, IABPC, 83/1.

9. Memo, Wall for Contracting Officers and General Managers, MSA, ABC, NAC, 4 Jul 82, sub: MOD Representative Role as Observers in Project Contract Closeout Operations, IABPC, 83/1; Ltr, Wall to Hartung, 4 Jul 82, IABPC, 83/1.

10. Memo, McNeely for Moore, 25 Jun 82, sub: Questions on MOD Budget and Other Matters, IABPC, 83/1; Telex, Butler to Wall, n.d., IABPC, 83/1; Ltr, Butler to Moore, 7 Jul 82, sub: Closeout Negotiations, IABPC, 83/1.

11. Ltr, Moore to Bratton, 3 Aug 82, sub: Monthly Report, Near East Project Office, IABPC, 91/2; Ltr, Moore to Albro, 12 Nov 82, sub: Status Report, Near East Project Office, IABPC, 91/2.

12. Ltr, Moore to Robert Flahive, Deputy Chief, OAS, OCE, 1 Jun 82, sub: Space Planning for the Kingman (Humphreys) Complex, IABPC, 62/4; NEPO Organization Charts, 3 Aug and 20 Sep 82, IABPC, 88/5; Memo, Paul Cheverie, Chief Counsel, for Col Moore, 27 Jun 82, sub: OC Schedule for Move to Ft. Belvoir, IABPC, 41/13.

13. Total strength stood at eighteen in September. The executive office consisted of the commander, deputy, staff support assistant, and secretary. The contract administration branch had a civil engineer (contract management), a civil engineer (cost schedule), two civil engineers (contract administration), and a secretary. Resource management included six people: a financial manager, an auditor, an accountant, an accounting technician, a voucher examiner, and a secretary. Office of counsel consisted of two lawyers, and property and procurement was a one-man operation. NEPO Organization Charts, 3 Aug and 20 Sep 82; Moore interview, Dec 85.

14. Ltr, Moore and H. R. Nelson, Deputy General Manager, Air Base Constructors, 25 Feb 83, sub: ABC Overhead on Design Subcontract Settlement Agreement, in NEPO Program Manager Update, 11 Mar 83, IABPC, 91/4.

15. NEPO Briefing for Brig Gen Moshe Bar-Tov (Ret.), 27 Jan 83, IABPC, 91/3.

16. Ltr, Moore to Albro, 12 Nov 82, sub: Status Report, Near East Project Office, IABPC, 91/2; Ltr, Moore to Bratton, 20 Sep 82, sub: Monthly Report, Near East Project Office, IABPC, 91/2.

17. Ltr, Moore to Albro, 12 Nov 82, sub: Status Report, Near East Project Office; NEPO, OCE Program Update, 3 Mar 83, IABPC, 91/2; Moore interview, Dec 85; NEPO Briefing for Bar-Tov, 27 Jan 83.

18. NEPO Briefing for Bar-Tov, 27 Jan 83; NEPO, OCE Program Update, 3 Mar 83.

19. Ltr, Moore to Albro, 29 Mar 83, sub: Near East Project Office Transition Update, IABPC, 91/4; Ltr, Moore to Bar-Tov, 7 Jun 83, sub: Program Update, IABPC, 91/4.

20. Ltr, Moore to Damico, 13 May 86, sub: Designation of Successor Contracting Officer, IABPC, 91/5.

21. Ltr, Moore to Bar-Tov, 18 Oct 83, sub: Program Update, IABPC, 91/5; Ltr, Moore to Reuven Kokolevich, 1 Oct 85, sub: Israeli Air Base Program Update, IABPC, 91/5; Moore interview, Dec 85.

22. McNeely interview, Mar 84.

23. Shaw interview, Apr 82; B. Steinberg interview; Wall, "Managing Construction of Israeli Air Bases in Negev—A Personal Perspective," *Journal of Management in Engineering* 1 (October 1985): 236.

24. Shepherd interview, May 82.

CHAPTER 16

Conclusion: A Forgotten Success

Ten years after Camp David a broader peace remains elusive.
William B. Quandt, National Security Council staff member, Carter administration[1]

Looking back from the perspective of nearly a decade, it is clear that for the Corps of Engineers the Israeli air base program was a significant success. Under the direction of Lt. Gen. John W. Morris, the Corps leadership eagerly pursued this mission in which they knew the organization must not fail. Maj. Gen. James Johnson and his North Atlantic Division staff in New York and the planners in Washington—Fred McNeeley, Lee Garrett, Bates Burnell, and the people who worked for them—jumped at the chance to get the highly visible risk-laden job for the Corps. Those who followed—Jack Gilkey, Dick Curl, Don O'Shei, Ben Lewis, John Wall, and the others—spent no time complaining about the difficult situation that had been thrust on them. They too appreciated the importance of the effort, and many thrived in the challenging, fast-paced environment. Morris' agency responded with the spirit that he sought in subordinates. Collectively, the Corps did not shy away from the opportunity to fail.

They did not fail. In fact, in conjunction with the other government and contractor participants in the program, they produced a remarkable success. The management plan that came out of the combined efforts of New York and Washington offices of the Corps got the program moving, and the cost estimates produced in the office of John Reimer turned out to be remarkably accurate. However, these estimates were not self-fulfilling. It was the management of John Wall and his staff along with the cooperation of the contractors that balanced the requirements of schedule, quality construction, and the budget to complete the program with only the smallest of overruns.

Success did not come easily. The complexity of the management scheme in Tel Aviv in combination with conflicts between organizations and the clashes of strong personalities did produce difficulties. But all of the participants acted in what they saw as the best interests of the mission, and the commitment of all to the goals of the program was never in doubt.

All knew that failure would have had far-reaching implications. The Carter administration's quest for peace between Israel and Egypt and in the Middle East at large would have been jeopardized had the Corps not succeeded. But the bases were completed, and the Israelis honored their historic commitment to withdraw from the Sinai peninsula. The Corps of Engineers added another major accomplishment to its list of huge construction projects and reaffirmed its ability to work in conjunction with private contractors in an environment that approximated mobilization for war. Military construction by the Corps of Engineers proved a valuable tool in the implementation of the nation's foreign policy.

The air base program was only the most prominent and most recent episode in the long history of post–World War II construction by the Corps of Engineers in the Middle East. From the early days of the cold war, the Corps supported American policy in the region with construction for American forces and for friendly governments. Most of the work was explicitly military, and early projects ranged from bases for American air forces along the southern shore of the Mediterranean in Libya and Morocco to a network of logistical, administrative, and tactical facilities for the shah's government in Iran. Engineer projects in the 1960s also included over five hundred miles of highways in Afghanistan—about one-third of that landlocked country's paved roads. Beginning around the same time and extending well into the 1980s, the Corps also managed a huge program in the Kingdom of Saudi Arabia, a multibillion-dollar complex of military and civil construction for several government ministries.[2]

So, by the time of Camp David, military construction was a tried and true albeit little known instrument of American policy in the region. But the connection of the air base work in the Negev to diplomacy was more explicit and immediate than in most cases. The project was tied directly to a specific diplomatic initiative rather than to long-range policy goals.

The air base program differed from American construction elsewhere in the region in other ways. These differences emanated from the specific policy goals that were involved and the contrast between Israel's level of maturation and that of other Middle East-

ern nations rather than from the special relationship between the United States and Israel. In other Middle Eastern locales, Corps projects contributed to development programs for societies on the road to modernization and diversification. But Israel was already a modern industrial nation, with a politically sophisticated and combative press and construction practices that Americans found idiosyncratic but conceded to be effective. This was not nation building, as the provision of infrastructure in developing countries is frequently called. In fact, in some respects something antithetical to nation building seemed to take place. The American presence, particularly because it was related to the withdrawal from the Sinai, represented a blow to Israeli national pride. Distress was especially acute in the building industry and crafts, which interlocked in the Histadrut labor federation. This unhappiness combined with the stress caused by the Portuguese workers in Negev towns to generate considerable negative publicity. It also underscored the difference between Israel and other Middle Eastern hosts of Corps projects as well as the distinctions between the political imperatives that drove the air base program and other Corps work in the region.

The most important questions about the air base program pertain to the ultimate result of the diplomacy that created the Corps mission in the Negev. What happened to the Camp David accords and the possibility of peace in the Middle East? On one hand, there is peace between Israel and Egypt, a peace that has seen some rocky times but still endures. However, Camp David was also and perhaps more importantly intended to serve as the basis for an overall regional peace and for resolution of the issues surrounding Palestinian nationality and territory. As a framework for regional peace, Camp David is a dead letter—repudiated by some, ignored by others, and supported by only a few.

Many Arab countries have firmly rejected further negotiations based on the Camp David accords. Most notable among these are Egypt itself, which was so instrumental in beginning the process, and Jordan, which has renounced its claims to its former territories on the West Bank of the Jordan River. They now seek solutions through a comprehensive international conference supported by the United States and the Soviet Union, the very approach that both Israel and the United States sought to avoid through the Camp David meetings. Egyptian President Hosni Mubarak, who had pledged full support for Camp David when he succeeded Sadat, grew disenchanted when discussions of Palestinian autonomy collapsed early in the 1980s. He later rejected the Camp David formula for Palestinian autonomy as "a thing of the past whose time has ended." The Palestinian protests against Israeli occupa-

tion of the West Bank and Gaza, the *intifada* that started late in 1987 and raged through the following year and into 1989, reinforced the conviction of many that Camp David did not show the way to a solution that would guarantee an end to the occupation. Other Arab countries—among them Saudi Arabia, Kuwait, the United Arab Emirates, Morocco, and Syria—shared this view.[3]

In Israel the Camp David accords still had strong official backing. Prime Minister Yitzhak Shamir remained committed to Camp David at the end of 1988, perhaps because the accords had provided an excuse for his government to forestall meaningful negotiations regarding the future of Palestinians in the occupied territories. "We have made it clear to all potential partners," Shamir was reported as saying, "that we are committed to the Camp David accords and we will not change our position in this regard."[4]

Shamir's adamancy notwithstanding, the fate of the three key participants underscores the failure of the Camp David initiative as a framework for regional peace. Sadat, who risked so much to open communications with Israel, was assassinated in his own country and did not live to see the completion of the Israeli withdrawal from the Sinai. Begin, who welcomed the initiative, became a recluse after Israel's disastrous invasion of Lebanon in 1982 and the death of his wife. Carter, who brought the two together, was defeated in Ronald Reagan's landslide election in 1980. As Ambassador Samuel Lewis reflected, looking back in the mid-1980s, regional peace seemed "a lonely relic of shattered dreams." True, Israel and Egypt remained formally at peace, and that in itself was a substantial achievement "in a tormented region where peace is rare and warfare and terror seem endemic."[5] But on the tenth anniversary of Sadat's visit to Jerusalem, both countries felt "ambivalence and a sense of disappointment," according to Glenn Frankel of the *Washington Post*.[6] Gone was the sense of "the turning point," as former Israeli Foreign Minister Abba Eban called Sadat's dramatic 1977 gesture, when "the windows were opened and the air came rushing in."[7]

While Camp David has not quite been forgotten, and indeed should be remembered for bringing peace between Israel and Egypt, the air base program quickly disappeared from the public memory of even the American president who helped create it. The chronology in President Carter's memoir ignored the program entirely, moving from the March 1979 treaty to the November seizure of American citizens in Iran, without mention of the intervening establishment of the Near East Project Office. Similarly, his entry for April 1982 mentioned only the return of the Sinai and the dismantling of the settlements. There was nothing about the successful completion of base construction and attainment of initial oper-

ating capability by the treaty date, an accomplishment that made possible the Israeli relocation of defense facilities from the Sinai.[8]

The Palestinian uprising that began late in 1987 dispelled any doubt regarding the irrelevance of Camp David for resolution of the overarching regional conflict. For two years large-scale Palestinian protests swept through the Gaza strip and West Bank. While the uprising raged across the occupied territories, scholars in the United States noted the rejection of Camp David that the *intifada* reflected. William Quandt had been at Camp David as a member of President Carter's National Security Council staff in September 1978. Ten years later, in September 1988, he wrote that the "clear message [of the uprising] is that the Camp David formula of 'autonomy' and the idea of having Egypt or Jordan represent Palestinian interests are unacceptable."[9] New proposals and initiatives were required.[10]

So to a large extent, the Camp David accords were a failure. The Palestinian demand for a state remains at the heart of tensions in the Middle East. Yet the peace between Egypt and Israel has endured, and travel, communication, and commerce between the signatories continue. In fact, in the spring of 1989, with the final return to Egypt of Taba, a tiny slice of disputed Red Sea beach on the edge of the Sinai, prospects for an enduring peace seemed good.[11] That much still remains the legacy of Camp David and the air base program.

Many people deserve the credit, notably the leaders of the countries concerned, for their vision and commitment. But the men and women of the air base program—Israeli, American, Thai, Portuguese, and others—helped create the conditions that made peace possible. Working for the U.S. government, the Israeli government, contractors, and suppliers, they made the Israeli withdrawal from the Sinai and the ensuing peace between Israel and Egypt possible. Their efforts should not be forgotten.

Notes

1. *New York Times*, 17 Sep 88.

2. Very little has been written on the vast program of Middle Eastern construction carried out by the Corps of Engineers, except the lessons-learned publications cited in the introduction, a handful of articles in The *Military Engineer* by officers who participated in one project or another, and the inadequate histories of some of the engineer districts that carried out the work. Yet there is much to be learned from this program, on a wide range of subjects from desert construction methods to the nature of modernization efforts in the region and the extent of American support for the military establishments of Middle Eastern countries. The records of these endeavors are voluminous and are housed in several locations: successors of the districts and divisions that did the work, the research collections of the Office of History of the Corps of Engineers, and various parts of the National Archives system.

3. *New York Times*, 16 and 22 Feb 88.

4. *Washington Post*, 4 Nov 88 and 25 Mar 89.

5. *New York Times*, 23 Mar 86.

6. *Washington Post*, 19 Nov 87.

7. Ibid.

8. Jimmy Carter, *The Blood of Abraham* (Boston, Mass.: Houghton Mifflin, 1985), pp. xviii–xix. David Shavit's *The United States in the Middle East: A Historical Dictionary* (Westport, Conn.: Greenwood Press, 1988) also fails to mention the Near East Project Office or its work.

9. *New York Times*, 17 Sep 88.

10. For some ideas by a distinguished journalist, see Thomas L. Friedman, "Proposals for Peace," *New York Times Magazine*, 30 October 1988.

11. *New York Times*, 27 Feb 89.

Bibliography

Books

Adan, Avraham. *On the Banks of the Suez: An Israeli General's Personal Account of the Yom Kippur War.* San Rafael, Calif.: Presidio Press, 1980.

Association of Graduates, United States Military Academy. *Register of Graduates and Former Cadets, 1802–1984.* Association of Graduates, 1984.

Bartov, Hanoch. *Dado: 48 Years and 20 Days.* Trans. Ina Friedman. Tel Aviv: *Ma'ariv* Book Guild, 1981.

Benvenisti, Meron. *The West Bank Data Project: A Survey of Israel's Policies.* Washington, D.C.: American Enterprise Institute for Public Policy Research, 1984.

Bernstein, Burton. *Sinai: The Great and Terrible Wilderness.* New York: The Viking Press, 1979.

The Book of the International Symposium on the 1973 October War, Cairo, 28-31 October 1975. [Cairo: Ministry of War, 1976.]

Carter, Jimmy. *The Blood of Abraham.* Boston, Mass.: Houghton Mifflin, 1985.

———. *Keeping Faith: Memoirs of a President.* New York: Bantam Books, 1982.

Churchill, Randolph S., and Churchill, Winston S. *The Six Day War.* Boston, Mass.: Houghton Mifflin, 1967.

Dayan, Moshe. *Breakthrough: A Personal Account of the Egypt-Israel Peace Negotiations.* New York: Alfred A. Knopf, 1981.

———. *Moshe Dayan: Story of My Life.* New York: Warner Books, 1977.

Eveland, Wilbur C. *Ropes of Sand: America's Failure in the Middle East.* New York: W. W. Norton, 1980.

Fahmy, Ismail. *Negotiating for Peace in the Middle East.* Baltimore, Md.: Johns Hopkins University Press, 1983.

Fernandez-Armesto, Felipe. *Sadat and His Statecraft.* London: The Kensal Press, 1982.

Freedman, Robert O., ed. *Israel in the Begin Era.* New York: Praeger Publishers, 1982.

Friedlander, Melvin A. *Sadat and Begin: The Domestic Politics of Peacemaking.* Boulder, Colo.: Westview Press, 1983.

Hazelton, Lesley. *Where Mountains Roar, A Personal Report from the Sinai and Negev Desert.* New York: Holt, Rinehart and Winston, 1980.

Heikal, Mohamed. *Autumn of Fury: The Assassination of Sadat.* New York: Random House, 1983.

Herzog, Chaim. *The Arab-Israeli Wars: War and Peace in the Middle East.* New York: Random House, 1982.

———. *The War of Atonement, October 1973.* Boston, Mass.: Little, Brown & Co., 1975.

Hillel, Daniel. *Negev: Land, Water, and Life in a Desert Environment.* New York: Praeger Publishers, 1982.

Holden, David, and Johns, Richard. *The House of Saud: The Rise and Rule of the Most Powerful Dynasty in the Arab World.* New York: Holt, Rinehart and Winston, 1981.

Katz, Shmuel. *The Hollow Peace.* Jerusalem: Dvir and the *Jerusalem Post,* 1981.

Kays, Doreen. *Frogs and Scorpions: Egypt, Sadat and the Media.* London: Frederick Muller Limited, 1984.

Kissinger, Henry. *Years of Upheaval.* Boston, Mass.: Little, Brown & Co., 1982.

Kurzman, Dan. *Ben-Gurion: Prophet of Fire.* New York: Simon and Schuster, 1983.

Luttwak, Edward N., and Horowitz, Daniel. *The Israeli Army 1948–1973.* Cambridge, Mass.: Abt Books, 1983.

Middle East War Projects of Johnson, Drake & Piper, Inc., for the Corps of Engineers, U.S. Army 1942–1943. New York: William E. Rudge's Sons, 1943.

Morris, Yaacov. *Masters of the Desert.* New York: G. P. Putnam's Sons, 1961.

Moskin, J. Robert. *Among Lions: The Battle for Jerusalem, June 5–7, 1967.* New York: Arbor House, 1982.

Neff, Donald. *Warriors of Jerusalem: The Six Days That Changed the Middle East.* New York: Linden Press/Simon and Schuster, 1984.

O'Ballance, Edgar. *No Victor, No Vanquished: The Yom Kippur War.* San Rafael, Calif.: Presidio Press, 1978.

Peri, Yoram. *Between Battles and Ballots: Israeli Military in Politics.* Cambridge, England: Cambridge University Press, 1983.

Pollock, David. *The Politics of Pressure: American Arms and Israeli Policy Since the Six-Day War.* Contributions in Political Science, no. 79. Westport, Conn.: Greenwood Press, 1982.

Sachar, Howard M. *Egypt and Israel.* New York: Richard Marek Publishers, 1981.

———. *A History of Israel: From the Rise of Zionism to Our Time.* New York: Alfred A. Knopf, 1976.
Sadat, Anwar el. *In Search of Identity: An Autobiography.* New York: Harper and Row, 1977.
Schiff, Ze'ev. *A History of the Israeli Army, 1874 to the Present.* New York: Macmillan, 1985.
——— and Ya'ari, Ehud. *Israel's Lebanon War.* Trans. Ina Friedman. New York: Simon and Schuster, 1984.
Shavit, David. *The United States in the Middle East: A Historical Dictionary.* Westport, Conn.: Greenwood Press, 1988.
Shazly, Saad el. *The Crossing of the Suez.* San Francisco, Calif.: American Mideast Research, 1980.
Silver, Eric. *Begin: The Haunted Prophet.* New York: Random House, 1984.
Toward Peace in the Middle East: Report of a Study Group. Washington, D.C.: The Brookings Institution, 1975.
Vilnay, Zev. *The Guide to Israel.* Jerusalem: Daf-Chen Press, Ltd., 1980.
Weizmann, Ezer. *The Battle for Peace.* New York: Bantam Books, 1981.
Who's Who in America, 1982–1983. 2 vols. Chicago, Ill.: Marquis Who's Who, 1982.

Periodicals

Avishai, Bernard. "The Victory of the New Israel." *New York Review of Books* 28 (13 August 1981).
Biton Heil Ha'avir. 1981.
Brilliant, Joshua. "Fast and Loose." The *Jerusalem Post Magazine* 18 (September 1981).
Commerce Business Daily. 1979.
Connor, Richard D. "Contracting for Construction Management Services." *Law and Contemporary Problems* 46 (January 1983).
Engineering News-Record. 1979–1985.
Elon, Amos. "From the Uprising." *New York Review of Books* 35 (14 April 1988).
Franks, Lucinda. "Israel After Lebanon." *New York Times Magazine,* 25 March 1984.
Friedman, Thomas L. "Proposals for Peace." *New York Times Magazine,* 30 October 1988.
Gilkey, Clarence D. "Fast-Tracking the Israel Air Bases." The *Military Engineer* 72 (September-October 1980).

Hazelton, Lesley. "Forgotten Israelis." *New York Review of Books* 27 (29 May 1980).

International Construction Newsletter 4 (1979).

International Construction Week 8 (1979).

Jabber, Paul. "U.S. Interests and Regional Security in the Middle East." *Daedalus* 109 (Fall 1980).

McQuade, Walter. "A Construction Job That Will Help Buy Peace." *Fortune* 100 (16 June 1979).

The *Middle East.* 1983.

Middleton, Drew. "Israel's Defense: As Good As Ever?" *New York Times Magazine,* 19 May 1985.

Milton, T. R. "Mideast Survey: Problems and Prospects." *Air Force Magazine* 63 (August 1980).

Newsview (Tel Aviv). 1982–1983.

Newsweek. 1981.

Parkinson, Edward L. "Getting a Handle on Co$t." *Engineering and Services Quarterly* 23 (Summer 1982).

Pettingell, Warren H. "Managing Construction of a Macro-Airbase-Project in the Negev: A Contractor's Perspective." *Technology in Society: An International Journal* 10 (1988).

Reed, Stanley. "Syria's Assad: His Power and His Plan." *New York Times Magazine,* 19 February 1984.

Rosenblatt, Roger. "From the Battlefield of Beliefs." *New York Times Book Review* 88 (6 November 1983).

Seale, Patrick. "The Egypt-Israel Treaty and Its Implications." *World Today* 35 (May 1979).

Squires, William R. III, and Murphy, Michael J. "The Impact of Fast Track Construction and Construction Management on Subcontractors." *Law and Contemporary Problems* 46 (January 1983).

Tieder, John B., Jr., and Cox, Robert K. "Construction Management and the Specialty Trade (Prime) Contractors." *Law and Contemporary Problems* 46 (January 1983).

Time Magazine. 1981.

[United States Air Force] *Engineering and Services Quarterly.* 1979–1983.

U.S. News and World Report. 1980.

Wall, John F. "Israeli Air Base Project: Construction Miracles in the Desert." The *Military Engineer* 73 (September-October 1981).

———. "Managing Construction of Israeli Air Bases in Negev—A Personal Perspective." *Journal of Management in Engineering* 1 (October 1985).

World Press Review. 1982.

Wright, Clifton D., Jr. "Air Force Engineering and Services—Investing Today for a Better Tomorrow." *Constructor* 67 (May 1985).

Government Publications

Chambers, John W. *The North Atlantic Engineers: A History of the North Atlantic Division and Its Predecessors in the U.S. Army Corps of Engineers.* New York: North Atlantic Division, U.S. Army Corps of Engineers, 1980.

Kitchens, James H. III. *A History of the Huntsville Division, U.S. Army Corps of Engineers, 1967–1976.* Huntsville, Ala.: U.S. Army Engineer Division, Huntsville, 1978.

Office of the Federal Register, National Archives and Records Administration, and General Services Administration. *Public Papers of the Presidents of the United States: Jimmy Carter, 1979.* Washington, D.C.: Government Printing Office, 1980.

U.S. Army. Army Regulation 15–6. *Boards, Commissions, and Committees: Procedure for Investigating Officers and Boards of Officers.* Washington, D.C.: Headquarters, Department of the Army, 24 Aug 77.

———. Army Regulation 310–25. *Military Publications: Dictionary of United States Army Terms.* Change 1. Washington, D.C.: Headquarters, Department of the Army, 12 Apr 77.

———. Army Regulation 415–17. *Construction: Cost Estimating for Military Programming.* Change 1. Washington, D.C.: Headquarters, Department of the Army, 1 Aug 78.

———. Army Regulation 415–17. *Construction: Cost Estimating for Military Programming.* Washington, D.C.: Headquarters, Department of the Army, 15 Feb 80.

U.S. Army. Corps of Engineers. Michael J. O'Connor and Glenn E. Colwell. *Cost-Plus Incentive Fee for Construction Contracts.* Technical Report P–118. Champaign, Ill.: Construction Engineering Research Laboratory, Dec 80.

———. Engineer Circular 310–1–438. *Military Publications: Rescission.* Washington, D.C.: Office, Chief of Engineers, 10 Dec 82.

———. Engineer Regulation 1–1–190. *Administration: Establishment of REDI DIST.* Washington, D.C.: Office, Chief of Engineers, 12 Apr 68.

———. Engineer Regulation 37–3–7. *Financial Administration: Budgeting and Funding for Military Functions Appropriations.* Washington, D.C.: Office, Chief of Engineers, 30 Nov 79.

———. Engineer Regulation 415–345–230. *Construction: Negotiation Regulation for Cost-Plus-A-Fixed-Fee Construction Contracts.* Washington, D.C.: Office, Chief of Engineers, 1 Oct 67.

———. Engineer Regulation 1180–1–1. *Contracts: Engineer Contract Instructions.* Washington, D.C.: Office, Chief of Engineers, 1 Dec 69.

———. *The Israeli Airbase Program: Lessons Learned.* Engineer Pamphlet 5–1–5. Washington, D.C.: Office, Chief of Engineers, Sep 82.

———. *Manual for Administration of Cost-Plus-A-Fixed-Fee Construction Contracts.* Washington, D.C.: Office, Chief of Engineers, 1 Jan 51.

———. Office Memorandum 10–1–1. *Organization and Functions: Office of the Chief of Engineers.* Washington, D.C.: Office, Chief of Engineers, 3 Nov 80.

———. Construction Engineering Research Laboratory. J. G. Kirby. *Project Manager's Handbook for Special Projects.* Technical Report P–85/01. Champaign, Ill.: Construction Engineering Research Laboratory, Oct 84.

———. Engineer Studies Center. Jill M. Davis, G. Leslie Geiger, and Robert B. Grundberg. *The USACE in the Middle East—Benefits and Experiences for Future Construction Challenges.* Report 84–11. Fort Belvoir, Va.: Engineer Studies Center, Dec 84.

U.S. Congress. *Statutes at Large.* 1979.

U.S. Congress. General Accounting Office. *U.S. Assistance to the State of Israel.* Report No. 83–51. Washington, D.C.: Government Printing Office, 1983.

U.S. Congress. House of Representatives. *Special International Security Assistance Act of 1979. Communication from the President of the United States Transmitting a Draft of Proposed Legislation to Authorize Supplemental International Security Assistance for the Fiscal Year 1979 in Support of the Peace Treaty Between Egypt and Israel and Related Agreements, and for Other Purposes.* 96th Cong., 1st sess., 1979, H. Doc. 96–91.

———. Committee on Appropriations. Subcommittee on Military Public Works. *Hearings. Investigations of Military Public Works, Part 4, Moroccan Air Base Construction.* 82d Cong., 2d sess., 1952.

———. *Report. Moroccan Air Base Construction.* 82d Cong., 2d sess., 1952.

U.S. Department of Defense. Department of Defense Directive 5105.38. *Defense Security Assistance Agency (DSAA).* Washington, D.C.: Office of the Secretary of Defense, 10 Aug 78.

———. Department of Defense Directive 5305.2. *Decentralization of Department of Defense Activities from the National Capital Region.* Washington, D.C.: Office of the Secretary of Defense, 24 Sep 63.

Interviews

Amick, Robert L. Apr 82, Tel Aviv, Israel.
Bar-Tov, Moshe. Aug 80, Apr 81, Oct 81, and May 82, Tel Aviv, Israel.
Barry, Robert I. Aug 80, Tel Aviv, Israel.
Bazilwich, Paul. Jan 80, New York, N.Y.
Billiams, Frank. Nov 86, Washington, D.C.
Blake, John. Aug 80, Ovda, Israel.
Brown, John R. Aug 80, Apr 81, Oct 81, and Apr 82, Tel Aviv, Israel.
Burnell, Bates C. (By telephone), Nov 83.
Butler, Fred. Aug 80, Ramon, Israel.
Chapla, Joseph R. Aug 80 and Apr 81, Tel Aviv, Israel.
Cheverie, Paul. Aug 86, New York, N.Y.
Clifton, Jack H. May 81, Tel Aviv, Israel.
Curl, Richard L. Oct 84, Washington, D.C.
Damico, Carl. Oct 79, Washington, D.C.; Aug 80, May 81, and Oct 81, Tel Aviv, Israel; and Nov 88, Baltimore, Md.
Davis, Irving. Aug 80, Ovda, Israel.
Gilkey, Clarence D. Aug 80, Tel Aviv, Israel.
Grafa, Otis. May 81, Ovda, Israel.
Graves, Ernest, Jr. Feb–Apr 85, Arlington, Va.
Graw, LeRoy H. Apr and Oct 81, Tel Aviv, Israel.
Gregor, Leonard H. Oct 81, Tel Aviv, Israel.
Griffis, Fletcher H. Aug 86, New York, N.Y.
Hansell, Haywood S. III. (By telephone), Jun 79, Washington, D.C.
Hartung, Paul T. Aug 80, Apr 81, Oct 81, and May 82, Tel Aviv, Israel.
Hays, James E. Dec 79, Alexandria, Va.
Hewitt, Oswald I. Jan 80, New York, N.Y.
Huggins, Richard. May 81, Ovda, Israel.
Jezior, Michael A. Jan 80, New York, N.Y.
Johnson, James A. Sep 83, Fort Belvoir, Va.
Kelly, Patrick J. May and Oct 81, Ovda, Israel.
Keener, Kenneth. Aug 80, Tel Aviv, Israel.
Lellis, Alfred. Apr 82, Tel Aviv, Israel.
Lewis, Bennett L. Jan–Feb 82 and Nov 83, Washington, D.C.
Lipsky, David. (By telephone), Nov 80, New York, N.Y.
Lloyd, Glenn D. Feb 87, Fort Belvoir, Va.
McGinness, Harry J. Apr 82, Tel Aviv, Israel.
McNeely, Frederick B. Sep 83 and Mar 84, Washington, D.C.
Maloney, Michael. Aug 80, May 81, and May 82, Tel Aviv, Israel.
Moore, John E. Oct 81 and Apr 82, Tel Aviv, Israel; and Dec 85, Fort Belvoir, Va.

Moon, Edgar N. Oct 81, Ovda, Israel.
Morris, John W. Mar 83, Arlington, Va.
Noah, Max W. Apr 83, Washington, D.C.
O'Connor, Michael J. (By telephone), Nov 84, Champaign, Ill.
Parkes, Bill. May and Oct 81, Ramon, Israel.
Peterson, Delbert D. May 81, Ovda, Israel; and Oct 81, Ramon, Israel.
Reimer, John F. Feb and Apr 82, and Dec 85, Washington, D.C.
Robertson, George R. May 85, Washington, D.C.
Sales, Janet. Apr 81, Tel Aviv, Israel.
Schweizer, John E. Jun 80, Falls Church, Va.
Shaw, Joseph R. Oct 81 and Apr 82, Tel Aviv, Israel.
Shepherd, Alan J. Oct 81 and May 82, Tel Aviv, Israel.
Sibley, Alden K. Interviewed by Paul K. Walker, Jul 82, Brownfield, Me. Interviewed by author (by telephone), Mar 83.
Snoddy, George. Apr 81, Tel Aviv, Israel.
Steinberg, Bory. Feb 85, Washington, D.C.
Steinberg, Naomi K. Dec 81, McLean, Va.
Taylor, Paul W. Jun 81, Washington, D.C.
Tener, Robert K. (By telephone), Jan 85, Dallas, Tex.
Theuer, Paul J. Sep 79, Washington, D.C.
Thomas, Charles R. Aug 80 and Oct 81, Tel Aviv, Israel.
Vinitsky, Alvin. Jan 80, New York, N.Y.
Wall, John F. Aug 80, May 81, Oct 81, and May 82, Tel Aviv, Israel; Sep 82, Washington, D.C.
West, Steven G. Oct 81 and Apr 82, Tel Aviv, Israel.
Wong, Donald. Aug 80, Tel Aviv, Israel.
Wray, William R. May 88, Fort Belvoir, Va.

Manuscripts

Records in the Defense Security Assistance Agency

U.S. Congress. House of Representatives. Committee on Foreign Affairs. Hearings Before the Subcommittee on International Security and Scientific Affairs and the Subcommittee on Europe and the Middle East of the Committee on Foreign Affairs, House of Representatives. Special International Security Assistance Act of 1979, the Egyptian-Israeli Treaty and the Upcoming Peace Negotiations. 26 April 1979.
U.S. Congress. Senate. Committee on Foreign Relations. Hearings Before the Committee on Foreign Relations, United States

Senate, to Hear Administration Officials on the Middle East Peace Package. 11 April 1979.

Records in the General Programs Branch, Construction Division, Military Programs Directorate, Headquarters, U.S. Army Corps of Engineers

File 1501–07. Israeli Air Base Program Files.

Records in the Office of History, Headquarters, U.S. Army Corps of Engineers

Dod, Karl C. Overseas Military Operations of the Corps of Engineers, 1945–1970.
Interviews by author.
Israeli Air Base Program Collection.
Lewis, Bennett L. Papers
Morris, John W. Papers.
Sibley, Alden K. Papers.
U.S. Army Engineer Sinai Construction Management Office. After-Action Report: Construction of Facilities in Sinai Desert. [1983.]

Records in the Middle East Task Group, Office of the Assistant Secretary of Defense for International Security Affairs

Correspondence Files. 1978.
Transcripts, U.S.-Israel Negotiations. Tel Aviv, March 1979.

Records in the National Archives, Suitland, Maryland

AMET Engineer Officer Files. AMET Records. Boxes 745 and 746. RG 332.
AMET G–2 Files. AMET Records. Box 724. RG 332.
Levant Service Command. Headquarters Journal. Records of Levant Service Command. Box 566916. RG 338.

Records in the North Atlantic Division, Corps of Engineers, New York City

Public Affairs Office Files.

Records in the Office of Air Force History, Bolling Air Force Base, Washington, D.C.

Headquarters, U.S. Air Force, Directorate of Engineering and Services. Semiannual Histories. 1979–1983.
Rogers, Edith C. The Army Air Force in the Middle East: A Study of the Origins of the Ninth Air Force, AAF Reference History 8, Manuscript 101–108.
U.S. Air Force Office of Information (later Office of Public Affairs). Biographies.

Records in the U.S. Army Center of Military History

Historical Section, Office of the Assistant Chief of Staff, G–2, HQ, AMET. History of Africa–Middle East Theater. Principal Special Staff Reports.

Records in the Washington National Records Center, Suitland, Maryland

Near East Project Office. Files. Accessions 77–83–0001, 77–83–1005, 77–83–1016, and 77–83–1025.

Newspapers

A Tarde (Lisbon). 1980.
Al Hamishmar (Tel Aviv). 1980–1981.
Army Times. 1979.
Ba'mahane (Tel Aviv). 1982.
Correio da Manha (Lisbon). 1980.
Davar (Tel Aviv). 1980.
Diario da Manha (Lisbon). 1980.
Diario de Lisboa (Lisbon). 1980.
Diario de Noticias (Lisbon). 1980.
Ha'aretz (Tel Aviv). 1979–1982.
Hamodia (Tel Aviv). 1981.
Hazofe (Tel Aviv). 1981.
International Herald Tribune (Paris). 1979–1980.
Jerusalem Post. 1979–1982.
The *Jewish Week-American Examiner* (New York). 1979.
Journal of Commerce (Tel Aviv). 1980–1982.
Los Angeles Times. 1981.
Ma'ariv (Tel Aviv). 1979–1982.
Mabat (Tel Aviv). 1979.
New York Daily News. 1978.

New York Post. 1979.
New York Times. 1979–1989.
Newsday (Long Island). 1981.
Philadelphia Inquirer. 1981.
Primero de Janeiro (Lisbon). 1980.
Sha'ar (Tel Aviv). 1980.
Shearim (Tel Aviv). 1981–1982.
Sheva News (Beersheva). 1980.
Wall Street Journal (New York). 1979–1982.
Washington Post. 1980–1989.
Yediot Aharonot (Tel Aviv). 1980.

Glossary

AAF	Army Air Force
ABC	Air Base Constructors
A-E	Architect-engineer
AFRCE (or AFR)	Air Force regional civil engineer
AF/LEE	Engineering and Services Directorate, Headquarters, United States Air Force
AMET	Africa–Middle East Theater
AR	Army regulation
ASA	Assistant secretary of the Army
ASA (IL&FM)	Assistant secretary of the Army for installations, logistics, and financial management
ASAF (MRA&I)	Assistant secretary of the Air Force for manpower, reserve affairs, and installations
ASD	Assistant secretary of defense
ASD (ISA)	Assistant secretary of defense for international security affairs
ASD (MRA&L)	Assistant secretary of defense for manpower, reserve affairs, and logistics
AWAC	Airborne Warning and Command
CE	Corps of Engineers
CENADNEG	Corps of Engineers, North Atlantic Division, Near East Group
CENEG	Corps of Engineers, Near East Group
CERL	Construction Engineering Research Laboratory
CG	Commanding general
CMH	U.S. Army Center of Military History
CMT	Sequential reply to internal memorandum written on disposition form (DF)
CO	Contracting officer
COE	Chief of engineers
CONUS	Continental United States
COR	Contracting officer's representative
CPFF	Cost-plus-fixed fee

CPO	Civilian Personnel Office(r)
CPSR	Contractor Purchasing System Review
CS	Chief of staff
DA	Department of the Army
DAEN-MP	Office symbol for Military Programs Directorate, Headquarters, U.S. Army Corps of Engineers
DAEN-MPC	Office symbol for Construction Division, Military Programs Directorate, Headquarters, U.S. Army Corps of Engineers
DAEN-MPC-F	Office symbol for Air Force Branch, Construction Division, Military Programs Directorate, Headquarters, U.S. Army Corps of Engineers
DAEN-MPC-G	Office symbol for International Programs Branch, Construction Division, Military Programs Directorate, Headquarters, U.S. Army Corps of Engineers (later General Programs Branch)
DAEN-MPE	Office symbol for Engineering Division, Military Programs Directorate, Headquarters, U.S. Army Corps of Engineers
DAEN-MPI	Office symbol for Israel Project Office, Directorate of Military Programs, Headquarters, U.S. Army Corps of Engineers
DAEN-MPT	Office symbol for Hays task force
DAEN-PRZ	Office symbol for Procurement Office, Headquarters, U.S. Army Corps of Engineers
DAEN-ZB	Office symbol for deputy chief of engineers
DASD	Deputy assistant secretary of defense
DASD (I&H)	Deputy assistant secretary of defense for installations and housing
DASD (ISA)	Deputy assistant secretary of defense for international affairs for the Near East, Africa, and South Asia
DCAA	Defense Contract Audit Agency
DCASR	Defense contract audit service region
DCC	Design and construction contractor
DF	Disposition form (format for internal memorandums)
DIRT	Definitization Internal Review Team
DOD	United States Department of Defense

DSAA	Defense Security Assistance Agency
DSD	Deputy secretary of defense
EC	Engineer circular
ECP	Engineering change proposal
EDES	Executive director, Engineer Staff, Office of the Chief of Engineers
ENR	*Engineering News-Record*
ER	Engineer regulation
ESC	Engineer Studies Center
FAST	Facilities and Support Team
FONECON	Telephone conversation
FRG	Federal Republic of Germany
GM	General manager
GO	General orders
GOI	Government of Israel
GPO	Government Printing Office
HQ	Headquarters
HQDA	Headquarters, Department of the Army
IABP	Israeli Air Base Program
IABPC	Israeli Air Base Program Collection
IAF	Israeli Air Force
IDF	Israel Defense Force
IOC	Initial operating capability
ISA	International Security Affairs
JOD	Joint occupancy date
MC	Military Construction Directorate
MEML	Middle East Manpower and Logistics
METG	Middle East Task Group, Office of the Assistant Secretary of Defense for International Security Affairs, for the Near East, Africa, and South Asia
MFR	Memorandum for the record
Milcon	Military construction
MOD	Israeli Ministry of Defense
MOU	Memorandum of understanding
MSA	Management Support Associates

NA	National Archives
NAC	Negev Airbase Constructors
NAD	North Atlantic Division
NAD-PA	Office symbol for North Atlantic Division Public Affairs Office
NAIPM-AD	Office symbol for administrative assistant to the project manager, NEPO
NEPO	Near East Project Office
NEPO-Rear	New York–based support group assigned to Near East Project Office
OAO	Ovda Area Office
OASD (ISA)	Office of the Assistant Secretary of Defense for International Security Affairs
OCE	Office of the Chief of Engineers, U.S. Army
OM	Office memorandum
OMB	Office of Management and Budget
OSD	Office of the Secretary of Defense
PAO	Public Affairs Office
P&C	Planning and control office of NEPO
PM	Program manager/project manager
PMO	Program management office
P&S	Procurement and supply division of NEPO
PTT	Post, Telephone, and Telegraph
QA	Quality assurance
QC	Quality control
RAO	Ramon Area Office
RD&A	Research, development, and acquisition
RFQ	Request for quotation
RG	Record group
RMO	Resource management office
SA	Secretary of the Army
SAF	Secretary of the Air Force
SCMO	Sinai Construction Management Office
Sitrep	Situation report
SOP	Standard operating procedure
SOS	Services of Supply
Stat.	*U.S. Statutes at Large*

TABII	Two air bases in Israel
TCN	Third country national(s)
USA	United States Army
USACE	United States Army Corps of Engineers
USAF	United States Air Force
USAFIME	United States Army Forces in the Middle East
USDAO	United States Defense Attache Office
WNRC	Washington National Records Center, Suitland, Maryland

Index

☆ U.S. GOVERNMENT PRINTING OFFICE: 1992 305–917

PIN : 069113–000


PIN : 069114-0