THE WHITE HOUSE
WASHINGTON

DATE: April 12, 1988

TO: Max Green, OPL

I would appreciate your providing a draft Presidential message for the 29th Annual Policy Conference of the American Israel Public Affairs Committee in Washington, May 15-17, 1988.

Please provide a draft message by APRIL 26.

Copies of previous messages attached, FYI.

Thank you.

Linda Watson

Presidential Messages
Room 18, x2941

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218604

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April 4, 1988

Dear Mr. Asher and Mr. Dine:

This letter is a follow-up response to yours of August 4, 1987 in which you invite the President to address the twenty-ninth Annual Policy Conference of the American Israel Public Affairs Committee in Washington, May 15-17, 1988.

The President asked me to convey his appreciation for your proposal to present him with the first annual Mort Silberman Democracy Award.

Unfortunately, the schedule to which he is committed that week, prior to his departure on May 26 for the summit meeting in Moscow, is so heavy that he will not be able to accept your generous offer.

With best wishes,

Sincerely,

FREDERICK J. RYAN, JR.
Director of Presidential Appointments
and Scheduling
Director of Private Sector Initiatives

Mr. Robert H. Asher
Mr. Thomas A. Dine
The American Israel Public
Affairs Committee
Suite 300
500 North Capitol Street, N.W.
Washington, DC 20001

FJR:KC:ckb 4FJR

cc: w/incoming to Message Unit for consideration

THE WHITE HOUSE

WASHINGTON

RECEIVED
MAR 04 1988
SCHEDULING OFFICE

February 29, 1988

RESPONSE DUE DATE: ASAP

REGRET

REQUEST FOR SCHEDULING RECOMMENDATION

MEMORANDUM FOR:

___ MARLIN FITZWATER	___ MARTY COYNE
___ JACK COURTEMANCHE	___ NANCY RISQUE
___ PAUL STEVENS	___ BOB TUTTLE
___ JAMES MCKINNEY	___ ARTHUR CULVAHOUSE
___ FRANK DONATELLI	___ WILLIAM BALL
X REBECCA RANGE	___ KENNETH CRIBB
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___ ELIZABETH BOARD	___ JIM HOOLEY
___ JIM KUHN	___ KATHY OSBORNE

FROM: FREDERICK J. RYAN, JR.
PRESIDENTIAL APPOINTMENTS AND SCHEDULING

Please provide your recommendation on the following scheduling request:

EVENT: For the President to address the 29th Annual Policy Conference of the American Israel Public Affairs Committee and receive the first annual Mort Silberman Democracy Award.

DATE: May 15-17, 1988

LOCATION: Sheraton Washington Hotel

Additional information concerning this event is attached.

YOUR RECOMMENDATION:

Accept X___ Regret _____ Surrogate Priority _____ Routine _____ Message Video _____ Written _____

If your recommendation is to accept, please cite reasons below:

Despite the fact that the AIPAC has opposed various Administration efforts to sell arms to Arab countries, this would be an event worth doing. No other occasion will provide such an opportunity for the President to receive public credit for all that he has done for Israel's security. I have no doubt that he will be hailed by this most powerful of Washington lobbies as the truest friend of Israel ever to sit in the Oval Office.

PLEASE RETURN TO SANDY WARFIELD IN OEOB, ROOM 182 BY THE RESPONSE DUE DATE ABOVE SO THAT YOUR COMMENTS MAY BE CONSIDERED AS WE PROCEED WITH THIS REQUEST. THANK YOU.

AIPAC
THE AMERICAN ISRAEL PUBLIC AFFAIRS COMMITTEE

August 4, 1987

The President
The White House
Washington, DC 20500

Dear Mr. President:

It is with distinct honor that we invite you to address the 29th Annual Policy Conference of the American Israel Public Affairs Committee. It will be held in Washington, DC from May 15-17, 1988 at the Sheraton Washington Hotel. At that time we would like to present you with the first annual Mort Silberman Democracy Award in recognition of your efforts to secure a strong U.S.-Israel relationship.

The AIPAC Policy Conference is the major annual gathering of the political leadership of the pro-Israel community in the United States; it brings to Washington over 1,000 leaders from across the country. It is the preeminent national meeting for those concerned with the U.S.-Israel relationship, as is evident by the participation of so many of our nation's leaders. Last year over 300 Members of Congress and 50 officials from the Executive Branch were in attendance.

Mr. President, you have done more to secure the close relationship between the United States and Israel and to elevate this relationship to an even higher level, than any other American President. We would be exceptionally honored if you would accept our invitation and award and make the first Presidential address to our Conference. We very much hope that your schedule will permit your accepting our invitation, and, of course, we are prepared to arrange our program around your availability.

500 NORTH CAPITOL STREET, N.W. • SUITE 300 • WASHINGTON, D.C. 20001 • (202) 638-2256

Thank you for considering our request. We look forward to your reply.

Respectfully yours,

Robert H. Asher
President

Thomas A. Dine
Executive Director

383445
MED02
C0074

April 7, 1986

In closing, I want to reaffirm America's interest in a negotiated settlement to the Arab-Israeli dispute. The road to genuine peace is proving long and arduous. But we must not falter in the face of radical violence. Once again I take great pleasure in sending greetings to the Annual Policy Conference of the American Israel Public Affairs Committee. negotiations which will produce peace and stability today, as well as for future The always strong ties between Israel and the United States have grown stronger yet over the past five and one-half years. That is a most welcome development. friendship of America. God bless you. Shalom.

Freedom everywhere in the world is both our ideal and our best long-range security. Our commitment to Israel flows from this shared belief as well as our mutual strategic and moral interests. Israel deserves our respect and full support.

Israel faces serious threats both to her economic well-being and to her security, but Israel doesn't face these threats alone. The United States is providing Israel with increasing amounts of both military and economic aid to help promote her stability and security. My commitment to the security and economic well-being of Israel is iron-clad.

Equally important have been our efforts to strengthen the Israeli economy and reduce her reliance on outside assistance. I refer, for example, to the new free trade zone agreement which will boost Israel's exports here, and to Project Independence, a private initiative which has received the strongest possible support from Secretary of State George Shultz.

Concerning our mutual security interests, I am very pleased by the progress we have made in the area of strategic cooperation between Israel and the United States, and to Israel's forthcoming participation in the development of the Strategic Defense Initiative.

AIPAC

38349555

THE WHITE HOUSE

WASHINGTON

In closing, I want to reaffirm America's interest in a negotiated settlement to the Arab-Israeli dispute. The road to genuine peace is proving long and arduous. But we must not falter in the face of radical violence and threats. The United States will therefore continue to work with Israel and her Arab neighbors to find a way to bring about direct negotiations which will produce peace and stability today, as well as for future generations.

I thank you all for your support and Israel for its friendship of America. God bless you. Shalom.

To Zev Lewis, OPL, to hand-carry and read.

RR:DC:ck8
cc: K.Osborne/D.Chew/R.McDaniel,NSC/M.Daniels/M.Green/C.Korte/CF
EVENT: APRIL 7
APAC

sending greetings to the Annual Policy Conference of the American Israel Public Affairs Committee.

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Concerning our mutual security interests, I am very pleased by the progress we have made in the area of strategic cooperation between Israel and the United States, and to Israel's forthcoming participation in the development of the Strategic Defense Initiative.

EF

3114685
MEDC2
C00074

April 22, 1985

I am pleased to extend to all of you my warmest greetings on the occasion of the 26th Annual Policy Conference of the American Israel Public Affairs Committee.

The members of AIPAC and other friends of Israel can take satisfaction, as I do, that U.S. - Israeli relations, always close, are today warmer and stronger than ever. Israel has a special place in the minds and hearts of Americans. The breadth and vigor of your organization is one of many signs of our unique relationship with Israel. This relationship is strongly rooted in shared values and traditions -- as well as common interests. Since the rebirth of Israel in 1948, the United States has been committed to Israel's security and well-being, and this commitment remains ironclad.

Our special relationship has many dimensions. The United States and Israel currently enjoy an unprecedented level of bilateral cooperation on security matters. Our partnership in strategic cooperation is an important new development. Our annual security assistance to Israel, for which we have proposed a level of $1.8 billion for the coming fiscal year, helps ensure Israel's qualitative military edge over potential adversaries. In the United Nations and other international fora, we continually reaffirm our role as Israel's strongest and most reliable supporter.

We have been consulting closely with the Government of Israel on ways to help them address their pressing economic problems and put Israel back on the path of

3114685S

April 6, 1984

Mtg. LD

I am delighted to extend my very warmest wishes to members and guests of the American-Israel Public Affairs Committee as you meet in your Annual Policy Conference.

As you undertake your deliberations, you should take satisfaction from AIPAC's justly earned reputation as a staunch advocate of strong American-Israeli relations. Your efforts to enhance those ties are an outstanding example of the freedom our society offers to all citizens to participate in the foreign policy process, and they are welcomed by those who count ourselves as friends of Israel.

All of us can take satisfaction, as well, from the new plateau which the Israeli-American relationship has reached. It is correct to speak of a "plateau", rather than a "summit", because we have attained a new, high level upon which we continue to build, rather than a peak from which we will descend.

The ramifications of this are evident throughout the relationship. Over the past few months, the United States and Israel have established a Joint Political Military Group, which is focusing on the threat posed by increased Soviet involvement in the Middle East and is considering such measures as combined military planning, joint exercises, and requirements for the prepositioning of American equipment in Israel. We are also holding talks with the Israelis leading toward the establishment of a Free Trade Area. Moreover, we have changed the composition of our aid to Israel from a combination of grants and concessionary loans to one of grants alone.

The net result of all this is to demonstrate once again -- as if there could be any doubt -- the importance that the United States and I personally attach to the strongest possible relationship with Israel. This relationship is a cornerstone of our foreign policy and of the structure of a just and lasting peace which one day will be attained between Israel and all her neighbors.

You have my best wishes. May your Conference be a most successful one.

A

RONALD REAGAN

TO BE HAND CARRIED BY MARSHALL BREGER
RR:LIVINGSTON:vs returned to Livingston after signing
cc: K.Osborne/D.Livingston/M.Breger/NSC/CF
EVENT: APRIL 8
(Draft information provided by NSC)

DEPARTMENT OF STATE

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COPY from ORM

May 6, 1982

UNCLASSIFIED

It is a delight for me to send warmest greetings to the American Israel Public Affairs Committee as you gather for this 23rd Annual Policy Conference.

This occasion provides a welcome opportunity to express my continuing high regard for your organization and all that you are working to accomplish in behalf of Israel.

As a fellow American, I share your commitment to the well-being of Israel. The U.S. commitment to Israel's security remains unshakeable. In the search for a just and lasting solution to the conflict in the Middle East, nothing will be done to jeopardize Israel's security. My Administration counts on the efforts of responsible organizations such as yours to help achieve progress toward peace and security in the Middle East.

You have my best wishes for a successful and productive meeting here in Washington.

This addition would help to allay the feeling of AIPAC that the Administration did not appreciate AIPAC's public statements at the time of the AWACs debate. AIPAC has interpreted some statements by Administration officials at that time as critical of AIPAC's role. The sentence we have suggested would be read by AIPAC members ... and would do a great deal to assuage their bitterness.

Call Beth Barnes for delivery - 2164

To Michael Gale, AIPAC

RR:Livingston:-
cc: K.Osborne/B.Barnes/M.Wheeler/T.Silverman/CF
EVENT: May 10

Executive Secretary

Attachments:

White House Draft

NSC# 8212550

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ME002
PR005-02
CO074
HU016
CO0001-07

COPY from ORM

DRAFT
T.Silverman
5/15/81

May 15, 1981

The American Israel Public Affairs Committee has

The American Israel Public Affairs Committee has earned the respect and good wishes of all who desire closer and more fruitful ties between the United States and Israel. It is therefore a great pleasure for me to greet the members of AIPAC on the occasion of your Twenty-Second Annual Conference.

Americans marvel at Israel for the miracle of its rebirth in the modern era. We respect the Israeli nation for its deepfelt belief in democracy and justice and for the extraordinary courage of the Israeli people.

AIPAC has done much to strengthen the ties of friendship and understanding between our two nations, a bond which brings great benefit to both America and Israel. Through your efforts to build public understanding of the problems which confront the Israeli people, AIPAC has contributed significantly to the attainment of a true and lasting peace between Israel and its neighbors -- the goal to which we all earnestly aspire.

Sincerely,

To Jack Stein for dispatch.

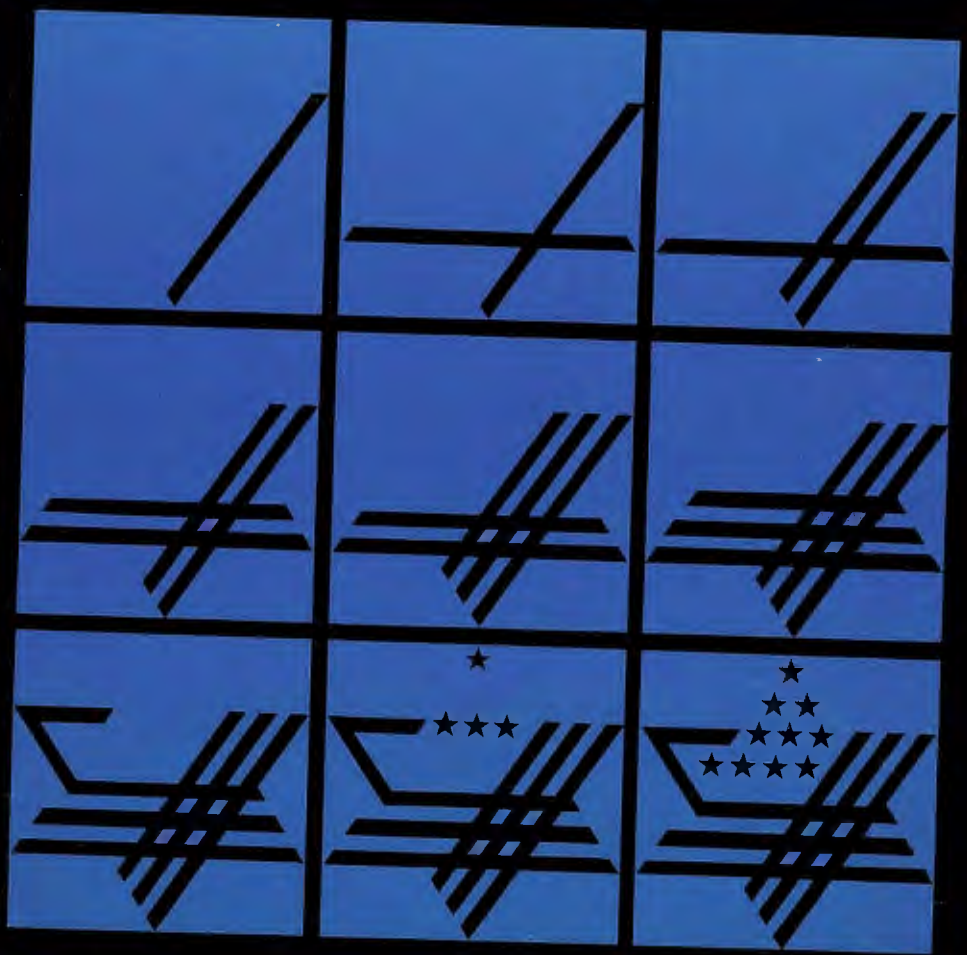
RR:Silverman:okb
cc: H. von Damm/T.Silverman/A.Lenz,NSC/CF
EVENT: MAY 18
Draft information provided by NSC.

To Beth Barnes 5/15-5

Msg to Org. re 22nd annual Conference.

The Strategic Value of Israel

Steven J. Rosen



AIPAC Papers on U.S.-Israel Relations: 1

The Strategic Value of Israel

Steven J. Rosen

AIPAC Papers On U.S.–Israel Relations

Research for this paper completed under
the sponsorship of Guilford Glazer

The AIPAC Papers on U.S. - Israel Relations

Editor: Steven J. Rosen
Managing Editor: Fay Randall

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Inquire for bulk purchase rates

Fourth Printing.

Cover design by Jill Indyk

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PREFACE

This study marks a new departure for AIPAC—the publication of a monograph series on issues concerning U.S.-Israel relations. This will enable us to provide greater depth of background and more detailed information on such issues as the potential for U.S.-Israel strategic cooperation, the military balance in the Middle East, economic issues of aid and trade, and media coverage of Arab-Israeli issues, in a format that will permit publication of current material on a schedule of weeks rather than months.

Publications in this series will be of two types: First, we will produce *annuals* on subjects of continuing interest, such as the military balance, Israel's aid requirements, and directories of key actors in American policy toward the Middle East. Second, we will publish individual *studies* on subjects of particular interest, such as major developments in Middle Eastern diplomacy, security problems of the West Bank and Gaza, and the potential for U.S. government procurement from Israel.

The editor of this enterprise is Steven Rosen, AIPAC's Director of Research and Information. Dr. Rosen recently joined this organization after four years as a Senior Analyst at the Rand Corporation where he served as Associate Director of the National Security Strategies Program. Previously, he was a professor in the Political Science faculties of Brandeis University, the University of Pittsburgh, and the Australian National University. Dr. Rosen will draw upon a larger and more experienced research staff to support the development of this unique series.

Thomas A. Dine
Executive Director
October, 1982

EXECUTIVE SUMMARY

Israel's strategic value derives primarily from four advantages:

(1) *Geostrategic position.* Israel is located midway between Europe and the Persian Gulf. From the point of view of U.S. defense planning, it has the potential to contribute in three theaters: the Gulf, the Mediterranean, and NATO's Southern and Central fronts. Compared to the continental United States, Israel is one-seventh the distance to the Gulf and one-half the distance to Germany.

(2) *Political stability.* While virtually every other friendly country of the region is subject to overthrow by coup or revolution or a drastic change of political orientation, Israel's stability is deeply rooted in sound democratic institutions.

(3) *Political reliability.* While policy orientations of other friendly states of the region could revert to hostility in the future, Israel's strategic interests and the values of its people are permanently aligned with those of the Free World. Deals made with certain Arab governments over the heads of their people can come unstuck if these people arise against their rulers, while our alliance with Israel is an alliance with the people of that country themselves.

(4) *Advanced society.* Israel is the one politically and technologically advanced country of the region.

Yet, these advantages, which have taken on particular importance since the loss of bases in Iran, have not been sufficient to prevent the systematic *exclusion* of Israel from U.S. defense planning for the Middle East and the Mediterranean, even while such less promising "allies" as Somalia and Oman are fawningly courted.

As a result, an undue reliance is being placed on basing U.S. "Rapid Deployment Forces" in the continental U.S., and to a lesser extent in "access arrangements" with unstable regional allies, simply to avoid Israel.

This paper quantitatively compares U.S. basing and these other allies with the currently excluded option of Israel in meeting one particular requirement of current defense planning: the need to move huge quantities of war materiel to the Persian Gulf region rapidly in the event of Soviet aggression there. "Prepositioning" of materiel in Israel is shown to have substantial objective advantages over the alternatives in terms of both force effectiveness and cost including the following:

- *Force Effectiveness.* Using half of America's airlift fleet, materiel for a mechanized division prepositioned in Israel could be redeployed to the Persian Gulf 66 days sooner than from the continental United States. Similarly, the time required to airlift to Germany would be reduced from 24 to 11 days.
- *Cost.* It would cost the U.S. over $9 billion in additional C-5 aircraft to achieve the same effect from bases in the U.S.—in terms of time required to deploy such a force—as compared to prepositioning in Israel.
- *Swing Force.* In terms of prepositioning a "swing force" for use either in the Gulf or Europe, Israel compares favorably with the other major prepositioning sites available to the U.S. Considerable savings in time and/or money could be achieved by prepositioning in Israel rather than in sites presently planned for the RDF.

Overall, in an honest comparison, Israel offers substantial strategic advantages. Yet the United States has chosen to bypass Israel in favor of an excessive reliance on strategic airlift from the continental U.S., which is slow and expensive, and alliances with unstable local governments of dubious reliability. This virtual exclusion of Israel from U.S. defense planning is, implicitly, a sacrifice of the objective American national interest to appease rejectionist Arab opinion. It is a sacrifice with a substantial hidden cost to the U.S. taxpayer, and it results in a less effective system of defense at a higher cost.

Strategic Value of Israel

The debate over how best to defend the Persian Gulf and its oil against the possibility of Soviet aggression is warming up and, as it does, it becomes increasingly clear that an issue as simple as geography is at the heart of the problem. The Soviet Union borders on Iran and is within 1,000 miles of the main oilfields of the Middle East, while the distance from the United States is about 9,000 miles by air and considerably longer by sea. Moreover, unlike Europe, the Far East, and Southeast Asia, there is no intact U.S. military basing structure to provide support in the event of a conflict. However, since the fall of the Shah, no nation of the Gulf region is prepared to extend to the United States full-scale basing privileges. The closest U.S. base, on the Indian Ocean island of Diego Garcia, is still 3,000 miles from the assumed locus of conflict, and this base is in any case limited in scale by the smallness of the island.

These simple facts create quite a problem for U.S. planners. A Soviet standing army of perhaps fourteen divisions sits astride the region across the border with Iran, in addition to the force of nearly a hundred thousand stationed in Afghanistan, while a single American division of about 25,000 would, if airlifted from the United States with its 70,000 tons of equipment, take about four weeks to get there using all U.S. airlift resources (and over twice as long using half the available airlift). It might well be a case of "too little too late," and if the Soviets perceived this in advance, they might be tempted to exploit their advantage.

Both the defense of the region and deterrence of a Soviet attack therefore require energetic remedial measures to enhance our "projection" capability. In part, this may take the form of expanding our small fleet of airlift and sealift vessels, procuring such items as additional C-5s or CXs. But at a $60 million program unit cost, there are severe limits on the number of strategic air transporters that can be procured. A second solution is to "lighten the load" to be lifted by developing lighter armored forces, thereby reducing the number of flights ("sorties") and transporters needed. But this would, at

best, result in a saving of perhaps 20 percent in terms of time or the required size of the lift fleet. While there is much to be said for both measures, additional solutions clearly are required.

The most obvious solution is to have the equipment in the theater of conflict, or at least near it, when you need it, rather than moving it only after an aggression begins. By moving the heavy equipment to "prepositioning sites" in peacetime, and flying in just the men to "marry up" with the equipment if a conflict contingency develops, considerable time can be saved. The prepositioned equipment poses no threat in peacetime, but serves as a notice to the Soviets that a rapid response to aggression is possible, and thereby enhances the deterrent threat to promote the stability of the region.

With this in mind, the Carter Administration negotiated a set of "access arrangements" to permit prepositioning in Oman, Somalia, Egypt, and Kenya on a limited scale, and the Reagan Administration has submitted to Congress appropriation requests for funding to flesh out these arrangements. There are, however, several problems with the prepositioning sites negotiated to date. Kenya is over 2,500 miles from assumed conflict areas by the most direct route, and Somalia is about 1,600. Somalia is demanding a king's ransom in aid in exchange for access, and has problems of political stability. Neighboring Ethiopia is a virtual colony of the Soviet Union, and has openly threatened to employ its air force against U.S. facilities in Somalia (with which Ethiopia is at war). As if this weren't enough, Somalia and Kenya are antagonists, and Kenya is informally allied with Ethiopia against Somalia. Kenya objects to U.S. cooperation with Somalia. Neither Kenya nor Somalia is in a position to provide an air defense umbrella for the security of American equipment and personnel against air attack, so anything prepositioned at these locations will be vulnerable unless the scarce air defense assets of the United States are devoted to the task and permitted by the host government to operate.

Oman is the best site of all in terms of distance, lying at the mouth of the Persian Gulf, but as an access opportunity it suffers from some of the problems already mentioned. It is within strike range of Soviet aircraft stationed in Afghanistan as well as the increasingly sophisticated air force of South Yemen (another Soviet colony), yet the host government cannot provide air defense. This alone will limit the amount of materiel the United States can put at risk in a vulnerable environment. In addition, the Omani government, not wishing to be seen as a "cat's paw" of a superpower in the region, intends to limit the conditions under which facilities can be used by United States forces. For example, the Sultan Qaboos was so outraged by the reported use of Omani facilities on Masirah Island in support of the (failed) Iran hostage rescue mission that he threatened to withdraw all American privileges. While the latter did not happen, it is clear that American access in Oman will be less

than 100 percent reliable over time under the present government. Nor is the survival of the Omani regime a foregone conclusion, although there are few signs of instability at the moment. In addition, Masirah Island and the other Omani sites reported in the press are among the hottest and most inhospitable places on the planet Earth, and the effects on U.S. armed forces personnel retention could be a real problem.

It is also worth noting that Oman, while it is close to the Gulf, is quite distant from Europe (as are Somalia, Kenya, and Diego Garcia). This means that equipment stationed there is dedicated to Persian Gulf contingencies but poorly located for NATO. Ideally, prepositioning sites would be suited to a "swing force" that could be deployed *either* to Europe or the Gulf, to limit the adverse impact of Persian Gulf security arrangements on the already precarious NATO alliance capability.

In these terms, Egypt has a considerable advantage over Kenya, Somalia, Oman, and Diego Garcia. For example, the distance from Ras Banas, Egypt, to Munich is about half that of Masirah, Oman. Egypt can also provide general air defense against any adversary but Israel, and can provide security against other forms of attack on the facilities that have been discussed. Moreover, Egypt is forthright in its support for a strengthening of U.S. capability in the region, and clearly intends to cooperate in plans to build the Rapid Deployment Force.

Yet, even the sites in Egypt raise problems. Cairo's isolation in the Arab world is unnatural, and should the current or a future Egyptian government seek to rejoin its historic allies, the price might include a weakening of the alliance with Washington. This might come, for example, now that Egypt has repossessed the Sinai in April 1982, under the terms of the peace treaty with Israel. Moreover, the evolution of the domestic political situation in Egypt could lead to a change of policy or even a change of government. After the bitter experience with Britain and then the USSR, Egyptians have a considerable antipathy to foreign troops and equipment on their soil. Egypt was one of the founders of the nonaligned movement, and foreign installations by whatever name are bound to become a target for Arab nationalist "Third Worldist" criticism of the regime. While, at the present time, the Egyptian/American alliance seems secure, Egyptian policy five and ten years hence is unpredictable.

Given this array of problems and reasons to worry, American planners are obligated to "spread the risk" by distributing American commitments among the access sites. Of the sites discussed, Egypt emerges as the "dominant solution," but conditions there too will limit the scale of American military investment. Basically, something more is needed.

Israel as a Prepositioning Site

Given the problems of each of the sites already explored, attention is beginning to turn to Israel. Israel offers several distinct advantages as a "stepping-stone" access site, which, taken together, comprise an attractive package:

1. *Location.* The distance from Israel to the Gulf is less than one-seventh that from the U.S. It is also half the distance of Diego Garcia, and closer than Kenya, Somalia, or Turkey (assuming, in the last case, that overflight of Syria, Iraq, and Iran is excluded). At the same time, it is half the distance to Europe (Munich) compared to the East Coast of the United States, and also about half the distance to Europe compared to Diego Garcia, Oman, Somalia, and Kenya. Of states willing to provide regional access for the RDF, only Egypt is competitive as a location for a "swing force" that could be sent either to Europe or the Gulf.

2. *Political Stability.* While the future political structures and policy orientations of Oman, Somalia, Kenya, Egypt, and Turkey are subject to radical change, the basic political structure and policy of Israel are stable and predictable as they affect that country's policy toward regional security. Virtually all Israeli leaders in the major parties support a strengthening of the United States role in the region, an enhancement of U.S. capability to deter and, if need be, defeat Soviet aggression, and an enhancement of U.S. force projection capabilities to support these objectives. The leadership of both major Israeli parties has forthrightly endorsed the provision of strategic access arrangements to the United States under appropriate conditions. Sites in Israel would be intrinsically less vulnerable to revolutions, coups, and domestic disorders.

3. *Political Reliability.* No sovereign nation in the modern world will extend basing privileges to a foreign power completely without restriction. But the political limitations that would be imposed in the Israeli case probably would be less severe than those on which Oman, Egypt, Somalia, and Kenya will insist, for the simple reason that there is a closer congruence between Israel's own interests and those of the United States as regards force projection contingencies. If, for example, an Iraqi threat to Kuwait or Iran called for an American response, the policies of Oman and Egypt could be limited by inter-Arab politics, while Israel would, in almost all scenarios, find its interests aligned with those of the U.S. The contrast might be still more pronounced in a European scenario, from which the Arab states might wish to divorce themselves while Israel, given its strategic position, could not. While there are differences between the Israeli and American policies in the local

diplomatic arena, their postures in regional strategic military affairs are generally in agreement.

4. *Air Defense.* U.S. materiel prepositioned in many states of the region could be subject to conventional and guerilla attacks, yet few of the host nations have the capability to provide a secure defense umbrella. Israel is a clear exception. The primary mission of the Israeli Air Force is to defend that nation's own air space, and the IAF's mastery of the skies is almost uncontested. While the United States might have to provide its own air defense in such locations as Masirah or Berbera, allocating scarce F-15 wings or I-Hawk SAM batteries, security of "prepo" against air attack in Israel would be provided implicitly by the host government. The same applies to security against large-scale guerilla operations, which the Israelis have brought almost completely under control.

While these differences between Israel and other sites, taken together, might be regarded as a considerable, even commanding advantage, there has been comparatively little American interest in strategic cooperation with Israel until recently. The notion of Israel as a strategic asset has been a subject of considerable interest in American Jewish and Israeli circles, but until recently it has been regarded with official indifference if not contempt, particularly by the Carter Administration. Indeed, it is said that the name "Israel" was not, until recently, permitted even to appear in official exploratory discussions of prospective access sites, and that, having been rejected from the start as a serious candidate for the regional security system, Israel's potential contribution was not studied by Carter Administration officials in any systematic way.

The Reagan Administration brings to the issue a different perspective. Repeatedly during the 1980 presidential campaign, the Republican candidate called attention to Israel as a concrete strategic asset and ally, and the Administration is reported to have a serious interest in exploring potential forms of strategic cooperation with the government of Israel.

Reagan is of course aware that the Arabs (with the possible exception of Egypt) do not look kindly upon U.S.-Israel cooperation, but, unlike his predecessor, he does not take this as an absolute limit to U.S. freedom of action. Since the very founding of the Jewish state, the U.S. has played both sides of the street successfully (in spite of heckling from certain elements in the Washington bureaucracy who endlessly warned that it couldn't be done). It is probably even the case that the U.S. has had more rather than less influence with the Arabs exactly because it also has had (most of the time) influence with Israel too. Ironically, Arab opinion already takes it as given that the U.S. is in cahoots with Israel, which Washington supports with considerable economic and military aid. The incremental diplomatic cost of expanded strategic cooperation could, for this very reason, be minimal if the

problem were managed intelligently during the transitional period.

Still, there will be political costs to be measured against strategic benefits. It is worthwhile, therefore, to assess in closer detail the strategic value of Israel, to quantify the military advantages that should be compared to any political disadvantages. What follows, then, is a more detailed statistical excursion to compare Israel with other prepositioning sites in military and economic terms, to quantify the value of cooperation or the "opportunity cost" of non-cooperation, in the expectation that this may provide a criterion by which to assess future policy.

Comparing Deployment Times

For the military planner, the central consideration of any prospective arrangement affecting the Rapid Deployment Force is its impact on force effectiveness. In the case of a prospective access site, this means that the central measure of effectiveness is the contribution that a "steppingstone" can make to shorten the time that it takes to deliver and deploy forces to assumed conflict locations, by comparison with sending forces from the continental United States (CONUS) or from other regional access sites.

The methodology by which such comparisons are made is complex, and includes the following factors:

1. distance;
2. the number and types of transport aircraft available;
3. the portion of this lift fleet assumed to be available for a given contingency;
4. lift capacity in terms of weight and bulk;
5. utilization factors, sortie rates, speed, and productivity; and
6. the weight and bulk of the materiel to be lifted.

These factors can be estimated from such public sources as the Defense Marketing Service databook, *Rapid Deployment Force* (Greenwich, Connecticut, DMS, 1980), on the basis given in the appendix to this paper. Assuming that the equipment for a mechanized infantry division is to be lifted from prepositioning sites to Dhahran, Saudi Arabia (from which they would move overland to participate in a Persian Gulf conflict), and that half of the available U.S. transporters were used for a Persian Gulf scenario (the other

half being held in reserve for European contingencies), prepositioning in Israel compares to prepositioning at other sites or lift from the continental U.S. as follows:

Table 1

Airlift to the Persian Gulf (Dhahran)

(using half of strategic lift)

From	Days to Transport One Mechanized Division
United States	77 days
Israel (Tel Aviv)	11 days
Diego Garcia	27 days
Somalia (Berbera)	14 days
Kenya (Mombasa)	22 days
Oman (Masirah)	8 days
Egypt (Ras Banas)	10 days
Turkey (Izmir)	17 days
(No overflight of Iraq, Syria, or Iran)	

The advantage of prepositioning in Israel is substantial compared to sending forces from the U.S.; the first whole division would get to the Gulf 2-1/2 months earlier! Forces from Diego Garcia or Kenya would take twice as long to arrive, and forces from Turkey 50 percent more time (assuming that overflight of radical countries is excluded). Only Oman and Egypt offer shorter deployment times, and in both cases the advantage is marginal.

If a war erupted in Europe instead of the Gulf, major U.S. reinforcement would be required for NATO to hold the line against the vastly larger Warsaw Pact armies. It could, in such a contingency, be necessary to lift materiel prepositioned for Persian Gulf contingencies to Europe instead of Dhahran. Assuming that the equipment for a mechanized infantry division were to be lifted from these prepositioning sites to Munich, Germany, and that all the available U.S. transporters were used, Israel compares to the other sites as follows:

Table 2

Airlift to Europe (Munich)

(using all of strategic lift)

From	Days to Transport One Mechanized Division
United States	24 days
Israel (Tel Aviv)	11 days
Diego Garcia	29 days
Somalia	20 days
Kenya	23 days
Oman	20 days
Egypt	12 days
Turkey	8 days

Forces prepositioned in Israel could be in Europe in half the time it would take those from the continental United States to arrive, and Israel is closer than any of the other regional prepositioning sites except Turkey (which is, of course, a member of NATO). It is also worth noting that Diego Garcia, which is the anchor of the RDF prepositioning system, is even further from Europe than the continental United States. Forces prepositioned in Diego Garcia, Somalia, Kenya or Oman are in effect dedicated to Persian Gulf contingencies, while Israel, Egypt, and Turkey are superior as sites for a "swing force" suited to either Gulf or European scenarios.

In addition to the swing force concept, Egypt, Israel, and Turkey also have importance for Mediterranean contingencies, from which Diego Garcia, Oman, Somalia, and Kenya are remote. The "beefing up" of our navy in the Indian Ocean has been accomplished partly at the expense of the Sixth Fleet in the Mediterranean, and any comparison of allocation of U.S. forces to alternative access sites should also take Mediterranean conflict into account. This comparison will be developed in greater detail in a subsequent study.

Comparisons in Terms of Cost

So far we have compared prepositioning sites exclusively in terms of military effectiveness and deployment time. But in the real world of force planning, choices are constrained by budgetary impact as well. For example, if the cost of deploying a given unit to a particular location within a required time can be reduced, the budgetary resources "liberated" can be used to strengthen other elements of the overall force structure. Conversely, spending more to achieve a given objective implicitly weakens other elements of the force structure.

How, then, would Israel compare to other access sites in terms of cost, holding military effectiveness constant? One way to make such a comparison is to compare the direct costs of the airlifts of equipment for one mechanized infantry division to Dhahran or Munich, as above, on the simple principle that miles translate into airfleet sorties which cost money (see Appendix). Table 3 gives the direct costs for the airlifts enumerated in Tables 1 and 2:

Table 3

Direct Costs of Airlifting One Mechanized Division

(as in Tables 1 and 2)

From	To Dhahran	To Munich
United States	$391 million	$247 million
Israel	63	125
Diego Garcia	138	294
Somalia	76	198
Kenya	124	232
Oman	43	208
Egypt	54	140
Turkey	99	87

Combining these comparisons (i.e., using the imaginary case in which one division was lifted to Dhahran and a second division to Munich), a "swing force" would cost a half billion dollars less to lift from Israel compared to the U.S.; $350 million less than Diego Garcia; $170 million less than Kenya; $90 million less than Somalia; and $60 million less than Oman. Again, only Egypt and Turkey are competitive in terms of cost, both being essentially identical to Israel.

But comparison of cost on this basis ignores a critical dimension of effectiveness, which is the time required to deploy. The very purpose of an airlift is to reduce the time that otherwise would be required to move forces at less expense but more slowly by sea. Indeed, even airlift deployment times like those given in Tables 1 and 2 are considered much too slow by officials responsible for U.S. national security planning, and procurement of additional C-5s or CXs is considered essential to the RDF.

One way to correct for deployment time in our comparisons, then, is to take into account the number of aircraft that would have to be procured to meet a given lift time requirement from the various prepositioning sites. To permit such a comparison, let us take as our deployment time standard the times required to lift the equipment for a mechanized division from Israel to Dhahran (11 days) and Munich (also 11 days), and take as the unit of cost the number of additional (or fewer) C-5As that would need to be procured to match this time from the other sites. The number of aircraft derived from the calculations in the appendix, is as follows:

Table 4

Number of C-5As Required to Match Deployment Time from Israel

To Dhahran		
from	United States	168.37 more
	Diego Garcia	39.00
	Berbera	6.68
	Mombasa	30.67
	Izmir	17.84
	Masirah	10.06 fewer
	Ras Banas	4.48 fewer
To Munich		
from	United States	69.28 more
	Diego Garcia	89.88
	Berbera	40.66
	Mombasa	57.82
	Masirah	45.81
	Ras Banas	7.44
	Izmir	20.05 fewer

Using the $56,000,000 program unit cost of the C-5A as a standard, equalization of deployment times will reveal considerable "hidden" cost differences between the access sites, differences much greater than the direct costs of the lifts ignoring time (Table 3) or the costs of facilities on the ground in the host countries (see Appendix). Table 5 compares the C-5A procurement costs to make it possible to lift one mechanized division to Dhahran in 11 days from the various sites.

Table 5

Additional Cost (Savings) of Capability to Deploy Mechanized Division to Dhahran in 11 Days

(as in Table 4)

From	$ Millions
United States	$9,429 million
Israel	-0-
Diego Garcia	2,185
Somalia	374
Kenya	1,718
Turkey	999
Oman	(563) savings
Egypt	(251) savings

By this measure, prepositioning in Israel is the equivalent of 168 C-5As or almost ten billion dollars compared to sending forces to the Gulf in the same time from the continental United States. Diego Garcia, Somalia, Kenya, and Turkey would also cost substantially more.

Only Oman and Egypt are superior to Israel for prepositioning in terms of cost to deploy to Dhahran in 11 days. If we add the comparison to Munich, on the other hand (see Table 4 and Appendix), Turkey is superior but Egypt would require 7 additional C-5s ($417 million) and Oman 46 ($2.6 billion). Finally, on a combined cost basis, Israel emerges as the least expensive alternative for a "swing force" if the cost of C-5s for both Munich and Dahran is taken as the criterion, since in the three cases where there is an additional expense to one location and a saving to the other, the additional expense is greater.

Conclusions

Israel offers clear and substantial advantages as a prepositioning site for U.S. projection forces, in terms of both force effectiveness and cost. Many of these advantages derive from its geographic position at the crossroads of the Mediterranean and Southwest Asian strategic zones.

There is more political support for an American presence among the Israeli public than in any other state of the region, and more support among the competing political elites. A U.S. decision to preposition materiel in Israel could be taken with a higher degree of confidence that access would in fact be available in a conflict contingency some years down the road than in most of the other host nations now under discussion. In addition, Israel is in a position to provide a security umbrella for prepositioned materiel, while in some of the other sites such security would have to be provided by U.S. forces. Overall, prepositioning in Israel would be a useful complement to other access arrangements, and would strengthen overall force effectiveness at substantially lower cost than other alternatives.

It is true that prepositioning in Israel also will entail political costs, in that certain of the Arab states will be strongly opposed. But these costs are containable if handled firmly, particularly during the transitional period. From the Arab point of view, the principal objection is surely to United States military and economic aid to the government of Israel, aid which will continue regardless of the degree to which Israel is developed as a regional strategic asset. Moreover, Arab publics already assume that the United States is engaged in a strategic alliance with Israel; the concept is more novel to Americans than to the peoples of the region.

In any case, the possibility of prepositioning in Israel should not be rejected *a priori,* without a careful accounting of costs and benefits. If, on balance, a decision is taken not to develop the strategic benefits of cooperation with Israel, it should, at the minimum, be taken with a clear-eyed awareness of the strategic and economic advantages that are being foregone.

Appendix

Basis of calculations, additional data, and sources

1. The following inventory of primary aircraft available was used:

   70 C5A
   234 C141
   234 C130

   Any airlift under 3,000 miles is assumed to utilize C130 aircraft as well as C5A and C141 aircraft.
2. A down factor of 15% was applied to the above numbers and then: (1) all available aircraft were employed in the Munich lift; (2) 50% of all available aircraft were employed in the Persian Gulf lift. The number of aircraft employed in any actual airlift would be highly scenario dependent, the above usage rate was chosen to provide a means for comparison.
3. All figures assume transport of all cargo from the on-loading point stipulated. The U.S. figures do not allow for a possible mix of CONUS and POMCUS locations, nor do any others.
4. After transporting all outsize cargo, C5As are assumed to continue to transport bulk and oversize cargo until the lift is completed.
5. No limitations have been placed on run-through capability of either the on-loading or off-loading point. It is assumed that any location chosen to serve as a future site will be built up as necessary to permit operations. It is also assumed that no limitation has been placed for national security reasons. In the 1973 lift to Israel, the Secretary of Defense limited the number of aircraft permitted on the ground at Tel Aviv at any given time for security reasons. These figures do not allow for such a limitation.
6. Mileage has been calculated as the most direct flight with overflight restrictions as follows: no overflight of the Soviet Union or any Soviet bloc state; no overflight of a Soviet controlled or allied state; no overflight of Iraq, Iran, Libya, Syria, Ethiopia, or Yemen.
7. Overflight of Jordan and Saudi Arabia is permitted on the assumption that regardless of the originating point, if Saudi Arabia is permitting

off-loading in Dhahran, overflight will also be permitted.

8. Non-U.S. prepositioning sites assume the first leg of the airlift originates on the U.S. East Coast, and that airlift aircraft are based in the U.S.
9. The divisional tonnage figures represent a division and support as follows:

Airborne	Outsize	13,775	
	Bulk and Oversize	48,300	
		62,075	tons
Mechanized	Outsize	34,655	
	Bulk and Oversize	60,948	
		95,603	tons
Infantry	Outsize	20,942	
	Bulk and Oversize	56,399	
		77,341	tons

The figures for an armored division were not calculated. It is assumed (1) this division would be transported by sea due to its extreme weight; and (2) this division would be the last division transported.

The source for these tonnage figures is Defense Marketing Service, *Rapid Deployment Force,* 1980.

10. The cost figures given are based on the peace-time operating cost per flying hour for each aircraft. The following figures were used:

C5A	$6,793/hour
C141	2,087/hour
C130	763/hour

It is acknowledged that in an actual lift scenario there would be additional ground support expenditures which are not included in the given figures.

The source for these figures is *Hearings Before a Subcommittee of the Committee on Appropriations,* House of Representatives, 96th Congress, 2nd Session, Part 8, *Department of Defense Appropriations for 1981,* p. 418.

The following formula was used to compute airlift capability in short tons/day*:

$$L = \frac{N \times U \times S \times R}{D} \times P$$

where:

L = lift capacity for a particular force, for a particular aircraft

N = the number of aircraft utilized

U = utilization rate of aircraft; utilization rate is determined by maintenance requirements, aircrew availability, and the fleet-wide average of the number of hours per day that each type of aircraft can fly

S = block-in speed of the aircraft; averaging the cruising speed with the slower take-off and landing speeds

R = productivity factor for the aircraft, allowing for empty return

D = distance travelled in airlift

P = payload of aircraft in cargo of specified force

The following factors were used for the specific aircraft and specified divisions.

C5A
U = 12.5
S = 428 mi/hour
R = .445
P = 54.6 Airborne
68.5 Mechanized and Infantry

C141
U = 12.5
S = 407
R = .445
P = 18.07 Airborne
27.04 Mechanized
23.14 Infantry

NOTE: the calculations assumed the C141B aircraft was used. This craft has been stretched to permit greater capacity before "cubing out". Actual figures for the C141B are not yet available; the Air Force estimate of a 30% increase cited in *Hearings Before the Subcommittee of the Committee on Appropriations,* House of Representatives, 96th Congress, 2nd Session, *Department of Defense Appropriations for 1981,* Part 6, p. 413, was used. Unofficial reports indicate the C141 capacity has increased by more than 30%.

C130
U = 8.0
S = 260 mi/hour
R = .445
P = 13.8 all divisions

*source for the formula and factors is Defense Marketing Service, *Rapid Deployment Force, 1980.*

Table 1

Airlift to the Persian Gulf (Dhahran)

From	Miles	Days to Transport	Cost (M$)
United States (East Coast)	8,739		
Airborne Division		69.38	350.0
Mechanized Division		77.44	390.7
Infantry Division		68.17	343.9
Israel (Tel Aviv)	1,284		
Airborne Division		9.77	55.2
Mechanized Division		11.18	63.2
Infantry Division		9.88	55.8
Diego Garcia	3,012		
Airborne Division		24.52	123.7
Mechanized Division		27.30	137.7
Infantry Division		24.11	121.6
Somalia (Berbera)	1,580		
Airborne Division		11.79	66.6
Mechanized Division		13.52	76.4
Infantry Division		11.92	67.3
Kenya (Mombasa)	2,642		
Airborne Division		19.05	107.6
Mechanized Division		21.95	124.0
Infantry Division		19.27	108.9
Oman (Masirah)	839		
Airborne Division		6.73	38.0
Mechanized Division		7.65	43.2
Infantry Division		6.80	38.4
Egypt (Ras Banas)	1,086		
Airborne Division		8.41	47.5
Mechanized Division		9.61	54.3
Infantry Division		8.50	48.0
Turkey (Izmir)	2,074		
Airborne Division		15.17	85.7
Mechanized Division		17.45	98.6
Infantry Division		14.30	80.8

Table 2

Airlift to Munich

From	Miles	Days to Transport	Cost (M$)
United States (East Coast)	5,530		
Airborne Division		21.76	221.4
Mechanized Division		24.31	247.4
Infantry Division		21.38	217.5
Israel (Tel Aviv)	2,543		
Airborne Division		9.62	109.5
Mechanized Division		11.01	125.3
Infantry Division		9.73	110.8
Diego Garcia	6,418		
Airborne Division		25.88	263.3
Mechanized Division		28.84	293.5
Infantry Division		25.44	258.9
Somalia (Berbera)	4,296		
Airborne Division		17.52	178.3
Mechanized Division		19.50	198.4
Infantry Division		17.23	175.3
Kenya (Mombasa)	5,036		
Airborne Division		20.44	208.0
Mechanized Division		22.75	231.5
Infantry Division		20.09	204.4
Oman (Masirah)	4,518		
Airborne Division		18.40	187.2
Mechanized Division		20.48	208.4
Infantry Division		18.09	184.1
Egypt (Ras Banas)	2,864		
Airborne Division		10.71	121.9
Mechanized Division		12.27	139.7
Infantry Division		10.83	123.3
Turkey (Izmir)	1,679		
Airborne Division		6.69	76.2
Mechanized Division		7.61	86.6
Infantry Division		6.76	77.0

Appendix
Table 3

Cost of Equalizing All Options

To Dhahran

from	United States	$9,428.72 M cost
	Diego Garcia	2,185.12
	Berbera	374.08
	Mombasa	1,717.52
	Izmir	999.04
	Masirah	$ 563.36 M savings
	Ras Banas	250.88

To Munich

from	United States	$3,879.68 M cost
	Diego Garcia	5,033.28
	Berbera	2,276.96
	Mombasa	3,237.92
	Masirah	2,565.36
	Ras Banas	416.64
	Izmir	$1,122.80 M savings

Footnotes:

The program unit cost of $56M for the C5A aircraft is used. The unit fly-away cost cited in the same source is $29.7 M. Source: Defense Marketing Service.

The cost for the C5A was used on the assumption that any actual procurement in any number, would be C5A aircraft. The CX was not used because it is still in the developmental stage.

Appendix
Table 4

Construction Costs for Basing Options

Site	FY 81	FY 82	FY 83	Program Total
Diego Garcia		317.6		317.6
Somalia	.4	24.0		24.4
Kenya	19.1	26.0		45.1
Oman	85.5	81.5	44.6	211.6
Egypt		148.5		148.5

Turkey: no figures available
Israel: no figures available

Source: DD 1391, Military Construction Project Data

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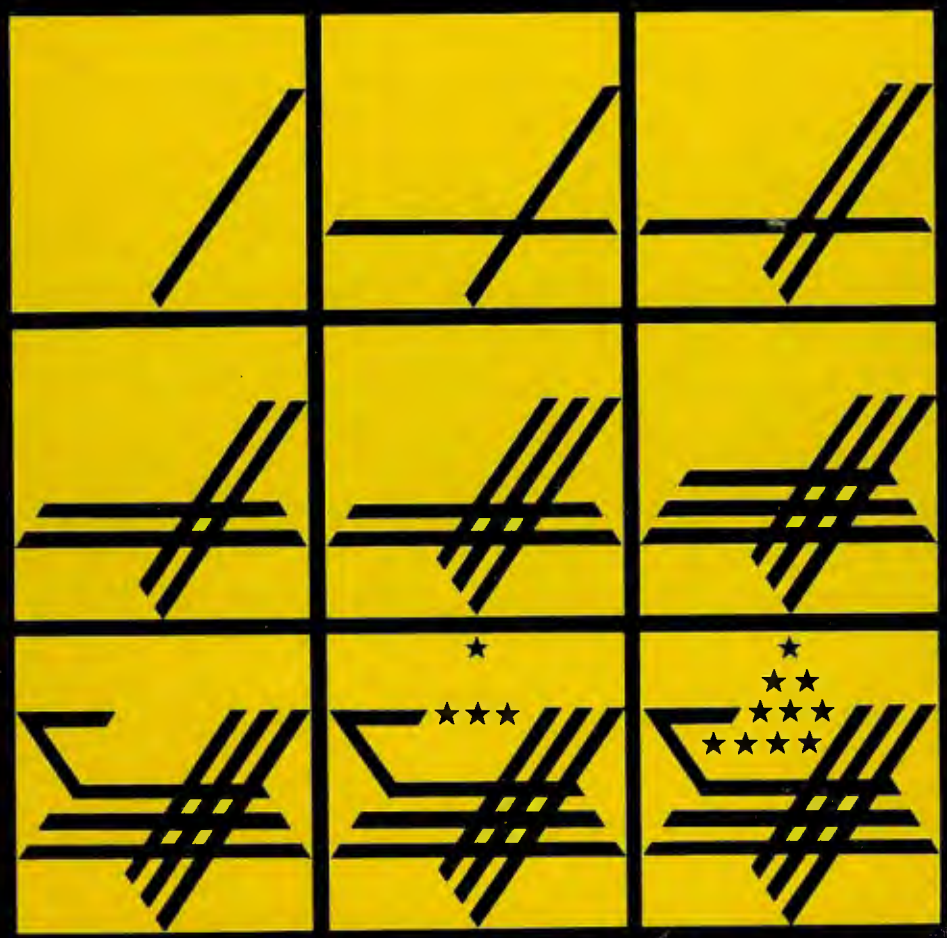

AIPAC Papers on U.S.-Israel Relations: 2

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PREFACE

This is the second publication of AIPAC's new monograph series on U.S.-Israel relations, and also the second part of a thematic six-volume "series within the series" on the specific issue of the potential for enhanced strategic cooperation between the United States and Israel. The first volume on this theme, *The Strategic Value of Israel,* was devoted largely to the advantages of prepositioning U.S. *Army* materiel at Israeli facilities for possible use in a Middle Eastern crisis. The current volume deals with various forms of cooperation between Israel and the U.S. *Air Force,* and it will be followed shortly by a parallel third study on the value of Israeli assistance to the U.S. *Navy*. The fourth volume will deal with the potential use of Israeli *medical* facilities to treat U.S. casualties in the event that it is necessary to involve the Rapid Deployment Force in a Persian Gulf conflict. The fifth will deal with the potential of Israeli defense and aerospace contractors to provide *overhaul and maintenance services* for U.S. armed forces equipment. The sixth and final paper on the theme of strategic cooperation will deal with the *political* and *diplomatic* aspects of managing Middle East policy to derive the maximum strategic advantage for the United States.

AIPAC's series of studies ranges beyond the theme of strategic cooperation. Other papers soon to be published include topics such as anti-Israel propaganda in the United States, media coverage in Lebanon, and the impact of territorial issues on Israeli security. But we believe that the strategic importance of Israel to the United States is not well understood, and the series of which this paper is a part is intended to build the foundation for a clearer appreciation of this central issue in U.S. Middle East policy.

Publications in this series draw upon the expertise of scholars and professional analysts. Dr. Martin Indyk is a Senior Lecturer at Macquarie University, Australia, specializing in the Middle East, and is a consultant to Near East Research, Inc. He formerly served as a senior Middle East analyst in the Office of National Assessments of the Government of Australia. Charles Kupchan is a graduate student in political sciences at Oxford University doing advanced research on the Rapid Deployment Force; he is a graduate of Harvard University. Dr. Steven J. Rosen is AIPAC's Director of Research and Information, and previously served as a senior analyst of Middle Eastern political/military affairs at the Rand Corporation after a decade of teaching at Brandeis University, the University of Pittsburgh, and the Australian National University.

Thomas A. Dine
Executive Director
February 1983

Executive Summary

While the U.S. Air Force has not been permitted, for political reasons, to exploit fully the potential for strategic-cooperation with Israel, Israeli assistance has been significant in a number of areas, including:

- providing combat data on the performance of American and Soviet equipment in 1973 and in other wars, which significantly affects USAF expenditures of $2 billion per year on conventional forces research and development and $20 billion on nonnuclear procurement
- demonstrating the vulnerability of Soviet SAMs and interceptors in Lebanon, which may force the USSR to divert large sums from force expansion to force renovation and replacement
- contracting to overhaul and maintain engines and components for USAF aircraft in some of the world's most advanced facilities, helping to raise USAF operational readiness
- exchanging intelligence about Soviet and Soviet-allied forces in the Middle East and the Mediterranean

However, the potential for future cooperation is considerably greater, including:

- use of Israeli ports and airfields as offered by Prime Minister Begin, access to which is much less likely to be denied abruptly than facilities in countries like Oman and Somalia
- providing deep cover for USAF military transport aircraft, which could be vulnerable to attack while moving vital equipment and supplies through the Mediterranean and the Middle East in a crisis
- providing secure and reliable storage facilities for USAF fuel and supplies which must be prepositioned in peacetime to support rapid deployment of large numbers of tactical aircraft in a crisis
- substantially greater use of Israeli contract maintenance to improve readiness at reduced costs.

Use of Israeli facilities could be particularly important to USAF as part of an overall Middle Eastern basing mix, for which prudent planning requires at least one facility as a reliable and secure "fall-back" position in the event that access to other, less reliable sites is denied.

Curiously, the failure of the Air Force to exploit these opportunities seems to have more to do with political objections than with defense effectiveness issues per se. Specifically, some fear that closer relations with Israel would impair ties with Arab countries, and would be inappropriate because some of the policies of Israel differ from those of the United States. But these objections, which seem to have great intuitive appeal in some quarters, have not been subjected to careful analysis. For example,

- close relations with Israel has not in the past prevented increased American influence in the Arab world, and may have enhanced that influence;
- our relationship with Israel is based on an enduring affinity between the peoples of the two countries, and any agreement between the two countries is likely to be respected by any future Israeli government;
- American arrangements with other countries in the region are often made with unpopular elites, who may not remain in power or who may feel forced to abrogate agreements with the United States during periods of crisis;
- while there may be differences between the United States and Israel, the two countries have much more in common than exists between the U.S. and Oman, Somalia, or Saudi Arabia, not to mention Korea, Pakistan, and the Philippines. It is not necessary for a reliable ally to agree on every point.

At a minimum, the potential costs and benefits of enhanced strategic cooperation with Israel need to be systematically compared with other policy options available to the United States, before arriving at a final judgment. This has not been done.

Table of Contents

Section I
Areas of Israeli Assistance to the U.S. Air Force

The purpose of this paper is to examine the potential contribution of Israel to the missions and requirements of the United States Air Force (USAF). Defending American interests in the Middle East and the Persian Gulf has not been a major concern of USAF since World War II. However, recent events in the region—particularly the fall of the Shah of Iran and the Soviet invasion of Afghanistan—have caused a reordering of priorities and USAF must now plan for Middle Eastern contingencies. Yet in its recent analysis and planning, USAF has not taken full account of the potential contribution of Israel and the benefits of such cooperation, as well as the implicit costs of non-cooperation, are neither well-studied nor well-understood.

In fact, Israel has already developed a cooperative military relationship with the United States from which USAF has derived considerable benefit. In recent years, this has included Israel's provision of combat data on the performance of American and Soviet systems in the 1967 Six Day War, the War of Attrition, and the 1973 Yom Kippur War. Some data gleaned from the 1982 Lebanon campaign has already been provided by Israel and it has offered to do more. This data is worth a great deal to USAF because the operation of weapons under battle conditions often differs importantly from the assessments of military intelligence and from the results of tests and simulations conducted "on the village green". Israel has provided USAF with captured Soviet equipment, post-combat damage assessments, performance data, electronic intelligence and other war evaluation information and all of these have had an important, though often indirect, impact on USAF expenditures of billions of dollars for research and development and acquisition.[1]

Beyond this, the Israeli Air Force (IAF) has indirectly assisted USAF by proving the superiority of American aircraft over both Soviet fighters and Soviet air-defenses. The IAF's successes against the Syrians during the 1982 Lebanon war, in which over 80 Syrian MIGs and 30 surface-to-air missile sites in the Bekaa Valley were destroyed at the cost of a single Israeli aircraft, dramatically exceeded the expectations of American experts (and probably Soviet observers as well). USAF gains from this because Israel has demonstrated the vulnerability of the Soviet air-defense system. In the European theater, the Soviets depend on a MIG-21, -23, SAM-2, -3, -6, -8, -9, ZSU-23 air defense combination only marginally different from the Syrian air defense array that the Israelis defeated. The Soviet Union will therefore now have to devote large financial resources to replacement and renovation of the systems which have proven vulnerable.

This, in turn, diverts Soviet military expenditures from force expansion to force replacement, from offensive systems to defensive ones. It is worth noting that the Soviet Union spends more on surface-based air defense alone than it does on its entire "Strategic Rocket Forces" (land-based nuclear weapons). If expenditures on interceptors are added, Moscow spends more on combined air defense than on its entire Navy,[2] so renovation will be costly.

The military result of Lebanon is thus a huge implicit gain for USAF, in undermining the value of tens of billions of rubles in Soviet air defense expenditure.

However, these examples of the past value of Israel to USAF, while significant, are limited in comparison with the potential contribution that Israel could make to the missions and requirements of the Air Force in the Persian Gulf, the Middle East, and the eastern Mediterranean. Until now, however, these opportunities have not been recognized. Indeed, Israel has been virtually excluded from USAF planning for access arrangements and defense cooperation in the Middle East because of a belief in the minds of many responsible officials that the political costs of cooperation with Israel would outweigh the strategic gains and economic savings which could be achieved. This consensus against cooperation with Israel, however, is based more on intuitive impressions and casual discussion than hard analysis. In fact, no systematic effort has been made to draw up a balance sheet of the costs and benefits of cooperation with Israel compared to alternative means for achieving USAF objectives, nor have the intuitive political objections to cooperation with Israel been subject to close scrutiny.

In a recent publication, we presented a cost/benefit analysis and comparison of alternatives on the subject of prepositioning materiel in Israel for the U.S. Army.[3] In what follows, we will present such comparisons for the requirements of the U.S. Air Force in the Middle East, examining the potential for utilizing Israeli air bases and airpower, Israeli aircraft maintenance facilities and—in a more detailed case study—jet fuel prepositioned in Israel. In the concluding section we deal with the political objections to cooperation with Israel and argue that they provide insufficient reason for overlooking the one reliable strategic asset available to the United States in the Middle East.

POTENTIAL ISRAELI CONTRIBUTIONS TO USAF

The current Defense Guidance instructs the Services to make maximum use of Host Nation Support,[4] in their efforts to project American power abroad. Israel is particularly well-suited to assist USAF in this way because of its ideal geo-strategic location at the Middle Eastern crossroads, its sophisticated basing infrastructure, its advanced maintenance facilities and—in the last resort—its powerful Air Force. The "menu" of potential forms of Israeli support to USAF is therefore substantial, covering areas of need for the Military Aircraft Command, the Strategic Air Command and the Tactical Air Command.

i) Air Bases and Air Forces

A Persian Gulf or Middle Eastern contingency requiring the prompt introduction of the ground force component of the Rapid Deployment Joint Task Force (RDF),[5] would place a heavy responsibility on the Military Airlift

Command to mount an enormous airlift over intercontinental ranges. Under present arrangements, the strategic airlifters operating out of the Continental United States—C-5s and C-141s—would have to refuel over the Atlantic, transit the Mediterranean and off-load the troops and equipment at staging areas in the Middle East. As they reach the eastern Mediterranean, these transport aircraft, upon which the viability of any RDF operations so crucially depends, would be potentially vulnerable to interdictory attacks by Soviet-allied or Soviet-manned interceptors operating out of Syria and Libya. Since USAF lacks a strategic escort capability, it will have to deploy its tactical fighters to provide deep air cover over the eastern Mediterranean and secure the air lines of communication. For this purpose, USAF will need access to an air base on the eastern Mediterranean littoral.

Moreover, in the contingency of a Soviet invasion of the Persian Gulf via Iran, which is the canonical scenario for Middle East defense planning, USAF will also be required to sustain heavy air-to-ground interdictory raids against Soviet armored columns moving through northern Iran and the Zagros mountains. This effort to slow the Soviet advance, pending the arrival of U.S. ground forces in the region, and to drive up the cost of a Soviet offensive, will require the use of the Strategic Air Command's B-52Hs, carrying conventional munitions, as the main "workhorses".[6] These aircraft require runways which are unusually wide, long and capable of supporting heavy loads, such that relatively few of the world's airfields can be employed for take-off and landing. In addition, as General Richard Ellis, former Commander in Chief of SAC, has noted, "B-52s seem to have a stigma" and many countries are reluctant to provide basing for them.[7] According to the press, airfields in Diego Garcia and Morocco will be available for RDF B-52 use. However, the distances separating these sites from the presumed target area in northern Iran are quite substantial, and reliance on them would severely limit the number of sorties that could be flown, while placing considerable stress on "strategic projection force" operations.

Israel and Egypt possess air bases which are both closer to the theater than Diego Garcia and Morocco for B-52 operations, and well-located for escort duties and combat air patrols over the eastern Mediterranean. However, between the two alternatives, arrangements in Israel could more reliably be counted upon for availability in a wide range of crisis contengencies. Moreover, there is a significant threat of sabotage to B-52s and tactical fighters based in Egypt emanating from fanatical Muslim fundamentalists—a threat not present in Israel. Prime Minister Begin has announced his country's willingness to host such a USAF presence and has even indicated a readiness to build a special runway at one of the new Israeli air bases strictly for American use.[8]

Such access arrangements could also be imporant for a number of other contingencies in the Mediterranean, southern European and Southwest Asian

theaters. Tactical fighters could operate out of Israel in defense of the Suez Canal (whose availability to the U.S. Navy and the sealift lines of communication might be crucial) and against Syrian and Libyan bases to deny them to Soviet air and airborne forces. Reconnaissance aircraft could use Israeli bases for their assignments in the eastern Mediterranean. These bases could also act as a fall-back should the Military Airlift Command discover that its other access and staging arrangements had suddenly become unavailable in a crisis. Nevertheless, the American response to Israel's several offers to negotiate USAF use of the new air bases in the Negev has been negative.

In addition to basing privileges, USAF could also gain from closer cooperation with the Israeli Air Force (IAF). The IAF could play a role in fulfilling USAF requirements by flying deep air cover and reconnaissance missions over the eastern Mediterranean. Indeed, given USAF's limited resources, coordination with the IAF would probably be essential to defend the airlift routes, regardless of political considerations. Prime Minister Begin made such an offer in a meeting with journalists in Washington in September 1981,[9] but it was not accepted by American officials. Nevertheless, Assistant Secretary of Defense, Francis "Bing" West, has since stated that he considers insuring a secure line of communication in the eastern Mediterranean the principal area where Israel might play a role in defense of the Persian Gulf.[10] Closer coordination of this kind, manifested in joint exercises, would also strengthen the West's ability to deter Soviet military action in the region because Soviet planners would then have to factor in their calculations the considerable power and effectiveness of the IAF.

ii) **Aircraft Maintenance Facilities**

One area of cooperation between USAF and Israel which holds great potential is Israeli depot-level maintenance of tactical fighters and attack aircraft. Both USAF and the IAF operate F-15s, F-16s and F-4s, and Israel already possesses sophisticated overhaul and repair capabilities for the airframes, engines and myriad subsystems and components that are critical to the operational readiness of these aircraft.

USAF has already begun to tap Israel's existing capability in this regard through contracts awarded to several Israeli firms for the maintenance of transport aircraft and the overhaul of fighter components.[11] These contracts were awarded solely on the basis of commercial considerations—Israel's costs were competitive and its quality standards and delivery schedules met USAF's requirements. However, USAF has so far avoided overhauling entire fighter aircraft in Israel, although it has awarded such contracts to Spanish and Greek firms.

It would nevertheless be a relatively simply matter for USAF to draw on the existing infrastructure in Israel to do this work on its fighter and attack aircraft. The overhaul and maintenance lines for Israeli F-4s, F-15s, and F-16s

are already operational and conform to U.S. Department of Defense military specifications. The personnel working on these lines have been trained to DoD quality standards. USAF has a contracting office in Israel and, under an agreement signed in 1979, Israel has been granted the right to compete with American companies for USAF overhaul and maintenance contracts.

Contract maintenance of USAF fighter and attack aircraft by Israel in peacetime would have several advantages for USAF's wartime Middle Eastern requirements. No such capability exists elsewhere in the Middle East so, by expanding Israel's existing system, USAF would be able to establish its only feasible regional maintenance infrastructure. It would also gain from Israel's expertise as the country with the finest record for combat repair during conflict. In addition, arrangements could be made to boost the maintenance capability in a crisis by drawing on the IAF's matching capability and its inventories of spare parts.

Most importantly, USAF's operational readiness could only benefit from access to Israeli maintenance facilities. The availability of these additional facilities could help raise USAF operational readiness rates.[12] Although USAF and IAF definitions of operational readiness differ, some idea of the capabilities of the Israeli facilities can be gained by a consideration of IAF operational readiness rates: usually above 90 per cent, and in the case of the F-16s flown in Lebanon, almost 100 per cent.[13] The "down time" of U.S. fighters and attack aircraft represents a tremendous "hidden cost" because, hypothetically, to have available 100 operationally ready aircraft at today's readiness rate, USAF would have to deploy in theater an additional 54 aircraft costing about $11.4 billion.

Thus additional contract overhaul and maintenance by Israel could increase the effectiveness and reduce the cost of USAF missions where large numbers of aircraft are required. It could also provide USAF with a highly reliable and efficient regional support infrastructure for wartime contingencies in the Persian Gulf and Middle East. Such contracts would represent a relatively low-level form of cooperation to which it would be difficult for others to object. They could also be instituted for a trial period and cancelled if the result was not satisfactory. Israel's maintenance facilities, however, would need to be expanded to meet USAF's requirements and this is something which could not be implemented if we wait until the crisis is upon us.

Another area of possible cooperation with great potential, but about which almost nothing has been written elsewhere, would be Israeli help to correct the severe fuel supply shortages the Tactical Air Command would face if called upon to support the Rapid Deployment Force in a Persian Gulf war. Using this example as a case study, the next section provides a detailed illustration of one of the current planning challenges before the United States Air Force and how cooperation with Israel can provide a better solution than other arrangements.

Section II
An Example: Logistical Support for RDF Tactical Airpower

Introduction

The Rapid Deployment Force is being designed to counter the basic contengency of a Soviet invasion of the Persian Gulf littoral from the Transcaucasian and Turkamen regions of the U.S.S.R. According to current Department of Defense Guidance, the tactical Air Force component required to meet this threat would be considerable, comprising five to ten Tactical Fighter Wings (TFWs), or from 360 to 720 fighters.[14] The role of tactical airpower will be particularly important during the opening phase of the war, because most of the ground forces will take a considerable time to arrive from distant locations, and the Air Force, which is more rapidly deployable, will have the principal burden of slowing the Soviet advance.

A force of five to ten TFW's will require prodigious quantities of JP-4 aviation fuel, without which it simply will not be able to operate. Fighter aircraft are high energy consumers typically requiring one gallon per mile on average. A reasonable estimate of USAF's requirements for the RDF would be three million gallons per day just for tactical aircraft.

The bulk of this requirement must be *prepositioned in the region* to supply these aircraft for the first thirty days after they are deployed. The alternative of airlifting fuel from the continental United States (CONUS) would vastly exceed the current and planned capabilities of the aerial refueling fleet; fuel transported from CONUS by sea would not be available for the first month of fighting.

USAF prepositioned fuel storage facilities currently planned for the region, however, will satisfy no more than 15-30% of the requirement for the first thirty days. Host Nation Support, out of "domestic" stocks, if available at all, could supply no more than an additional 20%. *There is thus a shortfall of at least 50% of the fuel requirement for the Tactical Air Command in the first 30 days of the canonical planning scenario for conflict in the Persian Gulf.*

Correcting this deficiency by procuring strategic airlifters to transport fuel from CONUS would be prohibitively expensive. The only practical solution is the construction of additional storage on land bases in the region. Obviously, such bases must be secure from air and commando attacks. And because fuel is the *sine qua non* of USAF operations, such bases must be reliably available to the United States in the event of a crisis.

While some additional storage in Oman, Egypt and other currently planned prepositioning sites is possible, considerations of physical security and political reliability, as well as the limitations imposed by host governments, point to the need for additional locations in this most volatile and unstable region of the world.

Israel is the only country in the region which can be relied upon to be there when USAF needs it. Israel's formidable air defense capability makes fuel sites there far more secure than most other potential sites. And Israel's geographic location gives it a substantial cost advantage over most other

sites. In the more detailed analysis which follows we show just how critical the shortage of prepositioned fuel is and why prudent planning would point to Israel for expanding fuel storage facilities.

THE IMPORTANCE OF AIRPOWER

There are presently some twenty-two Soviet divisions on the northern border of Iran, within 900 miles of the Persian Gulf and the West's oil supplies.[15] Most of the U.S. Rapid Deployment Force, by contrast, is based over 8,000 miles from the Persian Gulf in the United States. In the time that it would take the Soviet Union to occupy strategic locations in the Gulf with three armored divisions, the United States could deploy about one marine battalion and one airborne brigade to the front. Put simply, the ground force component of the RDF cannot hope to match the forces of the Soviet Union in the early stages of a Persian Gulf conflict.

This places a heavy burden on the U.S. Air Force which, by contrast, can deploy its fighters and bombers to the Persian Gulf theater in a matter of hours and days. These aircraft will have the crucial responsibility of interdicting and impeding the movement of Soviet forces as they advance through the narrow passes in northern Iran and through the Zagros mountains. They will have to compensate in the air for the absence of artillery and armor on the ground. They will also constitute an indispensable element in the defense of beachheads and forward positions to which the U.S. ground forces can deploy, and in protecting forward air bases and other initial staging areas from enemy interdiction.[16] In qualitative terms, dependence on air power makes good sense because American technical superiority over the Soviet Union is most pronounced in the field of fighter bombers.[17] Moreover, from a terrain perspective, dependence upon air power takes greatest advantage of the particular conditions in the Persian Gulf and Arabian Peninsula which assist air-to-ground interdiction.[18]

Thus, in attempting to counter the natural advantages of Moscow's geostrategic position in a Gulf conflict, the RDF will have to depend upon air power as both its only available opening response, and as its most effective response. For these reasons the Carter Administration assigned five Tactical Fighter Wings (TFWs) to the RDF and the Reagan Administration, in its 1982 guidance, ordered USAF to assign an additional five TFWs. In all then, some 720 aircraft are considered by defense planners to be required for tactical operations in the Persian Gulf.[19]

USAF's Fuel Problem in a Gulf War

Although the aircraft and crews can be moved to the region in short order, ensuring that the fuel required by the aircraft for high-intensity operations is available when needed will be a daunting endeavour. Even though the Middle East is the source of much of the world's crude oil, refined jet fuel is not likely

to be available in such large quantities from indigenous regional sources and the fuel must therefore either be transported to the region at the time of need or prepositioned before a crisis.

The normal means of moving large quantities of fuel is by sea, but even assuming that the Suez Canal can be used, fuel sealifted from CONUS will not be available in the theater for the first thirty days of combat.[20] During this period, operation of five tactical fighter wings will consume about 54 million gallons of JP-4 jet fuel; ten TFWs will require 108 million gallons, not to mention the requirements of SAC B-52s and other aircraft.[21] USAF recognizes that it faces "major inadequacies in the area of fuel facilities requirements."[22] and has decided to construct prepositioned storage sites at airbases in Oman and Egypt which, when completed, will provide 18 million gallons for Tacair purposes, as in Table I. But these facilities will satisfy only a third of the requirement, for a five TFW force and less than a fifth of that for a ten TFW force.

TABLE I

The Tactical Air Fuel Deficit[23]

		(,000 gallons) FIVE TFWs	(,000 gallons) TEN TFWs
FUEL REQUIREMENT (first 30 days)		54,000	108,000
TOTAL PLANNED STORAGE:			
Oman	12,108		
Egypt	5,460	17,640	17,640
DEFICIT		36,360	90,360
DEFICIT AS % OF TOTAL REQUIREMENT		67.3%	83.7%

If five to ten tactical fighter wings are to be available for Persian Gulf contingencies, major additional steps will be required to correct this fuel deficit. The range of possible solutions theoretically includes sealift, airlift, prepositioning on ships,[24] and prepositioning on land, but a comparison of these alternatives has led the Air Force to conclude that the only satisfactory option for the first month of the war is to preposition fuel on land in the Middle East.[25]

Sealift—as already noted—would take approximately thirty days with access through the Suez Canal and much longer without it; this would impact only after the crucial first month of fighting. *Airlift* of fuel from CONUS would be impossible[26] because the airlifters themselves would require more fuel than they could carry to traverse the great distance from the U.S. to the

Persian Gulf. Even if it were possible, it would require up to 332 KC-10's at a procurement cost of about $25 billion.[27] Fuel *prepositioned at sea* would be vulnerable to enemy strikes as it moved through the Straits of Hormuz and the confined waters of the Persian Gulf; targeting tankers would be the best way to ground the U.S. Air Force early in a war. For these reasons, among others, USAF doctrine requires that fuel be *prepositioned on land.*[28] For Persian Gulf contingencies, these prepositioning sites would need to be located in the Middle East region itself because ferrying the fuel from more distant sites, such as the Azores, Diego Garcia or Kenya, would be prohibitively expensive (see Appendix).

A BASING STRATEGY FOR RDF TACAIR FUEL

If fuel is to be prepositioned on land, where should the sites be located? In confronting the task of securing fuel storage locations in the Middle East, defense planners now have the opportunity to build a basing system for Persian Gulf contingencies from the ground up, since very little by way of access arrangements has been inherited from the past. This situation is quite different from Europe and the Far East, where today's basing system evolved largely from the results of the Second World War and earlier arrangements.

The fact that the region is almost a blank slate as regards access arrangements should be regarded as an opportunity as well as a burden, since the absence of past commitments leaves open the possibility of an integrated strategic approach to the problem, unfettered by tradition and vested interests. It is possible, at least in theory, to develop a coherent basing strategy to guide diplomatic negotiation and military construction activities, laying the foundations according to a rational plan. Choosing the right basing strategy for fuel is not an issue that grips the imagination as much as, say, speculating on what form a Soviet move might take. But fuel is the lifeblood of a tactical fighter force, without which it cannot operate, and a fuel basing strategy is, in fact, one of the most important challenges facing the RDF.

A strategic plan begins with an operational requirement: in the current case the necessity to preposition fuel for USAF tactical air missions in the region. It then compares systematically the options available to meet the requirements, including considerations of cost, effectiveness, and risk, to arrive at a preferred option or mix of options.

The concepts of *risk* and a *mix of options* have particular importance in a basing strategy for RDF tactical air fuel. The volatility and unpredictability of the Middle East emphasizes the risk factor; two of the four countries in which we have "access arrangements" today—Somalia and Egypt—were Soviet allies ten years ago, while two of the Soviet Union's main bases—Ethiopia and Afghanistan—were pro-Western or neutral at that time. It usually takes five to seven years to produce a completed basing facility, from inception of planning to full operational capability,[29] but the political orientations of many

states in this region are not visible over so long a planning time horizon. Of the 49 major USAF installations which existed on foreign soil in 1972, only 27 remained under Air Force control a decade later.[30] In deciding the appropriate locations for fuel storage facilities, therefore, the USAF Logistics Command must plan against the major political uncertainty that bases under construction today might not be available when we actually need them.

In addition, a basing strategy must contend with the physical vulnerability of fuel storage facilities to hostile action by the Soviet Union, its allies or dissidents adopting violent measures. Many of the sites contemplated at present are within striking range of enemy bases, or could be targets of commando or terrorist actions. The high flammability and bulkiness of fuel makes tank farms excellent targets for bombers, and the Allied experience in World War II demonstrates the drastic effect that fuel deprivation can have on enemy fighter capability.[31]

These risk factors also impact on cost, in two ways. First, a vulnerable site that must be protected by dedicated U.S. fighters and SAMs is considerably more expensive than one which is beyond the range of the enemy threat or can be defended by the host nation. Second, a site at a politically insecure location is implicitly more expensive than one in a reliable country, since the entire investment would be worthless if use of the facility were denied when it was needed. The principle that a low risk site is a less costly site is, as we will see, one of the major advantages of Israel in comparison with other prepositioning opportunities available to USAF in the region.

In deciding upon the most appropriate locations for fuel storage facilities today, a basing strategy must plan against political and site security risks over an extended time horizon. The NATO logistics system, which evolved largely from the conditions that existed after the Second World War rather than a coherent basing plan built from the ground up, today suffers from a maldistribution of fuel.[32] We have, in the Middle East, the opportunity to build a rational basing system that will last for many years according to a more rational plan.

A key element of this plan should be a strategy to hedge against the political and site security risks by distributing critical logistic support facilities at a number of locations in different countries, i.e., a mix of options rather than putting all our eggs in one basket. This will reduce the likelihood that unfavorable political changes or successful enemy strikes can deprive the tactical fighter force of fuel. The heart of a basing strategy, then, is to choose from among the access sites available today a basing mix that puts fuel where we will need it while hedging against risk.[33]

Hedging Against Risk—Israel as a Fuel Site:

In pursuing this basic mix, defense planners have a range of prepositioning locations in the Middle East to choose among: air bases in eastern Turkey and

northeastern Saudi Arabia provide possible close-in alternatives, while Somalia, Egypt, Oman, Jordan and Israel are possible regional locations. In choosing a mix of these sites, a strategy which sought to hedge against risk would require at least one location which provided USAF with the certain knowledge that prepositioned fuel would be available when needed, regardless of the circumstances. In the reasonable worst case, when other sites became unavailable (due either to enemy interdiction or political contingencies) this "fall-back" site would be capable of providing the essential requirements for keeping USAF's tactical air power operational. In the best case, fuel from this site would be available to complement stocks prepositioned elsewhere, giving USAF a valuable margin of flexibility.

Israel is the ideal location for such a strategic reserve because it offers the crucial combination of physical security, political reliability and cost-competitiveness.

Jet fuel stored in Israel would enjoy the protection of Israel's formidable air and ground defenses. Israel's Air Force is recognized as one of the most capable in the world and its primary task is to ensure that the country's airspace is impenetrable. The IAF has repeatedly demonstrated its superiority over neighboring Soviet-equipped air forces, and even over Soviet-piloted aircraft.[34] Israel's thirty-year experience in combatting guerrilla operations makes it equally capable of ensuring perimeter security. In short, Israel is eminently qualified to provide a secure defense umbrella over the fuel site and it would do so as a natural extension of its own defense effort.

Israel also provides a politically secure fuel site. Israeli governments harbor no sensitivities toward overt strategic cooperation with the U.S. because such policies enjoy the overwhelming support of the people of Israel. Israelis share with Americans a common culture, common values and common democratic institutions. A strong alliance with the U.S. is also the central tenet of Israel's foreign policy—regardless of the coalition in power. This stems from the basic convergence of American and Israeli strategic interests which has created an "organic" alliance: one based on the innate values of the two peoples rather than a temporary convergence of interests. Accordingly, USAF can have confidence that any arrangement made with one Israeli government regarding prepositioning of fuel will be kept by its democratic successors.

This combination of political and physical security is particularly important when compared to the combinations offered by the other Middle Eastern states prepared to offer their facilities to the U.S. All of these countries are physically vulnerable to enemy attack or internal sabotage. None of their regimes can be said to have strong popular support, and in no Arab country does public opinion endorse a military alliance with the United States. Most of the Arab states profess nonalignment as the foundation of their foreign policies. All are extremely sensitive to the charge of cooperating with American "imperialism," and most seek to limit their involvement accordingly.

While some are more stable than others, none can be relied on in all circumstances to make facilities on their soil available to USAF. In these circumstances, as we shall see, none of the alternatives to Israel can qualify as a high-confidence "fall-back" option for storing jet fuel.

COMPARING OTHER SITES TO ISRAEL

i. Turkey

Turkish authorities have consistently refused to provide basing and access arrangements for Persian Gulf contingencies in which the United States might become engaged, in spite of repeated entreaties from American officials. In the words of Defense Minister Haluk Bayulken, "It is out of the question for Turkey to take part in a rapid deployment force being established by the U.S."[35]

As the only Moslem member of NATO, Turkey is particularly sensitive to domestic and regional opposition to American military intervention in the Persian Gulf. Ankara is depending on Arab states, including Libya, to support its economic recovery; the regime is sensitive to domestic opposition from Islamic fringe groups, the strong Turkish left, and Kurdish dissidents; and it is attempting to pursue a policy of accommodation with the Soviet Union, with which it shares a long border.

Turkish sites are also vulnerable to air strikes from the numerous bases in the southern U.S.S.R.,[36] against which Turkish air defenses could provide only token resistance. In addition, while Turkish access arrangements would be useful for contingencies in northern Iran and the Soviet Transcaucasus, contingencies elsewhere in the Gulf would require flying through potentially hostile airspace over Iraq, Iran, or Syria, across distances which are in any case beyond the combat radius of tactical aircraft. Aerial refuelling from Turkish bases would be still more vulnerable.

This is not to argue that fuel stored in Turkey would not be valuable for certain contingencies. If Turkey lifted its opposition, fuel at bases in the eastern part of the country could be particularly important in a northern Iranian contingency. But the political uncertainties, site vulnerabilities, and contingency limitations rule out principal reliance on Turkish bases for fueling RDF tactical airpower.

ii. Saudi Arabia

Saudi Arabia's Dhahran air base is, in theory, an ideal location for fuel prepositioning. From here, tactical fighters working in conjunction with aerial refuellers could fly missions across the Persian Gulf and Iran to the borders of the Soviet Union and Afghanistan. However, Saudi Arabia has consistently rejected American efforts to acquire basing privileges and has opposed the concept of an American presence in the Gulf, arguing that such a presence

could provoke the Soviet intervention it is designed to prevent. The Saudi regime is particularly sensitive in this regard because it must contend with the anti-American hostility of all its important neighbors.[37] These pressures serve to heighten an already profound sense of insecurity generated by the combination of vast oil wealth and a grossly inadequate defense capability. The result is a deeply ingrained policy of placating the bear by keeping the bear-keeper at bay.[38]

For the Saudis, therefore, American intervention is an option of last resort. They want an American "over the horizon" capability to be there when needed, but they will not host an overt presence beforehand. USAF planners could surmount this problem—and indeed may already have done so[39] by entering into a covert arrangement for Saudi Arabia to "overbuild" jet fuel storage facilities at some of its eastern air bases. But given the political crosspressures on Saudi Arabia, these cannot be considered high-confidence arrangements.[40]

They could be further jeopardized if the Saudi regime itself becomes destabilized over time, as the full impact of the contradiction between rapid modernization and rising Islamic fundamentalism begins to be felt. An increasingly threatened regime cannot be expected to risk criticism by cooperating with the U.S.; indeed, it might dramatically reduce such cooperation exactly to placate and appease growing opposition. The tacit alliance with the United States, though it may reduce the risk of invasion, increases the more visible threat of subversion, and too close a relationship with the U.S. may raise the specter of an upheaval like that which occurred in Iran. Politically, Saudi Arabia cannot afford to be, or be seen to be, the linchpin of U.S. military capabilities in the Persian Gulf.

Finally, facilities in eastern Saudi Arabia are vulnerable to Soviet or Soviet-allied air strikes from bases in South Yemen (PDRY) and from bombers operating out of the six new Soviet airbases constructed in southern Afghanistan,[41] against which Saudi Arabia's own air defenses are not likely to be effective. Sites elsewhere in Saudi Arabia could be vulnerable to commando operations.

iii. Oman

On the face of it, Oman appears to be another attractive prepositioning site. Although its air bases are some distance from the primary theater of operations, aerial tankers could operate out of them in support of Tacair mission in the Persian Gulf. Sultan Qaboos is more willing than Saudi Arabia to be overtly involved with RDF force projection planning. For this reason, USAF has already decided to preposition some jet fuel in Oman. But facilities in the Sultanate face problems of physical vulnerability and political reliability and while they are an important component of a basing mix, they cannot substitute for a "fall-back" arrangement.

The storage tanks at Masirah, Seeb and Thumrait are all within strike-range of Soviet medium-range bombers operating out of southern Afghanistan. They could also be hit by aircraft operating out of Soviet-built air bases across Oman's western border in the PDRY (South Yemen). The facilities at Thumrait, in particular, are less than ninety miles from the PDRY border. The Omani air force is incapable of providing an adequate air defense, and the Sultan is not prepared to have USAF deployed on Omani soil in peacetime.[42] Thumrait would also be accessible to commandos or guerrillas operating out of Aden.[43]

The stability of the Sultan's regime also raises questions about the wisdom of over-dependence on storage facilities in his country. Qaboos has no son and there is no clear hierarchy which would provide for orderly succession. Like other producers in the Gulf, Qaboos faces the problem of meeting the rising expectations of a people only recently reconciled to his rule. Unlike the other oil producers, however, Oman's oil reserves are limited and, at a time of falling oil prices, his lavish expenditures and ambitious development plans cannot be sustained for long. In this context, the Sultan's reliability might also become questionable. His overt cooperation with the U.S. has placed Oman in an exposed position among the Gulf states. He has already come under heavy pressure from the Gulf Cooperation Council to deny Oman's facilities to the U.S.[44] Kuwait, in particular, has mounted a campaign to change the Sultan's mind.[45] Meanwhile the overt hostility to the United States expressed by neighboring PDRY and Iran provides a constant reminder of the dangers involved in his present course. The Sultan has resisted these pressures so far, but in more dire circumstances he might well be persuaded to change his orientation.

On balance, Oman cannot be considered a high-confidence, secure and reliable location for the prepositioning of jet fuel. A basing strategy which sought to spread the risks would include Oman but avoid too great a dependence on it.

iv. Egypt

Prepositioning sites in Egypt will be less vulnerable to enemy air strikes than those in Turkey, Saudi Arabia and Oman. The RDF facilities in Ras Banas are beyond the range of Soviet aircraft operating out of anywhere but Libya, and Egypt's own refurbished air force would probably be capable of dealing with any threat from that quarter. However, given Ras Banas' location on the Red Sea, facilities there do face a serious threat from naval commando operations. Moreover, sabotage operations by internal dissidents also presents a formidable problem—a fact which must have been driven home to the then Commander of the RDF, Lt. General Robert Kingston, as he watched from the reviewing stand the assassination of President Sadat by Muslim fanatics. Nevertheless, USAF planners have already decided to store some fuel at Ras Banas for Tacair use.

Yet, to make up the considerable shortfall that USAF faces in its tactical fuel requirements by extending facilities at Ras Banas would increase both the physical and political risks involved in prepositioning in the Middle East. This is particularly the case because of the new uncertainties emerging in Cairo.

Under President Sadat, Egypt was careful to place a strict ceiling on the level of strategic cooperation with the U.S., refusing to grant basing privileges or to sign a formal agreement. This reflected Sadat's understanding of popular Egyptian opposition to a foreign presence. The former British and Soviet bases in Egypt produced bitter memories for most Egyptians and the occasions of their removal are still celebrated as national triumphs.

In the wake of Sadat's assassination by Moslem dissidents opposed—among other things—to his association with the United States, the Mubarak regime must act even more cautiously. It now faces a serious challenge from Islamic fundamentalists whose anti-American message strikes a sympahetic chord in the hearts of the Egyptian masses.[46] This message is reinforced by Egypt's intellectuals and leftist opposition parties who argue that the U.S. is an imperialist power intent on dominating Egypt.[47] The sense of frustration felt by all Egyptians as they come to terms with the reality of Egypt's economic plight makes them increasingly receptive to opposition arguments that they should blame and turn on their latest great power patron in the same way as they have turned against all previous ones.

In these circumstances, Mubarak and the Reagan Administration have apparently reached agreement that an enhancement of the strategic relationship would not serve the interests of stability in Egypt at this juncture. The United States is instead seeking to lower its profile in the country. Accordingly, the second round of joint maneuvers between the Egyptian armed forces and the RDF, which were scheduled for late 1982, have been cancelled.

Just how reliable access arrangements with Egypt remain will therefore depend on circumstances beyond Washington's control. For example, in deference to the mounting criticism of Egypt's association with the United States, a cautious Mubarak might consider it wise to deny access to USAF. Similarly, the regime in Cairo might be unwilling to jeopardize its chances for rapprochement with other Arab states by supporting American military actions which were controversial in the Arab world. In the worst case, the Mubarak regime might itself be overthrown be a coalition of fundamentalist and leftist forces united in their opposition to his economic and foreign policies.

In short, the jet fuel already prepositioned in Egypt is at risk. Expanding the fuel facilities at Ras Banas will only increase that risk. Thus while Egypt is a necessary component in any USAF basing strategy it is not a sufficient component since it cannot meet the requirements of a "fall-back" facility.

v. Somalia

Situated some 1,600 miles from the Persian Gulf, Somalia is the least attractive of all the regional prepositioning alternatives. Not only is it poorly located for USAF's purposes, but its facilities at Berbera are also vulnerable to attack by aircraft operating out of neighboring Ethiopia or the PDRY across the Gulf of Aden—both Soviet allies. Indeed, Ethiopia has already threatened to employ its own air force against the existing U.S. facilities at Berbera. Somalia is incapable of providing an air defense umbrella for such highly vulnerable sites nor perimeter security against infiltrators operating out of the strife-torn Ogaden.[48]

Beyond these physical problems, Somalia's President Siad Barre is the least reliable of America's Middle East clients. He turned to the United States in the expectation of financial gain and demanded a "king's ransom" for access to Berbera. He is engaged in a war of his own making with Ethiopia and presides over a bankrupt economy. His revolutionary socialist regime is both corrupt and unpopular. Accordingly, Somalia could only be regarded as a site of last-resort for jet fuel prepositioning.

vi. Jordan

While in theory Jordan might appear to be a possible prepositioning alternative, King Hussein has rejected the idea of hosting RDF facilities in peacetime. USAF cannot resort to covert "overbuilding" of Jordan's own fuel facilities because its air bases are too small to camouflage such large scale construction. Moreover, King Hussein has already apparently agreed to a controversial proposal for American training of his elite troops as a rapid intervention force[49] and it would therefore be unwise to jeopardise his exposed position in the Arab world by further raising the profile of his cooperation with the RDF. Accordingly, Jordan should not be included in the fuel-basing mix.

COMPARISON IN TERMS OF COST

Thus a comparison of the political reliability and site security of the major land prepositioning options available to USAF for fuel storage facilities in this region points clearly to Israel as the one high-confidence option for a "fall-back" supply that will be there when needed. Some might argue, nevertheless, that the costs involved in airlifting fuel from Tel Aviv to air bases in the Gulf make closer sites more attractive. As Table II shows, however, airlifting fuel from Israel is as cheap as Egypt, where USAF has already decided to construct storage facilities, and one-third cheaper than Somalia.

This simple comparison, however, overlooks the other costs involved in prepositioning.[50] First, there is the cost of protecting the fuel site. In the case of both Israel and Egypt, the savings which result from their locations beyond

TABLE II

Costs of Airlifting Fuel to Dhahran (Saudi Arabia) for one Tactical Fighter Wing

PREPOSITIONING SITE:	($ Millions)
Somalia	454
Israel	302
Egypt	302
Oman	227

Source: See Appendix.

the range of Soviet aircraft together with their possession of indigenous capabilities to defend the fuel sites from air attacks, more than balances the transport costs incurred. Conversely, the vulnerability of sites in Turkey, Saudi Arabia and Oman to Soviet bombers and the inability of these countries to mount an effective defense, cancel the savings involved in their proximity to the area of Tacair operations.

Second, there is the implicit cost involved in the risk that a site might not be available when needed, rendering the entire investment worthless. According to this criterion, a site which has a 100 per cent probability of being available is half as expensive as a site which has a 50 per cent probability. These implicit costs are highest in Turkey and Saudi Arabia because of their reluctance to be involved in RDF planning and their acute sensitivity to hostile pressure. In Oman and Egypt the implicit costs are slightly less—as we have argued—though they remain high. Israel, however, incurs negligible implicit costs because of its inherent stability and reliability. The comparative savings which result from Israel's low-risk, low-vulnerability profile thus more than outweigh the transport costs involved in prepositioning jet fuel there.

CONCLUSION—THE IDEAL BASING MIX

Clearly, the United States cannot protect its interests in the Persian Gulf without depending heavily on the tactical power of USAF. And USAF cannot project its power into the Persian Gulf without access to huge quantities of jet fuel prepositioned in the Middle East. At best, fuel storage facilities already planned can cover only one-third of the requirement, and USAF must now decide on a basing strategy for additional facilities to meet the shortfall. In making its decisions, USAF must come to terms with the political uncertainties and physical vulnerabilities inherent in the Middle East region. Its only recourse is to a basing mix which hedges against risk both by prepositioning in a number of countries and by building a "fall back" strategic

reserve in one dependable location. Turkey, Saudi Arabia, Oman and Egypt have advantages as prepositioning sites because of their proximity to USAF's likely theater of operations. But all of these sites are burdened with problems of political uncertainty and/or physical vulnerability. Only Israel is both well-located and offers the essential combination of reliability and site security. Thus, while it makes sense to preposition some fuel in Oman, Egypt, Saudi Arabia, and Turkey, the ideal basing mix would seek to compensate for the risks involved by storing a good deal of USAF's fuel requirements in Israel.

Building this strategic reserve in Israel would also serve other USAF purposes beyond its role in RDF tactical air operations in the Persian Gulf. Under present arrangements, the Military Airlift Command depends upon en-route refuelling facilities for C5As transporting military equipment from CONUS to the Gulf. KC10s operating out of Israel could refuel the transport aircraft using the jet fuel stored there. Similarly, USAF might have a need in some contingencies for refueling facilities for Tacair or Strategic Projection Force operations in the Eastern Mediterranean. Again, jet fuel prepositioned in Israel would be available for such purposes. In short, tank farms in Israel would give USAF both a "fall-back" facility for Persian Gulf operations and a "swing" facility for Mediterranean contingencies. Prepositioning in Israel can give USAF confidence that its fuel requirements for operations in the Middle East will be available regardless of whether other countries decide to cooperate. A basing mix that excludes Israel will not provide this assurance.

Section III
Why Exclude Israel?

Enhanced strategic cooperation between the United States and Israel could result in some very tangible gains for the United States Air Force, in such areas as intelligence sharing, bases, air defense for military airlifts, improved maintenance to raise operational readiness rates, and reliable fuel facilities for tactical fighter operations. Yet the Air Force has not strongly supported efforts to improve strategic cooperation with Israel, neither during the 1981 negotiations over the Memorandum of Understanding for strategic cooperation,[51] nor since that time in efforts to bring cooperation back to life following the suspension of the MOU. Indeed, USAF has virtually excluded Israel from the access sites under consideration in this region.

What accounts for the lack of interest of the Air Force in exploring arrangements that could have a substantial positive impact on its ability to perform its mission? Curiously, the answer seems to have more to do with political objections than with defense effectiveness issues *per se*. Indeed, the perceived political problems are considered to pose such an obstacle that, according to reliable sources, no serious effort has been made within the Air Staff even to compare political considerations with the value of the military advantages that are being foregone. The result is that the military/strategic potential of cooperation with Israel has been neglected.

The political objections themselves boil down to two central arguments: first, that closer relations with Israel would impair ties between the United States and the Arab countries; and second, that closer cooperation with Israel would be inappropriate because the policies of Israel differ from those of the United States.

The belief that closer relations with Israel would impair U.S. ties with the Arabs in not a new one; in fact, it has been the main theme of a minority within the U.S. government since 1949. What is new is the spread of this conception from a few limited agencies, such as the State Department's Bureau of Near East Affairs, to new quarters.

The main attraction of this conception is its simple logic: as the Arabs say, the friend of my enemy is my enemy. But this Arabist formula is also almost completely at odds with the history and experience of the United States in this region for over thirty years, where a deepening relationship with Israel has not hindered a steadily improving friendship with a widening circle of Arab countries. This has been particularly true since 1973, when the U.S. has given unprecedented levels of arms and aid to Israel while substantially improving relations with Egypt, Saudi Arabia, and the states of the Arabian Peninsula. Indeed, even Syria and the PLO now recognize Washington as the most important outside actor in the Middle East, exactly because the United States has an intimate relationship with Israel. The simple truth is that, at a time when the United States enjoys a strong and close relationship with Israel, it has achieved an unparalleled position of influence in the Arab world.

In some critical cases, the close relationship with Israel has even been a

direct asset in building closer U.S. ties with Arab states. The most recent example is Lebanon, where Israeli action has severely reduced the influence of two Soviet allies (Syria and the PLO) and brought about the installation of a pro-American government there. Earlier examples include Jordan, where Israeli action in 1970 helped to save the government of King Hussein from a challenge by the PLO, and Egypt, whose new relationship with the United States was fostered by Israel's willingness to surrender the Sinai. In short, it is neither self-evident nor true that close cooperation between the United States and Israel hinders the improvement of relations with Arab countries.

Indeed, to the extent that there is tension between America's ties to Israel and its relationship with the Arabs, the principal Arab objections are to the things that the U.S. does for Israel, such as arms supplies and aid, rather than the things Israel does—and could do—for the United States to promote the stability of the region. In any case, the Arabs assume that we are already engaged in strategic cooperation with Israel. In effect, we are paying the cost of the alliance while depriving ourselves of much of the benefit.

Moreover, the areas of strategic cooperation proposed in this paper—bases, maintenance facilities, fuel prepositioning and deep air cover—could not reasonably be regarded by the Arabs as threatening to them. Their very purpose is to bolster USAF's "over the horizon" capability to defend the Arab states.

Beyond this, sacrificing the objective American national interest to satisfy the prejudices of some Arab states against Israel, even if it did earn praise in some quarters, would be a form of appeasement. The conservative Arabs are saying, in effect, that they want us to defend them, but not from bases on their territory, and not from facilities provided by Israel either. A responsible power cannot let its policy be dictated by this kind of logic.

The second class of political objections standing in the way of USAF cooperation with Israel is the perception that closer ties would be inappropriate because the policies of Israel differ from those of the United States. This reflects the fact that, in recent days, greater attention has been paid to the points of disagreement between Israel and the United States than the wider underlying areas of agreement. While there are, inevitably, some differences between the two countries on the complex issues of the region, Israel remains the one country of the Middle East which does not profess neutrality but considers its fate inextricably bound up with that of the Western world. It is also the country with the most democratic institutions, the country with the most advanced economy and most capable armed forces in the region, the country most willing to engage in strategic cooperation with the United States, and the country most likely to remain an ally of the United States over an extended period of time. The United States has more in common with Israel than, say, Somalia or Oman, and fewer areas of policy difference than with, for example, the Philippines or Pakistan, but an image is being created

that these countries are better allies than Israel. Even major allies like Germany and Japan pursue policies with which we do not agree, but there is no suggestion that these differences should stand in the way of strategic cooperation.

Those who have had long experience with alliance politics recognize that we cannot expect every policy of our allies to reflect our wishes. Strategic cooperation with a particular country is not meant as an endorsement of each and every action it may take, but rather is a means of coping with national security challenges within the limited means that are available to the United States.

Some who recognize that Israel can make a substantial contribution to the extension of these limited means but are cowed by the perceived political objectives, seek to resolve the tension by arguing that since Israel will be there when needed, it is unnecessary to take any action beforehand. The problem with this argument, however, is that access arrangements and facilities need to be established well in advance of a conflict. In the case of prepositioned fuel it could take as long as five years to construct the facilities.

Finally, the Air Staff cannot be expected to devise an entire diplomatic strategy for all aspects of a problem. Its responsibility is to advise the President on the specific needs of the Air Force in fulfilling its missions and assignments. Once the potential costs and benefits of strategic cooperation with Israel are systematically tabulated and compared with other policy options within the framework of the military requirements of the United States, it will be possible to broaden the agenda to take account of political factors. We should at least know what we are giving up. As yet, this tabulation has not been undertaken.

Appendix
Cost Comparisons

COMPARING THE COST OF STORAGE SITES

Although the *construction* costs of fuel storage sites in different countries may vary marginally, the major difference in the direct costs of the available locations is likely to be the *size of the aerial tanker fleet* that is necessary to move the fuel from the prepositioning sites to forward operating bases or "marry-up" points with the fighter aircraft that the fuel is intended to support. In general, a more distant site will require a larger number of aerial tankers to deliver a given volume of fuel to a particular marry-up point than a closer site.

To devise a common unit of measure for such a comparison, the following analysis uses these assumptions:

transport aircraft: KC-10 aerial tanker
forward operating air base: Dhahran, Saudi Arabia
fuel volume: the amount required to keep one Tactical Fighter Wing (TFW) of 72 F-15s operational on a two-sortie per day basis for 30 days.

1. KC-10 data:

Cargo fuel capacity	30,854 gallons
Average Speed	480 knots
Utilization Rate	12.5 hours per day
Unit Flyaway Cost	$74 million (FY'82 dollars)
Unit Operating Cost per flying hour	$4,232 (FY'82 dollars)

2. Fuel volume was calculated as follows:
   F-15 consumption per sortie = 2,500 gallons (to and from northern Iran)
   TFW consumption per day = 2,500 x 2 sorties x 72 aircraft
   = 360,000 gallons per day.

3. The number of KC-10s required was estimated by determining the number of cycles per day that one KC-10 could complete, including loading fuel at the prepositioning location, flying to Dhahran, unloading the fuel and then returning to the original site for reloading. Cycles per day were determined using the following formulae:

$$FH_1 = \frac{\text{Distance One-Way}}{\text{Average Speed}} + LT$$

$$FH_2 = 2 \times FH_1$$

$$CD = \frac{UTE}{FH_2}$$

where
FH = Flight Hours
CD = Cycles per Day
LT = Loading Time (25 minutes)
UTE = Utilization Rate (12.5 hours per day)

4. The number of KC-10s required to transport enough fuel to keep one Tactical Fighter Wing operational was calculated using the following formula:

$$KC = \frac{\text{TFW fuel consumption/day}}{\text{KC-10 cargo fuel} \times CD} = \frac{360{,}000}{30{,}854 \times CD} = \frac{11.67}{CD}$$

where
KC = number of KC-10s required
CD = Cycles per day

5. Operating costs were determined by the following method:
Oc = Uc × UTE × 30 = $1.59 million per KC-10
where
Oc = Total operating costs for the supply period (30 days)
Uc = Unit operating cost per flying hour ($4,232)
UTE = Utilization rate (12.5 hours per day)

Table III
TRANSPORT COSTS FROM PREPOSITIONING SITE TO DHAHRAN, SAUDI ARABIA

Site	(n. miles) Distance	Cycles/day	KC10s/TFW	($ million) Procurement Cost	($ million) Operational Cost	Total
United States	9,000	0.32	36	2,664	57	2,721
Azores (Lajes)	3,674	0.77	15	1,110	24	1,134
Diego Garcia	2,566	1.08	11	814	17	831
Kenya (Mombasa)	2,080	1.32	9	666	14	680
Somalia (Berbera)	1,244	2.08	6	444	10	454
Israel (Tel Aviv)	894	2.75	4	296	6	302
Egypt (Ras Banas)	795	3.01	4	296	6	302
Oman (Masirah)	660	3.49	3	222	5	227

SOURCES:
Jane's All the World's Aircraft, New York, Franklin Watts Inc., 1978-1979.
Department of the Air Force, *USAF Cost and Planning Factors, AF Regulation 173-13*, Washington, D.C.: Headquarters U.S. Air Force, February 1, 1982.
Defense Marketing Service, *Rapid Deployment Force*, Greenwich, CT, 1980.

FOOTNOTES

1. In fiscal year 1983, for example, the Air Force will spend $2.2 billion on research and development for tactical programs, and $20.6 billion on general purpose (nonnuclear) forces procurement, operation and maintenance. If Israel's combat experience—the major "testbed" of state-of-the-art systems in the world—affected 10% of this activity on the average, the "saving" to USAF, in the form of replacing ineffective programs and systems with proven alternatives, would be about $200 million per year in R & D and a larger amount in procurement operation and maintenance costs.
2. In 1977, the most recent year for which an unclassified breakdown is available the Soviet Union spend 12% of its defense budget for National Air Defense (SAM's, anti-aircraft artillery and related systems) compared to 8% for the Strategic Rocket Forces (ICBM's, IRBM's, and MRBM's—i.e., land-based nuclear weapons). Adding in the MiG-21s and -23s, which comprise perhaps a third of Soviet Air Force expenditures (22% of the budget), the air and ground systems that Israel defeated in Lebanon corresponds to about 20% of Soviet military investment. This is equal to the entire expenditure on the Soviet Navy. Data from Central Intelligence Agency, *Estimating Soviet Defense Expenditures: Trends and Prospects*, June 1978, p. 3.
3. Steven J. Rosen, *The Strategic Value of Israel*, AIPAC Papers on U.S.-Israel Relations #1, October 1982.
4. The current Defense Guidance instructs the Services that,
> The U.S. will rely, to the extent feasible, on assured host nation logistics support in . . . Southwest Asia. Assured host nation support is the preferred means for meeting logistics support requirements. Where HNS is judged to be inadequate . . . Services should identify U.S. Reserve Component units . . . Additional active combat service support manpower should not be planned and programmed where HNS or RC alternatives are feasible.

(Quoted in *DoD Appropriations for 1983*, Part 6, House Appropriations Committee, pp. 49-50).
5. The Rapid Deployment Joint Task Force was reconstituted as the Central Command (Centcom) in January 1983. Throughout this paper, however, we will use the more familiar terminology of the Rapid Deployment Force (RDF).
6. The B-52Hs would be supplemented by other attack aircraft which carry smaller payloads and operate over shorter ranges. *DoD Appropriations for 1982*, Part 2, Senate Armed Services Committee, p. 1064.
7. *DoD Appropriations for 1982*, Part 5, Senate Armed Services Committee, p. 2466.
8. Wolf Blitzer, "No AWACS, No Strategic Deal with Israel—Pentagon," *Jerusalem Post*, September 13, 1981, p. 1.
9. "Begin Offers Services," Jerusalem Domestic Service in Hebrew, September 11, 1981.
10. Testimony in *DoD Appropriations for 1983*, Part 6, Senate Armed Services Committee, p. 3744.
11. Israel currently is one of the world's leading sources of 707 maintenance and recently has been awarded a contract to perform component maintenance on USAF F-4s and U.S. Army helicopters.

12. The average "mission capable rates" of U.S. Air Force first-line tactical aircraft were 63% in FY 1980 and 60% in FY 1979. *(DoD Appropriations for 1982,* Part 1, Senate Armed Services Committee, p. 335). Mission capable rates by aircraft type in FY 1980 were as follows:

F-15	59%
F-4E	66%
F-111D	39%
A-7	64%
A-10	72%

(Ibid, Part 5, p. 2523)

Secretary of Defense Weinberger expects Reagan Administration initiatives to raise the Air Force tactical aircraft mission capable rate to "68 per cent, as opposed to the 64 percent projected by the previous Administration." *DoD Appropriations for 1983,* Part 1, House Appropriations Committee, p. 139.

13. According to the General W. L. Creech, head of the U.S. Tactical Air Command, the Israelis reported that all 72 of their F-16s were ready to fly every morning. Richard Halloran, "U.S. General Says American Jets Have Proved Reliable in Lebanon," *New York Times,* August 7, 1982.
14. Richard Halloran, "Special U.S. Force for Persian Gulf is Growing Swiftly," *New York Times,* October 25, 1982, p. 1.
15. Using the worst case scenario, *DoD Appropriations for 1983,* Part 8, House Appropriations Committee, p. 311.
16. TAC would also be responsible for air-to-air interception, air-defense suppression, achievement of air superiority, close air support for ground forces, and possible strikes against Soviet air bases. See *DoD Appropriations for 1982,* Part 3, Senate Armed Services Committee, pp. 1247-53.
17. For example, the typical "exchange rates" in engagements between U.S. and Soviet aircraft in the Middle Eastern wars have been considerably more favorable than the kill ratios of U.S. vs. Soviet tanks.
18. Soviet movements through the northern and central Iranian mountains would be channeled into a relatively small number of narrow highways marked by ideal interdiction zones where off-road movement is difficult or impossible, thus presenting lucrative targets for air-to-ground blocking and impeding operations. The large desert tracts in the south deny concealment to ground forces moving over open terrain. Similarly, the prevailing weather conditions provide clear visibility for target acquisition and effective employment of precision-guided munitions.
19. One USAF TFW consists of three squadrons of 24 aircraft. The five original AF TFW's assigned to the RDF were the 27th (F-111s), the 49th (F-15s), the 347th (F-4s), the 354th (A-10s), and the 23rd (A-7s). See *DoD Appropriations for 1982,* Part 4, Senate Armed Services Committee, p. 1708. According to Halloran, the Reagan administration has expanded this to include 10 USAF TFWs (of which some would presumably be "attrition fillers" to replace losses), three aircraft carriers with 258 aircraft (of which no more than half would be available for offensive overland missions), the air wings of two Marine Corps divisions, and a number of B-52 strategic-range bombers carrying conventional munitions. See Halloran, *op. cit.* For typical composition of tactical fighter wings in the different services, see *DoD Appropriations for 1982,* Part 1, Senate Armed Services Committee, p. 255.
20. If the Suez Canal was closed by hostile action, or if the Military Sealift Command considered the sea line of communication through the Canal insecure and therefore preferred the Cape route around southern Africa, it would take about 40 days to sealift fuel from CONUS and the prepositioning requirement would increase to 72 million gallons for 5 USAF TFWs and 144 million gallons for 10 TFWs.
21. This calculation assumes: (a) fuel consumption of one gallon per mile; (b) two sorties per day average; (c) all aircraft operational. This totals 360,000 gallons per tactical fighter wing per day, or 10,800,000 gallons per wing for thirty days.
22. *DoD Appropriations for 1983,* Part 6, House Appropriations Committee, p. 57.
23. Source: *Military Construction Hearings, FY'82 and '83,* (various).

24. By contrast to the small payload of aerial tankers (the KC-10, for example, carries 30,000 gallons), maritime supertankers carry millions of gallons, and are currently available in surplus due to the worldwide oil glut. However, thin-skinned vessels could be vulnerable to a single missle hit, and would be a lucrative target difficult to protect against enemy action.
25. *DoD Appropriations for 1983,* Part 6, House Appropriations Committee, pp. 59-60.
26. According to General Lew Allen, USAF Chief of Staff, "Our current refuelling assets are unable to support a major contingency deployment without degrading tanker support for our strategic bomber forces. The increased refuelling requirements associated with the B52G/ALCM will further strain our limited tanker force." *DoD Appropriations for 1982,* Part 2, Senate Armed Services Committee, p. 1076. The Air Force, which already faces a severe shortage of aerial refuelers for other purposes, clearly has no intention of pursuing the impractical course of airlifting fuel to the Persian Gulf from CONUS to supply theater tactical requirements. The strategic bomber force alone requires 765 KC-135A tankers for optimum bomber tactics, compared to a current fleet of only 615, and in addition 75 to 265 are believed necessary for tactical air refueling within the theater in a Persian Gulf contingency. In other words, a considerable expansion and upgrading of the current aerial refueler inventory is required to meet these and other priorities, and airlifting fuel to the Gulf in quantity is and will remain beyond the capability of the fleet. See *DoD Appropriations for 1983,* Part 6, House Appropriations Committee, pp. 56-57.
27. Each KC-10 carries 30,000 gallons of fuel, and could complete a CONUS/Gulf/CONUS cycle in 3.3 days, averaging 272,000 gallons per KC-10 over the month of an airlift. Flying fuel to make up the deficit for five tactical fighter wings (as in Table 1) would require 133 KC-10s costing $9.8 billion, while ten fighter wings would require 332 KC-10s costing $24.6 billion.
28. According to General Bryce Poe, Commander of the Air Force Logistics Command, "Adequate stocks of properly prepositioned fuels are becoming increasingly more critical to our ability to project and sustain a credible force throughout the world. *We have a two-fold problem—storage capacity and storage location.* The heightened tensions in the Persian Gulf and dwindling reserves in the geographic areas covered by our major war scenarios have *increased our dependence on prepositioned fuel stocks." DoD Appropriations for 1982,* Part 5, Senate Armed Services Committee, p. 2485. Emphasis added.
29. *Military Construction Appropriations for 1983,* Senate Armed Services Committee, p. 185.
30. *DoD Appropriations for 1982,* Part 5, Senate Armed Services Committee, p. 3052.
31. During the closing stages of World War II, the Allies carried out extensive bombing raids against petroleum reserves in both Germany and Japan. Although the accuracy of the bombings was poor by contemporary standards, the results of these raids were devastating, largely because of the secondary damage caused by fires and explosions. In Germany, production of avaiation fuel dropped to ten per cent of its previous level; in Japan, output capacity was cut by 85 per cent and more than half the storage tanks were destroyed. The devastation was achieved without the use of incendiary bombs and against fuel storage tanks which were smaller and more hardened than those currently being constructed. In the battle field of the 1980s, fighter-bombers will be able to utilize an array of weapons—including Precision Guided Munitions and improved incendiary bombs—to ensure a high degree of effectiveness against fuel depots. Target acquisition will also be much easier than in World War II, both because of the terrain in Southwest Asia and the switch to low-level bombing tactics. See Edmund Dews, *POL Storage as a Target for Air Attack: Evidence from the World War II Allied Air Campaigns Against Enemy Oil Installations,* Rand Corporation, Santa Monica, California, June 1980, N-1523-PA&E.
32. *DoD Appropriations for 1982,* Part 5, Senate Armed Services Committee, p. 2845.
33. As Senator William Cohen, Chairman of the Senate Armed Services Subcommittee on Sea Power and Force Projection, has noted:

> "One can question the utility of an RDF that is composed largely of air transported US Army and US Air Force units . . . critically dependent upon prehostilities access to bases and airfields ashore and whose ability to sustain combat would require the creation ashore of a huge support infrastructure. The question we have to raise is, are we to stake the RDF's success or failure in a crisis on the momentary political calculation of host regimes in an area that former Secretary of State Henry Kissinger has aptly called the most volatile,

Appropriations for 1982, Part 4, Senate Armed Services Committee, p. 1700.

34. The following table gives the ratios of Israeli to enemy aircraft losses in *air-to-air* engagements. The 1967-1973 figures include the IAF's shooting down of four Soviet-piloted Mig-21s over the Suez Canal in July 1970 for no Israeli loss.

KILL RATIOS IN AIR-TO-AIR COMBAT

	Enemy Losses	Israeli Losses	Kill Ratio
1967 Six Day War	60	3	20:1
1967-1973	138	2	69:1
1973 Yom Kippur War	334	6	55:1
1982 Lebanon War	80	—	80:0

Source: *Armed Forces Journal International*, October 1973, p. 61 and April 1974, p. 32, and press accounts of the Lebanon engagements.

35. Xinhua News Service, 4/28/82. When Bayulken visited Washington in June 1981 he declared that Turkey was not involved in contingency planning with the U.S. for intervention in the Gulf and that American access to Turkish bases would be permitted only in the context of "a need to protect the vital interests of NATO" *(Associated Press*, 6/12/81). In October 1982, the Reagan Administration signed an agreement with Ankara to build one new air base and modernize two others in eastern Turkey. In the process of negotiations, U.S. officials sought permission to use these bases for a Persian Gulf emergency. Consistent with its earlier pronouncements, Turkey refused. *(Washington Post*, 11/7/82, *Associated Press*, 11/6/82).
36. According to Turkish sources, the Soviet Union possesses some 150 air bases which pose a threat to Turkey and it has constructed new air bases in the south, in close proximity to the three Turkish air bases being refurbished or built by the U.S. From its bases the Soviet Union would be able to deploy large numbers of MIG-27s, Su-17s and Su-24s to destroy such vulnerable and high priority targets as fuel sites. *(Washington Post*, November 7, 1982).
37. Henry Kissinger succinctly summarized the pressures on the Saudi regime in a recent interview: "Saudi Arabia faces simultaneously the uncertainties of rapid modernization and the challenges of Islamic fundamentalism. It has a secular, radical neighbor to the south in the People's Democratic Republic of Yemen; a perhaps reformed but always potentially radical neighbor in Iraq to the north. Across the Gulf it faces traditional Iranian expansionism allied to religious fanaticism; across the Red Sea there is a Soviet and Cuban base in Ethiopia." *The Economist*, November 13, 1982. See also William B. Quandt, *Saudi Arabia in the 1980s, Foreign Policy, Security and Oil*, The Brookings Institution, Washington, D.C., 1981.
38. For a summary of Saudi attitudes to the Rapid Deployment Force see, *Saudi Arabia and the United States: The New Context in an Evolving Special Relationship*, Report to the Subcommittee on Europe and the Middle East, House Committee on Foreign Affairs, by the Congressional Research Service, 97th Congress, 1st Session, August 1981.
39. One newspaper report suggests that "overbuilding" of Saudi facilities is already underway. The U.S. Army Corps of Engineers is under contract to build a large number of facilities which conform to American specifications and are compatible with American systems. Among these projects are five air bases, in each corner of the country, which—according to the report—are being built on a scale that exceeds Saudi needs, perhaps to meet RDF requirements. There is no indication, however, that the construction plans include large-scale jet-fuel storage facilities. See Scott Armstrong, "Saudis' AWACS Just the beginning of a New Strategy", *Washington Post*, November 1, 1981.
40. As the Chairman of the Senate Armed Services Subcommittee on Sea Power and Force Projection has argued:

> . . . back in 1973 when we had the October War suddenly our closest friends said, no, you can't have overflight rights and no, you can't use our bases for this purpose. If you can't count on your allies in a time of crisis it ought to raise a very serious doubt in our minds as to whether you can count on people who are not actually allies, who have to remain for domestic political reasons as neutral as possible, and who don't want to see a presence on the part of the United States in that part of the world. I think the same kind of political pressures which say stay out of here, we want to feel you but not see you, will be

> political pressures which say stay out of here, we want to feel you but not see you, will be the same kind of pressures that would be exacerbated in a time of crisis or conflict.

DoD Appropriations for 1982, Part 4, Senate Armed Services Committee, p. 1834.

41. Pentagon officials admit that these airfields represent a new threat to U.S. air, sea and ground operations in the Persian Gulf—a threat which cannot easily be countered because of the reluctance of Turkey and Saudi Arabia to make their air bases available to USAF. Richard Halloran, "New Soviet Afghan Bases Seen as Peril to Gulf", *New York Times*, November 14, 1982.
42. U.S. concern for the vulnerability of Omani air bases was reflected in the 1982 joint exercises of the RDF and Omani forces—code-named 'Jade Tiger'. The maneuvers reportedly included a simulated attack by two B-52 bombers and six F-15s on an Omani air base defended by the Sultanate's small air force. *Associated Press*, December 5, 1982.
43. Dhofari rebels, supported by South Yemen, waged a prolonged war against Sultan Qaboos in precisely this area. Although they were eventually suppressed, this was achieved by Iranian and Jordanian forces. Oman's army remains incapable of dealing even with this low-level threat.
44. In 1981, the Gulf Cooperation Council was reported to have offered the Sultan over $1 billion to cancel his agreement with the U.S. Although the report was subsequently denied by the Saudi Information Minister, there can be little doubt that Oman's actions are at odds with the policy of non-cooperation with the U.S. pursued by the majority of GCC members. See David Ottaway, "Saudis Wary of U.S. Role", *Washington Post*, December 2, 1981.
45. In October 1982, for example, Kuwait succeeded in negotiating a normalization agreement between Oman and South Yemen, after which the foreign ministers of both Kuwait and South Yemen argued publicly that Sultan Qaboos could now "refrain from depending on 'world powers' for protection". The actual text of the agreement provides that neither side shall "allow any foreign forces to use their territories for aggression or provocation against the other country". See Foreign Broadcast Information Service, *Daily Report, Middle East and North Africa*, 3 November, 1982, C2; 16 November, 1982, C3; 24 November, 1982, C8.
46. In the wake of Sadat's assassination and the attempt by militants to promote an insurrection in Upper Egypt, the Mubarak regime arrested thousands of Islamic fundamentalists. Many more are believed to have gone underground where they continue to threaten the regime. Thus in October 1982, Mubarak extended the emergency police powers, proclaimed after Sadat's assassination, for another year. See William E. Schmidt, "For Mubarak, a Year of Turmoil and a Year of Survival", *New York Times*, October 7, 1982.
47. In a recent series of articles, the semi-official *Al Ahram Iktisadi*, a Cairo economic weekly, accused the U.S. Agency for International Development of seeking "to dominate every field of Egyptian life", and claimed that American researchers were stealthily collecting intelligence for this purpose. The fact that such articles could appear in a government-controlled magazine is an indication of the disillusionment and suspicion now permeating the Cairo elite. *New York Times*, October 21, 1982.
48. Libya's Colonel Khaddaffi has publicly pledged to overthrow Somalia's President Siad Barre and is training and equipping members of the 3,000 strong Somali Salvation Democratic Front who operate out of Ethiopia. These guerillas are reported to be better armed than the Somali army. *Baltimore Sun*, March 12, 1982.
49. See Jack Anderson, "Secret U.S. Plan Would Establish RDF in Jordan", *Washington Post*, January 13, 1983.
50. The cost of constructing tank farms and filling them with jet fuel will be essentially constant wherever the fuel is prepositioned. Military Construction costs for tank farms now being built in Oman and Egypt amount to $2.00 per gallon of fuel. The FY'83 price of jet fuel is $1.18 per gallon. If 10% is added for land costs, the total cost of constructing facilities to store an additional 90 million gallons of fuel would be $304 million.
51. *Middle East Policy Survey*, December 4 and December 18, 1981; Rowland Evans and Robert Novak, "A Near-Bankrupt Mideast Policy," *Washington Post*, December 7, 1981, p. 15.

Glossary

CONUS	Continental United States
IAF	Israeli Air Force
MOU	Memorandum of Understanding
NATO	North Atlantic Treaty Organization
PDRY	People's Democratic Republic of Yemen (South Yemen)
RDF	Rapid Deployment Joint Task Force
SAC	Strategic Air Command
SAM	Surface-to-Air Missle
Tacair	Tactical Airpower—the use of aircraft against ground forces
TFW	Tactical Fighter Wing
USAF	United States Air Force

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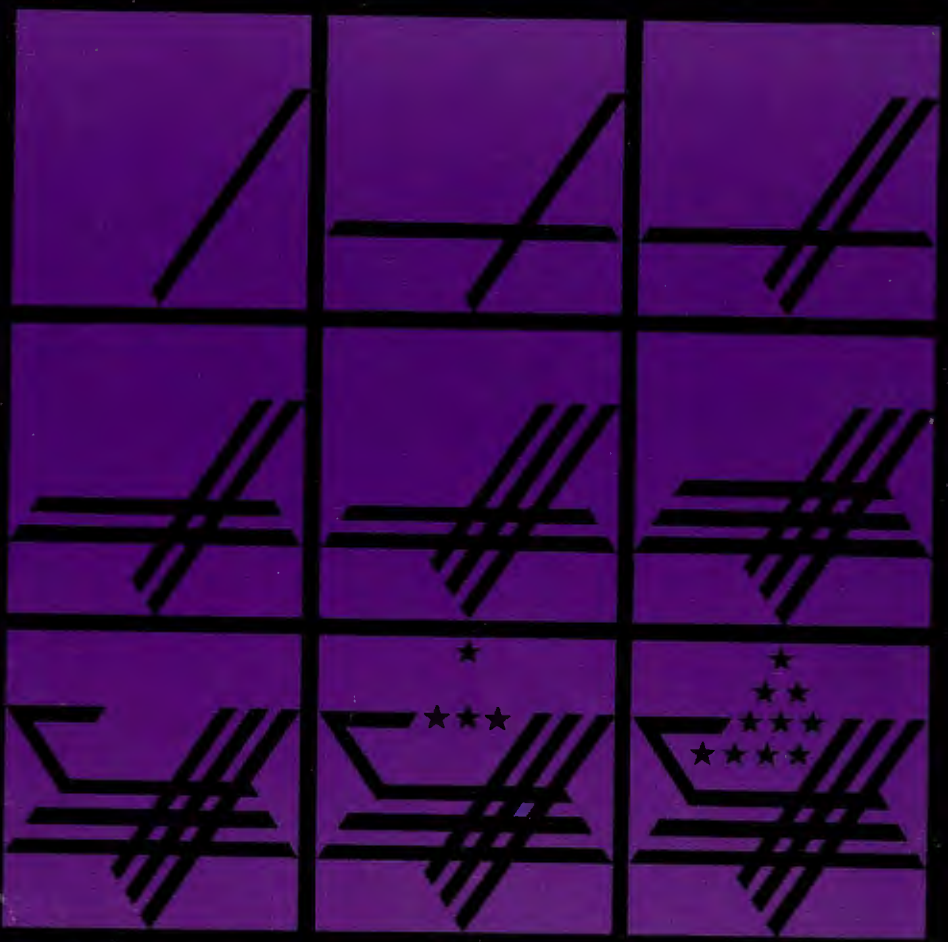
Papers on U.S.-Israel Relations

Israel and the U.S. Navy

W. Seth Carus



AIPAC Papers on U.S.-Israel Relations: 4

Israel and the U.S. Navy

W. Seth Carus

AIPAC Papers On U.S.-Israel Relations

This paper continues research initiated by Guilford Glazer

The AIPAC Papers on U.S.-Israel Relations

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PREFACE

This is the third part of a thematic series of AIPAC Papers on the specific issue of the potential for enhanced strategic cooperation between the United States and Israel. The first volume on this theme, *The Strategic Value of Israel,* was devoted largely to the advantages of prepositioning U.S. *Army* material at Israeli facilities for possible use in a Middle Eastern crisis. The second volume dealt with various forms of cooperation between Israel and the U.S. *Air Force*. The current study examines the value of Israeli assistance to the U.S. *Navy*. The fourth volume will deal with the potential use of Israeli *hospital* facilities to treat U.S. casualties in the event that it is necessary to involve the Rapid Deployment Force in a Persian Gulf conflict. The fifth will deal with the potential of Israeli defense and aerospace contractors to provide *overhaul and maintenance services* for U.S. armed forces equipment.

AIPAC's series of studies range beyond the theme of strategic cooperation. Other papers soon to be published include topics such as the way in which aid to Israel serves the U.S. national interest, anti-Israel activity on the college campuses and the impact of territorial issues on Israeli security. But we believe that the strategic importance of Israel to the United States is not well understood, and the series of which this paper is part is intended to build the foundation for a clearer appreciation of this central issue in U.S. Middle East policy.

Publications in this series draw upon the expertise of scholars and professional analysts. W. Seth Carus is AIPAC's advisor on military affairs.

Thomas A. Dine
Executive Director
June 1983

EXECUTIVE SUMMARY

The strength of the Israeli Air Force and Navy is an important but often neglected element of the balance of power in the eastern Mediterranean. At a time when Soviet capabilities in the region have grown while the ability of the United States to commit resources to the Mediterranean has declined, Israel has emerged as the most capable power in the basin. Moreover, Israel has an inherent interest in ensuring that the eastern Mediterranean does not fall under the control of Soviet-allied forces.

Israeli air and naval forces have impressive capabilities to challenge Soviet and Soviet-allied ships and aircraft operating in the zone east of the Turkish Straits. The Israeli Air Force can generate twelve times as many combat sorties as a U.S. carrier air wing, and twenty times as many attack sorties. Even if only 20% of its resources were dedicated to missions against Soviet targets in a Mediterranean crisis, the Israeli Air Force would still be able to fly more sorties than a two-carrier U.S. task force (twice what we have there now) operating a maximum surge rate, enough to sink the entire Soviet surface fleet in the Mediterranean in less than four days. The Israeli Navy, although comprised mainly of small missile boats, has impressive capabilities against surface combatants, carrying almost three times as many anti-ship missiles as the Soviet fleet typically operating in the Mediterranean. Acting in combination, these Israeli forces are, surprisingly, capable of dominating the eastern Mediterranean and defeating any likely fleet of Soviet surface combatants deployed in those waters.

Even in the absence of a formal strategic cooperation agreement between the U.S. and Israel, Israeli air and naval forces are an important element in the balance of power in the eastern Mediterranean. The Soviet Union, aware of Israel's strength, cannot act in the region without taking into account possible Israeli counter-action. Accordingly, Israel has become an important deterrent to Soviet aggression and contributes daily to the security of the United States and NATO.

There are, however, steps that could be taken that would further enhance Israel's strategic value to the United States, many of which would have little cost to the U.S. And the benefits would accrue, not just to Israel and the U.S., but to all countries which would be adversely affected by Soviet domination of the Mediterranean—even including some hostile to Israel. As we look for allies to carry a greater share of the burden of the common defense, Israel stands out as a country able and willing to do more.

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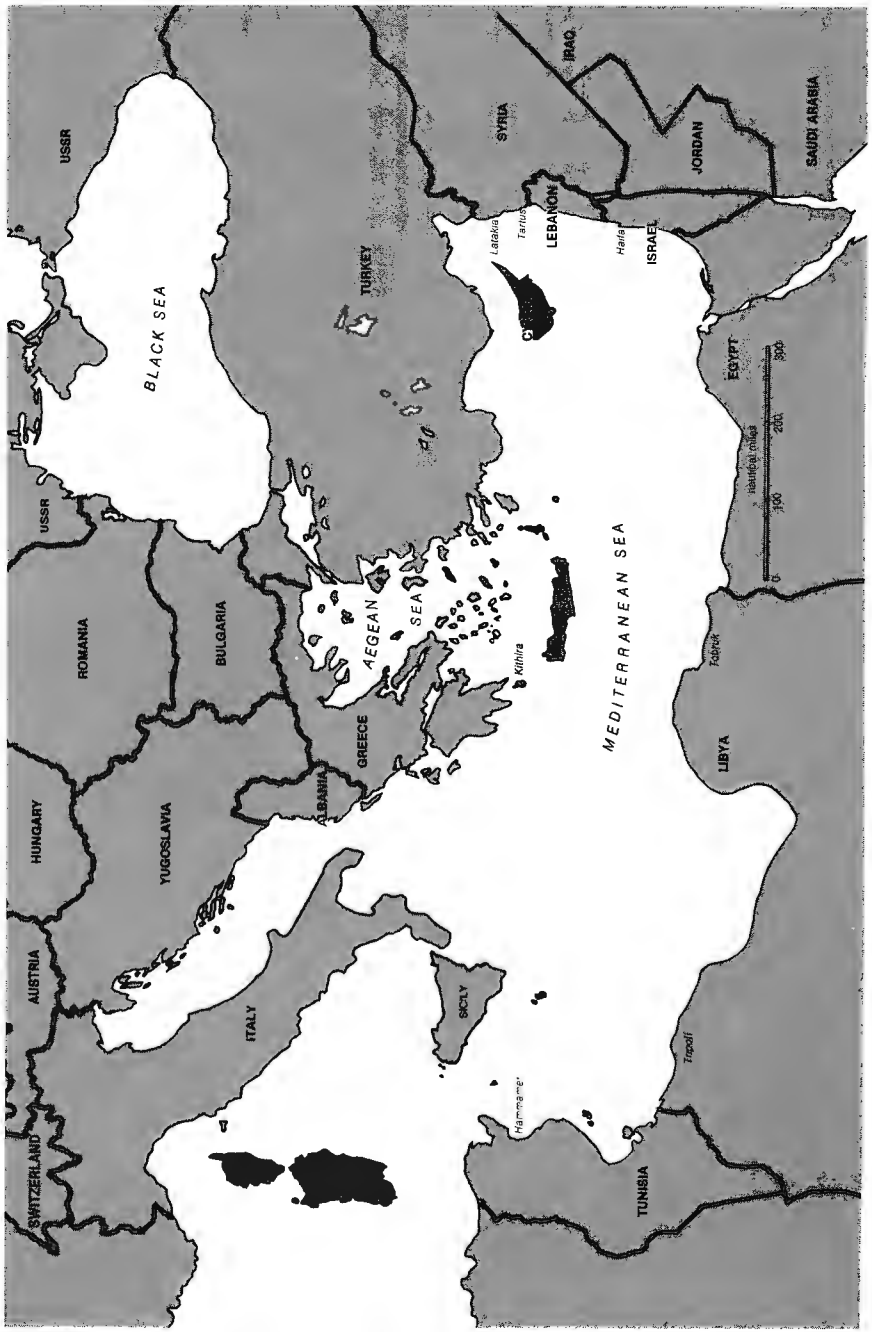


Israel and the U.S. Navy

Israeli air and naval forces are an important but often neglected element of the balance of power in the eastern Mediterranean. It is the purpose of this study to look at Israel as a Mediterranean power, and to examine ways in which enhanced cooperation between Israel and the United States could benefit the United States.

The eastern Mediterranean is an area of particular historic, current and future concern for American naval strategists. It is a strategically important body of water, more so today than in the past. Yet, the ability of the U.S. Navy to operate in the eastern Mediterranean under wartime conditions is under greater challenge today than it has been in many years. Threats to American naval forces have proliferated, including both the expanding Soviet naval and air forces and the growing capability of Soviet allies, including Syria and Libya, to act as a threat themselves, or to provide needed bases and support to Soviet forces. At the same time, the United States has accepted a greater role in maintaining the security of the Persian Gulf and the Indian Ocean, compelling the U.S. Navy repeatedly to divert naval resources from the Mediterranean. Even with planned additions, past reductions in the overall number of American naval ships will make it difficult for the U.S. Navy to return to past levels of strength. There has also been a decline in the political reliability and/or naval combat capability of our NATO allies in the eastern Mediterranean—Greece and Turkey. In combination, these factors have produced a situation in the Mediterranean more favorable to the Soviet Union and more challenging for the West than has ever been the case.

Because the United States needs additional support in the eastern Mediterranean, this is a particularly appropriate time to consider the potential contribution that could be made by Israel. Israel shares the basic strategic objectives of the United States in the eastern Mediterranean, and has become a more important potential contributor to the common defense. Israel has a vital interest in making sure that the Soviet Navy does not dominate the eastern Mediterranean, and in ensuring that the United States, not the Soviet Union, is the dominant power in the region. Indeed, Israel might be able and willing to support American efforts under conditions where other American allies in the region might not.

The purpose of this study, then, is to examine the problems facing the United States in the eastern Mediterranean, and to consider ways in which cooperation with Israel could contribute to solving those problems, thus furthering American interests.

Soviet Naval Strength

The primary military threat to American interests in the Mediterranean is the combined forces of the Soviet Navy (surface, submarine and air). This threat has grown in the past decade. Soviet aircraft, surface ships, and submarines are more capable today than in the past, and the weapons and electronics carried by these platforms have grown in sophistication. Compared to the types previously used, newer Soviet anti-ship and anti-submarine missiles are more accurate, longer ranged, and harder to defend against.

The Soviet Mediterranean squadron is usually 'their' most powerful fleet deployed outside their peripheral waters. About a third of all Soviet ships at distant stations are assigned to the Mediterranean. The fighting power of this force can vary considerably, depending on the exact classes of the ships stationed there at any given time, but the U.S. Navy must anticipate that in time of crisis the Soviets would quickly reinforce their Mediterranean fleet to levels far above the normal peacetime strength.[1]

The ability of the Soviets to reinforce their Mediterranean squadron was demonstrated during the confrontation between the United States and the Soviet Union during the 1973 Arab-Israeli War. On October 4, just before the start of the conflict, the Soviets had 52 naval vessels in the Mediterranean, including 25 combatants. Ten days later, reinforcements had increased the total number of vessels to 69. By October 24, there were 80 Soviet warships present, including 38 combatants. One week later, on October 31, there were 95 ships, of which 51 were combatants. Equally impressive was the increase in weaponry. According to U.S. Navy estimates, on October 24 the Soviets had a "first-launch" capability of 250 torpedoes, 28 surface-to-air missiles, and 40 anti-ship missiles. A week later they had 348 torpedoes, 46 surface-to-air missiles, and 88 anti-ship missiles.[2]

The Soviets can reinforce their Mediterranean forces so quickly because they have a large fleet in the Black Sea. Soviet actions in 1973 indicate the ease with which these ships can be moved into the Mediterranean in time of crisis. To prevent such reinforcements, the U.S. Navy anticipates closing the Turkish Straits linking the Black Sea to the Mediterranean. As the 1973 crisis indicated, however, the Soviets may have sufficient warning of an impending crisis to reinforce their Mediterranean fleet before hostilities erupt. In addition, should Turkey not be directly involved in hostilities, the U.S. may be unable to deny the Soviets passage through the Turkish Straits.

The U.S. Navy also has to anticipate that it will be attacked by Soviet naval aircraft during a conflict in the Mediterranean. Attached to the Soviet Black Sea Fleet is a considerable air force, including about 100 Tu-16 *Badger*, Tu-22 *Blinder*, and Tu-26 *Backfire* bombers.[3] Equipped with long-range anti-ship missiles, all these bombers have sufficient range to attack American vessels in the eastern Mediterranean, even when operating from air bases in

Soviet Naval Strength in the Mediterranean

8-10	torpedo attack submarines
2-3	cruise missile submarines
2-4	cruisers and carriers
9-12	destroyers and patrol ships
1-3	minesweepers
1-3	amphibious ships
15-20	auxiliary ships
5-6	survey ships

Source: *Understanding Soviet Naval Developments*, Fourth Edition, pp. 16-17.

Soviet Naval Strength in the Black Sea

1	aircraft carrier
2	helicopter carriers
7	guided missile cruisers
15	guided missile destroyers
7	guided missile frigates
3	light cruisers
9	destroyers
40	frigates
30	missile boats and missile corvettes

Source: *Jane's Fighting Ships, 1982-83*, p. 460. Submarines are excluded from the table, since they are prohibited by treaty from transiting the Turkish Straits.

the Soviet Union.[4]

In time of crisis the Soviets might operate bombers from Mediterranean air bases as well. Since 1981 both Syria and Libya have allowed the Soviets to fly naval reconnaissance aircraft from their countries,[5] and the U.S. Navy must assume that bombers may be rapidly transferred to the Mediterranean in a time of crisis. Of less danger is the threat currently posed by Soviet carrier aviation. Even when a *Kiev*-class carrier is stationed in the Mediterranean, it can only contribute its dozen *Forger* attack aircraft. However, the capabilities posed by Soviet carrier aircraft are certain to increase as time passes, adding further to the threat posed by Soviet naval aviation to the U.S. Sixth Fleet, which operates in the Mediterranean. By 1990, the USSR is expected to have acquired at least one attack carrier like those employed by the U.S. Navy.

The Soviet naval threat is particularly acute in the eastern half of the Mediterranean. For strategic and operational reasons, the Soviet Mediterranean fleet usually operates in this sector. Soviet forces in the eastern Mediterranean can be used in time of war to interdict Western shipping transiting the Suez Canal, isolate Greece and Turkey from the rest of NATO, and destroy American carriers and submarines using the eastern Mediterranean as a base of operations to support NATO's southern flank.

In time of peace, Soviet forces in the eastern Mediterranean are a visible reminder of Moscow's growing military might, putting pressure on Greece and Turkey to adopt conciliatory policies towards the Soviet Union and demonstrating support for countries aligned with the Eastern bloc (Syria and Libya).

The importance of the eastern Mediterranean is reflected in the distribution of Soviet naval anchorages, which are conveniently located sites in international waters at which Soviet ships congregate when not on patrol. Of the six most important Soviet naval anchorages in the Mediterranean, five are in the eastern Mediterranean and four are in the eastern half of the eastern Mediterranean. In addition, there are Soviet naval facilities located in ports of the eastern Mediterranean. At present, the Syrian port of Tartus is the single

Soviet Anchorages in the Eastern Mediterranean

most important Soviet naval base in the region, in large part because of the strength of the defenses protecting that facility (and especially recently installed air defenses, including Soviet-manned SA-5 antiaircraft missiles). The importance of Tartus has been increased by its transformation into a base to support Soviet submarines.[6]

In addition, Soviet naval aviation poses a more dangerous threat in the eastern Mediterranean than in the western Mediterranean, for three main reasons. First, the eastern sector is relatively close to naval air bases on Soviet territory. Second, Soviet naval aircraft may be able to operate from air bases located in Syria and Libya. Third, NATO land-based air forces in this area are comparatively weak.

These factors combine to make the eastern Mediterranean an especially dangerous theater of operations for the U.S. Navy. According to one assessment, it is one of three zones (along with the northern Atlantic and the northwest Pacific) that

> are considered by the Navy to be high-threat areas because of the capability of the USSR to coordinate air-, surface-, and subsurface-launched weapons attack.[7]

These capabilities could enable the Soviets to deny the West use of the eastern Mediterranean in time of conflict. While not having the resources to actually control those waters, Soviet naval and air forces are sufficiently strong to make Western efforts to control that region excessively expensive.

Problems Facing the U.S. Navy

The principal mission of the U.S. Sixth Fleet is to protect Western interests threatened by the presence of Soviet and Soviet-allied forces in the Mediterranean, and to support the southern flank of NATO in time of war. This requires that the fleet support NATO's land and naval operations in the Mediterranean, protect lines of communication, deter attacks on friendly countries (not necessarily belonging to NATO), and aid American diplomatic endeavors. To accomplish its missions, the Sixth Fleet must have a credible warfighting capability. This requires that it simultaneously defend itself, project power ashore in support of NATO ground forces and protect vital NATO lines of communications and facilities, while also launching attacks against enemy ships, aircraft, and support facilities. In practical terms, the U.S. Navy has to be able to defend itself from anti-ship missiles, prevent Soviet anti-submarine attacks, deny Soviet and Soviet-allied forces use of air bases and ports in the region, and interdict their lines of communications.

In short, the United States must control the Mediterranean. Unlike the Soviet Navy, which can achieve most of its objectives merely by denying the West use of the Mediterranean, the U.S. Navy has to be able to operate on, above and below the sea, as well as against the shore. Given the strength of Soviet naval and naval air forces, the Sixth Fleet could have considerable difficulty achieving its objectives.

Even when the Soviets were much less powerful, the U.S. Navy considered that at least two aircraft carriers were needed to control the Mediterranean. Often, one or two additional carriers reinforced the Sixth Fleet in times of crisis. The decision to deploy carriers in the Indian Ocean has made it virtually impossible to routinely deploy two carriers in the Mediterranean on a continuing basis. Since the U.S. Navy has only enough carriers to operate four at forward stations continuously in peacetime, those sent to the Indian Ocean had to come from the Mediterranean and the Western Pacific. Accordingly, today there is usually only one aircraft carrier present with the Sixth Fleet. The Sixth Fleet has thus become weaker at a time when its tasks have become more difficult.[8]

The Sixth Fleet relies heavily on carrier-based aircraft. The planes assigned to carrier air wings provide the diverse capabilities needed to deal with a variety of tasks. For example, fighters protect merchant ships and surface combatants from air attack, escort attack aircraft, and defend the aircraft carrier battle group itself. Attack aircraft strike naval vessels or targets on land. In addition, the aircraft carrier has anti-submarine planes and airborne early warning aircraft which complement the Navy's land-based anti-submarine warfare aircraft stationed in the region. A carrier air wing is in fact a powerful force armed with modern stand-off precision guided weapons, supported by sophisticated electronic warfare equipment, and manned by superbly trained personnel.

Most carriers have a single carrier air wing with about 85 aircraft, including 24 F-14 fighters for air superiority missions and 38 attack planes for strike

U.S. Naval Strength in the Mediterranean

1-2	aircraft carriers (with about 85 aircraft each)
18-19*	surface combatants (cruisers/destroyers/frigates)
4-7	amphibious ships
5-7	replenishment ships
——	nuclear attack submarines

*The number of surface combatants is reduced when there is only one carrier.

Source: Based on Desmond P. Wilson, "The U.S. Sixth Fleet and The Conventional Defense of Europe," Professional Paper No. 160, Center for Naval Analyses, September 1976, p. 4.

missions.[9] It is the attack aircraft that constitute the U.S. Navy's main strike capability against surface ships, though the introduction of the Harpoon anti-ship missile gives many surface combatants a surface warfare capability as well. Under normal circumstances, a carrrier air wing can probably generate about 45 air superiority and 70 attack sorties per day. Calculated optimistically, it might be possible to achieve a surge rate of double those figures. It would be possible to sustain the surge rate for only a few days, after which the carrier air wing would be able to maintain only normal sortie rates.[10]

These small numbers mean that a single carrier air wing can accomplish only so much. In comparison to the tasks assigned to the Sixth Fleet a single carrier is insufficient. Even two carriers may not be enough. According to an assessment made in the late 1970s when there were still two carriers stationed in the Mediterranean, the ability of the U.S. Navy to gain superiority in the eastern Mediterranean was minimal without the presence of one or two additional carriers.[11] Today the situation is probably even more precarious, since the United States cannot be assured that the lone American carrier in the Mediterranean will be free to move into the eastern Mediterranean. Nor can the U.S. anticipate easy reinforcement of the Sixth Fleet, because in the event of a conflict there it is quite likely that available carriers would also be needed elsewhere.

Nor can our two NATO allies in the eastern Mediterranean, Greece and Turkey, be counted on to provide significant levels of support for the Sixth Fleet. Neither country has particularly powerful naval or air forces, relying as they do on often obsolescent equipment, and in the event of a conflict involving all of NATO it is likely that they would be fully occupied by attacks from the north. Political problems may limit the ability of these nations to fulfill their NATO commitments, especially in Greece where the current government has adopted policies that fall just short of a withdrawal from NATO.[12]

There are also diplomatic problems making reliance on Greece and Turkey uncertain in a non-NATO/Warsaw Pact conflict. Not only are the two countries intensely hostile towards each other, so that close cooperation between them is unlikely, but both have some regional interests that diverge from those of the United States. In the past each has indicated an unwillingness to allow use of American bases in support of actions taken outside the European theater. There is reason to believe that restrictions will remain as strict in the future. Given the variety of circumstances in which conflict can emerge in the eastern Mediterranean, prudent defense planning cannot anticipate automatic access to U.S. bases in the area.[13]

Overall, the United States is faced on an increasingly difficult situation in the Mediterranean, and especially in its eastern half. The strength of the potential opposition has grown in the recent years, and the forces of the U.S.

have declined. Yet, the Sixth Fleet still has important military and political missions, making it necessary to find practical solutions to the problems that hamper its effectiveness.

Israel as a Mediterranean Power

It is unusual to think of Israel in a Mediterranean rather than a Middle Eastern context, because focus on the Arab-Israeli conflict has so thoroughly molded our perceptions of Israel's place in the world. Israel is in fact, however, a Mediterranean country, just like Greece, Turkey, and Italy, and can be substantially influenced by what happens in those waters. In particular, the East/West balance of naval power in the Mediterranean has a direct impact on Israel's security, since it would face a severe security threat if the Soviet Union came to dominate that sea. Conversely, Israeli actions can significantly influence the strategic situation in the eastern Mediterranean, and its large air force and small but potent navy must be taken into account by assessments of the East/West balance in that region.

Israel's Mediterranean role could be important for the United States. It is widely agreed in the American national security community that U.S. cannot do it all alone. We must look to our allies to do more, with regard to their own forces and with regard to providing host nation support to the United States' forces. Israel, as a long-term ally of the United States, as a recipient of substantial amounts of U.S. aid, and as a country with a strong commitment to enhance the strategic position of the West, is a logical place to look. Israel is also one of the few countries of the world which has stepped forward and said, in effect, "We are willing and able to do more."

How, then, do the Israeli air force and navy impact on the balance of forces in the Eastern Mediterranean? And what, if anything, can and should be done to enhance cooperation between U.S. and Israeli forces in this area?

Israeli Air Power

Because Israel is opposed by adversaries with more than 1900 combat aircraft and because it relies heavily on its air force to compensate for weaknesses in other areas, the Israeli Air Force has acquired an inventory of about 600 modern combat aircraft. While intended primarily to protect Israel from air attack and to support its ground forces, these aircraft are also an important factor in the naval balance of power in the eastern Mediterranean. The flexibility of air power is such that a plane used to defend against Syrian air attacks over the Golan Heights in the morning could that same afternoon fly a

mission over the Mediterranean.

The Israeli Air Force has an impressive array of combat aircraft. It has 240 fighters which can be employed in either air superiority or attack missions (40 F-15, 70 F-16, and 130 F-4E). In addition, there are another 350 attack aircraft (170 *Kfir* and 180 A-4), though the *Kfirs* also have air combat capabilities.[14] Among these aircraft are some originally developed for the U.S. Navy, including the F-4s (which are still in front-line service with the U.S. Navy and Marine Corps), the A-4s (which are still used by the Marine Corps), and the very impressive E-2Cs. In comparison, a U.S. Navy aircraft carrier usually operates only about 60 combat aircraft.

Israel has a deserved reputation for making good use of its combat aircraft. On a sustained basis, Israeli aircraft can generate an average of about 2.5 sorties per day.[15] For brief periods, the Israeli Air Force has doubled this rate, but for analytic purposes the more conservative figure is used here. This means that the Israeli Air Force can generate on a sustained basis an average of either up to 600 air superiority and 875 attack sorties or 1475 attack sorties per day. The U.S. Navy can generate nearly the same number of sorties per airplane, but because of the smaller number of available aircraft it is estimated that a U.S. carrier air wing can generate only about 115 combat sorties per day, or up to 230 sorties for a few days running.

Thus, on a sustained basis, Israel can generate twelve times the number of combat sorties as a carrier air wing. Significantly, it can produce more than twenty times as many attack sorties. Even under ideal circumstances with two U.S. carriers in the eastern Mediterranean, the Israeli Air Force can generate five times as many air superiority missions and up to ten times as many attack missions. Thus, while Israeli air power is no direct substitute for American naval air power, it is quite evident that Israel could significantly supplement

Combat Sorties

	Israeli Air Force		Sixth Fleet (1 Carrier)		Sixth Fleet (2 Carriers)	
	Aircraft	Sorties	Aircraft	Sorties	Aircraft	Sorties
Air superiority	—	—	24	45-90*	48	90-180*
Air superiority or attack	240	600	—	—	—	—
Attack	350	875	34	70-140*	68	140-280*
Total	590	1475	58	115-230*	116	230-460*

*The first figure is sustained, the second surge. Surge effort can be maintained for only about three days.

U.S. aircraft carriers.

These figures assume that Israel is able to devote its entire air effort to operations in the eastern Mediterranean. This is not likely, since Israel could not devote all its resources to this mission under any but the most extreme circumstances. Yet, even if only 1 of every 5 sorties were dedicated to Mediterranean operations, the Israeli Air Force would still be able to fly more sorties than a two carrier American force operating at maximum surge rate.

In actuality, however, it is doubtful that Israel would have to devote such a large percentage of its resources to naval operations over an extended period of time. Tactics vary according to circumstances, but typically the U.S. Navy might allocate six strike aircraft to attack a single naval vessel. Thus, assuming that the Soviets had 50 surface vessels to be attacked in the eastern Mediterranean, that the Israelis used six-plane strike groups to attack each ship, and that only one-quarter of the groups successfully locate and sink their targets, Israel would still require no more than 1200 combat sorties to destroy the entire Soviet surface fleet in the region. Realistically, however, it is likely that far fewer sorties would be needed. If Israel had no other concerns, this could be accomplished in a single day. If Israel were also at war with an Arab foe or foes, this would probably require three or four days (depending on how much effort was initially devoted to attacking Soviet vessels.) In short, the Israeli Air Force could have an enormous impact on the naval balance of power in the Mediterranean basin.

In the event of an American-Soviet conflict, it is probable that certain Arab facilities would be used by the Soviets. The Syrians provide the Soviets with port facilities protected by air defenses at Latakia and especially at Tartus, and with air bases from which Soviet naval aircraft operate. In the event of a confrontation involving Israel, Syria, the United States and the Soviet Union, the Israelis would undoubtedly attack such facilities to keep the Syrians from using them. This would have the added benefit of also reducing their availability for the Soviets. In fact, Israel could deter the Soviets from exposing their forces at these locations.

The significance of the Israeli Air Force is not merely a function of its quantitative strength or of the quality of its aircraft. There are other factors which contribute to making Israeli air power a potent anti-naval strike force. The Israeli Air Force has considerable ability to conduct operations against distant targets. It has numerous aircraft with extremely long ranges, and the radius of action of these aircraft can be extended by in-flight refueling using some of Israel's tanker aircraft (KC-130 and converted Boeing 707). Israel also can provide command and control for distant operations using E-2C airborne early warning aircraft or possibly Boeing 707 aircraft converted into flying command posts. Israel also has aircraft specifically configured to target ships at sea.[16]

The Israeli Air Force has demonstrated an ability to attack targets as much as 550 nautical miles (nm) from Israel. F-15 fighters carrying a substantial payload and equipped with conformal fuel tanks have a combat radius of over 700 nm.[17] While as a practical matter it is doubtful that Israeli strike aircraft could locate and attack ships at such distances, they could rely upon possible support from E-2Cs and other aircraft in locating targets at considerable distances. The E-2C can track on radar small naval vessels at distances of over 100 nm. Larger vessels can be detected at longer ranges. In addition, the E-2C has sophisticated passive detection equipment that can track targets at much greater ranges, provided that they are emitting electronic signals. Since a typical E-2C mission involves the aircraft flying about 200 nm from its base, and remaining at that point for up to 4 hours, it is reasonable to believe that the E-2C could support strike missions at distances of at least 300 nm from an Israeli air base. This would be sufficient to cover a zone of the Mediterranean extending to the west of Cyprus.[18]

Israel also has three 1124N *Sea Scan* maritime reconnaissance aircraft. Equipped with a search radar, passive electronic detection gear, and (probably) forward looking infra-red sensors, the *Sea Scan* has considerable detection capabilities. As currently configured, however, the *Sea Scan* cannot carry weaponry, though there is some talk of fitting it with the new air-launched version of the *Gabriel III* (with a 37.5-60 nm range). On a typical low altitude mission (flying at 3000 feet), the *Sea Scan* has a 60 nm wide search path and a range of 1300 nm. At higher altitudes, range increases to 2500 nm. It is thus plausible that the *Sea Scan* could be used to support strike missions at distances well in excess of 650 nm from Israeli air bases, or to the west of Crete.[19]

In addition to its long reach, the effectiveness of the Israeli Air Forces is greatly enhanced by a large inventory of air-launched guided munitions. Most were procured from the United States, so Israel employs many of the same weapons used by the U.S. Navy. Like the Sixth Fleet, Israel has *Maverick* television-guided missiles, *Shrike* and *Standard ARM* anti-radiation missiles, laser-guided bombs, and television-guided bombs. Included in the Israeli inventory are two advanced design television-guided weapons, the Extended Range/Data Link *Walleye II* and the GBU-15.[20] As a consequence, Israeli aircraft have available a range of sophisticated weapons that can be employed against Soviet surface ships with potent air defense capabilities.

Using advanced weapons, the Israelis should be able to attack warships while avoiding or suppressing most anti-aircraft defenses. For example, the GBU-15 can be released at altitudes of under 100 meters, yet still attack targets 5-6 nm away. At that altitude and distance, the launching aircraft cannot be attacked by most Soviet air defense weapons. Similarly, the Extended Range/Data Link *Walleye II* has an estimated range of about 25 nm.[21]

This allows weapons release outside the maximum range of most Soviet air defense weapons. Such attacks would undoubtedly be coordinated with simultaneous use of anti-radiation missiles and possibly even bombs delivered using conventional means.

The Israeli Air Force also has extensive electronic warfare capabilities, which could be of decisive importance when fighting the Soviet Navy. While the Israelis have never faced the Soviet Navy, they have on many occasions fought Soviet-built land-based air defenses. At times those defenses were manned by Soviet air defense troops. This has given Israel considerable expertise in the techniques of electronic warfare, and has forced the Israeli Air Force to procure and develop a formidable array of electronic warfare equipment. The effectiveness of this arsenal was decisively demonstrated in the summer of 1982 when Israeli aircraft destroyed Syria's Soviet-supplied air defenses in Lebanon without taking any losses.[22]

Much of Israel's experience against Soviet land-based air defenses will be directly applicable to use against the Soviet Navy, which often uses air defense missiles similar to those employed by the Soviet Army. Israeli experience against the SA-2, SA-3, SA-7, and SA-8 missiles should be applicable to the roughly similar SA-N-2, SA-N-1, SA-N-5, and SA-N-4 naval air defense systems. Only two new naval missiles, the SA-N-6 based on the SA-10 and the SA-N-7 based on the SA-11 now appearing on new Soviet naval combatants, should pose unfamiliar problems in the near term. Against the SA-10 and SA-11 the Israelis have no experience, so it is probable that the SA-N-6 and SA-N-7, now deployed on only a few ships (with others under construction), would be entirely new challenges. Obviously, the same would also be true for the U.S. Navy.[23]

The Israelis are believed to have modified some of their F-4E fighters into specialized electronic warfare planes similar to the American F-4G "Wild Weasels."[24] If true, these aircraft would be armed with *Shrike* and *Standard ARM* missiles designed to attack radars. They would also be equipped with an array of jamming and electronic deception systems to support air strikes by other aircraft. While certainly not in the same class as the EA-6 electronic warfare aircraft available to the U.S. Navy, the Israeli-modified F-4s are potent machines giving the Israelis a capability not matched by most of our other allies.

Israeli Experience Against Soviet Antiaircraft Missiles

Naval Missile	Land Equivalent	Israeli Experience Against Land Equivalent
SA-N-1	SA-3	Considerable since 1970
SA-N-2	SA-2	Considerable since 1967
SA-N-3	None	—
SA-N-4	SA-8	Some since 1982
SA-N-5	SA-7	Considerable since 1970
SA-N-6	SA-10	None
SA-N-7	SA-11	None

Source: Derived from *Combat Fleets of the World 1982/1983*, pp. 584-585.

Furthermore, unlike most air forces, the Israeli Air Force has extensive experience in operating over water. Air missions at sea are different from those conducted over land and acclimatization is necessary. The Israeli Air Force, however, lacking extensive land areas, has been forced to conduct much of its training over the Mediterranean. The Israelis also have some experience in air combat over water, though admittedly little by the standards of the U.S. Navy. They have used their air force on several occasions to attack Arab naval vessels. The best-known incident took place on May 1970, when Israeli aircraft sank an Egyptian destroyer and a missile boat at Ras Banas, some 200 nm from the nearest Israeli air base.[25] In all, it is believed that from 1967 through 1973, Israeli aircraft destroyed seven Arab warships, mostly small combatants. The Israelis have also done considerable aerial fighting over water. To cite but one example, albeit a spectacular one, in September 1973 Israeli aircraft fought Syrian aircraft over the Mediterranean off the coast of Syria between Latakia and Tartus. In this battle, more than 150 nm from the nearest Israeli air base, some thirteen Syrian MiG-21s were shot down against the loss of a single Israeli aircraft.[26]

Admittedly, the Israelis cannot do everything that American naval aircraft operating from aircraft carriers can do. Aircraft carriers are mobile and can concentrate air power at a particular point, providing a flexibility that cannot be equalled when operating from land bases. Equally important, the Israeli Air Force lacks expertise in attacking heavily defended surface ships, while the U.S. Navy is without equal in this area.

At the same time, however, the Israeli Air Force possesses advantages of its own. Its air bases are considerably less vulnerable than aircraft carriers, however well-defended those carriers may be. The Israelis have extensive aircraft repair facilities readily accessible, unlike the Sixth Fleet, which has no depot-level maintenance facilities closer than the United States. As a result, heavily damaged Israeli aircraft can be put back into service relatively quickly, while heavily damaged American aircraft may remain out of service for the duration of the fighting. Finally, the operational readiness rates of Israeli aircraft are higher than those for U.S. Navy aircraft, in part because of the intrinsic difficulties of keeping highly sophisticated weaponry operational when remote from extensive repair facilities and spare-parts depots.[27]

The Israeli Navy

Israel has a powerful surface fleet in the eastern Mediterranean, a simple fact that has gone largely unnoticed. The Navy is the least important branch of the Israeli Defense Forces. It receives the smallest portion of the Israeli defense budget, and is allocated relatively little manpower. It is insignificant in size by American standards. In fact, the total tonnage of all Israeli warships is only slightly greater than the tonnage of one new American guided-missile destroyer. Even when compared with the navies of America's two NATO allies in the eastern Mediterranean, Greece and Turkey, the Israeli Navy seems insignificant in tonnage and personnel.[28]

Such comparisons, however, are misleading. Though it operates no surface ships of more than 500 tons, the Israeli Navy (acting in coordination with its associated support aircraft) has the resources to successfully combat any fleet of Soviet surface combatants likely to be deployed in the eastern Mediterranean. This effectiveness has resulted from Israel's ability to develop a navy tailored to meet the particular problems of naval warfare in the region. Certain conditions have enabled Israel to develop such a specialized naval force.

First, the Israeli Navy is intended primarily to fight surface combatants. Because the Israeli Air Force can provide air cover, Israeli warships need only limited air defense capabilities. Because Israel's traditional opponents in the past have had only limited submarine warfare capabilities, it was never necessary to develop extensive anti-submarine capabilities. Thus, the Israeli Navy has been able to concentrate largely on the problem of fighting hostile surface ships.

Second, the Israeli Navy is optimized to fight relatively near its bases. This means that large ships with great endurance are unnecessary. It also means that Israel does not require the logistics ships needed to support naval operations in distant waters. In addition, because the Israeli Navy now operates almost exclusively in the eastern Mediterranean, it does not require large ships able to survive the rigors of the Atlantic and Pacific Oceans. This favorable situation is accentuated by the way in which the Israelis use their fleet. In a sense, they operate their missile boats almost as if they were aircraft, generally keeping them at sea for only a few days at a time and rarely operating more than a day's cruising time from Israel.

Third, the Israeli Navy relies almost exclusively on anti-ship missiles for fighting surface combatants, and probably has as much experience in the use of such weapons as any other navy in the world. Israel was one of the first countries in the Western world to consider adoption of anti-ship missiles, and was one of the very first to introduce an operational anti-ship missile into service. In the early 1960s Israel began development of the *Gabriel* anti-ship missile, which entered service in 1968. Improved versions of that weapon

remain in service with the Israeli Navy to this day. The Israelis also have the American *Harpoon* anti-ship missile, a weapon with a considerably longer range than the *Gabriel*.

The *Gabriel* and *Harpoon* anti-ship missiles are the main batteries on Israel's fleet of missile boats. Relying on these weapons, an Israeli missile boat can effectively challenge ships of much greater size. Typically, an Israeli missile boat carries more anti-ship missiles than the destroyers and cruisers of other navies. For example, an Israeli *Reshef*-class missile boat carries nine anti-ship missiles. By contrast, many Soviet destroyers and cruisers carry no dedicated anti-ship missiles, and those that do usually have only four or eight launching tubes.

Fourth, the Israeli Navy is one of the few naval forces in the world to develop working defenses against anti-ship missiles. Israeli awareness of the dangers posed by anti-ship missiles was accentuated by the destruction of the *Eilat* by Egyptian-fired *Styx* missiles. After the *Gabriel* entered service, the Israeli Navy discovered that it had a range about 15 nm less than that of the Soviet-built *Styx* missiles used by the Egyptian and Syrian navies. This meant that in order to be able to fire *Gabriel* missiles at Arab missile boats, Israeli vessels first had to survive attacks from *Styx* anti-ship missiles. As a consequence, the Israeli Navy proceeded to develop defenses against anti-ship missiles. The effectiveness of these defenses was demonstrated in 1973, when some 52 *Styx* missiles were fired at Israeli missile boats without achieving a single hit.

The emphasis on anti-ship missile defenses continues to this day. Unlike other navies, which invest only reluctantly in defenses against anti-ship missiles, the Israeli Navy devotes considerable resources to this matter. They have detection equipment (both radars and radar-detecting devices), electronic countermeasures equipment (passive measures, including chaff launchers, and active measures, including jamming and deception gear), and guns able to shoot down anti-ship missiles (soon to include the *Phalanx* gun system developed for the U.S. Navy).

As a result of this equipment, a typical Israel missile boat currently has better defenses against anti-ship missiles than do warships ten to twenty times that size operated by NATO navies. Israeli missile boats are, for example, better protected than many of the larger and more expensive frigates and destroyers that the Royal Navy used to fight in the Falklands in the spring of 1982. In fact, in some respects the Israeli Navy is even better prepared to fight missile wars than the U.S. Navy. Unlike the Americans, who until recently concentrated on defenses against just Soviet anti-ship missiles, Israel has had to devise defenses against anti-ship missiles made in France, Italy, and the Soviet Union.

In these efforts, the small size of their vessels makes the Israeli missile

Israeli Surface Combatants

CLASS	*Aliyah*	*Reshef*	*Sa'ar III*	*Sa'ar II*	*Shimrit*	*Dvora*	*Dabur*
TYPE	Missile Boat	Missile Boat	Missile Boat	Patrol Boat	Hydrofoil Missile Boat	Missile Boat	Patrol Boat
NUMBER IN SERVICE	4	8	6	6	2	2	37
TONS (FULL LOAD)	500	450	250	250	100	47	35
SPEED (KNOTS)	31	32	40	40	52	32	25
RANGE (NAUTICAL MILES)/ SPEED (KNOTS)	1500/30 4000/17	1500/30 4000/17	1000/30 2500/15	1000/30 2500/15	1056/44	700/27	1200/17
MISSILES							
Harpoon	4	4	2	0	4	0	0
Gabriel	4	4	3	0	2	2	0
GUNS							
76mm	—*	2	1	0	0	0	0
40mm	—*	0	0*	2	0	0	0
30mm	—*	0	0	0	1 twin	0	0
20mm	—*	2	0	0	0	2	2
TORPEDO TUBES	0	0	0	2	0	0	0
HELICOPTERS	1	0	0	0	0	0	0
CREW	53	45	40	40	15	10	6

*Armament varies.

boats hard to hit. A small warship is harder to detect, having a proportionally smaller radar profile, and is also harder to hit once detected. It is also easier and less expensive to provide electronic defenses for a small ship than a larger one. Since an Israeli missile boat often carries the same anti-ship missile defenses as ships many times larger, it should be evident that the Israelis have managed to achieve a level of defense unrivaled by any other navy. While a missile boat cannot survive once hit by an anti-ship missile, the same is often true for larger vessels as well, as the British recently discovered against Argentina.

In addition, the Israeli Navy has three small submarines to supplement its missile boats. These *Gal*-class submarines were built in England to West German specifications and are similar to boats currently operated by several NATO navies. Acting in conjunction with Israel's surface fleet, these submarines can further complicate the tactical situation for the Soviet Navy. Reportedly, Israel has purchased submarine-launched versions of the American *Harpoon* anti-ship missile, which can be fired when the submarines are submerged. Given the known limitations of Soviet anti-submarine warfare capabilities, *Harpoon*-armed submarines might be able to launch attacks before being detected.

The Israeli navy possesses a sophisticated battle management system necessary to effectively fight modern naval wars. This command, control, communications and intelligence (C^3I) system integrates all the information obtained from a variety of sensors. Especially important are search aircraft, including the *Sea Scan* and (on occasion) E-2C *Hawkeye* patrol aircraft as well as helicopters mounted on the new *Aliyah*-class missile boats. Supplementing these planes is a chain of surveillance radars along Israel's Mediterranean coast. In addition, land-based passive sensors monitor electronic traffic at sea. Combat vessels are equipped with surveillance radars, but unlike most other small navies, the Israeli navy does not rely heavily upon such active detection methods. Instead, considerable use is made of passive detection devices that can detect radars far beyond the range at which the radar itself can detect objects. All this information is combined at a central, computerized command and control center to provide Israel's senior naval commanders with an integrated picture of the naval arena.

This system makes it possible for Israeli missile boats to attack targets too distant to be detected by search radars mounted on the combatants themselves. The impact of this on the potential effectiveness of Israeli naval warships is demonstrated by examining the distances at which targets can be attacked. In 1973, Israeli missile boats could engage targets no more than about 12 nm away using the version of the *Gabriel* then in service. Today, those same ships can attack targets at distances of up to 60 nm using over-the-horizon targeting techniques and American-supplied *Harpoon* missiles, or out

Anti-Ship Missiles on Israeli Naval Vessels

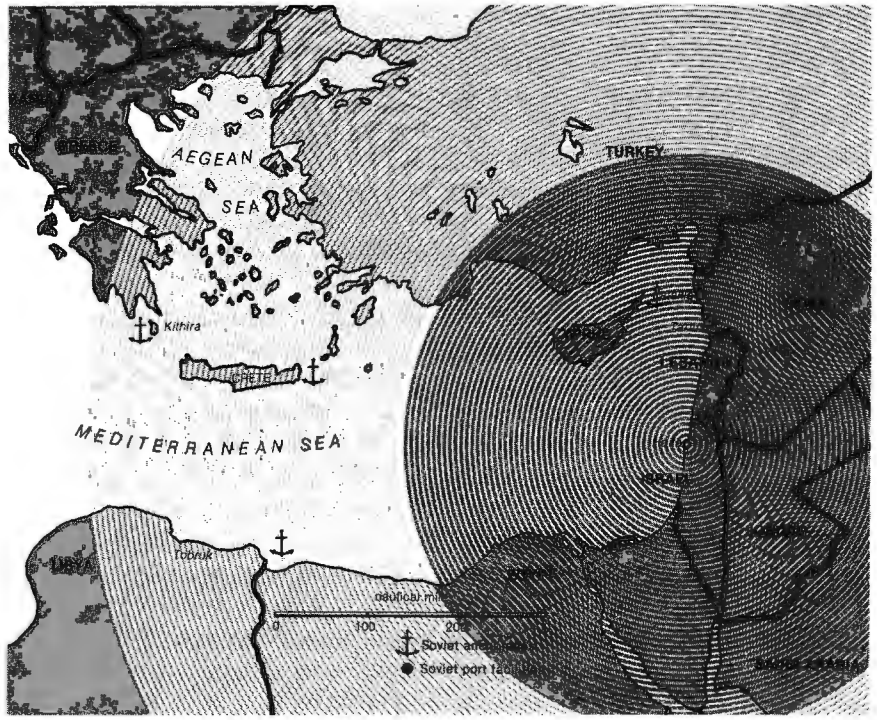
CLASS	SHIPS	TOTAL MISSILES		
		Harpoon	*Gabriel*	Total
Aliyah	4	16	16	32
Reshef	8	32	32	64
Sa'ar III	6	12	18	30
Shimrit	2	8	4	12
Dvora	2	0	4	4
TOTAL	22	68	74	142

to 25 nm using the latest version of the *Gabriel*. Similarly, this system should make it possible for Israeli submarines to fire submarine-launched *Harpoons* against targets too distant to be detected by sensors on those submarines.

A comparison of the Israeli Navy with the Soviet Mediterranean squadron vividly illustrates the striking power of the Israeli missile boats. Israel's 22 missile boats carry a total of 142 anti-ship missiles. In contrast, the Soviet Mediterranean squadron's peak strength during the 1973 crisis was only 28 surface combatants carrying (it was thought at the time) 88 anti-ship missile launchers. Today, the Soviet Mediterranean squadron usually has no more than 16 surface combatants, rarely with more than about 50 anti-ship missiles.

Many Soviet naval combatants are in fact poorly configured to fight warships like Israel's missile boats. Soviet ships often rely on weapons primarily intended for use against targets other than ships. For example, it is believed that the Soviets plan to use surface-to-air missiles against surface ships. Such weapons, however, lose accuracy when fired at small targets like Israel's missile boats. Equally important, anti-aircraft missiles have shorter ranges against surface targets than the anti-ship missiles now employed by the Israeli Navy. It is also believed that the Soviets intend to use their SS-N-14 anti-submarine missile against surface ships. This missile, which is widely used by the Soviets, carries a torpedo that is released when near the target. While this weapon might be useful against large surface ships, it is doubtful that this will enable the SS-N-14 to attack small, shallow draft, high speed missile boats.

Even many of the anti-ship missiles that the Soviets do have may beunsuitable for use against Israeli missile boats. Some Soviet anti-ship missiles, like the SS-N-3 or its replacement the SS-N-12, are intended for attacks on large surface combatants, like 95,000-ton aircraft carriers and 10,000-ton cruisers, not 450-ton missile boats. They lack the agility to hit small, maneuvering missile boats, and their guidance systems are designed to concentrate on large targets and in some cases may even have been designed to ignore small targets.



Effective Combat Radius of Israeli Air and Naval Forces

Despite these weaknesses, the Soviet Navy does possess ships that can effectively fight the Israel Navy. Specifically, there are three main combatant types that the Soviet Navy might choose to employ against Israel. First, there are the 900-ton *Nanuchka*-class missile corvettes armed with the highly capable SS-N-9 anti-ship missile. While only occasionally deployed in the Mediterranean, these warships would probably be a match for Israeli missile boats. It is less clear, however, that these missile corvettes could survive against the combined effort of Israeli naval and air forces. Thus, while useful, the *Nanuchkas* cannot successfully operate by themselves.

Second, the Soviet Navy could divert against Israel some of their newest surface combatants, like the *Kirov*-class battle cruisers, the *Krasina*-class cruisers, or the *Sovremenny*-class destroyers. All these warships are armed with new generation anti-ship and anti-aircraft missiles that could cause the Israelis great difficulty. However, that the Soviets would in fact be willing to send these warships against Israel is unlikely. At present the Soviet Navy has only a handful of these new ships, and it is probable that they would be needed elsewhere against higher priority targets, like the U.S. Navy. Even if the Soviets did send a small number of these warships to oppose the Israelis, it is doubtful that such a force could dramatically change the naval balance in

the Mediterranean. Israeli air and naval forces are sufficiently capable that eventually they could sink even these new warships, albeit with higher losses than would be expected from engagements with older Soviet combatants. To the extent that the Soviets to decide to send such combatants into the Mediterranean to strengthen their forces, however, Israeli naval and air power will be aiding the U.S. by diverting these highly capable warships from other areas of the world.

Third, the Soviets could send submarines to attack the Israeli surface fleet. Israel has very limited anti-submarine warfare capabilities. While it now operates four ships equipped with the EDO 780 variable depth sonar, an excellent system of modern design, the Israeli Navy has no effective capability against a fleet with as many submarines as the Soviets operate in the Mediterranean. In essence, the only damage that Israel could do to the Soviet submarine force probably would be destruction of submarine tenders.

There is, however, a reverse side to this, in that Soviet submarines could do little directly against Israeli naval combatants. Most are equipped with torpedoes, and missile boats are less than ideal targets for torpedoes. The only submarines likely to be effective against Israeli missile boats are those armed with anti-ship missiles, and especially *Charlie*-class nuclear-powered cruise missile submarines.

But these are also the most serious threat to American surface ships, and the Soviets might not be able to attack both sets of targets. Should the Soviets be forced to use their *Charlie*-class submarines against the Israelis, the strategic benefit to the United States would be considerable since it would mean that the Soviets would be using these high value assets to attack 450-ton missile boats instead of 10,000-ton cruisers or 95,000-ton aircraft carriers.

The Israeli Navy is thus in the surprising position of being able to contribute to Western efforts to secure the Mediterranean. The quality and quantity of surface combatants, the sophistication of the weapons and electronics used by those warships, and the advanced state of command and control systems have made the Israeli Navy an effective fighting force, one capable of influencing the East/West naval balance of power in the eastern Mediterranean.

Of greatest importance, however, is the combined effect of Israel's Navy and Air Force. When operating together, these two forces are sufficiently powerful to defeat any likely fleet of Soviet surface combatants deployed in the eastern Mediterranean. It is this capability that makes Israel important to the U.S. Navy, and that has made possible U.S.-Israel naval cooperation of great potential benefit to America. Working together, primarily by linking their respective command, control, and communications systems, and by exploiting their comparative advantages, these forces should be able to totally dominate any possible Soviet Mediterranean naval force.

U.S.-Israel Cooperation in the Mediterranean

Israeli naval and air forces are permanent factors in the Mediterranean balance of power. There is no possibility that these ships and aircraft will be redeployed to some other part of the world. Thus, both the United States and the Soviet Union know that even in the absence of an American presence in the region, there will exist a potential anti-Soviet force of considerable strength. At a time when the U.S Navy is stretched thinly across the globe, and may be unable to maintain a large fleet in the eastern Mediterranean in times of crisis, the presence of the Israelis becomes a strategic asset for the United States, and thus for NATO, of no small importance.

Israel has a vital stake in the success of the U.S. Navy. Should the shipping lanes to Israel be interdicted for any reason, the very lifeline of the state which is already denied normal overland commerce with most of its neighbors, would be jeopardized. Virtually all of Israel's imports and exports are shipped by sea, generally across the Mediterranean, and this foreign trade is crucial to the Israeli economy. The shipping lanes are also important for military reasons. Israel's imported weaponry is normally transported by ship. If free access to sea routes was denied Israel, its basic security would be seriously impaired.

For Israel, the situation is further complicated in that the main American adversary, the Soviet Union, is also hostile to Israel. The Israelis know that they cannot afford to permit a situation where their security and economy are subject to Soviet decisions. Israel has a great inherent interest in the outcome of any struggle between the United States and the Soviet Union.

Even in the absence of formal strategic cooperation agreements between the United States and Israel, Israeli naval power is of value to the American navy. The Soviet Union recognizes the potential threat posed to them by the Israelis. For this reason, Soviet naval planners cannot afford to consider plans of operation for the eastern Mediterranean without taking into account the potential threat from the Israelis. This considerably complicates the naval situation for the Soviets, since they will still have to worry about a serious Israeli air and naval threat even if the Sixth Fleet has no carriers in the eastern Mediterranean. Equally important, the Soviets also know that even if they successfully put out of action any American aircraft carriers there will still remain a potent pro-U.S. air force in the region.

Accordingly, any net assessment of the current U.S.-Soviet balance of power in the eastern Mediterranean should include Israel's air and naval forces as a potential source of assistance to the Sixth Fleet. To ignore the impact of the Israeli military would be like doing a study of the balance of naval power in the northern Atlantic without including a consideration of Britain's naval and air forces as a NATO asset.

The potential value of naval cooperation with Israel has not gone un-

noticed. For example, it is reported that a U.S. Navy study conducted in the late 1970s concluded that Israel's Air Force could destroy the entire Soviet Mediterranean fleet.[29] It is thus not surprising that Secretary of Defense Caspar Weinberger recently indicated that "Israel's military strength and enormous national ingenuity help to deter Soviet aggression in the Eastern Mediterranean and throughout the region."[30] Similarly, Senator John Glenn (D, Ohio), has declared that Israel

> is an ally on whom we can count in the Eastern Mediterranean, where we face formidable problems of maintaining a military balance with the growing Soviet Navy which in wartime could be supported by Syria and Libya. In this regard, the strength of the Israeli Air Force and Navy is a factor that the Soviet Union must take into account should it contemplate aggressive action in this region.[31]

Increasingly, Israel is becoming recognized as an important deterrent to Soviet aggression, and as an important strategic asset to both the United States and NATO.

According to press accounts, the U.S. Navy has already taken some steps to promote naval cooperation with Israel. In May 1982, during a visit to Israel by the then American Chief of Naval Operations, Admiral Thomas B. Hayward, it was indicated that American and Israeli naval personnel were being trained together, and that steps were being taken to ensure that in the event of hostilities in the eastern Mediterranean the Israelis would be able to distinguish between American and Soviet naval vessels. The Commander of the Israeli Navy told reporters at that time that cooperation between the two navies included "visits, exchanges of views, discussions of battle experience, and development and purchase of various systems." In more mundane areas, the Sixth Fleet now uses Haifa as a resupply point for fresh food supplies and as a port of call to give crews shore leave.[32]

At present, however, U.S.-Israel naval cooperation does not extend to precisely those areas of greatest potential benefit to the United States. There are measures that could be taken that would enhance the value to the United States of Israeli air and naval forces that often involve little or no cost to the U.S. In other cases the costs might be larger, but the benefits of cooperation are sufficiently great that implementation of such programs would provide immediate advantages. Initially, a formal naval cooperation program could concentrate on measures involving little visibility that would cause few political or diplomatic problems. As the relationship matured, measures with greater visibility could be implemented. Such an incremental approach would minimize the risk of potential problems and still ensure that the United States received the benefits of naval cooperation with Israel.

First, steps need to be taken to ensure that Israeli air and naval operations against Soviet naval forces can be effectively coordinated with the activities of the Sixth Fleet. Unless basic procedures are developed in peacetime, the United States may sacrifice many of the advantages of naval cooperation in the event a conflict does occur. Proper coordination requires that Israeli forces and the Sixth Fleet conduct joint naval exercises in time of peace. Such exercises would familiarize the two navies with the radically different characteristics of their respective warships, and would permit creation of standard procedures needed to permit properly coordinated joint operations in time of war. They should also make possible the development of means to communicate between the different data link systems used by the two countries. A basis for joint exercises was provided by the Memorandum of Understanding between Israel and the United States signed in November 1981 but suspended one month later. Had that agreement been implemented, it is likely that naval cooperation between the two countries would be much greater today than is actually the case. The Memorandum of Understanding twice mentioned the need for joint American-Israeli training exercises in the eastern Mediterranean, a clear indication of the importance of such activities.

Second, there are certain types of equipment that the United States could supply to Israel that would enhance the capabilities of the Israeli Navy against Soviet submarines. Given Israel's relatively sparse resources, it is doubtful that it could ever acquire anti-submarine capabilities equal to its surface and air warfare capabilities. On the other hand, through careful provision of modern anti-submarine warfare equipment, it should be possible to significantly upgrade the quality of Israeli anti-submarine equipment, thus allowing Israel to contribute to Western anti-submarine efforts in the Mediterranean. Equipment that might be appropriate could include some kind of modern towed array sonar system and possibly some kinds of modern airborne anti-submarine warfare gear. In particular, it would be sensible for the U.S. to provide Israel with P-3C maritime patrol aircraft. This would increase the number of such aircraft in the Mediterranean, and would create support facilities needed to operate U.S. Navy P-3Cs from Israeli airbases.

Third, the U.S. Navy could probably help improve the quality of Israeli tactics through a joint training program. Unlike the U.S. Navy, the Israeli Navy and Air Force do not routinely plan and train to fight the Soviet Navy, and are not familiar with the nuances of conducting operations against Soviet naval forces. At the same time, the U.S. Navy could provide Israel with other equipment not already possessed by Israel needed to fight the Soviets, such as countermeasures to Soviet naval electronics. Alternately, the U.S. Navy could provide technical assistance to the Israelis to develop such equipment should security considerations make it impossible to transfer American devices.

Fourth, the United States should develop plans to resupply Israel in the event of a conflict against the Soviets. To the extent that Israeli weapons destroy targets that the United States would otherwise have to attack, resupply of Israel need not be a net loss to America. To the extent that such a guarantee encourages vigorous Israeli activity, the United States would be a net beneficiary.

Fifth, Israel could provide the U.S. Navy facilities to support operations of the Sixth Fleet. Besides the use of Israeli air bases for American P-3C anti-submarine aircraft to patrol the eastern Mediterranean, Israel's aircraft maintenance facilities could be used to repair and support other naval aircraft. Israel's largest port, Haifa, could be used as a base for American vessels operating in the eastern Mediterranean. Such facilities would offer important advantages. They would be protected from attack by Israeli air and naval forces. They could provide a secure alternative to other American bases in the eastern Mediterranean should circumstances make those other bases unavailable. In addition, Israeli facilities would be ideally located to provide logistics support, especially for operation of C-2 *Greyhound* carrier on-board delivery aircraft, for American carrier task forces operating in the eastern Mediterranean.

Conclusion

The United States faces a formidable strategic challenge in the eastern Mediterranean, where Soviet capabilities have grown while the U.S. Navy has been forced to draw down its fleet. Israel has the capability to make a significant contribution to maintaining the strategic balance in the region, and it has a clear interest to prevent the region from becoming an area of Soviet predominance. But to realize the full potential of this congruence of interests between the United States and its long-term ally, measures to enhance strategic cooperation will be required. The required measures, however, are not dramatic, but rather are simple and discreet actions that can measureably enhance the potential effectiveness of both sides in the event of a conflict with the U.S.S.R.

Some people are bound to object to enhanced strategic cooperation on the grounds that it would impair our relations with Arab countries. But the Mediterranean is not in itself part of the principal Arab zone of interest. The kinds of enhancements of Israeli naval capability that would be desirable to increase its effectiveness against the Soviet Navy would have little impact on the Arab-Israeli balance of power. And Arab countries friendly to the U.S in the Mediterranean, such as Morocco, Egypt, and Lebanon, would find their own security enhanced if closer cooperation between the U.S. Navy and Israeli forces came into effect.

Strengthening the Western position in the eastern Mediterranean, and reducing the Soviet advantage, is a common interest of all members of the Western alliance and countries strategically linked to the United States in the region. Enhanced cooperation between the United States and Israel in this zone would therefore be advantageous, not only to Israel and the United States, but to the common interest of all countries that would be affected if the Soviet Union became the dominant power in the eastern Mediterranean.

FOOTNOTES

1. The strength of the Soviet Mediterranean squadron is discussed in some detail in Bruce W. Watson, *Red Navy at Sea: Soviet Naval Operations on the High Seas, 1956-1980* (Boulder, Colorado: Westview Press, 1982), pp. 73-130. See also Office of the Chief of Naval Operations, *Understanding Soviet Naval Developments*, Fourth Edition (Washington: Government Printing Office for the Department of Navy, January 1981), pp. 16-19. More recent data is provided by Donald C. Daniel, and Theodore A Neely, Jr., "Their Navy in 1981," U.S. Naval Institute *Proceedings*, 108 (October 1982). p. 112.
2. Watson, *Red Navy at Sea*, pp. 101-119, outlines the growth in strength of the Soviets in the Mediterranean during the 1973 crisis. Note that in 1973 the U.S. Navy incorrectly identified the SS-N-14 anti-submarine missile as the SS-N-10 anti-ship missile. Accordingly, the actual number of anti-ship missiles was considerably lower than the contemporary estimates given here.
3. Captain John Moore, editor, *Jane's Fighting Ships, 1982-83*, Eighty-fifth edition (London: Jane's Publishing Co., 1982), p. 460, estimates 110, but includes short-range attack aircraft in its total. Jean Labayle Couhat, editor, *Combat Fleets of the World, 1982/83*, translated by A.D. Baker III (Annapolis, Maryland: U.S. Navy Institute Press, 1982), p. 596, estimates 100 bombers and 15 attack aircraft.
4. The Tu-22 has a high altitude unrefueled radius of 1500 nm. The comparable figure for the Tu-16 is 1200 nm, and for the *Backfire* is about 3000 nm. Even the Tu-16s can easily reach the eastern Mediterranean from bases in the Soviet Union. See Figure 43 in Paul J. Murphy, editor, *Naval Power in Soviet Policy*, Studies in Communist Affairs, Volume 2, published under the auspices of the United States Air Force, 1978, p. 195.
5. Hearings before the Committee on Armed Services, United States Senate, *Department of Defense Authorization for Appropriations for Fiscal Year 1983*, part 1, p. 737. According to this report, in mid-1981 the Soviets temporarily deployed in Syria *Badger* reconnaisance and *May* anti-submarine aircraft, and two additional *May* aircraft were sent to Libya. This was the first deployment of Soviet land-based naval aircraft to the Mediterranean since 1972.
6. Soviet operating patterns in the Mediterranean are examined by Watson, *Red Navy at Sea*. Especially useful are the tables on pp. 183, 200-209. On recent developments, see *New York Times*, April 29, 1983, pp. A1, A4.
7. Clarence A. Robinson, "USSR Submarines Pose Heavy Threat," *Aviation Week and Space Technology*, 106 (January 24, 1977), p. 76
8. The deployment of aircraft carriers in 1982 was given in the Annual Report of the Secretary of Defense reproduced in Hearings before the Committee on Armed Services, United States Senate, *Department of Defense Authorization for Appropriations for Fiscal Year 1983*, part 1, p. 230. There is a fuller discussion of carrier deployment by then Chief of Naval Operations, Admiral Thomas B. Hayward, in the same hearings, part 2, pp. 1073-1074, 1078. During most of 1982 there were two carriers in the Mediterranean, according to Daniel and Neely, "Their Navy in 1981," p. 112, but in early 1983 there was again only one. See the AP Wire Report, February 3, 1983, by Fred S. Hofman.

9. A typical carrier air wing consists of the following:

Aircraft Type	Function	Squadrons	Aircraft
F-4/F-14	Fighter (Reconnaissance)	2	24
A-7	Light Attack	2	24
A-6/KA-6	Medium Attack, Tanker	1	14
S-3A	Anti-submarine	1	10
SH-3D	Anti-submarine	1	6
EA-6B	Electronic Warfare	1	4
E-2C	Airborne Early Warning	1	4
		9	86

Report of the Secretary of Defense Caspar W. Weinberger to the Congress on the FY1984 Budget, FY 1985 Authorization Request and FY 1984-88 Defense Programs, February 1, 1983, p. 162. The 4 KA-6 tanker aircraft can be used in strike missions, but normally are needed to refuel other aircraft.

10. Actual sortie rates are classified, and these are estimates based on open sources. Particularly useful in this regard was the data provided in Congressional Budget Office, Congress of the United States, *Costs of Expanding and Modernizing the Navy's Carrier-Based Air Forces*, May 1982, pp. 20-23, 43-46. By combining the statistics in the text with the graph on p. 23, it is possible to calculate that the Congressional Budget Office estimates that a wing could generate about 23 A-6 and about 55 A-7 sorties a day. This assumes full strength air squadrons. According to Clarence A. Robinson, "U.S. Retains Edge in Mediterranean Sea," *Aviation Week and Space Technology*, 106 (January 17, 1977), p. 48, the aircraft of one air wing were normally in the air for 100-150 hours a day. This could be increased to 300 hours, but for only three days. Usually each A-7 squadron had available only 9-10 of 12 aircraft, and the A-6 squadron had only 8 of 12 aircraft. In Clarence A. Robinson, "F-14 Demonstrates Agile Aerial Combat," *Aviation Week and Space Technology*, 107 (November 29, 1976), p. 55, it is reported that one F-14 squadron averaged 16 daily two hour sorties, but had flown up to 22. Generally, only 8 of 12 aircraft were operational.
11. Clarence A. Robinson, "U.S. Retains Edge in Mediterranean Sea," *Aviation Week and Space Technology*, 106 (January 17, 1977), p. 48.
12. For discussions of Greece's increasingly independent line under Prime Minister Andreas Papandreou see Van Coufoudakis, "Ideology and Pragmatism in Greek Foreign Policy," *Current History*, December 1982, pp. 426-431. Many of these issues can be followed in the press coverage of Greek negotiations with the U.S. over base rights and aid. For typical articles, see John Rigos, *Christian Science Monitor*, March 1, 1983, p. 7, and Andiriana Ierodiaconou, *Washington Post*, May 21, 1983, p. 1.
13. While cooperating fully with the United States within a NATO context, Turkey has been more reluctant to support actions that do not involve NATO. For example, during the 1970 Jordan Crisis the Turkish government indicated that they would not allow American transport aircraft to stage from American air bases in Turkey, according to Sam Cohen, *Washington Post*, September 22, 1970, p. A16. Similarly, during the 1973 Arab-Israeli conflict, Turkey (and Greece) refused transit to American transport aircraft involved in the airlift to Israel, but allowed Soviet transport aircraft to overfly without protest. On this episode, see Leslie Gelb, *New York Times*, October 25, 1973, p. 1. There is no reason to believe that Turkey has changed its attitudes. See for example the comments in Martin Indyk, Charles Kupchan and Steven J. Rosen, *Israel and the U.S. Air Force*, AIPAC Papers on U.S.-Israel Relations #2, p. 14. On the other hand, Turkey cooperates fully with American efforts to stengthen NATO, and is one of our stronger NATO allies. These issues are discussed in Sam Cohen, *Christian Science Monitor*, April 5, 1983, p. 12; *New York Times*, October 16, 1982, p. 5; and, Metin Demirsar, *Wall Street Journal*, January 12, 1983, p. 32.
14. Aircraft inventory adapted from figures given by *Aviation Week and Space Technology*, 118 (February 14, 1983), p. 17.

15. This is an average sortie rate used solely for analytic purposes. Actual sortie rates differ greatly depending on circumstances, and can be much higher for short periods but would be lower over an extended stretch of time. If the Israelis were to fly long-range missions, the sortie rate would decline.
16. *Military Balance 1982-1983* (London: International Institute for Strategic Studies, 1982), p. 57.
17. Exact range of the F-15 remains classified, and this figure is an estimate based on data given in State of Israel, Ministry of Defense, *National Security Issues*, pp. 29-31.
18. J. Phillip Geddes, "Airborne Early Warning for the U.S. Navy," *International Defense Review*, 8 (No. 5, 1975), pp. 679-682; "Hawkeye," *Aviation and Marine International*, (June 1980), pp. 53-62; Grumman literature.
19. Irvine Cohen, "Nautical Westwind," *Flight International*, 109 (3 April 1976), p. 824; John W.R. Taylor, *Jane's All the World's Aircraft, 1981-82*, New York: Jane's Publishing Co., 1981), p. 116. According to *Jane's*, when armed with the *Gabriel III* anti-ship missile, the *Sea Scan* can conduct attack missions at ranges of greater than 1000 nm, which is the distance from Israel to Italy. On the air-launched *Gabriel III*, see *Aviation Week and Space Technology*, 118 (February 14, 1983), p. 103, and *Aviation Week and Space Technology*, 117 (December 20, 1982), pp. 21-22.
20. *Military Balance 1982-1983*, p. 57, and Hearings before a Subcommittee of the Committee on Appropriations, House of Representatives, *Department of Defense Appropriations for 1983*, part 7, p. 495.
21. *Aviation Week and Space Technology*, 111 (October 13, 1980), p. 68, and *Aviation Week and Space Technology*, 105 (November 15, 1976), p. 23.
22. Israeli tactics are discussed in Carus, "The Bekaa Valley Campaign," *The Washington Quarterly*, 5 (Autumn 1982), pp. 37-41, but this should be supplemented by Clarence A. Robinson, "Surveillance Integration Pivotal in Israeli Successes, *Aviation Week and Space Technology*, 117 (July 5, 1982), pp. 16-17, and John V. Cignatta, "A U.S. Pilot Looks at the Order of Battle, Bekaa Valley Operations," *Military Electronics/Countermeasures*, (February 1983), pp. 107-110.
23. Couhat, *Combat Fleets of the World, 1982-83*, pp. 584-585; *Jane's Weapons Systems, 1981-82*, pp. 106-108.
24. "Lebanon Proved Effectiveness of Israeli EW Innovations," *Defense Electronics*, 14 (October 1982), p. 42.
25. Edgar O'Ballance, *The Electronic War in the Middle East, 1968-70* (Hamden, Conn.; Archon Book, 1974), p. 119.
26. Chaim Herzog, *The Arab Israeli Wars* (New York: Random House, 1982), p. 308.
27. Aircraft readiness rates for the Israeli Air Force typically exceed 90%. All of Israel's 72 F-16s were mission capable at the time of the Lebanon fighting in June 1982, according to General W.L. Creech, commander of the U.S. Tactical Air Command, as quoted in Richard Halloran, *New York Times*, October 25, 1982, p. 1.
28. Sources used in the following account of the Israeli Navy include *Jane's Fighting Ships 1982-83;* Couhat, *Combat Fleets of the World;* W. Gerhard Albrecht, *Weyers Flottentaschenbuch 1982/83* (Munchen, Bernard and Graefe Verlag, 1982); *Military Balance 1982-1983;* Edward H. Kolcum, "Arabs Seen Challenging Israel at Sea," *Aviation Week and Space Technology*, 105 (August 30, 1976), pp. 20-21; Reuben Porath, "The Israeli Navy," U.S. Naval Institute *Proceedings*, 97 (September 1971), pp. 34-39; Martin J. Miller, "The Israeli Navy: 26 Years of Non-Peace," U.S. Naval Institute *Proceedings*, 101 (February 1975), pp. 49-54; Norman Friedman, "Protecting the Coast Requires Revamping Israel's Navy," *Military Electronics/Countermeasures*, (February 1983). pp. 88, 90-92 (this article is particularly good on command and control); Shlomo Erell, "Israeli Saar FPBs Pass Combat Test in Yom Kippur War," U.S. Naval Institute *Proceedings*, 100 (September 1974), pp. 115-118. The relatively comprehensive article by Clyde Owan, "The Arab-Israel Naval Imbalance," U.S. Naval Institute *Proceedings*, 109 (March 1983), pp. 101-109, was received after this section was completed.
29. *Near East Report*, XXII (March 14, 1979), p, p. 50, based on a news item reported by Ted Koppel on ABC News.

30. Quoted from a letter sent by Secretary of Defense Caspar Weinberger to a private citizen, March 19, 1983.
31. *Near East Report*, XXVII (May 20, 1983), p. 82.
32. William L. Dowty III, "Middle Eastern, North African, and South Asian Navies," U.S. Naval Institute *Proceedings*, 109 (March 1983), p. 51; Hearings before the Committee on Armed Services, U.S. Senate, *Department of Defense Appropriations for Fiscal Year 1983*, part 2, pp. 1143-1144, in which Admiral Hayward briefly discusses port calls to Haifa; Joshua Brilliant, *Jerusalem Post*, May 12, 1982; Ya'acov Friedler, *Jerusalem Post*, January 28, 1983, p. 3; *Jerusalem Post*, February 2, 1983, p. 2.

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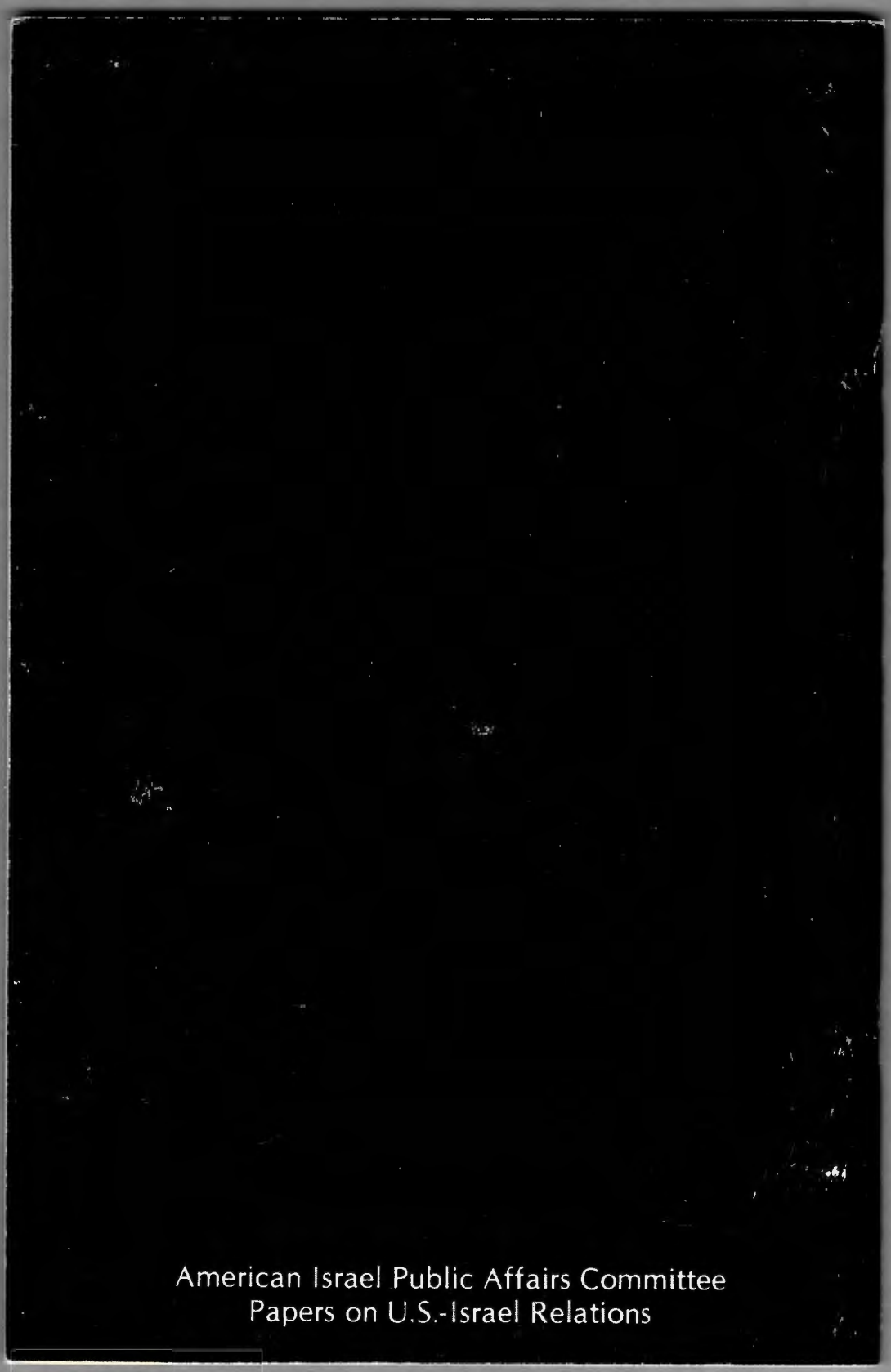

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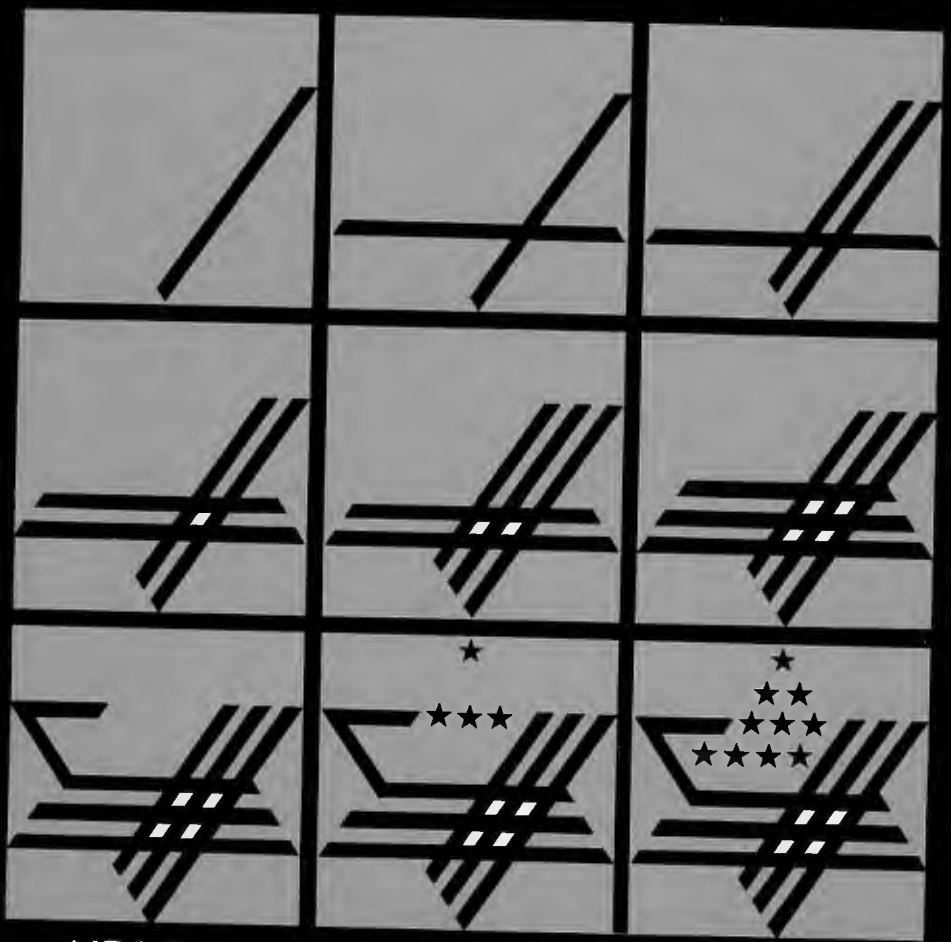
Papers on U.S.-Israel Relations

Israeli Medical Support for the U.S. Armed Forces

Stephen P. Glick



AIPAC Papers on U.S.-Israel Relations: 5

Israeli Medical Support for the U.S. Armed Forces

Stephen P. Glick

AIPAC Papers On U.S.-Israel Relations

This paper continues research initiated by Guilford Glazer

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PREFACE

Publication of this study, after many months of research, happens to coincide with a major discussion between President Reagan and Prime Minister Shamir on enhancing U.S.-Israel strategic and defense cooperation. The agenda of this summit includes the issue of medical cooperation, which became a matter of national attention after the brutal bombing of the U.S. Marine barracks in Beirut on October 23.

But this study was not initiated in response to this tragedy, nor is it concerned primarily with Lebanon. Rather, it looks at the medical support requirements of the U.S. armed forces in the wider context of Middle Eastern crises in which the U.S. might find it necessary to act. The author, Stephen P. Glick, is a military analyst and regular contributor on defense issues for various periodicals.

The study continues a series on the potential for enhanced cooperation between the two countries, past publications of which include *The Strategic Value of Israel, Israel and the U.S. Air Force,* and *Israel and the U.S. Navy.* The overall purpose of this thematic series is to enhance public understanding of the ways in which the security of the United States, Israel and the non-communist world would be increased by strategic cooperation between the United States and its most enduring, reliable, and effective Middle East ally. We are encouraged by the fact that, after a period of neglect, this issue is beginning to receive attention in the higher councils of our government.

Thomas A. Dine
Executive Director
November 28, 1983

EXECUTIVE SUMMARY

American military planners encounter serious difficulties in trying to arrange adequate medical care for American servicemen in foreseeable wartime situations, particularly in the Middle East and the Persian Gulf. The medical requirements for a large-scale conflict in the region could excede the provision of over 17,000 beds. Currently, the United States armed forces are capable of providing only about half that number, under optimum conditions. The resulting shortfall could cause many otherwise unnecessary deaths among American casualties.

A shortage of deployable medical facilities is not the only problem afflicting American military medical planners when considering a Middle East scenario. There are desperate shortages of skilled medical and support personnel, which would need to be addressed if deployed hospitals were to be operational. In addition, the American military is short of aeromedical evacuation capacity needed to move casualties within and out of the theater.

To deal with these problems, the armed services have begun a number of programs. However, it will be at least the end of the decade before enough of the deployable facilities and evacuation aircraft will be ready. The services do not expect to make up the staffing shortages without resort to a possibly infeasible draft of health care professionals.

Until and unless all of the desired programs are completed, and perhaps even then, America's military planners must seek other solutions. One such solution might be to use the medical facilities that exist in Europe. However, those facilities are several thousand miles away, requiring large amounts of aeromedical evacuation capacity and involving long delays until the casualties receive proper treatment. Also, these European facilities might not be available due to military or political factors. Another solution might be to have the Arab states of the Persian Gulf make the necessary peacetime arrangements to place portions of their hospital systems at the disposal of the American armed forces during war. Unfortunately, most of these nations possess systems that are inadequate for their own needs, let alone for handling large numbers of American casualties. And none of these states has been willing to make the necessary peacetime preparations for such an arrangement.

However, there is one nation in the Middle East that not only possesses a large, modern medical system, but has explicitly offered such assistance to the United States. Israel could, through a combination of its own existing hospitals and prepositioned American 'folding hospitals', provide about 4,000 beds—tripling the ready medical capacity of American forces in the Middle East. Furthermore, the geographic position of Israel would allow such facilities to support American forces in the Eastern Mediterranean and supplement the American medical system in Europe.

The major objection to such an arrangement with Israel is the assertion that it would antagonize Arab nations with which the United States wishes to be on friendly terms. This argument fails to note that the United States has been able to improve its relations with Arab nations while growing closer to Israel. In the case of Israeli medical support for American forces, it is clear that such a humanitarian move cannot be interpreted as hostile to the Arab world. In fact, by enhancing America's ability to defend the region against outside aggression, such an arrangement would serve the interests of the moderate Arab states.

By exploiting medical facilities in Israel, the United States can demonstrate the strength of its resolve to defend its interests in the Middle East. This demonstration in turn will deter potential aggressors, thus lessening the chances of a conflict. Most importantly, these arrangements with Israel would help to ensure that, should a conflict occur, everything possible will be done to protect the lives of American soldiers.

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Israeli Medical Support for the U.S. Armed Forces

Introduction

American military planners have encountered serious difficulties in trying to arrange adequate medical care for American servicemen in future wartime scenarios. Major shortages exist in physical facilities (hospitals), personnel, and aeromedical evacuation capabilities. To quote the Assistant Secretary of Defense (Health Affairs), "The harsh reality is that if the United States entered combat today, whether in the Far East, in Southwest Asia, or in Europe, we could not care for our casualties."[1]

The United States military would find it particularly difficult to provide reasonable levels of medical care for forces deployed in the Middle East/ Persian Gulf, because we do not have large-scale bases in the area. It is openly recognized that a medical support problem exists, though the exact dimensions of the shortage have never been made public. It is possible, however, to estimate the size of the medical facilities that would be required and available to support a large-scale deployment of forces to the Persian Gulf from Congressional testimony and other sources (see Appendix A). These indicate that the United States may now be able to provide only about half of the medical facilities needed in-theater to care for its sick and wounded during a conflict in this region.

The nearest out-of-theater facilities, attached to our NATO forces in Europe, are a considerable distance from the Persian Gulf. In addition, the medical resources in Europe may not be available to the Middle East command (now known as Central Command, which is chiefly a planning staff) either because of urgent need in the NATO theater or because of possible political circumstances.

Another choice might be to obtain support from one or more of the Arab states surrounding the Persian Gulf (the anticipated center of operations for the region). However, these nations, including those already cooperating in other arrangements with the United States, have not provided this type of support on a substantial scale. Even if these nations should decide to assist with medical support, the size and character of their medical systems would render their contribution of limited use.

A major alternative now being explored is to employ the medical support offered by Israel and to preposition U.S. equipment in Israel. In a crisis, Israel's hospital system is large enough to cover much of the anticipated shortage of hospital facilities. The quality of Israeli medical care is on a par with that of the United States. Moreover, the expertise of Israel's medical professionals in the field of battlefield medicine as well as in the diseases of the Middle East is unequalled. Furthermore, Israel's location makes its facilities available for contingencies involving American forces in the eastern Mediterranean and Europe as well as the Middle East.

The Problem

In order to properly understand the importance of Israeli medical care for American forces, it is necessary first to examine what medical resources the United States military can provide for its troops in the Middle East. Currently, according to the Pentagon, the United States armed forces ". . . do not have even enough deployable hospitals of any kind to provide even the emergency surgical treatment required to prepare the predicted numbers of patients for evacuation."[2]

A large-scale American deployment to the Middle East could involve as many as 300,000 troops, including six combat divisions, fourteen wings of tactical aircraft, three carrier battle groups, and supporting forces.[3] While the anticipated hospital needs of a force that size have not been released, it is likely that at least 17,000 hospital beds would be needed for a major conflict in the Persian Gulf (see Appendix A for a discussion of how this figure was calculated). A smaller force would probably require fewer beds, as would be the case during the early stages when a larger force was being transported to the region. Despite this, it is reasonable to project a need for 17,000 beds, since military planners must count on being able to provide a reasonable level of support for a 300,000 man force.

The armed services can provide at most half of the rapidly deployable medical facilities that would be needed to sustain a speedy, large-scale Central Command force buildup—8,000 beds out of the anticipated requirement of 17,000 or more beds.

To achieve this figure alone would require all of the Navy's amphibious assault helicopter carriers (LPHs) and amphibious assault ships (LHAs) (carrying a total of 3,600 beds), the Marine Rapidly Deployable Medical Facility stored on a cargo vessel off the island of Diego Garcia in the Indian Ocean (1,000 beds), its Army predecessor now stored in California (1,000 beds), all of the Air Force's Air Transportable Hospitals (576 beds), and another 1,800 beds prepositioned in Europe and the United States.

Actually it is unlikely that all 8,000 hospital beds could be deployed to the Middle East. Many of the shipboard hospitals will be unavailable, since about one-third of all ships of each type will be undergoing maintenance and overhaul at any one time in the United States. In any case, it is uncertain that the U.S. Navy would be able to gather together all these ships in time of crisis. Nor could the Air Force send all its Air Transportable Hospitals to Central Command, since to do so would leave the remaining air wings bereft of mobile hospital facilities. Many of the deployable hospitals in Europe and the United States have been in storage for a long time and are considered to be both unready and unsuitable for rapid deployment to the Middle East. Many of them require that the sites at which they are to be set up be provided with pre-existing shelters and the complete range of utility services. These conditions are present in Europe where it was originally envisioned that many of these hospitals would be used. Such pre-existing amenities simply do not exist in the Middle East. Thus it will be necessary to construct shelters and provide support services for those hospitals which are not wholly self-contained. This will increase the time needed to make these hospitals fully operational. Even the fully deployable hospitals (those possessing their own shelters, water purifiers, power sources, etc.) might still require weeks to become fully operational after arrival at their sites.[4]

In Vietnam, for example, the establishment of medical systems was leisurely and largely unopposed. Nevertheless, it often took much longer than expected to get new hospitals into use because of the many problems associated with the new environment.[5] The circumstances accompanying a Central Command deployment in the Middle East would be considerably more urgent than in Vietnam. The consequent dangers, confusion and problems of adaptions would therefore make both the deployment and achievement of full operational status even slower.

The U.S. military also anticipates difficulties in transporting the hospitals to the theater. The larger hospitals, such as the Army's general hospital, could require 100 C-141 and 30 C-5A sorties. At this time the American armed services have only 254 C-141s and 73 C-5As. Airlift in such quantities might be unavailable because of the other heavy demands on America's limited transport capabilities at the time. The combination of these and other factors could reduce the number of available beds by 2,000 or more.[6] This would leave a shortfall of over 10,000 beds.

Even if the hospitals were available, the U.S. military faces a serious shortage of medical and medical support personnel. The shortages are greatest in certain critical skill areas, such as surgeons. At this time all active, reserve, and national guard personnel and units together, are only able to provide 32 per cent of the surgeons needed during wartime.[7] According to the Assistant Secretary of Defense (Health Affairs), "An inadequate surgical capability is a 'war-stopper . . .'."[8] The shortage of nurses is estimated at over 30,000 and

the overall medical personnel shortage is close to 200,000.[9] These estimates envisage American involvement in a major war in Central Europe as well as in the Middle East. However, they indicate that the shortages of medical personnel are so great that they would seriously hamper a deployment in the Middle East while maintaining necessary levels of medical support elsewhere.

Effects of the Shortfall

The consequences of this shortfall of medical facilities could be devastating. If a conflict should occur, the shortage of properly functioning hospitals could mean many more deaths among American casualties than would otherwise be the case. According to one estimate, one of every four soldiers wounded in combat could die as a result of the shortage of medical care.[10] Losses on this scale could reduce morale of American soldiers, lowering their combat effectiveness. This shortage of adequate medical care could even increase the likelihood of a conflict by reducing the credibility of our deterrent. In a statement calling for additional procurement of deployable medical facilities, then-Commandant of the Marine Corps General Barrow stated, "I am confident that hospital ships and fleet hospitals in their own way can do as much to foster deterrence as do other higher visibility weapons systems."[11]

The scarcity of deployable hospitals will also aggravate the already acute shortage of aeromedical evacuation transport. The comparatively limited facilities of the forward deployable hospitals will force the evacuation, to fully equipped hospitals outside the theater, of most patients needing serious care. When large numbers of casualties are involved, even more aeromedical transport aircraft will be needed. Currently, the U.S. has only about 35 dedicated aeromedical evacuation aircraft.[12] Other transport aircraft can be used for this role, and in fact this was done in October 1983, when wounded Marines were flown from Beirut. However, the U.S. has a serious shortage of strategic and tactical airlift and using those planes for aeromedical transport would divert them from other important missions.

Programmed Solutions

The U.S. armed forces have adopted a number of programs to solve these problems. Providing adequate quantities of in-theater hospitals has received the most attention, reflected in a multi-service, multi-year acquisition program. The Navy has begun to acquire hospital ships (2,000 beds in two ships), and Fleet Hospitals (with 2,500 beds). The Air Force is procuring several Rapid Deployment Force hospitals (250 beds apiece), as well as

additional aeromedical staging facilities to support longer distance aeromedical evacuations. The Army has initiated procurement of 500 and 1,000 bed Mobile Army Surgical, Combat Zone, and Communications Zone Hospitals.

However, the procurement of these facilities will not solve the military medical problem. All these planned facilities will not be ready until almost the end of this decade, if then. That completion date assumes that the programs continue to be funded according to schedule and that no major problems arise. These hospital systems are also expensive. The cost of procuring these hospitals is about $49,000 per bed.[13] Some of the planned hospital facilities will be even more costly. For example, the hospital ships have a predicted acquisition/modification cost of $580 million ($290,000/bed).[14] There are also disagreements over specific acquisitions. For example, purchase of the hospital ships has been delayed for well over a year by debates over the type to be procured.[15] Finally, there is a constant and inevitable competition between the concrete, definable peacetime demands upon the military medical system and the uncertain, debatable, and costly wartime requirements that hopefully will never be needed.[16] Yet another difficulty is the competition for scarce medical resources from other theaters.

Another important problem is where the deployable hospitals will be prepositioned. Optimally, the hospitals would be stored near anticipated battle areas, but not so close to the frontlines as to risk their capture during an enemy advance. Unfortunately, none of the 'first-line' nations in Southwest Asia, which the United States has approached to assist in the preparations for Central Command, seems willing to preposition medical facilities on its territory. This means that hospitals will have to be stored outside the theater and that it will take days or even weeks to transport to the area of need. Only if combat forces are given a lower priority than hospitals could these medical facilities arrive earlier.

To relieve the shortage of aeromedical evacuation, the American military is depending upon a mix of solutions. It appears that the greatest increase in aeromedical transport will come from the wartime conversion of other transport aircraft. The military is also planning to procure additional dedicated aeromedical evacuation aircraft. Military planners, however, seem to be counting on increased in-theater hospital capacity to hold down the demand for aeromedical evacuation.

To provide adequate numbers of hospital personnel, three solutions have been adopted. The first, already well underway, has been an intense recruitment campaign to raise medical strength to authorized levels of qualified individuals, particularly for the reserves. Second, non-medical personnel are being retrained to fill needed slots. Third, preparations are being made for a draft of trained health care personnel, including women. Although this draft has been in the planning stages for some time, it has not yet been presented to

the Congress. It is unclear whether this draft would ever be enacted into law, or if it could survive anticipated legal challenges.[17]

Alternate Solutions

Until all of the planned military medical programs are completed, and perhaps even then, American military planners will have to seek additional solutions in order to provide adequate medical care for American servicemen in case of a conflict in the Middle East. One possible solution is to employ already existing American and European medical facilities in NATO to compensate in part for shortages in-theater. The use of such facilities, however, would depend upon their actually being available. For any of several reasons, that might not be the case. First, should a conflict spread to Europe, the facilities there would be fully utilized. Even if it only appeared that the conflict might spread to Europe, it would certainly be preferrable to keep most of the hospitals there free for a NATO contingency. Moreover, in some circumstances, America's NATO allies might be reluctant to allow use of facilities in their countries for fear of adverse reactions in the Middle East or Eastern Europe.

Even if these problems did not arise, the military medical facilities in Europe are roughly three thousand miles from the most likely areas of conflict in the Middle East (around the Persian Gulf). Flying casualties to Europe would increase the strain on the already limited aeromedical evacuation capacity. It could also mean a long, exhausting evacuation trip (lasting seven or more hours) that could further increase the mortality rate of the wounded evacuees. Finally, at that distance, aeromedical evacuation aircraft are at the limit of their range. This will require them to refuel enroute at a friendly airbase. This would further increase the evacuation time. It would also require the cooperation of one or more conveniently situated nations. This cooperation can no longer be taken for granted. For example, in September 1983, Greece and Turkey, American NATO allies, refused to allow American aircraft supporting the American deployment in Lebanon to land in their countries.[18] Put simply, the use of medical facilities in Europe does not provide an adequate solution.

Optimally, the United States should try to arrange for the nations of the Middle East to reserve portions of their medical systems for the use of Central Command. In fact, American forces are directed to use local facilities whenever possible by the current U.S. Defense Guidance, the policy document of the Department of Defense. It states "Host nation support is to be used to the maximum practical extent."[19]

However, few nations in the region possess adequate medical facilities for the United States armed forces. Most of them have fairly small medical

systems (see Appendix B), and many of their hospitals are antiquated. In any case, most of the systems can barely care for the needs of their own populations. Even Saudi Arabia, which has invested great sums of money in health care since 1973, possesses less than 7,000 hospital beds, only .72 per 1,000 people.

Although Iran and Iraq each have hospital systems with over 15,000 beds (.52 and 1.23 beds respectively per 1,000 people), their systems were already fully occupied tending to the needs of their populations even before the war between them broke out. Since then, their hospitals have been pushed to the limit of their capabilities. Moreover, Iraq is a formal ally of the Soviet Union and Iran has declared the United States to be one of its foremost enemies.

Egypt, which possesses by far the largest health care system in the Arab world (over 24,000 hospital beds) has to care for a population of over 38 million people with only .64 beds per 1,000 people. Although Egypt's medical system is considered to be one of the best in the Arab world, only two of its hospitals are regarded as adequate even for American tourists.[20]

In any case, none of the nations in Central Command's region of responsibility in the Middle East (which excludes Israel, Lebanon, Syria, and Turkey) have been willing to make the necessary peacetime preparations to provide wartime medical support. Many of the nations within the region are actively hostile to the United States (such as Afghanistan, Iran, and South Yemen), while others have not been willing to support the existence and purpose of Central Command (such as Saudi Arabia, Kuwait, and the United Arab Emirates).

Other nations, (Egypt, Sudan, Oman, Somalia, and Kenya) are assisting the United States in preparing for Central Command's possible deployment by providing certain types of conditional assistance in exchange for American aid. However, they have not made the necessary arrangements to provide medical assistance to the United States. Such arrangements cannot easily be established in the midst of a conflict. To be effective, they must be negotiated in detail during peacetime. These arrangements affect the standard operating procedures of the services and require a firm commitment from the host country to assist the United States in time of war. This type of commitment has not been forthcoming from any of the nations currently assisting Central Command.

The unpopularity of ties to the United States plagues Central Command's operational planning. In many cases, governments of the area friendly to the United States lack a popular base and are unstable. Often, a friendly regime's very association with the United States undermines its domestic support. Should such governments be overthrown, they are all too likely to be replaced by anti-American regimes. During a crisis requiring American intervention, even regimes wishing to remain close to the United States might be forced to repudiate promised assistance in order to remain in power. Thus, even if the

medical facilities were adequate and were actually offered, the reliability of such arrangements would be doubtful.

The Israeli Option

Israel is the one country of the Middle East which has repeatedly expressed a willingness to assist the United States by providing medical support to American armed forces. It formally agreed to such an undertaking in the 1981 Memorandum of Understanding on strategic cooperation (which, unfortunately, was later suspended by the United States). Israel has offered to perform such services several times since, most recently after the terrorist bombing of the Marine barracks in Beirut in October 1983. The concept of such cooperation is supported by a wide spectrum of political leaders and by the Israeli public, so practical arrangements could be built on a solid political foundation (unlike many Arab countries, where there is strong opposition to defense cooperation with the United States).

Israel is also the only country in the Middle East capable of providing medical support on a substantial scale. It has 18,000 beds in 106 hospitals[21]—more than all the 'friendly' Persian Gulf Arab states combined. Relative to population, Israel has roughly six times the capabilities of the Arab countries (4.72 beds per 1,000 people versus .64 in Egypt and .72 in Saudi Arabia, for example).[22] Its medical system is, of necessity, designed for wartime expansion. This capability was demonstrated in October 1973, when up to 9,000 hospital beds were readied for military use within eight hours of mobilization. Possibly Israel can mobilize an even larger number today.[23]

Of course, it cannot be assumed that all of the theoretically available beds could be provided to the American armed forces. A complete mobilization could be achieved only by imposing a considerable strain on the facilities, the civilian population of Israel, and particularly on the medical personnel involved. Nor could the possibility that Israel might be attacked while providing such support be excluded. Israel would have to reserve a portion of its medical capacity for its own use.

Despite these difficulties, it should be possible to provide and preposition medical facilities in Israel that would approximately triple the medical resources currently available to Central Command in the region. This could be accomplished through a series of measures using existing Israeli facilities, supplemented by American resources, resulting in a considerable capability in place in a relatively short period of time. First, the Israeli hospital system has, on the average, 1,000 vacant beds[24] which could be made available immediately. Second, Israel might agree to provide a fraction (e.g. 25%) of its sustained mobilization capability, for an additional 1,500 beds. Third, to

reduce reliance on some of the austere measures Israel uses to expand wartime capacity for its own casualties (such as the placement of temporary beds in large rooms), currently vacant hospital buildings, such as the former Tel-Hashomer facility, could be outfitted with perhaps 500 beds as facilities exclusively for American use. Fourth, the United States could preposition in Israel a "folding" deployable hospital with 1,000 beds, like that currently stored at Diego Garcia. The combination of such near-term, cost-effective solutions would provide Central Command with 4,000 extra beds in the region, going a long way to correct the shortfall of current capabilities.

Beyond its size, Israel's medical system is also modern. Over 80 per cent of the system has been constructed in the last 35 years.[25] Hospital care is on a par with that provided in the United States (not the case in other Middle Eastern states). Most of the health care personnel speak English. In addition, many of the physicians have trained, studied, or practiced in the United States, and are familiar with the latest procedures and treatments in their respective fields. Also, because of Israel's unfortunate war experiences, virtually all Israeli health personnel are familiar with the problems and procedures encountered in modern military medicine. This experience represents an invaluable asset. Israeli hospitals possess special units to treat virtually every type of wound to be found on the modern battlefield.

The Israeli medical system would be particularly useful in treating troops stricken with disease. Israeli doctors are familiar with almost every disease to be found in the Middle East. This familiarity stems from the need to deal with the wide variety of illnesses brought to Israel by two generations of immigrants from Middle Eastern countries. Experience in past wars has shown that a majority of American troops admitted to hospitals were suffering from exposure to indigenous diseases. In fact, during some years of the Korean War about two-thirds of the hospital admissions were for disease. In Vietnam the disease admissions never dropped below 60% of the total. Since Israeli doctors are likely to be more familiar with the local diseases than their American counterparts, the sick soldiers would get superior treatment in Israel. Also, since the troops stricken by disease would most likely be capable of returning to their units in a comparatively short time, it would be better to keep them within the theater. If they are evacuated out of the theater it would be far more difficult to return them to their units. It was for this reason that the U.S. expanded its hospital facilities for disease victims during the Vietnam war. By removing them from front-line hospitals to Israel, more of those facilities would be available for combat casualties needing more urgent and timely care.

The Israeli health care system also has sophisticated rehabilitation facilities for the severely wounded. Though the American military will probably prefer to fly such casualties back to the United States, cooperation between the two

countries would enable both of them to improve their rehabilitation procedures and facilities.

Israel's geographical position also enables her facilities to directly support American forces operating in the Eastern Mediterranean, or to treat casualties from a conflict in Europe. Since Israel is only about five to six hours flight time from Central Europe, as opposed to the 11 hour flight from Central Europe to the eastern United States, its hospitals could be a useful supplement to the American hospitals in Europe. This would be most valuable when caring for casualties who could be returned to duty after a few weeks of treatment. In addition, the shorter distance to hospitals in Israel would dramatically reduce the demand for aeromedical evacuation aircraft.

Israel is also well-placed to serve as a prepositioning site for hospitals intended for use in forward areas, either in Europe or in the Middle East. Israel is only about two hours flight time from the Persian Gulf, as compared to seven hours from Diego Garcia to the Persian Gulf. The security that Israel's military prowess brings to its territory can protect prepositioned equipment from guerrilla or terrorist attacks. In other countries in the region, a comparable level of security might require the peacetime stationing of American combat units, a possibility that is anathema to all of America's other supporters in the region. This same security can guarantee the safety of American soldiers convalescing in Israeli hospitals during wartime against attacks from guerrilla forces or terrorists. As a result the United States would not have to use scarce combat units to protect hospitals from those who might not respect the sanctity of those hospitals.

The greatest advantage to the United States of using the Israeli health care system for Central Command is that it is already in place and fully operational. It would not be necessary to wait weeks for hospitals to arrive and be established. The whole system could be ready to operate in a matter of hours. Nor would it require the diversion from other tasks of precious mobility assets. The problems to be expected when systems are taken out of storage and sent into the field would be minimized. Because the medicines would be part of a constantly rotated stock, needing only augmentation, there would be no worry about shelf life. The shortage of personnel that could severely hamper American military medicine would be less of a problem if Israel's medical system were used, since there would be less need to worry about staffing hospitals.

For the United States to take full advantage of Israeli medical facilities, arrangements must be worked out in peacetime. Adoption of standard operating procedures that will make possible such medical cooperation must be done before a crisis takes place. It is not possible to rely on *ad hoc* agreements made at the last moment. This is the lesson to be drawn from the failure of the United States to use Israeli medical facilities after the terrorist bombing of the

Marine headquarters in Beirut. Unless American medical personnel are familiar with Israeli facilities, and have developed procedures to take advantage of Israeli medicine, the United States military cannot expect that American doctors will send wounded and sick troops to unknown facilities with unfamiliar capabilities.

But, it will not be possible to get maximum benefit from available Israeli facilities without some effort on the part of the United States. For the American military to take advantage of Israel's mobilization hospital capacity, even in part, the United States would have to ensure that proper equipment and adequate quarters would be available for incoming casualties. In addition, the United States should anticipate that American medical personnel would work side by side with Israelis to staff these facilities. Further, the United States should make Israel responsible for setting up any prepositioned hospitals stored in that country. Since such hospitals could be erected at their storage sites, or very near, they could be equipped with amenities not available to more austerely equipped stored hospitals elsewhere. Such hospitals stored in Israel would still be deployable to other theaters should the need arise.

Arab Objections

The major objection to an arrangement allowing the United States military to use Israeli medical facilities is the belief that such an accord might antagonize the Arab nations friendly to the United States. This objection fails to acknowledge, however, that while the United States has grown closer to Israel since 1967, and especially so since 1973, it has at the same time managed to build much closer relationships with Arab nations like Egypt, Oman, Somalia, and Sudan. In fact, in some cases the Israeli-American tie has played an important part in making closer relations with certain Arab countries possible. It was Israel's decision to relinquish the Sinai Peninsula to Egypt, with its airfields, strategic depth, and valuable oil fields, that enabled America to cement ties with Egypt. It was an Israeli threat to attack Syria that enabled the United States to halt the Syrian invasion of Jordan in 1970, thus preventing Jordan from falling into the hands of anti-American forces.

An arrangement to use Israeli medical support could not possibly be interpreted as a threat to any Arab country. Its clear humanitarian intent and its multi-theater positioning remove it from the realm of Arab-Israeli issues. In fact, such an agreement will help the United States defend the Arab world without having to increase its profile there, a phenomenon that should be welcomed by many Arab supporters of America. Ironically, Arabs from countries hostile to Israel sometimes choose to be treated in Israeli hospitals, so Arab objections to such arrangements between Israel and the United States can be given less weight.

Conclusion

Central Command will certainly be able to deploy its forces in the Middle East even if Israeli medical facilities are not utilized. Nor is it likely that an American victory in battle will depend on having such an arrangement. But at the same time, a failure to use Israel's hospitals will certainly ensure that in the event of a conflict in the region, American lives will be lost which otherwise could have been saved. Also, international perceptions of real American intentions and capabilities will be affected. By exploiting Israel's medical facilities, America helps make it clear that it is serious about defending the Middle East. This will make potential aggressors less likely to test American resolve. In this sense, arranging to use Israeli medical facilities has benefits far beyond caring for the American soldiers sent to the region. But should deterrence fail, at least America's soldiers, their families, and their countrymen will know that their government is taking all possible steps to ensure that they will return home alive and well.

Appendix A

The Hospital Bed Shortage

According to testimony presented to Congress by John Beary III, M.D., Acting Assistant Secretary of Defense (Health Affairs) (in Hearings Before a Subcommittee of the Committee on Appropriations, United States House of Representatives, *Department of Defense Appropriations for 1983,* part 9, pp. 434-435), the Navy (including the Marines) and the Air Force were to procure deployable hospitals totaling 2,000 beds (the Air Force was to procure 500 beds, the Navy and Marines the rest) during Fiscal Year 1983 for the primary use of Central Command in the Middle East. The Army was also procuring a certain number of beds for the same purposes, but the figure was not given. The total procurement of beds for Central Command for that Fiscal Year (1,500 Navy/Marine beds, 500 Air Force beds, and an unknown number of Army beds) amounted to 11.8 percent of the number believed required. Assuming that the Army bought no beds for use in the Middle East, using this data a need for 17,000 beds is established to support in-theater operations in the Middle East. If the Army's hospital purchases for Central Command had been 1,000 beds, the anticipated total hospital bed need would be over 25,000 beds.

A requirement of 17,000 beds is consistent with experience of hospital admissions in previous conflicts. Expected daily hospital admissions rates can be calculated using United States Army data given in its staff officers planning manual, FM 101-10-1 (Department of the Army, 1977; Chapter 5). According to this source (pp. 5-24 to 5-28, Table 5-28g), hospitalization rates for defensive operations in hot plains are 11.24 men per 1,000 for infantry, 9.88 men per 1,000 for mechanized units, and 4.70 men per 1,000 for non-divisional forces. It is expected that a 300,000 man Central Command force would include 91,000 men in infantry divisions (three Army divisions with 15,000 men apiece and two Marine divisions with 23,000 men apiece), 15,000 men in one Army mechanized division, and 194,000 men in non-divisional units of the Army or with the Navy or Air Force contingents. Using these figures, hospital admissions should total about 2,100 per day.

These calculations are based on admissions rates for a conflict fought thirty years ago, the Korean War. This was the last war involving large numbers of American soldiers fighting conventionally against a non-guerrilla enemy. Recent experience suggests, however, that increases in firepower, resulting in part from the appearance of new weapons, will cause greater numbers of casualties on today's battlefield than on those of the past.

Should the United States send a force smaller than 300,000 to the Middle East, the size of the hospital facilities needed to treat the casualties might be fewer than the 17,000 estimated above. According to one press account, even a smaller force might still require a fairly large number of hospital beds to treat the sick and wounded. According to this story ("RDF predicted to Have High Casualty Rate," *The Washington Post,* August 7, 1981, p. C-15), a 100,000 man deployment might need 10,000 beds in-theater and a 130,000 man force might need more than 15,000 beds.

Appendix B

Sizes of Some Hospital Systems

Country	# Hospital Beds	# Hospital Beds per 1,000 people
Bahrain	572	2.16
Egypt	24,429	.64
Iran	16,705	.52
Iraq	15,159	1.23
Israel	18,804	4.72
Jordan	2,446	1.22
Kenya	17,896	1.29
Kuwait	1,873	1.66
North Yemen	2,799	.05
Oman	805	.99
Qatar	661	7.69
Saudi Arabia	6,888	.72
Somalia	5,163	1.76
South Yemen	1,858	1.06
Sudan	8,381	.49
Syria	4,798	.61
UAE	682	2.84
United States	1,365,626	6.30

Source: Adapted from *World Health Organization Statistic 1980,* Hospital Establishments, and *Statistical Abstract of Israel 1981.*
The information given in this table should be treated with caution.

FOOTNOTES

1. Testimony of John H. Moxley III, M.D., Assistant Secretary of Defense (Health Affairs), Hearings Before a Subcommittee of the Committee on Appropriations, United States House of Representatives, *Department of Defense Appropriations for 1982,* part 4, p. 596.
2. *Ibid.*
3. Figures from Defense Marketing Service, *Rapid Deployment Force,* 1980, extracts from the Joint Chiefs of Staff *RDJTF Capability Study,* January 1981, assorted volumes of testimony before Congress, and articles in a variety of periodicals.
4. Hearings Before a Subcommittee of the Committee on Appropriations, United States House of Representatives, *Department of Defense Appropriations for 1983,* part 9, pp. 613-616.
5. Major-General Spurgeon Neel, *Medical Support 1965-1970,* Department of the Army, 1973.
6. This assumes four out of twelve LPHs and LPAs out of service (for a loss of 4 × 300 = 1,200 beds) and presumed undeployability of one of the 500 bed hospitals either in Europe or the United States due to one unforeseen event or another (missing sections, etc.) and the availability of only half of the Air Force's Air Transportable Hospitals (a loss of 288 beds). The total loss would be just under 2,000 beds.
7. Calculated from the testimony of John Beary III, M.D., in Hearings Before a Subcommittee of the Committee on Appropriations, United States House of Representatives, *Department of Defense Appropriations for 1983,* part 9, p. 437.
8. *Ibid.*
9. United States General Accounting Office, *Will There Be Enough Trained Medical Personnel In Case Of War?,* June 24, 1981, p. 55.
10. Captain Michael B. Parini, "Air Force Medicine on the Move," *Air Force Magazine,* October 1983, p. 67.
11. Letter from General Barrow to Senator Denton as quoted by John Beary III, M.D., Acting Assistant Secretary of Defense (Health Affairs), in testimony in Hearings Before a Subcommittee of the Committee on Appropriations, United States House of Representatives, *Department of Defense Appropriations for 1983,* part 9, p. 439.
12. Calculated from Mark Hewish, Bill Sweetman, Joseph C. Wheeler, and Bill Gunston, *Air Forces of the World,* Simon and Schuster, 1979, pp. 25-41, and Bill Gunston, editor, *The Encyclopedia of World Air Power,* Crescent Press, 1981, p. 243.
13. This is for the Navy's fully deployable Fleet Hospitals. Hearings Before a Subcommittee of the Committee on Appropriations, United States House of Representatives, *Department of Defense Appropriations for 1983,* part 9, pp. 539-540.
14. *Ibid.*, p. 573.
15. The debate centered on whether or not the World War II era hospital ship *Sanctuary* could be modernized, and if not, whether the liner *United States* or some other ship(s) should be converted to the role. It was eventually decided to acquire and modify two cargo ships.
16. Although the declared primary mission of the military medical system is to prepare for and perform the care of wartime casualties (see Hearings Before a Subcommittee of the Committee on Appropriations, United States House of Representatives, *Department of Defense Appropriations for 1982,* part 4, p. 595), an examination of budget expenditures shows that

the peacetime care of military personnel, their dependents, and the retired military community commands the lion's share of the resources (*ibid.*, pp. 589-594). For example, 69 per cent of those cared for by the Air Force's medical system are dependents and retired personnel (Captain Michael D. Parini, "Air Force Medicine on the Move," *Air Force Magazine*, October 1983, p. 67). This is not necessarily wrong, as the United States has been essentially at peace throughout the greater part of its existence and hopes to remain so in the future. If peace is maintained, and the deterrent value of medical preparations is ignored, then expenditures on preparations for war might be perceived as having been wasteful. Such a perception, while plausible, is incorrect.

17. Henry David Rosen, "Pentagon seeking to Register Health Care Women for Draft," *The Washington Post*, September 1, 1983, p. A2.
18. *U.S. News and World Report*, October 2, 1983; *Jerusalem Post*, September 28, 1983, p. 1; Reuters news reports of September 20 and September 27, 1983.
19. The 1984-1988 Defense Guidance, as quoted in testimony Before a Subcommittee of the Committee on Appropriations, United States House of Representatives, *Department of Defense Appropriations for 1983*, part 6, p. 50.
20. For instance, see David Lamb, "Egypt Lifts Veil on U.S. Maneuvers," *Los Angeles Times*, August 10, 1983, p. A7.
21. Figures calculated from the *Statistical Abstract of Israel 1981*, p. 675.
22. *World Health Organization Statistic 1980*, pp. 61-63, 123.
23. These calculations were made using the figures given in Lechaim Naggan, "Medical planning for disaster in Israel," *Injury: the British Journal of Accident Surgery*, vol. 7, no. 4, p. 281 together with the figure for hospital beds given in the *Statistical Abstract of Israel 1981*, p. 675. According to Naggan, "8 hours after the alert and 4 hours after the war started, most hospitals had increased their regular bed capacity by 40-60 per cent, and 60-80 per cent of these beds were vacant, ready to admit battle casualties." For the purposes of this study, it is assumed that it will only be possible to expand capacity by 40 percent, and that only 60 percent of the total capacity will be vacant. This means that the total number of general hospital beds will be expanded from about 11,000 to about 15,400, and that roughly 9,240 of these beds would be vacant within hours of a crisis. The actual number of beds made available probably would be much higher given the conservative nature of these calculations.
24. *Statistical Abstract of Israel 1982*, p. 686.
25. Calculated from the *Statistical Abstract of Israel 1981*, p. 675.

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