ISRAEL'S VALUE TO THE U.S.

by

Steven L. Spiegel

1/22/85

ISRAEL'S VALUE TO THE U.S.

by

Steven L. Spiegel

TABLE OF CONTENTS

Preface

In early 1982, Guilford Glazer came to me with a variety of questions. Does the present level of financial aid the United States contributes to Israel constitute a fair sharing of the burden for the defense of the Middle East? What tangible gains has the United States realized from the U.S.-Israeli relationship?

Glazer's penetrating and repeated probes encouraged me to embark on the research project, whose results follow. I am grateful to his continual criticisms and insights without which the paper could not have been completed in its present form.

April 1984
Los Angeles.

ISRAEL'S VALUE TO THE U.S.

by

Steven L. Spiegel

Executive Summary

Despite many myths to the contrary in the American-Israeli relationship, Israel more than pays its way. The presence of this vibrant and trustworthy ally in the Middle East has saved the United States at least $125.6 billion since the country's birth in 1948--an average of approximately $3.5 billion per year. These benefits to the United States have occurred at an accelerated pace in recent years. In the 1980's the savings actually amounted to approximately $10 billion annually. These figures dwarf the aid which the United States has extended to Israel.

Israel has fulfilled the exact responsibilities America has had to shoulder in other regions. Israel's armed forces are a powerful deterrent to the activities of the Soviet Union and to Soviet clients in the area. Unlike Europe and the Far East, American troops are not needed in large numbers in the Middle East to protect the peace and defend Western interests. Without Israel, the United States would surely have had to establish major bases in this highly volitile area over the last three decades and would likely have needed to intervene militarily--perhaps even on the scale of Korea or Vietnam.

The Lebanon experience illustrates dramatically the

terrible and inestimable human cost which a Middle East intervention could have exacted in American blood and treasure. This analysis deals only with dollars and does not presume to place a value on the countless American lives saved by Israel's contribution to U.S. security. Such considerations can only be understood in the heart of the reader.

Israel's service to the United States can also be illustrated by its intelligence gathering capabilities which are renowned. Her military experiences and the Russian equipment Israel captured have served to enhance our research and development capacities and the refinement of our armed forces. Israel's forces are already critical in the Mediterranean and Israel's proven military prowess causes foreign countries to select U.S. arms over competitors.

Since Israel has made enormous contributions to the United States in the past, it is time to recognize that there is a potential for even greater benefits to the United States through more intricate areas of cooperation. U.S. defense requirements in the area will increase dramatically if Israel is forced to reduce her own defense capacities for lack of adequate funds.

ISRAEL'S VALUE TO THE U.S.*

by

Steven L. Spiegel

Introduction

In 1975 the Israeli Army High Command began receiving reports that something was wrong with most of the armor-piercing ammunition its troops were using in training exercises. The crucial shells were not penetrating the tanks they were supposed to be destroying. Upon investigation the High Command discovered that Israeli manufactured shells were performing adequately, but the majority of Israeli shells came from the United States and most of these were not. Incredulous American officials were contacted and ultimately convinced that, indeed, the American-manufactured munitions were not functioning properly. Finally, U.S. experts discovered that adjustments were required in most American shells that were in stockpile worldwide and immediately set about correcting the problem.

The process, however, took several months until the new shells could be supplied. During this period the Israelis had no effective method of stopping Arab tanks had an attack occurred, as it had just two short years earlier. The United

---

*There are several people without whom this manuscript would not have been possible. In the early stages David Arfin, Jenny Morrison, and David Schultz all contributed their time and research skills. Sandy Smith edited this paper as well as several other versions. Cliff Gladstein verified my facts, dug for more information, and provided many hours on the word processor. To all of these individuals I owe my thanks.

States would have been similarly inhibited if a Warsaw Pact attack had occurred in Europe or a crisis had emerged in Korea. None of these forces could have faced an enemy onslaught. Only the Israelis had discovered the problem in the first place.

One topic raised frequently in discussing American policy toward the Middle East is the question of whether and how Israel serves U.S. interests. As demonstrated by the example provided above, the question should not be does Israel serve U.S. interests, but what is the extent of Israel's importance to American security. Although doubts continue to linger among some analysts, we have tried to resolve some of the uncertainties in the debate by applying quantitative values to Israel's services. This approach is designed to correct inaccuracies conveyed by concentrating on more easily quantifiable debits such as economic and military assistance. The resulting analysis of services has been divided into categories according to an increasing level of abstraction and speculation.

CONCRETE SERVICES AND SAVINGS

I. Intelligence--Savings of $3.5 Billion

Israeli intelligence, which is widely regarded as the best in the Middle East, has consistently demonstrated its prowess and daring. American intelligence services have cooperated with their Israeli couterparts for over three decades. Shared information has enabled the U.S. to save on training, deploying fewer intelligence operatives and in utilizing fewer facilities.

Israel's intelligence activities are legendary. Before 1967, for example, the Israelis successfully infiltrated one of its members into a high-ranking position with the Syrian government. Israeli agents also managed to convince an Iraqi air force officer to fly his never-studied-in-the-West MIG 21 to Israel. The Egyptian defense industry was also penetrated by the Israelis, as were the upper echelons of the Palestine Liberation Organization.[1] The Israelis are believed, and with good reason, to have eyes and ears in most every Arab country.

Israeli intelligence has, on numerous occasions, assisted the U.S. by warning America's Arab allies of subversive actions. In the summer of 1977 the recently elected Begin government warned Anwar Sadat of an effort by Libyan-backed conspirators to overthrow him. The Israelis have also provided repeated secret warnings to the Saudis.[1a] In a mini-crisis in early 1983 over a Libyan-inspired threat to the Sudanese government, the intelligence sources on which the

U.S. relied to mobilize a counteroffensive were predominantly Israeli.

Even prior to 1967, Israeli intelligence was closely tied to the CIA, particularly because of the interest of a key CIA figure, James Angleton, in information sharing. Israel's Mossad was the primary source for the CIA of intelligence about the Arab states. The Israelis also provided U.S. intelligence with crucial information on Russian activities not only in the Middle East, but in areas under Soviet control as well.[2] Mossad, for example, gained a copy of the famous Khrushchev speech to the Soviet Central Committee in 1956. Israel's intelligence capabilities in the Eastern Bloc were viewed as "vastly superior" to those of the CIA. Beginning in 1953-54, the Dulles brothers operated "joint activities" with Mossad in order to try to liberate the people living behind the Iron Curtain. Israel's intelligence assessments "greatly influenced" the Dulles brothers' understanding of Soviet activities in the Middle East. Consequently, close cooperation with the Israelis was viewed as an integral part of "stemming the spread of communism worldwide."[3]

The CIA and Israel's Mossad worked together to monitor Soviet activities and developments in their satellites. One of his former aides quotes Allen Dulles as saying, during an evaluation of "amateur" actions of Arab intelligence services, that Israel's intelligence operation was the "only one on which we can count. Not against the Arabs, of course, but against our common target, the Russians." Indeed, as the

CIA's capabilities in the Middle East waned with the coming of radical-nationalist revolutions in Egypt, Syria and Iraq, the American agency progressively relied heavily on the Israelis.[4]

Despite the continued popularity of cloak and dagger tales, in the 1980s intelligence gathered by electronic devices rather than human spies has become central to the collection of intelligence data. Were it not for the Israeli coverage of this critical region, the U.S. would have to increase its expenses substantially. The Israelis have become not only a provider of information, but also an important developer of instruments designed for the collection of intelligence data. They have helped devise intelligence systems with American corporations like Boeing, Sylvania, RCA, E-Systems, and Beechcraft. In each of these cases Israeli sponsorship saves dollars because the Israelis assume the development costs, after which the U.S. either adopts the already refined product, or benefits from the information acquired. For example, the Israelis spent over $100 million developing a small plane, "the GuardRail V," saving the U.S. Army $70 million in the process. On some systems the Israeli contribution to their own intelligence gathering capabilities has implications for U.S. operations in other regions. An intelligence balloon developed by Israel for over $100 million will now be used by the U.S. to monitor activities inside Cuba. Indeed, one expert estimates that the U.S. intelligence community is using 60-70 percent of Israel's

high technology intelligence equipment.[5]

Evaluation

How are we to estimate the value of Israeli services to the United States? Since the U.S., like all governments, keeps a tight lid on the costs of intelligence, estimating the value of Israel's contribution is extremely difficult. Evidence is fragmentary. For example, the National Security Agency, the super secret organization responsible for deciphering codes, is the most expensive component of Washington's intelligence community. Recent estimates suggest that its budget is $10-$15 billion a year. A figure published in 1974 suggested that the more familiar CIA's annual budget was $750 million, which would translate to about $1.5 billion in 1983 dollars.[6] According to published accounts, the Israelis have also been involved with the Defense Department's intelligence agencies. (The Defense Intelligence [DIA] budget alone is estimated to be in the range of $180-365 million in constant 1982 dollars. This does not include the intelligence budgets of the armed services).[7]

If we take the lower figure of the NSA estimate ($10 billion) and regard it as the figure for the entire intelligence community, we would undoubtedly be erring on too low an estimate. Given the wide range of intelligence activities in which Israel has engaged, it certainly seems reasonable to suggest that these services have yielded a contribution equivalent to one percent of the $10 billion

annual budget for 35 years--yielding a figure of $3.5 billion in Israeli savings. The estimate is extremely rough yet, given the known impressiveness of Israel's services and the lengthy period of their involvement in information sharing with the U.S., the figure of $3.5 billion is an understatement of Israel's utility in this sphere.

II. The Global Conventional Military Sphere

Introduction

The most concrete arena in which Israel's strategic value to the United States can be ascertained is, ironically, less directly connected to the Middle East. Israel is the only pro-Western country that can provide advice to the U.S. conventional defense program based on combat experience with American weapons against Soviet arms. Thanks to Israel's advanced technological capacity and its possession of captured Soviet weaponry, it can also provide practical assessments of arms made in the Soviet bloc for use against the West. Since the Arabs do not yet possess the capability to evaluate adequately the significance of each war's developments, the U.S. has a basic advantage over the Soviets in being able to formulate its own defenses based on real rather than hypothetical experiences. Without Israel the U.S. armed forces would perennially be in the position of a major automobile manufacturer which was unable to test its new cars under actual driving conditions.

The persistent Arab-Israeli conflict, combined with the country's small population, creates an environment in which many of the most talented and able personnel in Israel are compelled to enter the military. The need for reserves provides an additional large pool of civilian scientists, mechanics, and engineers who are acquainted with the technical requirements of the military. Because of the pressures

of living with hostile neighbors, the Israeli public supports the military and its needs to an extent not found in other contemporary Western societies. Israel is the only Western country where military requirements are seen as absolutely necessary by all strata of society. Consequently, there is a degree of cooperation between the military, civilian, scientific and academic communities which is unparalleled in the West. This situation dramatically improves Israel's technological capacities--especially because a high percentage of Israel's civilians have military experience. Many in the defense-scientific area work on improving weapons that they will later use in combat.

It is obviously not in American or Israeli interest for periodic Middle East wars to occur. However, once conflicts have been initiated and battles have been fought, there is no reason--despite an aversion to war in both countries--not to admit the value for the U.S. in terms of the enhanced credibility of American arms, the lessons learned, and the loss of credibility of Soviet weapons.

This long-ignored area of the American-Israeli relationship is becoming more important as Israel follows the U.S. into the era of advanced technological weaponry and as the U.S. rediscovers the importance of non-nuclear forces. Depite the disparity in the two countries' size and needs, Israel's military exploits partially compensate for our military's lack of conventional combat experience. It is Israel which is developing the technical innovations and

tactics to deal with the challenges posed by the latest Russian weaponry. The Israelis cannot contribute to such areas as strategic weapons systems or aircraft carrier technology, but of the three locations where the Eastern and Western blocs confront one another (Israel v. Syria; South v. North Korea; West v. East Europe), Israel is the only country to repeatedly and recently fight on the front line the authentic doctrine, electronics, aircraft and artillery of the Soviet Union. The lessons learned cannot be purchased, developed or simulated. The advantage Israel offers is not only data, but experience, technique and tactics which--with the rapidly changing technology of modern warfare--cannot be gained elsewhere. These lessons are available without a single American casualty.

1. Tactical Warfare Research and Development - $29.9 Billion

Services

In an era when skyrocketing defense expenditures are creating huge deficits, Israeli experiences, know-how, intelligence and cooperation offer improvements in the quality and efficiency of U.S. arms developments at reduced costs. For example, the Israelis have provided crucial information about the latest Soviet weaponry, especially because much of the equipment recently gained by Damascus from Moscow is similar to that possessed by the Warsaw Pact countries and the Russians themselves. One of the more spectacular items Israel gained from the Egyptians in the 1969-70 War of Attrition incuded an entire Russian radar station. The U.S. defense community learned many lessons from Israel's experiences in the 1973 war. Since weapons systems are designed according to performance objectives, Israeli military experiences reinforce and often contribute to research and development activities in the United States. In 1975, Dr. Malcolm Currie, then Director of Defense Research and Engineering, testified before Congress:

> "The war has provided much evidence which helps to clarify our perspective on our own R & D programs.. ..For the most part, the war confirms that the United States has been on the right track in developing and acquiring weapons. In some cases, the war has clarified our understanding, and this has led...to acceleration of certain programs or assignment of high priority to certain characteristics in ongoing programs."[8]

In this manner the Israeli experience in the 1973 war highlighted the importance of anti-tank systems, air-to-air combat (the continued role of dogfighting in aerial conflict), and electronic jammers.[9]

Similarly, the Israelis helped the U.S. to acquire knowledge about Soviet equipment and how American weapons performed in combat with that equipment. For example, initially the Israelis were vulnerable to some of the new Soviet surface-to-air missiles used by the Arabs. This situation, although hard on the Israelis, became a tactical bonanza for the Americans:

> "The Israelis, using our equipment, learned to deal with those systems....The intelligence we have obtained from that conflict will enable us to modify our electronic jammers and so on to take better account of what we know about that surface-to-air missile."[10]

The myriad of specific details shared over the years have been equally important--especially during the U.S. involvement in southeast Asia.

In the 1982 Lebanon War the Israelis were able to inspect electronic equipment from the remains of several MIG-23s and one MIG-25 which had been shot down, thereby providing the basis for adjusting operational tactics and improving American weaponry to counter equipment of Soviet design.[11] The Israelis also devised a method of destroying the T-72 tank, the Soviet's main battle tank which is the principal weapon on which the Warsaw Pact relies for an offensive in Europe and which was hitherto considered difficult, at best, to penetrate. They did so by the relatively simple method of developing a modified 105mm shell which pierced the tank's

composite armor. Developing means of protecting their own men and of penetrating Soviet tanks has been one of the important lessons to emerge from Israel's wars. After the Yom Kippur War, six Soviet T-62s were sent to the United States--one to be disassembled, one sent to Fort Knox, another to a location near Washington, and three to be used as "aggressors" for exercises. Israel's recent innovations and successes in anti-tank weaponry prompted the armies of several Western states--Canada, West Germany, Denmark, Sweden and Switzerland--to adopt the Israeli ammunition.[12]

In Europe military experts have identified three other major Israeli innovations from the Lebanon War which will assist NATO commanders in the continent's defense. The first deals with packages of add-on armor which are attached to tanks and reduce the vulnerability of the vehicle to anti-tank missile and rocket fire. The second innovation is the addition of a wire mesh to the rear of tank turrets to protect the vehicle from anti-tank missiles fired by infantry concealed behind the tank. Finally, and most importantly, the Lebanon War marks the first time that anti-tank helicopters were deployed for extensive use in combat. This use has greatly encouraged NATO defense planners, who are designing a 4.5 ton anti-tank helicopter for mass deployment in the 1990s along the Russian front, armed with a "fire and forget" missile with a range of 4,000 meters. This weapon is being developed to compensate for the lack of all-weather and day/night capabilities, some of the deficiencies in anti-tank

helicopters discovered by the Israelis during the Lebanese engagement.[13]

As illustrated by these cases, Israeli experiences affect the timing and direction of large sections of the conventional research and development programs of the U.S.--thereby reducing needless expenditure on false or faulty programs. By demonstrating the relative utility or weaknesses of established weapons and revealing the latest Russian innovations, years are saved for the United States by enabling unnecessary programs to be terminated early and others to be initiated long before their importance might have been realized. Thus the Israeli experience in the 1967 war strengthened the case for a highly maneuverable air superiority fighter, helping the development of the F-16. The 1973 war highlighted the new significance of electronic warfare--leading to intensified development of such weapons as air-to-ground, anti-ship, ground-to-air missiles and electronic countermeasures. Both wars, in retrospect, demonstrated the continued viability of tanks, whose future utility many had questioned. For example, Israeli experiences significantly influenced the development of the M-1, the latest American main battle tank (MBT).[14]

The 1982 war also revealed the utility of remotely piloted vehicles (RPV). The Israelis had been the first in the world to deploy RPVs as an anti-missile system operationally and successfully. They thereby proved that intelligence could be gained during battle more cost-effectively and at a

dramatically lower risk to the lives of airmen.

By contrast, in 1976 the American RPV program was almost terminated because of early vehicle losses. Originally, the RPV was developed in the U.S. as an expendable warplane that would not need a pilot. Experts predicted unmanned aircraft capable of "dog-fighting" by remote control and "carrying out strikes in support of ground troops with pinpoint precision."[15] Out of the 986 RPVs once built, however, only 33 still existed in the U.S. by 1982, and all of these were in storage. Yet Israel's use of the mini-RPV in Lebanon has renewed U.S. interest in its own RPV programs. In fact, the most advanced American model, the YMQM 105, only recently completed its first successful flight test. Specialists agree that the U.S. can learn from the Israeli usage of these vehicles. A sense of urgency also surrounds the development of an effective American RPV, as recent testimony indicates the Soviet Union is already into its second generation of pilotless drone development.[16]

In addition to its having been battle tested, the Israeli mini-RPV is far cheaper than the Aquila, whose development cost, once estimated at $350 million, is now anticipated to cost the American taxpayer $2.17 billion. In stark contrast to this over 600% cost over-run, the Tadiran Mastiff cost about $15 million to develop. The Israel Aircraft Industries' Scout is priced at less than $5 million for a system of five mini-RPVs, including spare parts and training.[17] Obviously, the U.S. RPV, when completed, will be

far more expensive.

Of greatest significance is not Israel's development of the RPV, but the unique way it was put to use. It is evident that the U.S. defense community did not conceive of using RPVs against Russian missile emplacements. At most they perceived the RPV to be a reconnaissance craft or unmanned attack platform. Israel's use of the RPV will be a technique incorporated by the U.S. armed forces for untold benefits. Indeed, a recent Technical Committee paper concluded that unmanned vehicles are now seen as offering a partial solution to many of the U.S. and NATO's problems in confronting the numerical superiority of the Warsaw Pact's military. Although the more expensive Aquila will be more complex than the Israeli RPVs, the latters' utility to the U.S. military is demonstrated by the decision of the U.S. Navy to purchase them for maritime use.

The Navy also appreciates the performance of Israeli-designed piloted aircraft; it has leased 12 Kfir C-1s for its "Adversary and Aggressor" aircraft program. The Israeli aircraft will play the role of high performance Soviet fighters in combat simulations with Navy interceptors.[18]

One of the reasons the Israelis do so well in the military sphere is their propensity for innovation and their technical expertise. In general, Israeli research and development procedures are quicker and cheaper than those in the United States--in part because the Israelis cut corners and are more flexible since they live under the perception of

imminent danger and in part because their small size limits inhibiting regulations. Improvization and short-cuts are the Israeli speciality and they operate on a quick reaction, crisis basis which permits crash programs not possible with standard peacetime procedures in the U.S. Therefore, the U.S. armed forces can and have benefited from Israeli developments whose licenses are later sold to American companies for larger production. Recent examples include various types of mines and obstacle clearing equipment in which Israel is particularly advanced, the American SMAW warhead matched with an Israeli-designed B-300 rocket launcher purchased by the Marines from McDonnell Douglas as an anti-fortification device, and newly developed air filters for helicopters to keep out sand particles and preserve the engines (an example of the dangers of working without filters is exemplified by the disastrous rescue raid over Iran in April 1980). An Engineering Fighting Vehicle for use by the Army Corps of Engineers is being developed in the U.S. to Israeli technical specifications in an unusual joint project. In cooperation with a Pennsylvania-based company, BMY, the Israelis are also assisting in the development of a Heavy Assault Bridge for America's newest main battle tank, the M-1.[19]

More important than particular cases, however, is a wider application of Israeli innovations. The Israeli Air Force, for example, today faces a more complex challenge than its American counterpart. When an Israeli fighter takes off, the pilot does not know whether he will confront Russian,

European or American equipment in hostile hands. No country in the world faces a comparable dilemma. This complicated threat drives Israeli developers and designers to search constantly for improvements and refinements and to produce or conceive of new operational systems because of the diversity of the challenges they face. Necessity forces them always to probe the fringes of the latest technical limits, to look forward to the next war rather than backward at the last one. Because of the close integration of Israeli inventors with U.S. corporations, the U.S. inevitably benefits in its larger programs from sharing with Israeli concepts and ideas, helping American developers to enhance the future operational capability of U.S. weaponry by pressing for higher requirements. A defense corporation official told one researcher that "if I had to choose between doing business with Germany, Britain, France or Israel, I would choose Israel."[20]

Evaluation

These Israeli accomplishments--forced upon the country by the pressure of survival--are impressive and their significance should not be underestimated. To illustrate the tremendous costs involved, the development and procurement of sample American weapons systems are $35.3 billion for the F-18, $18.6 billion for the M-1 MBT, and $6.1 billion for the AMRAAM air-to-air anti-aircraft missile.[21] Even if Israel only affected the development of just one or two of these systems, or prevented the development of one system which

would have proved unnecessary, the savings would be in the billions. Indeed, Israeli experiences have influenced U.S. decisions in such widely disparate areas as planes, tanks, RPVs, and anti-aircraft missiles. In the high-tech era, with development costs as expensive as they are, Israeli lessons which affect the direction of future programs have an important effect on large portions of the U.S. defense budget.

In Fiscal Year 1983 the United States spent approximately $24.2 billion on defense-related research, development, testing and evaluation. Of this total, $3.3 billion was designated for technology base, $951 million for advanced technology development, $7.6 billion for tactical programs, and $2.8 billion for defense-wide intelligence and communications systems. This sum adds up to approximately $14.6 billion, or 60% of the total RDT&E budget not being spent on strategic or management and support programs. This percentage is actually lower than that of previous years. In 1982 the four categories of RDT&E spending amounted to 63.6% of the $20 billion spent; in 1981 it was 65.6 % of the $16 billion appropriated for RDT&E.[22]

Taking 60% of each RDT&E budget from 1967-1982, we arrive at a figure of $188.9 billion (in constant 1982 dollars). This is the approximate total of U.S. research and development spending on tactical, technological, advanced technology and intelligence/communications programs.

Without the information shared by Israel, it would have been necessary for the U.S. to increase its research and

development appropriations or they would have produced fewer results. Acting cautiously, we estimated that Israeli combat experience was worth about 10% of this expenditure or $18.9 billion. We justify this estimate because weapons systems are designed around performance objectives, which are shaped by military experience. This sum ($18.9 billion) seems a useful rough estimation of the value of Israeli information and technology which has been shared with the U.S. over the last 15 years.

In addition, not building a weapon saves both the research and development as well as the procurement costs. For example, because of the Israeli experience the F-15 was improved; that saves total procurement costs. In fiscal 1983, the U.S. spent $60 billion on its general purpose forces (tactical, non-nuclear). Over the last five years the average spending on general purpose forces was over 67% of the average defense procurement budget; from 1967-1983, 68% of total procurement costs ammounted to approximately $564 billion. Because of the high payoff of Israeli combat experience to U.S. manufacturers, we estimate Israeli services at 2% of general purpose force procurement. This results in a figure of $11 billion. Added to the $18.9 billion estimated savings on RDT&E costs, the total for research and development is $29.9 billion.[23]

2. Refining America's Armed Forces--$10 Billion Service

Israeli combat experience is not only important to research and development, but to refinements of existing U.S. weaponry which the Israelis used in combat or training.

There are several examples of Israeli modifications of existing American weaponry adopted by the U.S. armed forces. The following pattern has occurred repeatedly: (1) The Israelis receive permission to purchase an American weapon, for example the F-15. (2) They then deal directly with the company producing the weapon. The Israeli team may request particular features which the Pentagon has rejected or it may be offered features the Defense Department was not interested in developing. Often the Israelis are informed that if they are prepared to pay for the research and development costs to build the feature for themselves, the American company will include the item in their model of the weapon. (3) The Israelis then acquiesce, the item is developed, and they deploy it. (4) Once the weapon has been built with the feature that the Israelis payed to have developed, the Pentagon recognizes the value of the feature and adopts it for versions of the weapon procured for American use. The savings to the American taxpayer are obvious when compared to a situation in which the item would have been developed and tested with DOD funds. A few recent examples of this process include the conformal fuel tanks on the F-15, leading edge slats for the

F-4E Phantom, an external fuel tank for the M-113A1, modification of the M-109 self-propelled 155mm artillery piece, a Head-UP Display and a weapons delivery system for the A-4N Skyhawk, bomb racks for the F-16, and certain types of FLIR night vision equipment and a digital weapons delivery system for the F-4 Phantom.[24]

Similarly, Israeli experiences have become important to the improvement of American equipment--potentially saving American lives and certainly cutting costs. Just realizing that a problem exists with a piece of equipment may be more critical than providing a solution. Several varied examples follow: (1) Israeli aircraft are operated under far more severe conditions than those of other countries; they suffer "fatigue damage" much earlier. When the Israelis expend funds refining their American-built aircraft, this knowledge is passed on to the United States. The same can be said for the operation of American air-to-air and air-to-ground missiles. (2) The Israelis operate American planes more efficiently at lower cost than the U.S. itself--thereby providing ample lessons to be learned on maintenance and readiness. (3) Israel discovered problems in the fuel pumps of the F-100, the engine for the F-15 and F-16, and provided American engineers with ideas how to deal with the difficulty. In all the Israelis have made 27 substantial recommendations for changes in the F-15. (4) Similarly, the Israelis learned from combat use of the M-60 tank before the October 1973 war that its hydraulic fluid was highly flam-

mable, thereby increasing casualties. This discovery led to the adoption of measures to prevent such casualties in the future. Over the years Israel has made 114 modifications of the M-48 and M-60 main battle tanks, many of which (such as improvements on tank air cleaners and the development of new cupolas for the M-48) have been adopted by the U.S. Army. The philosophy of General Israel Tal, the father of the Israeli Merkavah MBT, has influenced the further development of German, Swedish and American tanks and armor tactics. His main emphasis is on making the survivability of the crew the first priority, accomplished by increasing the vehicle's mobility and by leaving as small a target area exposed as possible. (5) The Israelis have been very successful in developing dry-clad storage for their tanks so that they can go for years without being checked or overhauled and can still be used quickly in a crisis. (6) When the U.S. built two new airfields in the Negev to replace Israel's Sinai facilities (returned to Egypt in April 1982) it became clear that Israeli methods were cheaper once Israeli developments in airfield construction were shared with the Army Corp of Engineers. (7) When the U.S. Army recently built a new combat training center at Fort Irwin near Barstow, California, the facilities and programs were based generally on Israeli methods.

Israeli combat experiences have led to: (1) the decreased use of search lights, (2) the increased use of thermal sights for night fighting, (3) greater use of tanks and

APCs in tandem, (4) improvements in command, control and communications facilitating the coordination of air, land and sea operations down to the unit level, (5) the use of electronic warfare in reconnaissance units, and (6) enhanced air-to-air missiles and electronic countermeasures.[25]

It is not that the U.S. armed forces copy Israeli systems and approaches; each respective army and air force has its own particular problems. Rather, the Israelis have identified problems and influenced solutions. They are affected by their experiences, especially because many technical problems and answers cannot be handled conceptually until they are discovered in combat. In a period when wars and attrition rates are progressively shorter, the power of weapons has been enhanced, and increased mobility (as in the Rapid Deployment Force [RDF]) is essential, it is the Israeli sharing of experiences gained and lessons learned which is so valuable.

The Israelis are particularly adept at improving older weapons, making it worthwhile to keep them in production. This saves the U.S. new development costs and facilitates exports to countries that cannot buy the latest models. They also have contributed to maintaining competition in bids for Pentagon contracts, thereby keeping costs down by providing contracts to companies for particular types of equipment. Without these contracts, several companies would have removed themselves from a particular type of work, limiting the field of future competitors, and costing Americans jobs.

Israel is constantly feeding information back to American defense contractors and military services about the strengths and weaknesses of defense equipment. This information, as one defense corporation official put it, "is constantly being used to change the [American] systems."[26] The information is also utilized so that the company involved is able to maintain the same or similar production lines, lowering costs. Renovation of production lines can be extremely expensive, particularly if a major change is involved. Thus, by assisting in the prevention of major renovations, Israel helps individual American firms save millions of dollars. These funds can then be reinvested in research and development activities.

Evaluation

Given the number and variety of examples of Israeli improvements and refinements in U.S. weaponry over the past several years, this contribution is certainly one of the most important and concrete of those we have discussed. Taking only 1% of the $1 trillion spent on U.S. general purpose forces in 1982 dollars from 1967 to 1982, we have a sum of $10 billion.[27]

III. Air Defense--Savings of $3 Billion

A particularly dramatic event occurred in 1982 when Israel proved there was a means of breaking the anti-aircraft missile wall the Russians thought they had developed against Western air forces. This development is bound to cost Moscow heavily, because if the Soviets wish to keep their air defense concept viable they will have to make major adjustments and improvements in their entire air defense system, including changing production lines and developing new equipment. Of all of Israel's defeats of the Arabs, this victory is the most costly to the Russians because of the sophistication of the weaponry involved and the challenge to an entire defense concept. Since this system is similar to the Warsaw Pact air defense system currently deployed in Eastern Europe, the Israeli achievement affects the conventional balance between the U.S. and the U.S.S.R. as well. An impression of weakness in the Soviet air defense system revealed by Israel's action in Lebanon is reinforced by the large numbers of errors made by Soviet personnel which led to the shooting down of Korean Air Lines Flight 007 in September, 1983.

One CIA estimate suggests that the Soviets regularly spend about 12 percent of their overall defense budget on air defense systems (primarily missiles, guns and associated radar). This is more than they spend on their strategic forces. If we add the cost of the MIG-21 and MIG-23 interceptors, which are part of the Russian air defense complex,

we reach a total of about 20 percent of their entire defense budget--about the same as their Navy.[28] That such a substantial percentage of their defense operations should be compromised must be seen as nothing less than a major blow to vital Soviet defense concerns. It is not for naught that high ranking Soviet intelligence and air defense experts began to swarm over Syria after June, 1982. The initial batteries of SAM 2s, 3s, 6s, 7s, and 9s were augmented first by SAM 8s and then, after the Israelis destroyed these, by the longer range SAM 5s, which were protected by SAM 11s after the war. This time they were operated by larger numbers of Soviet technicians.

In keeping with the philosophy of the times, this overwhelming evidence of the significance of this war's events have been met with three arguments--all decrying their importance. The first is that the Israelis operated with impunity because they were in combat with the Syrians, not the Russians. This is undoubtedly true, but the Syrians had been trained by Soviet advisors. Moreover, not counting Afghanistan, which is hardly comparable, the Russians have not had serious combat experience in a major operational role (with the exception of "volunteers" in Korea) since World War II. In August 1970, when the Israelis surprised five jets piloted by Russians near the Suez Canal, they were all summarily shot down. The Syrians, for their part, fought well in October 1973. It would have been more difficult for the Israelis against Russians, but there is no reason to

believe that the final results would have been different.[29]

A second argument used against the significance of the military results of Israel's attack on Syria's missiles in Lebanon is that the Syrians do not receive first line Soviet equipment. If the stand on Soviet v. Syrian personnel is debatable, this position is misleading. Between 1974 and the Spring of 1982 the Russians shipped 30 billion dollars worth (not counting approximately 20 percent extra for auxiliary subsystems, spare parts, etc.) of arms to the Arab states--primarily Syria, Iraq, Libya, Algeria, South Yemen, North Yemen, and, until 1975, Egypt. Actual deliveries included 8800 tanks, 5000 armored personnel carriers, 3000 artillery pieces, 180 surface-to-surface missiles launchers (including the Frog 7 and the Scud B), 1300 combat aircraft (not including transports), 300 helicopters, 370 anti-aircraft batteries of all kinds, 90 naval vessels (including 46 missile boats of which more than 75 percent were for use in the Mediterranean). These were not out of date weapons; rather, the Arab countries have been supplied with a more advanced mixture of hardware by the USSR than many of their own units. Previously, the Soviets sent equipment which was five years old; now they are sending material which is perhaps two years old.[30]

Except for the first echelon of Soviet troops and the East Germans, the Arabs have regularly been the first to receive the latest in Russian weaponry. For example, the second and third echelon units in the USSR (mainly reserves)

are still to a large extent equipped with T-54 and T-55 tanks as are most East European countries (Poland and Czechoslovakia both produce the T-54 and the T-55). These are not good enough for the Syrians, who rely primarily on the T-62 and the T-72. Arab countries received the SAM 6s, 7s, and 8s before the East Europeans (except the East Germans). The SAM 5 was first deployed outside the USSR in Syria. The Soviets only later deployed SAM 5s in Eastern Europe. Syria is today phasing out the MIG-21, which is still the backbone of the Soviet Tactical Airforce. The 5000 armored personnel carriers delivered to the Arabs from 1974 to 1982 would have enabled the Soviets to equip 20-25 divisions; many divisions in the USSR today are still equipped with trucks.[31]

The problem the Soviets face is that they send much of their first line equipment to the Arab states. Otherwise they cannot continue to compete politically or economically with the West in the Middle East. The Arabs are very quick to blame their poor military showing on Soviet equipment. Moscow compensates by sending the latest material in order to convince the Arabs that they are receiving weapons comparable to those received from the West by the Israelis. This explains why the Arabs receive the most advanced weaponry earlier than such regular Russian customers as North Korea and Cuba. Although they take cash when they can get it, the Soviets often agree to barter deals and even ship prior to payment. They prefer to be paid, but they will settle for influence; arms shipments constitute the main attraction

they represent to those Arab states still prepared to align with the Eastern Bloc.

If the Soviets did not deliver thousands of weapons to the Arabs, they would still produce and supply them in greater quantity to their own units and to the East Europeans. If they did not ship these weapons, they would not confront the risks of broken intelligence secrets which is inevitable once they send weapons to the Middle East. Therefore, the argument that the Syrians suffered from inferior equipment in 1982 simply is not accurate. In most cases the Israelis face the same type of equipment the U.S. would face in a conventional war with the Soviet Union, a condition which has intensified due to the even greater sophistication of the arms delivered to Syria since the June, 1982 Lebanon conflict.

The most convincing argument against the significance of the war's developments for the West is that now the Soviets are forewarned of the bugs in their systems and they can adjust for the weaknesses. The West, in turn, will have to counter these adjustments.[32] The argument is misleading. First, it assumes that the Israeli-Syrian confrontation represented an East-West conflict. The weapons used against the SAM sites in the Beka'a Valley were built to Israeli specifications and did not precisely equal American systems. Similarly, the Israelis did not use all available American systems, so that several could not have been compromised. The Israelis were also able to learn what types of tactics to

use in specific situations--which will help both the IDF and the U.S. armed forces in the future.

Indeed, the lessons learned by the IDF indicate that they constantly change their tactics and approaches, so that any information the Soviets may have gained from the battles of 1982 is now obsolescent. The Soviets are trying to determine how the Israelis were able to totally defeat their SAM unbrella through the recent deployment of tactical electronic intelligence (ELINT) helicopters along the Syrian-Israeli border. They have recently installed in Syria improved countermeasure equipment and satellite links to Moscow, and they have deployed special teams to operate radar and communication links and to man SAM-5 sites. They have also attempted to upgrade Syrian command, control, communications and intelligence (C^3I) performance. These moves suggest the Soviets are not quite sure how to deal with Israeli advancements and consequently are using traditional Soviet tactics in order to deal with the threat.

Moreover, the battlefield conditions in the Middle East are not similar to other arenas of East-West confrontation. For example, cloud cover is extremely rare in the Middle East; this is not the case in most other major crisis areas (particularly Europe and the Korean peninsula). Finally, it will take several years for the Russians to prepare appropriate new systems and to make extensive renovations in existing systems. This process is very expensive and will rely on stagnant data, frozen in the tactics and technology

of June, 1982. While the Russians alter their air defense system based on the lessons of 1982, the Israelis and the Americans are also adjusting.

Thus, both sides learned valuable lessons in Lebanon, but the Western powers are still ahead because only the Israelis and the Americans (since the information is shared) know why the Russian equipment was defeated so soundly. The Soviets are reduced to adapting, guessing and hoping that the technical personnel which they sent to Syria after June 1982 will be able to come up with some answers. To the extent that they must renovate their air defense umbrella instead of expanding into new arenas or improving offensive weapons, the Western position is strengthened both because of reduced Soviet offensive readiness and because of reduced Western costs to counter new Soviet equipment.

The 1982 war affected U.S. and Soviet fortunes in opposite directions. The credibility and reputation of Russian arms were seriously damaged. It will take a major new confrontation for them to recoup lost prestige, which is certainly one of the reasons they have sent SAM-5s and SAM-11s to Syria and continue to subsidize Assad's armed forces. In addition, the failures of Russian arms--especially the air defense umbrella--affects adversely the confidence of Russian and East European military planners in the reliability and capabilities of their equipment.

On the other hand, the U.S. has gained immeasurably. The war must be a boost to the confidence of American offi-

cers in American-made material and in the reliability of their weapons. For example, the recently maligned TOW anti-tank weapon had a 72% kill rate (99 hits out of 137 fired) in Lebanon in the hands of the Israelis, while the Cobra helicopter proved to be a highly effective anti-tank weapon as well.[33] These achievements should go far to encourage American servicemen and military planners. In Europe, the psychological atmosphere along the East German border is bound to be affected. Israeli performance will likely be a boon for NATO servicemen and a nagging doubt to the armies of the Warsaw Pact.

Evaluation

The monetary value of Israel's cracking the Soviet air defense system can be estimated indirectly. According to a recent CIA estimate, the Russians spent approximately $191.5 billion on defense in 1981.[34] If the CIA was correct in the estimate that the air defense component of the Soviet defense budget is roughly 20%, then the portion of Soviet military expenditures which has been compromised is roughly $38 billion annually. While it will not require a large expenditure to refine the system, rubles spent on the replacement of an air defense system are rubles not spent on air defense expansion or on any other military priority. New Soviet force expansion would force the U.S. to spend compensating ammounts to maintain the balance. Thus, Israel is causing severe problems for the Soviet air defense system as

the Soviets begin the restructuring of the Warsaw Pact SAM systems (whose ground-to-air missile system is very similar to the one used by the Syrians until 1982). Soviet military funds spent on revamping existing systems to cope with an unclear threat are funds the U.S. does not have to match. This relieves some of the burden on the American taxpayer.

Israel's continued reliance and proficiency in conventional weapons dramatizes their utility compared to unusable nuclear weapons, while at the same time demonstrating how a long-neglected conventional force can be made more effective. In Europe, increased stress on conventional forces could raise the possibility of reduced Western reliance on tactical nuclear weapons which was the result of NATO's usual presumption of accute battlefield inferiority vis-a-vis the Warsaw Pact. General Bernard W. Rogers, NATO's supreme commander in Europe, recently stated that it is an increase in conventional weapons which is needed in NATO's defenses much more than an increase in NATO's tactical nuclear arsenal.[35] The U.S. is already spending $133 billion on NATO-related defense expenditures annually. Because the Soviet Union's need to refine its air defense system will certainly inhibit Moscow's ability to expand its forces in Europe, the level of force expansion needed by the U.S. and its allies will accordingly be reduced.

In addition, Israel's demonstration of the effectiveness of American arms relative to those of the USSR should limit somewhat the need for contemplated force expansion.

Certainly, the compromise of a major system worth 20% of the Soviet defense budget (and in a system particularly applicable to the European theater) ought to have a positive effect on the U.S. defense budget. This achievement ought to be worth 5% of the annual U.S. expenditure on NATO ($133 billion in fiscal year 1983) which yields approximately a $6.6 billion surplus. If we assume that it will take the Russians five years to redesign, produce, and deploy a new air defense system, the savings to the U.S. is over $33.25 billion. Yet, in keeping with the cautious approach of this study, we will credit the Israelis with saving the U.S. 2.5% of one year's expenditure on NATO, resulting in $3 billion. Extrapolated over five years (and assuming a similar U.S. commitment to NATO's defense) this sum would represent only about .004% of the total U.S. NATO expenditure, or .02% of annual defense expenditures.

IV. Israel As U.S. Arms Salesman--Additional Revenue of $11.3 Billion

Service

Arms sales represent an ironic example of the effect of Israel's military successes. Since the War of Attrition in 1969-1970, Israel has advertised the proficiency of U.S. weaponry in combat. This process has been considerably expanded as a consequence of the Lebanon War in 1982.

U.S. arms sales worldwide from 1972-1982 nearly tripled from about $6.8 billion to $19.6 billion in constant 1982 dollars. Military transfers expanded after the late 1960s due to Washington's efforts to strengthen regional proxies and reduce America's military commitments abroad. After the 1973-74 oil crunch, arms sales were also seen as a way to recycle the petrodollars paid to oil producers back into the American economy. Consequently, by 1982 Arab states accounted for 50 percent of U.S. sales worldwide, compared to 11 percent in 1972. Sales increased tenfold, from $.7 billion to $7.8 billion in the ten years in constant 1982 dollars.[36] Even though Israel's American supporters have occasionally been able to restrain arms sales to Arab states, these sales have flourished.

Even when wars are not being fought, the Israeli reputation for military prowess means that when they purchase a system, the reputation of that weapon is enhanced. For example, the Japanese hesitated for over a year whether to purchase the Grumman E-2C Hawkeye, the airborne command and

control system the Israelis used so effectively in the Lebanon War. After Israel decided to purchase it, the Japanese made their affirmative decision. Since the war, several countries have expressed interest in the Hawkeye, especially Singapore, but also such countries as South Korea, Spain, Switzerland, and Australia. The E-2C program director estimated that this could lead to the sale of 30 to 40 planes abroad, meaning up to $4 billion in sales, including the ground support facilities.[37] Ironically, Israeli weapons prowess also makes American arms attractive to Arab countries, precisely because the Israelis have succeeded so well with them.

It is well-known in the U.S. defense field that many countries send representatives secretly to Israel to discuss their weapons purchases. In the case of the Hawkeye, Grumman gained at the expense of the British equivalent, the Nimrod. What the Israelis once did for the French Mirage, they now accomplish for American aircraft such as the F-16 at the expense of the Mirage 2000. Once the Israelis purchased the MD-500 helicopter gunship (which they had helped to improve) the Jordanians, South Koreans, and Kenyans moved to purchase it at the expense of the German-made BO-106 and the Franco-British Gazelle.

After all, why do so many countries want the F-16? Because the Israelis have demonstrated their effectiveness from Osiraq to Lebanon. Belgium, Denmark, the Netherlands, Norway, Egypt, Korea, Pakistan and Turkey have already ordered them.[38] It cannot be totally coincidental that Northrop has long been frustrated in selling its F-20 Tigershark. Israel did not purchase any.

The model of Franco-Israeli cooperation when France was Israel's major arms supplier in the 1950s and early 1960s is particularly instructive for understanding contemporary events. Israel's success with French aircraft facilitated French overseas sales, perhaps selling as many as 1000 Mirages. In many instances the Israelis helped modify French equipment, a service she performs for the United States today. For example, by adopting the Israeli suggestion that a cannon should be added to the original Mirage design for low level defense, "France widened the appeal of the aircraft for Switzerland, South Africa, and Australia, which bought the Mirage on Israeli advice."[39] A "technological symbiosis" emerged between the French and the Israelis and Israeli suggestions were repeatedly proven successful on the battlefield. Indeed, "Israeli pilots sent continuous performance reports and flight photos to the Dassault company [producer of the Super-Mystere], and,...many of their recommendations--especially on radar, electronics and the use of 30mm cannon--were to find their way into the Mirage."[40]

By contrast with the previous French and the present U.S. relations with the Israelis, the Soviet Union's trade with the Arab countries (excluding arms) accounts for only 5 percent of those countries' exports and imports. Moscow's stock and trade is in arms, yet the reputation of these arms

has plummetted as a consequence of the Lebanon War. Therefore, it is probable that the volume of their arms sales will be reduced worldwide in the coming years, especially in the Middle East. Countries seeking weapons are likely to seek alternate suppliers, if they possibly can. As the Soviets lose sales, they will have less cash to spend on their own arms procurement and development. Therefore the U.S. will have less to counter--thereby saving additional funds.[41]

In an ironic twist, several of the weapons systems improved by the Israelis have been sold to Arab countries by the United States. The conformal fuel tanks for the F-15 have been sold to the Saudis; E-Systems has had sales to Saudi Arabia and Egypt of equipment to which Israel contributed; about 30 helicopters with Israeli-improved designs have been sold to Jordan and the updating of the Jordanian Centurion by Teledyne-Continental is based on Israeli improvements. Indeed, several modifications in F-15s and F-16s which were suggested by the Israelis were then incorporated in the models sent to Arab countries. An Israeli-improved version of the A-4 Skyhawk was sold to Kuwait after that country insisted on receiving a version which contained the Israeli improvements.[41a]

Evaluation

From 1972-1982 U.S. arms sales to the Arab world were $45.7 billion out of a world total of $184 billion (in constant 1982 dollars).[42] By 1980 Saudi Arabia alone accounted for about 17% of U.S. arms sales worldwide. Although it may have been harmful to Israel, her military exploits have accounted for at least 10% in higher U.S. arms sales rate to the Arab world. This figure is $4.6 billion. We rated the Israeli "credit" so high because of the important symbolic value in the Middle East of Israeli use of American arms in recent victories over Arab states. We add 5% of the total for the rest of the world (minus Israel) or $6.7 billion as an Israeli "credit," indicating the impact Israeli success with American arms has on the popularity of those weapons. When this $6.7 billion figure is added to $4.6 billion in Arab purchases the resulting total value to the U.S. of Israel as an arms salesman is $11.3 billion.

V. Mediterranean--Savings of $25 Billion.

Although not noted for her naval prowess, Israel has become a major surface power in the Eastern Mediterranean. Since relinquishing the Sinai in April 1982, the Israelis have been able to concentrate the bulk of their Aliyah, Reshef, Sa'ar III and Dvora missile boats off Israel's west coast. Coupled with her powerful air force, the IDF effectively dominates the seas for 250-300 nautical miles off the Israeli shoreline. This area represents 12.5 percent of the Mediterranean, including ports and other facilities of crucial importance to the United States and the Soviet Union.

For two decades U.S. naval power in the region has declined while Soviet naval capabilities have grown. America's increasing concern with the Persian Gulf and Indian Ocean has diverted resources and combat vessels once a part of the Sixth Fleet to other theaters of operation. The single carrier which usually operates with the Sixth Fleet does not give the United States naval superiority in the Mediterranean because of the Soviets' dramatic buildup in surface combatants and long-range bombing capabilities. In addition to their Mediterranean squadron the Soviets can utilize forces from their Black Sea fleet. This capability was demonstrated during the October 1973 War when the Soviet squadron grew from 52 vessels to 95 warships (including 51 combatants) in one month. By contrast, even if the U.S. had deployed a two-carrier American battle group it would have no more than 35 ships, only 19-22 of which would be combatants.[43]

The presence of Israel compensates for the dimunition of American forces. For example, a few years ago it was reported that a U.S. Navy investigation determined that Israel's air force was capable of destroying the entire Soviet Mediterranean fleet.[44] As one example of the effectiveness of Israeli ships, during the Sudan crisis in early 1983, their presense allowed units of the Sixth Fleet to leave the coast of Lebanon. Secretary of Defense Caspar Weinberger recently stated that "the Soviets would dearly love control over the Middle East's resources and strategic choke points, but Israel stands determinedly in their way."[45]

Because the Israeli presence bolsters diminishing U.S. capabilities, the Soviets would have to hesitate before committing their Black Sea Fleet's estimated 100 Tu-16 Badger, Tu-22 Blinder, and Tu-26 Backfire bombers to conflict with the West in the Mediterranean. Even the dozen Forger attack aircraft from the Soviets' only aircraft carrier, the Kiev, would hardly be a match for the American F-14s and Israeli F-15 and F-16s.[46] Since Israeli as well as American forces must be taken into account if the Soviet air force wishes to entertain operational activities in the vicinity, it must expend much greater forces and its preparatory expenses must be a great deal higher to confront not only the normal U.S. air cover over the Sixth Fleet, but the Israeli air force as well. As in other areas, any major increases in Soviet military expenditures is a boon to the United States.

The Israelis provide a capability which the U.S. would

be sorely pressed to fulfill without their presence. The Israeli air force and navy are becoming more, not less, critical to Western military defense. In addition to the extra air cover the Israelis could provide the Sixth Fleet and the extra firepower Israeli missile boats would supply to American surface vessels, the Israelis could also protect the air and sea lanes to Eastern Turkey and the Persian Gulf. This would relieve American forces of these peripheral responsibilities, thus allowing U.S. combat aircraft to accomplish their primary missions. Surely, whether or not Israel was established, the Soviets would have emerged as a major Mediterranean power--an objective of Russian foreign policy for centuries.

Evaluation

The growth of the Red Navy has been the highlight of Russian military expansion since World War II. Israel's presence, however, stunts the political and military effectiveness of this major Russian achievement in this critical region. The Soviets and their proxies would have major interdiction and deployment problems in a general conflict, difficulties which would not be faced if they had only the American Sixth Fleet to confront. The deterrence factor which the IDF supplies the West in the Eastern Mediterranean would cost the United States tens of billions of dollars to reproduce in naval costs alone. The Israeli contribution to Western defense in the Mediterranean over the last several

years is at least equivalent to what another aircraft carrier battlegroup would have cost.

The costs associated with such a battlegroup are enormous. Procurement of the nine battlegroup ships (one nuclear-powered aircraft carrier and eight missile cruisers and destroyers) costs $9.7 billion. For the carrier airwing and associated anti-submarine LAMPS helicopters the U.S. must spend an additional $6.4 billion. Also, it costs $3.2 billion for the six support ships and their LAMPS helicopters. Consequently, just to build the ships and aircraft associated with the battlegroup, the United States must spend $19.3 billion (1984 Constant Budget Dollars [CBD]).[47]

There are more expenses associated with an aircraft carrier battlegroup's maintenance and operation. The annual operating costs of its ships and aircraft is $590 million per year, or $8.85 billion over 15 years (half of the battlegroup's estimated 30-year life cycle). Adding the procurement cost of the 15 associated ships, 90 aircraft, and 9 LAMPS III helicopters, another battlegroup would cost the United States $30.4 billion (1984 CBDs) to deploy, operate and maintain in the Eastern Mediterranean.[48]

Midlife conversion costs must also be taken into account for the deployment of an additional battlegroup in the Mediterranean. They include expenses related to keeping the ships battleworthy and fully supplied with state-of-the-art weaponry and communications systems. For the entire fleet of 15 ships and their aircraft this one time cost would

be $9.4 billion. Thus, the total cost of an additional carrier battlegroup would be $39.8 billion. Secretary of Defense Weinberger testified in February, 1983, that the 30-year life cycle cost of a Nimitz class carrier battlegroup and its support ships would be $49.5 billion (1984 CBDs). This total exceeds our own because we excluded the additional $10 billion for 15 years of operating and support costs which we are not including in this analysis.[49]

Another U.S. carrier battlegroup would not have been as militarly potent as the highly motivated and skilled force Israel represents. Israel is certainly more valuable than one carrier group given its forces' stronger capabilities, the increased costs it creates for the USSR, and the wider range of capacities a national force maintains close to its base by comparison with a carrier force far from home. For example, compared to the 90 aircraft and 9 helicopters of the average American battlegroup, Israel possesses over 600 aircraft and 42 combat helicopters--obviously a much more potent force than one carrier group.[50]

Israel is not under the command of the President as an additional carrier would have been, but on the other hand, she is not subject in the same way to continual U.S. domestic and Congressional pressure against overseas American military action. She can act (especially vis-a-vis other forces besides the USSR) in ways that the U.S. can disavow but still benefit from (as in the attack on Osiraq).

Consequently, we can reasonably credit the powerful

Israeli air force and navy with the $39.8 billion cost of another aircraft carrier battlegroup. However, in the interest of methodological prudence, we will exclude the $9.4 billion associated with the mid-life conversion costs and the $5.45 billion it would cost to procure and operate the support group's ships. We credit Israel with the costs of procuring and operating an aircraft carrier battlegroup's ships and aircraft for 15 years. Thus, Israel has saved the U.S. at least $24.95 billion by protecting both sea and sky in the Eastern Mediterranean.

Interim Sum--$82.2 Billion

The six items discussed here are the most concrete of the services Israel has provided the United States. They alone add up to $82.2 billion.

Intelligence	$3.5
Tactical Warfare Reseach and Development	$29.9
Refining America's Armed Forces	$10
Air Defense	$3
International Arms Sales	$11.3
Mediterranean	$25
Total	$82.7 billion

These categories of services and savings offered by the Israeli relationship are the easiest to explain and are the most amenable to quantification and justification. There are other types of activities which are more abstract and hypothetical and we will turn to them now.

HYPOTHETICAL SERVICES AND SAVINGS

Introduction

Whereas the concrete examples all referred to services with global implications (with the partial exception of Intelligence and the Mediterranean), the hypothetical services are rooted in developments within the region. This is not surprising because regional problems have always been the controversial element in the U.S.-Israeli relationship. U.S. officials have been concerned with the tradeoff between Israeli security concerns and their fears that the relationship with Israel might harm ties with Arab countries. Further confusing analysts and policymakers alike, the region is the locus of incessant inter-Arab conflicts, as well as the Arab-Israeli dispute. Therefore, arguments on these issues have often been complicated. In order to illucidate Israel's regional services, we have divided the following analysis into four categories: (1) bases which the U.S. would have had to maintain in the area without Israel; (2) the additional need for military intervention into the area without Israel; (3) the deterrence value which Israel's presence has served; and (4) the effect Israel has had on the international energy crisis.

I. Bases-Savings of $18.4 Billion

An indirect method of assessing Israel's value is to contemplate what the area would have been like without her. Some analysts have always believed that Western interests would have been well-served had the Jews lost the Palestine War in 1948. A current manifestation of this position is that without Israel, the United States could arrange bases in critical locations in the Persian Gulf. The most acceptable substitute is to create as much distance between the United States and Israel as possible.

These arguments are not credible. If Israel had not survived, Jordan, Egypt and Syria would undoubtedly have continued the war for the division of Palestine (and perhaps Lebanon as well), since none recognized the legitimacy of an independent Arab state in Palestine. With all three countries bordering upon one another, the situation would have been highly unstable and volatile. The Jordanian government thought the Hashemites should rule over all of geographic Syria which today includes Lebanon, Israel, Syria, and Jordan; the Syrians had similar claims.[51] The Jordanians (supported by the Iraqis) claimed the part of Palestine apportioned to an Arab state in the 1947 U.N. Partition Resolution. King Farouk of Egypt sought sovereignty over Palestine as far north as Jerusalem in order to control the Arab holy places there and to compete with the Saudis as a leading Islamic nation. Under these conditions Saudi Arabia would not have been able to avoid involvement in what would

have been another bloody inter-Arab conflict.[52]

In the 1950s a of power existed in the Arab world between Egypt and Iraq.[53] The intensity and ferocity of this competition, so often forgotten by contemporary analysts, was the overwhelming characteristic of Arab politics in the mid-50s. The conflict between Iraq's Nuri and Egypt's Nasser was virulent. It did not abate when the pro-Western Nuri al-Said was overthrown and replaced by the pro-Soviet Abdul Karim Kassem. There were other conflicts in the region, including the competition both Iraq and Egypt had with both Saudi Arabia and Jordan. With the Western powers losing influence and reluctant to fuel an arms race, one of the parties would have inevitably turned to the Soviet Union, as Egypt did in 1955.

A close examination of the Russian breakthrough in the area reminds us of why the Egyptians turned to Moscow in the first place. Nasser's relations with Britain and France had deteriorated; he would not accept U.S. conditions for military assistance and he resented Anglo-American efforts to build up Nuri's Iraq.[54] Moreover, Nasser suscribed to an emerging philosophy of neutralism in international affairs advocated by such leaders as Nehru of India and Sukarno of Indonesia. It maintained that the world's newly independent states could form a third force in international affairs independent of the two superpowers. They thought their countries would gain more by creating a competition between the U.S. and USSR for support rather than relying solely on one

or the other.

In this context the conflict with Israel--while not inconsequential, especially after Israel's raid on Gaza in February 1955--was by no means the sole reason Nasser turned toward the USSR. We can assume that he would likely have done so in any case, given his desire to become the leader of the Arab world and his advocacy of nonalignment. Indeed, since the conflict with Israel was a major reason why Sadat turned back to Washington, the Jewish state may ironically have constituted an incentive for his return to the Western fold. If Israel had not existed, Egypt's military burden might not have been as crushing. Victories over regional adversaries would have been greater, thereby avoiding the frustration which led to Sadat's expulsion of Soviet advisors.[55]

Whether or not it would have been Egypt or another Arab country which first turned to the USSR, without Israel in the area, pro-Soviet and pro-Western Arab coalitions would still have competed with each other. The pressures on the U.S. would have been greater than they have been with Israel's presence in the area. America's allies would have been weaker because the power represented by Israel would not have existed to tip the regional balance of forces toward pro-Western governments. In periodic inter-Arab wars it is not clear that the allies of America would have won, as Israel has. Since arms are the major instrument of Soviet influence in the region, if the countries using Soviet weapons had

emerged victorious in their battles with countries using Western-supplied weaponry, then the devastating 1967, 1973 and 1982 blows to Soviet prestige would not have occurred. Thus, America's position would have been repeatedly jeopardized as the Soviet position has been until now.

The advantages of having a dynamic political-military power in the region, even one which is ostracized, can be identified by comparing the U.S. experience in the Middle East to the history of U.S. involvement in Central America and Southeast Asia. In the Middle East today, the U.S. is the dominant political power, even though the region is located in the Soviet Union's backyard and resentment of the West is a long-standing and well-ingrained tradition. In Indochina, in the absence of a dynamic military ally, the U.S. suffered defeat and forced withdrawal despite a massive effort. In Central America the same missing link of a dynamic democracy has led to an increasingly tenuous U.S. position, even in an area supposedly within the American sphere of influence.

In the turbulent Middle East, where force is a key ingredient of power, without a strong ally like Israel the U.S. would certainly have had to increase its military presence there. By the 1960s Jordan was threatened by Syria and Iraq, Saudi Arabia by Egypt. With the area in growing turmoil it is difficult to believe that the U.S. would not have needed some base of operations in the Middle East heartland to help protect its interests and its clients, or at least maintain a

strident and effective symbol of American support.

As recent experience with Egypt suggests, it would not have been easy to set up such a base in the Middle East, even with our strongest Arab allies. In the 1980s the U.S. expected to refurbish and have access to the Egyptian base at Ras Banas. It was to be central to a series of U.S. bases in Southwest Asia which would significantly improve the quick response capabilities of the American military. As James R. Blaker, the Deputy Assistant Secretary of Defense, told the House Committee on Appropriations in 1984, "Among the most important of these facilities is Ras Banas, which is strategically located on the Red Sea." Blaker believed that this base would be crucial to the improvement of America's strike capability because it would allow the military to "deploy forces more rapidly near a potential conflict area in SWA [Southwest Asia] or the Middle East than if we had to wait until we could directly enter the affected country."[56]

The negotiations with Egypt, however, broke down in 1983 after years of haggling. There have subsequently been rumors of a possible secret arrangement with Cairo, but any covert pact would still be handicapped by Egyptian sensitivities. Even under President Sadat the Egyptians were reluctant to provide permanent bases. Today they are embarrassed to be identified with the U.S. too closely lest their new openings to the rest of the Arab world be impaired.

Evaluation

The Ras Banas episode indicates the difficulties the U.S. has had trying to upgrade American military capabilities in the oil-rich and strategically crucial Middle East. This problem would have been magnified manifold if Israel had not existed and the U.S. would have had to maintain an effective military presence in the region, probably 30 to 40,000 men. Certainly, substantial numbers of Americans are stationed in other areas. For example, in March, 1983, approximately 41,300 were stationed in S. Korea, 48,000 in Japan (including Okinawa), 15,000 in the Philippines, 13,000 in Italy, 27,000 in the United Kingdom, and 248,000 in Germany.[57] In Fiscal Year 1980 immediate direct U.S. expenditures were about $1 billion in South Korea, $2.4 billion in Japan (including Okinawa), $300 million in the Philippines and Italy, $600 million in the United Kingdom, and $5.75 billion in West Germany.[58]

In order to deduce what it might have cost to maintain 30,000 troops in the Mideast for a prolonged period, we took two-thirds of U.S. expenditures on bases in Korea over the last twenty-five years. On this basis, the sum to be considered is $25 billion ($1 billion per year of maintenance in Korea from 1957 to 1982). In keeping with our cautious approach we took only two-thirds of that sum, which came to almost $17 billion, even though it would have cost far more to defend the entire Middle East than Korea. We based our estimate on a twenty-five year span on the assumption that in the 1955-1957 period a Suez crisis type incident would have

occurred even without Israel as British and French influence declined and their disillusionment with Nasser grew. The former colonial powers and the new Arab nationalists were bound to conflict, leading to U.S. involvement. Without Israel, the U.S. would have required a stronger response than the Eisenhower Doctrine, which we assume would have led to the establishment of a major base or bases in the region. Of course, the necessity for a base(s) might have developed in response to the Yemen conflict of the 1960s, the energy crisis of the 1970s or the fall of the Shah in 1979.

We estimated Israel's value over 25 years as $17 billion, but the sums on which we have based our figures are artificially low. Considering that all direct and indirect expenses in the Far East will reach $47 billion by 1985, it must be remembered that the sum of $1 billion spent in South Korea in 1980 (which forms the basis of our estimate) represents the most restricted definition of a portion of U.S. defense costs in a particular country. Actually maintaining U.S. forces in Asia is a much more expensive proposition. The actual costs of U.S. deployments in South Korea is also higher than $1 billion per annum because one of the primary roles of all U.S. forces in the Asia-Pacific area is the defense of South Korea. These estimates also do not include expenses for the building of bases, indirect logistic and administrative costs for support from outside of the U.S., and major procurement or military construction costs.

Another category of costs are Air Force operating and

support expenses. Certainly there would have been aircraft support expenditures for a Mideast base in this period. Even if we limited ourselves to fifteen years, based on current expenses for one airwing the U.S. would have had to spend $1.4 billion to maintain and support its aircraft. Since we are not even including the initial cost of the aircraft, Israel has certainly saved the Air Force at least this sum in operating and support costs if a Middle East base had existed over the last 15 years.[59]

Therefore, adding the maintenance and support costs for one airwing, $1.4 billion, to the original cost of $17 billion yields a total of $18.4 billion. We therefore estimate that the existence of Israel saved the U.S. at least this expenditure on military bases in the Middle East over a twenty-five year period.

Our figures still ignore the unsuccessful record of U.S. base arrangements. The sorriest tale applies to Vietnam where billions of dollars in equipment and facilities were lost in the precipitous 1975 withdrawal. Middle East examples are tempered by the limited nature of U.S. installations. In 1969, the undepreciated U.S. investment in the facilities at Wheelus Airforce Base in Libya, which dated back to World War II, was valued at $77 million.[60] An additional $229.5 million (through 1970) had been extended to Libya in outright grants. However, when the coup bringing Muammar Quadaffi to power brought the closure of the base, American personnel were only able to salvage less than $24

million in material and supplies. Over 90 per-cent of the American investment in the base was lost.[61]

Similarly, the U.S. spent $59 million on facilities in Iran from 1977-1979 alone, only to see all of these installations disappear with the fall of the Shah.[62] From 1977-1979 the U.S. spent $1.75 billion on five bases in Greece, but these facilities are now jeopardized by the forthcoming expiration of the five-year agreement which could well lead (and the current Greek government claims that it will) to the closing of these bases.[63] In addition, the U.S. has spent $224.3 million on facilities in Oman, $54.4 million in Somalia, and $57.9 in Kenya in preparation for use of these installations by the Rapid Deployment Force.[64] But these countries are fearful that the news of U.S. involvement could undermine the legitimacy of their regimes. Therefore, America must spend substantial ammounts on enhanced aid programs as part of the base package with no assurance that what happened in Libya and Iran will not be repeated.

Thus, we cannot afford to be without Israel--a dynamic independent military power which builds its own bases and initiates its own defense programs. We can benefit from Israel's existence even though there are occasional differences of opinion and strategy. After all, an aid program to a democratic country which creates an effective and capable force committed to its own survival while serving U.S. interests at the same time is the way the U.S. aid program is supposed to work.

Israel cannot serve all our needs. But if she had not existed and additional bases would have had to be built in the region, the costs of U.S. Mideast policy would have necessarily been greater. Not having to spend funds on bases has freed them for expense elsewhere in the U.S. budget. There is a limit to what the U.S. can afford to spend on defense and on its domestic economy as well. Thus, any services Israel has provided automatically has saved resources because the U.S. might well have had to perform them instead at a greater financial and human cost.

II. A Middle East Intervention--Israel Saves U.S. $4 Billion

Bases refer to long-term actions which the U.S. would have had to take if Israel had not existed. We turn now to acute, short-term cases of military intervention. Once troops and supplies were stationed over long periods, it is more likely the U.S. would have had to act militarily--with accompanying costs in blood, treasure, and the alienation of significant parties in the area. Because crises are by their nature infrequent, there are few examples which suggest the kind of actions which might have been taken in the Middle East. Even with Israel's existence, this volatile region has provided opportunity for involvement. Lebanon in 1958 was a notable example of good fortune and skill; the U.S. participation in the Beirut-based multinational force from mid-1982 to early 1984 was not effective.

The most dramatic example of Israel's ability and willingness to act in America's interests occurred in the much-discussed September 1970 incident in Jordan when the PLO--with Syrian assistance--threatened to take over the country. Faced with the possible fall of the pro-Western monarch, the disruption of the Middle East balance of power, and a major victory for the Soviet Union in its bid to disrupt American mediation attempts, Nixon and Kissinger found that their alternatives were severely limited. The Administration believed that American prestige and influence in the area would be significantly damaged by the replacement of the usually cooperative Hashemite king with radical Palesti-

nians, in league with Soviet proxies Syria and Iraq. This would not only place greater pressure on Israel's borders but would also weaken the position of the Saudis, already threatened by pro-Soviet Iraq, South Yemen and Egypt.

American options during the crisis were constrained by a variety of factors. In their memoirs, both Henry Kissinger and Admiral Elmo Zumwalt point out that an American military intervention in the Jordanian crisis would have committed the entire Strategic Reserve, presented insurmountable supply problems, demonstrated reduced American naval capability in the Mediterranean, threatened U.S. relations with the Arab world, and would have made the United States "vulnerable to a Soviet thrust elsewhere."[65] When the Syrians invaded Jordan on September 20 (with possible Soviet encouragement), American threats of retaliation went unheeded. At that point the Administration, already dependent on Israeli intelligence and reconnaisance flights, gave the Israelis the go-ahead for air operations against the Syrians.

Bouyed by the support he was receiving from the Americans and Israelis, Hussein was able to rally his forces to repel the Syrians and defeat the Palestinians. The Soviets, confronted with their tactical inferiority vis-a-vis the coordinated American/Israeli effort, pressed the Syrians to cut their losses and retreat. Thus, a major confrontation between the superpowers was averted, the balance of power in the region was maintained and King Hussein was able to reconsolidate and strengthen his rule. Although it was not

actually used, the availability of Israeli military muscle and their readiness to use it alleviated the need for committing scarce American resources and discouraged the radical Syrian government from pressing onward.

Without Israel's presence as a military and political force in the area, the Soviets would have had an easier time subverting Western interests, requiring American preventive and counter moves. Today only South Yemen is solely dependent on Russian arms. Had Israel not existed it would have been easier for the Soviets to satisfy and keep prospective Arab clients because they would not have had as strong an adversary. Under these conditions America would have had to intervene at least once to counter Soviet or radical moves or to save one or more regimes without Israel. In this sense America's Lebanese intervention of 1958 would have been a precursor of later developments.

Evaluation

But how much would it have cost? It is, of course, difficult to estimate the cost of an event or events which never occurred. However, in keeping with the cautious approach of this study, we took for our figure 1% of the cost of the Vietnam War, or $4 billion. This is based on a $404 billion estimate of the war cost and was figured by adding the $138.9 billion DOD Vietnam estimate for FY 65-75 and future budgetary costs (military facilities of $6.7 billion; Veterans' war benefits of $233.3 billion and interest on the

war debt of $265.1 billion).[66] The comparison to Vietnam was selected on the basis that the Middle East is more directly related to U.S. vital interests than Southeast Asia--especially considering the energy crisis of the 1970s and the proximity of the region to the USSR. Therefore, to maintain that the U.S. would have been 10% as involved as in Vietnam or would have spent 1% of the Vietnam War cost if it had become engaged over the last three decades in the Middle East, is eminently proper, especially when we consider that it could cost the U.S. $20 billion a year and probably much more to field a force comparable to Israel's.[67] It is also worth noting that 1% of the casualties in that war is 567 lives (based on official DOD figures of 56,737 American dead), a further reminder that Israel has saved American lives as well as dollars. Any expensive operation by the United States in the Middle East would certainly have been at a bloody cost to the United States.

III. Israel as a Deterrent--$15 Billion

In evaluating hypothetically the value of Israel for the U.S., we have used the heuristic device of attempting to ascertain the costs of actions the U.S. would have had to take without Israel. We move now to Israel's deterrence of actions adverse to U.S. interests. An examination of the historical record demonstrates that increasing American political influence in the Middle East has long been a goal of American foreign policy and that Israel has often served as a silent partner to the U.S. in the area. In July 1958 Israel agreed to a British and American request to allow British transports to overfly her territory to aid King Hussein. In the 1960s Israel helped surreptitiously to defeat the threat to Saudi Arabia raised by Nasser's intervention in the Yemen War. In September 1970 Israel's mobilization and the success of the Royal Jordanian Army averted the need for the Israelis to intervene in the Jordanian Civil War. We will never know what coup attempts, what invasions, what internal Arab crises were deterred because their perpetrators knew that Israel would act to prevent their success.

Those who argue that friendly regimes such as the Jordanians and the Saudis would have been more secure if Israel did not exist would do well to consider that without Israel's presence, the hatred of the West would surely have been unchecked. Without a counterweight, anti-Western forces would have been stronger and the continued role of such pro-American stalwarts as King Hussein and the Saudis would

undoubtedly have been jeopardized, not secured.

Today the Israeli armed forces represent a considerable deterrent force of which the Soviets and their clients must take account in their plans for any activities in the Mediterranean. Mo_eover, Israel's forceful and dynamic resistance to radical moves in her region serves to enhance the credibility of Western willingness to resist aggressive actions (a commodity which, except for Britain's response to the Argentinian invasion of the Falklands, has been in precious short supply in recent years).

The Israelis have cemented U.S.-Egyptian relations by relinquishing the Sinai. In Lebanon, their 1982 operation represented the culmination of a decade and a half in which Israeli intelligence and military methods were at the vanguard of the campaign to control and destroy the network of international terrorism, a product of the advanced technology and political tensions distinctive of the modern era. In the eighteen months preceeding the 1982 war, terrorists from 28 countries--2300 in number--were trained at PLO bases in Lebanon with the assistance of weapons and advisers from the USSR, East European countries and North Korea.[68] Every one of these groups was operating against democratic or pro-Western regimes from Germany to Colombia; Ireland to Thailand; Spain to Turkey. Their bases in Lebanon were destroyed. As American personnel have come under attack by Iranian backed Shi'ite fundamentalists, Israel has remained an important ally in the battle against Mideast-based terrorism.

Similarly, the much-maligned Israeli attack on Osiraq accomplished a blow to nuclear proliferation, future instability and violence which few in the West have been prepared to admit publically. If Iraq used mustard gas against Iran, had it possessed nuclear weapons can there be any question that it would have used them against the waves of Iranian infantry which were launched against its troops by Khomeini?

The effectiveness of deterrence is, by its very nature, difficult to judge because it is only successful when actions do not occur. However, without Israel in the Middle East the United States would not have had a comparable pro-Western power to exert a brake on instability. Even if Washington had been willing and able to play the role, the profound anti-Western attitudes embedded in the regimes and ideologies of the area would have thwarted American leverage.

Evaluation

The value of the Israeli presence and its comparatively low cost can be compared to expenditures elsewhere. Two recent government reports estimate that in Fiscal Year 1985 the U.S. will spend 56-58 percent of its defense budget on the defense of other members of NATO. The $133 billion spent on NATO-related defense may soon be $177 billion.[69] Yet these countries are generally not keeping their commitments in terms of increasing their contributions to Western defense as measured by the percent of GNP they are supposed to be spend-

ing or on specific programs they are scheduled to institute. Americans already spend three times per capita what the average European pays for defense.[70] Indeed, NATO has a long and sad history of missed targets and unfulfilled plans.

In 1979 the goal was set for each NATO country to increase total annual defense expenditures by 3%. This goal has not been achieved by any of the organization's members with the exception of the United States and Luxembourg.[71] Only two other countries seem to even take the commitment seriously, the UK and Italy. By 1982, NATO's defense spending had fallen to 65% of the U.S. from 75% in 1979. From 1980 through 1982, the U.S. accounted for over four-fifths of NATO's total military spending.[72]

American expenses on European and Japanese defense often have hidden costs. They are not repaid financially and they involve a substantial burden not only in terms of the U.S. taxpayer but in terms of American manpower. As an example, Germany's funding levels in contribution to NATO's defense are only a little over 3% GNP. In 1982 Bonn had a real program decrease of .2%, while the U.S. had a real program increase of 7.5%.[73] Japan's percentage of GNP spent on defense is among the lowest in the world (0.93 percent compared to 6.1 percent for the U.S. and 28.7 percent for Israel) in 1981.[74] Low defense expenditures have facilitated Japan's ability to compete with the U.S. economically on a wide variety of products, most notably automobiles. One analyst proposed that Japan's GNP would be closer to that of

Italy's if the Japanese spent a percentage of their domestic production on defense comparable to the average defense expenditure of the U.S.[75]

In order to just maintain its current force levels, the U.S. will have to spend about 7.5% of its GNP. Spending less than this would mean finding "alternatives to using active American force levels to satisfy our strategies." One way to avoid this is to "even up the defense burden among those who share Western benefits."[76]

In a prepared statement before Congress, former Assistant Secretary of Defense, Leonard Sullivan, testified in 1982 that given a then-projected increase in defense spending to 7% GNP, if Japan increased its share by .5% of GNP and non-U.S. NATO increased its share by only 1% GNP, the U.S. defense budget would decrease 1.4% of GNP or $43 billion. If U.S. spending was 8% GNP, if Japan increased its defense spending by 1% and non-U.S. NATO's rose 1.5%, the portion of U.S. GNP dedicated to defense would only have to be 6%, a 2% decrease.[77] Thus, the claim that Israel saves the U.S. defense budget is not hypothetical. These figures demonstrate that when our allies spend, we save. When they save, we spend.

Henry Kissinger summarized U.S. criticism of our allies' "sharing" of the defense burden of NATO when he stated that "The Western Alliance will surely be jeopardized by the new theory of 'division of labor' by which the Europeans seek to retain the benefits of a relaxation of

tensions while we assume all the burdens and risks of resisting Soviet expansion."[78] Meanwhile, the view of many allies toward Western security interests and the proper approach to the USSR continue to diverge from those of the U.S. Even during the Carter Administration, which was less inclined than its successor to adopt a tough stance toward the USSR, differences were profound. Many allies were even reluctant to adopt sanctions toward Teheran in support of American policies at the time of the Iranian hostage crisis. Although the U.S. cannot always be held blameless despite the major burden continually exercised on behalf of the Europeans, an atmosphere of contempt and certainly ingratitude has set in--especially among the younger generation and within the European intellectual community.

These calculations become relevant in the light of the appreciating U.S. defense budget and the varied roles which the U.S. armed forces are asked to play. "Traditionally, we've had a range of contingency needs that probably exceed the force capabilities that we've been able to generate," Army Chief of Staff, General John A. Wickham, Jr., stated in August, 1983; "That probably applies now."[79] Recent Congressional debates reflect a recognition that the U.S. must either contract its commitments or expand its forces. General David C. Jones, the retired Chairman of the Joint Chiefs of Staff, has stated that the mismatch between American military forces and strategy "is greater now than it was before because we are trying to do everything."[80]

In the light of these conditions, Israel's deterrent capability in the Middle East becomes even more significant. Without her, U.S. commitments could well be much greater because of the instability and importance of the region. Even by 1983, U.S. expenses on Mideast-related RDF costs were only $25 billion ($737 million direct and $1.8 billion indirect) compared to $133 billion in NATO and $47 billion in the Far East.[81]

These expenses on the RDF (now known as the U.S. Central Command) are producing an untried and untested force which does not have an anchor in the area and is designed primarily for use in the Persian Gulf. It currently has 220,000 troops, 7 Air Force tactical fighter wings (approximately 72 aircraft each or 504 total), 3 aircraft carrier battle groups, 18 prepositioning ships, 1 amphibious ready group, 1-1/3 Marine amphibious forces.[82]

However, the transports do not exist and will not exist until 1987 for their rapid shipment to the Middle East or Persian Gulf. Oil facilities in the region are insufficient for fueling this force even if it could get there. The U.S. sold 12.5 million gallons of petrol to British forces for use in the brief Falklands crisis. This represents 2/3 of the oil now stored in the Middle East for the RDF.[83] By comparison, the $6.5 billion Israel spends annually produces not only oil storage for its forces; it also maintains a standing army of 172,000 (growing to over 500,000 during mobilization), 550 aircraft, 3,600 tanks, and 42 combat helicop-

ters.[84]

Therefore, in estimating the deterrent value of Israel and her contribution to Western security and credibility it seems logical to assume that without Israel U.S. costs in the Middle East would have increased at least $1 billion annually over the costs which have actually been incurred. This is less than 1% of the $133 billion spent on NATO in 1983 alone. It is only 5% of the $20 billion minimum annual expenditure we estimated it cost the U.S. to field a force comparable to Israel's unmobilized army.[85]

The Israeli contribution is even more important because the RDF has important implications for both U.S. NATO policy and the defense budget as a recent Congressional Budget Office study points out. If war were to draw the RDF to Southwest Asia, the U.S. would not be able to sustain its current level of commitment to NATO. The strength of NATO's position if this occurred would vary with the size of the RDF and its use. Many of the RDF forces are stationed in Europe and would be called away in the event of conflict in another region like the Middle East. The Reagan Administration has responded to this problem by attempting to convince our allies in Europe to increase their defense expenditures. As we have seen, the Administration has not had positive responses to these efforts.[86]

The current RDF force, if it had to respond to a conflict in Southwest Asia, would decrease NATO's forces by as much as 6 percent. The decrease in U.S. forces stationed

in Europe could be up to 20 percent. Even if the Reagan Administration does not follow through with its plans to enlarge the RDF, it would still cost an additional $19 billion over five years to maintain America's current commitment to NATO above the sums which would have been necessary without the RDF.[87]

The Administration has plans for a larger RDF force which would consist of 440,000 troops in 5 Army combat divisions, 3 Aircraft Carrier Battle Groups, 1 Amphibious Ready Group, 10 Airforce Tactical Fighter Wings, and 2 Marine Amphibious Forces.[88] Were this larger RDF to become engaged in a conflict in the Middle East, there would be a decrease of up to 33% in the number of U.S. troops stationed in Western Europe. Further, if conflicts were to occur simultaneously in Europe and Southwest Asia, and the larger RDF was drawn away, the U.S. could only deploy the six reinforcement divisions on reserve in U.S. bases for the first 60 days of conflict unless some of the RDF divisions were able to redeploy to Europe. In order to maintain both this larger RDF and a stable position in NATO, the Pentagon has discussed the possibility of adding four more fully supported Army divisions to NATO. Thus, the RDF could be costing the U.S. an additional $37.8 billion (the proposed cost of these four divisions) just so it can restabilize the force balance in NATO.[89] Indeed, one recent account estimated that the RDF will cost $59 billion as early as 1985.[90]

These estimated costs illustrate dramatically how

important Israel has become. Israel's forces are not at the command of the U.S. President as the RDF would be. Given Israel's citizen army they are not likely to be used at the disposal of the U.S.--especially in the Gulf. However, the RDF's principal role, like other forces, is to serve as a deterrent. Israel does not replace the RDF, but its forces are far more powerful and they certainly augment U.S. deterrence in the area. It would have cost the United States much more for a defense force comparable to Israel's due to higher American costs and the distance from the Middle East. Given this data, it is certainly not unreasonable to suggest that the U.S. would have had to expend at least $1 billion extra per year (totalling $15 billion over the last 15 years) for a level of security and credibility not nearly as effective as that provided by the existence of Israel.

IV. Energy Savings of $6.9 Billion

Many observers incorrectly blame Israel for the energy crisis of the 1970s. Even before the 1973 October War, consumer dependence on Middle Eastern oil was increasing and prices were rising. OPEC had previously scheduled a meeting to raise the cost of a barrel of oil before the war began. Moreover, the largest increases in the cost of a barrel of crude occurred in 1979-1980 over a development unrelated to Israel, the upheaval in Iran. In 1982, when Israel intervened in Lebanon, the Arab oil producers were furious but were unable to act because the world was awash in oil. Therefore, the market determined what OPEC could do with the price of oil, not the Israelis.

If Israel had not existed, these basic conditions would have developed in any case. Indeed, matters might have been worse--with other Mideast upheavals like the fall of the Shah serving as the trigger event which October 1973 became. Analysts who focus on the Arab-Israeli angle as a major cause of the energy crisis ignore the extent to which the Israelis actually contributed to stability and prevented price rises.

Supporters of Saudi Arabia cannot avoid its central role in the two price hikes of the 1970s--in 1973, when the price per barrel of Arabian light crude quadrupled from $2.10 to $9.60, and after the fall of the Shah, when it tripled from $12.70 to $32.[91] In the first hikes the Saudis had imposed the oil embargo on the U.S. and the production cuts which created the proper market and psychological conditions

which permitted the rise. In the second hike the Saudis were the prime mover in failing to increase production after the panic buying which followed the Shah's downfall. A recent paper estimates that these Saudi actions were a key factor in the repeated recessions of the 1970s, costing the U.S. economy $101.6 billion and approximately 4 million jobs.[92]

Most important, the Saudi regime might not have existed by the early 1970s if not for Israel. If Egypt had succeeded in the Yemen in the 1960s, if Hussein had fallen in 1970 or if radicals or the Soviets had not been deterred by Israel's military might, a domino effect could have toppled the region's monarchies. Without Israel the overthrow of the Saudis would have most likely occurred in the decade between 1957 and 1967 when the Saudi regime was weakest. The long-forgotten Yemen crisis of the 1960s stands as a monument to a history that might have been.

Through the mid-1960s the Egyptians intervened with Russian support to uphold a pro-Nasser government in Yemen against Saudi-backed rebels attempting to reinstall the centuries-old Immamate. Had Nasser succeeded in this venture, he would certainly have soon threatened neighboring Saudi Arabia, raising the spectre of a collapse of the Western position in the Persian Gulf. The history of the energy crisis in the 1970s may well have been more stark if it had occurred in the late 1960s instead.

Most analyses suggest that Nasser's failure in the Yemen was testimony to the poor abilities of his armed

forces--a conclusion reinforced by the sweeping Israeli military victory of 1967. But the Egyptian leader was also restrained in the resources he could commit to Yemen by his need to maintain a large body of troops on the Suez frontier. His fear of confrontation with Israel prevented him from committing Egypt to the overthrow of the "reactionary" regimes of the Arabian penisula. Moreover, Israel made this task even more difficult because of her covert activities to turn Egyptians against the Yemen operation. Without Israeli influence, Nasser's army might not have appeared as incompetent and may have been able to crush the royalist forces. The Saudis certainly drew this conclusion. They learned from the Yemen War the need to redirect Arab energies into the Arab-Israeli theater and away from inter-Arab conflicts like Yemen which presented a direct challenge to their survival. From their point of view it was better for Nasser to be fighting Israel than threatening them.

Thus, the energy crisis could have started earlier and with greater ferocity if a radical regime had succeeded in assuming power in Riyadh by the late 1960s as it did in Libya. The Israelis may not be popular, but they are also feared and in averting a 1973-style oil crisis in the 1960s, that characteristic may well have been crucial. Without Israel, moreover, interdiction of the oilfields or disruption of supply routes might well have occurred in the 1970s--creating an even greater crisis and costing the West untold billions.

Evaluation

The conventional wisdom of 1973 and 1974 was that without Israel the energy crisis would not have occurred or, if it did, at least oil would have not been as expensive. With the benefit of several years' hindsight, it now appears that the existence of Israel as a deterrent factor in the Mideast could have actually kept matters from getting worse sooner. In order to attempt to estimate the savings, we have calculated the U.S. oil import bill from 1967 to 1982 $691.19 billion and figured that without Israel the U.S. import bill would have been a minimum of one percent higher. This means, under the assumptions of our argument, that Israel has actually saved the U.S. at least $6.9 billion in reduced oil costs.[93] This figure has been calculated as an absolute minimum; a higher percentage was not used for purposes of caution. Without Israel's deterrent and military capacities, even taking account of the conflict with the Arab states, the level of instability within the region would have been greater with devastating effect on energy supplies.

Hypothetical Summary--$44.3 Billion

The total ammount of all of the hypothetical cases is ($ billions):

Middle East Intervention	$ 4
Israel as a Deterrent	$15
Bases	$18.4
Energy Savings	$ 6.9
Total	$44.3 Billion

Total Savings--$127 Billion

The findings for total savings from the relationship with Israel since its birth may be summarized as follows:

Concrete savings:	
Intelligence	$ 3.5
Tactical Warfare Research and Development	$29.9
Refining America's Armed Forces	$10
Air Defense	$ 3
International Arms Sales	$11.3
Mediterranean	$25
Hypothetical Savings:	
Middle East Intervention	$ 4
Israel as a Deterrent	$15
Bases	$18.4
Energy Savings	$ 6.9
Grand Total	$127 Billion

The Israeli Asset

The facts speak for themselves. Whether considered from America's regional interests in the Middle East or from more global concerns, the results are the same. Israel is a unique and impressive ally--democratic, dynamic, strong and reliable. She influences political developments in her own area, causes the Soviets embarrassment and military difficulties, facilitates the evaluation of American weapons, conveys lessons which can be learned only from combat experience, provides intelligence on developments in the region, and saves U.S. defense costs through innovations and modification of U.S. weaponry.

Only to examine the costs without considering the benefits provided by an ally is shortsighted and foolish. If we do not begin to judge more accurately the value and services of a country like Israel, our policies may well end up costing us much more. Like the businessman who cannot properly evaluate the return he is realizing on his investments, we will be the loser.

Israeli has been a reliable asset, which by it existence actively works in favor of U.S. interests. For example, in a study of the 37th General Assembly in 1982 Israel supported the U.S. 86.2% of the time, more than any other country. (Great Britain, which was second, voted with the U.S. 80.1% and in third place was West Germany with 76.6%). By comparison, Saudi Arabia supported the U.S. 24%, Egypt 26.2%, and Jordan 20.8% (The USSR voted with the U.S. 20.6%

of the time).[94]

Israeli willingness to cooperate and her capacity to innovate suggests that the savings to the U.S. could even be higher if we were prepared to place the relationship with Jerusalem on a more solid footing and were prepared to admit to ourselves that a technologically skilled, small but beleaguered country with more combat experience than we have had in recent years is in a position to assist us. In a period of a mushrooming defense budget, it would be perilous indeed for our own future to ignore such unusual opportunities.

There are other contributions Israel makes to the West--in agriculture, medicine, science, music, art, and philosophy. These are often recognized, but the basic strategic factors in the American-Israeli relationship are regularly neglected. On a daily basis all elements in contacts between the two countries are usually subservient to political disputes over such issues as West Bank settlements, withdrawal from Lebanon, the Reagan Plan, and arms to Arab states. Yet we cannot afford to become so immersed in contemporary controversies or particular personalities that the basic strategic interests of the United States are ignored or disregarded. The fundamental underlying reality of the American-Israeli relationship is that while political disagreements are inevitable, our strategic interests converge. A wise American policy can only be implemented if our officials make a clear distinction between the

frustrations of the conduct of daily diplomacy and the opportunities provided by complementary assets on both sides and demanded by mutual necessity.

Policy Implications

Beyond even these impressive benefits, the Israelis could aid the United States further through substantive and quiet arrangements in such areas as medical services, pre-positioning and maintenance of material, and stockpiling of oil for the Rapid Deployment Force. The usual objection to such areas of cooperation is that Arab states will oppose them. This approach is shortsighted and inaccurate. The Arabs may protest loudly whenever any improvement in U.S.-Israeli relations is trumpeted publicly. However, the protests mask the fact that some Arab leaders have learned to respect the stabilizing benefits of U.S.-Israeli strategic cooperation, others are powerless to undermine it, and still others are resigned to its existence. Tensions in the American-Israeli relationship only serve to threaten the implicit recognition in the area of the inevitability (and to some, the utility) of cooperation between Jerusalem and Washington.

The Israelis can provide indirect support, such as the use of their naval and air facilities, and the U.S. can continue to benefit from their refinement of U.S. equipment based on combat experience, from their technological innovations and from their presence in the Eastern Mediterranean. They can become active in tracking submarines and they are already engaging in joint naval exercises with the United States. They could become important in the upgrading of older U.S. equipment for Third World countries and they could engage in joint defense research and development with

American personnel and firms. None of these activities involve serving as a mercenary force or being employed in ground combat--actions which would be greeted negatively by the Arabs and would be anathema to the Israelis. Our approach needs balance--even with these caveats there are still wide areas available for cooperation which are not currently undertaken. If we do not take advantage of the services Israel offers, which are not available elsewhere, we encounter the worst of both worlds: we suffer the public deficits of support for Israel without gaining all of the benefits.

In Shakespeare's King Lear the monarch foolishly relinquishes his kingdom to two daughters who flatter him with expensive but false promises of everlasting devotion while he disowns his one faithful daughter, Cordelia, because she will not stoop to pretenses. The result is villainy and tragedy.

The analogy with America's current Middle East policy is compelling. Countries such as Saudi Arabia and Kuwait, which offer friendship but will not cooperate with U.S. defense or peace efforts, are regarded as critical allies, whereas Israel--which offers facilities and services--is treated as a pariah. As in Shakespeare's classic, the spurned party is actually the most loyal and reliable. King Lear destroyed his life, his family, and his kingdom because he could not judge accurately between friend and foe. The moral for the United States is obvious.

Footnotes

1. Wolfgang Lotz, The Champagne Spy, Manor Books, (London), 1972.

1a. Sidney Zion and Uri Dan, "The Untold Story of the Mideast Peace Talks," New York Times Magazine, January 21, 1979, p. 22.

2. Wilber Crane Eveland, Ropes of Sand: America's Failures in the Middle East, W.W. Norton & Co., (London), 1980, p. 95.

3. Ibid, p. 308n; Khrushchev speech in Stewart Steven, The Master-spies of Israel, Ballantine Books, (New York), 1980, p. 115-116.

4. Eveland, p. 309.

5. Author's confidential interview.

6. Victor Marchetti and John Marks, The CIA and the Cult of Intelligence, Knopf Inc., (New York), 1974, p. 80.

7. Ibid., p. 80; See also Louis Fisher, Presidential Spending Power, Princeton Univesity Press, (Princeton, N.J.), 1975, pp. 90, 215; and Leslie Gelb, "U.S. Intelligence Budget Cost put at $4 Billion," New York Times, November 19, 1975, p. 40. Gelb estimated the DIA Budget at $100 million, the NSA budget at $1.2 billion, and the CIA budget at $750 million of the $4 billion total that the U.S. spent on intelligence in 1975.
Early information on the costs of the American intelligence community include Harry Rowe Pansome, The Intelligence Estimate, Harvard University Press, (Cambridge, Mass.) 1970, pp. 88, 106, and 125; David Wise and Thomas Ross, The Invisible Government, Vintage Books, (New York), 1974, pp. 261-262; Nicholas Horrock, "Ford Aides Seek to Modify Laws on Spending Method," New York Times, October 15, 1975, pp. 1, 73; Elliot Maxwell, "The CIA's Secret Funding and the Constitution," Yale Law Journal, Vol. 84, No. 3, January 1975, pp. 608, 632; and Ray Cline, Secrets, Spies and Scholars, Acropolis Books, (Washington D.C.), 1976.
Discrepancies in estimates of the intelligence budget have resulted in many different estimations. Cline claims that "the total national intelligence community budget is estimated to equal just less that one half percent of the total U.S. GNP." (p. 241). The Pike Report claimed that "approximately 20% of the NSA's budget is not added to the intelligence budget" and that "the estimated total intelligence cost is 3 to 4 times the actual amount reported to Congress." See United States Congress, House, Select Committee on Intelligence, CIA: the Pike Report, Spokesman Books for the Betrand Russell Peace Foundation, (Nottingham), 1977, pp. 100-101.

8. "Department of Defense Appropriations for 1975," Hearings before a Subcommittee of the Committee on Approproations, House of Representatives, Ninety-Third Congress, Second Session, Part 4, (Washington D.C.), U.S. Government Printing Office, 1975, p. 465.

9. See, for example, "Department of the Air Force," U.S. Senate Hearing before a Subcommittee on Tactical Air Power of the Committee on Armed Services, (Washington D.C.), U.S. Government Printing Office, 1974, pp. 4244,4247, 4249, 4309-11; "Department of Defense Appropriations for Fiscal Year 1975," U.S. Senate hearings before the Subcommittee on Appropriations, (Washington D.C.), U.S. Government Printing Office, 1975, p. 5; "Fiscal Year 1975 Authorization for Military Procurement, Research and Development, and Active Duty, Selected Reserve and Civilian Personnel Strengths," Hearings before the Committee on Armed Services, Senate, Ninety-Third Congress, Second Session, Part 3, (Washington D.C.), U.S. Government Printing Office, 1975, pp. 1179-1184; "Department of Defense Appropriations for 1975," Hearings before a Subcommittee of the Committee on Appropriations, House of Representatives, Ninety-Third Congress, Second Session, Part 2, (Washington D.C.), U.S. Government Printing Office, 1975, pp. 66-67, 272, 302-303, 845.

10. Testimony of former Secretary of the Air Force John L. McLucas in the Senate hearings before the Subcommittee of the Committee on Appropriations, in "Department of Defense Appropriations for FY 1975," March 7, 1975.

11. The Soviets realized the importance of the Lebanon War as a source of valuable performance and technical data on their enemy's weapons. For example, when one Israeli Phantom was shot down late in the war the Israelis, to prevent their technological secrets from being revealed, quickly bombed the site. Only later did they discover that twelve Russians had already been combing the plane's remains and were killed. Author's confidential interview. See also Benjamin S. Lambeth, Moscow's Lessons for the 1982 Lebanon Air War, Rand Corporation, (Santa Monica, CA.), R-3000-AF p. 13.

12. Author's confidential interview; The ammunition discribed is the M-111, a 105mm armor piercing fin stabilized discarding sabot (APFSDS) round, a far more effective shell than previously available. It was used with success against the T-72 in Lebanon, and is credited with several hundred kills; W. Seth Carus, U.S. Procurement of Israeli Defense Goods and Services, AIPAC Papers on U.S.-Israel Relations, American Israel Public Affairs Committee, (Washington D.C.), 1984, p. 14-15, 37; Dr. Karl Schnell, "Experiences of the Lebanon War," Military Technology, No. 7/84, July 1984, pp. 28-29.

13. Schnell, pp. 28-30.

14. Author's confidential interview; International Defense Review, February 1982, p. 171; Gerald M. Steinberg, "The Israeli Arms Industry," paper prepared for the Stockholm International Peace Research Institute, August 1984, p. 26.

15. "Planes Without Pilots--Coming Defense Weapon," U.S. News and World Report, Febrary 28, 1972, p. 56.

16. Benjamin F. Schemmer, "Where Have all the RPV's Gone," Armed Forces

Journal International, Febrary, 1982, p. 38.

17. Phillip J. Klass, "Israel Demonstrates Mini-RPV Utility," Aviation Week and Space Technology, October 2, 1982, p. 28; Tom Bates, ed., "A Hero of Israel," California Magazine. The figure for the Michael Cieply, "Paper Planes", Forbes, September 26, 1983, p. 34; See also "How Israel, U.S. RPV's Compare," Electronics, October 6, 1982.
The Aquila program has been plauged with cost overruns and technical problems. Flaws in the Lockheed-built RPV led the Senate and House Armed Services Committees to advise the Army to delay production for a year (from the original July 1985 release for production date). Both the Senate and House Committees cut over $100 million from the Reagan Administration's FY 1985 RPV development budget request, due to "tight schedules and escalating costs." The original estimate for the DOD's 548 RPVs and 80 ground control stations was $563 million. See Armed Forces Journal International, "Aquila Delayed a Year; Ford Earns Contract," September 1984, p. 17. For Soviet lead in RPV technology see Newsweek, October 5, 1984, p. 17.

18. Technical Committee paper refered to in Benjamin M. Elson's, "Cost Factor Key to Unmanned Vehicles," Aviation Week and Space Technology, August 9, 1982, p. 67; Carus, p. 16-17; Israeli Defense Minister Moshe Arens spoke of the sale of Israeli RPVs to the U.S. Navy in the Jerusalem Post International Edition, September 9-15, 1984, No. 1245, p. 10; the sale was first reported in "U.S. Buys Israeli Pilotless Planes", New York Times, May 24, 1984.

19. Author's confidential interview; See also Walter Andrews, Washington Times, Dec. 2, 1983, p. 4; House of Representatives, Committee on Appropppriations, Department of Defense Appropriations for 1983, Part 7, p. 477-480; Near East Report, Nov. 4, 1983, p. 192; and Carus, p. 27, 40.
The B300/SWAW is a good example of the mutual benefit derived from U.S.-Israel industrial cooperation. The Marine Corps tested for some time before adapting their SWAW warhead to the Israeli B-300 launcher, the result being the primary "bunker-busting" weapon of the leathernecks. The U.S. Army, on the other hand, spent $225 million and seven years before finally cancelling a similar weapon, the Viper. Consequently, the U.S. Army still does not have a satisfactory anti-fortification device (although they're looking at the Swedish AT-4) while the Marines have a much needed and very effective weapon, an American company has a defense contract, and the Israelis were able to recover the B-300s development costs. See Armed Forces Journal, November 1983, p. 21; Carus, p. 28.
In the case of BMY, the American firm was in danger of going under untill it was decided to cooperate with Israeli engineers in order to design new and innovative types of military equipment. The M-1's Heavy Assualt Bridge will be longer yet lighter than U.S. Army specifications. BMY, traditionally a producer of armored vehicles for the Department of Defense, now has developed considerable research and development capabilities were now had existed before. See the "Interview with Mr. Vincent L. Jones, President BMY," in

Military Technology, VII, October 1983, p. 86; United Press International, February 24, 1983; Defense and Foreign Affairs Daily, July 29, 1983, p. 1; and "BMY: expanded operations," Military Technology, VII, April 1983, p. 95.
In addition to the B300/SWAW, Marine Corps Commandant General Paul X. Kelly has instructed that the Israeli Military Industry's 60mm hyper-velocity gun be considered for use as an assault gun variant. See Armed Forces Journal, Sepember, 1984.

20. Confidential interview by Ms. Sandra Smith.

21. F-18 and AMRAAM material found in Comptroller General of the United States, "Improving the Effectiveness and Acquisition Management of Selected Weapons Systems: A Summary of Major Issues and Recommended Actions," General Accounting Office, MASAO-82-34, May 14, 1982, p. 65, 111;
M-1 material found in Comptroller General of the United States, "Large-Scale Production of the M-1 Tank Should be Delayed Unitl its Power Train is Made More Durable," General Accounting Office, MASAO-82-7, December 15, 1981, p. 14.

22. "Department of Defense Appropriations," Senate Hearings before the Committee on Appropriations, Ninety-Seventh Congress, Second Session, Part 1, (Washington D.C.), U.S. Government Printing Office, 1983, pp. 206-207.

23. "Department of Defense Appropriations," Senate hearings before the Committee on Appropriations, Ninety-Seventh Congress, Second Session, Part 1, (Washington D.C.), U.S. Government Printing Office, 1983, p. 211.

24. Author's confidential interview. Also see Carus, 17-18.

25. Author's confidential interview. Also see Carus, 9-10.

26. Interview with Charles Krause, Manager of Foreign Industrial Trade for Ford Aerospace Corporation by Ms. Sandra Smith.
An example of a potential savings wasted is the U.S. standard ARM missile. The version in the U.S. military's inventory began to have problems with its engine and warhead. The Israelis solved the difficulties by developing a $5,000 warhead to be placed on a $10,000 American-made engine, resulting in a relatively inexpensive $15,000 weapon. The Pentagon rejected the Israeli version, choosing instead a $300,000 product of an American firm. Authors Confidential Interview.

27. National Defense Budget Estimates for FY 1983, (Washington D.C.) Office of the Assistant Secretary of Defense, 1982, p. 74.

28. See International Institute for Strategic Studies, Military Balance 1982/83, London, 1983, p. 312; and National Foreign Assessment Center, "Estimating Soviet Defense Spending: Trends and Prospects," Central Intelligence Agency, SR 78-10121, June, 1978.

29. For testimony concerning American pilots' superiority to Soviet

pilots see "Department of Defense Appropriations," Ninety-Seventh Congress, Second Session, Part 1, (Washington D.C.), U.S. Government Printing Office, 1983, p. 97. For skill of Israeli pilots see Lambeth, p. 28-29.

30. SIPRI Yearbook, 1983, pp. 361-69; Author's confidential interview.

31. Author's confidential interview; See also Lambeth, p. 12-13.

3

32. Anthony Cordesman, "Syrian-Israeli C I: The West's Third Front?," Armed Forces Journal International, March 1984, pp. 87-90, 51. For an effective counter to Cordesman see Lambeth, Op cit. From his analysis of Soviet military journals, the Rand Corporation analyst concludes that, although the Russians did learn some valuable lessons form the 1982 Lebanon War, they have also made some important erroneous conclusions. Lambeth believes the Soviets accurately understood the importance of releasing air superiority fighters from support of strike formations to separate patrol orbits, the vulnerability of airborne surveillance platforms to fighter and SAM action, the value of communications and radar jamming, the value of using fighters with long-range radars in a mini-AWACS role, the diminished reliability of radar controlled (ground) air operations as depth into enemy territory increases and the value of other "force-multiplier" technologies.

At the same time Lambeth recognizes many misrepresentations and errors of fact in recent Soviet military literature. First, the Soviets equate Israel's air operations over Lebanon with traditional American tactics recognized during the Vietnamese conflict. In truth, the Israelis used completely novel tactics developed by themselves. Second, the Soviets believe that the war proves the value of independent fighter sweeps which are supported by airbourne control platforms, which inaccurately portrays the independent search capabilities of the F-15's radar. This may be due to the traditional Russian tactic of controlling air operations from ground control centers; thus, the Soviets are simply interpreting the use of E-2C Hawkeye as an airborne Israeli command center. Finally, the Soviets seem not to have understood the importance of a good all-aspect air-to-air missile. They have discounted the capabilities of these weapons and regard them as the wave of the future, instead of the aircraft-killer of the present as they are in the West. They have also come to the conclusion that the F-15 requires either AWACS or ground support to utilize its AIM-7F and AIM-9L missiles, which is not the case. Lambeth concludes that "Either the Soviets have failed to comprehend some of the major tactical lessons suggested by Israel's air combat results over Lebanon, or they are intentionally misrepresenting those results to their aviators for a variety of reasons that we can only guess at. Either interpretation offers ground for guarded encouragement among American fighter pilots." (p. 27)

33. Schnell, p. 30.

34. "Estimated Soviet Defense Spending: Trends and Prospects," (Washington D.C.), Central Intelligence Agency, National Foreign

Assessment Center, 1978, SR 78-10121, pp. 4-5; Military Balance, (London), IISS, 1982, p. 12.

35. For a discussion of General Rogers statement and the implications for NATO see the New York Times, February 5, 1984, Sec. I, p. 18.

36. Foreign Military Sales, Foreign Military Construction Sales and Military Assistance Facts, as of September, 1981, Data Management Division, Comptroller, Defense Security Assistance Agency, (Washington D.C.), 1981, pp. 1-2.

37.

38. F. Clinton Berry, Jr., "The Revolutionary Evolution of the F-16XL," Air Force Magazine, November, 1983, p. 52.

39. Sylvia K. Crosbie, The Tacit Alliance: France and Israel from Suez to the Six Day War, Princeton University Press, (Princeton, N.J.), 1974, pp. 109-111; Aviation Week and Space Technology, Vol. 86, May 29, 1967, pp. 84-91; See also Steinberg, pp. 8-9.

40. Crosbie, pp. 155-57.

41. Author's confidential interviews; Both Iraq and Peru openly questioned the adequacy of their Soviet-supplied weapons after the debacle in Lebanon. For information concerning the effect of the Lebanon War of 1982 on Soviet arms sales, See Lambeth, p. 12; Ernest Conine, "Red Faces in the Kremlin: Soviet Arms Failures in Lebanon Could Lead to Danger," Los Angeles Times, October 4, 1982.

41a. Carus, p. 17.

42. Foreign Military Sales, Foreign Military Construction Sales and Military Assistance Facts as of September 1982, Department of Defense Security Assistance Agency, Comptroller, Data Management Division, (Washington D.C.), 1982, pp. 2-3.

43. Clarence A. Robinson, "U.S. Retains Edge in Mediterranean Sea," Aviation Week and Space Technology, January 17, 1977, p. 48; The Robinson article refers to a technical rather than a numerical superiority. See also Bruce W. Watson, Red Navy at Sea: Soviet Naval Operations on the High Seas, 1956-1980, (Boulder, Colo.), Westview Press, 1982, pp. 101-119.

44. Near East Report, XXII (March 14, 1979, p. 50, based on news item reported by Ted Koppel on ABC News.

45. Carus, p. 1; Weinberger also recently said that "Israel's military strength and enormous national ingenuity help deter Soviet aggression in the Eastern Mediterranean and throughout the region." Quoted from a recent letter sent by Secretary of Defense Casper Weinberger to a private citizen, dated March 19, 1983, made available to author.

46. Capt. John Moore, ed., Jane's Fighting Ships, 1982-1983,

Eighty-fifth edition, (London), Jane's Publishing Co., 1982, p. 460.

47. "Department of Defense Appropriations for 1984," Hearings before a Subcommittee on Appropriations, House of Representatives, Ninety-Eighth Congress, First Session, Part 1, U.S. Government Printing Office, (Washington D.C.), 1983, pp. 576-577. 1984 rather than 1982 dollars have been used here because the examples are future-oriented.

48. Ibid.

49. Ibid.

50. "The Military Balance, 1983/84," Air Force Magazine, December 1983, p. 98.

51. Patrick Seale, The Struggle for Syria, Oxford University Press, (London), pp. 5-15.

52. The claims, counterclaims, and rivalries of the various Arab actors leading up to and during the 1948 War are well documented. The primary antagonists among the Palestinians were the Husayni and Nashashibi families and the Istiqlal political party. See Christopher Sykes, Crossroads to Israel: 1917-1948, World Publishing Company, (Cleveland), 1965, pp. 122-124, 327-329; J.C. Hurewitz, The Struggle for Palestine, Schocken Books, (New York), 1976, pp. 182-194; and Sir Richard Allen, Imperialism and Nationalism in the Fertile Crescent: Sources and Prospects of the Arab-Israeli Conflict, Oxford University Press, (London), 1974, pp. 387-388.

53. The rivalry between Cairo, Baghdad, and Damascus has been a characteristic of Arab politics for centuries. The modern states have openly competed for the leadership of the Arab world since their independence. This rivalry has been particularly visible on the pan-Arab/Islam organizational level. Nasser's attempt to create a "United Arab Republic" are well documented. The Nile and the Euphrates long battled for the leadership of the Arab League. MacDonald termed this rivalry a "distinctive factor" in the development of the League, a contest which "has been institutionalized in and through the Arab League...and has been a persistent component of the continuum of conflict evident at the League Council level." See Robert W. MacDonald, The League of Arab States: A Study in the Dynamics of Regional Organization, Princeton University Press, (Princeton, N.J.), 1965, pp. 73-82. For the Egyptian perspective of this conflict see P.J. Vatikiotis, Nasser and His Generation, St. Martin's Press, (New York), 1978, pp. 236-237; For Syria's move toward and then away from Egypt in the late Fifties and early Sixties see A.L. Tibawi, A Modern History of Syria, MacMillan/St. Martin's Press, Inc., (New York), 1969, pp. 393, 397-413.

54. Townsend Hoopes, The Devil and John Foster Dulles, Little, Brown & Company, (Boston), 1973, pp. 320-23; See also Paul Jabber, Not by War Alone: Security and Arms Control in the Middle East,

University of California Press, (Berkeley, CA), 1981, pp. 147-149; For further information on Nasser's relations with other Arab countries see P.J. Vatikiotis, Nassar and His Generation, St. Martin's Press, (New York), 1978, pp. 225-248.

55. See Anwar el-Sadat, In Search of Identity: An Autobiography, Harper & Row, (New York), 1978, pp. 293, 298-301; Henry Kissinger, Year of Upheaval, Little, Brown and Company, (Boston), 1982, p. 749; Jimmy Carter, Keeping Faith: Memoirs of a President, Bantam Books, (New York), 1982, pp. 267-429.

56. "Military Construction Appropriations," Hearings before a Subcommittee of the Committee on Appropriations, House of Representatives, Ninety-Eighth Congress, First Session, Part 5, U.S. Government Printing Service, (Washington D.C.), 1983, p. 16.

57. Defense Almanac, 1983, September, 1983, American Forces Information Service, Arlington Virginia, p. 26.

58. "DOD Annual Operating Costs of Maintaining U.S. Military Forces in Foreign Countries and Areas," Office of the Assistant Secretary of Defense (Comptroller), April 28, 1980. (All costs translated into 1982 dollars).

59. Comptroller General of the United States, Report to the Senate Committee on Appropriations, "Operating and Support Costs of New Weapons Systems Compared with their Predecessors," Department of Defense, the Air Force and the Navy, Department of Defense, (Washington D.C.), LCO-77-429, pp. 5-6.
An Air Force squadron may include 18 or 24 aircraft. The information available on operating and support costs describes these expenses in terms of cost per squadron. In keeping with our cautious approach, we are assuming that the available operating and support funds would have been allocated to a squadron of 24 rather than 18 planes, thereby lowering the cost per aircraft. We also took only a 15 year rather than a 25 year basis for calculation as a means of further caution.

60. U.S. Government Printing Office, "United States Security Agreements and Commitments Abroad: Morocco and Libya, Hearings before the Subcommittee on United States Security Agreements Abroad of the Committee on Foreign Relations, Senate, Ninety-First Congress, Second Session, Part 9, July 20, 1970, p. 1992. ($77 million equals $192 million in constant 1982 dollars.)

61. This figure provided by U.S. Overseas Loans and Grants Obligations and Loan Authorizations, 1946-1982, Volume IV, Africa, March, 1983. Translated into 1982 dollars, $229 million equals $578.6 million.

62. "United States Foreign Policy Objectives and Overseas Military Installations," prepared for the Committee on Foreign Relations, Senate, by the Foreign Affairs and National Defense Division, Congressional Research Service, Library of Congress, April 1979, U.S. Government Printing Office, (Washington D.C.), 1979, p. 207.

(Appendix 1).

63. Ibid.

64. "Military Construction Appropriations for 1984," Hearings before a Subcommittee of the Committee on Appropriations, House of Representatives, Ninety-Eighth Congress, First Session, Part 5, U.S. Government Printing Office, (Washington D.C.), 1983, p. 115.

65. Henry Kissinger, White House Years, Little, Brown and Company, (Boston), 1979, p. 605; Elmo R. Zumwalt, Jr., On Watch: A Memoir, Quadrangle Books, (New York), 1976, pp. 70, 126, 139, 129-30, 353-354.

66. Robert Warren Stevens, Economic Consequences of the Vietnam War, New Viewpoints, Franklin Watts, (New York), 1976; Len Campbell, Office of Assistant Secretary of Defense (Comptroller), "DOD Outlays for Vietnam, Year by Year Since Fiscal Year 1965," January 9, 1975.

67. The task of determining how much it would cost for a force equivalent to Israel's depends on whether the base figure is the Israel unmobilized force of 172,000 or the mobilized force of 500,000 troops. It also depends on whether comparable American figures used are for direct or indirect costs of U.S. forces in NATO. Therefore, what emerges is a sliding scale.

First, the cost of U.S. forces in NATO totalled $133.2 billion for 1983. This is for a force strength of 355,600. Israel's unmobilized armed forces represent 48.4% of our total troop strength in Europe, or 172,000. Taking this as a percentage of U.S. costs yields a total of $64.4 billion annually. Using the same percentages but a lower figure which has been quoted for U.S. expenditures on our forces in NATO yields a total of $39.2 billion. (The lower estimate is $81 billion and does not include indirect costs as the $133.2 billion figure does.) Of course, if we based our figures on an Israeli troop strength of 500,000 the comparable figures would be $187.8 billion and $114.2 billion.

Second, in a similar vein, the cost of six U.S. divisions in Europe is estimated to be $30 billion. A single division costs the U.S. approximately $5 billion with one division comprising about 19,350 troops. The 172,000 troops in Israel's armed forces (unmobilized) is the equivalent of approximately 8.9 U.S. divisions. To field this many divisions the U.S. would have to spend about $44.5 billion annually. The comparable figure for a mobilized Israel of 500,000 would be $129 billion.

A third method of compilation was based on Air Force Magazine which in November, 1982, wrote that by preventing a force growth of 18,900 men in Europe the U.S. could save $220 million. This number of troops is 11% of Israel's total armed forces unmobilized. Using these figures, the cost for the U.S. of fielding a force equivalent to Israel's 172,000 would be $2.4 billion per year; fielding a force of 500,000 troops would be $5.8 billion.

These figures, however, are artificially low because they do not include the costs of maintenance, equipment, structure, capital investment and opportunity costs which would be part of any expenditure necessary for a troop presence in the Middle East the same size as the Israel Defense Forces (IDF). Moreover, the country or countries in which these forces were being housed would have to receive additional amounts of foreign aid (perhaps costing as much as $2-$3 billion per year) and the ever present danger of coups and revolutions would still exist--increasing expenses exponentially.

Another means of comparision is to compare U.S. and Israeli expenditures on the three services. Thus, the unmobilized Israeli Army is 17.3% of the American Army which cost $62.3 billion in 1983; The unmobilized Israeli Navy is 1.6% of the U.S. Navy, which costs $89.3 billion and the unmobilized Israeli Air Force is 4.7% of the $79.5 billion American Air Force. Therefore, according to these figures a comparable unmobilized force would cost $15.9 billion. When the Israelis are fully mobilized, their Army is 57.6% of the American Army, their Navy is 1.8% and their Air Force is 23.1%. The comparable figure, then, is a $55.9 billion annual cost that the U.S. would have to spend to field a comparable size force in the Middle East. However, these figures may be somewhat low because they do not take account of overall defense costs such as research and development. This conclusion is reinforced by the final means of comparison.

Perhaps the easiest means is to cite the annual Israeli defense budget of about $6.5 billion per year, but, Israel's labor costs are lower than those of the U.S. They are based in the Middle East so they do not have the transportation costs we would have, their maintenance costs are lower, and they generally man a leaner and more efficient military machine. Therefore, it is probably about right to suggest it would cost the U.S. three times the Israeli cost for a comparable defense product or about $18 billion--which is the minimum figure which should be considered here for fielding a force equivalent to Israel's unmobilized force in the Middle East. One recent analysis estimates the cost of to the U.S. of $150 billion for such a force, although presumably the comparison is to mobilized force, Issac Cohen, "Aid for Israel: A Bargain...," Chicago Tribune, October 24, 1984.

These calculations are based on Ronald Steel, "Ending the American Protectorate of Europe: Why we Should Dissolve NATO and Bring Home our Troops," Harper's Magazine, July 1982, p. 14; "What Should be the Level of U.S. Commitments for National Defense?" Compiled by Congressional Research Service, Senate, Ninety-Seventh Congress, Second Session, Document No. 97-34, (Washington D.C.: Library of Congress, 1982), p. 454-55; "The Military Balance, 1983/84," Air Force Magazine, December, 1983, pp. 72, 96; "DOD Appropriations Budget Overviews," Senate Hearings before the Committee on Appropriations, Ninety-Seventh Congress, Second

Session, Part 1, U.S. Government Printing Office, (Washington D.C.), 1982, p. 170; Comptroller of the United States, National Defense Budget Estimates for FY 1983, Office of the Assistant Secretary of Defense (Comptroller), March 1982, pp. 61-63.

68. "Terrorism: The role of Moscow and it Subcontractors," Hearing before the Subcommitte on Security and Terrorism of the Committee on the Judiciary, Senate, Ninety-Seventh Congress, First Session, June 26, 1981, Serial No. J-97-44, U.S. Government Printing Office, (Washington D.C.), 1982, pp. 1-53; "Foreign Assistance Authorization for Fiscal Year 1982," Hearings before the Committee on Foreign Relations, Senate, Ninety-Seventh Congress, First Session, U.S. Government Printing Office, (Washington D.C.), 1981, p. 268.

69. Richard Halloran, "Europe Called Main U.S. Arms Cost," New York Times, July 20, 1984.

70. Ibid.

71. Anthony Cordesman, "Defense Burden Sharing: A Brief Scorecard on our Major Allies (and Ourselves)," Armed Forces Journal International, October, 1982, p. 65.

72. SIPRI Yearbook, 1983, p. 131.

73. "Supplemental Appropriations for 1983," Hearings before the Subcommittees of the Committee on Appropriations, House of Representatives, Ninety-Eighth Congress, First Session, Part 2, U.S. Government Printing Office, (Washington D.C.), 1983, p. 366.

74. "Department of Defense Appropriations," Hearings before the Committee on Appropriations, Fiscal Year 1983, Senate, Ninety-Seventh Congress, Second Session, U.S. Government Printing Office, (Washington D.C.), 1983, p. 7, 196; The International Institute for Strategic Studies (IISS), The Military Balance, 1981-82, "Comparisons of Defense Expenditure and Military Manpower, 1975-1982," (London), 1982, p. 124.

75. Gary R. Saxonhouse, Professor of Economics, University of Michigan and Hugh Patrick, Professor of Economics, Economic Growth Center, Yale University, in testimony before Congress, "United States-Japan Relations," Hearing before the Subcommittee on Foreign Affairs, House of Representatives, and its Subcommittee on International Economic Policy and Trade and on Asian and Pacific Affairs, Ninety-Seveth Congress, Second Session, U.S. Government Printing Office, (Washington D.C.), 1982, pp. 603-605.

76. "Department of Defense Appropriations," Senate Hearings before the Committee on Appropriations, Ninety-Seventh Congress, Second Session, Fiscal Year 1983, Part 2, U.S. Government Printing Office, (Washington D.C.), 1982, p. 151.

77. Ibid, pp. 151-52.

78. "What Should be the Level of U.S. Commitments for National Defense," Compiled for the Congressional Research Service, Library of Congress, Senate, Ninety-Seventh Congress, Second Session, Document No. 97-34, U.S. Government Printing Office, (Washington D.C.), 1982, p. 446.

79. New York Times, "Military Force Stretched Thin, Army Chief Says," August 10, 1983.

80. Ibid.

81. "Department of Defense Appropriations, Fiscal Year 1983," Senate Hearings before the Committee on Appropriations, Ninety-Seventh Congress, Second Session, Part 3, U.S. Government Printing Office, (Washington D.C.), 1982, pp. 228-234. The Far East costs were obtained from Earl C. Ravenal, Defining Defense: The 1985 Military Budget, The Cato Institute, (Washington D.C.), 1984, p. 16.

82. The FY1984 budget has included a $13.7 billion increase in the 1984 defense budget authority to be spent by 1987 on these transports. Congressional Budget Office, Rapid Deployment Forces: Policy and Budgetary Implications, prepared for the Subcommitte on Sea Power and Force Projection of the Senate Committee on Armed Services and the Joint Economic Committee, CBO, Congress of the United States, (Washington D.C.), 1983, pp. xiii, 55; Ibid, p. xv.

83. For an analysis of the tactical fuel needs of the RDF see Martin Indyk, Charles Kupchan and Steven Rosen, Israel and the U.S. Air Force, AIPAC Papers on U.S.-Israel Relations--2, American Israel Public Affairs Committee, (Washington D.C.), 1983. See also The Economist, [fill in].

84. "The Military Balance, 1983/84," Air Force Magazine, December 1983, p. 98. This $6.5 billion figure is the estimated yearly defense cost for Israel, based on statistics provided by the IISS Military Balance. Israel's defense budget was multiplied year by year with an American Consumer Price Index, added together and averaged for 1972-1981.

85. See Footnote 67 above.

86. Congressional Budget Office, Rapid Deployment Forces: Policy and Budgetary Implications, February, 1983, p. xiii, 19, 23.

87. Ibid, pp. 26-27.

88. Ibid, pp. xiii-xv, p. 11; One source estimates that the eventual cost of the RDF will top $500 billion. See James A. Nathan, "Gulf Oil is no Longer Worth our Defense," Los Angeles Times, Nov. 29, 1983, Section II, p. 7.

89. Ibid, pp. 24-5, xvi, xvii.

90. Ravenal, p. 17.

91. Congressional Quarterly, The Middle East, Fifth Edition, Congressional Quarterly Inc., (Washington D.C.), 1981, p. 95.

See Lawrence Goldmuntz, Chairman, National Energy Committee, "Toward an Oil Glut at Lower Prices, LDC and OECO vs. OPEC," American Jewish Committee, Institute of Human Relations, (New York), pp. 6-7; "Strategic Petroleum Reserve," Hearings before the Subcommittee on Energy Resources and Materials Production of the Committee on Energy and Natural Resources, Senate, Ninety-Sixth Congress, First Session, U.S. Government Printing Office, (Washington D.C.), 1980.

93. Figures provided to the author by the Source: U.S. Department of Energy.

94. Congressional Record, "Extension of Remarks," Ninety-Eighth Congress, Second Session, April 5, 1983, pp. E-1392-93.