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**ISRAEL'S STRATEGIC REALITY:
THE IMPACT OF THE
ARMS RACE**

HIRSH GOODMAN



THE WASHINGTON INSTITUTE FOR NEAR EAST POLICY

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Though Israel's military prowess has impressed the world, its superiority rests in fact on fragile foundations: on the skill and motivation of Israel's men and women in arms; on the technological superiority of the weapons Israel receives from its ally, the United States, as well as those designed or improved by its own scientists; and on the weaknesses and disunity of its Arab opponents. The author, Hirsh Goodman, is the military correspondent of The Jerusalem Post. He is also author of numerous articles in The New Republic and The Atlantic. He wrote this paper while a Visiting Fellow at The Washington Institute for Near East Policy in 1985.

ISRAEL'S STRATEGIC REALITY: THE IMPACT OF THE ARMS RACE

This is why the Washington Institute's Jerusalem Post correspondent, to prepare this policy paper on the changing factors in the Middle East balance of power. His cogent analysis brings to bear the gifts both as a writer and a military analyst for which Mr. Goodman is so widely esteemed.

The Washington Institute's Policy Papers series is designed to provide the Washington based policy-making community with timely, expert analysis of current Middle East issues. Its wider purpose is to promote a better understanding of the Middle East and the means by which these interests can be promoted.

HIRSH GOODMAN

ACKNOWLEDGEMENTS
Barbi Weisberg
President

The author would like to thank Deborah Rothfeld and Leonard Schoen for valuable research assistance, Seth Carus for providing advice and much of the data and the graphs, and Robert Satloff for preparing the tables.



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For Near East Policy

PREFACE

Though Israel's military prowess has impressed the world, its superiority rests in fact on fragile foundations: on the skill and motivation of Israel's men and women in arms; on the technological superiority of the weapons Israel receives from its ally, the United States, as well as those designed or improved by its own scientists and engineers; and on the weaknesses and disunity of its Arab opponents. These assets have so far proven sufficient to compensate for a continuing, indeed a growing, numerical disadvantage in manpower, in economic resources and in all manner of weaponry.

The quality of Israel's fighting men is one advantage that surely will endure. They know that they cannot afford to fail, for if Israel loses one war, it will never get a chance to fight another. But Israel's other advantages are quite perishable. Israel's budget cutbacks are widening the quantitative gap which has always favored the Arabs. And now Israel's critical technological edge is in jeopardy. With Israel's deterrent capability eroding the chances of war increase and the prospects for peace diminish.

That is why the Washington Institute asked Hirsh Goodman of the Jerusalem Post, one of the world's leading military correspondents, to prepare this policy paper on the changing factors in the Middle East balance of power. His cogent analysis brings to bear the gifts both as a writer and a military analyst for which Mr. Goodman is so widely esteemed.

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Barbi Weinberg
President
January 1986

The combination of these trends underscores the prime importance of maintaining air superiority as Israel's only effective response to a deteriorating military balance. But here too, Israel's edge is diminishing. Arab states have concentrated their efforts on acquiring the means to challenge Israel's vital air superiority. The proposed sale of F-16s and mobile I-Hawks to Jordan, combined with F-15s and AWACS in Saudi Arabia and the front-line Soviet equipment supplied to Syria, pose a threat with which Israel's air force has never before been faced. Moreover, these acquisitions undermine Israel's deterrent image and fuel the incentive for a quick and decisive Arab surprise attack.

As long as the fuse on Middle East conflict is shortened by the provision to both sides of weapons that are faster, more advanced and more lethal, hope for peace and stability in the region will continue to evaporate.

EXECUTIVE SUMMARY

Israeli military planners must prepare for potential conflict in a strategic environment that is growing increasingly hostile. Forced to deal with worst-case scenarios spread over a 10-year planning horizon, Israeli planning must account for the ebb and flow of inter-Arab alliances. Therefore, Israel must not only ready itself against traditional foes, but it must also assume that weapons now sold to pro-Western Arab moderates will be used against the Jewish state in the event of an Arab-Israeli war. Planning is made even more complex given Israel's geographic limitations, with most of its population and its industrial infrastructure squeezed into an area roughly the size of urban Indianapolis.

First, the Arab states' **quantitative** edge over Israel is expanding. Comparisons of population growth, gross national product and armed forces indicate that the statistical gap between Israel and the Arab confrontation states is widening. Moreover, drastic budget cuts, escalating procurement costs, and a drop in the value of US aid have forced Israel to cut back spending in such crucial areas as development, training and regular army troop levels. In short, Israel simply cannot keep up; it can no longer maintain the minimum **quantitative** ratio that its planners consider necessary to wage war at an acceptable cost.

Second, due to the greater sophistication and easier utilization of weapons in Arab arsenals, Israel's **qualitative** advantage is eroding as well. Whereas arms sold to Arab states traditionally were technologically inferior to those sold to Israel, today both sides are able to purchase the same weapons. Israel is left with only two options to overcome this new technological problem: pre-positioning material at more vulnerable sites closer to the potential battlefields and investing vast sums of money and manpower in making the best weapons *even better*. Ironically, the effort to maintain the **qualitative** edge adds to the burden on the Israeli economy, further worsening the **quantitative** gap in the Arab states' favor.

The combination of these trends underscores the prime importance of maintaining air superiority as Israel's only effective response to a deteriorating military balance. But here too, Israel's edge is diminishing. Arab states have concentrated their efforts on acquiring the means to challenge Israel's vital air superiority. The proposed sale of F-16s and mobile I-Hawks to Jordan, combined with F-15s and AWACS in Saudi Arabia and the front-line Soviet equipment supplied to Syria, pose a threat with which Israel's air force has never before been faced. Moreover, these acquisitions undermine Israel's deterrent image and fuel the incentive for a quick and decisive Arab surprise attack.

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TABLES, GRAPHS AND MAPS

Map 1:*	Flying Times to Israel	page 5
Map 2:*	Arab Participation in Wars Against Israel	page 7
Map 3:*	The SCUD Threat	page 33
Map 4:	The Missile Threat from Syria	page 34
Map 5:	Possible Missile Threat from Jordan	page 35
Map 6:*	Contribution of F-16 and mobile "Hawk" Missiles to Jordan's Attack Capability	page 36
Map 7:*	Supply of F-16 and Mobile "Hawk" Missiles to Jordan - Characteristics and Consequences	page 38
Map 8:*	F-15 Capability - Attack Mission - With/Without CFT & MER-200	page 39
Map 9:*	The AWACS Threat to Israel	page 41
Graph 1:	Middle East Military Expenditures	page 16
Graph 2:	Middle East Arms Imports	page 16
Graph 3:	Middle East Combat Aircraft	page 17
Graph 4:	Middle East Battle Tanks	page 18
Graph 5:	Arab and Israeli Population	page 19
Graph 6:	Middle East GNP, 1950-1982	page 19
Graph 7:	Defense Spending as % of GDP, 1983	page 20
Graph 8:	Defense Spending Per Capita, 1982	page 21
Graph 9:	Israeli Military Spending as % of GNP	page 21
Graph 10:	Israeli Military Spending Per Capita	page 22
Graph 11:	Israel's Increasing Cost Per Aircraft	page 23
Graph 12:	Cumulative U.S. Arms Sales to Saudi Arabia	page 49
Table 1:	Arab Alliances, 1964-1982	page 10
Table 2:	American Equipment in the Iranian Order of Battle at the Time of the Fall of the Shah	page 12
Table 3:	Arab-Israeli Military Expenditures, 1972-1982	page 13
Table 4:	Balance of Forces, 1984	page 14
Table 5:	Arms Imports, 1972-1982	page 14
Table 6:	Israel-Arab Military Balance	page 15
Table 7:	Population, 1950-2000 Arab Countries and Jewish Israeli	page 18
Table 8:	U.S. Military Aid to Israel in Constant 1974 Dollars	page 23
Table 9:	Arms Used by Both Israel and the Arabs	page 26
Table 10:	U.S. Foreign Military Sales, 1950-1984	page 47
Table 11:	Upgrades of Soviet Equipment Supplied to Arab Countries	page 48

* These maps reflect the borders which the Israel Defense Forces currently maintain, including territories administered by Israel since 1967.

CONTENTS

PREFACE	iii
EXECUTIVE SUMMARY	v
LIST OF TABLES, GRAPHS AND MAPS	vi
I. INTRODUCTION	1
II. ISRAEL'S STRATEGIC REALITY	4
III. THE QUANTITATIVE BALANCE OF POWER	13
IV. THE QUALITATIVE EDGE	25
V. THE THREAT TO ISRAEL'S AIR SUPERIORITY	31
VI. EROSION OF DETERRENCE AND THE CHANCES OF WAR	42
VII. ISRAEL AND THE U.S.	45
VIII. THE CONSEQUENCES OF FURTHER ARMS SALES	50

I. INTRODUCTION

Much has been written about Israel's eroding quantitative and qualitative military edge. The inherent consequences of this, however, have not been elucidated sufficiently; nor has America's role in the process.

America is Israel's staunchest ally. Without its aid Israel's current military and economic situation would be near catastrophic. American arms transfer policies, on the other hand, especially over the past 10 years (since the decision to supply Saudi Arabia with F-15 fighters) have become a major problem both for the maintenance of Israel's military edge and its economic well being. An examination of American arms transfer policy leads to perplexing conclusions. Foremost among them is that there is an inherent contradiction between American diplomatic goals in the Middle East -- producing lasting peace and stability through a process of territorial compromise -- and a US arms transfer policy which provides the main protagonists with the wherewithal and incentive to perpetuate conflict, thus making territorial compromise increasingly unlikely.

Declared American policy regarding peace in the region rests on UN Security Council Resolutions 242 and 338, calling for Israel's return of territory captured in the 1967 Six Day War in exchange for peace with its neighbors. Yet, how can Israel be expected to return the strategically vital West Bank when Jordan, Saudi Arabia and Egypt are the beneficiaries of weapons systems that cut flying times, increase destructive capabilities, are harder to intercept and are more survivable than anything Israel has ever had to face before? The better the weapons on the other side (more often than not the same weapons that the U.S. supplies to Israel), the more cogent the

argument for not giving up strategic depth, for not compromising on the hills that provide the early warning capabilities that are becoming more imperative as the quality of weapons on the other side constantly improves.

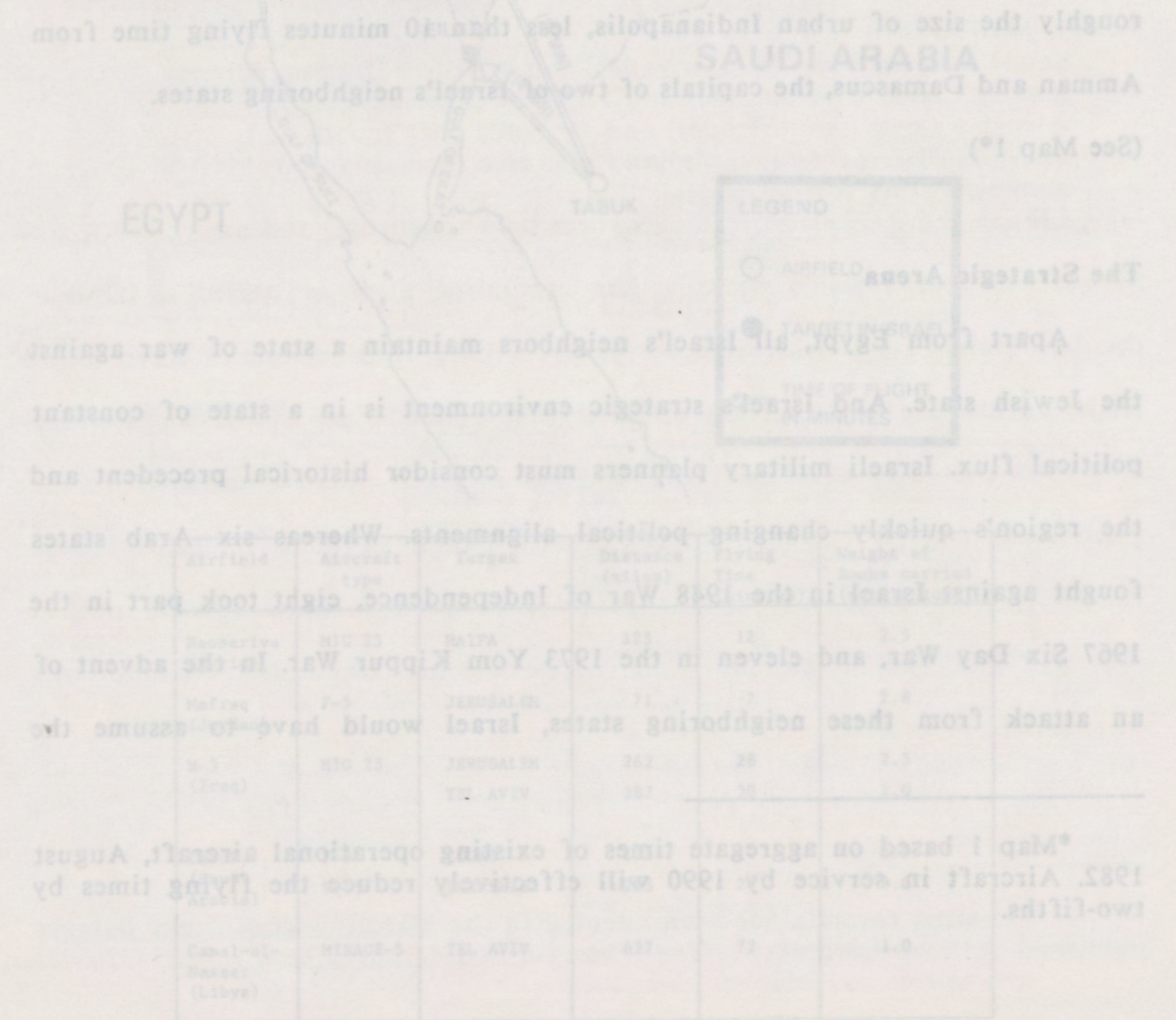
Israeli strategic planners have to assume the worst-case probability. Historic precedent makes it clear that it is impossible to predict the future of the arena; to know whose finger will be on the trigger in the currently pro-Western and moderate countries; and to foresee what ideologies will prevail in the states now receiving high-grade American weapons technology, infrastructure and training. An analysis of past patterns and future potential scenarios in these countries makes these questions not only theoretically applicable, but an essential element of any realistic appraisal of developments in Israel's strategic arena.

While others are also arming Israel's potential enemies, one-third of all military sales flowing to these countries comes from the US. And the problem of American-made systems is not just quantitative. On the qualitative level, the injection of high-grade American weapons in the arena brings in their wake upgrading from other sources of supply as well. The Soviet Union, for example, traditionally supplied its Arab clients with equipment one generation behind what it deployed on its own frontline. That pattern has changed and, one suspects, primarily because of the general increase in sophistication generated by US arms sales. It must be difficult, for example, for the Soviet Union to say "no" to a Syrian request for advanced fighters when the Americans are considering supplying Jordan with F-16s or comparable aircraft.

One of the purposes of this paper is to show that American arms transfer policies in the Middle East have not always been dictated by strategic prudence and are often not consistent with the real threat posed to the

recipients of these weapons. Though it is both shallow and glib to say that in many cases arms sales were generated by pecuniary interest, the ability of the arms manufacturing lobby to influence policy cannot be discounted. Also, the influence of the upper echelons of the military establishment -- whose strategic perceptions have often been affected by other interests such as defraying research and development costs -- cannot be dismissed.

The long-term consequences of the constant pumping of more TNT into a potential powderkeg and the equally constant shortening of the fuse on that powderkeg have been subordinated both to short-term interests and a narrow view of Middle East realities. The most likely result is the perpetuation of the regional conflict, not its resolution.



II. ISRAEL'S STRATEGIC REALITY

Israelis are one of the most politically heterogeneous people in the world, with 2,654,613 voters supporting 26 political parties. All Israelis, however, share a common strategic reality that transcends ideological differences.

Israel proper is a tiny country which stretches along the Mediterranean coast for 226 miles. It has an average depth of a mere 40 miles. About 90 percent of its population -- and 93 per cent of its industrial infrastructure, power-generating capability, ports, airports and refining facilities -- are situated along the coast, concentrated roughly between Ashkelon in the south and Acre in the north. In other words, most of Israel is located in an area roughly the size of urban Indianapolis, less than 10 minutes flying time from Amman and Damascus, the capitals of two of Israel's neighboring states.

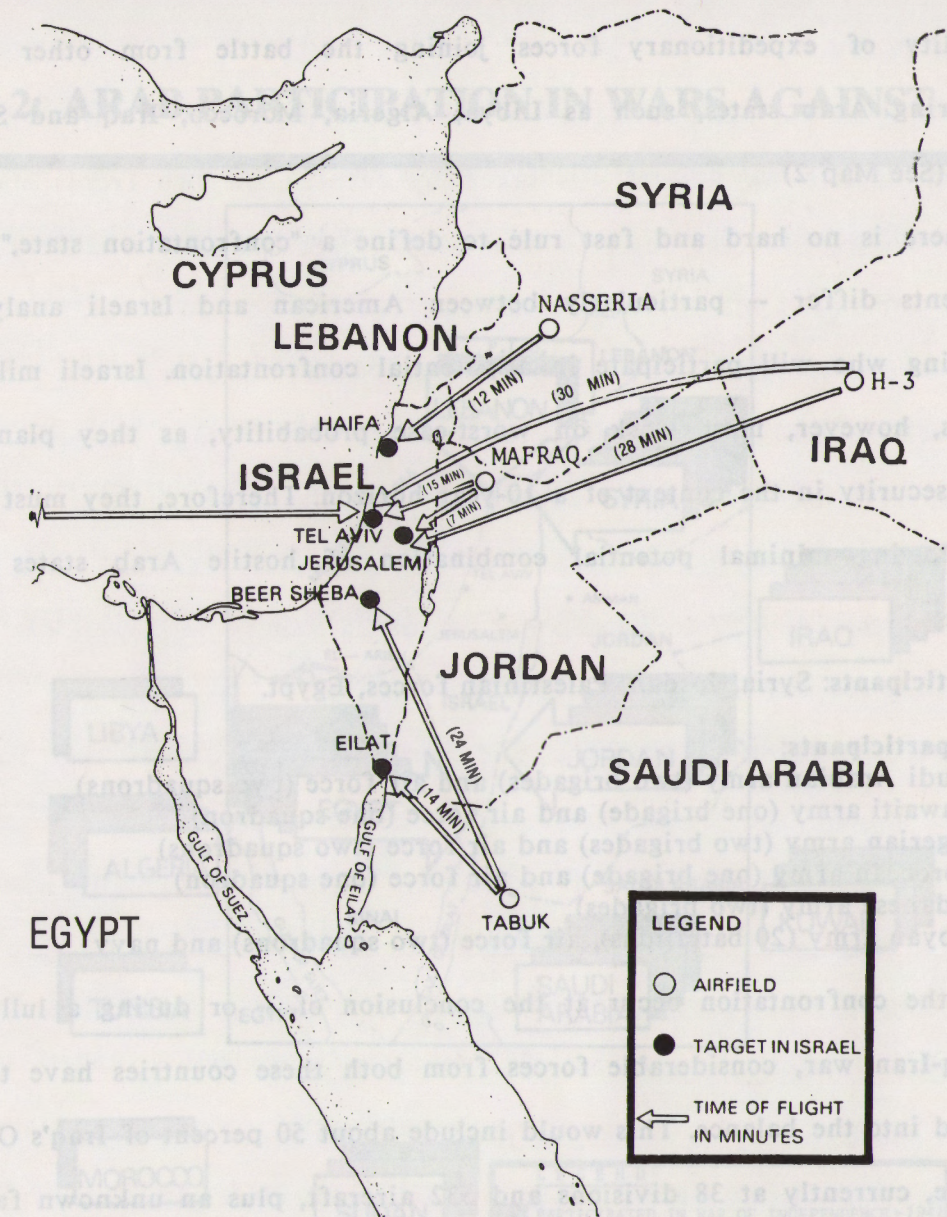
(See Map 1*)

The Strategic Arena

Apart from Egypt, all Israel's neighbors maintain a state of war against the Jewish state. And Israel's strategic environment is in a state of constant political flux. Israeli military planners must consider historical precedent and the region's quickly changing political alignments. Whereas six Arab states fought against Israel in the 1948 War of Independence, eight took part in the 1967 Six Day War, and eleven in the 1973 Yom Kippur War. In the advent of an attack from these neighboring states, Israel would have to assume the

*Map 1 based on aggregate times of existing operational aircraft, August 1982. Aircraft in service by 1990 will effectively reduce the flying times by two-fifths.

MAP 1: FLYING TIMES TO ISRAEL



Airfield	Aircraft type	Target	Distance (miles)	Flying Time (minutes)	Weight of Bombs carried (metric tons)
Nasseria (Syria)	MIG 23	HAIFA	125	12	2.5
Mafraq (Jordan)	F-5	JERUSALEM	71	7	2.8
H-3 (Iraq)	MIG 23	JERUSALEM	262	28	2.5
		TEL AVIV	287	30	2.0
Tabuk (Saudi Arabia)	F-5	EILAT	131	14	2.0
	F-15	BEERSHEBA	225	24	3.0
Gamal-el-Nasser (Libya)	MIRAGE-5	TEL AVIV	637	72	1.0

probability of expeditionary forces joining the battle from other non-neighboring Arab states, such as Libya, Algeria, Morocco, Iraq and Saudi Arabia. (See Map 2)

There is no hard and fast rule to define a "confrontation state," and assessments differ -- particularly between American and Israeli analysts--concerning who will participate in a potential confrontation. Israeli military planners, however, must work on worst-case probability, as they plan for Israel's security in the context of a 10-year horizon. Therefore, they must take the following minimal potential combination of hostile Arab states into account:¹

Full participants: Syria, Jordan, Palestinian forces, Egypt.

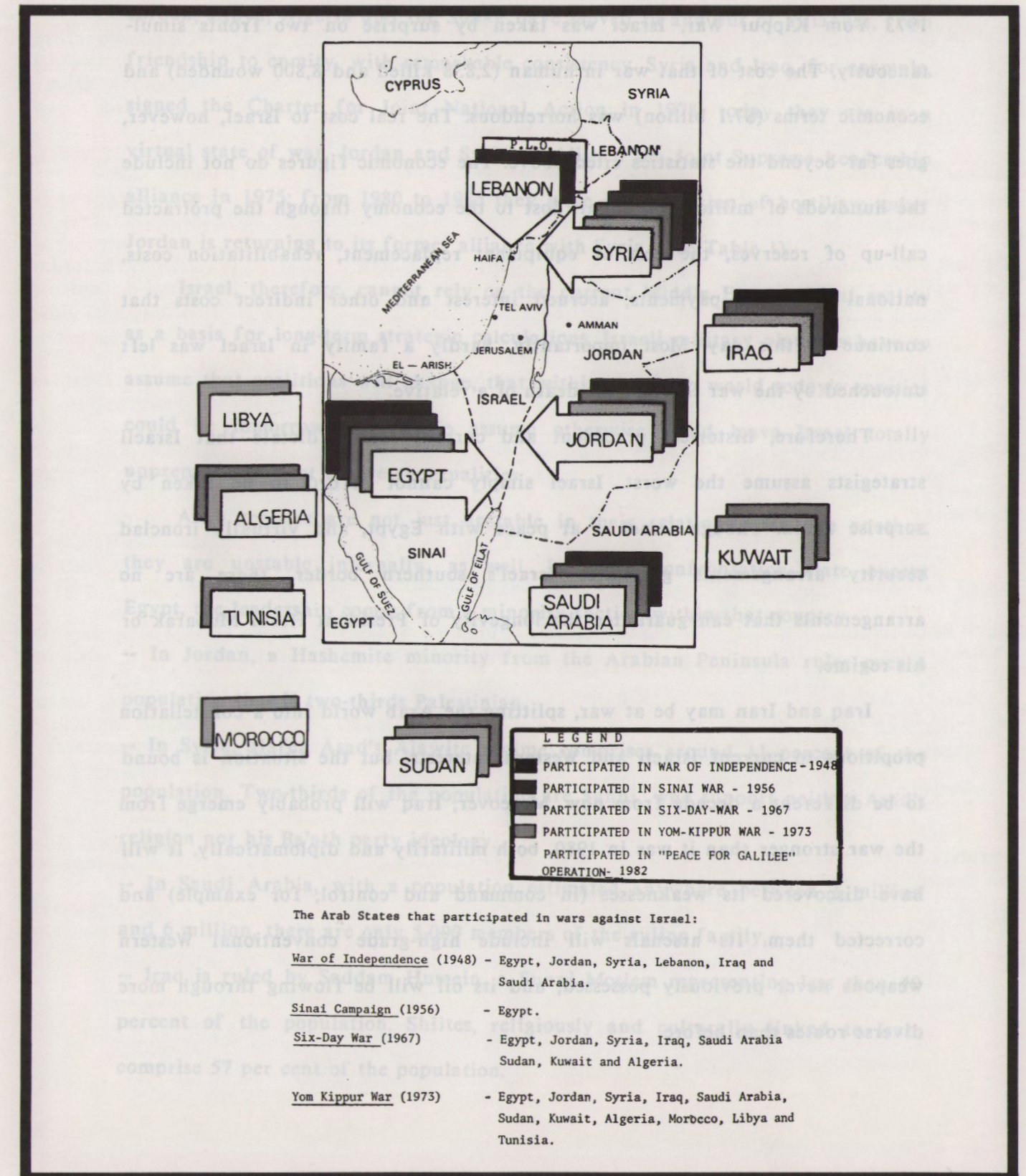
Partial participants:

- Saudi Arabian army (two brigades) and air force (two squadrons)
- Kuwaiti army (one brigade) and air force (one squadron)
- Algerian army (two brigades) and air force (two squadrons)
- Moroccan army (one brigade) and air force (one squadron)
- Sudanese army (two brigades)
- Libyan army (20 battalions), air force (two squadrons) and navy

Should the confrontation occur at the conclusion of -- or during a lull in-- the Iraq-Iran war, considerable forces from both these countries have to be projected into the balance. This would include about 50 percent of Iraq's Order of Battle, currently at 38 divisions and 532 aircraft, plus an unknown factor from Iran. Though currently at peace with Israel, Egypt is included in the composition of potentially hostile forces because it is impossible to project who will head the regime and what its political and ideological attitudes will be a decade from now.

¹ The same formula has been adopted in the Middle East Military Balance published by the authoritative Jaffee Center for Strategic Studies at Tel Aviv University.

MAP 2: ARAB PARTICIPATION IN WARS AGAINST ISRAEL



The Worst Case

Planning on the basis of the worst case probability is not fanciful. In the 1973 Yom Kippur War, Israel was taken by surprise on two fronts simultaneously. The cost of that war in human (2,838 killed and 8,800 wounded) and economic terms (\$7.1 billion) was horrendous. The real cost to Israel, however, goes far beyond the statistics cited above. The economic figures do not include the hundreds of millions of dollars lost to the economy through the protracted call-up of reserves, the cost of equipment replacement, rehabilitation costs, national insurance payments, accrued interest and other indirect costs that continue to this day. Most importantly, hardly a family in Israel was left untouched by the war through the death of a relative.

Therefore, historical precedent and current reality dictate that Israeli strategists assume the worst. Israel simply cannot afford to be taken by surprise again. Though Israel is at peace with Egypt, and virtually ironclad security arrangements guarantee Israel's southern border, there are no arrangements that can guarantee the longevity of President Hosni Mubarak or his regime.

Iraq and Iran may be at war, splitting the Arab world into a constellation propitious to current Israeli and Western interests, but the situation is bound to be different a decade from now. Moreover, Iraq will probably emerge from the war stronger than it was in 1980, both militarily and diplomatically. It will have discovered its weaknesses (in command and control, for example) and corrected them. Its arsenals will include high-grade conventional Western weapons never previously possessed, and its oil will be flowing through more diverse routes than before.

Alliances between Arab regimes have been notoriously unstable, with 25 fundamental coalition changes in the last two decades alone. Syria, Iraq, Jordan, Libya, Algeria and the Sudan have moved in and out of alliances, from friendship to enmity, with remarkable consistency. Syria and Iraq, for example, signed the Charter for Joint National Action in 1978; today they are in a virtual state of war. Jordan and Syria established the Joint Supreme Leadership alliance in 1975; from 1980 to 1985 they were in a situation of hostility; today Jordan is returning to its former alliance with Syria. (See Table 1)

Israel, therefore, cannot rely on the current Middle East political reality as a basis for long-term strategic calculations. Israeli military planners have to assume that coalitions will change, that within the Arab world today's enemies could be tomorrow's allies. To assume otherwise could leave Israel totally unprepared to meet future eventualities.

Arab regimes are not just unstable in their relations with one another; they are unstable internally, as well. In every confrontation state except Egypt, the leadership comes from a minority faction within that country.

-- In Jordan, a Hashemite minority from the Arabian Peninsula rules over a population that is two-thirds Palestinian.

-- In Syria, Hafez Asad's Alawite regime comprises around 11 percent of the population. Two-thirds of the population are Sunni, who support neither Asad's religion nor his Ba'ath party ideology.

-- In Saudi Arabia, with a population estimated anywhere between 3 million and 6 million, there are only 5,000 members of the ruling family.

-- Iraq is ruled by Saddam Hussein, a Sunni Moslem representing less than 40 percent of the population. Shiites, religiously and culturally linked to Iran, comprise 57 per cent of the population.

TABLE 1: ARAB ALLIANCES, 1964-1982

TYPE OF COALITION	DATE	PARTICIPANTS	DATE AND CAUSE OF ABROGATION
United political command	1964	Egypt-Iraq	1973: hostile relations between the two countries
Joint defense agreement	1966	Syria-Egypt	-----
Military coalition for war on Israel	1967	Jordan-Egypt-Syria-Iraq	end of the Six Day War
Egyptian-Jordanian joint defense agreement	1967	Egypt-Jordan-Iraq	March 1978: Jordan severed diplomatic relations with Egypt
Eastern command	1968	Iraq-Jordan-Syria	December 1968: lack of coordination
Eastern front command	1969	Syria-Jordan	August 22, 1970
Bilateral defense agreement	1969	Syria-Iraq	1982: differing views over Iran-Iraq War
Cairo Agreement	1970	Egypt-Jordan	-----
Tacit coalition of radical states	1970	Egypt, Iraq, Syria, Libya, Sudan, Algeria	-----
Egyptian military advisors and officers	1970	Egypt-Libya	March 1976: Libya expelled 250,000 Egyptian workers
Tripartite alliance	1970	Syria, Egypt, Libya, Sudan	-----
Permanent joint committee on Syrian-Lebanese affairs	1971	Syria-Lebanon	-----
Tacit understanding	1971-1973	Egypt-Saudi Arabia	-----

TABLE 1: ARAB ALLIANCES, 1964-1982

TYPE OF COALITION	DATE	PARTICIPANTS	DATE AND CAUSE OF ABROGATION
Military coalition	1973	Egypt-Syria	----
Higher Jordanian-Syrian joint committee	1975	Syria-Jordan	1980: Syria massed on Jordanian border
Tripartite agreement	1975	Egypt-Saudi-Sudan	-----
Joint Supreme Jordanian-Syrian leadership	1975	Syria-Jordan	1980: Syria massed on Jordanian border
Arab Deterrent Force (intervention into Lebanon)	1976	30,000 Syrian troops already in Lebanon (contingents from Saudi Arabia, Sudan, Libya, UAE, South Yemen)	April 1979: all non-Syrian forces had withdrawn
Charter for joint national action	1978	Syria-Iraq	1982: differing opinions over Iran-Iraq War
Coordination of supply of arms and training to Iran	1979	Syria-Iran	-----
Alliance between the two countries, military support	1980	Jordan-Iraq	-----
Pan-Arab "Front of Steadfastness and Resistance"	1980	Syria, Libya, Algeria, PDRY, PLO	1982: Lebanon war made it virtually inactive
Egypt supplies Iraq with arms and ammunition	1981	Egypt-Iraq	-----
Restoration of relations	1982	Saudi Arabia-Libya	March 1982: Libyan accusations that the Saudis were blocking oil production discussions in OPEC

Source: The Military Balance, 1982, 1980-1981

-- Minority regimes also rule uneasily in Kuwait and Bahrain.

Israeli strategists, therefore, cannot predict who will be in control of the Arab arsenals now being assembled. Highly sophisticated weapons supplied to a friendly regime today could well end up in the hands of a hostile regime tomorrow. The best example of this is to be found in the fall of the Shah of Iran in 1979. Just as Ayatollah Khomeini inherited an estimated \$9.1 billion in sophisticated American weapons, so Israeli strategists have to assume that the same could happen in any of the current pro-Western, moderate countries now receiving American weapons. At the time of the revolution the following American equipment was deployed in Iran:

TABLE 2: AMERICAN EQUIPMENT IN THE IRANIAN ORDER OF BATTLE AT THE TIME OF THE FALL OF THE SHAH

ARMY		AIR FORCE	
400 M-47/48 tanks	188 F-4D/E fighters		
460 M-60A1 tanks	166 F-5E/F fighters		
325 M-113 armored personnel carriers	77 F-14A fighters		
330 M-101 105mm artillery	14 RF-4E reconnaissance aircraft		
112 M-114 155mm artillery			
14 M-115 203mm artillery	13 Boeing 707, 9 Boeing 747,		
440 M-109 155mm artillery	54 C-130E/H transports		
38 M-107 175mm artillery			
14 M-110 203mm artillery	39 Bell 214C, 2 CH-47C, 2 S-61A4 helicopters		
Dragon anti-tank missiles			
TOW anti-tank missiles	Phoenix, Sidewinder, Sparrow		
HAWK anti-aircraft missiles	air-to-air missiles		
205 AH-1J helicopters	Maverick air-to-surface missiles		
295 Bell 214A helicopters			
90 CH-47C helicopters			
NAVY		NAVAL AIR	
2 Sumner class destroyers	6 P-3F Orion maritime reconnaissance aircraft		
4 PF-103 class corvettes			
Harpoon anti-ship missiles	6 S-65A, 20 SH-3D, 6 RH-53D helicopters		
Standard anti-ship missiles			

Source: The Military Balance, IISS, 1980-1981

III. THE QUANTITATIVE BALANCE OF POWER

In the 12 years that have elapsed since the 1973 Yom Kippur War -- a war that Israel almost lost -- the Arab confrontation states have spent \$98.4 billion on weapons; arms worth an additional \$21 billion are in the pipeline. Consequently, in the decade 1972-1982, Arab-Israeli military spending ratios dramatically improved in the Arabs' favor. Whereas the ratio in 1972 (in constant 1981 U.S. dollars) was 2.7:1, in 1982 the ratio was 7.5:1. By the end of the decade, the ratio is estimated to be about 8:1, though no credible data is available.

TABLE 3: ARAB-ISRAELI MILITARY EXPENDITURES, 1972-1982 (millions 1981 \$US)

YEAR	TOTAL ARAB	ARAB-ISRAEL RATIO	ISRAEL
1972	7,842	2.73:1	2,872
1973	11,944	2.06:1	5,786
1974	17,281	3.36:1	5,140
1975	22,981	3.92:1	5,869
1976	28,209	4.70:1	5,999
1977	28,518	5.01:1	5,694
1978	29,571	6.17:1	4,789
1979	33,054	5.30:1	6,232
1980	38,042	6.42:1	5,930
1981	37,108	8.48:1	4,374
1982	41,492	7.53:1	5,507

Total Arab includes Egypt, Iraq, Jordan, Kuwait, Libya, Saudi Arabia and Syria
Source: US Arms Control and Disarmament Agency, 1984

Assuming an Arab constellation of Egypt, Iraq, Jordan, Kuwait, Libya, Saudi Arabia and Syria, Israel would have been faced with the following balance of forces (excluding navies) in 1984:

TABLE 4: BALANCE OF FORCES, 1984

	TOTAL ARAB	ISRAEL	RATIO
Mobilizable military manpower ('000s)	3,519	474	15:2
Combat aircraft	2,600	539	5:1
Surface-to-surface missile launchers	230	12	19:1
Surface-to-air missile launchers	487	15	32:1
Divisions	70	14	5:1
Battle tanks	14,910	3,560	4:1
Artillery	12,002	958	25:2

This balance of forces is a function of both procurement and production capabilities. Whereas Israel has an edge in production, arms import ratios have constantly deteriorated from Israel's point of view. In 1972 the ratio of arms imports was 4.2:1, in 1982 it was 14.6:1.

TABLE 5: ARMS IMPORTS, 1972-1982
(constant 1981 US \$millions)

YEAR	TOTAL ARAB	ARAB-ISRAEL RATIO	ISRAEL
1972	2,473	4.22:1	587
1973	5,685	13.37:1	425
1974	4,111	2.55:1	1,614
1975	3,614	3.21:1	1,127
1976	5,075	3.52:1	1,440
1977	6,847	4.46:1	1,536
1978	8,669	7.41:1	1,170
1979	10,510	17.93:1	586
1980	10,014	11.09:1	903
1981	12,495	11.36:1	1,100
1982	13,826	14.66:1	943

The overall 1984 balance between Israel and the aggregated forces Israel would have to face (excluding Iraq and Iran, but including Egypt) can be broken down as follows:

Source: The Military Balance, 1985, 1980-1981

TABLE 6: ISRAEL-ARAB MILITARY BALANCE

Note: Plus sign indicates precise number unknown; minus indicates no entry
Source: The Middle East Military Balance 1984, Jaffee Center for Strategic Studies

ARMY					
	Israel	Arab Coalition	Israel	Arab Coalition	
Personnel (thousands)					
Regular	130	752			
Reserves	310	750			
Total	440	1,502			
Divisions					
Armor	11	10			
Mechanized	-	10			
Infantry	-	3			
Indep. Brigades					
Armor	-	9			
Mechanized	-	2			
Inf./Para./Comm.	20	40			
			Indep. Battalions Mechanized	-	20
			Tanks	3650	8065
			APCs & ARVs	8000	8470
			Guns & Mortars	1000	6050
			ATGM Launchers	+	5150
			SSM Launchers	12	54
AIR FORCE & AIR DEFENSE					
	Israel	Arab Coalition	Israel	Arab Coalition	
Personnel (thousands)					
Regular	30	221.0			
Reserve	50	62.5			
Total	80	283.5			
Interceptors	40	750			
Military airfields	11	48			
Long-range SAM batteries	+	304			
			Strike & Multi-role aircraft	600	850
			Bombers	-	35
			Total combat aircraft	640	1635
			Transport aircraft	88	160
			Helicopters	188	485
NAVY					
	Israel	Arab Coalition	Israel	Arab Coalition	
Personnel (thousands)					
Regular	10	34.3			
Reserve	10	17.5			
Total	20	51.8			
			Submarines	3	18
			Surface vessels	62	155
			Naval bases	3	17

ERRATA

Page 14, TABLE 4 should read:

Mobilizable military manpower ('000s)	3,519	520	7:1
Combat aircraft	2,600	640	4:1
Battle tanks	14,910	3,650	4:1

Page 25, last sentence should read:

Both Israel and Saudi Arabia have F-15s; both Israel and Egypt have F-16s, and Jordan is anxious to acquire them; both Israel and Jordan have Hawk anti-aircraft missiles.

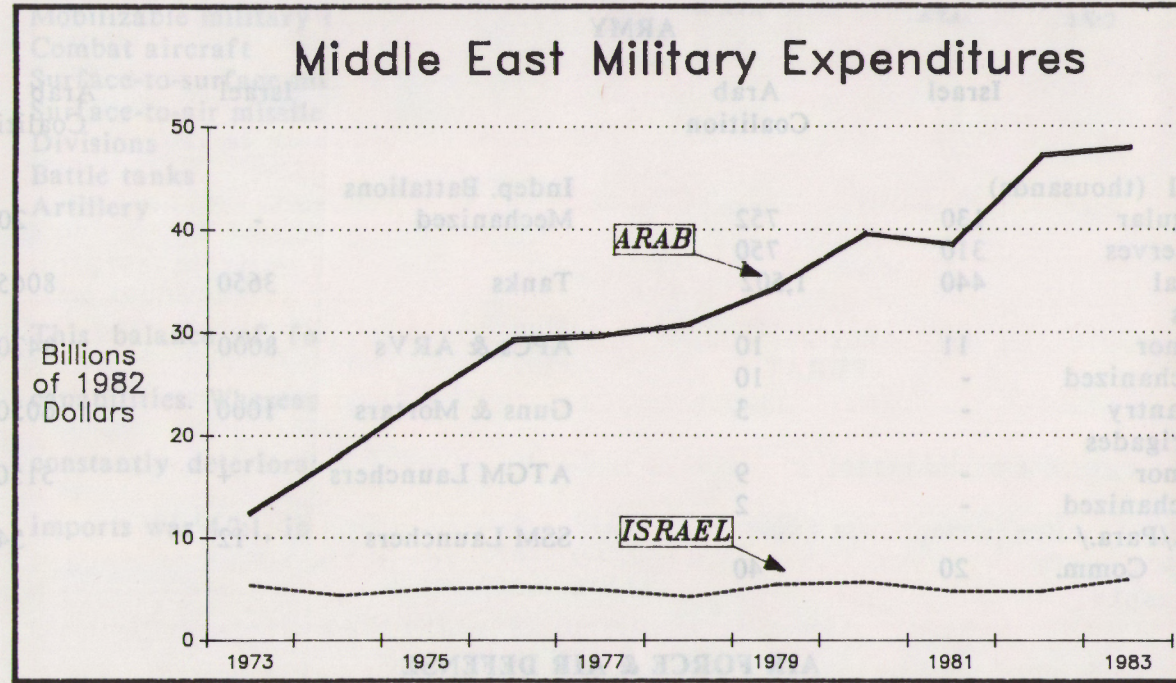
Page 26, TABLE 9, second item under FIGHTER BOMBERS should read:

F-16: Egypt

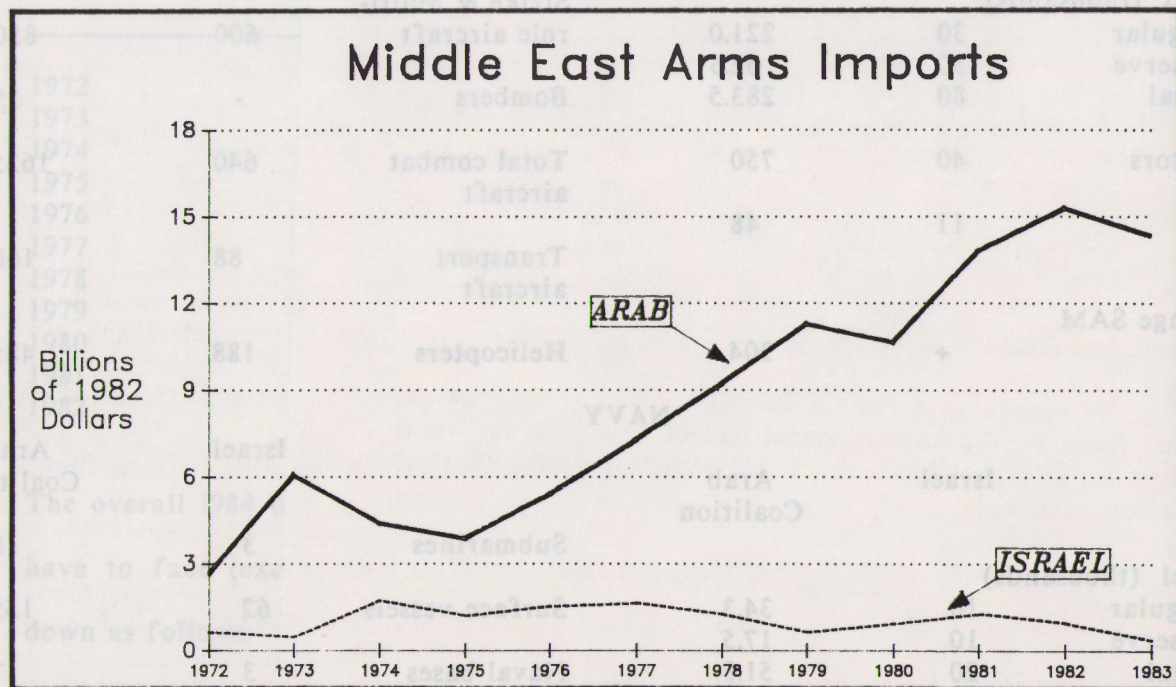
Page 27, last sentence should read:

In order to ensure that its numerically inferior airforce can combat those of the enemy, Israel has to have the ability to improve on the performance of individual systems in these aircraft.

Moreover, there is a growing disparity between Israel and the confrontation states in main weapons systems since the Yom Kippur War.

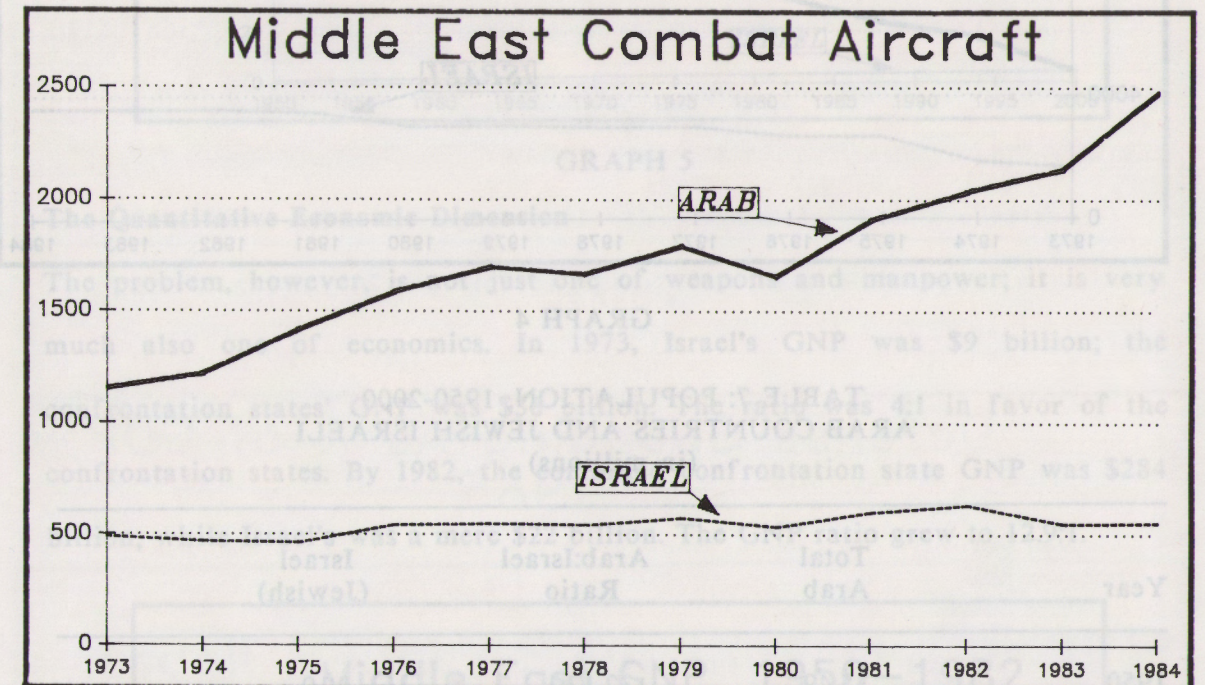


GRAPH 1



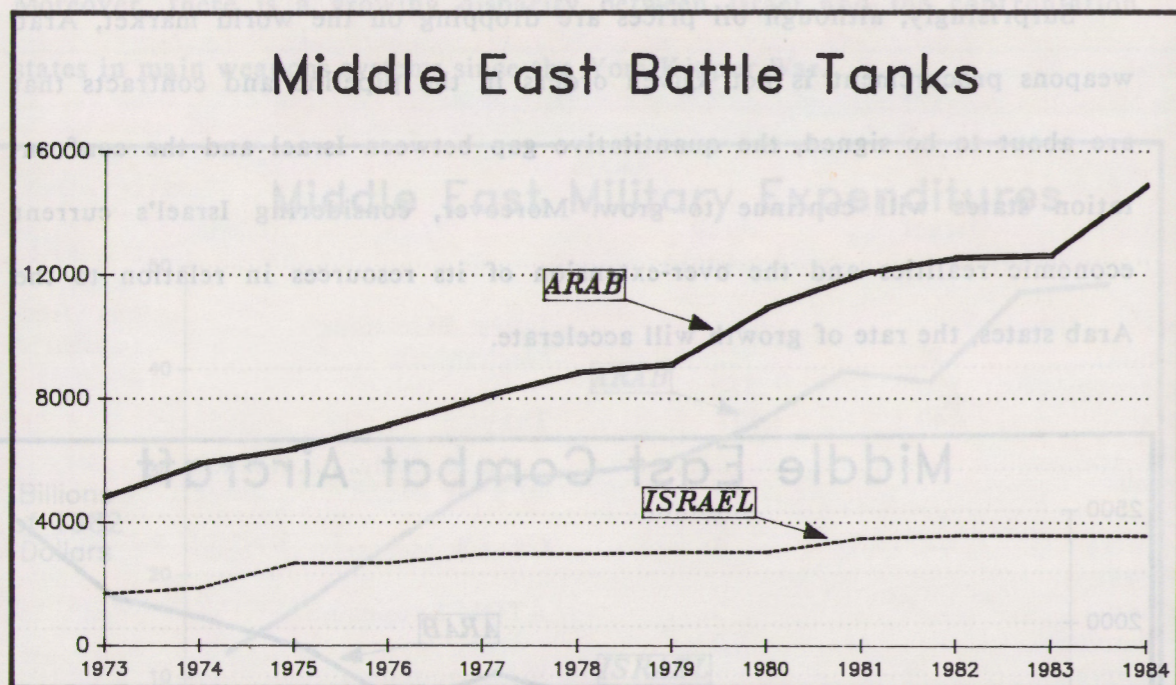
GRAPH 2

Surprisingly, although oil prices are dropping on the world market, Arab weapons procurement is not. Given orders in the pipeline and contracts that are about to be signed, the quantitative gap between Israel and the confrontation states will continue to grow. Moreover, considering Israel's current economic realities and the over-extension of its resources in relation to the Arab states, the rate of growth will accelerate.



GRAPH 3

In terms of manpower, the situation is just as alarming. Israel's projected Jewish population by the end of this decade is estimated to be 3.7 million; the population of the potential Arab confrontation states will be some 108 million -- a ratio of 29:1, compared with a ratio of 26:1 in 1985. By the year 2000, the ratio is expected to jump to 34:1.



GRAPH 4

TABLE 7: POPULATION, 1950-2000
ARAB COUNTRIES AND JEWISH ISRAELI
(in millions)

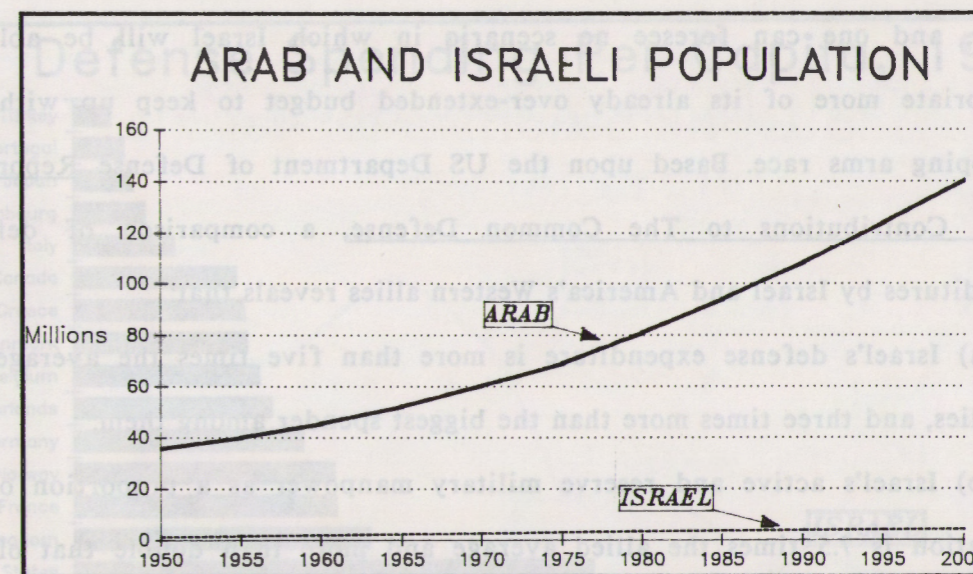
Year	Total Arab	Arab:Israel Ratio	Israel (Jewish)
1950	35.49	32.17:1	1.10
1955	39.99	25.71:1	1.56
1960	45.41	24.11:1	1.88
1965	52.17	22.99:1	2.27
1970	60.26	23.70:1	2.54
1975	68.96	23.53:1	2.93
1980	80.88	24.59:1	3.29
1985	93.86	26.61:1	3.53
1990	108.08	28.89:1	3.74
1995	123.79	31.54:1	3.92
2000	140.62	34.08:1	4.13

Total Arab includes Egypt, Iraq, Jordan, Kuwait, Libya, Saudi Arabia and Syria

Sources: For all data before 1972: United Nations, Demographic Yearbook:

Special Issue: Historical Supplement; for 1972-1981: UN, Demographic Yearbook 1981; Israeli data, Statistical Abstract of Israel, 1984 ed.

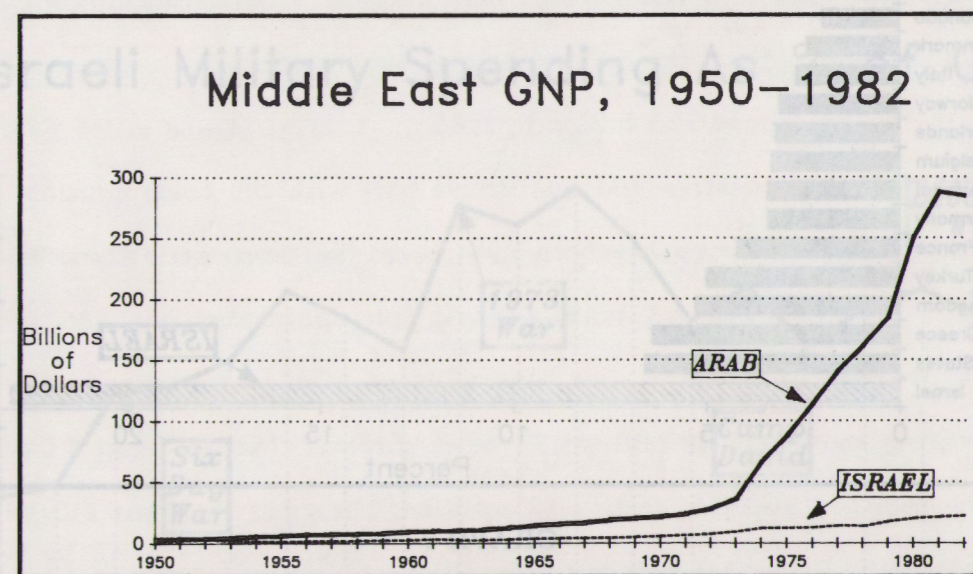
Projections: UN, Department of International Economic and Social Affairs, Demographic indicators of countries (estimates and projections as assessed in 1980, 1982). Jewish projections from Statistical Abstract of Israel, 1982, ed.



GRAPH 5

The Quantitative Economic Dimension

The problem, however, is not just one of weapons and manpower; it is very much also one of economics. In 1973, Israel's GNP was \$9 billion; the confrontation states' GNP was \$36 billion. The ratio was 4:1 in favor of the confrontation states. By 1982, the combined confrontation state GNP was \$284 billion; while Israel's was a mere \$22 billion. The GNP ratio grew to 12.9:1.

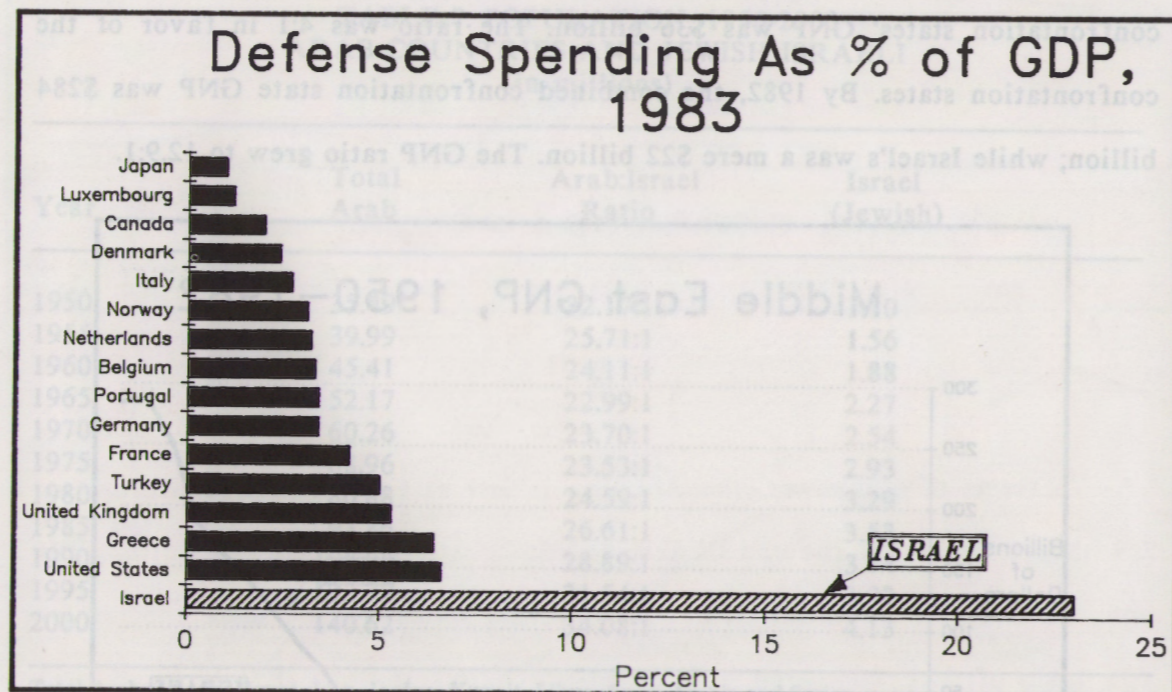


GRAPH 6

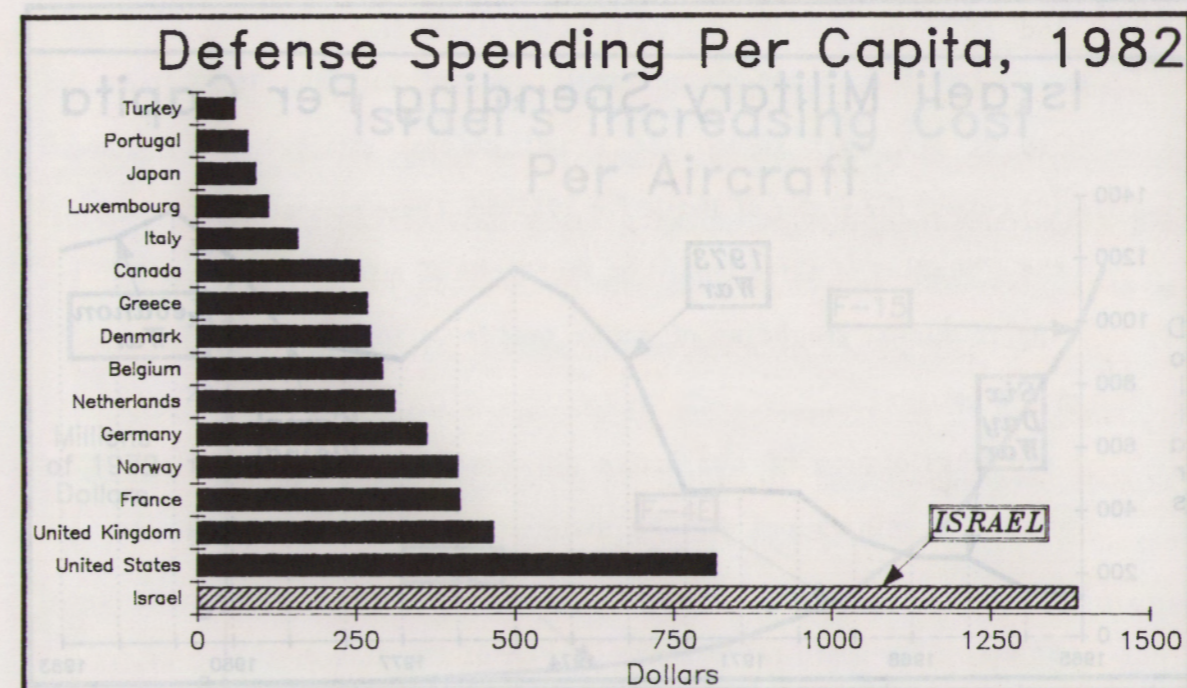
Israel is already the highest per capita spender on defense of any developed

nation, and one can foresee no scenario in which Israel will be able to appropriate more of its already over-extended budget to keep up with the developing arms race. Based upon the US Department of Defense Report on Allied Contributions to The Common Defense, a comparison of defense expenditures by Israel and America's Western allies reveals that:

- a) Israel's defense expenditure is more than five times the average for the allies, and three times more than the biggest spender among them;
- b) Israel's active and reserve military manpower as a proportion of its population is 7.5 times the allied average and more than double that of the ally with the largest armed forces;
- c) Israel's number of armored divisions compared to its GDP is 25 times the allied average while its aircraft combat inventory is 24 times the average.

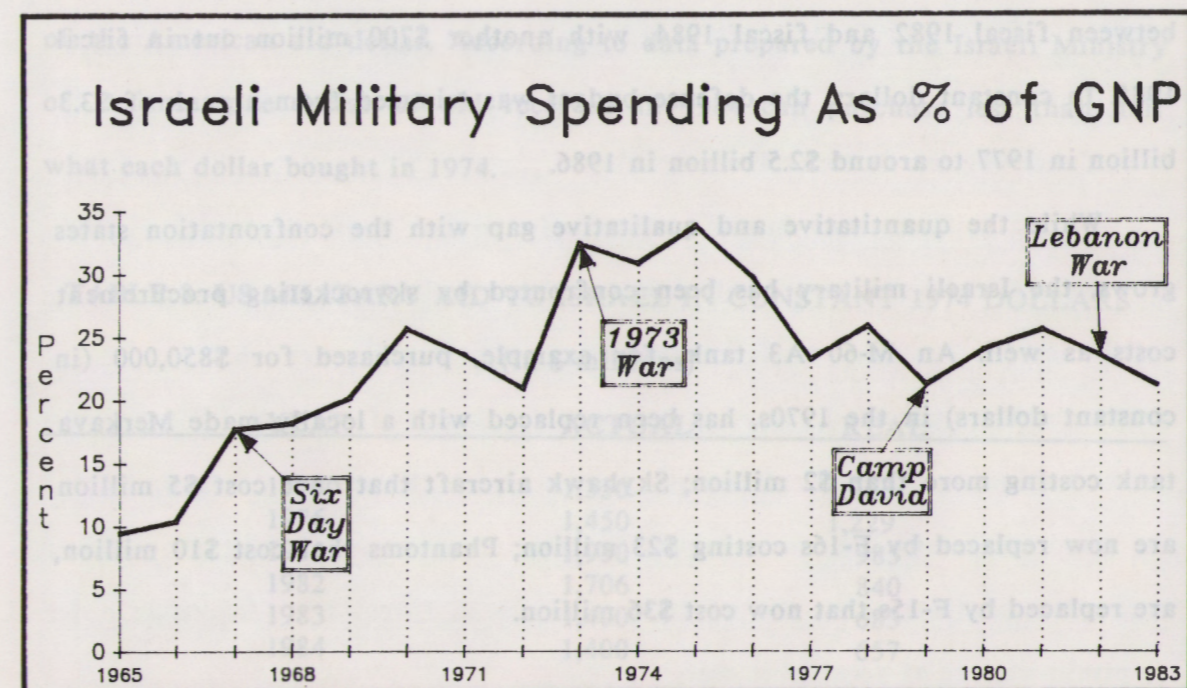


GRAPH 7

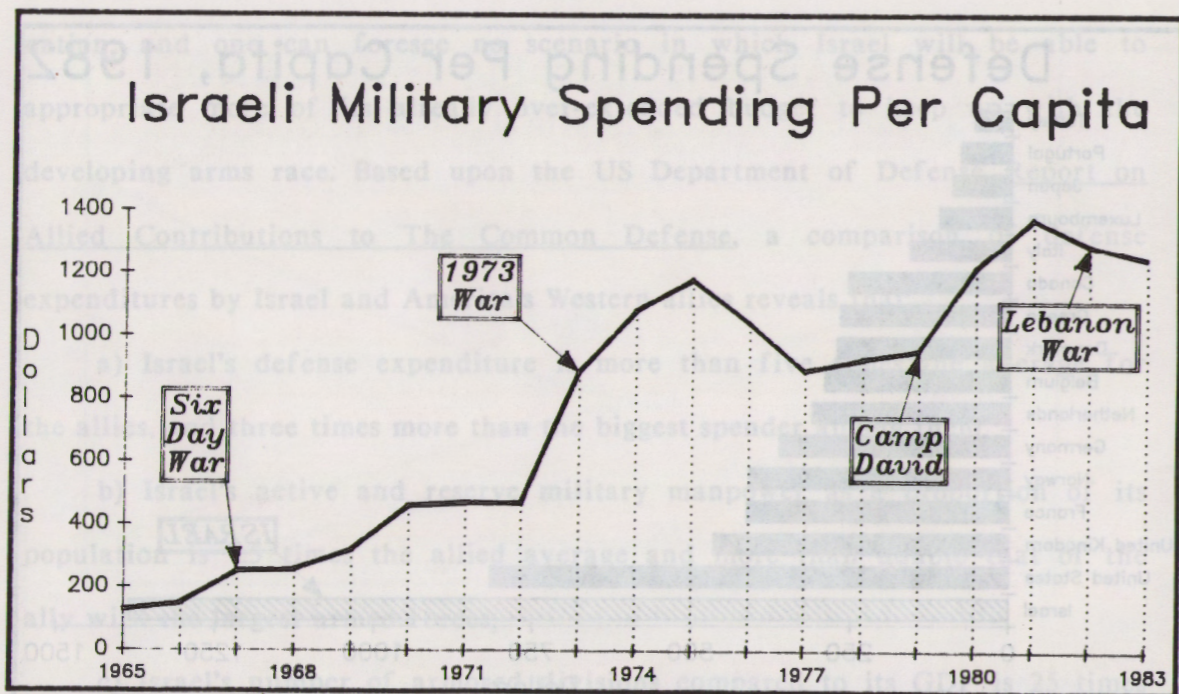


GRAPH 8

And as graphs 7 and 8 show, Israeli military spending as a percentage of GNP and per capita continues to be the highest in the world.



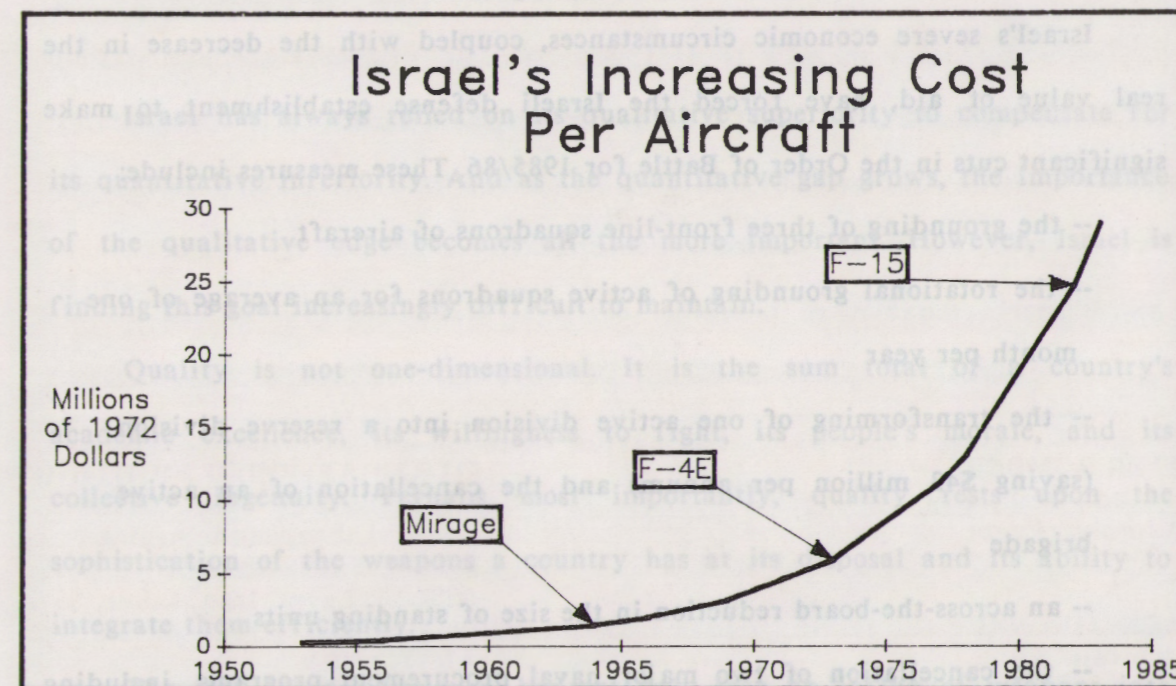
GRAPH 9



GRAPH 10

Massive defense expenditures have had a debilitating effect on the Israeli economy, being one of the prime causes for the near collapse of the Israeli economy toward the end of 1984. And as part of the overall plan to salvage the economy, the defense budget (excluding aid) was slashed by \$925 million between fiscal 1982 and fiscal 1984, with another \$700 million cut in fiscal 1985. In constant dollars, the defense budget was trimmed from a peak of \$3.3 billion in 1977 to around \$2.5 billion in 1986.

While the quantitative and qualitative gap with the confrontation states grows, the Israeli military has been confronted by skyrocketing procurement costs as well. An M-60 A3 tank, for example, purchased for \$850,000 (in constant dollars) in the 1970s, has been replaced with a locally made Merkava tank costing more than \$2 million; Skyhawk aircraft that once cost \$5 million are now replaced by F-16s costing \$23 million; Phantoms that cost \$10 million, are replaced by F-15s that now cost \$36 million.



GRAPH 11

The Diminishing Value of Aid

Procurement difficulties have been exacerbated by the drop in the value of the American aid dollar. According to data prepared by the Israeli Ministry of Defense, one dollar of aid received in 1984 can purchase less than half what each dollar bought in 1974.

TABLE 8: US MILITARY AID TO ISRAEL IN CONSTANT 1974 DOLLARS

YEAR	(in \$ millions)	
	ACTUAL	REAL
1975	1,350	1,205
1976	1,450	1,229
1981	1,950	985
1982	1,706	840
1983	1,400	683
1984	1,400	657

The Consequences

Israel's severe economic circumstances, coupled with the decrease in the real value of aid, have forced the Israeli defense establishment to make significant cuts in the Order of Battle for 1985/86. These measures include:

- the grounding of three front-line squadrons of aircraft
- the rotational grounding of active squadrons for an average of one month per year
- the transforming of one active division into a reserve division (saving \$43 million per annum) and the cancellation of an active brigade
- an across-the-board reduction in the size of standing units
- the cancellation of two major naval procurement programs, including the SAAR-5 advanced missile boat
- the retirement of over 6,000 military and defense-related personnel
- a cut in all training programs (Israeli pilots now fly fewer training hours than their American or Jordanian counterparts)
- a reduction in stockpiles and strategic reserves and a freeze on all building programs other than fortifications for the northern border following the pullback from Lebanon
- a significant cut in the number of "reserve days" -- the days per year a reserve soldier is called up for either active duty or training.

All indicators -- projected relative economic and population growth, procurement trends, and future Israeli military budget forecasts -- point to the same conclusion. Israel simply cannot keep up with the arms race. In particular it cannot maintain the current overall quantitative ratio of 2.7:1 that Israeli strategists consider to be the minimum balance of forces Israel needs in order to attain victory at acceptable cost.

IV. THE QUALITATIVE EDGE

Israel has always relied on its qualitative superiority to compensate for its quantitative inferiority. And as the quantitative gap grows, the importance of the qualitative edge becomes all the more important. However, Israel is finding this goal increasingly difficult to maintain.

Quality is not one-dimensional. It is the sum total of a country's academic excellence, its willingness to fight, its people's morale, and its collective ingenuity. Perhaps most importantly, quality rests upon the sophistication of the weapons a country has at its disposal and its ability to integrate them efficiently.

The last decade, however, has not only seen an influx of weapons into the Middle East; it has witnessed a continually growing sophistication in these weapons. Whereas Israel faced second-line Soviet equipment (apart from the Jordanians and other marginal units of specialized forces) in the 1967 and 1973 wars, today the IDF faces an array of highly sophisticated weapons from the front-line arsenals of both the East and the West. These weapons are faster, more accurate, more destructive and more difficult to neutralize than anything Israel has had to counter in the past.

Clearly, the increased sophistication of weapons in the confrontation arena makes the dangers of surprise in the future even more acute than they were in 1973. The margin of error is both narrow and critical, and it has consequently placed Israel under a tremendous burden in terms of finding technological solutions to its increasingly complicated problems.

The main problem is not simply that East and West are selling the confrontation states the most advanced technologies available, but that the same weapons are finding their way to both sides of the conflict. Both Israel

Hawk anti-aircraft missiles. The same tanks, artillery, electronics, avionics, missiles and rockets are now to be found on both sides of the confrontation line, even to the absurd point where the Egyptian air force is today flying Phantom jets with over 200 Israeli modifications, and the Saudi Arabian air force is flying F-15s with "fastpacks" developed by Israel.²

TABLE 9: ARMS USED BY BOTH ISRAEL AND THE ARABS

FIGHTER BOMBERS

F-15: Saudi Arabia
F-16: Jordan, Egypt
F-4E: Egypt

ATTACK AIRCRAFT

A-4: Kuwait

ATTACK HELICOPTERS

AH-1 Cobra: Jordan
Hughes 500: Iraq, Jordan

AIR-TO-AIR MISSILES

AIM-9L Sidewinder: Egypt, Saudi Arabia
AIM-7F Sparrow: Egypt, Saudi Arabia

AIR-TO-GROUND WEAPONS

Maverick: Egypt, Jordan, Saudi Arabia
Laser-Guided bombs: Saudi Arabia

TANKS

Centurion: Jordan, Kuwait
M-60A1/A3: Egypt, Jordan, Saudi Arabia
M-48: Jordan
T-54/55: Iraq, Libya, Syria
T-62: Iraq, Libya, Syria

OTHER ARMORED FIGHTING VEHICLES

M-113: Egypt, Jordan, Kuwait,
Libya, Saudi Arabia
BRDM: Egypt, Iraq, Libya, Syria
BTR-50: Egypt, Iraq, Libya, Syria

ARTILLERY

M-109 155mm: Jordan, Libya,
Saudi Arabia
M-110 203mm: Jordan
M-46 130mm: Egypt, Iraq, Libya, Syria
D-30 122mm: Egypt, Iraq, Libya, Syria

ANTI-TANK

Dragon: Jordan, Saudi Arabia
TOW: Egypt, Jordan,
Kuwait, Saudi Arabia

AIR DEFENSE

Improved HAWK: Egypt, Jordan, Kuwait,
Saudi Arabia
Redeye: Jordan, Saudi Arabia
M-163 Vulcan: Jordan, Saudi Arabia

ANTI-SHIP MISSILE

Harpoon: Egypt, Saudi Arabia

² Fast-Packs are conformal fuel tanks that take up no hard points (to which the weapons are attached.)

To maintain its qualitative edge, Israel therefore must now make the world's most sophisticated weapons even better. This task has required the establishment of a military/industrial complex that currently employs nearly 70,000 people (18 percent of the country's total industrial workforce), forcing Israel to channel productive manpower into weapons development.

It has also forced Israel into the saturated arms export market and necessitated relationships with politically abhorrent regimes. Not only has the number of arms exporters increased thirtyfold in the past 11 years -- Israel is 15th³ on a list of the top 18 arms exporters -- but political constraints make finding markets increasingly difficult. While defense exports of over \$850 million in 1984 (8 per cent of Israel's total exports) offset some of the cost of maintaining Israel's disproportionately large defense infrastructure, the enterprise is far from economically viable.

The Burden of Sophistication - The Case of the Lavi

The example of the Lavi fighter plane typifies the burden generated by the technological race in the Middle East and Israel's obligation to retain its qualitative edge. This Israeli-designed aircraft was approved in the late 1970s, with production of the first prototype scheduled for 1986. While Israel could probably buy a comparable fighter more cheaply, it has been left with little choice but to generate a project that will keep in the country the diverse technological manpower and infrastructure necessary to improve on the performance of weapons flowing to the Arabs.

It is not enough for Israel simply to possess comparable aircraft. In order to ensure that its numerically inferior airforce can combat those of the enemy,

³ World Armaments and Disarmaments, SIPRI Yearbook 1984. Stockholm International Peace Research Institute, (Philadelphia, 1984).

systems in these aircraft. That can only be achieved by maintaining its own expertise in each field. Hence the necessity of producing its own fighter aircraft.

The Lavi project, however, is expected to cost Israel \$2.2-\$3 billion in non-recurrable development costs, plus an estimated \$10 billion in overall production costs (assuming the production of 300 aircraft, all for local use) over the next 15 years. Though economically debilitating, the project is essential. For it brings together more than 7,000 top-rate scientists and engineers who collectively provide the answers to Israel's defense problems. Their task is to improve on the radars, fire-control systems, communications, missiles and ordnance possessed by the confrontation states, especially those systems which duplicate Israel's deployments.

Currently, the bulk of the development program is being financed by American aid provided on an annual basis. If, for some reason, the US Congress decides to change the stipulation in the foreign aid bill that allows for the extraordinary appropriation of funds to be spent in Israel (as opposed to the regular stipulation that all aid funds must be spent inside the US), Israel could find itself faced with harsh choices: cancelling the program; finding a partner outside Israel willing to assume the program; or making available the economic means, at the expense of other factors in the economy, to complete it. Given the fact that nearly half of Israel's total budget of \$21 billion in 1984 was spent on debt-servicing, with defense consuming nearly \$6 billion of the remainder, the last alternative hardly looks realistic.

The Human Factor

Added to the obvious problems posed by the injection of new technologies in the arena is that, ironically, these systems for the most part are easier to

maintain and operate than those previously deployed by the confrontation states. While this is true for most modern weapons, it is particularly true for weapons reaching the Middle East from the U.S.

Since the abolition of compulsory conscription into the US armed forces in 1973, America has had to compensate for the loss in quality manpower by finding technological solutions. These solutions have made American weapons easier to operate and maintain. And this in turn has had a fundamental impact on Israel's ability to exploit its main resource -- ingenuitive manpower.

An illustration of this can be found in the relative turn-around ratios for the Phantom F-4 compared with either the F-15 or the F-16. Whereas it took six hours to turn around a Phantom jet, Israeli technicians, by employing ingenuity, could achieve the task in just two hours. In practice, therefore, Israel could field more than twice as many aircraft than would otherwise be technically possible. By maximizing "platform usage" Israel was able to minimize "platform procurement." But the F-15 and the F-16, despite their advanced technology, can be turned around in mere minutes, with far less technical skill than was required for a Phantom. They can be armed more easily than a Phantom and faulty avionic and electronic systems can be identified rapidly and replaced easily. The Phantom example can be applied to almost every parameter of warfare in the Middle East, whether the battle environment is on the land, in the air or at sea. Almost every major weapons system now deployed in the Middle East shares the common characteristics of being more lethal, more threatening and yet easier to maintain and operate.

The Problem of Reserves

Israel is faced not only with the dual problem of an eroding qualitative edge and an eroding quantitative balance but also with the added burden of

reliance on reserves soldiers, who comprise 85 percent of Israel's armed forces. According to published data, these reserves require 72 hours to mobilize. In other words, in a situation in which Israel were attacked, it might be able to field only 15 percent of its forces in the first three days of combat.

One partial solution to this problem would be to maintain a sizeable portion of the reserve forces on active duty at all times. This option, however, is costly both in terms of lost labor days and compensation for lost salaries. Indeed, to pare down the 1985/86 military budget, Israel has actually been forced to reduce the number of reserve days (as well as the number of units on active duty).

Because of its dependence on reserves, the IDF decided to minimize the time lag between call-up and mobilization by pre-positioning weapons and ammunition closer to Israel's borders. Placing them in the center of the country would have made them less vulnerable but would have required more time to deploy the reserves. Invulnerability was therefore sacrificed to the expedient of speed.

This has added another dimension to Israel's strategic vulnerability and therefore its dependence on early-warning. If the enemy makes significant inroads before Israel has mobilized its reserves, or if Israel's vulnerable pre-positioning sites -- essential for mobilizing of those reserves -- are significantly damaged in the opening stages of a war, Israel's situation would be critical.

V. THE THREAT TO ISRAEL'S AIR SUPERIORITY

A cardinal pillar of Israel's response in this deteriorating environment is the maintenance of the air superiority which affords rapid pin-point response and must be relied upon to counter Israel's quantitative inferiority. The air force is an essential element in providing time for the reserves to mobilize. In addition, the air force will also have prime responsibility for protecting pre-positioning sites from attack and for halting an enemy offensive. It will carry responsibility for protection of the skies, and shipping lanes (Israel's isolation making these strategically vital). The air force will also have to bolster Israeli naval capability in protecting Israel's vulnerable shores. And it will have to provide ground support; neutralize the enemy's ground-to-ground and ground-to-air capabilities; interdict enemy supply lines; evacuate casualties; supply Israeli forces; and provide intelligence and communications.

If Israeli population and industrial centers are among the opening targets of an Arab attack, the tasks facing the IAF multiply significantly in both diversity and urgency. Put simply, at the outset of any war, the IAF must establish control of the skies above the battlefields. Therefore, given Israel's small size, the concentration of its population and industrial infrastructure, the vulnerability of its pre-positioning and the country's acute dependence on its air force, the maintenance of air supremacy is the heart of Israel's defense.

For this reason air power has become the focal point of the arms acquisition programs of the Arab confrontation states. They have sought answers to Israel's air superiority by purchasing newer and more sophisticated aircraft with better penetrability and survivability characteristics; better ground-to-air defenses; and more accurate ground-to-ground capabilities. The recent Saudi purchase of 72 Tornados -- NATO's most sophisticated ground

attack aircraft -- is a case in point.

These acquisitions now pose a serious threat to Israel's airfields and prepositioning sites. For example, the injection into Syria of Soviet-Improved Scud and SS-21 ground-to-ground missiles has amplified that threat. The consequences of Scud deployment in Syria, supplemented by those of an Iraqi expeditionary force on Jordanian territory are illustrated in map 3 which also shows that the number of Scuds deployed in potential confrontation states has increased from around 200 in 1982 to 340 in 1986.

In 1983, the Soviet Union provided Syria with SS-21 missiles which have a CEP (dispersal ratio) of 250 meters over a range of 120 km. This was the first time such weapons have been deployed outside the Warsaw Pact, adding yet another layer of threat. If similar missiles were deployed in Jordan (e.g., the Lance), not a single Israeli airfield (other than Ovda in the south and thus distant from the combat arena) would be outside their combined range. Every city, port and other installation in Israel would be threatened by these ground-to-ground missiles. (See maps 4, 5)

If they were deployed only in Jordan, the threat would be no less significant. Indeed, the immediate threat from Syria is severely exacerbated should Jordan join forces with it. The border with Jordan is Israel's longest and the closest to its population centers and industrial infrastructure. For this reason, the Reagan Administration's attempts to sell Jordan F-16s and/or F-20s as well as mobile, Improved-Hawk anti-aircraft missiles will make the threat to Israel's air superiority from the east even more acute. (See map 6)

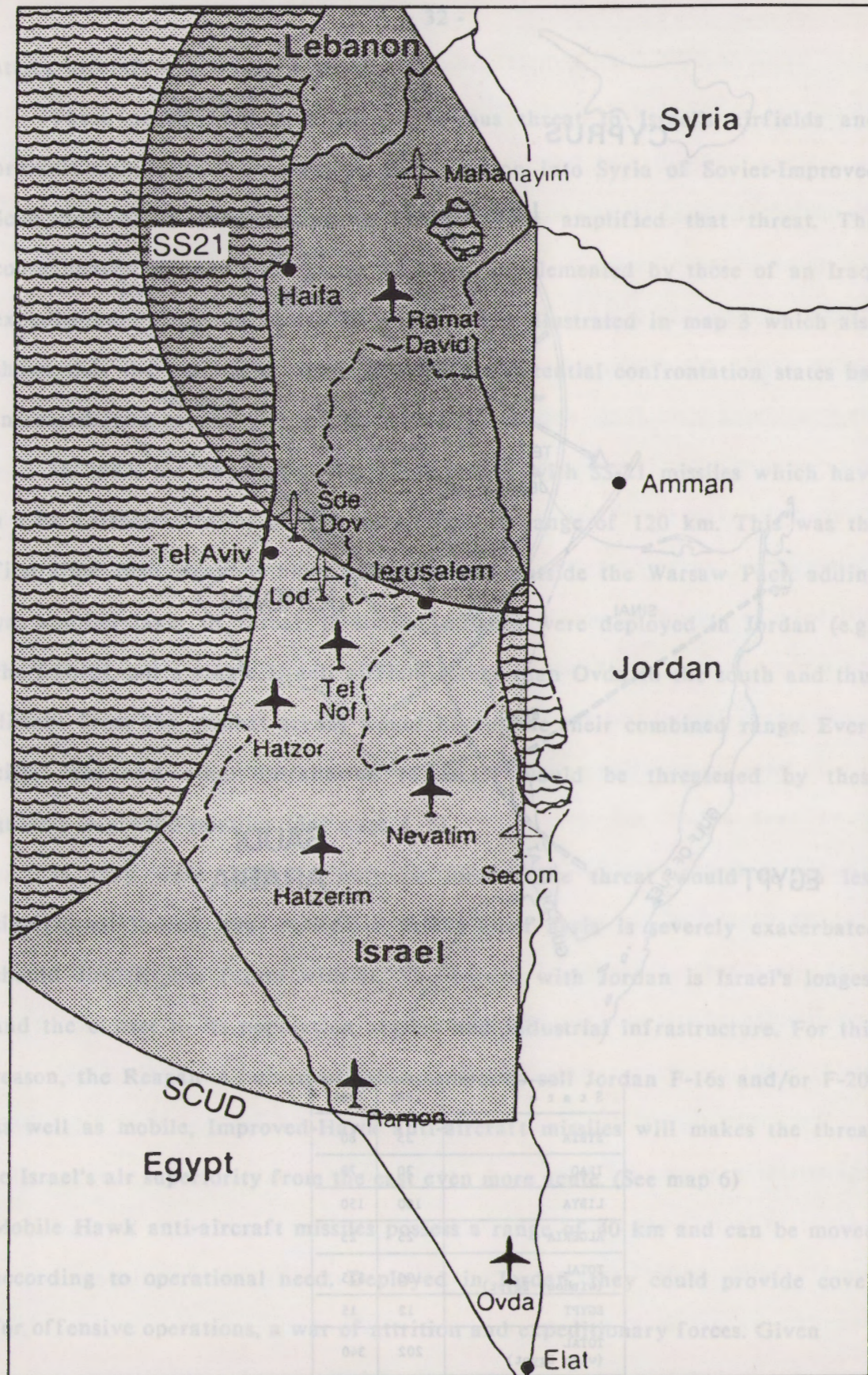
Mobile Hawk anti-aircraft missiles possess a range of 40 km and can be moved according to operational need. Deployed in Jordan, they could provide cover for offensive operations, a war of attrition and expeditionary forces. Given

MAP 3: THE SCUD THREAT

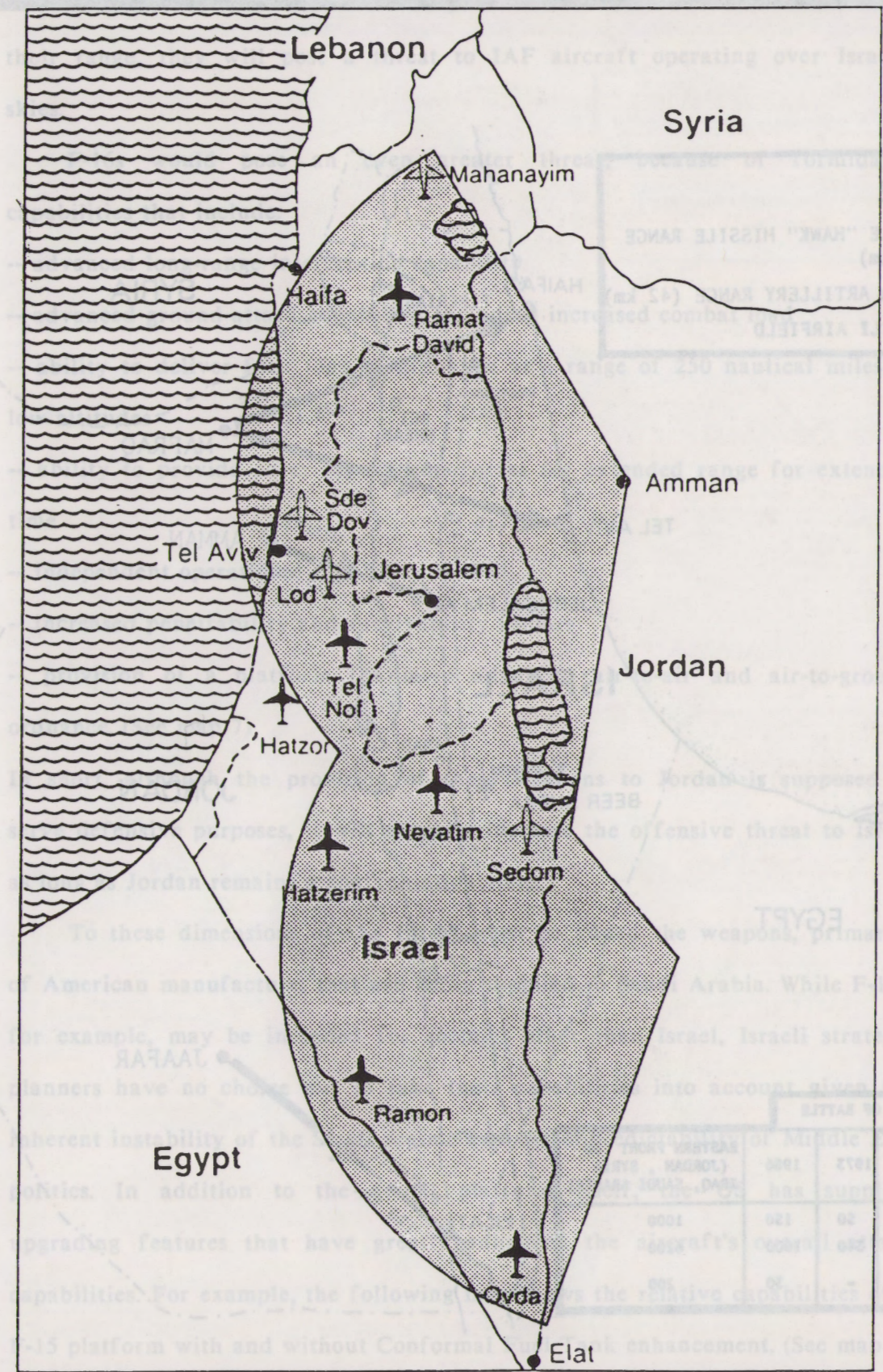


State	1982	1986
SYRIA	35	80
IRAQ	30	70
LIBYA	100	150
ALGERIA	25	25
TOTAL (without Egypt)	190	325
EGYPT	12	15
TOTAL (with Egypt)	202	340

MAP 4: THE MISSILE THREAT FROM SYRIA



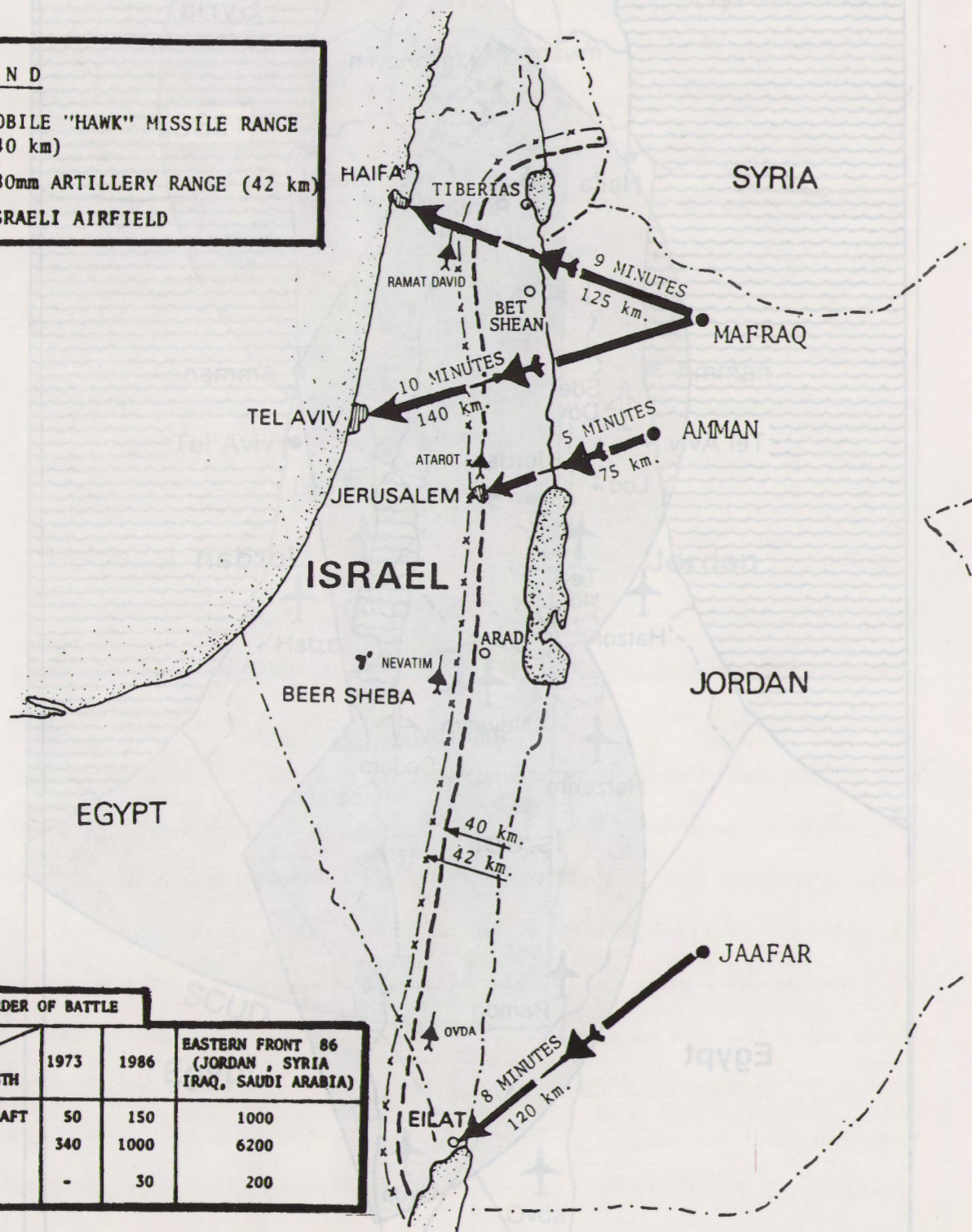
MAP 5: POSSIBLE MISSILE THREAT FROM JORDAN



MAP 6: CONTRIBUTION OF F-16 AND MOBILE "HAWK" MISSILES TO JORDAN'S ATTACK CAPABILITY

LEGEND

- MOBILE "HAWK" MISSILE RANGE (40 km)
- x-x- 180mm ARTILLERY RANGE (42 km)
- ▲ ISRAELI AIRFIELD



JORDANIAN ORDER OF BATTLE

YEAR	1973	1986	EASTERN FRONT 86 (JORDAN, SYRIA IRAQ, SAUDI ARABIA)
COMBAT AIRCRAFT	50	150	1000
TANKS	340	1000	6200
S.A.M LAUNCHERS	-	30	200

their range, they will pose a threat to IAF aircraft operating over Israel's skies.

F-16s would pose an even greater threat, because of formidable capabilities that include:

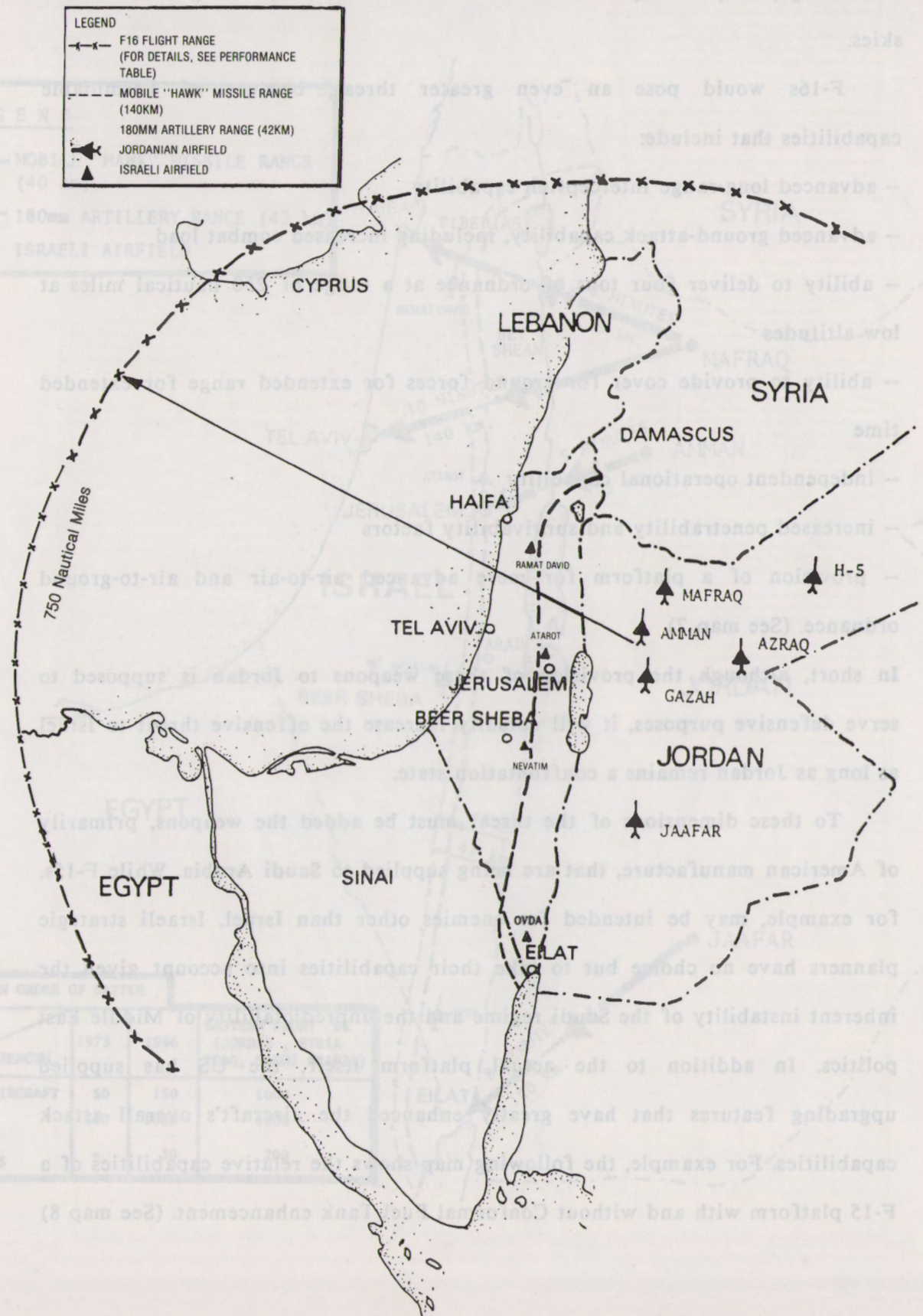
- advanced long-range interception capability
- advanced ground-attack capability, including increased combat load
- ability to deliver four tons of ordnance at a range of 250 nautical miles at low altitudes
- ability to provide cover for ground forces for extended range for extended time
- independent operational capability
- increased penetrability and survivability factors
- provision of a platform for more advanced air-to-air and air-to-ground ordnance. (See map 7)

In short, although the provision of these weapons to Jordan is supposed to serve defensive purposes, it will actually increase the offensive threat to Israel as long as Jordan remains a confrontation state.

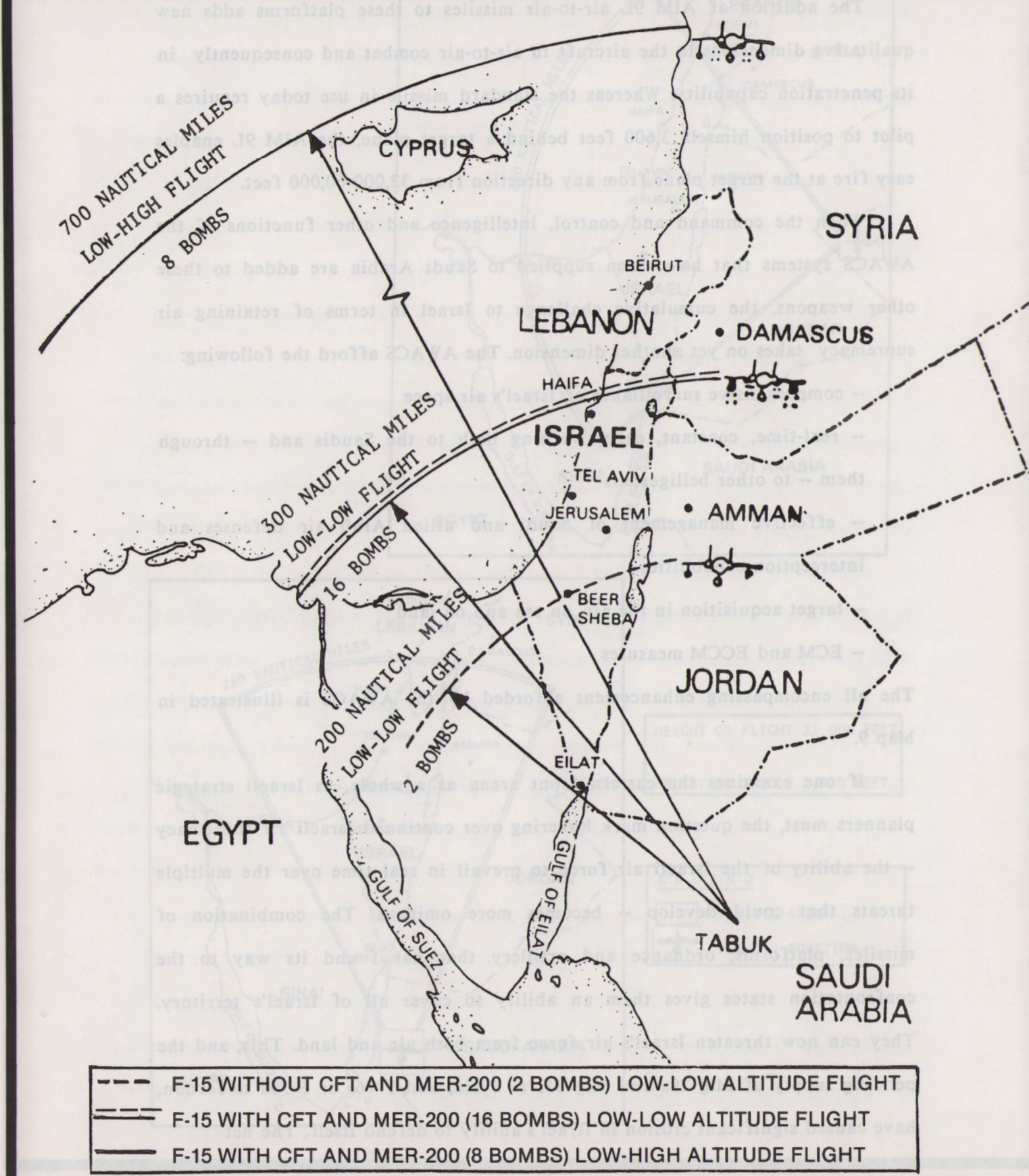
To these dimensions of the threat must be added the weapons, primarily of American manufacture, that are being supplied to Saudi Arabia. While F-15s, for example, may be intended for enemies other than Israel, Israeli strategic planners have no choice but to take their capabilities into account given the inherent instability of the Saudi regime and the unpredictability of Middle East politics. In addition to the actual platform itself, the US has supplied upgrading features that have greatly enhanced the aircraft's overall attack capabilities. For example, the following map shows the relative capabilities of a F-15 platform with and without Conformal Fuel Tank enhancement. (See map 8)

F-15 WITHOUT CFT AND MER-200 (8 BOMBS) LOW ALTITUDE FLIGHT
 F-15 WITH CFT AND MER-200 (16 BOMBS) LOW ALTITUDE FLIGHT
 F-15 WITH CFT AND MER-200 (8 BOMBS) LOW-HIGH ALTITUDE FLIGHT

MAP 7: SUPPLY OF F-16 AND MOBILE "HAWK" MISSILES TO JORDAN—CHARACTERISTICS AND CONSEQUENCES



MAP 8: F-15 CAPABILITY - ATTACK MISSION - WITH/WITHOUT CFT & MER-200



The addition of AIM 9L air-to-air missiles to these platforms adds new qualitative dimensions to the aircraft in air-to-air combat and consequently in its penetration capability. Whereas the standard missile in use today requires a pilot to position himself 3,600 feet behind a target plane, the AIM 9L enables easy fire at the target plane from any direction from 32,000-60,000 feet.

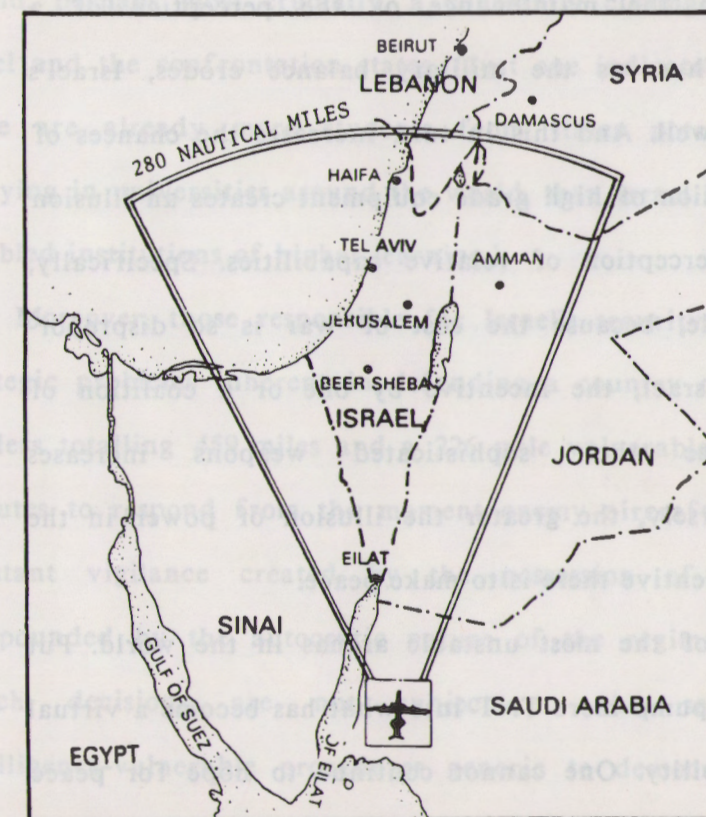
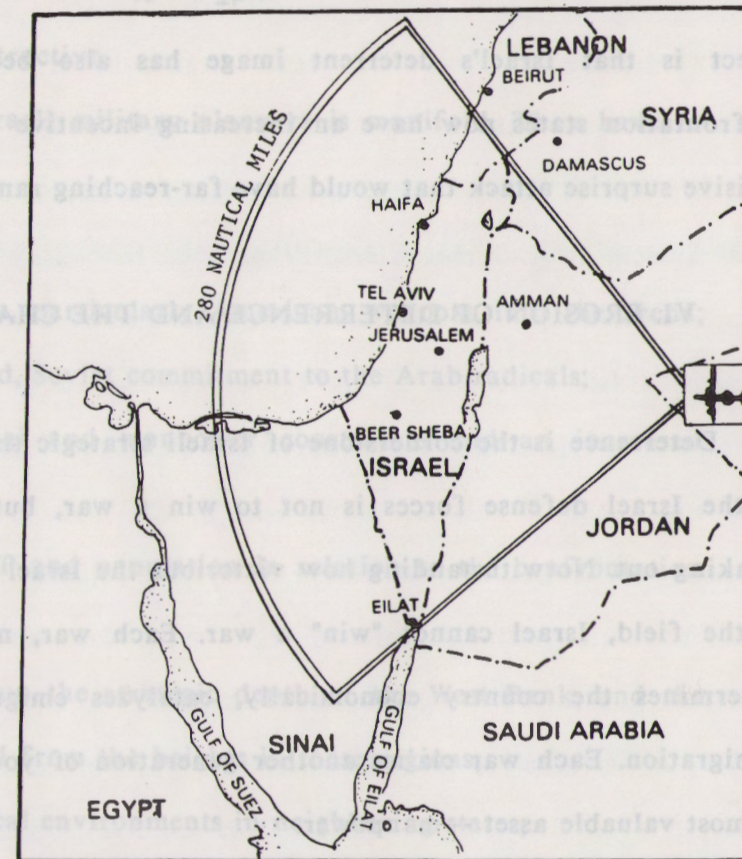
When the command and control, intelligence and other functions of the AWACS systems that have been supplied to Saudi Arabia are added to these other weapons, the cumulative challenge to Israel in terms of retaining air supremacy takes on yet another dimension. The AWACS afford the following:

- comprehensive surveillance of Israel's air space
- real-time, constant, early warning both to the Saudis and -- through them -- to other belligerents
- effective management of Saudi and allied Arab air defenses and interception capabilities
- target acquisition in the air, on sea and on land
- ECM and ECCM measures

The all encompassing enhancement afforded by the AWACS is illustrated in Map 9.

If one examines the eastern front arena as a whole, as Israeli strategic planners must, the question mark hovering over continued Israeli air supremacy -- the ability of the Israeli air force to prevail in real time over the multiple threats that could develop -- becomes more ominous. The combination of missiles, platforms, ordnance and artillery that has found its way to the confrontation states gives them an ability to cover all of Israel's territory. They can now threaten Israel's air force from both air and land. This, and the pending supply of Mig 29s and Mig 31s to Syria, and F-16s or F-20s to Jordan, have caused significant erosion in Israel's ability to defend itself. The net

MAP 9: THE AWACS THREAT TO ISRAEL



HEIGHT OF FLIGHT 31,000 FEET
 HEIGHT OF TARGET 2,000 FEET

LEGEND
 [Shaded Area] - VISIBLE AREA
 [Airplane Icon] - PLANE'S POSITION

effect is that Israel's deterrent image has also been weakened and the confrontation states now have an increasing incentive to try for a quick and decisive surprise attack that would have far-reaching ramifications.

VI. EROSION OF DETERRENCE AND THE CHANCES OF WAR

Deterrence is the cornerstone of Israeli strategic thinking. The prime goal of the Israel defense forces is not to win a war, but to prevent war from breaking out. Notwithstanding how victorious the Israel Defense Forces may be in the field, Israel cannot "win" a war. Each war, no matter how limited, undermines the country economically, catalyzes emigration and discourages immigration. Each war claims another generation of youth, depriving Israel of its most valuable asset -- manpower.

Deterrence depends upon the maintenance of the perception of a favorable military balance. Thus, as the military balance erodes, Israel's deterrent capability erodes as well. And this in turn increases the chances of war. Moreover, the mere possession of high grade equipment creates an illusion of power which alters the perception of relative capabilities. Specifically, because Israel is so vulnerable, because the cost of war is so disproportionately disadvantageous to Israel, the incentive by one or a coalition of confrontation states to use their sophisticated weapons increases disproportionately. And, conversely, the greater the illusion of power in the confrontation states, the less incentive there is to make peace.

The Middle East is one of the most unstable arenas in the world. Put simply, one cannot continue to pump more TNT into what has become a virtual powder-keg and hope for stability. One cannot continue to hope for peace while shortening the fuse on the conflict by providing weapons that are faster,

more penetrable and more destructive.

The challenge facing Israeli military planners is manifold. They have to assume:

- a worst case probability;
- the influx of more Western, particularly American, weapons into the arena;
- a continued, if not deepened, Soviet commitment to the Arab radicals;
- tremendous Israeli financial and manpower constraints and an increased dependence on American aid;
- a growing gap in both GNP and population in relation to the confrontation states;
- political pressures to give up the strategic depth of the West Bank, and the early-warning benefits derived from the heights in these regions;
- continually changing political environments in neighboring states;
- and, perhaps most crucially, a constantly closing qualitative gap between Israel and the confrontation states. (Just one indicator of this is the fact that there are already more students from states potentially hostile to Israel studying in universities around the world, than Israel has in its own financially troubled institutions of higher learning.)

Moreover, those responsible for Israel's security are also faced with the strategic problems inherent in defending a country of 8300 sq. miles -- with borders totalling 459 miles and a 226 mile vulnerable shoreline -- having only minutes to respond from the moment enemy aircraft take off. The need for constant vigilance created by the possession of high-grade weapons is compounded by the autocratic nature of the regimes surrounding Israel, in which decisions are not subject to the same time-delaying and intelligence-vulnerable procedures generic to democracies. This shortens the fuse even more.

The erosion of Israel's deterrent image coupled with the shortening fuse portend ill for both the peace process and stability. Each new military capability in the hands of the confrontation states adds yet another layer to Israeli insecurity and makes Israel less able to consider giving up territorial depth in exchange for less than absolute security guarantees. Moreover, it increases Israel's incentive to opt for a pre-emptive strike should the chances of war be perceived as real. Because the first hours of any conflict between Israel and the confrontation states will be the most critical (as they were in 1967 and 1973), and because surprise is a crucial element in helping Israel redress the quantitative imbalance, the increased sophistication of weapons in the arena generate an added Israeli incentive to pre-empt. If, for example, Israel receives credible information of hostile Jordanian or Syrian intent, it cannot wait to have its airfields and pre-positioning sites threatened before it responds. If it is going to emerge victorious at acceptable cost, it must nip the threat in the bud.

The combined erosion of Israel's quantitative, qualitative and deterrent postures not only increases the chances of conflict, but it also significantly cuts down on the lead-time available for diplomatic intervention and mediation before the guns go into action. In short, the more TNT in the powderkeg, and the shorter the fuse, the greater the chances of war.

VII. ISRAEL AND THE U.S.

An unquestionable element of Israel's continued ability to maintain a credible deterrent is its alliance with the United States. Beyond the physical supply of weapons and aid from America to Israel, a crucial factor in the Arab calculation of whether or not to go to war is how Washington will respond to an attack on Israel.

The bilateral alliance is based on America's historic and emotional empathy for the Jewish state and its democratic principles; but it is also founded on a mutuality of strategic need. Since the turn of the decade, there has been a growing emphasis in the relationship on this mutual strategic bond. While this is partly due to the personalities involved, the strategic relationship has blossomed primarily because of a growing fear in Washington over the potentially transient nature of alliances in the Middle East and the compounded frustration with mercurial Arab attitudes toward basic American policy objectives in the area.

Israel, however, cannot take this special relationship for granted. There have been sporadic US embargos against Israel when America wanted to achieve policy objectives that were not consistent with Israeli perceptions or when Israel has acted too independently (as in the 1981 bombing of the Iraqi nuclear reactor). There have also been occasions when US aid to Israel in time of war has been hampered by the attitudes of third parties, as was the case in 1973, when no West European country except Portugal was prepared to allow American transport aircraft en route to Israel to refuel on its territory.

Moreover, Israel has to be sensitive to the almost certain Congressional and public pressure that will be applied in coming years on the Administration

to trim foreign aid in tandem with domestic spending in order to cut the budget deficit. The chances of exacerbating tensions on the policy level, especially if the Administration pursues a Middle East peace initiative, are also great -- as are the potential repercussions on the fundamental relationship between the two countries. Tension in the relationship could also arise over the almost predictable differences of opinion concerning America's arms transfer policies in the Middle East. This could manifest itself in Administration anger over Israeli opposition to these transfers and could also generate anti-Israel sentiment on the part of those who are linked financially to these transfers.

Despite the mutuality of goals and interests, Israel's relationship with America is fragile. While it is probably safe to assume that the basic relationship will not alter, tactical nuances could have long-term strategic implications for Israel. The Lavi fighter project, for example, is dependent on an annual injection of American aid money. If, for some tactical reason, funding were not forthcoming, a prime Israeli strategic interest will be compromised.

Of all the factors that could influence American-Israel relations, none is potentially more explosive than that of American arms transfers to the states Israel perceives as potential enemies and America perceives as friends. The significance to Israel of these weapons flowing into the arena is crucial at every level: military, economic and political. Since 1973, 33 per cent of all military sales to countries Israel defines as confrontation states (plus Egypt) were from the United States. In 1984, the ratio of American arms supplied by to Israel and the Arab confrontation states was 12:1 to the advantage of the Arabs. If the current Administration proposal to sell arms to Jordan goes through, the ratio will deteriorate even further.

TABLE 10: US FOREIGN MILITARY SALES, 1950-1984

(in \$ millions)

(Includes FMS, Military Construction, MAP and Commercial Military Sales)

Fiscal Year	Egypt	Jordan	Saudi Arabia	Other	Total Arab	Arab:Israel Ratio	Israel
1950-1974	---	450	4045	161	4656	1.14:1	4091
1975	---	141	5761	353	6256	7.30:1	857
1976	76	398	7470	193	8137	7.07:1	1150
1977	2	149	1894	17	2062	2.97:1	695
1978	167	129	2670	68	3034	2.06:1	1476
1979	411	118	6675	14	7219	7.58:1	952
1980	2107	377	4694	122	7299	9.24:1	790
1981	313	380	1997	45	2735	6.86:1	399
1982	1926	167	7308	120	9521	12.19:1	781
1983	741	100	2706	153	3700	1.41:1	2616
1984	1036	38	3322	156	4553	11.92:1	382
Total	6778	2446	48543	1405	59172	4.17:1	14188

Other includes Kuwait, Iraq, Libya and Syria Source: US Arms Control and Disarmament Agency, 1984

American strategic interests in the Middle East and the necessity of American arms transfers as an instrument of furthering American policy goals cannot be denied; nor can the real threat to America's Arab friends. However, the implications of the arms race that this generates also cannot be ignored. While the arms race may be in the interest of the American business community it does not, in the long-term, further American policy objectives which center on stability and peace in the Middle East.

Of course, America is not the only supplier of weapons to the arena. But it has become a cardinal source of those weapons and it has consistently upgraded their sophistication. And when front-line American systems reach the

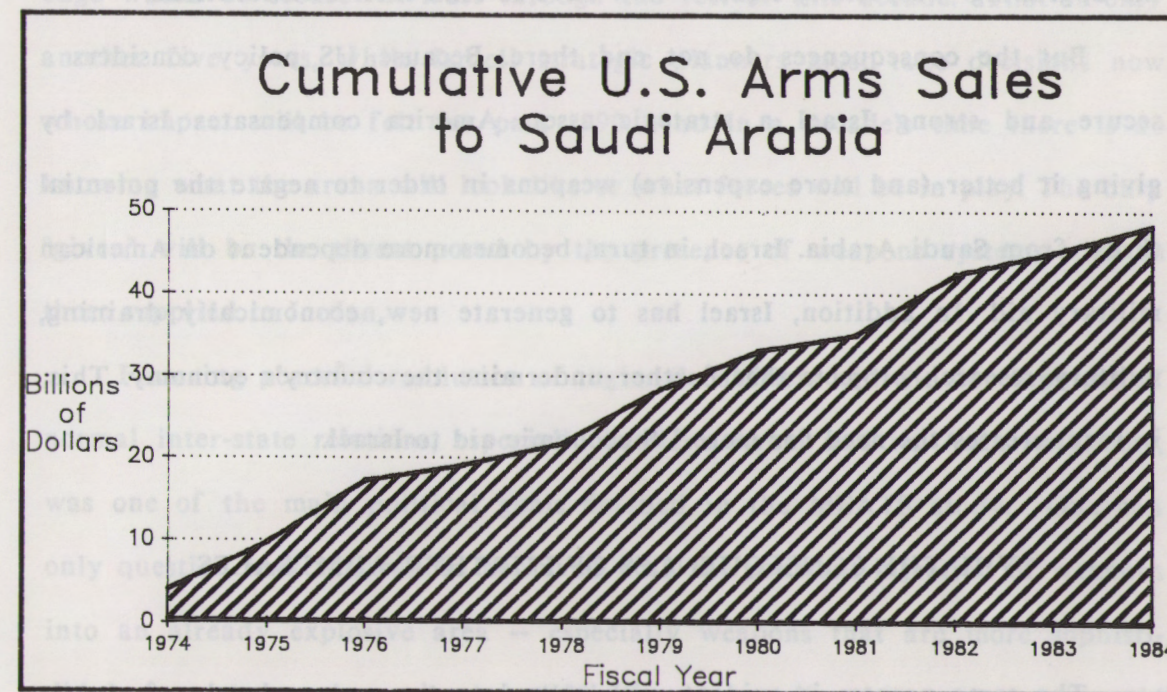
Middle East it makes it more difficult for both the Europeans and the Russians to say "no" when their clients ask for the latest weapons in their own arsenals. While the Europeans would probably sell anyway (with the French even going so far as to provide Iraq with the wherewithal to ultimately produce a nuclear weapon), the Soviets have, by and large, restricted the weapons they were providing their clients. Moscow, for example, refused to provide Saddam Hussein with nuclear technology. Now, however, the Syrians are receiving weapons never before allowed outside of Warsaw Pact countries, including the Sam-5 missile systems, SS-21 ground-to-ground rockets and soon the most advanced fighters in the Mig family. While one cannot attribute the increased sophistication of Soviet arms solely as a response to what the Americans are supplying, there is no question that a relationship exists between the two. It is axiomatic that the better the American weapons in the Arab countries aligned with the West, the greater the sophistication of weapons provided by the Soviet Union to its clients. An examination of the timing of supply of upgraded Soviet weapons, compared with the injection of high-grade American military technology into the arena, confirms this.

TABLE 11: UPGRADES OF SOVIET EQUIPMENT SUPPLIED TO ARAB COUNTRIES

FIGHTERS	ATTACK AIRCRAFT	SURFACE-TO-AIR MISSILES
MiG-15 (1956)	Su-7 (1967)	SA-2 (pre-1967)
MiG-17 (1957/58)	Su-17 (1973)	SA-3 (1970)
MiG-19 (1961)	Su-20/22 (1974)	SA-7 (1970)
MiG-21 (1962)	MiG-27 (1983)	SA-6 (1970/1973)
MiG-23 (1974)	*Su-24	SA-9 (1974)
MiG-25 (1978)		SA-8 (1982)
*MiG-29		SA-5 (1983)
*MiG-31		SA-11 (1983)
*Su-27		SA-13 (1983)
	BATTLE TANKS	SA-14 (1983)
	T-55 (1964)	*SA-12
BOMBERS	T-62 (1972)	*SA-10
Il-28 (1956)	T-72 (1979)	
Tu-16 (1964)	T-74 (1984)	
Tu-22 (1976)	*T-80	

* not in inventory
 Dates indicate approximately when weapons entered into Arab service.

Ironically, as US-Israeli ties have become stronger in recent decades, American weapons have come to pose the greatest threat to the security of Israel. This is not only the result of America's legitimate policy dilemmas in the Middle East but also because in many cases commercial considerations seem to have prevailed over strategic ones. This seems to be especially true in the case of Saudi Arabia. Saudi orders for defense goods and services from the US have amounted to \$48 billion through fiscal 1984. From FY1982-1984, American sales to Saudi Arabia have constituted about one-quarter of all US arms sales.



GRAPH 12

These sales not only have a profound impact on America's balance of trade and internal economy, they also drastically reduce the cost of non-recurrable research and development invested in weapons systems developed for the American military. Without returning to the well-worn

arguments surrounding the 1981 sale to Saudi Arabia of the \$8.1 billion AWACS aircraft, one cannot ignore the role of American corporations in molding that decision. In lobbying for an arms sales policy that would enhance their own prosperity, these corporations were hardly likely to take into account the strategic consequences. Yet the injection of the AWACS system could not be an isolated action. As a result, a technological leap was generated that reverberated throughout the arena. The possession of AWACS necessitated the acquisition of communications, radars, jamming technologies, computers, high grade fighters (for escort and response) and other systems that dramatically altered the nature of the potential battlefield. In turn, countries threatened by the upgrading -- especially Israel -- now have to find their own solutions.

But the consequences do not end there. Because US policy considers a secure and strong Israel a strategic asset, America compensates Israel by giving it better (and more expensive) weapons in order to negate the potential threat from Saudi Arabia. Israel, in turn, becomes more dependent on American military aid. In addition, Israel has to generate new, economically draining, military research projects that further undermine the country's economy. This, in turn, creates the need for more US economic aid to Israel.

VIII. THE CONSEQUENCES OF FURTHER ARMS SALES

The same process is evident with regard to the proposed sale of mobile Hawks and F-16s to Jordan. The Middle East Arms Transfers Study (MEATS) presented to Congress in secret session of the Senate Foreign Relations Committee in August 1985, which justified this sale, reflects the tension in US policy objectives. Accordingly, the logic used in the report was often contradictory. It argued, for example, that since Jordan spans Israel's longest

border with any Arab state, it was essential that Jordan have the wherewithal to protect that frontier from hostile forces. There is, however, no conceivable scenario whereby King Hussein would protect Israel's border from a concerted Arab attack, and Israel considers Jordan -- even with this King but particularly if there is a change in regime -- to be a potential confrontation state.

The MEATS study also reaffirms America's enduring commitment to Israel's security and stresses that more sophisticated weapons will contribute to that security by providing a qualitative edge that will serve as a strong deterrent. However, the assessment was then offered that Israel's qualitative edge would be secure "at least through the rest of this decade." That is only another five years, while Israeli strategic planners must take decisions now whose impact will be felt far past 1990. And in a decade's time there is no knowing what the arena will look like or what forces will be in play. The only "given" will be the threat posed by the presence of weapons systems such as those supplied to Jordan.

Fostering peaceful resolution of regional conflicts and the development of normal inter-state relations, especially between Israel and its Arab neighbors, was one of the main political goals defined in the MEATS study. One can only question how this can be achieved with the constant injection of weapons into an already explosive area -- especially weapons that are more sophisticated, more destructive and more difficult to neutralize. Moreover, a paranoid Israel, unable to maintain either the quantitative or qualitative balance, will not be an Israel that can be induced to negotiate territorial concessions. In fact, the perennial flow of arms makes stronger the case of uncompromising Israelis and makes less credible the case of those who counsel peace through territorial compromise. If the goal is indeed to foster regional stability, there

has to be a balance between arms supplies and strategic evaluation. Policy must be strategic, not tactical. Goals must be clearly defined and not obfuscated with convoluted logic.

The late President Anwar Sadat did not come to Jerusalem in 1977 because he was a Zionist, but because he came to recognize that he could not deal with Israel by military means. That message was brought home to him in the Yom Kippur War, when the arena was typified by a different balance of power and when despite a surprise attack on two fronts by an eventual coalition of 11 Arab nations, he could not defeat Israel.

Peace can only be the result of an Arab recognition that military means are futile. The way to promote peace certainly cannot be the unbridled supply of the means of war.

SOVIET THREAT

RNAL

NOVEMBER 1987

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Pg. 29

Warsaw Pact Success Would Hinge on Blitzkrieg, US Army Observer Says

by Scott D. Dean
and Benjamin F. Schemmer

Warsaw Pact combat doctrine against NATO will continue to emphasize highly mobile masses of armor under tight, centralized control, according to Western observers of recent Soviet/Warsaw Pact exercises. US observers have witnessed eight such maneuvers in the past year, according to Cdr. Robert S. Prucha, the Pentagon spokesman on US/Soviet affairs.

Army Maj. Gen. Philip H. Mallory, who is now an advisor for NATO affairs to the Assistant Secretary of Defense for International Security Policy and who last year was Commander of the 7th US Army Training Command in Germany, became the first US observer of Warsaw Pact exercises in nearly a decade. During his visit to the Druzhiba '86 exercises, held in September of 1986 in Czechoslovakia, and maneuvers held near Potsdam, East Germany, in March of this year, Mallory confirmed the Warsaw Pact's reliance on massive, "set piece" armored attacks combined with heavy artillery and air support.



Mallory

Mallory concluded that the US and NATO "really do understand" how the Soviets would fight in Europe. But Warsaw Pact forces, he suggested, could achieve a breakthrough against NATO lines unless the West has a mobile reserve to contain potential breakouts. Mallory also concluded that NATO must increase its ability to strike at Warsaw Pact second-echelon forces and to target its air defense, engineering, and communications assets at vulnerable moments during their set-piece assaults. The Pact's growing reliance on these assets came into sharp focus throughout Mallory's visits to the maneuvers.

Mallory was somewhat critical of the Warsaw Pact's limited compliance with the Helsinki/Stockholm Accords. Under the 1975 Helsinki Accords, 35 nations (including all NATO and Warsaw Pact countries)

pledged to notify each other of military exercises and maneuvers involving more than 25,000 personnel. The confidence-building Accords "encouraged" signatories to invite observers from the other nations to monitor these exercises to diminish East-West suspicions and anxiety caused by massing and repositioning forces, to verify advertised troop strengths, and to verify the "peaceful" intent of the exercises.

There were problems with the Helsinki Accords. Observers, when invited, were not allowed to bring cameras, binoculars, or tape recorders to the exercises, for instance. Binoculars were supplied by the host army, although in one case then Col. William Odom (the last US observer of an Eastern-bloc exercise, in 1978) was given a pair of Soviet binoculars that couldn't focus and were badly fogged over. Some of the deficiencies in the Helsinki Accords were remedied in the Stockholm Accords, signed late in 1986. On the eve of those Accords, Mallory and the US defense attaché in Prague, Czechoslovakia, Air Force Col. Donald Kosovak, were invited to the Druzhiba '86 exercises held from 8-12 September at the Hradiste training area in Czechoslovakia.

Druzhiba exercises are held annually by the Warsaw Pact to demonstrate its capabil-

ity to operate as a multinational force. The participants in September of 1986 were a Czech motorized rifle and tank division, a Soviet tank division (stationed in Czechoslovakia), and a Hungarian tank regiment.

Druzhiba '86

Unlike "free play" Western maneuvers that only specify overall mission objectives and leave tactics to subordinate commanders, the Eastern bloc exercises Mallory observed emphasized predetermined set-piece actions. Druzhiba '86 broke down into three "demonstrations," as Mallory characterized them: a defensive operation in which blue "aggressor" units launched an attack against red Warsaw Pact forces; a forced river crossing by the red forces; and, finally, a counteroffensive by the red forces. Different units participated in each action.

There were several ground rules placed on the observers. The Western group was not allowed to take photographs of the exercises, while the Eastern observers, which included a Czech TV crew, could take photographs. Mallory was later able to obtain a videotape of the exercise that had been recorded off Czech news. The General was also allowed to take some photographs from the bus that transported the 48 observers to and from the exercises by maintaining that while on the bus he was not an observer, but a tourist. The observers were also prevented from attending any unit debriefings, visiting command posts, or inspecting the troops or equipment, despite requests to do so.

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Exercise areas as outlined by Mallory



BLITZKRIEG...CONTINUED

In the first operation, a blue force consisting of two Czech mechanized battalions with OT-64 armored personnel carriers (a Czech version of the Soviet BTR) and T-54/55 tanks supported by Su-20 Fitter aircraft attacked the red Czech battalion equipped with T-72 tanks.

According to Mallory, the attack followed classic Warsaw Pact doctrine. The blue attack began with preparatory air and artillery strikes followed by the mechanized force T-54/55s leading the OT-64s. The red force reacted with MiG-23 Flogger aircraft, Hind-D helicopter gunships, and artillery to blunt the blue attack. Emerging from hidden positions, the red force T-72s moved forward into prepared defilade positions and engaged the blue forces with their 125 mm cannons. The blue force then released purple smoke and, as Mallory described the demonstration, "Every single vehicle of the blue force died on the battlefield." A company of about 10 red force T-72s then conducted a counterattack which—to Mallory's amazement—was abruptly halted in an open area of the battlefield, leaving the tanks totally exposed.

Mallory noticed other gaffes made by the Warsaw Pact forces during the demonstration. Almost all the tanks in the exercise had their barrels elevated while on the move, even though modern Soviet-bloc tanks have stabilizer systems that allow the gun to be trained on a target even while the tank is in motion. Mallory drew two possible conclusions: "Either [the tanks are] not fully crewed, and, hence, you only have a tank commander and a driver—so the units are understrength—or they have maintenance problems and the stabilization systems weren't working."

Warsaw Pact air operations also surprised Mallory. He observed jets and helicopters of the red and blue forces flying their attack runs at high altitudes and in tight formations, "not down on the deck like we fly—meaning down at a couple hundred feet. They're much higher than that; it's like they never learned any lessons from Afghanistan—or what we learned in Vietnam." Moreover, he noted, the Hinds used no nap-of-the-earth and pop-up maneuvers; they attacked like fixed-wing aircraft on strafing runs.

Other aspects of the operation impressed the General. Mallory "never saw a tracked vehicle that did not have at least one antenna, and the assumption is, of course,

that at the bottom of the antenna is a radio." This observation could puncture the misconception that only Warsaw Pact command vehicles have radios. Further evidence of Eastern-bloc command, control, and communications (C³) sophistication was the number of well-camouflaged command posts bristling with antennas. Mallory photographed (from the bus) numerous antennae that Western experts have since identified as microwave, high frequency, single-side band, and FM capable—"All the kinds of things that you would expect in a modern type of communications setup," said Mallory. This advance in Warsaw Pact C³ is consistent with his perception that centralized control of forces is critical to their tactical operations.

Mallory was also impressed (although not surprised) by the "high density of air defense weapons . . . four or five of them [in this case tracked SA-13 SAM launchers] in the area of one defending battalion" and by the extensive, effective use of camouflage. However, he noted the camouflage was effective only "in a static situation—once they moved there was no more camouflage." Mallory added that because the units had been rehearsing at the training site six weeks prior to the Druzhiba exercise, they had a great deal of time to prepare the camouflage and dug-in positions.

That careful preparation was also evident in a river crossing on the banks of the Elbe River. Mallory noticed that both banks had been prepared to facilitate the entry and exit of vehicles. Each regimental sector "had five entrance and exit ramps prepared, and these were made with concrete blocks . . . wide enough to fit one vehicle."

Prior to the river crossing, the red force conducted a preparatory air strike (this time using Su-25 Frogfoot aircraft) and then dropped a Soviet rifle battalion on the opposite bank of the river by Hip transport helicopters supported by Hind gunships.

The first vehicles that crossed the river were amphibious BMP armored personnel carriers. Mallory recalled that five BMPs in each regimental sector "entered the water at about 15 to 25 kilometers an hour. . . fully buttoned up" and "behind [the first line of BMPs], five more." Within moments Mallory found himself facing 75 armored vehicles in a three-km stretch of river. For a defender, as Mallory put it, "That's a lot of vehicles to service simultaneously."

At this point Mallory expected to see a bridging team arrive, but instead, emerging from the woods in the Soviet sector were T-72s equipped with snorkels that proceeded to drive across the river bottom. Similarly equipped T-54/55s from the Czech sector crossed the same way.

The first BMPs crossed the 150-meter-wide river in 60 seconds. The tanks made the crossing in 70 seconds (although Mal-

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The speed bridged the river. As Mallory put it, "The first truck with the . . . rafts across and put to the back end of it came . . . until the first tank was across. . . took 12 minutes." Within one hour, Mallory estimated, the red force had four regiments across the Elbe with . . . and air defense units.

But, Mallory suggested, the impressive speed and precision with which the river crossing was executed could be a vulnerability in actual combat. When a unit attempts a river crossing of this magnitude, Mallory said, "they have to turn everything loose on a very tight time schedule." If a defender can anticipate and disrupt a river crossing through obstacles, mines, artillery, or air strikes, he could cause Warsaw Pact formations to pile up near the river bank and devastate them with air and artillery fire.

On the subject of tactics that would delay a crossing, Mallory asked the Czech general in command of the Pact's Western military district why there was no NBC (nuclear, biological, chemical) warfare training at Druzhiba '86, and the general replied, "It's against the Geneva Convention, and we wouldn't do that."

Mallory found the use of snorkeling devices to cross the first waves of Warsaw Pact tanks across the Elbe particularly vulnerable. Snorkels can easily be damaged by shrapnel and terrain. As Mallory put it, "You don't drive through trees with five-meter snorkels erected; that means that you've got to select places to put your snorkels on [it is thought to take between 20 and 30 minutes to prepare a tank to snorkel]. That has to be done close to the river, which makes for an ideal target array."

The final demonstration was of a red force counterattack conducted by one Soviet, one Hungarian, and two Czech tank regiments. Due to rain and fog during this operation, Mallory was able only to observe the Soviet and one Czech regiment.

After the preparatory air and artillery strikes, the counterattack began. As the red

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EMBER 1987 Pg. 331

The Finn red line

"POLAR bears don't walk the streets of Helsinki, we are not communists and nobody speaks Russian". These words may be found in tourist guides distributed to Finnish hotels, but also spring readily to the lips of scientists and administrators faced with a foreign journalist who wants to write about their country.

Finns are sensitive about their border with the Soviet Union, pointing to the lack of affinity between the two countries. From the twelfth century until 1809, Finland was a part of Sweden. Even today, 300,000 Finns (6 per cent) have Swedish as their mother tongue and the country is officially bilingual. There is even a Swedish-language university (Abo Akademi) in Turku. Government from Russia lasted only a century. In 1809 Finland was made an autonomous Grand Duchy, ruled by the Tsar of Russia, until attaining its independence as a republic in 1917.

After the Second World War, Finland lost part of its territory (Estonia and Karelia) to the USSR but prides itself on having never been occupied. With war damages to pay to the United States until the early 1950s, Finland developed a neutral foreign policy that persists today.

Finland's modern front door and facade may face west, but the back door opens onto 8.5 million square miles of Soviet Union. If Finland is the Western department store most accessible to the Soviet Union, the USSR offers energy resources, world-class theoreticians, especially in mathematics and physics, and a ready market for Finnish high-tech exports. □

BLITZKRIEG... CONTINUED

force emerged from a nearby woods it quickly broke from columns and formed into lines ready to fight. As Mallory described it, "The formations they took up were a row of tank companies, about 25 to 30 meters between hubs on the tanks, and then 50 meters behind that, another row of a company of tanks on line, and then a third one behind that."

Mallory said it reminded him of exercises at the US Army's National Training Center at Ft. Irwin, CA: "It was just like I was standing out at the NTC watching the OPFOR [Opposing Force]." Opposing Forces are trained and equipped to duplicate Soviet Army tactics in maneuvers against US units. Mallory saw a strong

resemblance to OPFOR exercises in all the Soviet operations. In fact, he said, "Our Opposing Forces execute Soviet tactics better than the Warsaw Pact. We really do understand how the Soviets will fight. If you can beat the [OPFOR] folks at NTC, you can beat anything they'll put together."

Mallory's first reaction to the red force counteroffensive demonstration was, "Wouldn't I love to be a tank battalion commander watching this kind of formation come at me, and I'm defending at the time and place of my choosing. They're too tightly packed together, the second and third ranks cannot fire effectively, and so they have limited firepower that they can bring to bear on you; they're coming right down the center of the open terrain disregarding the use of terrain. You'd have a turkey shoot."

As the weather deteriorated further during the Druzhba exercise, Mallory drew some other conclusions. "I thought about the typical widths that we talk about in our doctrine about a rifle company's sector of defense, and then suddenly I thought about the fog rolling in: You now have somewhere on the order of 325 to 350 armored vehicles in these two regiments, three kilometers wide, pouring through a rifle company armed with M-113s, .50 caliber weapons, and so forth . . . and I concluded very rapidly that a breakthrough was very much a potential, if the Russians want to pay the price, because in fact they can mass a superior amount of force on a very narrow forward line of troops; that's a lot of combat power coming at you very quickly."

Mallory was impressed again with the density of air defense systems behind the lead tank battalion in each regiment. Mallory counted 10 SA-13 and three SA-8 SAM launchers and six ZSU-23 guns in the Russian sector. "That's a whale of a lot of air defense systems—up forward, completely capable [with the exception of the SA-8s] of keeping up with the tank formations."

The use of tightly controlled, fast moving masses of armor will present some difficulties for the Pact. Mallory pointed out that "they move very fast, but . . . to gain this speed, they forfeited the use of terrain." Mallory also questioned the Eastern-bloc force's ability to synchronize its supporting fires, as they demonstrated with pyrotechnics. Mallory said the Soviet/Pact forces fired off more pyrotechnics during one small, three-battalion exercise than a US division gets to use in one year."

Potsdam Exercises

Mallory was also invited to observe a joint Soviet/East German exercise near Potsdam, East Germany, last March. On this occasion, many of his insights into Eastern-bloc training and readiness came

from outside the training area.

The Potsdam exercise was conducted by a tank division (equipped with T-64s), a motorized rifle division from the Group of Soviet Forces Germany, and one East German tank division (equipped with T-72s). The exercise was much like the previous Druzhba maneuvers, and many of the same observer restrictions applied. The observer group was billeted in Potsdam during the "concocted" exercise. At midnight of the third night, an entire Soviet motorized rifle regiment garrisoned in Potsdam came roaring down the city's deserted streets—right past the observers' hotel. The observers had been tipped off earlier to a big troop movement due the presence of military traffic control teams at the road crossings.

What really surprised Mallory was the presence of a major or lieutenant colonel leading many of the three-man traffic control teams. US Army traffic control duties are usually handled by noncommissioned officers. Mallory hypothesized that the reason Warsaw Pact forces rely on officers for these kinds of assignments "is because I don't think many of [the enlisted personnel] can read maps. Our soldiers and NCOs are far more reliable."

The ragtag road march through Potsdam of the Soviet motorized rifle regiment also shocked Mallory. Mallory described the procession: "Four of these BTRs with all kinds of spacing problems . . . then there'd be a gap and then there'd be five or six more rattling by . . . it was a very unprofessional road march." Mallory also noted a number of vehicles broken down along the route. In one case, Mallory saw one BTR towing another—with a single rope—and when the lead vehicle attempted to slow for a turn, the towed vehicle slammed into the one towing it. Mallory commented to an East German general who was escorting him, "General, look at that!" and the East German replied, "Oh, that's Russian—we'd never do that!" Mallory characterized these units as "priority divisions" that would fight on the front line against NATO forces.

Other observations made by Mallory backed up the East German general's statement. When allowed to randomly inspect an East German T-72, Mallory found that "although that tank had been used for training, it was well maintained and capable of performing its combat mission." Mallory's random inspection of a Soviet T-64 was a different story. He noted, "The outside of this T-64 was immaculately painted, shined up, and everything, but the inside was a disgrace . . . where you would logically put your foot [there] was a large cable with many wires inside; it had been stepped on so many times that it was completely severed and all the wires stood up like the teeth in a comb. . . . [The tank] was powered up, but most of the dial lights on

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DISINFORMATION

FALL 1987

WHO'S WHO IN THE SOVIET LEADERSHIP

Propaganda Czar Alexander Yakovlev

The European and American media is full of praise for Moscow's new public relations image. Certainly Gorbachev personally has been a hit. (Although he has made mistakes—such as suggesting to a US Congressional delegation that Black Americans be given a state of their own!) One of the main reasons for Soviet PR success is the new group around Gorbachev.

CPSU Secretary for Propaganda Alexander Yakovlev has emerged as one of Mikhail Gorbachev's leading advisers and a key player in active measures. Although we were among the first to point to his growing importance (Spring 1986 issue of *Forecast*), we did not anticipate his meteoric rise. With his appointment to full Politburo membership in June 1987, Yakovlev now has risen over the heads of many senior CPSU contemporaries and must be considered a major player in Soviet decisionmaking.

As CPSU Secretary for Propaganda (in addition to his Politburo membership), Yakovlev is a chief architect of Gorbachev's celebrated *glasnost* policy. The bureaucracy Yakovlev heads, along with the CPSU International Department and the KGB, are the major institutions responsible for active measures abroad.

Yakovlev has been one of the key figures responsible for promoting Gorbachev's image as a reasonable, sophisticated ruler of a modern superpower. He is well equipped for this role for two reasons: (1) he has specialized in the theory and practice of propaganda throughout his career; (2) he has spent a good deal of time in the West.

His propaganda work began in 1962, when he became an instructor

in the Central Committee's Department of Propaganda and Agitation. In 1964-65 he was chief of the Radio and TV Broadcasting Section of the Propaganda Department and also served as acting chief of the department until 1973. According to Ilya Dzhirkvelov (a member of this publication's Advisory Board) who worked with him at the time, Yakovlev is an intelligent and careful propagandist.

Yakovlev has first-hand familiarity with Western culture and politics. In 1959-60, he was an exchange student at Columbia University. Subsequently, Yakovlev was Moscow's ambassador to Canada from 1973 to 1983. He is thus in a position to provide Gorbachev with a more realistic assessment of the workings and behavior of Western societies—their strengths, weaknesses, and above all, how best to appeal to elite and public opinion.

In 1983 Gorbachev visited Canada and apparently was impressed with Yakovlev. Soon afterwards, Yakovlev was brought back to Moscow and appointed director of the prestigious Institute of World Economics and International Relations (IMEMO). He headed IMEMO until 1985, when he returned to his old bailiwick, the

Propaganda Department chief. At the 27th CPSU Congress in February-March 1986, Yakovlev became a full member of the Central Committee and Secretary for Propaganda. In January 1987 he was named a Candidate Member of the Politburo and became a full member six months later.

Since 1984, Yakovlev has accompanied Gorbachev on high-level visits abroad: to Britain for the December 1984 meeting with Margaret Thatcher and to the 1985 Geneva and 1986 Reykjavik summits with Ronald Reagan. At all these encounters, Western observers were struck by the open, candid style of the Soviet delegation. As Secretary for Propaganda, Yakovlev's hand was evident throughout, from the unusually diverse mix of Soviet spokesmen, to their eager availability to Western reporters. Yakovlev is clearly Gorbachev's right-hand man when it comes to getting his ideas across to an audience.

However, Yakovlev is far more than a Western-style public relations officer. As Secretary for Propaganda, his responsibilities include content as well as form. In this respect, his writings reveal him to be one of the

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BLITZKRIEG . . . CONTINUED

the computer and so forth were not working. It smelled of fuel and oil leaks; gear was not stowed correctly on the tank. My conclusion was that the tank could not have executed a combat mission. It might have run fine and it might look pretty in a parade with a guy standing on the top saluting, but I seriously question whether that tank could have executed a combat mission."

Throughout his tour as exercise observer, Mallory said he never saw a Warsaw Pact tank equipped with reactive armor. Observers of more recent exercises in the Kiev military district reported seeing reactive armor on every one of the 350-400 tanks participating, according to former national security advisor Zbigniew Brzezinski.

The main obstacle to meeting goals of the Stockholm/Helsinki Accords, in Mallory's opinion, was the lack of information provided to the observers. According to Mallory, the Warsaw Pact hosts "wouldn't tell

you where the units were or what their designations were, who they were subordinate to, what their order of battle was, [or] where their home garrison was located," and "they wouldn't let you in any CPs [command posts], they wouldn't let you [in most cases] look at any equipment, they wouldn't talk to you about any logistics reserves, how much fuel was built up—ammunition, spare parts, and so forth."

Mallory found these restrictions a major impediment to the confidence-building objectives of the Accords; "My contention [to his Warsaw Pact hosts] was, you're only 30 kilometers from the [West] German border and you've got 25,000 soldiers—by your own statement—massed up here for training. Now when I walk out of here as the observer, what's to stop you from simply rolling back to your ammunition point, uploading with big bullets, refueling, and starting the attack? We ought to see those battalions going back to garrison." ■ ☆ ■