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HIGH DIVIDENDS FROM A U.S.-ISRAELI PARTNERSHIP ON STRATEGIC DEFENSE

INTRODUCTION

The Israeli decision to participate in research on the Strategic Defense Initiative (SDI) promises to be the most important project ever formally undertaken between the two nations. Never before has a joint U.S.-Israeli military project offered so many strategic, technological, economic, and political benefits for both countries. The U.S. stands to gain not only a stronger ally in the Middle East, but a much improved technology base for the SDI program. Israel stands to gain a stronger defense capability and access to the technical and economic benefits of participating in the world's most advanced technology research program.

Specifically, building an Israeli defense against Soviet-supplied SCUD-B, SS-12, SS-21, and SS-22 surface-to-surface missiles deployed in Syria would serve U.S. interests by strengthening Israel's defenses, which should help stabilize the Middle East's military balance. It would benefit SDI by calling on Israeli expertise in laser technology, aero-mechanics, computer software, microelectronics, and propulsion systems. It would accelerate the SDI program by taking advantage of the rapid weapons acquisition process in Israel. It would create technological spinoffs for conventional armaments that would improve Israel's ability to coordinate its military forces and stop attacks by enemy tanks and heavy armored vehicles. And it would stimulate the Israeli economy by imparting to Israel some of the estimated \$5 trillion to \$15 trillion commercial value of SDI high technology spinoffs.

To reap these benefits, it is vital that the U.S.-Israeli cooperation on SDI be allowed to develop fully. Thus the Reagan Administration should:

1) vigorously oppose congressional efforts to reduce allied participation in the SDI research program;

2) establish a U.S.-Israeli working group as soon as possible to accelerate research and development on an anti-tactical ballistic missile (ATBM) system for Israel; and

3) begin working with Israel to upgrade the Israeli air defense system around air bases, mobilization centers, and cities as a first step toward a more comprehensive defense system against tactical ballistic missiles.

THE TACTICAL BALLISTIC MISSILE THREAT TO ISRAEL

When Ronald Reagan unveiled his Strategic Defense Initiative in March 1983, he offered U.S. allies the opportunity to participate in the project. Three years later, in May 1986, with the unanimous support of the Israeli Cabinet, Israeli Defense Minister Yitzhak Rabin signed a Memorandum of Understanding with U.S. Secretary of Defense Caspar Weinberger signaling a go ahead for Israeli involvement in the program. This prompt Israeli response derives in large part from the growing threat to Israel from ballistic missiles armed with conventional, chemical, and nuclear warheads.

Arab states confronting Israel have accumulated weaponry that totals well over \$100 billion. Israel's chief adversary is Syria, which boasts Soviet-supplied SCUD-B, SS-12, SS-21, and SS-22 surface-to-surface missiles. These missiles--even when carrying non-nuclear warheads--can destroy Israeli military control centers, storage depots, and airfields almost without warning. Virtually all of Israel's airbases north of Jerusalem would be vulnerable to attack and could be neutralized for up to 24 hours. This would allow Syria to overrun Israeli forces on the Golan Heights.

Israel currently has ten airbases potentially vulnerable to Syrian short-range missiles.¹ Ten direct hits by either a chemically armed or conventionally armed SS-21 could completely incapacitate a base. The Syrians now possess about two dozen SS-21s. In the near future, the Soviets could supply Syria with enough missiles to knock out all of Israel's bases with a first strike.

1. For a detailed analysis of the Syrian missile threat to Israel airbases and major cities, see Seth W. Carus, "The Threat to Israel From Tactical Ballistic Missiles," testimony before the Senate Subcommittee on Strategic Nuclear Forces, January 30, 1986.

The Syrian SS-21 short-range ballistic missiles have a range of 75 miles and an accuracy reported to be within 100 yards. They can strike major Israeli population centers. A surprise attack by these missiles would seriously disrupt the call-up of reserves, the lifeline of the Israel Defense Forces. Israel believes, moreover, that Syria will soon receive the SS-23 with greater accuracy and more than four times the range of the SS-21. It could hit almost any point within Israel.

The use of surface-to-surface missiles in the Iran-Iraq war has revealed to Israeli officials the vulnerability of population centers. One of Israel's most pressing needs thus has become to develop technologies to counter this threat. That SDI offers a promise to remedy this vulnerability is understood by the Israelis.

THE ADVANTAGES OF ISRAELI PARTICIPATION IN SDI

The U.S. invitation to its allies to participate in SDI stated that the program will "examine technologies with potential against shorter-range ballistic missiles." One of the first technologies likely to emerge from SDI research will be for anti-tactical ballistic missiles. SDI technologies thus could enable Israel to defend itself rather than rely upon the risky strategies of deterrence by threat of retaliation or preemptive attack. The development of an Anti-Tactical Ballistic Missile System (ATBM) or a theater defense system offers a near-term deployment option for Israel. Interceptor weapons such as kinetic energy kill systems, ground-launched hypervelocity interceptor missiles, Rail guns, laser beams, particle beams and various other intercept technologies are already being tested.² Defense against SS-21, SS-22, and SS-23 missiles could employ a wide range of current technologies since the trajectories of the missiles are lower, and the speeds are slower than those for ICBMs.

What Kind of System

Upgrading existing air defense systems to meet the short-term ballistic missile threat would be the first step in creating a theater defense system. Newer technologies, however, offer great promise. An ideal candidate for an Israeli defense against the Syrians' SS-21 is the U.S. Navy's "Aegis" acquisition radar deployed with a two-stage

2. Israel is reported to be able to deploy a ground-based free electron laser weapon system capable of intercepting ballistic missiles as part of an ATBM system during the 1990s. The system could use a single system to defend the entire country and would rely upon ground-based relay/fighting mirrors instead of space-based systems. Aviation Week and Space Technology, October 20, 1986, p. 27.

hypervelocity missile being developed by Rafael Corporation in Israel. Many of the major components for the missile have already been flight tested. Also promising are a modified version of the U.S. Army's "Patriot" air defense missile and the French "Aster" anti-ballistic missile, which could engage warheads inside the atmosphere.

A point defense at a lower altitude could be composed of proved "off the shelf" anti-ballistic missile technologies, which might also include Patriot surface-to-air missiles. Newly devised "Swarm Jets," hypervelocity Rail guns, lasers, and various other ground-based interceptors could serve as a second layer to catch missiles in the terminal phase of their trajectories that permeate the higher altitude defense.

Each layer when utilized alone would have an 80 percent reliability rate, and when combined, could produce a 96 percent reliability rate. Syria, therefore, would need to target 500 missiles per base, instead of ten missiles, to guarantee destruction of each base. To wipe out all Israeli bases then would require 5,000 SS-21s. Logistics, costs, and political and strategic constraints make this an almost impossible number for Syria to deploy. Without SDI, the Syrians now require only 200 SS-21s to achieve the same results.

Enhancing Israeli Conventional Warfare Capability

SDI technologies should spill over considerably on Israel's conventional capabilities. Weapon designs and battlefield management systems, for instance, could be upgraded via cooperation with the U.S. in developing and sharing such state-of-the-art technologies as electronics, optics, computers, and energy. Domestic defense production enhanced by SDI contracts and shared expertise will contribute to Israeli self-sufficiency and the development of advanced weapons systems necessary for Israel's survival. Writes Avram Schweitzer, an Israeli journalist for the widely respected Ha'Aretz newspaper: "A system that can make out, identify, hone-in-on, and destroy an object less than 100 feet long, moving at near Mach 1 speed at a distance of 10,000 miles, is essentially a [ballistic missiles defense] system, the application of which could do to the foot soldier, the artillery piece, the tank, or the helicopter, what its space-progenitor is supposed to do to strategic missiles. To be in on this kind of technology...could mean the purchase of peace for Israel, or more realistically, the imposition, by non-aggressive means, of a permanent state of non-belligerence along its borders."³

The Israelis are already researching the possibilities of converting offshoots of SDI hypervelocity Rail guns into weapons capable of being mounted on tanks and armored vehicles. Because of

3. Midstream, June/July 1985, pp. 6, 7.

SDI, Israel will be in a better position to update aviation electronics and keep combat command and control systems close to state-of-the-art. The 1982 Lebanese conflict demonstrated the importance of these components for military success during Israel's confrontation with Syria.

Reducing the Likelihood of a Future Arab/Israeli Conflict

Unable to match the numbers of men and weapons fielded by its adversaries, Israel has had to rely on its qualitative advantage. But because of economic restraints, and the influx of Soviet, British, French, and even American weaponry to its adversaries, Israel's qualitative deterrent has eroded seriously. Syrian short-range missiles, for example, soon may be able to destroy Israel's fighter aircraft on the tarmac in a surprise attack. Israel's only way to counter such an imminent attack from surface-to-surface missiles would be by a preemptive strike against the missiles before they can be fired. Such a preemptive strike, of course, could ignite a new war in the Middle East. SDI, however, could enable Israel to regain its qualitative edge and thus be able to counter an impending missile strike without having to take preemptive action. Such a capability to deter Syrian aggression would not only enhance Israeli security immeasurably, but stabilize the entire region as well.

Insurance for Israel's Reserve System

The bulk of the Israeli Defense Forces consists of reserves. Israel's standing armed forces number 174,000. The reserves bring IDF to around 500,000--and most of this can be done within 72 hours. Israel's strained economy, however, cannot bear the cost of a constant reserves mobilization.

An ATBM system for Israel would help protect such Israeli mobilization capabilities as storage depots, roads, and supply lines which could seriously disrupt the call of the reserves. Moreover, by providing Israel defensive cover for calling up the reserves, an ATBM system would give the Israelis more time to decide and prepare for mobilization.

Strengthening the U.S.-Israeli Relationship

The U.S.-Israeli relationship will grow as the SDI program expands. Shared research and development between industries and applications of weaponry in the conventional arena will build a new array of relationships. This could lead to heightened strategic cooperation beyond anything envisioned at present.

Israel also will benefit from SDI relationships with those other U.S. allies that have accepted the President's offer. Great Britain and West Germany already have begun discussions on hybrid technological ventures for theater defenses. With an SDI role, Israel

could assume a de facto allied membership by helping to guard the southern flank of NATO.

Economic Benefits

U.S. federal budget constraints could restrict future U.S. aid to Israel. Possible aid drops, however, could be offset by SDI contracts awarded to Israeli defense industries. The Pentagon already has signed three contracts with Israel. Israeli research facilities and firms already have submitted some 150 science and technology proposals (including a project for the study of the basic features of regional anti-tactical ballistic missiles systems) to the U.S. Strategic Defense Initiative Organization. Since high-tech products now account for 40 percent of Israel's industrial exports, the rapid development of SDI-related industries will boost economic growth.

Technological spinoffs could include new computer systems, energy sources, communication devices, medicines, and thousands of consumer products. SDI also will channel research funds to Israeli universities and will help revitalize the Israeli scientific community.

Israeli defense-related industries will receive contracts, strengthening strategic and economic cooperation between Israel and the United States. Major General David Ivry (Ret.), former Chairman of Israel Aircraft Industries, confirmed that Israeli industry is committed to playing a significant role in the SDI program. Such high-tech firms and organizations as Ivry's, Technion, Tadiran, Rafael, Elbit, El Op, Elisra, and the Sofek Nuclear Research Centre will be the likely recipients of the initial SDI subcontracts.

New opportunities in high-tech jobs surely could prevent Israeli scientists from leaving the country to seek opportunities in the West. In fact, an expanded high-tech industrial base in Israel may serve to be an attractive incentive for Jewish scientists abroad to move to Israel. In a sense, the economic importance of SDI to Israel is equally as important as the strategic benefits toward ensuring Israel's survival.

ISRAELI CONTRIBUTIONS TO SDI

Israel can contribute substantially to the SDI effort.

Technological Innovations and Battlefield Experience

Israel leads the world in the share of its population employed in research and development. There are approximately 300 engineers and scientists per every 10,000 people in Israel. Israel excels in the development of lasers, aero-mechanics, computer software, and

propulsion systems. Israel's vast battlefield experience, meanwhile, can be of great value to SDI. Example: the development of such U.S. weaponry as the F-16 Fighting Falcon interceptor aircraft was enhanced by lessons Israel learned during the Lebanon war.

The Israeli Defense Forces' battle experience ranges from remotely piloted vehicles (drones) to command, control, and communications (C³). This could enhance development of SDI.

A Catalyst for the SDI Program

Because of the precarious nature of the Middle East, the Israelis cannot afford long research and development time spans to move weaponry from the drawing board to the field. The Israelis team the military with scientists to conceive new technologies quickly. The Israeli Weapons Acquisition Cycle, therefore, provides a quick reaction capability and an emergency "surge" production capability. This could catalyze the entire SDI program by accelerating its pace.

The Israeli military/industrial partnership has advantages over the American. Since the Israeli military is small, it has a more fluid organizational structure, and there is more room for individual initiative in weapons proposals. Israel, moreover, need not contend with a strong anti-national security political network. Israel's historical experience dictates that military strength is the best insurance for survival.

CONCLUSION

Deployment of a ballistic missile defense system in Israel is feasible and necessary. An SDI system in Israel should prevent its adversaries from contemplating attack. Such a system also could guard against a conflict arising from an accidental launch or conventionally armed shorter-range missiles. A joint U.S.-Israeli project, moreover, will not only improve the SDI program with Israeli technical expertise but produce important technical spinoffs for conventional armaments, and it could stimulate economic growth in Israel by encouraging the development of marketable high-technology spinoffs. Finally, U.S.-Israeli cooperation on SDI will set a good example in participation for Western Europe.

For both Israel and the United States, the Strategic Defense Initiative is an opportunity and insurance policy for survival. Recent congressional efforts to restrict SDI contracts to allies was vigorously and successfully opposed by SDI supporters in Congress and by the Reagan Administration. The Administration must continue to

oppose amendments designed at reducing allied support for SDI by undermining competitive bidding on projects.

To facilitate research on a tactical ballistic missile defense system for Israel, the U.S. should form a working group with Israel and NATO allies to accelerate research and expedite cooperative development not only of an ATBM system but improved air defense systems as well. Establishing ATBM defenses in Israel and in Western Europe would greatly reduce the chances of a successful preemptive attack against Israeli and NATO forces. This would, in turn, deter aggression and thereby help preserve the peace in two regions of vital interest to the U.S.

SDI cooperation serves the interests of both the U.S. and Israel. It strengthens U.S. and Israeli ties as well as the SDI program itself. But clearly cooperation is most important for Israel. For the ability to defend itself against a growing Syrian short-range ballistic missile threat may some day be necessary for Israel's very survival.

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