

ISRAEL HIGH-TECH & INVESTMENT REPORT

A MONTHLY REPORT COVERING NEWS AND INVESTMENT OPPORTUNITIES

JOSEPH MORGENSTERN, EDITOR

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From the Editor's Desk

PRIVATE DREAMS, PUBLIC VISIONS

Finding financing for high-technology (or even merely science-based) projects is a tricky business. After personal and family funds are used up, inventors seek banking sources in order to develop their ideas. But Israeli banks are not a good source of startup business capital. Interested not so much in what may be good for the country in the future, they concentrate exclusively on what is good for their bottom line in the present, lending money only when there is a 100% certainty that the capital will be returned - with exaggerated interest.

By the nature of his work, an entrepreneur is not able to provide such insurance policies, or the type of collateral the banks require. It's a pity.

There is a nascent venture-capital industry, but it is only starting to come of age. In the meantime, the local stock market is fickle but expanding. Since raising capital here is less expensive than raising it overseas, many choose this road.

The private placement memorandum has become a good vehicle for raising money. The real test begins at this stage. The project and the entrepreneur are put on display, and must be able to answer any question raised by prospective investors. For many who survive the scrutiny, there will be an initial public offering.

As well, more than 40 Israeli companies have raised capital in the United States. The firms which have gone public in America have a total market capitalization of more than \$6 billion, with annual sales in excess of \$2.7 billion.

We have chosen ten of the 40 and tried to determine whether investing in them in 1992 is a good idea. We set strict criteria for inclusion in the group. One is that the business be connected directly or through investment to industry, especially high-tech or science-based and export-oriented industry. The other criteria is that the firm has stock market valuations of more than \$100 million.

The results appear in this issue. The graphs clearly indicate that investors in Israeli enterprises appreciate the quality of earnings, and prefer the glow of an Israeli sunrise to that of an American or European sunset. Otherwise, their valuations would have sagged, as has been the case on many of the world's share markets.

In fact, we were surprised to note that no fewer than nine of the ten companies examined have much higher valuations now than they had at the start of the year.

A new day is dawning.

It's too bad, though, that our government is sleeping in. A leading economic columnist, Gideon Eshed, of the prestigious Haaretz daily, suggests that the government's methods of trying to encourage capital investment - offering tax breaks, cheap land and wage subsidies - is counterproductive. He points to a decline of capital investment in Israel's economy as a percentage of the GNP.

Yet companies such as Intel and Vishay continue to expand their activities.

There's a lesson here. Investors interested in this country are not coming because of the government's baubles; they're coming because they can feel which way the wind is blowing, and want to get in while there's room. And they're coming in spite of that fact that our government continues to greet them with the

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Attention: Mr. Robert M. Bruckenthal Tel.: 914-723 8321 Fax: 914-723 8340
Editorial Offices: Aala House, 4 Weizmann Street, Tel Aviv 64239, Israel
Tel: 972-3-6979817 Fax: 972-3-6919788

truckloads of red tape and ranks upon ranks of petty-minded clerks that typify a backwoods, make-work-at-all-costs country rather than the globe-spanning export corporation which Israel is rapidly becoming.

An Exporter's Dream Come True

As bright as things are on the local business scene, it seems the best is yet to come. With the demise of Communist Russia and the emergence of so many new republics, social, cultural, political and economic ties are blossoming. India and China appear interested in establishing closer contacts with Israel.

For a high-tech, export-dependent country like Israel, developing trade with countries that have huge populations looking to move into the 21st Century offers vast potential, but requires time and effort. Visits to and from China are taking place, and these may provide valuable insights.

But as enticing as the prospects are, these are largely uncharted seas, and many companies prefer that others test the water first. The long delay between the start of an effort and a first sale deters most from conducting this aspect of business on their own. So market developers are offering their services. The developer asks for an agreement which guarantees a reward after the developer identifies the market and the buyer, arranges for a product test, and brings buyers to the manufacturer. Like spoon-feeding a giant baby.

This process is gaining momentum, and we are finding that news of China, East Europe and India is beginning to get some editorial attention.

Venture capital group

Dr. Seymour Rosenberg of America, a former CFO for a technology company, and for the past decade an academician, is heading an organization seeking to form a Venture Capital Group. The founding group includes: patent lawyer Theodore Jay; Dr. Israel Palcham, physicist who emigrated to Israel from Russia in the 1970s; and Joseph Nathan, a PR specialist.

The group expects to establish a multi-million dollar fund to invest in startups, and will seek to fill a niche with companies in Israel, especially those formed by new immigrants, to provide capital for their activities.

A fast boat to China

Prospects are good for a rapid increase in trade between Israel and China. This past month, an

official Chinese delegation visited Israel. Moreover, Chinese private-sector executives were in Israel to conclude contracts with their Israeli counterparts. A number of trade development specialists based in Israel are now offering to develop the market for Israeli electronic and health-care products. One of these, David Dukes, reports strong interest in one of China's major provinces for diagnostic kits and electronics.

Semtex

Semtex is a hard-to-detect plastic explosive. A Czech chemist from VCHZ Synthesia, which manufactures the explosive, admitted at a Weizmann Institute conference that it was his firm's product which destroyed the Pan Am jet over Lockerbie.

Research at the Weizmann Institute has led to devices that are able to chemically tag Semtex and facilitate its detection.

Athena's investments serve as a double dividend

Adler and Tolkowsky Management Associates serve as managing partners in Athena Venture Partners LP. The fund has already invested \$20 million in Israeli and American technically oriented companies.

Dan Tolkowsky points out that it is Athena's experience that for every dollar it invests, two to three dollars were invested by foreign venture capitalists.

Trade between Korea and Israel

The Korean Samsung electronics giant has begun to market personal computers in Israel. InterGamma, an Israel Corporation subsidiary, is developing the local market.

Samsung has annual sales of \$52 billion, and its electronic products - especially in the field of computers - are seen as highly competitive.

Do Israelis really prefer to buy blue and white?

Earlier this year, the Ministry of Finance relaxed regulations and allowed Israelis to invest in bonds and shares listed on foreign markets. Until now, Israelis could only invest overseas in the shares of Israeli companies approved by the Ministry of Finance.

One would have expected a stampede to the foreign exchanges, most of which are larger than the Tel Aviv Stock Exchange. But this has not happened. The Israeli banks have been less than enthusiastic in recommending foreign investments, and continue to offer a limited choice of Israeli securities listed on the Tel Aviv Stock Exchange and in the U.S.

The ten companies reviewed for their share performance have been chosen on the basis of two criteria:

1. Their business is related to activities which are heavily dependent on research and/or development, and
2. Their stock market capitalization is in excess of \$100 million.

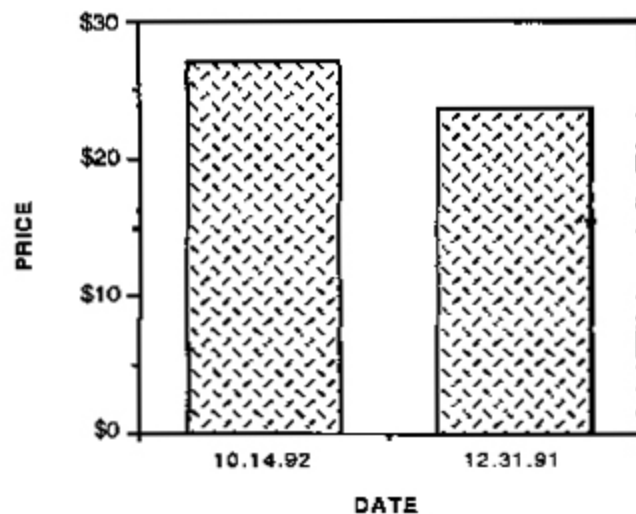
The comments are intended to serve as a general guide to overall performance, and reflect the opinions of the Editor.

For further information about these companies one should write directly to them or to consult with a broker or financial advisor. As a service to our readers we will pass on your inquiries for reply directly to the company.

ECI Telecommunications Limited

ECI is experiencing strong growth - both in orders delivered and in backlog - of its core products for telecommunications networks. Profit margins are excellent, and the outlook is good for new products.

ECI TELECOM



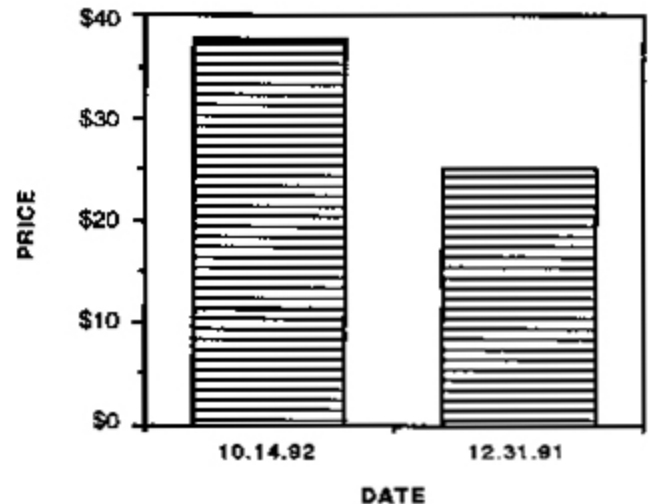
Outlook: It is very likely that future performance will be positive.

Elbit Computers Limited

There is a good outlook in spite of worldwide cutbacks in defense spending. The company's products are based on innovative solutions as well as time-tested approaches for various defense sectors.

Elbit's holdings in Elscint provide it with a main entry and a flow of earnings in non-defense areas; Elscint's expertise is in the medical imaging industry.

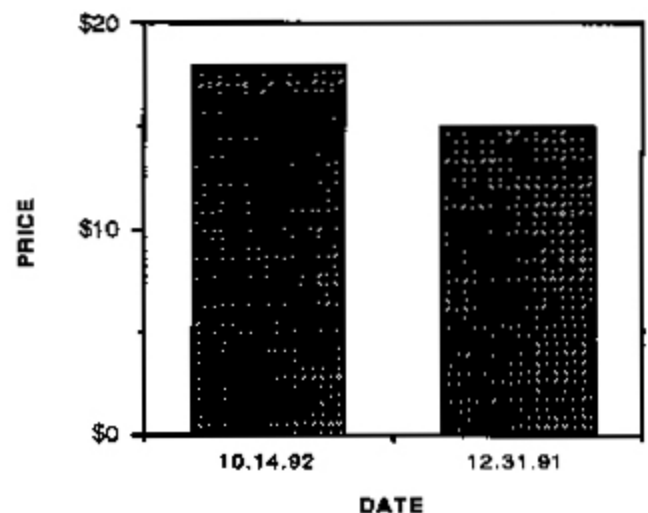
ELBIT COMPUTER



Outlook: Very positive.

Elron Electronic Industries Limited is an interesting investment company with a history of involvement in innovation and high tech. Its holdings in Elbit Computers, and therefore in Elscint, provide a strong base of earnings. However, losses at Optrotech and Fibronics have affected profitability.

ELRON ELECTRONIC



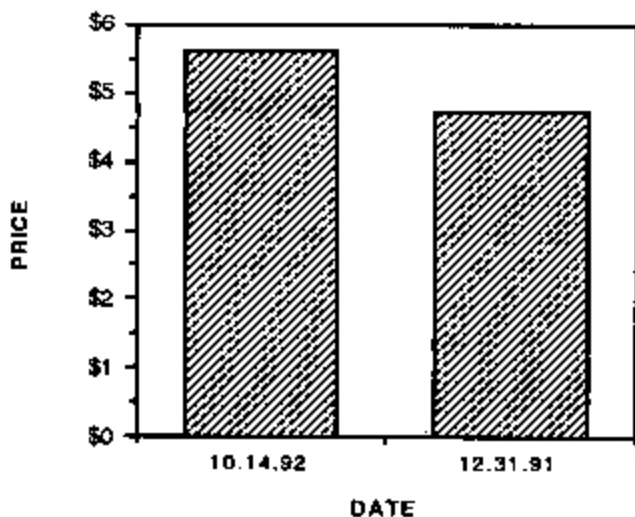
Outlook: It would be good to see some divestiture of present holdings, and an application of management's expertise at finding new investments.

Elscint Limited

This company has accumulated three decades of experience in research and development, production and sales of imaging modalities. This has resulted in a good line of products and growing sales.

Elscint has a following among hospitals in various parts of the world, and can be expected to use this as a channel for new products.

ELSCINT LTD.

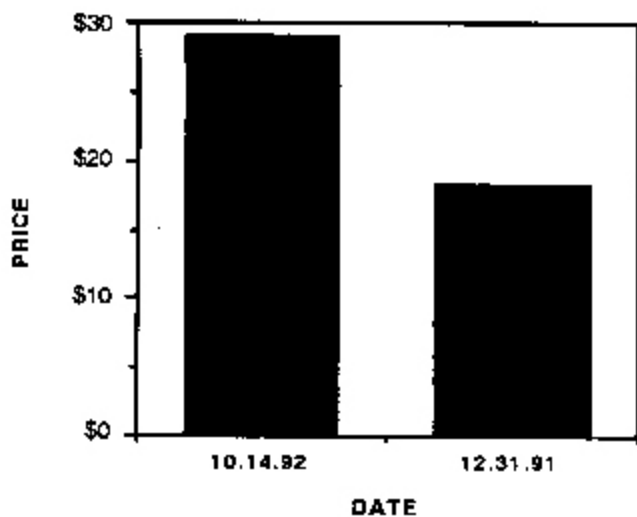


Outlook: Its management seems to feel a need to maintain a flow of predictions as to earnings and sales. This raise questions of credibility.

IIS Intelligent Information Systems

IIS's IBM-compatible systems often reach the market ahead of the big companies, including IBM.

IIS INTELLIGENT INFO

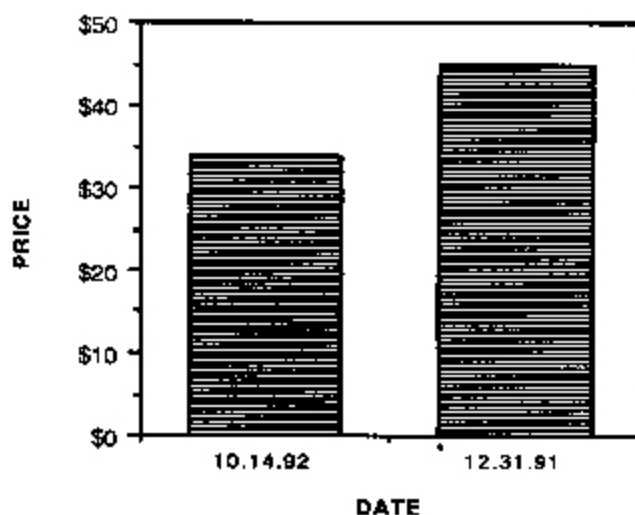


Outlook: Its acquisition of Lee Data Systems provides the company with good prospects for sales and profit growth.

Interpharm Laboratories Limited

Interpharm continues to increase sales, and is achieving good margins on the sale of Frone, its beta interferon pharmaceutical product. Prospects continue to be excellent. The market valuation of its shares reflects the generally lower valuations for biotechnology issues in the US.

INTERPHARM LTD

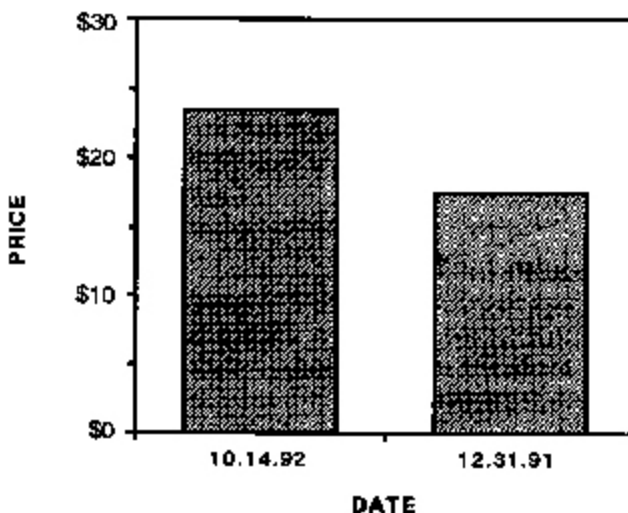


Outlook: Prospects appear good due to a strong base in innovative R&D.

Lannet Data

Lannet is a data communications supplier with a fast

LANNET DATA



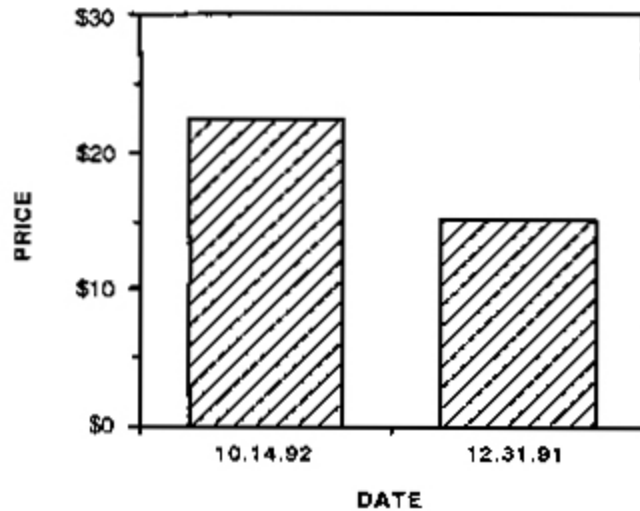
track record. Second-quarter performance was higher than last year, but below expectations. This led to a reassessment of market valuations.

Outlook: Management will need to improve communications with investors in order to allay their concern about unpleasant surprises.

PEC Israel

Through its intricate corporate connections, this company has advantageously positioned itself as an important investor in Israel's industrial universe.

PEC ISRAEL



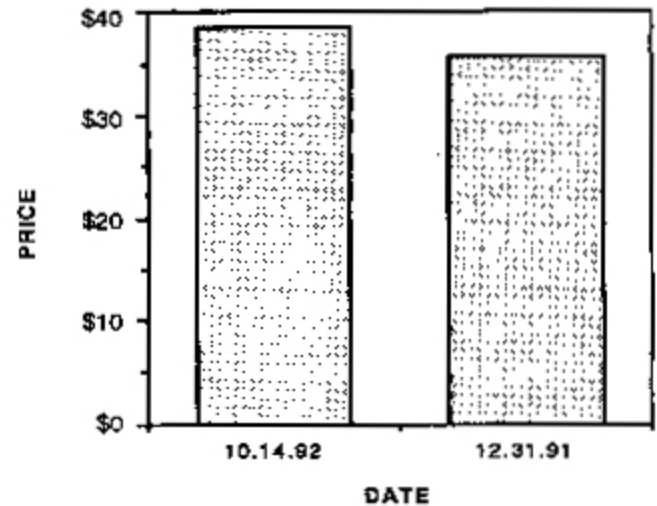
Outlook: Things are looking good at PEC, due to its good mix of investments. Its relation to Discount Investments provides enhanced investment decisions.

Scitex Corporation

Scitex is a leading supplier of pre-press systems to the graphics and publication industries. Sales in excess of \$500 million are being predicted in 1992, and its earnings performance in the first half reflects the company's ability to increase sales while maintaining earning margins.

Outlook: Expect good growth in earnings and sales due to its position in industries where more companies are seeking Scitex-type solutions.

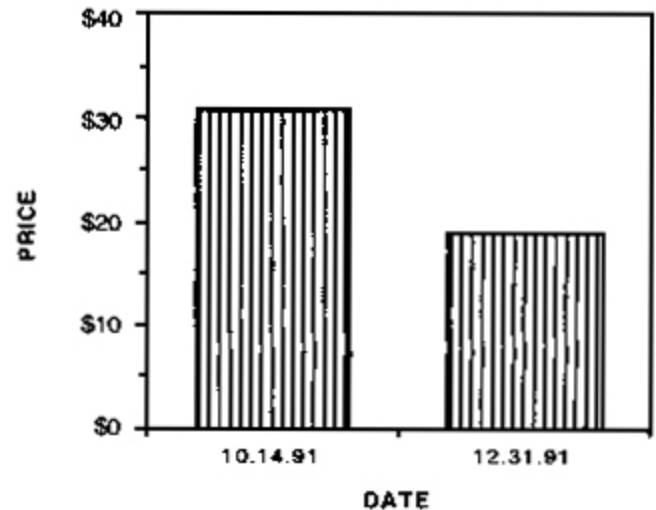
SCITEX CORP



Teva Pharmaceuticals

This company is gaining generic approvals in the United States, and has recently made its debut in Europe as a manufacturer and supplier.

TEVA PHARM



Outlook: These developments will probably generate important growth and profits.

Yozma and Advent

Advent a major American venture capital company has signed with Yozma, the Israel Government's venture capital company to establish a new venture capital fund to invest in Israeli high-tech. Dr. Ed Mlavsky will manage the new fund which will aim to raise \$50 million for local investments. Participants

in the group are Discounts Investments and PEC Israel.

Teva signs milestone agreement with DuPont Merck

The recently signed agreement between Teva and DuPont Merck, whereby the companies will market each others products, may prove highly beneficial to

the Israeli firm. The agreement should boost interest in and sales of generic products in Europe.

ECI and Tadiran cooperation in SDH

ECI Telecom and Tadiran Ltd. have agreed to cooperate in the area of synchronous digital hierarchy products and systems, primarily in marketing. Telephone networks operating under the new SDH standard will enhance the management of a variety of voice, video and data services such as video conferencing, high-speed communication of text and graphics, and computer communications in a fiberoptic and traditional network environment.

The announcement of this association attracted new investment in Tadiran shares, which are listed on the New York Stock Exchange. In our August report, we suggested that a major jump in price could be anticipated if Tadiran sells its shares to the public at under \$16 each (the company had hoped to obtain \$18.50). In the event, Tadiran received \$14.50, and the shares have advanced since then by about 40%, to over \$20.00.

Merger on hold

Optrotech Ltd. and Orbot plans for their proposed merger have been temporarily set back. The merged entity will control approximately 90% of the PCB market in the U.S. American regulatory authorities are studying whether the activities of the new concern will result in sales exceeding the limits set by anti-monopoly regulations.

Aryt Invests

Aryt Industries has acquired 74% of SOGO Electronics Ltd., manufacturers of telecommunications peripherals, for an undisclosed sum.

BSF research funding

One of the ways in which countries can promote better mutual understanding is by promoting bi-national cooperation and advancing scientific research for peaceful purposes. A number of European countries, notably Germany, are beginning to establish such a relationship with Israel. But the Bi-National Science Foundation, now celebrating its 20th anniversary, continues to carry on. The Foundation is endowed with \$100 million, contributed equally by the American and Israeli governments.

The endowment, which is invested in local currency, yields an annual income equivalent to \$12 million. At the meeting of its board of governors this past summer, members approved support for 97 new

research projects out of the 286 proposed. These were limited to the Health Sciences, Life Sciences and Bio-medical Engineering. The board was able to review two decades of activity during which BSF has supported more than 2,000 projects conducted by over 2,200 Israeli-American scientific teams and involving \$150 million in research funds.

The foundation's staff of seven is headed by Dr. Zeev Rotem, the Executive Director. A four-year survey carried out by BSF among individual grant recipients indicated practical and substantial results have been achieved - 75 new discoveries were made, including new equipment designed, built and put into use; new methods and techniques have been developed for laboratory implementations; previously unknown phenomena have been discovered; experimental advances have been made, and major theoretical breakthroughs elucidated.

One issue raised is whether America receives sufficient benefit to justify continued support of such a foundation. Dr. Rotem and his group point out that in numerous instances, the initiating discovery was made by the Israeli partner.

The projects funded by the National Science Foundation and carried out at the Hebrew University of Jerusalem, for example, offer the prospect of environmental improvement and commercial application, whether in the United States, Israel, or elsewhere in the developed and developing world.

Elbit and Opher - armed to the teeth, with nothing to eat
Defense industries worldwide have been ravaged by peace, and major producers are either moving towards civilian production or learning to compete by developing fewer but higher-priced products and systems.

Elbit Computers Ltd. falls into both categories.

One of Israel's most respected companies in the field of high-tech and defense electronic systems, its sales in 1991 exceeded \$400 million.

As part of the company's diversification into the civilian market, it has entered the medical instrumentation field by means of Elcint Limited, producer of medical imaging devices such as magnetic resonance imagers (MRI), ultrasound probes and CAT scanners.

Nevertheless, defense systems continue to absorb an important part of the company's expertise. One area is in the field of precision guidance systems, otherwise known as smart bombs. These proved successful in Operation Desert Storm, which underscored the potential for such weaponry.

The Opher is a guidance kit attachable to widely used, general-purpose dumb bombs. It gives these weapons the ability to seek targets in a fire-and-forget mode. The Opher system is being produced for the Israel Air Force, but other armed forces are also considering it.

The products operational features and advantages were recently proven as part of a customer evaluation procedure designed to show Opher's capabilities, including the ability to differentiate between live and passive targets, and correct substantial delivery errors.

In the test, four tanks were positioned in formation - two with running engines, two others burning to simulate killed targets. Four air raids were performed, each involving a general-purpose bomb equipped with Opher. The pilots deliberately aimed at distant reference points in order to simulate pilot/system error.

Each of the four bombs ignored the burning targets and hit the live ones. Videotapes from the aircraft showed how Opher identified and dismissed the dead tanks, acquired the live ones and homed in on them.

The test proved that Opher gives general-purpose bombs the ability to pinpoint the correct target, correct delivery errors, increase delivery range and reduce pilot workload.

Recycling Facts and Figures

Composition of Israeli domestic waste according to weight is as follows:

Organic matter	50-54%
Paper and cardboard	16-21%
Plastic and synthetic material	10-12%

Paper and Cardboard

In 1991, over 505,000 tons of paper and cardboard were used in Israel, 300,000 tons of which were imported. The total collected for recycling by Amnir Recycling Industries - a subsidiary of American-Israel Paper Mills Ltd. - was 112,000 tons, or 69% of the local production.

The 300,000 tons imported cost Israel \$125/ton. Since paper and cardboard constitute 20% of the total weight and 30% of the total volume of solid waste, the collection and recycling of such material merits further consideration.

Plastics

The annual consumption of plastic, produced by hundreds of plants throughout the country, is about 250,000 tons, or about 68 kg per person - expected to increase to 80 kg by 1995. Last year, 15,000 tons of thermoplastic materials were recycled, 20% of

which was originally imported.

Composition of plastic waste:

Packaging material	35%
Agriculture, construction, industry	75%

Amnir recycles some 15% of the country's polyethylene sheets and pipes - about 6,000 tons/year. Of the 650 million liters of beverages and water consumed each year, about 430 million are in plastic bottles, and ways and means of recycling these containers are being investigated.

Ministerial Backing

Prof. Amnon Rubinstein, Minister of Science and Technology, has announced that the Ministry of Finance will provide \$25 million to develop the infrastructure for research and development. This one-time allocation is the single largest to be assigned for basic R&D. The minister did not provide details of the program.

Mr. Rubinstein also promised to press for the passing of legislation whereby the Jerusalem College of Technology (JCT) would be able to grant the title of handasai (practical engineer).

The remarks were made by the Minister in Jerusalem on the occasion of an exhibit of prototypes, simulations and products, the result of 11 R&D projects carried out on the campus of JCT. An industrial park located at the college provides the setting for the research and development units. Some of these are strictly commercial and profit motivated. Others operate within the framework of an industrial incubator. The individuals developing these projects are backed by the Ministry of Industry and Trade (MIT). Some of these projects involve recent immigrants from Russia, the US and France, among others.

The MIT funding lasts two years - 100% of the cost of salaries and 75% of the cost of equipment and other project expenses.

Eytam aims at improving the diagnosis of breast cancer

Mammography helps detect breast cancer. It uses an X-ray system which is customized for this purpose. These systems are manufactured by leading medical device manufacturers, among them Israel's Elscint. The local company achieves high image quality by using a new molybdenum X-ray tube.

Eytam is a startup group at Elscint which has developed a prototype employing digital technology to transform mammograms into computerized images.

The results, according to the group, are superior to

what is currently available. Their claim for the prototype is that it performs accurate, reliable and objective diagnosis. The motivation for the project, IHTIR was advised, was the high number of unnecessary biopsies being performed. By improving the diagnostic capability of mammography, the number of needless biopsies could be reduced.

Elco Industries Ltd. is delivering mobile transformers

"Being able to meet American specifications is behind our ability to sell the American market," states Dan Zamski, of the development department of Elco Ltd. The more than four decade old company supplies the majority of Israel's needs for electrical equipment including that which reduces high voltage to low voltage for power stations. The company has diversified in recent years but the core business remains in the units which serve as transformers up to 1000 MVA and distribution transformers.

By all standards Israel is a small market and Mr. Zamski confirms that the company is selling its products and sometimes technology to clients in America and as far as Colombia, Venezuela, Uruguay and Thailand, among others. At our recent visit at the Ramat Hasharon plant we encountered Thai technicians. It is customary for clients to send personnel to view the equipment in advance of shipment, explained Mr. Zamski. Much of the equipment used in manufacturing is nearly fully automatic and materials handling and supervision is needed to ensure that the plans are followed carefully. Metal is formed by specialized equipment and is "bundled" to weights sometimes exceeding several tens of tons. Dealing with electricity levels which exceed that of lightning requires insulation of the core materials. The preparation of that core which is the "heart" of the transformer is carried out manually, in contrast to most other aspects of production which are nearly automated. It is such an exacting task that to get it right a technician carries out the steps manually. Each step is followed in accordance with prescribed dimensions.

An important contract with Israel's Electric Corporation for ten transformers is now coming out of the production lines. These units are mobile and may serve to increase the supply of electricity in any given area of Israel. The mobile units with their flexibility for power distribution as and where needed can be seen as a flexible low cost solution for the supply of electricity where

Elco total group annual sales are approaching the \$300 million level but in 1991 when its total sales were \$254 million exports were less than 10 per cent

leaving room for expansion of this part of the business. Though the company is diversifying rapidly into air conditioners and elevators the management is still centralized at the Ramat Hasharon plant, an indication of the importance of this business to overall activity. "We have a strong order backlog," confirms Gaston Cosmin, Elco Industries Ltd. export department manager. Where does the future lie? Perhaps in joint ventures in Europe to ensure a growth in exports, suggests the company's profile.

BOLEO...business opportunities on lasers and electro-optics in Israel

Thirty top businessmen including Bob Gelbert, Vice President of Coherent, America's largest laser company, Marty Cohen of Quandronics, also a major laser products company and Mark Fukuhara of Laser Photonics and Bob Weiss of PSI among other, are coming to Israel to investigate business opportunities including joint ventures, direct investments and licensing opportunities. The conference will be held in Tel Aviv, Dec, 14-17.

According to Joe VanZwaren, director of physics, the above industrialists are among a growing number of individuals planning to attend the conference which will feature the most important aspects of the state of lasers and electro-optics. This conference is a must for those who are interested in the business of lasers and electro-optics.

ISRAEL HIGH-TECH & INVESTMENT REPORT NEWS AND INVESTMENT OPPORTUNITIES

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