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UNITED STATES SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

Report of Foreign Private Issuer

Pursuant to Rule 13a-16 or 15d-16 under the Securities Exchange Act of 1934

For the month of August 2004

Commission File Number 000-12790

ORBOTECH LTD.

(Translation of registrant s name into English)

SANHEDRIN BOULEVARD, NORTH INDUSTRIAL ZONE, YAVNE 81101, ISRAEL

(Address of principal executive offices)

1

Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F:
Form 20-F <u>X</u> Form 40-F
Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1):
Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(7):
Indicate by check mark whether by furnishing the information contained in this Form, the registrant is also thereby furnishing the information the Commission pursuant to Rule 12g3-2(b) under the Securities Exchange Act of 1934.
Yes No _X

Attached hereto and incorporated by reference herein is the following document:

- 1. Press release issued by the Registrant on, and dated, August 2, 2004, and entitled Orbotech Announces Second Quarter 2004 Results .
- 2. Registrant s Condensed Consolidated Balance Sheet at June 30, 2004.
- 3. Registrant s Condensed Consolidated Statements of Income (Loss) for the Six and Three Month Periods ended June 30, 2004.
- 4. Press release issued by the Registrant on, and dated, August 4, 2004, and entitled Orbotech Develops First Technology for Parallel Automatic PCB Inspection and Verification .

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This report on Form 6-K is incorporated by reference into the Registration Statements on Form S-8 (Registration No. 33-25782, Registration No. 33-78196, Registration No. 333-05440, Registration No. 333-05440, Registration No. 333-08404, Registration No. 333-09342, Registration No. 333-11124 and Registration No. 333-12692) of Orbotech Ltd. previously filed with the Securities and Exchange Commission.

FOR IMMEDIATE RELEASE

COMPANY CONTACTS:
Adrian Auman, Corporate Vice President
Investor Relations, Director of Finance
Orbotech Ltd.
+972-8-942-3560
Amichai Steinberg, CFO and Corporate VP Finance
Orbotech Ltd.
+972-8-942-3524
www.orbotech.com

Michelle Harnish Marketing Communications Manager Orbotech, Inc. +1-978-901-5120

ORBOTECH ANNOUNCES SECOND QUARTER 2004 RESULTS

YAVNE, ISRAEL August 2, 2004 ORBOTECH LTD. (NASDAQ/NM SYMBOL: ORBK) today announced its consolidated financial results for the second quarter and six months ended June 30, 2004.

Revenues for the second quarter of 2004 totaled \$77.5 million, compared to \$67.2 million recorded in the first quarter of 2004 and \$54.6 million in the second quarter a year ago. Net income for the second quarter of 2004 was \$8.6 million, or \$0.26 per share (diluted), compared to net income of \$5.1 million, or \$0.15 per share (diluted), in the first quarter of 2004 and \$1.2 million, or \$0.04 per share (diluted), in the second quarter of 2003.

Revenues for the first six months of 2004 totaled \$144.7 million, compared to \$108.8 million recorded in the first half of 2003. Net income for the first six months of 2004 was \$13.6 million, or \$0.41 per share (diluted), compared to net income of \$2.3 million, or \$0.07 per share (diluted), in the first six months of 2003.

Sales of equipment to the printed circuit board (PCB) industry relating to bare PCBs were \$29.4 million in the second quarter of 2004, compared to \$23.2 million in the first quarter of 2004, and \$18.5 million in the second quarter of 2003. Sales of flat panel display (FPD) inspection equipment were \$20.7 million, compared to \$18.7 million in the first quarter of 2004, and \$12.0 million in the second quarter of last year. Sales of equipment to the PCB industry relating to assembled PCBs were \$8.8 million, compared to \$6.6 million in the first quarter this year, and \$6.1 million in the second quarter of 2003. Sales of automatic check reading products were \$1.3 million in the second quarter of 2004, compared to \$1.9 million in the first quarter of 2004, and \$1.8 million recorded in the second quarter of 2003. In addition, service revenue for the second quarter increased to \$17.3 million from \$16.8 million in the first quarter of 2004, and \$16.2 million in the second quarter of 2003.

The Company completed the quarter with cash, cash equivalents and marketable securities of approximately \$166 million, compared to \$152 million at the end of the first quarter, due principally to a positive operating cash flow of approximately \$15 million for the quarter.

The Company s results for the quarter reflect the improved business climate prevalent throughout the electronics industry, which has led to increased capital expenditures across the PCB and FPD industries that the Company serves.

Revenues from sales of the Company s PCB-AOI products, notably the Spiron AOI series and the solid state laser direct imaging systems, both of which have been designed to meet the complex technological needs of PCB manufacturers, increased by over 25% sequentially. In addition, revenues from sales of the Company s assembled PCB products experienced similar increases, reflecting the growing awareness and acceptance of AOI as an integral part of the manufacturing process. During the second quarter the Company continued to record strong bookings for its FPD products, primarily as a result of the combined effects of manufacturers ongoing, strategic investments in new sixth and seventh generation fabrication facilities for TFT-LCD televisions - which are continuing as planned - and the highly sophisticated technological solutions which the Company can offer these manufacturers.

Commenting on the results, Yochai Richter, Chief Executive Officer, said: We are pleased with our financial results for the quarter. We are feeling the effects of the recovery in the electronics industry and are also benefiting from our continued selective investments in research and development. These have enabled us to offer innovative products that answer our customers needs which, in turn, reinforces our leadership position at the forefront of those industries we serve. Our confidence in the long-term growth prospects of these industries continues to be high.

An earnings conference call is scheduled for Monday, August 2, 2004, at 9:00 a.m. EST. The dial-in number for the conference call is 630-395-0017, and a replay will be available, until August 16, 2004, on telephone number 203-369-0010. The pass code is Q2. A live web cast of the conference call and replay can also be heard by accessing the investor relations section on the Company s website at www.orbotech.com.

Except for historical information, the matters discussed in this press release are forward-looking statements that are subject to certain risks and uncertainties which could cause the actual results to differ materially from those projected, including industry trends, the timing and strength of product and service offerings, changes in business or pricing strategies, changes in the prevailing political and regulatory framework in which the relevant parties operate or in economic or technological trends or conditions, including currency fluctuations, inflation and consumer confidence, on a global, regional or national basis and other risks detailed from time to time in the Company s SEC reports. The Company assumes no obligation to update the information in this press release.

Orbotech is a world leader in providing yield-enhancing, production support solutions for specialized applications in the supply chain of the electronics industry, principally for printed circuit boards (PCBs) and flat panel displays (FPDs). The Company designs, develops, manufactures, markets and services automated optical inspection (AOI) systems for bare and assembled PCBs and for FPDs, and imaging solutions for PCB production. The Company s innovative AOI, imaging and computer-aided manufacturing (CAM) technologies enable customers to achieve the increased yields and throughput essential to remaining at the forefront of electronics production. Through its subsidiary, Orbograph Ltd., the Company also develops and markets automatic check reading software to banks and other check processing organizations. Of Orbotech s employees, more than one quarter are scientists and engineers, who integrate their multi-disciplinary knowledge, talents and skills to develop and provide sophisticated solutions and technologies designed to meet customers—long-term needs. Orbotech maintains its headquarters and its primary research, development and manufacturing facilities in Israel, and more than 30 offices worldwide. The Company—s extensive network of marketing, sales and customer support teams throughout North America, Europe, the Pacific Rim, China and Japan deliver its knowledge and expertise directly to customers the world over. For more information visit www.orbotech.com.

ORBOTECH LTD.

CONDENSED CONSOLIDATED BALANCE SHEET

AT JUNE 30, 2004

	June 30	December 31	
	2004	2003	
	(Unaudited) U. S. dollars	(Audited)	
<u>Assets</u>			
<u>CURRENT ASSETS:</u>			
Cash and cash equivalents	130,238	124,937	
Marketable securities	4,491	10,999	
Short-term bank deposits		6,900	
Accounts receivable:			
Trade	97,187	91,560	
Other	19,071	18,250	
Deferred income taxes	2,677	3,391	
Inventories	62,375	52,990	
Total current assets	316,039	309,027	
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INVESTMENTS AND NON-CURRENT ASSETS:	20.054	15.020	
Marketable securities	30,854	15,829	
Investments in companies	11,026	10,560	
Non-current trade receivables	797	249	
Severance pay fund	13,735	13,891	
Deferred income taxes	4,379	4,749	
	60,791	45,278	
PROPERTY, PLANT AND EQUIPMENT, net of accumulated depreciation and amortization	17,795	18,604	
GOODWILL AND OTHER INTANGIBLE ASSETS, net of accumulated amortization	12,385	13,539	
	407,010	386,448	
<u>Liabilities and shareholders equity</u>			
CURRENT LIABILITIES:			
Current maturity of long-term liability		6,151	
Accounts payable and accruals:			
Trade	27,033	19,178	
Other	48,186	44,890	
Total current liabilities	75,219	70,219	
ACCRUED SEVERANCE PAY	22,764	22,685	
Total liabilities	97,983	92,904	
MINORITY INTERPORT IN CONTROL IN ATTER MANAGEMENT			
MINORITY INTEREST IN CONSOLIDATED SUBSIDIARY	499	455	

SHAREHOLDERS EQUITY:		
Share capital	1,618	1,616
Additional paid-in capital	98,005	97,615
Deferred stock compensation	(568)	(921)
Retained earnings	231,781	218,146
Accumulated other comprehensive income	16	(1,043)
	330,852	315,413
Less treasury stock, at cost	(22,324)	(22,324)
Total shareholders equity	308,528	293,089
	407,010	386,448

ORBOTECH LTD.

CONDENSED CONSOLIDATED STATEMENTS OF INCOME (LOSS)

FOR THE SIX MONTH AND THREE MONTH PERIODS ENDED JUNE 30, 2004

	6 months ended June 30		3 months ended June 30		12 months ended December 31
	2004	2003	2004	2003	2003
	(Unaudited) U.S. dollars in		(Unaudited) thousands (except per share data)		(Audited)
REVENUES	144,709	108,822	77,509	54,610	228,392
COST OF REVENUES:					
COST WRITE-OFF OF INVENTORIES	80,104	63,146	42,603	31,859	130,917 7,448
	80,104	63,146	42,603	31,859	138,365
GROSS PROFIT	64,605	45,676	34.906	22,751	90,027
RESEARCH AND DEVELOPMENT COSTS - net SELLING, GENERAL AND ADMINISTRATIVE	22,838	19,752	11,689	9,944	39,456
EXPENSES	25,286	23,300	12,946	11,415	48,000
AMORTIZATION OF OTHER INTANGIBLE	1 154	1 200	577	600	2.400
ASSETS RESTRUCTURING COSTS	1,154	1,200	577	000	2,400 3,786
OPERATING INCOME (LOSS)	15,327	1,424	9,694	792	(3,615)
FINANCIAL INCOME - net	585	1,454	281	726	2,379
OTHER EXPENSES					(696)
INCOME (LOSS) BEFORE TAXES ON INCOME	15,912	2,878	9,975	1,518	(1,932)
TAXES ON INCOME	2,205	396	1,453	206	61
INCOME (LOSS) FROM OPERATIONS OF THE COMPANY AND ITS SUBSIDIARIES AND JOINT	12.707	2.402	0.522	1.212	(1.002)
VENTURE MINORITY SHARE IN PROFITS OF	13,707	2,482	8,522	1,312	(1,993)
CONSOLIDATED SUBSIDIARY	(44)		(16)		(455)
SHARE IN PROFITS (LOSSES) OF ASSOCIATED COMPANY	(28)	(222)	59	(79)	(507)
NET INCOME (LOSS) FOR THE PERIOD	13,635	2,260	8,565	1,233	(2,955)
EARNINGS (LOSS) PER SHARE:	Φ 0.42	ф 0.07	Ф. 0.27	Φ 0.04	(\$ 0.00)
BASIC	\$ 0.42	\$ 0.07	\$ 0.27	\$ 0.04	(\$ 0.09)
DILUTED	\$ 0.41	\$ 0.07	\$ 0.26	\$ 0.04	(\$ 0.09)

WEIGHTED AVERAGE NUMBER OF SHARES (IN THOUSANDS) USED IN COMPUTATION OF EARNINGS (LOSS) PER SHARE:					
BASIC	32,163	31,983	32,163	31,983	32,031
<u>DILUTED</u>	33,056	32,153	32,883	32,202	32,031

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COMPANY CONTACTS:
Adrian Auman, Corporate Vice President
Investor Relations, Director of Finance
Orbotech Ltd.
+972-8-942-3560
Amichai Steinberg, CFO and Corporate VP Finance
Orbotech Ltd.
+972-8-942-3524
www.orbotech.com

Michelle Harnish Marketing Communications Manager Orbotech, Inc. +1-978-901-5120

ORBOTECH DEVELOPS FIRST TECHNOLOGY FOR PARALLEL AUTOMATIC

PCB INSPECTION AND VERIFICATION

YAVNE, ISRAEL August 4, 2004 ORBOTECH LTD. (NASDAQ/NM SYMBOL: ORBK) today announced the introduction of its patent-pending automatic verification-in-parallel (AVIP) technology for use in automated optical inspection of printed circuit boards (PCBs).

Featuring specially-designed automatic verification capabilities, and combined with Orbotech s proven Verification-in-Parallel (VIP) technology, the new AVIP technology enables both inspection and verification of the PCB to be conducted simultaneously, on one system and using only one operator, resulting in a reduction by up to half of the AOI cycle time and corresponding substantial production cost savings compared with other available AOI solutions.

AVIP technology will initially be incorporated into the Company s SpirorAOI series, making Spiron-AVIP the world s first system capable of automatically verifying PCB defects detected during its own inspection process.

Commenting on the announcement, Mr. Asher Levy, President of the PCB Division at Orbotech Ltd., said: We believe this to be one of the most important changes in PCB-AOI technology since its introduction over 20 years ago. Although AOI has always been automatic, verification has been completed manually using a separate workstation and numerous human operators. This, in turn, has prolonged production time, increased the risk of human error and diverted valuable floor space. AVIP revolutionizes this entire operation by automating the verification process and incorporating it into the AOI system in a parallel - not sequential - operation mode, without compromising inspection quality or yield. By using the Spiron-AVIP our customers can achieve significant increases in end-to-end throughput and substantial cost-savings throughout their AOI operations.

AVIP is an altogether new technology offering a highly original approach to the detection of defects and the reduction of false calls. Leveraging Orbotech's extensive experience with Visiomltraviolet laser-fluorescence technology, AVIP utilizes fluorescent illumination to supplement robust color reflective illumination. Defects identified during the inspection process are automatically re-examined, using an ultra high-resolution fluorescent image and newly-developed post- processing algorithms, to ensure enhanced detection of critical defects on mixed, inner and outer layer applications. Spiron-AVIP s innovative dual-table operation allows automatic inspection and verification to be performed in parallel on the same table, resulting in rapid and accurate detection and enabling highly efficient loading and unloading. The system can inspect- and simultaneously verify - as many as 200 sides per hour for 5 mil line technology, which no other currently available AOI system can achieve.

Except for historical information, the matters discussed in this press release are forward-looking statements that are subject to certain risks and uncertainties which could cause the actual results to differ materially from those projected, including industry trends, the timing and strength of product and service offerings, changes in business or pricing strategies, changes in the prevailing political and regulatory framework in which the relevant parties operate or in economic or technological trends or conditions, including currency fluctuations, inflation and consumer confidence, on a global, regional or national basis and other risks detailed from time to time in the Company s SEC reports. The Company assumes no obligation to update the information in this press release.

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SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

ORBOTECH LTD.

(Registrant)

By: /s/ Amichai Steinberg

Amichai Steinberg Corporate Vice President for Finance and Chief

Financial Officer

Date: August 4, 2004